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AGENDA
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Mr. Enrique V. Iglesias, President, Inter-American Development Bank  
Mr. Donald Johnston, Secretary-General, OECD

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Mr. Fernando Sanchez Ugarte, President, Federal Competition Commission, Mexico

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Competition and Efficiency as Organising Principles for All Economic and Regulatory Policymaking  
Session Chairman: Mr. Alberto Heimler, Director, Autorità garante della concorrenza e del mercato, Italy  
Lead Presenter: Mr. Paul Crampton, Head, Outreach Unit, Competition Division, OECD  
Discussant: Mr. Paul Correa, Senior Economist, the World Bank

11:30 - 1:30 p.m.  Session 2  
Competition in the LAC Banking Industry  
Session Chairman: Mr. José Tavares, Secretary for Economic Monitoring, Ministry of Finance, Brazil  
Lead Presenters: Mr. Eduardo Levy-Yeyati, Universidad Torcuato Di Tella, Argentina, and Mr. Alejandro Micco, Research Economist, Inter-American Development Bank  
Discussant: Ms. Liliana Rojas-Suárez, Consultant, Inter-American Development Bank

1:30 - 3:00 p.m.  Lunch

3:00 - 5:30 p.m.  Session 3  
Competition in the LAC Power Sector  
Session Chairman: Mr. Pedro Maria Meroño Velez, Chairman of ARIAE, Association of Latin American Energy Regulators.  
Lead Presenter: Mr. Frank Wolak, Stanford University, United States  
Discussant: Mr. José Jaime Millán, Economist, Inter-American Development Bank

5:30 – 7:00 p.m.  Cocktail Reception
Tuesday April 8, 2003

9:30 - 11:30 a.m.  **Session 4**  
*Peer Review of Chile's Competition Institutions*  
*Session Chairman:* Mr. Knut Eggum Johansen, Director General, Norwegian Competition Authority  
*Country Examiners:* Mexico, Canada  
*Lead Presenter:* Mr. Terry Winslow, Consultant, OECD

11:30 - 1:00 p.m.  **Session 5**  
*Competition in the LAC Telecommunications Sector*  
*Session Chairman:* Mrs. Carmen Fuente, Jefe de Area de Concentraciones, Dirección General de Defensa de la Competencia, Ministerio de Economía, Spain  
*Lead Presenters:* Mr. Carlos Lapuerta, The Brattle Group, U.K., and Mr. Juan Benavides, Infrastructure Specialist, Inter-American Development Bank  
*Discussant:* Mr. Eric Brousseau, Université de Paris 10

1:00 - 2:30 p.m.  **Lunch**

2:30 - 4:00 p.m.  **Session 6**  
*Roundtable Discussion:*  
"Challenges in the Introduction of Competition in Latin America"  
*Session Chairman:* Mr. Kirtikumar Mehta, Director, DG Competition, European Commission  
*Lead Presenter:* Mr. José Tavares, Secretary for Economic Monitoring, Ministry of Finance, Brazil

4:00 - 5:15 p.m.  **Session 7**  
*Looking Ahead – Future Work*  
*Session Chairman:* Mr. Fernando Sanchez Ugarte, President, Federal Competition Commission, Mexico  
**General Discussion**  
*IDB Practices Supporting Competition Policy*  
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5:15 - 5:30 p.m.  **Concluding Remarks**  
Mr. Eduardo Lora, Principal Advisor Research Department, Inter-American Development Bank  
Mr. Seiichi Kondo, Deputy Secretary-General, OECD
First Latin American Competition Forum - Background Note

Paris, 7-8 April 2003

BACKGROUND NOTE

The Latin American Competition Forum will promote dialogue, consensus building and networking between policymakers, and the identification and dissemination of best practices in competition law and policy in a collegial setting. Emphasis will be on sharing experience. Participants will be senior officials of Latin American competition authorities and other relevant institutions. Competition officials from OECD countries will be invited to provide a different perspective and to convey their experience.

The first session of the meeting will deal with competition as an organising principle of all economic and regulatory reform.

The following three sessions will discuss how the growing participation of foreign-owned firms has changed the landscape for competition and has created new challenges to regulatory and competition institutions. Reports on the impact of foreign direct investment in three sectors, financial services, electricity and telecommunications, will be debated. The sessions will aim at deriving policy lessons for regulators and for prospective reformers in the three sectors.

A roundtable discussion on challenges in the introduction of competition in Latin America will allow Latin American competition officials to exchange experiences among themselves, as well as with competition experts from countries where effective competition regimes have been established for a longer period.

Chile’s competition institutions will be examined following the same methods developed for the review of competition institutions in OECD countries. Competition officials from Mexico and Canada will lead the review.

In the last session, participants will provide feedback on the first meeting and discuss topics that would be of interest in future meetings. Participants will also be invited to discuss how future work should be organised.
OPENING REMARKS
(Spanish version only)

By Mr. Enrique V. Iglesias
President of the Inter-American Development Bank

at the

First Meeting of the

Latin American Competition Forum

PARIS: 7 APRIL, 2003
OPENING REMARKS BY PRESIDENT IGLESIAS.
LATIN AMERICAN COMPETITION FORUM

Dentro de un acuerdo más general, el BID y la OCDE van a cooperar para ayudar a los países de Latino América y Caribe a conseguir una implantación efectiva del Derecho y la Política de la Competencia.

El primer acto de esta cooperación es la celebración de este Foro sobre la Competencia.

Méjico es país miembro de la OCDE y país prestatario del BID. Argentina y Brasil acuden como observadores a los Comités de la OCDE.

La colaboración entre el BID y la OCDE va a ofrecer una oportunidad más a los países prestatarios del BID de acceder al apoyo de la División de Derecho y Política de la Competencia de la OCDE.

*Competencia como principio básico*

La liberalización y flexibilización de los sectores productivos perfeccionan los mercados domésticos de bienes y servicios, contribuyendo a la estabilidad de la economía mediante una mejor asignación de recursos y una mayor igualdad de oportunidades para las empresas en los mercados, pero la llegada de la competencia a estos mercados hace necesaria la puesta en marcha de una política de la competencia, para evitar que ciertos comportamientos de los agentes económicos impida su buen funcionamiento, mermando efectividad al esfuerzo liberalizador y privando a consumidores y a empresas de sus ventajas.

El objetivo de la política de la competencia es beneficiar al conjunto de las sociedad. No solamente los consumidores salen beneficiados, las empresas se benefician porque los precios de sus inputs descienden y su calidad aumenta, haciéndolas mas competitivas.
La existencia de una buena ley de defensa de la competencia tiene que ir acompañada de la existencia de una autoridad de la competencia con poderes y recursos humanos adecuados y suficientes para hacer cumplir la ley con independencia de las presiones del sector público y privado.

El BID aúna esfuerzos con la OCDE con miras a desarrollar una cultura de la competencia que involucre a los gobiernos, a las empresas y a los consumidores. Para mantener la liberalización de los mercados es de vital importancia demostrar a la opinión mundial que el derecho de la competencia protege los intereses de los ciudadanos.

*Regulación y Competencia.*

La política de la competencia va más allá de las leyes anti-cartel, y de las actuaciones contra las empresas que abusan de su situación de dominio.

Muchas veces las regulaciones de los gobiernos diseñadas para alcanzar legítimos objetivos políticos distorsionan la competencia en los mercados.

La política de la competencia debe ser el referente para las regulaciones de sectores específicos y para las reformas estructurales.

Los principios que regulan la política de la competencia se pueden utilizar para diseñar los sistemas regulatorios.

Estas adecuadas reformas regulatorias junto con la puesta en marcha de las políticas de la competencia contribuyen a aumentar la capacidad de las economías para superar las crisis externas e internas.

Las leyes de defensa de la competencia actúan sobre las prácticas del sector privado pero no pueden actuar sobre las regulaciones de los gobiernos que restringen la competencia.

Tiene que existir una coherencia entre regulación y competencia.
**Comercio y Competencia**

Las políticas de comercio y competencia son complementarias.

Existe sin embargo una diferencia decisiva entre ambas políticas, la política comercial se dirige a los gobiernos y a los estados mientras que la política de la competencia actúa sobre restricciones al comercio y a los mercados por parte de las empresas.

Estamos de acuerdo con las conclusiones del Grupo sobre Comercio y Competencia de la OCDE en el sentido que una liberalización comercial puede verse frustrada por deficiencias en la aplicación de la política de la competencia y por otra parte instrumentos de la política comercial (aranceles, cuotas y otras formas desprotección) pueden restringir la competencia y sustraer a los consumidores y a las empresas importantes beneficios.

Si a nivel nacional los monopolios producen una transferencia de los consumidores a los productores, disminuyendo el volumen de comercio, lo mismo ocurre a nivel internacional.

La competencia en los mercados domésticos promueve la competitividad internacional de las empresas.

La OCDE, la UNCTAD y la OMC tienen grupos de trabajos sobre la interacción entre Comercio y Competencia

**Integración y Competencia**

Los acuerdos que se han firmado entre Méjico y la UE y Chile y la UE contemplan anexos o capítulos sobre Políticas de la Competencia.

Las negociaciones UE-Mercosur también contemplan un Protocolo de Defensa de la Competencia de Mercosur (Acuerdo sobre el Reglamento del Protocolo de Defensa de la Competencia de Mercosur, 5 de diciembre 2.002).
Estos compromisos se repiten en los acuerdos CARICON (protocolo VIII, Competition Policy and Consumer Protection, Tratado de Chaguaramas revisado).

Los acuerdos NAFTA también hacen referencia a políticas de la competencia. (en concreto el capítulo 15 Competition Policies, Monopoly and State Enterprises, de la Parte V, Investment, Services and Related Matters)

La Comunidad Andina aprobó una decisión sobre normas para corregir las distorsiones a la competencia (Decisión 285--21.03.1991)

Así pues nos encontramos con que la Competencia ha entrado a formar parte de los requisitos de Integración.

Cooperación Internacional

El derecho de la competencia es en general un derecho nacional.

Sin embargo, su aplicación tiene cada día una dimensión más internacional.

El hecho de que algunos países no dispongan de leyes de la competencia, que existan exenciones a dichas leyes, que en algunos países estas leyes no se apliquen con todo rigor permite que exista a nivel mundial una actividad anticompetitiva que distorsiona el comercio internacional.

El BID apoya las recomendaciones del Consejo de la OCDE para una mayor cooperación internacional en materia de política de la competencia.

Competencia y Desarrollo

Las regulaciones anti-competicitivas, el abuso de la posición de dominio y la existencia de cartels duros impiden el desarrollo de los países y su posibilidad de integrarse en la economía mundial.

¿Cómo una empresa de un país en vías de desarrollo puede competir a nivel internacional o sobrevivir en el mercado nacional si tiene que pagar precios más altos por servicios básicos, tales como electricidad, servicios
financieros, transporte o telecomunicaciones y sus inputs básicos se los suministra una empresa local con posición dominante o un cartel internacional a precios por encima de los niveles internacionales?

Aunque es difícil probar estos asuntos empíricamente, los análisis de la OCDE han mostrado en forma bastante convincente que cuando los mercados de bienes y servicios son altamente competitivos tiende a crecer la productividad y el empleo. Esto es una conclusión muy importante para los países latinoamericanos, afectados como todos sabemos por bajas tasas de crecimiento y problemas de productividad y generación de empleo. Por supuesto que la política de competencia por sí sola no va a resolver estos problemas, pero es una pieza fundamental, sin la cual no lograremos el objetivo del desarrollo.

**América Latina y Caribe y la Política de la Competencia**

La relación entre el Estado y el mercado en la región ha experimentado cambios muy importantes derivados del proceso de reformas económicas impulsadas en las últimas décadas. Esas reformas han producido resultados en términos de estabilidad macroeconómica, creando un ambiente más propicio para la inversión. También se puede constatar la apertura al mercado de sectores enteros de la actividad productiva, antes dominados por monopolios estatales ineficientes. De igual forma, se han desmantelado barreras comerciales y regulaciones sectoriales restrictivas de la competencia interna y externa. Sin embargo, el tránsito hacia un mayor protagonismo del mercado no ha sido suficientemente acompañado por el desarrollo de capacidades efectivas de regulación que promuevan la competencia, reduzcan el rentismo y protejan los intereses generales; además, el tránsito al mercado ha sido desigual y, en no pocos casos, ha estado en función de la capacidad de los intereses organizados en tomar ventaja o resistir la apertura.

En este contexto, el necesario apoyo al funcionamiento del mercado debe ser acompañado por el reconocimiento de la importancia y la complementariedad de las políticas e instituciones públicas. Como se pone en evidencia a través de diversos estudios, los países que han obtenido mayores beneficios de las reformas económicas son aquellos que han avanzado más en las reformas institucionales coherentes con los requerimientos de la gobernabilidad democrática.
Varios países de la Región no tienen leyes de competencia pero están en el proceso de tenerlas. Hay proyectos de regulación de la competencia en elaboración o discusión en Ecuador, Paraguay, República Dominicana, Guatemala, El Salvador, Nicaragua, Barbados y Trinidad Tobago.

Otros países teniendo ya leyes de defensa de la competencia están tramitando nuevos proyectos para mejorarlas, Brasil y Venezuela y Uruguay.

Argentina, Chile, Perú, Panamá, Costa Rica y Méjico y Jamaica tienen leyes de defensa de la competencia y no están tramitando nuevos proyectos.

En términos generales los entes reguladores de la Región están presupuestariamente mucho mejor dotados que las autoridades de la competencia.

Aunque en los años noventa se ha avanzado mucho, los grandes desafíos permanecen y están condicionados por las posibilidades reales de aplicar las leyes de defensa de la competencia, coordinar su acción con los reguladores y disponer de unos funcionarios preparados con unos recursos financieros acordes.

Las autoridades de competencia de la Región necesitan transferencias de conocimientos prácticos de Europa y Estados Unidos.

No consiste en aplicar a la Región los modelos de los países desarrollados. Los países de la Región tienen que resolver sus problemas con sistemas diseñados para sus necesidades, y ese proceso puede facilitarlo un buen entendimiento de las experiencias de los otros países. Ese es justamente el objetivo de este encuentro técnico entre expertos y autoridades en el tema de la competencia.
OPENING REMARKS
BY THE HONOURABLE DONALD J. JOHNSTON
SECRETARY-GENERAL OF THE OECD

at the
First Meeting of the
Latin American Competition Forum

PARIS: 7 APRIL, 2003
Good morning, ladies and gentlemen. Welcome to this first meeting of the Latin American Competition Forum. This forum brings together competition policy makers and sector regulators of more than 25 countries, mostly from the Latin American region, but also from the U.S., Canada and Europe. I am also pleased to see representatives of international organisations – UNCTAD, the World Trade Institute, and of course many colleagues from the Inter-American Development Bank. I would like to thank the IDB for making this event possible through its generous financial contribution.

This event is the first concrete step in a partnership, launched last August, between the IDB and the OECD to promote competition policy and competitiveness in Latin America. The OECD and the IDB share many objectives: economic and social progress and poverty reduction, economic integration, higher levels of trade and investment, sustainable development, competitiveness, and responsible and transparent governance. I believe that closer co-operation will be very fruitful for both organisations. Indeed, President Iglesias and I will sign this afternoon a Joint Statement of Priorities to guide our cooperation. These priorities include competition and regulatory policy; competitiveness and growth; trade and investment; as well as many other policy fields. We at the OECD are enthusiastic about developing a close working relationship with the IDB in order to realise the full potential of this expanded partnership.

Because of the increasing integration of the world economy it is difficult for OECD to neatly divide its work with its own members from work with our partners in developing and transition economies. We need to co-operate and come together in fora such as this one, to discuss common challenges and experiences.

The OECD has been working with Latin American countries on competition law and policy issues for a long time. Mexico, as a Member of the OECD, of course participates actively in the work of our Competition Committee and its Working Parties. Argentina and Brazil also take part in that work as Observers to the Committee. Many of you have attended our Global Forum on Competition, including the third one which was held Paris less than two months ago. We have also worked with many of you in OECD conferences and workshops on competition that were co-sponsored by governments throughout the Latin American region. Because of the importance and success of this work, the OECD’s Programme of Co-operation with non-Members will give higher priority to work in Latin America on competition policy in 2003-2004.

Competition is a policy area that has strong links to most other branches of economic policy, and virtually all sectors of the economy. Therefore, I am pleased that experts from the banking, energy and telecommunications sectors have joined us. Exchanging perspectives and experiences with sector experts is the only way to strike the right balance between competition and regulation in the pursuit of increased efficiency and economic growth.
Concerning the agenda, for this first meeting of the Latin American Competition Forum:

− We and our partners in the IDB decided to begin with a session on Competition and Efficiency as Organising Principles for All Economic and Regulatory Policymaking. This will enable us to explore the relationship between competition policy and regulatory reform.

− Secondly, we wished to focus on how competition policy principles may be applied in three sectors, namely, telecommunications, banking and electricity.

− Thirdly, we thought that this would be an excellent opportunity to invite you to participate in a peer review exercise – in this case of Chile’s competition law and policy. Peer review is one of the core instruments of the OECD for dialogue and policy enhancement, and has featured prominently in the work of our Competition Committee for many years. Chile should be commended for taking a pioneering role, as the second country outside the OECD to volunteer for this exercise in the competition policy area.

− After the peer review session, we will have a roundtable discussion on the challenges facing competition proponents in Latin America. I hope that this forum will assist Latin American countries to meet those challenges.

− In the final session, your suggestions on how to proceed from here will be of paramount importance.

We should not underestimate the importance of what we will be discussing in the coming two days. We live in a world with enormous potential for social progress – if we take the right public policy decisions. Fortunately, countries across the spectrum of development have begun to come together to forge a shared international development agenda. There appears to be broad acceptance that economic growth spearheaded by competition, investment and entrepreneurship is the best way to fight poverty and enhance public welfare. Economic reform guided by competition principles increases wealth, productivity, and international competitiveness. Effective competition law enforcement helps to put a stop to private, anti-competitive conduct that may eliminate or undermine the benefits of market reform and trade liberalisation.

With that I wish you all a fruitful meeting, hoping that the presentations and discussions will be of value in your important work promoting competition in your countries.
SESSION I:
COMPETITION AND EFFICIENCY AS ORGANISING PRINCIPLES OF ALL ECONOMIC AND REGULATORY POLICYMAKING
BACKGROUND NOTE
COMPETITION AND EFFICIENCY AS ORGANISING PRINCIPLES
FOR ALL ECONOMIC AND REGULATORY POLICYMAKING

Prepared for the
First Meeting of the
Latin American Competition Forum

Paris: 7-8 April, 2003

Paul Crampton

*Head, Outreach Unit, Competition Division, OECD.
Introduction

In conceptualising the agenda for the first Latin American Competition Forum, a consensus quickly emerged among those involved on behalf of the Organisation for Economic Cooperation and Development (OECD) and the Inter-American Development Bank (IDB) that we should begin with first principles. In the context of a forum on competition in a developing region of the world where competition has been significantly limited by a plethora of laws, regulations, administrative measures and other institutional restraints to competition (for convenience, collectively referred to as “regulations” hereinafter), it was agreed that the first session should focus on the benefits of orienting all economic and regulatory policymaking towards maximizing competition and efficiency. Accordingly, that will be the principal focus of this paper.

Another way of putting this basic principle of market reform, which lies at the heart of the OECD’s 1997 Policy Recommendations on Regulatory Reform and the 1999 APEC Competition Principles, is that competition and efficiency ought to provide policy coherence to all economic and regulatory policy decisions. That is to say, competition and efficiency should be the policy “glue” that links and binds all economic and regulatory decision-making into a coherent framework. This implies bringing competition and efficiency dimensions to all such decision-making, and being guided by the general principle that competition should be stimulated and maximized except in cases of market failure or where other legitimate public interest objectives give rise to a need for continued or even new regulation. In such cases, the regulation ought to be designed in an efficient way that provides incentives to reduce costs and innovate, that is generally efficient, and that stimulates competition in respect of activities within the sector that do not need to be regulated, or that only require partial regulation. This requires a framework for assisting policy-makers to strike the optimal balance between competition and regulation -- an important theme within the overall focus of the paper.

The need to pay close attention to striking the right balance between competition and regulation is particularly strong in Latin America, where there are troubling signs that various economic problems are being blamed on market liberalisation initiatives of the 1990s that may not have been pursued in an optimal manner. To some extent, this may be attributable to misunderstandings regarding the reasons for the sub-optimal outcomes. This underscores the need not only to exercise prudence in striking the right balance between competition and regulation, but also to make every effort to fully address misperceptions and explain the true reasons why market reform efforts to date have not yielded anticipated benefits. In this context, it makes good sense to have a slight bias towards minimising the risk of failure during this particularly fragile political climate.

The remainder of this paper will be divided into five sections. Part 1 will briefly address why OECD countries are placing increased reliance on competition and, where necessary, flexible and efficient regulation. Part 2 will then explain how competition and efficiency can provide a coherent policy framework for all economic and regulatory policy making. Part 3 will follow with a brief summary of the principal justifications for regulation. This will facilitate a discussion, in Part 4, of various suggestions for striking the right balance between competition and regulation, including by reforming necessary regulatory frameworks to support effective competition and to achieve greater efficiency. Finally, Part 5 of the paper will offer a three-pronged strategy for building capacity to pursue a strong competition policy.
1. **Why OECD Countries are Embracing Increased Competition and, Where Necessary, More Efficient and Flexible Regulation**

1. Within OECD countries, competition is now broadly accepted as the best available mechanism for maximising the things that one can demand from an economic system in most circumstances. Economic regulation is increasingly perceived to be at the opposite end of the spectrum - it tends to leave a larger number of people with a reduced real income and a lower standard of living. In addition, economic regulation imposes costs on society in terms of its establishment and administration, its adverse impact on economic efficiency (including dynamic efficiency) and the significant time, effort and expense associated with its removal.

2. Studies consistently demonstrate that deregulation and regulatory reform in OECD countries have been accompanied by large price reductions to consumers and substantial improvements in quality and service. As noted in a publication summarising the OECD’s 1997 Regulatory Reform Report:

   “More heavily regulated countries can expect to see increases in real GDP levels on the order of 3 to 6 percent after ambitious reform programmes, according to OECD models. Countries well-advanced on the path of regulatory reform already have reaped some of those benefits and so stand to gain less from further reform.

   Australia assesses its gains from reform to be around 5.5 per cent of DGP. The European Single Market increased EU income by an estimated 1.5 percent from 1987 to 1993; and the Commission projects even greater future gains. Japan estimates that reducing price and productivity gaps with the United States, primarily through regulatory reform, should increase GDP by several percentage points.”

3. In a contemporaneous review of a number of similar studies relating to the deregulation of the natural gas, long distance telecommunications, airlines, trucking and rail industries in the U.S., it was reported that real prices dropped at least 25% and sometimes close to 50% within ten years of deregulation in those industries. The annual value of consumer benefits from such deregulation was estimated to be approximately US$5 billion in the long distance telecom industry, US$19.4 billion in the airline industry, US$19.6 billion in the trucking industry, and US$9.10 billion in the railroad industry. At the same time, consumers were able to benefit from improvements in the quality of service. Moreover, "[c]rucial social goals like airline safety, reliability of gas service, and reliability of the telecommunications network were maintained or improved by deregulation and customer choice."  

4. A more recent OECD study on product market competition and economic performance has found that multi-factor productivity (MFP) improved markedly following regulatory reforms in previously sheltered industries. Based on the empirical data reviewed, the study estimates that Japan and the large continental European countries could increase productivity levels by between 2 and 6 percent if they were to align their product market regulations with those in countries with the most competition-friendly environments. In Greece and Portugal, the increase was estimated to be at least 10 percent, reflecting comparatively strict regulations in product markets and relatively large distances from the technological frontier of the most pro-competitive stance. To put these results into context, the study observes that “the estimated potential gains in MFP would correspond to several years of growth at the average rate of MFP growth over the 1981-2000 period”.

5. The study also estimates that regulatory reforms undertaken in OECD countries between the late 1970s and the late 1990s increased individual countries’ employment rates by an average of 1½ percent and up to approximately 2.5% in countries where reforms were pursued most vigorously. This is consistent with previous OECD work that suggested long term employment gains from regulatory
This puts into serious question the myth that regulatory reform leads to employment losses in the domestic economy.

6. In another recent study, Dutz and Vagliasindi assessed the effectiveness of competition policy across 20 transition economies in central and Eastern Europe, in terms of enforcement, competition advocacy and institutional effectiveness. The survey sampled over 3,000 firms in the first half of 1999. It found a strong link between implementation effectiveness and ease of expansion of productive enterprises, as well as “a robust positive relationship between more effective competition policy implementation and intensity of competition as captured by economy-wide enterprise mobility”. It added:

“Merely having a competition law on the books, or having an up-and-running competition agency, is not a sufficient condition for effective implementation. The stronger and statistically more significant impact of institutional dimensions of implementation independence, transparency and effectiveness of appeals suggests that in order to help foster the [entry] and growth of enterprises, competition authorities should be more accountable to civil society, and build additional safeguards to protect against undue influence from pressure groups in government and elsewhere.”

7. Turning to Latin America, a study of liberalisation of the trucking, container and cargo handling businesses in Mexico over the period 1989-1993 by Dutz, Hayri and Ibarra found that reforms led to increases in quantities and distances of freight hauled, increases in reliability (timeliness, transit losses) and overall benefits estimated at 10% of operating margin of a representative user company.

8. In addition, it has been reported that reform in the telecommunications sector in Chile in the late 1980s resulted in a quadrupling of the number of telephone lines by 1997 and “brought about rapid network modernization, new services, and prices that are among the world’s lowest”. Indeed, competition also played a key role in accelerating the deployment of facilities in rural areas.

9. In addition, a 1999 World Bank study of reform in the telecoms industry in 30 African and Latin American countries over the period 1984 – 1997 found increased competition to be associated with lower prices for local calls, increased mainline penetration and connection capacity, more payphones and a higher connection capacity. By contrast, merely privatising an incumbent monopolist without introducing greater competition and establishing a regulatory framework with an independent regulator was negatively correlated with mainline penetration and connection capacity. These findings led to the conclusion that “competition is the most effective agent of change, privatization without regulation may not improve service, and regulation is especially important when privatizing a monopoly incumbent”. The study also stated: “One important policy implication of these results is that granting exclusivity periods to an incumbent may seriously delay the real benefits that seem to come with competition”.

10. Turning to the impact of international cartels on developing economies, two recent related studies of cases reported by OECD competition authorities found that 39 cartels had impacted developing countries; cartel participants included companies from 31 different economies (including 8 developing economies); 24 of the cartels had lasted at least 4 years; price falls after cartels had been broken up were in the order of 20-40 percent; the initial cartel formation had been triggered by substantial price falls; 16 cartel alone accounted for at least US$81 billion of developing countries’ imports; and the cartelised products represented approximately 6.7% of imports and 1.2% of the GDP of developing countries.

11. It cannot be over-emphasised that, over the longer run, innovation accounts for most of the improvements in average living standards that flow from greater competition. This applies in both developed and developing economies. A recent OECD study estimated that procompetitive reform explained more than one third of the excess R&D intensity in the U.S., Japan, German and Sweden relative
to the OECD average and provided a large positive contribution in the U.K., Canada and Ireland. Conversely, excessive regulatory restrictions to competition in Italy and Greece were estimated to account for one third and two thirds, respectively, of the shortfall in R&D intensity relative to the OECD average.23

12. A related way in which competition is superior to regulation as an organising force in market development is in helping firms to “deal with the unexpected.” One needs only to consider the success of the Internet. Initially created in the US, the Internet has now has spread around the globe. It is based on an open architecture that provides for competitive innovation between web sites. This competition is not just between commercial web sites, but also between sites of non-commercial providers of information such as the OECD, which has to continue to strive to make its web site more user-friendly and useful to its target audience. Otherwise that audience will go elsewhere in search of comparable information, and the OECD’s work will become less relevant. What is noteworthy for this discussion is that the Internet was not the first such network of its kind. A decade before it was born, the Minitel system was in wide use in France. Among other things, one could bank, book air tickets and obtain a significant range of information through that network. But Minitel floundered, largely because it was a closed system with a monopoly core service run by France Telecom using a “locked in” technology. It was unable to innovate past its slow and graphics free architecture and was unable to respond in a timely fashion to unexpected innovations which arose elsewhere.

13. Notwithstanding the persuasive evidence of the benefits of greater competition and more efficient, flexible regulation, Latin American countries continue to be highly regulated, in some cases with large state-owned sectors and oligopolies or inefficient firms operating in markets insulated by various types of barriers. In addition to the above-mentioned economic gains that citizens in these countries could receive from a strong competition policy, such a policy also likely would help to create better conditions for democratic institutions. This is because the democratisation of political systems and the decentralisation of economic decision making are mutually reinforcing processes.

2. Competition and Efficiency as a Coherent Framework for All Economic and Regulatory Policy Making

14. Some of the ways in which regulations can and do distort competition and efficiency across the developed and developing world are discussed in Part 3 below. However, as the saying goes, these are just the tip of the iceberg. In virtually every country today, competition and efficiency continue to be distorted at all levels of government, across a large number of sectors of the economy and in a vast array of different ways. In aggregate, these competition and efficiency distorting measures create an enormous impediment to economic growth and development.

15. Given the pervasiveness of competition and efficiency distorting regulations, the creation of a strong competition culture and the realisation of the full potential of competition policy cannot be achieved unless all economic and regulatory policy making includes competition and efficiency dimensions and is guided by the general principle that efficiency should be promoted and that competition should be stimulated and maximised except in cases of market failure or where other legitimate public interest objectives give rise to a need for continued or even new regulation. This is consistent with the view, expressed in the OECD’s 1997 Regulatory Reform Report, that “reform should be built on a foundation of competition policy”.24 It is also consistent with the APEC Competition Principles, which were intended to “provide a framework that links all aspects of economic policy that affect the functioning of markets”.25

16. Indeed, the comprehensiveness principle in the APEC Competition Principles advocates “[b]road application of competition and regulatory principles to economic activity including goods and services, and private and public business activities”, as well as the “recognition of the competition dimension of policy development and reform which affects the efficient functioning of markets”.26 To implement this
comprehensiveness principle, the Competition Principles encourage APEC Member Economies (which include several Latin American economies), to, among other things:

(i) identify and/or review regulations and measures that impede the ability and opportunity of businesses (including SMEs) to compete on the basis of efficiency and innovation; and
(ii) ensure that measures to achieve desired objectives are adopted and/or maintained with the minimum distortion to competition.

17. Further insight into this comprehensiveness principle is provided by the PECC Competition Principles, from which the APEC Competition Principles were distilled. The PECC principles were in part a response to the Asian crisis, which was in full swing at the time the Competition Principles project was launched in 1997. A fact that may be particularly relevant to a number of Latin American countries is that it was envisaged that adoption by APEC economies of a set of competition principles would help to counter the risk of increasing protectionism.

18. The PECC Competition Principles “are based on competition and efficiency as the preferred means for sustaining overall economic growth and development”. They stress the unifying role that competition and efficiency should play in achieving an integrated, coherent and transparent paradigm for the assessment and refinement of all existing policies and the development of future policies that impact upon markets. This approach was conceived as likely to “provide a powerful mechanism for achieving the APEC strategy of more open and competitive markets, in order to attain greater economic efficiency and overall economic welfare”.

19. As with the OECD’s approach to regulatory reform, the PECC approach is premised on bringing a competition and efficiency dimension to all economic and regulatory policymaking, by assessing the extent to which existing and future policies distort, or are likely to distort, competition. By giving predominance to competition and efficiency, the OECD and PECC approaches provide a framework for resolving policy conflict with non-efficiency goals in, or underlying, existing or proposed regulations. In the OECD approach, this predominance is achieved by reforming economic regulations in all sectors to stimulate competition and eliminate competition distorting impacts except where clear evidence demonstrates that they are the best way to serve broad public interests. In such cases, it is advocated that any required regulation be designed to promote efficiency. In the PECC and APEC approaches, this predominance is achieved by promoting competition and efficiency in cases of conflict with non-efficiency goals, except where application of this principle is simply not practicable or politically feasible, in which case the competition distorting impact of the regulations is minimised. Moreover in the latter circumstances, it is recommended that reasons for divergence from the principle of fully promoting competition and efficiency “should be compelling and transparent”.

20. Embracing competition and efficiency as the “glue” that links and binds all economic and regulatory policy-making implies making a commitment to the following multi-step process:

First, the full range of regulations that affect markets should be revisited with a view to making an assessment of the extent to which they distort competition and efficiency in the pursuit of their objectives.

Second, where a competition or efficiency distorting effect is identified, an assessment should be made of whether the continued existence of the regulation as a whole is consistent with market-oriented reform.
Third, if the answer to this question is negative, an evaluation should be made of whether there is clear evidence that the regulation is the best way to promote any legitimate public interest objectives that the government wants to continue to pursue.

Fourth, if such clear evidence does not exist, or if the government no longer wishes to pursue the public interest objectives in question, the regulation should be eliminated.

Fifth, if, on the other hand, clear evidence demonstrates that a regulatory approach is the best way to achieve the public interest objectives, the regulation should be amended with a view to minimising the extent to which competition and efficiency are distorted in the pursuit of such other objectives. In this regard, competition principles should be drawn upon to help inform both the appropriate type and extent of regulation that should be embraced to achieve the objectives.

21. In conducting this exercise, particular attention needs to be paid to shifting the systemic bias. The onus should be to demonstrate the continued need for regulation, or at least the competition and efficiency distorting aspects of desirable public interest regulation. The onus should not be to demonstrate the benefits of competition.

22. It bears emphasising that the scope of this competition and efficiency driven economic and regulatory policy-making process should extend to all national and sub-national (e.g., state/provincial and municipal) regulations that affect markets for goods and services. This includes those relating to tariff and non-tariff barriers to trade, foreign direct investment, government procurement, the professions, intellectual property rights, infrastructure sectors (e.g., financial services (banking, securities), energy (electricity, natural gas, oil), telecommunications and transportation (airlines, railroads, shipping, trucking, ports, courier services)), agriculture, health & safety, product standards, SMEs and labour.

23. In assessing how best to stimulate competition and efficiency enhancing behaviour in these and other areas, a key focus should be upon eliminating or at least lowering to the extent possible regulatory barriers and impediments to entry, expansion and market access.

24. A good example of how competition can be fostered in particular segments within an industry is provided by the electricity sector. It is now generally accepted, at least in OECD countries, that the generation stage of the electricity sector is capable of supporting vigorous competition. However, it is less well known that various steps can be taken to stimulate competition at that stage, over and above splitting a former generation monopolist into several competing components, or allowing for new entry. For instance, changes to the manner in which electricity is metered can affect purchasing behaviour and the overall efficiency of the industry. More specifically, if electricity use is measured minute-by-minute, as opposed to the month-to-month way that is conventional in some countries, then it can be priced minute-by-minute. This provides purchasers, such as large customers with flexible demand, an incentive to reduce their load at peak times and perhaps even resell contracted electricity back into the market. If time-of-use metering applies to enough customers, the peaks in electricity demand can be blunted. In turn, this implies that capacity, and therefore the overall costs of the electricity system, can be lower. Moreover, a further constraint on the potential exercise of market power by generators can be created because at least some customers will be able to respond to high prices by reducing their demand immediately.

25. The point is that this competition stimulating and efficiency enhancing innovation may not have been conceived if it had not first been made possible by eliminating all competition distorting aspects of the regime regulating the electricity sector that were not essential to prevent monopolistic behaviour at the natural monopoly stages of the industry (transmission and distribution) and to achieve other public interest objectives (such as universal service or recovering sunk costs).
26. Even if a segment of an industry or market continues to display natural monopoly characteristics, competition can have an important role to play in helping to increase the overall efficiency of the regulatory regime. This can be achieved by creating competition for the market, for example, by auctioning off the right to be the monopolist supplier.

3. Principal Justifications for Regulation

27. Implicit in the proposition that competition is superior to regulation in most circumstances, is the notion that there are some circumstances in which free and unrestricted competition is not optimal and therefore some form of regulation may be preferable. These circumstances are fairly limited, and can be grouped as follows:

- to address market failure
- to advance the "public interest"
- to advance special interests
- to assist in the transition to a competitive market

3.1 Market Failure Regulation

28. Market failure can be defined as an inability of the market to deliver goods and services to consumers in an efficient manner, i.e. because unrestricted competition cannot be sustained in the industry in question. In such situations, some form of market-oriented, efficiency-enhancing, regulation may be efficient and appropriate. Each situation needs to be assessed individually, as regulation will not be efficient if it costs more than the harm that it seeks to address.

29. One of the classic and generally recognised examples of market failure is public goods. Examples include national defence, parks, public schools, flood control protection, lighthouses, and road construction and maintenance (although toll highways that are constructed and operated by the private sector are increasingly appearing). These are goods or services for which it likely would be difficult to establish an efficient payment mechanism, and for which the cost of extending the service to an additional person is virtually zero. The form of "regulation" typically adopted in respect of public goods is for the government to assume responsibility for deciding what is to be produced.

30. Another form of market failure may arise when it is less costly, due to the presence of economies of scale or scope, for a single entity to supply the entire market than to have competition between multiple entities. Regulation of the natural monopoly – either its prices or conduct - is then necessary to ensure that the market power of the monopoly is not abused. An example is electrical transmission.

31. A related type of market failure can occur when prospective entrants into a market must incur high costs that they would not be able to recoup if they were subsequently to exit from the market. Putting wires and pipes in the ground are examples of sunk costs, but so are the costs of learning and dealing with a regulatory regime. If a country wishes to attract private investment into markets with high sunk costs, ensuring a stable regulatory regime that promotes confidence and predictability is a key prerequisite.

32. Fortunately, the forces of globalisation and innovation are opening up many markets formerly thought to constitute natural monopolies, e.g., electricity generation, electricity retailing, natural gas retailing, local and long distance telecommunications, rail transportation, postal services and even public highways. This experience suggests that assumptions regarding sectors thought to be natural monopolies should be revisited periodically to test their continued validity.
However, these same forces are giving rise to new natural monopolies resulting from network externalities. Demand side network externalities can occur where there are enormous benefits to being a member of a network or standard. As the network or standard is embraced by more people or organisations, its value to existing members rises. Supply side network externalities can occur when the expenditures associated with providing services to additional consumers reduces the overall cost of the network. As an existing network grows, potential suppliers of rival networks are often unable to generate or maintain enough sales to compete with the "first mover" or the growing network. The dominance of VHS over Beta is the most cited example of this type of externality. In emerging network industries, policy-makers are still wrestling with how to approach this problem - i.e., through competition law or by leaving the market to decide winners and losers.

Other types of externalities can also give rise to market failure. Environmental legislation is the most obvious example of regulation dealing with pollution-related externalities. A less obvious example is zoning regulation, which prohibits activities that may generate noise, traffic or other externalities from taking place in close proximity to certain types of land uses.

Market failure also can exist as a result of information asymmetries. Such asymmetries can lead consumers to under or over consume. In addition, where incumbent suppliers are able to exploit informational asymmetries between themselves and potential new entrants, they may effectively increase barriers to entry, thereby putting themselves in a position to exercise market power. To enable the market to function efficiently, protect the public from providers of poor or sub-standard services, and even prevent against fraud, laws relating to matters such as professional standards, product labelling, deceptive marketing practices and securities trading need to be enacted.

A final type of market failure can occur when the government attempts to promote competition between state-owned enterprises. This type of a situation is difficult to sustain over the long run because the implicit or explicit guarantee against bankruptcy, together with the mandate to maintain employment, create incentives to predate that are much stronger than for profit-seeking privately owned enterprises. Thus, a market in which an SOE competes faces a high risk of descending into inefficient competition and generating huge losses for taxpayers, particularly if there are multiple SOEs competing against each other. Accordingly, creating competition between SOEs should only be considered as a short term step in a longer process of privatisation and deregulation.

Another rationale for regulation that is somewhat analogous to the market failure justification is to promote what is perceived to be the public interest. Regulations related to health and safety, the environment, labour, food and drugs, transportation (e.g., airline, trucking and rail services), securities, insurance, health care and investment often are supported by reference to "public interest" considerations. These types of regulations can be effected through a variety of instruments, including legislation that establishes a licensing regime, prevents or requires certain types of behaviour, imposes foreign ownership restrictions, or imposes product or technical standards. Unfortunately, in the pursuit of legitimate public interest objectives, this type of regulation often distorts competition to a far greater degree than necessary.

For example, in the financial sector, regulation generally is recognised to be required for prudential reasons - that is to say, to prevent systemic instability. Systemic failures in financial systems have proven to be very costly, with official “rescue” packages for failed financial institutions costing upwards of 20 per cent of GDP in some cases. Additionally, large failures of financial institutions, such as those that occurred in the post-1997 Asian crisis, helped to fuel economic disruptions with extremely high economic and social costs. Thus systemic stability clearly is a legitimate public interest objective that warrants regulatory intervention. However, regulatory frameworks designed primarily to promote public
interest in systemic stability often have distorted competition to a greater degree than necessary. For example, they have prevented foreign financial institutions from competing in various segments of the financial services industry, and/or have prevented competition between participants in two or more parts of the financial services industry, e.g., between banks and insurance companies; or between banks and investment dealers.

39. Similarly, the telecommunications industry has been pervasively regulated despite the fact that only the local loop was arguably naturally monopolistic. Even this assumption is now questionable, as cable companies and suppliers of wireless technologies are entering or are poised to enter local telecommunications markets in several jurisdictions.

3.3 Special Interest Regulation

40. Often, regulatory regimes are established to advance the interests of certain groups in society that have succeeded in persuading political authorities that they are worthy of what essentially amounts to protection from competition. This form of regulation typically is simply a means by which the regulatory process is used to protect the interests of some participants in the economy at the expense of others. Examples of this include supply management schemes (which are common in the agricultural sector - for example, the dairy, poultry, pork, grain and fruit industries), labour codes, licensing regimes which make it difficult for foreign and other firms or professionals to enter markets (these types of restrictions are common in the transportation and financial services sectors as well as in the professions), product and technical standards which have a similar effect (these types of restrictions are common in the construction sector) and foreign ownership restrictions. These latter restraints fall in the grey zone between public interest and special interest based regulation, as they can promote both of these types of interest, e.g., the desire to promote a national champion or local employment can coincide with the private interest in protection from competition.

41. Unfortunately, political realities are such that competition-distorting, special interest based regulations often cannot simply be eliminated by a government that is keen on market reform. Where such decisive action is not politically feasible, an alternative course of action that can yield significant benefits would be to amend the regulatory regimes in question in a way that minimises, or at least significantly lessens, their adverse impact on competition.

3.4 Transitional Regulation

42. An increasingly common rationale for regulation is to facilitate the transition of industries from regulation to competition. The process of regulatory reform sometimes involves complicated issues that require very careful consideration to ensure that the benefits of deregulation are not lost, for example by inadvertently enabling deregulated entities to establish private restraints in the place of the public restraints that have been removed. In addition, during the transition to open markets, the situation can be politically fragile -- if the transitory framework fails to produce expected benefits on a timely basis or produces short-term harm to stakeholders with political influence, policy makers may be pressured to re-regulate or to limit deregulation. The experience with deregulation of electrical power generation in California provides a noteworthy example. Sorting out the roles to be played by competition and by regulatory authorities during the transition requires striking a balance between sending appropriate investment signals to potential entrants, mitigating the exercise of market power of incumbent entities, and minimising the disruption to consumers. Where to draw the line depends in large measure on the speed with which new rivals can gain a foothold in the deregulated industry, and their incentives to do so. A number of suggestions for expediting the introduction of competition in transition industries are provided in Section 4 (ii) below.
4. Striking the Right Balance between Competition and Regulation

43. It is often forgotten that competition and regulation have the same ultimate goals, namely, to prevent the illegitimate acquisition and exercise of market power and to facilitate the efficient allocation of resources. Where free and unrestricted competition is unlikely to produce this result, it is generally recognised that some sort of regulation is appropriate, either as (i) a full substitute for competition, (ii) a means for establishing a sustainable framework within which effective competition can take place, or (iii) a means of "holding the fort" until the anticipated arrival of competition.

44. This gives rise to a need to manage the interface between competition policy (broadly defined) and regulatory policy in a way that recognises their mutually reinforcing nature and optimises economic welfare. In this regard, there are a number of general steps that can be taken, which are addressed immediately below. In addition, it is important to address the three key pillars of successful regulatory reform: establishing the right industry structures, the right industry rules and the right institutions to stimulate competition and efficiency-enhancing behaviour where possible. This is addressed in Sections 4 (ii), 4(iii) and 4(iv) below.

i) General Suggestions

45. The most important ingredient for successful reform is strong and consistent support at the highest political level. This means that the “buy-in” and active support of ministers and other political actors in the economy must be obtained. In short, it is critical that there be sufficient supportive political energy to drive regulatory reform efforts throughout the administration and overcome vested interests in both the private and public sectors which benefit from the status quo.

46. It is also crucial to establish clear objectives for the regulatory reform exercise as well as in any legislation or regulations that may be implemented to effect the reform. In this regard, the legal instruments establishing the regulatory regime should include, as one of their objectives, the promotion of economic efficiency, and, if possible, competition in areas not subject to regulation.

47. Furthermore, steps should be taken to ensure that these legal instruments, as well as the regulator’s policies, practices and procedures, are highly transparent and predictable. These steps should include actions and measures designed to give relevant domestic stakeholders and foreign investors confidence that the rules will not be arbitrarily changed.

ii) Getting the Right Structure

48. For competition to work in a market, there need to be competitors. A monopoly is not a good starting point and therefore privatising a monopoly is usually a poor policy. It is clear from experience that it normally takes a very long time for monopolies to be eroded, and not much time at all for privatised monopolists to establish private restraints that take the place of the former institutional restraints to competition.

49. Accordingly, it generally is better to break up a monopoly into a number of competing firms before it is privatised and/or deregulated. This is consistent with the general principle that regulatory reform should not just allow competition but it should foster it. For example, Hungary established a good foundation for its reform of the generation stage of the electricity industry by creating several new firms to compete against each other.

50. Where markets that are good candidates for deregulation are characterised by significant economies of scale or scope, one cannot expect a large number of competitors. In such cases, the
appropriate way to create the right structural conditions for competition is to remove regulatory impediments to entry by foreign or other potential competitors.

51. In addition to creating the right horizontal structure, it is important to address other structural considerations. For example, as recommended in the 2001 OECD Council Recommendation Concerning Structural Separation in Regulated Industries, serious consideration should be given separating the regulated and non-regulated activities of any entity that will continue to be regulated. At a minimum, this means creating separate affiliates for the purposes of conducting regulated and non-regulated activities, and establishing a number of complementary measures to ensure that structural separation is in fact maintained. Structural separation is required to address potential discrimination by the regulated entity in favour of its unregulated affiliate, and to protect against anti-competitive cross subsidisation. Accounting and costing rules simply are not sufficient to ensure that costs are properly allocated between competitive and regulated activities. Although this may result in some loss of economies of scope, this cost probably is well worth incurring in order to achieve the benefits that competition has to offer in fragile, emerging markets.

iii) Establishing the Right Rules

52. The second critical component of any regulatory reform program is to establish the right rules. This includes adopting an effective domestic competition law, minimising the number of exemptions from that law and making a commitment to its vigorous enforcement. An effective competition law is critical to ensuring that the benefits of deregulation are not undermined by private anti-competitive conduct, and anything less than strong enforcement of that law by an independent competition law enforcement authority can leave significant scope for anti-competitive behaviour to flourish, thereby seriously impeding the development of competition. Where it is considered desirable to exempt a sector from the application of the domestic competition law, the rationale for such exemption should be revisited from time to time, the exemption should be no broader than necessary, and the sectoral regulation should contain provisions that effectively prevent and sanction anti-competitive behaviour.

53. Although some have suggested that there may be some merit in delaying the introduction of a domestic competition law until a country reaches a certain stage of economic development, this would simply give former state enterprises and other deregulated firms the opportunity to engage in a broad range of anti-competitive conduct that would seriously impair the development of competition and push back the point in time at which competition is able to deliver the benefits discussed above. To minimise the scope for this to occur, domestic competition laws should be enacted as early as possible in the market opening process and contain as few industry and other exemptions as possible. This is an important sequencing issue.

54. Where the regulated entity will continue to control network or bottleneck facilities to which third parties must have access in order to compete effectively, non-discriminatory access rules should be established and the access price should be based on the cost of providing the service. In most cases, to ensure a level playing field, this should be the long-run incremental costs associated with the provision of the services, although there may be situations in which other definitions of "cost" would be appropriate. In addition, there should be a procedure for resolving disputes between the regulated entity and third parties regarding issues related to access, and that procedure should ensure swift resolution of disputes. Measures also should be adopted to protect the confidentiality of any competitively sensitive information that the regulated entity might otherwise be in a position to learn about its rivals in upstream, downstream or adjacent markets. In addition, provision should be made to ensure that rivals have adequate notice of changes to essential facilities that may adversely impact upon their competitiveness.
55. Where prices in one part of an industry (for example, long distance telephone services) have artificially subsidised prices in another part of the industry (for example, local telephone services), it also is important to adjust prices in the subsidised part of the industry to reflect their underlying costs. In short, suppliers should recover the costs of each product through the prices charged for that product. This will have the salutary effect of eliminating a strong disincentive to efficient entry by new competitors in the market for the supply of the subsidised product.

56. A more general pricing-related issue is how prices will be established. Alternative approaches can be grouped into two broad categories, (i) cost of service or rate of return regulation, which permits the regulated entity to obtain a predetermined rate of return on its capital (as defined by its rate base), and (ii) performance based regulation, such as price caps, which set a maximum price that a regulated entity can charge, while permitting the entity to retain any profits that can be realised through cost reduction initiatives. The latter approach is designed to decouple costs and rates so that carriers have a strong incentive to minimise costs and have no incentive to inflate their costs or to shift them between regulated and unregulated activities. For this reason, it is now generally considered to be superior to cost of service or rate of return regulation. Revenue sharing is somewhat of a hybrid of rate of return regulation and performance based regulation, in that it permits the regulated entity to retain a share of the returns that exceed its allowed rate of return, thereby providing a greater incentive to pay greater attention to costs.

57. In addition, consideration also should be given to the extent to which a voluntary code of conduct can eliminate, reduce the need for, or reduce the scope of the regulatory regime. In most cases, an important component of such a code would be oversight by an independent party.

58. Another important aspect of the rules framework is to ensure that it is sufficiently flexible to accommodate changing market conditions. For example, if technological advances occur more quickly than anticipated, the timetable for the transition can be reduced. Conversely, if competition is not developing as quickly as hoped, it should be possible to adjust the transition process to take account of that fact.

59. Where the experience in other jurisdictions has demonstrated that all or part of an industry previously thought to be a natural monopoly is no longer a natural monopoly, a plan should be developed to deregulate the industry or the part of it that is no longer a natural monopoly. If some parts of the industry (for example the production of equipment) do not display any natural monopoly characteristics, consideration should be given to removing all artificial barriers to competition into, and otherwise deregulating those aspects of, the industry immediately, or in any event as quickly as possible.

60. In this regard, if immediate deregulation is unlikely to spawn effective competition within a short period of time, consideration should be given to placing a clear time limit, in the form of a sunset clause in the enabling legislation or regulations of the regime, on the transition period as a whole or on certain aspects of it. Where clear time limits are not appropriate, clear milestones should be established in the legislation or regulations for either the termination of the transition, the termination of certain aspects of the transition, or the obligatory (as opposed to the permissive) forbearance of the regulator when such milestones are reached. In this regard, consideration should be given to including "carrots and sticks" in the transitory regime, to provide incentives for the incumbent firm(s) to reach the milestones as quickly as possible.

61. The guiding principle that ought to be embraced in considering the appropriate temporal parameters of a transitory regime is to minimise the transition period. In some situations, impediments to competition can be removed virtually overnight, whereas in other situations it will be entirely appropriate to move more slowly in order to avoid undermining the paramount objective of achieving conditions that are conducive to the maintenance of long-term competition. In any event, reliance on market forces should
be maximised at every stage of the transition process. Restrictions or other limitations on competition should be removed as soon as they are no longer required. In short, every effort should be made to avoid "over managing" the transition to competition.

62. One of the most potentially serious shortcomings associated with leaving a regulator broad scope to "manage" a transition to competition is that the regulator has a basic conflict of interest: the sooner the transition is complete, the sooner the regulator and staff at the regulatory agency must look for new work. This is why it is desirable to have someone other than the regulator determine whether any tests that have been established for the termination of the transitory regime have been met.

63. Moreover, it should be recognized that most regulators do not have a competition mind set. Their natural instincts often are to carefully manage and control, rather than to leave things to uncertain market forces. This can colour the entire transition process, with the result that their "management" of the transition has the ironic result of delaying that transition. Indeed, regulation also winds up occupying a larger portion of field, at the expense of competition. In short, not enough of the industry gets deregulated on a timely basis. This is in part attributable to the fact that, regulators have a tendency not only to want to set the rules of the game, but to referee it in a fashion that all participants come out as winners.

64. The fundamental problem with such an approach is that it is antithetical to competition, which has winners and losers. In this sense, competition is not a "fair" process, at least not from the perspective of the losers. In short, the only "fairness" issue that is relevant in a transition to competition is to ensure that there is a level playing field for all competitors and potential competitors, in the sense that competitors of the deregulated entity (or entities) do not face anti-competitive vertical or horizontal restraints, including exclusionary or predatory behaviour by incumbent dominant firms, or discriminatory conditions with respect to access to essential bottleneck facilities, such as local telecommunications switching networks, electricity transmission grids or distribution networks, slots at airports, rail lines, automated teller networks and pipelines.

iv) Creating the Right Institutions

65. Regulatory institutions are extremely important for the success of efficient and effective regulation. It is not possible to anticipate all the problems and all the ways in which enterprises can act to exclude or otherwise harm their rivals, or evade the objectives of regulation. Thus, regulatory institutions need to be established. However, this alone is not sufficient. A commitment must be made to ensuring that these institutions are well-staffed and well-resourced. Moreover, serious consideration should be given to providing the institutions with budgetary independence, to insulate them from the types of real or perceived pressures that can exist when a regulator recognises or is made aware that a certain course of action may have adverse future budgetary implications.

66. In addition to budgetary independence, regulatory institutions need to be independent of the enterprises they regulate, and, in a broad range of circumstances, government, in both structural and practical terms. Their optimal relationship with government will vary according to the objectives of the regulatory regime and the local domestic realities. For example, if the key objective is to maximise competition and efficiency, there is a strong case to be made that complete independence from government would be appropriate. In this regard, it may be noted that responses prepared to a questionnaire circulated to participants in the recent Global Forum on Competition identified greater independence as the single step/measure that would likely lead to better promotion and attainment of the objectives of the respondents’ domestic competition law and policy.52

67. However, if the enabling legislation requires the regulator to make decisions based on a broad “public interest” test, then some mechanism for obtaining government input might be desirable. Between
these two ends of the spectrum, a sober assessment must be made at the outset regarding the costs and benefits of complete independence versus varying degrees of government involvement in the regulatory process. For example, if, in addition to promoting competition and efficiency, other objectives of the regulatory regime were to ensure system stability, non-discrimination and universal service, one would have to ask how preserving a role for political influence in the decision-making process would advance these goals and outweigh the adverse implications for certainty, predictability and transparency. In any event, the key is for the regulator not to be subject to political influence beyond that which may be contemplated by the legal instruments establishing the regulatory regime.

68. Regardless of the degree of independence given to the regulator, it is critical that laws and regulations creating the regulatory regime provide for a high degree of transparency in respect of the tests that will be used by the regulator in making its decisions, the factors that will be considered in ascertaining whether the tests have been met, the procedures that will be followed by the regulator and the procedures that should be followed by persons whose conduct might be the subject of investigation or who might want to make representations and be given an opportunity to be heard. The same is true of the mechanism by which the government or relevant minister might input into the decision-making process. In the absence of such transparency, public confidence in the regulatory regime may be compromised.

69. Furthermore, regulators must be given sufficient powers to obtain the information they require to make their decisions. This includes not only powers to compel oral testimony or representations, but also written submissions and paper or computer records or other documents.

70. Moreover, consideration must be given to how best to address the interface between the competition law enforcement agency and the sectoral regulator. In this regard, one particularly valuable and basic step that can be taken is to enshrine in either the domestic competition law or the enabling sectoral law a right of intervention by the competition authority in the sectoral regulator’s proceedings. This would provide a legal mechanism to ensure that the competition agency can make written or oral submissions regarding key matters such as the industry structure (e.g., how to break up a former regulated entity into several competing firms, or how competition can be promoted through vertical separation); the formulation of industry-specific competition rules; how best to prevent cross-subsidisation between the regulated and unregulated activities of an entity; how to prevent against the anti-competitive use of sensitive customer information; and alternative approaches to issues such as stranded costs, universal access, deceptive marketing practices and price regulation.

71. To further reinforce the ability of the competition agency to be an effective advocate for change, serious consideration also should be given to giving the agency, or its head, a statutory mandate to engage in advocacy to promote competition throughout the economy and to help build a competition culture. In any event, a genuine effort should be made to include senior representatives of the competition agency at an early stage of the regulatory reform process within various branches of government, including in any interdepartmental meetings within government at which issues related to regulatory reform may be discussed.

72. Also, it is important to minimise duplication and overlap as between the regulators. This could be addressed in the sectoral legislation, for example, by making it clear that nothing in the legislation affects the operation of the domestic competition law. Alternatively, the legislation could state specifically that nothing in it precludes the operation of certain sections of the competition law (for example the sections dealing with abuse of dominance or hard core cartels), while leaving dual jurisdiction over matters such as vertical mergers, deceptive marketing practices or price discrimination. Another way that regulators have attempted to minimise duplication and overlap, is through an informal protocol which sets out in a clear and transparent way who will assume responsibility for what. An advantage of this approach is that it is more flexible and can be adapted to reflect changes in resources or evolving areas of expertise of the
competition agency and sectoral regulator. An informal protocol also can be used to provide an important framework for co-operation between the competition agency and the sectoral regulator.

73. Broadly speaking, it typically makes sense to give the competition agency responsibility to protect the public from anti-competitive conduct and to review at least horizontal mergers while giving the sectoral regulator responsibility to control pricing by natural monopolists of former monopolists that are still dominant. However, there are some grey areas, such as vertical mergers, price discrimination and the terms of access to essential facilities. While competition agencies have more experience dealing with abuse of dominant behaviour, sectoral regulators ordinarily are better suited to reviewing the large volume of cost data that can be required to make an informed decision in discrimination or access cases. They are also better suited to monitoring the industry to ensure compliance with regulatory decisions. Nevertheless, if regulation over the terms of access is only required for a short transitional period, it may make sense to give this responsibility to the competition regulator.

74. Finally, in thinking about the optimal design of regulatory agencies, some thought should be given to the relative merits of creating several specialised single sector regulators versus combining responsibility for two or more sectors (e.g., telecom and broadcast; or gas and electricity) under a single multi-sectoral regulator. Clearly, a key trade-off to be evaluated in this analysis is the higher up-front cost of establishing several regulators versus the ongoing efficiency losses that may be incurred by forcing affected parties to deal with a larger, more cumbersome and less nimble multi-sectoral regulator. Additional considerations that should be factored into this assessment include the economies of scope that might be realised by creating a multi-sectoral regulator, the reduced probability of regulatory capture that would be associated with a multi-sectoral regulator, the availability of sufficient skilled people in the country to spread across several agencies, and the greater expertise and specialisation that would be associated with establishing specialist agencies.

5. Building Capacity to Pursue a Strong Competition Policy

75. Establishing a competition and efficiency driven economic policy involves a three pronged strategy: (i) building a competition culture among key constituencies in the economy; (ii) eliminating or reducing the competition distorting effects of all regulations that impact upon markets; and (iii) creating an effective competition law enforcement regime to address private anticompetitive conduct.

76. In developing this strategy, an extremely helpful first step is to conduct an assessment of the country’s most basic needs and priorities in relation to each of these areas. This will also help to prepare a coherent and mutually reinforcing strategy across each of the three areas. Many of the various factors that should be considered in conducting the needs assessment are identified in the following summary of key areas that should be addressed in any strategy for establishing and cultivating a competition and efficiency driven economic policy.

i) Building a Competition Culture

77. Even in developing countries that have already embraced a competition and efficiency driven approach to economic and regulatory policy-making, there is clearly a long way to go in building a competition culture.

78. The exercise of building a competition culture should begin with an evaluation of the level of understanding of the benefits of competition, its strong links to other policy areas, and the level of commitment to competition among key constituencies in the country. In most developing countries, there is a poor understanding of the benefits of competition and the links between competition policy and other basic pillars of economic development.
79. Regarding the benefits of competition, policy-makers and the intellectual elite often make the mistake of focusing solely on concepts such as enhanced efficiency, aggregate welfare or average living standards, which are abstract concepts to the average business person, consumer or press reporter. To build support for competition among these constituencies, it is necessary to address things that are important to them in their everyday lives, such as the fact that competition and efficient regulatory reform generally leads to:

- dramatic reductions in the prices of products at all levels of the production chain including the final consumer – examples can be provided of basic consumer commodities (e.g., milk, rice, flour, salt, gasoline, beer, electricity, long distance telephone services, airline travel) and business inputs (e.g., trucking, rail, telecommunications, energy, financial services, office supplies, machinery, computer products, agricultural seeds, farm equipment)
- the elimination of buying cartels that depress prices paid to subsistence farmers and others for their products
- substantially improved service – (e.g., quicker turn-around times for new orders, requests for repairs and warranty claims; longer banking or shopping hours; better quality service in dealing with former state enterprises or monopolists)
- new products (consider giving the example of the explosion of new telephone products in OECD countries as reform of the telecom sector has spread over the last 20 years)
- greater product variety (e.g., increased availability of products manufactured in other parts of the country or abroad – this can be particularly significant for local businesses sourcing inputs for their products)
- a dramatic increase of innovative entrepreneurial activity by SMEs that are able to compete on a level playing field based on economic merit

80. Regarding the links between competition policy and other key pillars of economic development, these include:

- Governance - A strong political and institutional commitment to a transparent competition and efficiency driven economic policy makes it much more difficult for elected and non-elected officials to engage in corrupt behaviour in support of policies or measures that benefit private interests at the expense of competition and efficiency.
- Privatisation – As previously noted, merely substituting public ownership for private ownership will accomplish very little, if anything, unless former SOEs are broken up into several competitive pieces and barriers to entry and expansion in the relevant market(s) are eliminated or substantially reduced. Where the presence of economies of scale or scope weigh in favour of keeping an SOE intact, policies aimed at eliminating barriers to entry and expansion are absolutely critical.
- Deregulation/regulatory reform – As emphasised throughout this paper, deregulation and regulatory reform will fall far short of their potential, and perhaps fail altogether, unless they are guided by the basic principle of maximising competition and efficiency except in cases of market failure or where other legitimate public interest objectives give rise to a need for continued or new regulation. Even in such cases, every effort ought to be made to minimise the competition distorting impact on competition and efficiency.
- Trade liberalisation - Competition was included in the Doha Ministerial Declaration precisely because there are strong links between competition and trade. To the extent that trade liberalisation typically results in lower prices and increased product variety, consumers and business purchasers will be unambiguously better off. While some domestic businesses may be forced to exit their markets in the face of intense competition from abroad, other businesses will expand as domestic comparative advantage is exploited in foreign markets and leads to increased exports. Also, businesses can be expected to expand as they become
more competitive in domestic markets that already are subject to foreign competition. Moreover, short-to mid-term disruptions caused by competition-induced local business failures can be minimized or at least lessened significantly by transitional policies designed to foster domestic competition and efficiency before the doors are swung fully open to foreign competitors.

- The attraction of private risk capital – Deregulation and other market liberalisation initiatives inevitably lead to substantial private sector investment in new and existing enterprises from domestic and foreign sources.
- The creation of a strong entrepreneurial class of SMEs - Fuelled by expanded sources of private financing, and unrestrained by unnecessary government impediments to competition and private anti-competitive conduct, the growth of SMEs can be expected to follow the European experience, where SMEs had accounted for almost all net job creation in the years leading up to the OECD’s 1997 Report on Regulatory Reform.
- Sectoral policies – The experience with pro-competitive regulatory reform over the last two decades in key sectors such as telecoms, financial services, energy, transportation, agriculture and health demonstrates the strong linkages between competition and these policies.
- Innovation - Once again, as discussed previously, experience has unequivocally established that pro-competitive regulatory reform has been followed by an explosion of new products and processes, and an increase in overall innovation activity.
- Education - Around the developing world poor families are forced to take their children out of school to help pay for the family’s basic needs. As the prices of families’ basic basket of goods decreases with competition, the pressures to take children out of school at an early age are significantly alleviated.
- Poverty alleviation – All of the foregoing contributes to alleviating the overall goal of poverty alleviation.

81. Experience strongly suggests that the building of a competition culture within a developing or transitioning country is likely to be slow and tenuous at best unless key stakeholders understand the above-noted benefits of competition, are aware of at least some of the aforementioned links between competition policy and other important policy areas, and believe that greater competition in the economy will in fact improve their own well-being as well as the well being of others in their constituency. In this regard, the key stakeholders include politicians, public servants, the business and legal communities, sectoral and other regulators, academics and the press. If any of these stakeholders does not understand the benefits that typically are associated with greater competition, or if they are sceptical about the prospects for those benefits to materialize within an acceptable timeframe, the process of transitioning to more competitive markets may be difficult and characterised by regressive periods along the way.

82. Accordingly, it is important to adopt a comprehensive strategy for building support and enthusiasm for competition, as well as confidence in competition institutions, among these stakeholders, as well as among the general public. This is where the press, non-governmental organisations and educational institutions can be particularly helpful. By sensitising journalists, professors and students to the benefits of competition and the various ways in which competition can be distorted, advocates of competition can cultivate important allies who are capable of galvanizing public opinion in support of pro-competitive reform in various sectors. In turn, public support for greater competition can make it much more difficult for politicians to abandon, undermine or resist market reform efforts.

83. These “bottom up” efforts at building broad public support ought to be complemented by efforts directed towards other important stakeholders such as the business and legal communities. Unfortunately, it is often assumed that the business community is likely to resist pro-competitive reform. This may be true for the elite representatives of those entrenched entities currently benefiting from competition-distorting regulations. However, the SME community, exporters, importers and, depending on the circumstances,
MNEs can be strategically important allies. Therefore, it is important to establish contacts with these groups and to work with them to increase support for pro-competitive reform.

84. Of course, the overall strategy also must include a top-down component, directed towards cultivating the enthusiasm of elected and unelected government officials for pro-competitive reform.

**ii) Eliminating or Reducing the Competition Distorting Effects of all Regulations that Impact upon Markets**

85. Even in the most advanced industrialized countries, institutional restraints are likely continue to have a far greater aggregate distorting impact on competition than all private restraints combined. This is in part because distortions of competition brought about by laws, regulations, licensing regimes, administrative measures, other institutional restraints and “red tape” typically exist in markets accounting for a substantial proportion of overall economic activity in the economy, including basic infrastructure industries such as transportation (air, rail, truck, shipping), telecommunications, financial services, energy as well as other key industries such as agriculture, health, and many professional services. Accordingly, any serious attempt to establish a competition and efficiency driven economic policy should begin with a review of the extent to which competition currently is being distorted by laws, regulations, supply management schemes, licensing regimes, procurement policies, investment restrictions, product standards and other institutional measures or practices. The key initial focus of this exercise should be to identify those sectors that have the greatest distorting impact on competition and in respect of which there is the greatest potential for eliminating or reducing the adverse impact of the institutional restrictions on competition.

86. In considering how to approach this task, it may be helpful to refer to the OECD’s work in the regulatory reform area, much of which is available on the OECD’s website. Readers may wish to pay particular interest to the previously mentioned 1997 Report on Regulatory Reform. Additional sources that should be consulted are the previously mentioned APEC Competition Principles and the PECC Competition Principles.

87. The more important areas of focus for capacity building efforts in this regard include:

- Helping to build public and political confidence in market reform initiatives
- Helping key decision-makers to understand the linkages between competition policy and the aforementioned policy areas
- Promoting, within government and other regulatory policy-making circles, a commitment to adopting a competition and efficiency driven approach to all domestic economic and regulatory policy making
- Helping to bring this approach to the review of existing and potential future regulations, i.e., by identifying any potential competition distorting implications of such regulations and helping to develop alternatives which eliminate or at least minimise their potential adverse impact upon competition and efficiency
- Training politicians, heads of agencies, senior civil servants, legislative drafters, as well as more junior political, agency and government staff members, to identify how competition can be distorted by government/regulatory action and how to minimise such outcomes
• Assessing timing issues and the optimal policy sequencing for the various stages of the establishment of a competition and efficiency driven approach to all economic policy-making

• Redesigning regulatory regimes and agencies

• Assisting regulatory agencies and government departments to establish and maintain helpful linkages with other domestic, foreign and international institutions

iii) Creating an Effective Competition Law Enforcement Regime to Address Private Anticompetitive Conduct

88. The third essential prong of any strategy for building a strong competition policy is to establish an effective competition law regime to ensure that private anti-competitive restraints on competition do not eliminate or reduce the benefits of pro-competitive market reform efforts. In approaching this element of the strategy, it can be particularly helpful to begin by conducting an assessment of the strengths and weaknesses of any competition law regime that may exist. If no such regime exists, the assessment should focus on what would be required to establish an effective regime.

89. In addition to ensuring that the benefits of liberalisation and market reform are not undermined or completely lost due to the establishment of private anticompetitive restraints in the place of former institutional distortions of competition, an effective competition law regime is critical to encouraging competition and preventing anticompetitive conduct in new industries and other markets that may not be directly affected by liberalisation or market reform initiatives.

90. Although some have argued that the establishment of an effective competition law regime is unnecessary where barriers to external and internal trade are eliminated, this view fails to recognise that many markets are local in nature, e.g., due to transportation costs, the perishable or fragile nature of particular products, local preferences or other factors. Moreover, liberalisation initiatives alone cannot address exclusionary conduct by local dominant firms, mergers to create monopolies, or anticompetitive behaviour by international cartels.

91. The more important areas on which an assessment of a competition law regime should focus include:

• the effectiveness of the provisions in the domestic competition law

• the paramount objectives of that law – is the law being used to advance non-competition objectives, and if so, are there better instruments for advancing those objectives?

• the skills and training of staff in the enforcement agency, prosecutors, litigators and judges

• the level of political support for the law

• the level of funding for the agency

• the extent of independence from political or other influence enjoyed by the enforcement agency

• the effectiveness of the agency’s advocacy competition policy advocacy efforts
• the effectiveness of mechanisms, protocols or practices for reducing duplication and uncertainty in respect of the jurisdiction of the agency and sectoral regulators
• the strength of the agency’s commitment to vigorous enforcement
• the degree of transparency of the agency’s policies, practices and procedures
• the degree of predictability and certainty associated with agency decisions, practise, policies and procedures
• the extent of due process afforded to persons whose conduct may be subject to challenge under the competition law
• the agency’s record in maintaining the confidentiality of information provided by business persons
• the timeliness of agency decision-making
• the efficacy of the agency’s case screening criteria, investigative techniques, case-building methods, communications and compliance tools and alternative case resolution techniques
• the extent to which the agency makes use of computerisation to improve its efficiency
• the extent of co-ordination and co-operation between the agency and other competition authorities

iv) Cooperation

92. Co-operation with enforcement authorities in other jurisdictions can be a very helpful mechanism for expediting the time it takes for an enforcement agency to move up the learning curve. In this regard, there are a broad range of potential modalities. These include:

• case specific co-operation pursuant to bi-lateral co-operation agreements
• informal and ad hoc high level or staff level meetings to discuss general analytical approaches, policies, practices or procedures
• regular bilateral meetings with specific countries
• regional plurilateral meetings
• staff exchanges and secondments
• participation in international conferences or meetings

93. The OECD has a long history with facilitating co-operation between competition law enforcement authorities. For many years, this co-operation was limited to the authorities of OECD Member countries. The principal vehicle for that co-operation was and continues to be the regular meetings of the Competition Committee. During these meetings, high-level officials from different countries share their experiences, seek advice, and receive feedback and recommendations. Sometimes, the “roundtable” and
other exchanges in the Committee have lead to the identification of voluntary “best practices” for dealing with a particular issue.

94. In recent years, the OECD in general, and the Competition Division in particular, have increasingly reached out to non-Members. Indeed, the Competition Committee now has six regular non-Member Observers, and meetings of the OECD Global Forum on Competition – organised under the auspices of the Centre for Co-operation with Non-Members (“CCNM”) – each have included representatives from about 25 other countries. Moreover, non-Members have made use of the Committee’s Framework for Notification of Transnational Mergers, and have been invited to associate themselves with the OECD’s Recommendation concerning hard core cartel conduct.

95. In 1967, the OECD issued the first of a series of Recommendations on voluntary co-operation as a means of reducing conflict and promoting mutual assistance in competition law enforcement. The current version is the 1995 Recommendation concerning Co-operation between Member Countries on Anticompetitive Practices Affecting International Trade. The 1998 Recommendation on hard core cartels expands on some of the 1995 Recommendation’s provisions in the context of cartel investigations (and addresses the kind of legislation that is important for individual jurisdiction’s enforcement activities and international co-operation).

96. Although the most well known benefit of the 1995 Recommendation – for both Members and non-Members – has been its availability as a model for bilateral co-operation agreements, the Recommendation is far more than a model. It is, in fact, an operational international agreement on voluntary co-operation that may be invoked by any Member country and actually provides the basis for most OECD Members’ existing co-operation. Most OECD countries have no bilateral co-operation agreements, and few have more than one or two. Thus, co-operation among most OECD Members is based solely on the Recommendation, under which any OECD Member may request co-operation by any other.

97. A detailed summary of the provisions of the 1995 Recommendation is beyond the scope of this note. For the present purposes, it suffices to state that Part A of the document, which deals with notification, the exchange of information and co-ordination of action, articulates three general principles:

- when a Member country undertakes under its competition laws an investigation or proceeding that may affect important interests of another Member country or countries, it should notify such Member country or countries, if possible in advance, and, in any event, at a time that would facilitate comments or consultations;
- where two or more Member countries proceed against an anticompetitive practice in international trade, they should endeavour to co-ordinate their action insofar as appropriate and practicable;
- through consultations or otherwise, the Member countries should co-operate in developing or applying mutually satisfactory and beneficial measures for dealing with anticompetitive practices in international trade – in this connection, the Recommendation specifies certain types of co-operation, including investigatory assistance.

98. Part B of the Recommendation contains various provisions designed to encourage consultation and conciliation in various circumstances, including by giving full and sympathetic consideration to the views expressed by the other Member country.
99. In practice, OECD Member countries regularly notify each other when their investigations may affect each other’s important interests, and they sometimes ask for and provide assistance subject to their applicable laws and important interests, including resource limits. For additional information regarding how this co-operation operates, readers are referred to a wealth of material that can be found on the websites of Competition Division and the OECD Global Forum on Competition. In this regard, readers may wish to take particular note of the materials prepared by the Secretariat on co-operation in cartel and merger cases for the October 2001 and February 2002 meetings of the OECD Global Forum.  

v) **Peer Review**

100. Peer review can be another very helpful tool for helping to build a competition culture in developing and transitioning economies. Indeed, the OECD’s Competition Division has found that competition enforcement agencies are enthusiastic supporters of peer reviews, in part because they provide an opportunity to obtain valuable input from their peers regarding their practices, policies and procedures, and in part because all or parts of the final report can be used to effect change back in their home jurisdiction.

101. Rigorous peer reviews have been a feature of the Competition Committee’s activities for several years. These reviews are based on a comprehensive report by the OECD Secretariat on a Member country’s competition regime, which then serves as the basis for an examination by other Members and a subsequent exchange of views within the Committee. The report includes specific recommendations to strengthen the competition law and policy of the country under review.

102. At the recent Global Forum on Competition, the first such peer review of the competition law and policy of a non-OECD country (South Africa) was conducted. The review was marked by intense interest on the part of participants and the large number and diversity of questions. The discussion at the meeting reflected that it was generally considered to have been a success. This first meeting of the Latin American Competition Forum will feature, tomorrow, the second peer review of the competition law and policy of a non-OECD country, Chile. We hope that each future annual meeting of the Latin American Competition Forum will include the peer review of another Latin American country.

vi) **Paragraph 24 of the Doha Declaration**

103. A discussion of competition culture building and technical assistance would not be complete without noting that paragraph 24 of the Doha Declaration explicitly describes a type of assistance and capacity building that is different from the reinforcement of competition institutions that is discussed above and in paragraph 25 of the Doha Declaration. The unique type of technical assistance and capacity building described in paragraph 24 relates to helping developing and least developed countries “to better evaluate the implications of closer multilateral cooperation for their development policies and objectives, and human and institutional development”. The upcoming Joint Global Forum on Trade and Competition on 15-16 May 2003 will be the principal event held under the auspices of the OECD to address this type of capacity building need. While it was not possible to invite representatives from each country in the world to this event, the written materials will be available on our website soon after the event. We also intend to circulate widely a summary of the proceedings. This initiative is intended to complement and build upon efforts in this area by UNCTAD and the WTO’s Working Group on the Interaction between Trade and Competition Policy.
CONCLUSION

104. There is a growing body of empirical evidence that demonstrates that a competition and efficiency driven economic policy can be expected to fuel increases in productivity, employment, international competitiveness, innovation, overall economic growth and average living standards.

105. To realise the full potential of such a policy, it ought to be guided by the general principle that competition should be stimulated and maximised except in cases of market failure or where other legitimate public interest objectives give rise to a need for continued or even new regulation. When presented with situations falling into one of these types of exceptional cases, the regulation ought to be designed in an efficient way that provides incentives to reduce costs and innovate, and that stimulates competition in respect of activities within the sector which do not need to be regulated, or which only require partial regulation.

106. By embracing a broad and comprehensive framework designed to stimulate competition and efficiency throughout the economy, Latin American countries can cultivate a dynamic process capable of freeing up tremendous energy, creativity and innovation in all areas of economic activity. By shifting away from restrictive policies that attempt to design market outcomes, and by instead fostering a competitive process based on economic merit and limited only by the bounds of human ingenuity, the foundation can be laid for the growth of an entrepreneurial driven SME sector, greater investment, increased international competitiveness, reduced inflation and other economic rewards. Moreover, improved governance can be achieved, in no small part because a strong competition policy helps to achieve more inclusive participation in the economy and helps to address non-transparent, discriminatory and other policies or conditions that help to facilitate corrupt practices. In turn, this will help to reinforce efforts to cultivate stronger democratic institutions in the region.

107. In the current delicate political and economic environment in Latin America, which has been characterised by some setbacks in the competition policy area in a number of countries, it is essential for those among us who have faith in a competition and efficiency driven economic policy to take active steps to help cultivate a renewed commitment to market reform. This should include addressing misunderstandings about the likely results of pro-competitive reform and the true causes of problems that have occurred at home or abroad.

108. This paper describes a number of steps that should be taken to implement a competition and efficiency driven policy. It also offers a number of suggestions for striking the right balance between competition and regulation where a sector or market cannot support full deregulation and liberalisation. After making a number of general suggestions, the paper offers some specific proposals for getting the right market structure, creating the right rules and establishing the right institutions. These suggestions can help significantly to avoid so called “failures” of market or regulatory reform initiatives that have occurred in Latin America or elsewhere.

109. The paper then describes a three prong strategy for building capacity to pursue a competition and efficiency driven policy. This strategy involves: (i) building a competition culture among key constituencies in the economy; (ii) eliminating or minimising the competition distorting effects of all regulations that impact upon markets; and (iii) creating an effective competition law enforcement regime to address private anticompetitive conduct. Given the OECD’s long history as a pioneer in fostering
cooperation between enforcement agencies in different jurisdictions and in conducting peer review exercises of OECD countries, and more recently non-OECD countries, these topics also have been addressed, together with the capacity building provisions in the Doha Development Declaration.
OECD, *Report on Regulatory Reform* (Paris: 1997). In May 1997 OECD Ministers welcomed this Report and agreed to work to implement its recommendations in their countries. The key recommendations that evolved from this report are attached at Appendix 1 hereto. Unless otherwise indicated, subsequent references to this report are to Volume II.

APEC, *Principles to Enhance Competition and Regulatory Reform* (1999). (See Appendix 2 hereto.) These principles were specifically endorsed in the 1999 APEC Leaders’ Declaration. (See http://www.apecsec.org.sg/virtualib/econlead/nz.html.)


See generally, OECD, *supra*, note 1, Volume I. The findings of various studies are summarised at Volume II, p. 252.

The OECD Report on Regulatory Reform, Summary (June 1997), at 6.


Ibid.

The relevant parts of this study are reproduced in OECD *Economic Outlook*, [2002/2] (No.72, December).

Ibid., at 157-158.

Ibid.

Ibid. at 161.

OECD, *supra*, note 1, at 10.


Ibid.


Ibid.

Ibid.

Ibid.

Ibid., at 2.


Supra, note 1, at 253.

Supra, note 2, Preamble.

Supra, note 2.


Ibid., at 1. In the interest of full disclosure, the author was a member of the Core Working Group of PECC’s Competition Principles Project. (It may be noted that a number of Latin Americans also contributed to this project.)

Ibid., at 2.

Ibid., at 1, 5 and 17.

Ibid., at 5.

See Appendix 2 (Recommendation 5); as well as the OECD’s Regulatory Reform Report, supra, note 1, at 14-15 and 270-271. See also pp. 262-264, dealing with how to address industries in which there are both monopoly and potentially competitive activities.


Ibid., at 18.


For example, in *Canada (Director of Investigation & Research) v. Air Canada* (1989), 27 C.P.R. (3d) 476, the Canadian Competition Tribunal was required to consider a request for a Consent Order by the Competition Commissioner which, among other things, sought to remove the "bias" that existed in the display of information to travel agents on the merging parties' computer reservation system. This bias tended to advantage the merging parties' airline affiliates over other "participating" airlines, when travel agents sought to make bookings on flights. Ultimately, the Tribunal endorsed the Consent Order requested by the Commissioner.

OECD, *supra*, note 5, at 1. Note that PECC’s Competition Principles document emphasises that “[a]ctive and visible ‘competition advocacy’ at [the level of APEC Economic Leaders and relevant Ministers] is a prerequisite for bringing a competition dimension to bear on all policy-making that impacts on the efficient functioning of globalizing markets.” Among other things, this would “serve as an important signal that incumbents benefiting from the protections of the old system cannot be assured of the status quo”. *Supra*, note 27, at 23.

OECD, *supra*, note 1, at 254.

See OECD, *supra*, note 1, at 253-254.

This recommendation is available at http://www.oecd.org/pdf/M00017000/M00017015.pdf, and also can be accessed from the Competition Division’s website www.oecd.org/competition. See also the OECD’s February 2002 Policy Brief entitled “Restructuring Public Utilities for Competition”.


In considering how to design a competition agency, readers may wish to review the OECD Secretariat note entitled Optimal Design of a Competition Agency, that was prepared for the recent Global Forum on Competition (CCNM/GF/COMP(2003)2). This document can be obtained at http://www.oecd.org/pdf/M00038000/M00038298.pdf, or through the Competition Division’s website www.oecd.org/competition.


*Supra*, note 5, at 6. The report also states: “Reform is particularly important for small and medium-sized enterprises (SMEs), which account for between 40 and 80 percent of employment in OECD economies (depending on the country); provide a large share of new jobs; and are the source of much technological change and innovation”. *Ibid*. The report proceeds to note: “In Australia, small businesses accounted for almost all of 1.2 million net new jobs in the decade to 1994-95, though accounting for less than half of total employment”. *Ibid*.

http://www.oecd.org/competition

*Supra*, note 1.

Appendix 1. See in particular principles 5,6,7,8,9 and 10.

*Supra*, note 27.

In the past, Hong Kong and Singapore have advanced this view. However, it appears that both are now seriously considering adopting a competition law. It may be noted that during the session on competition
policy in small economies at the recent OECD Global Forum on Competition, there appeared to be a consensus that even small economies should have a competition law, regardless of their size, although it was recognized that some form of regional competition law might be an appropriate substitute for a domestic law where a group of small countries do not have sufficient economic or human resources to establish their own domestic regimes. No one suggested that it might not be necessary to have some type of competition law to address private restraints.

In preparing for the session on objectives of competition law that was held at the recent Global Forum on Competition, the OECD Secretariat sent participating economies a questionnaire. One of the principal themes emerging from the responses to the questionnaire is that there appears to be a shift away from the use of competition laws to promote what might be characterised as broad public interest objectives, such as the promotion of employment, regional development, national champions (sometimes couched in terms such as promoting an export-led economy or external competitiveness), national ownership, economic stability, anti-inflation policies, social progress or welfare, poverty alleviation, the spread of ownership stakes of historically disadvantaged persons, security interests and the “national” interest. There seemed to be a general consensus that the “core” objectives of competition law and policy are promoting and protecting the competitive process (as opposed to specific competitors), and attaining greater economic efficiency. See OECD, The Objectives of Competition Law and Policy, CCNM/GF/COMP(2003)3, at 3.

A second questionnaire that was sent to participants in the recent Global Forum on Competition addressed the issue of the optimal design of a competition law enforcement agency within the broader government apparatus. The responses to that questionnaire revealed that agencies not having competition advocacy as one of their tasks perceive their influence on the government as low or non-existent. See OECD, Optimal Design of a Competition Agency, CCNM/GF/COMP(2003)3, at 7.

Argentina, Brazil, Israel, Lithuania, Russian Federation and Chinese Taipei.

Available on the OECD’s website. See ibid..

The co-operation among the three Baltic countries -- Estonia, Latvia, and Lithuania -- is modelled on the OECD Recommendation.

Appendix 1

APEC Principles to Enhance Competition and Regulatory Reform

Open and Competitive Markets are the Key Drivers of Economic Efficiency and Consumer Welfare

Recognising the strategic importance of developing competition principles to support the strengthening of markets to ensure and sustain growth in the region and that these principles provide a framework that links all aspects of economic policy that affect the functioning of markets;

Recognising that these principles are non-binding and will be implemented by each member economy voluntarily, consistent with the way APEC operates;

Recognising that the adoption of these principles for policy development needs to take account of, and encompass the diverse circumstances of economies in the region and the different priorities that arise from these circumstances;

Recognising that member economies will have flexibility to take into account their diverse circumstances in implementing this framework;

Recognising that policy and regulation in APEC economies may properly have objectives other than promoting competition;

Recognising that exemptions and exceptions from a competition driven regulatory framework may be necessary and that these will be implemented in a way that minimises economic distortions, giving consideration to this framework;

Recognising that an improved competitive environment is beneficial to small and medium sized enterprises, and that extensive consultation has occurred with the business community in developing these principles; and

Drawing upon relevant inputs from various APEC fora and the Pacific Economic Cooperation Council’s "Principles for Guiding the Development of a Competition-Driven Policy Framework for APEC Economies”;

APEC endorses the following principles:

Non Discrimination

(i) Application of competition and regulatory principles in a manner that does not discriminate between or among economic entities in like circumstances, whether these entities are foreign or domestic.

Comprehensiveness

(ii) Broad application of competition and regulatory principles to economic activity including goods and services, and private and public business activities.

(iii) The recognition of the competition dimension of policy development and reform which affects the efficient functioning of markets.
(iv) The protection of the competitive process and the creation and maintenance of an environment for free and fair competition.

(v) The recognition that competitive markets require a good overall legal framework, clear property rights, and non-discriminatory, efficient and effective enforcement.

Transparency

(vi) Transparency in policies and rules, and their implementation.

Accountability

(vii) Clear responsibility within domestic administrations for the implementation of the competition and efficiency dimension in the development of policies and rules, and their administration.

Implementation

To achieve this*, APEC Member Economies will make efforts to:

1. Identify and/or review regulations and measures that impede the ability and opportunity of businesses (including SMEs) to compete on the basis of efficiency and innovation.

2. Ensure that measures to achieve desired objectives are adopted and/or maintained with the minimum distortion to competition.

3. Address anti-competitive behaviour by implementing competition policy to protect the competitive process.

4. Consider issues of timing and sequencing involved in introducing competition mechanisms and reform measures, taking into account the circumstances of individual economies.

5. Take practical steps to:
   - Promote consistent application of policies and rules;
   - Eliminate unnecessary rules and regulatory procedures; and
   - Improve the transparency of policy objectives and the way rules are administered.

6. Foster confidence and build capability in the application of competition and regulatory policy. This will be achieved, inter alia, by:
   - Promoting advocacy of competition policy and regulatory reform;
   - Building expertise in competition and regulatory authorities, the courts and the private sector; and
   - Adequately resourcing regulatory institutions, including competition institutions.

7. Provide economic and technical co-operation and assistance and build capability in developing economies by better utilising the accumulated APEC knowledge and expertise on competition policy and regulatory reform, including by developing closer links with non-APEC sources of technical expertise.

8. Build on existing efforts in APEC to help specify approaches to regulatory reform and ensure that such approaches are consistent with these principles.

9. Develop programmes, including capacity building and technical assistance, to support the voluntary implementation of the approaches to regulatory reform developed by relevant APEC fora.
10. Develop effective means of co-operation between APEC economy regulatory agencies, including competition authorities, and ensure that these are adequately resourced.

* Recognising that efforts will seek to avoid the duplication of work of other fora, as appropriate.
Appendix 2
OECD Policy Recommendations on Regulatory Reform:

1. Adopt at the political level broad programmes of regulatory reform that establish clear objectives and frameworks for implementation.
   - Establish principles of "good regulation" to guide reform, drawing on the 1995 OECD Recommendation on Improving the Quality of Government Regulation. Good regulation should:
     (i) be needed to serve clearly identified policy goals, and effective in achieving those goals; (ii) have a sound legal basis; (iii) produce benefits that justify costs, considering the distribution of effects across society; (iv) minimise costs and market distortions; (v) promote innovation through market incentives and goal-based approaches; (vi) be clear, simple, and practical for users; (vii) be consistent with other regulations and policies; and (viii) be compatible as far as possible with competition, trade and investment-facilitating principles at domestic and international levels.
   - Create effective and credible mechanisms inside the government for managing and co-ordinating regulation and its reform; avoid overlapping or duplicative responsibilities among regulatory authorities and levels of government.
   - Encourage reform at all levels of government and in private bodies such as standards setting organisations.

2. Review regulations systematically to ensure that they continue to meet their intended objectives efficiently and effectively.
   - Review regulations (economic, social, and administrative) against the principles of good regulation and from the point of view of the user rather than of the regulator.
   - Target reviews at regulations where change will yield the highest and most visible benefits, particularly regulations restricting competition and trade, and affecting enterprises, including SMEs.
   - Review proposals for new regulations, as well as existing regulations.
   - Integrate regulatory impact analysis into the development, review, and reform of regulations.
   - Update regulations through automatic review methods, such as sunsetting.

3. Ensure that regulations and regulatory processes are transparent, non-discriminatory and efficiently applied.
   - Ensure that reform goals and strategies are articulated clearly to the public.
   - Consult with affected parties, whether domestic or foreign, while developing or reviewing regulations, ensuring that the consultation itself is transparent.
   - Create and update on a continuing basis public registries of regulations and business formalities, or use other means of ensuring that domestic and foreign businesses can easily identify all requirements applicable to them.
   - Ensure that procedures for applying regulations are transparent, non-discriminatory, contain an appeals process, and do not unduly delay business decisions.

4. Review and strengthen where necessary the scope, effectiveness and enforcement of competition policy.
   - Eliminate sectoral gaps in coverage of competition law, unless evidence suggests that compelling public interests cannot be served in better ways.
– Enforce competition law vigorously where collusive behaviour, abuse of dominant position, or anticompetitive mergers risk frustrating reform.
– Provide competition authorities with the authority and capacity to advocate reform.

5. Reform economic regulations in all sectors to stimulate competition, and eliminate them except where clear evidence demonstrates that they are the best way to serve broad public interests.
– Review as a high priority those aspects of economic regulations that restrict entry, exit, pricing, output, normal commercial practices, and forms of business organisation.
– Promote efficiency and the transition to effective competition where economic regulations continue to be needed because of potential for abuse of market power. In particular: (i) separate potentially competitive activities from regulated utility networks, and otherwise restructure as needed to reduce the market power of incumbents; (ii) guarantee access to essential network facilities to all market entrants on a transparent and non-discriminatory basis; (iii) use price caps and other mechanisms to encourage efficiency gains when price controls are needed during the transition to competition.

6. Eliminate unnecessary regulatory barriers to trade and investment by enhancing implementation of international agreements and strengthening international principles.
– Implement, and work with other countries to strengthen, international rules and principles to liberalise trade and investment (such as transparency, non-discrimination, avoidance of unnecessary trade restrictiveness, and attention to competition principles), as contained in WTO agreements, OECD recommendations and policy guidelines, and other agreements.
– Reduce as a priority matter those regulatory barriers to trade and investment arising from divergent and duplicative requirements by countries.
– Develop and use whenever possible internationally harmonised standards as a basis for domestic regulations, while collaborating with other countries to review and improve international standards to assure they continue to achieve the intended policy goals efficiently and effectively.
– Expand recognition of other countries’ conformity assessment procedures and results through, for example, mutual recognition agreements (MRAs) or other means.

7. Identify important linkages with other policy objectives and develop policies to achieve those objectives in ways that support reform.
– Adapt as necessary prudential and other public policies in areas such as safety, health, consumer protection, and energy security so that they remain effective, and as efficient as possible within competitive market environments.
– Review non-regulatory policies, including subsidies, taxes, procurement policies, trade instruments such as tariffs, and other support policies, and reform them where they unnecessarily distort competition.
– Ensure that programmes designed to ease the potential costs of regulatory reform are focused, transitional, and facilitate, rather than delay, reform.
– Implement the full range of recommendations of the OECD Jobs Study to improve the capacity of workers and enterprises to adjust and take advantage of new job and business opportunities.
SESSION II: COMPETITION IN THE LATIN AMERICAN BANKING INDUSTRY
BANKING COMPETITION IN LATIN AMERICA

Prepared for the
First Meeting of the
Latin American Competition Forum

Paris: 7-8 April, 2003

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Abstract

In recent years, Latin American banking sectors have experienced an accelerated process of consolidation that was accompanied by important increases in concentration and, in most cases, internationalization. This process, which in many cases was triggered by episodes of financial distress, has posed questions about its implications for the competitive behavior of banks, and for the approach that the supervisory bodies should adopt to balance financial stability considerations with the goal of fostering competition. Exploiting a rich balance sheet database for 7 Latin American countries, we examine the evolution of concentration and foreign penetration indicators and their impact on competition. We conclude that, at least at an aggregate level, there is no evidence that industry consolidation has led to a less competitive environment. While most Latin American banking sectors are far from the perfect competition benchmark, competition estimates do not differ from those computed for developed economies and have remained remarkably stable. Moreover, if anything, the evidence suggests that consolidation led to more rather than less competition in the sector. This may be due in part to the fact that, in earlier years, Latin American banking sectors were overpopulated, with many banks specialized in niches on which they have some market power despite their relative size. Thus, concentration levels at the end of the consolidation process are not above international standards. This notwithstanding, we argue that financial stability considerations have so far outweighed competition concerns, and that a closer coordination between the competition and the bank supervision body is warranted in many cases.

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I. Introduction

In the last decade there have been important changes in the banking industry in several countries in Latin America. Participation of foreign banks has more than doubled in many cases while banking concentration has increased due to bank consolidation, led by mergers and, possibly, by regulatory changes that affected proportionally more smaller (and more specialized) institutions. These developments have raised concerns about the impact on competition (in particular, on borrowing costs and banking efficiency), stability of the financial system, and credit distribution among different sectors in the economy.

The purpose of this study is to explore empirically the recent evolution of selected banking sectors in the region and its effects on competition. The goal is to assess whether the consolidation process has negatively affected the competitive environment, and suggest the policy options available to governments of countries facing the tradeoff between attaining the welfare benefits associated with the introduction of competition in the sector and protecting the stability of the system.

Exploiting a rich balance sheet database for seven Latin American countries, we examine the evolution of concentration and foreign penetration indicators over recent years. In addition, we estimate a competitive behavior parameter on a yearly basis to test whether competition changed in the most recent years and whether these changes are related to changes in concentration (and, in particular, to the growing importance of large banks) and to changes in foreign participation. We conclude that, at least at an aggregate level, there is no evidence that industry consolidation has led to a less competitive environment. While most Latin American banking sectors are far from the perfect competition benchmark, competition estimates do not differ from those computed for developed economies. Moreover, they have remained remarkably stable in recent years. In addition, we find no clear cross-country correlation between concentration and internationalization indicators, on the one hand, and competition measures, on the other.

Our findings that concentration may reflect the fact that, in earlier years, Latin American banking sectors were characterized by an overpopulation of banks, many of them specialized in niches on which they have some market power despite their relative size. Thus, concentration levels at the end of the consolidation process are not above international standards. This notwithstanding, we argue that financial stability considerations have so far outweighed competition concerns, and that a closer coordination between the competition and the bank supervision body is warranted in many cases.

Hence, the empirical exploration is complemented with a survey of regulatory aspects that may influence banking competition, as well as the real examples of pro-competition regulatory actions.

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4 Argentina, Brazil, Chile, Colombia, Costa Rica and Peru.
The plan of the paper is the following. Section II discusses the main issues of concern and reviews previous studies that addressed them analytically and empirically. Section III presents background data on the evolution of the banking sector in a group of selected Latin American countries, and analyzes different concentration measures in association with a number of competition-related variables, as a first approach to assessing the degree and recent evolution of banking competition. Section IV surveys the recent empirical literature on banking competition, describes the empirical methodology used in the paper and presents the main econometric results. Section V discusses the results from a policy perspective. Section VI concludes.

II. The Issues

In this section, we introduce the main issues associated with the link between concentration and foreign penetration, and banking competition, and a brief survey of previous work that addressed them analytically and empirically.

The impact of banking consolidation

It is widely believed that bank consolidation generates a more concentrated system and, as a consequence, a less competitive one. Despite this general belief, there is no clear evidence, from a theoretical point of view, that bank consolidation necessarily implies a less competitive banking environment, as it depends mainly on the pattern of mergers.\(^5\) As stated in Vives (1999), for example, a merger between firms serving overlapping or identical markets reduces competition and increases efficiency by eliminating duplication of activities. Alternatively, it is not at all clear whether competition and concentration should go in opposite directions. Elimination of branching restrictions, or a widespread use of ATMs that reduces the geographical barriers can be shown to enhance, rather than hinder, banking competition, while inducing consolidation as a result of narrower margins.\(^6\) At any rate, a wide range of studies that analyze the US and EU experiences conclude that mergers seem to have been pro-competitive in general.\(^7\)

Efficiency considerations do not offer unambiguous answers either. Mergers can reduce competitive pressure and result in lessened efforts by managers to maximize operating efficiency.\(^8\) However, as noted, mergers may increase efficiency if the markets are overlapped, if the banks are operating at a small scale, and if the banks are very different in terms of technology and efficiency ex-ante. Empirical studies for the EU and US show

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6 See Matutes and Vives (2000) and Cordella and Levy Yeyati (2002) for an analytical discussion along these lines. The increase in concentration as a result of the elimination of branching restrictions in the U.S. is studied, e.g., in Economides et al. (1995). See also Schargrodsky and Sturzenegger (2000) for a related study of the Argentine banking sector.
8 This effect was named “quiet life” by Hicks (1935) and is tested and found very big by Berger and Hannan (1998) and Resti (1998) for the Italian case.
that consolidations do not improve efficiency significantly, even when costs have been reduced in general. Furthermore, several studies have found that cost scale economies, typically used to justify the existence of big banks and consolidation processes, were exhausted at a relatively small size (well below US$ 10 billion in assets). This tends to suggest that scale effects are not a major efficiency driver for mergers among relatively large banks.

There is an open discussion about the impact of consolidations and concentration on system stability. From a theoretical point of view, keener competition seems to reduce stability because of a drop in bank charter value that reduces incentives for prudent risk-taking behavior. According to this view, the promise of extraordinary profits associated with the presence of market power reduces the agency problem of limited liability banks (namely, their propensity to gamble). Alternatively, stiffer competition could give rise to a higher risk propensity, as documented in some empirical studies. On the other hand, a more concentrated system, inasmuch as it implies the presence of a few relatively large banks, is more likely to display a “too big to fail” problem by which large banks increase their risk exposure anticipating the unwillingness of the regulator to let the bank fail in the event of insolvency problems. (Hughes et al. (1998).

Finally, constraining competition has the effect of reducing choices available to users of credit and other banking services. Thus, besides the welfare considerations related to the menu of products available, consolidation and concentration may influence the distribution of banking (particular loan) services between different sectors of the economy. In this aspect, the higher the degree of concentration, the larger seems to be the flow of funds to new enterprises and to sectors that rely more on external financing, possibly because these are also the sectors with a bigger proportion of informationally opaque firms. This fact was tested empirically in the literature for the US and is attributed both to a free riding problem in monitoring, which emerges in competition, and to the impossibility for a competitive bank to extract future rents from potentially successful young firms.

There are no conclusive answers to the questions about the impacts of concentration and consolidation in the banking industry in Latin America, either from the theoretical or from the empirical literature. Furthermore, fast changes in technology, deregulation and globalization make it difficult to generalize findings from previous studies (mostly from

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11 See Cesari and Daltung (2000), Keeley (1990), Bergtresser (2001), Carletti et al. (2002). Cordella and Yeyati (2002), using an analytical framework, argue that a correct regulation and disclosure of information that enhances market discipline from bank creditors could reduce this perverse link between competition and risk.
European countries and the U.S.) to developing economies with different institutions and paths to development.\textsuperscript{13}

\textbf{The impact of foreign penetration}

Unlike the case of financial centers like the U.S. or EMU, banking sector consolidation in Latin America appears to have been based to a large extent on the acquisition of local banks by bigger foreign institutions. The main underlying reason appears to have been in part related to the lower perceived vulnerability to financial shocks. This, in turn, was induced by the typically larger capitalization of foreign banks and perceived liquidity insurance from highly diversified parent houses and solid lenders of last resort in parent countries, all in a context of financial volatility and frequent banking crises. This fact is not trivial in the analysis of competition: other things being equal, depositors tend to demand higher returns from local banks than from their foreign counterparts.\textsuperscript{14}

Related to this, Claessens et al. (1998) analyze bank-level data covering 80 countries during 1988-1995, and find that in developing countries the presence of foreign banks is typically associated with higher net interest margins and higher profitability than domestic banks. In addition, they find that foreign banks have higher overhead costs, casting additional doubt on the hypothesis that foreign banks’ profitability is driven by efficiency.\textsuperscript{15} Cull et al. (1998) find that, for Argentina, domestic banks’ performance is negatively correlated with their relative exposure to manufacturing, where foreign banks have been particularly active, and argue that foreign competition has inflicted a negative shock on domestic bank profitability. This illustrates the difficulties involved in identifying efficiency effects when measures of bank services cannot be adjusted for factors such as difference in quality or transient versus permanent effects.\textsuperscript{16}

Regarding the link between foreign penetration and financial stability, Demirguc-Kunt et al. (1998) find that, other things being equal, the presence of foreign banks is associated with a lower probability of financial crisis. The result can be interpreted in at least two ways. On the one hand, highly protected banking sectors could generate inefficient institutions, and negatively affect the efficacy of their regulation and supervision. On the other hand, foreign-owned banks may forestall liquidity shocks better aided by their highly capitalized parents, so that a country with an internationalized banking sector may be partially isolated from bank runs.

\textsuperscript{14} After episodes of financial stress in the region, it is common to observe a flight to quality that tend to result in a larger concentration of deposits in foreign-owned banks.
\textsuperscript{15} They attribute this to the fact that recent entrants have to incur an additional cost to make up for incumbent advantages and gain a reasonable market share. However, while an increase in overhead costs may be related to organizational changes aimed at improving efficiency, they may also be linked to a surge in (economically inefficient) marketing costs. The two effects are difficult to disentangle as their results do not correct for product quality. At any rate, the previous findings suggests that, at least in the short run, cost efficiencies are not likely to be visible.
\textsuperscript{16} This applies directly to the standard discussion on concentration and competition, that emphasizes economies of scale, implicitly assuming that consolidation is achieved through mergers of ex-ante homogenous banks.
One concern that has been associated with foreign penetration is its influence on the distribution of credit through what is usually referred to as “cherry picking,” namely, the choice of one sector or a narrow segment of customers (e.g., multinationals, prime credits, exporters) leaving part of the economy underfinanced. While, as noted, cherry picking could be in principle associated with bank concentration in general, the evidence on cherry picking is mixed. However, there are sectors that may be negatively affected in their access to credit by consolidation and foreign penetration, such as small businesses previously served by small specialized banks.

III. Background Data

Evolution of banking sectors in Latin America

If a pattern emerges from the observation of the recent evolution of banking sectors in Latin America, it is a trend towards consolidation and internationalization. As can be seen in the following graphs, participation of foreign banks has more than doubled while banking concentration is relatively high in comparison with EU and US standards.

In this section, we present an exploratory discussion of the main trends in concentration and foreign penetration, as well as its correlation with standard indicators of competition, efficiency, banking stability, and credit allocation between different sectors of the economy, based on balance sheet data from individual countries. We center our attention

17 Nicholls (1997), analyzing the highly internationalized New Zealand banking sector, finds that foreign bank operations has been increasingly diversified, as banks gather information on local borrowers. In Argentina, on the other hand, foreign-owned banks have been extremely active in personal and mortgage lending (Cull et al., 1998).
18 As Schargrodskey and Sturzenegger (2000) illustrate, consolidation in Argentina was accompanied by a decreasing market share of regional and cooperative banks, specialized in relationship banking to small local firms.
19 It has to be noted at this point that there are signs of reversion in the internationalization trend after the Argentine crisis, due to the stagnation of local credit markets and a growing perception of the risks involved in their Latin American operations.
Banking Competition in Latin America

on a selected sample that includes Argentina, Brazil, Chile, Colombia, Costa Rica, El Salvador, and Peru.

The Appendix figures provide a first glance at relevant aggregate data for our sample countries. There we present indicators of the evolution of banking depth (deposit and credit over GDP),\(^{20}\) the real and nominal GDP, the domestic reference interest rate (which may influence interest rate spreads and bank pricing behavior),\(^{21}\) financial dollarization (which in many countries underscored the process of financial deepening and helped reduce bank margins),\(^{22}\) and fiscal exposure (credit to the public sector over total assets).

As expected from a cross-country study, the evolution of these variables tends to differ in each case. However, some basic patterns can be unveiled from simple inspection. First, it is apparent that, while banking sectors in Latin American countries have, on average witnessed an expansionary trend over most of the last decade, growing steadily and faster than GDP, in many cases this trend was reversed in recent years due to episodes of financial turmoil or outright financial crisis as in Argentina.

Where countries clearly differ is in the exposure to the public sector. Only a sub-group of countries has displayed a sizable increase in the share of credit to the public sector (Argentina, Brazil, Colombia, Costa Rica, Mexico). Even among this group, the underlying reasons are not always similar. Thus, while the fiscal exposure of Mexican banks jumped after the Tequila crisis reflecting the consequences of the crisis resolution (more precisely, the swap of non-performing assets by government bonds), the cases of Argentina, Brazil and Colombia reflect a trend to finance government financing needs in the domestic markets (either due to the lower financing costs or to the closure of international capital markets).\(^{23}\)

Concentration and foreign penetration

While there is a wide array of concentration measures proposed in the industrial organization literature,\(^{24}\) hardly any of them have been used in the empirical banking literature with the exception of the k-firm concentration ratio (CR\(_k\)) and the Herfindahl index (HI), defined below:

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\(^{20}\) To minimize the impact of inflation on these ratios, credit and deposits are averaged over the year.

\(^{21}\) Measured as the Treasury bill or the central bank rediscount rate or, whenever these are not available, as the money market rate. While a higher interest rate (e.g., due to higher nominal uncertainty) may be reflected in wider interest margins, in cases in which nominal rates increase substantially (e.g., as a result of high inflation), we could observe the opposite (narrower margins) if banks do not pass through the increase in funding costs to borrowers due to rationing.

\(^{22}\) Financial dollarization is computed as the deposit and loan dollarization ratios for those countries where foreign currency intermediation was allowed.

\(^{23}\) Increasing fiscal demands are likely to crowd out domestic borrowers in a differential way, affecting the distribution of credit. Moreover, changes in fiscal exposure beg the question of the differential propensity to lend to the public sector of banks of different size and ownership and the impact that changes in the composition of banks may have on credit access.

\(^{24}\) For a survey, see Bikker and Haaf (2001) and Shaffer (1992).
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\[ CR_k = \sum_{i=1}^{k} s_i \]
\[ HI = \sum_{i=1}^{m} s_i^2 \]

where \( i \) is an index that orders banks from largest to smallest, and \( s_i \) is the market share of bank \( i \), (typically measured in terms of total assets).

In addition, the HI is used as a statutory measure to evaluate the impact of a proposed merger on competition in the US.\(^{25}\) For the sake of comparability, we compute these two measures (CK in the case of the concentration ratio) based on total bank assets, for our selected sample of countries and different periods of time, to offer a first look at the evolution of banking concentration during the period of analysis. Moreover, to take into account the multi-product nature of banks and the different patterns of specialization displayed by different types of banks, we compute the same concentration measures for a subset of markets, namely private deposits, private credit, mortgage loans (typically but not exclusively associated with real estate consumption) and consumer loans (usually tied to the purchase of durables other than real estate).

In turn, regarding foreign penetration, we measure in two relatively standard ways: as the ratio of foreign to total banks, and as the foreign-owned to total asset ratio. Here, we define foreign banks as those controlled by institutions with headquarters in developed countries, as opposed to institutions from within the region, which we label regional banks.\(^{26}\)

The Appendix figures show the evolution of the number of operating banks, along with different concentration indicators. As can be seen, consistent with the focus of this paper, we observe a visible consolidation trend (as measured by the number of operating banks) in most countries, which are clearly reflected in the different concentration measures. Indeed, in the only case in which concentration has not increased for the whole system (Costa Rica) it has done so for the private segment.\(^{27}\)

As expected, concentration indicators in different markets are highly correlated, with the salient exception of mortgage, which in many countries has been supplied early on by specialized (often state-owned) institutions. Thus, interestingly, while concentration has

\(^{25}\) According to antitrust laws in the US, if post-merger market HI does not exceed 0.18 and the merger does not raise the HI by 0.02 or more, the merger is automatically approved.

\(^{26}\) There is some indication that regional banks tended to display particular characteristics, particularly a smaller size, and a concentration in consumer loans or cross-border operations. In addition, many of the advantages often attributed to foreign banks (e.g., implicit protection from well-capitalized headquarters) are not extensible to regional banks.

\(^{27}\) This study will not delve into the potential reasons underscoring consolidation, which may include the opening of the banking sector to foreign competition, stiffer internal competition due to relaxation of restrictions on the line of business, technological progress (e.g., ATMs and pc banking) or market developments that induced more homogenous banks (e.g., the boom in the dollar mortgage market in Argentina), regulatory tightening as countries increasingly embraced Basle standards, or even aggressive competition for market share in the context of an expanding market.
generally increased in recent years, in parallel with banking sector consolidation, mortgage loans have displayed a downward trend as lenders in this market have increased from a few specialized institutions to most large banks in the system.

Has this trend towards concentration been led by a few large foreign-owned banks, or is it the result of another trend toward larger, similarly-sized institutions in search of economies of scale? Is concentration disguising a growing participation of public institutions? To address this issue, the figures also show the CK₅ and HHI indicators (based on total assets) for private banks. In all cases, the results do not differ qualitatively from those obtained for the whole sample.

Finally, before getting into a more rigorous estimation of the degree of banking competition, we have a first glance at the correlation between concentration and internationalization, on the one hand, and competition, on the other, by comparing the evolution of the previously described measures with standard indicators of banking competition. More precisely, in the last panel of the figures we look at net interest and financial rate margins (NIM and NFM) and profits (measured as returns on assets and on equity, or ROA and ROE, respectively). In addition, to examine the relation with efficiency, we look at overhead costs. All variables are normalized by total assets.

At first sight, it appears that the recent banking sector trends have not been accompanied by a deterioration of the competitive environment, as indicated by (in most cases) low and relatively stable returns and interest margins, or by lower efficiency, as suggested by slightly declining overhead expenses.

IV. Econometric Analysis

As noted above, there is not a consensus about the link between concentration and foreign penetration, on the one hand, and competition, on the other. This presence and the nature of such a link remain an empirical question and require a case-by-case exploration. This is the purpose of this section, where we address these links in a more rigorous way. More precisely, whereas in the previous section we described recent developments based on standard indicators of concentration, penetration and competition, and their correlation, here we estimate country-by-country competition measures, and use them to look more closely into the relation between competition and recent concentration and

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28 While the general trends unveiled by these figures are likely to be robust, cross-country differences may be reflecting the presence of holdings of small banks that may bias the indicator downwards. The incidence of bank groups in concentration indicators has been documented for Brazil by Sampaio (2001), who, as expected, finds significantly larger concentration ratios once bank groups are taken into account.

29 The fact that we are dealing with outstanding rather than new loans partially disguises the growing participation of other banks.

30 We omit indicators for different product markets for conciseness.

31 While both measures are highly correlated, increased competition may be associated with a relative increase of the latter over the former due to lower interest margins and a growing share of non-interest income (assuming that a larger scope for diversification in liquidity services allows banks to better preserve their market power in this segment).
internationalization trends, as well as changes in regulation that may influence market structure. In the next section, we use our competition measure to explore its link with bank risk indicators and the distribution of credit across sectors.

**Measures of competition**

The literature on the measurement of competition can broadly be divided into two branches: the (non-formal) structural approach and the (formal) non-structural approach. The structural approach centers on the Structure-Conduct-Performance paradigm (SCP) or the efficiency hypothesis, according to what they assume to be the main reason for superior market performance. For the SCP, the collusive behavior among large firms due to a highly concentrated market is the main driver of market overperformance. On the other hand, the efficiency hypothesis, implicitly assumes the presence of economies of scale through which large firms achieve increased efficiency and improved performance. Thus, if a firm is more efficient than the rest (e.g., due to a lower cost structure) it could gain market share by reducing prices, and hence, market structure is endogenously shaped by firms’ performance so that concentration is a result of the superior efficiency of the leading firms.

New developments in industrial organization and the refinement of formal models of imperfectly competitive markets, as well as the realization of the need to endogenize market structure have led recent empirical work to rely increasingly on non-structural models. In particular, the application of the SCP in the banking literature has been criticized for the one-way causality (from market structure to market performance) that the original model imposed.

There are three main non-structural models proposed in the literature: Iwata’s (1974), Bresnahan’s (1982) and Panzar and Rosse’s (1987) models. Of these, Iwata’s model has not yet been applied to the banking industry, due to the lack of micro data needed for empirical estimation. Empirical applications of Bresnahan’s model are also relatively scarce for developed countries. There are a number of papers that apply this model to the Latin American banking sector. Variations on Bresnahan’s conjectural variation approach find competitive markets in Colombia (Barajas et al, 1999), Brazil (Nakane, 2001) and Argentina (Burdisso et al., 2001).

In this paper, we use Panzar and Rosse’s (PR) approach, which has the advantage of using bank specific data and therefore allows us to control for variables of interest such as size and foreign ownership. The PR approach has been used in several studies that test

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32 For a survey, see Bikker and Haaf (2001) and Shaffer (1992).
competition for the European Banking Industry (Table X presents a survey of the main results).

**The PR Panzar-Rosse model**

The model starts by assuming profit maximizing individual banks, from which it derives a first order condition for profit maximization of the type:

\[ R'_i (OUT, n, BSF_{rev}) = C'_i (OUT, FIP, BSF_{cost}) \]

where \( OUT \) is output, \( n \) is the number of banks, \( FIP \) denotes factor input prices, and \( BSF_{rev} \) are bank-specific factors affecting the banks revenue and cost functions, respectively. In addition, if the market is in equilibrium, the zero profit constraint should hold at the market level, so that:

\[ R^*_i (OUT^*, n^*, BSF_{rev}) = C^*_i (OUT^*, FIP, BSF_{cost}). \]

Under these conditions, Panzar and Rosse (1987) show that the sum of the elasticities of the reduced-form revenue function with respect to factor prices is equal to one under perfect competition, while it is zero or negative under monopoly. Thus, values significantly different from zero or one would indicate monopolistic competition.

The following specification of the reduced-form revenue equation is used for empirical testing:

\[
\ln FINR_{it} = \alpha_i + \sum_y \left(\beta_y \ln AFR_{it} + \gamma_y \ln PPE_{it} + \delta_y \ln PCE_{it}\right) + \eta \ln OI_{it} + \sum_j \xi_j \ln BSF_{j, it} + \sum_j \lambda_j X_{jt} + \nu_{it}
\]

where:

- \( \beta_y, \gamma_y, \delta_y \) are set to 0 if quarter \( t \) does not belong to year \( y \)
- \( FINR \) = ratio of total financial revenue to total assets
- \( AFR \) = ratio of annual interest expenses to total funds, or the Average Funding Rate
- \( PPE \) = ratio of personnel expenses to the total balance sheet, or the (approximated) Price of Personnel Expenses
- \( PCE \) = ratio of physical capital expenditure and other expenses to fixed assets, or the (approximated) Price of Capital Expenditure
- \( BSF \) = Bank specific exogenous factors (fundamentals), lagged one quarter, reflecting differences in risks, costs, and size of the bank:

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37 See also Vesala (1995) for a formal derivation.
1. Risk component, proxied by equity (EQ) and loans (LO) ratios, and by the liquidity (CASH) ratio, all normalized by total assets.
2. Differences in the deposit mix, captured by demand deposits from customers to total customer and short-term funding (DDC).
3. Size, proxied by total assets (LASSETS).

- OI = ratio of Other Income to the Total Balance Sheet
- X = time-variant macroeconomic factors such as the reference interest rate (INT) and the inflation rate (INF).

In order to test competition, we use PR’s measure of competition, H, defined as the sum of the elasticities of the reduced-form revenues with respect to factor prices, which in our specification corresponds to:

\[ H_y = \beta_y \gamma_y + \delta_y \]

**Econometric results**

For each country, we estimate the parameter \( H_y \) according to our baseline specification, along with one in which we eliminate the time interactions so as to compute a time-invariant \( H \) for each country.\(^{38}\)

In Table 2, rows 1 and 2 report the estimates of time-invariant \( H \)s for private and state-owned banks with and without bank fixed effect.\(^{39} \) \(^{40}\) The third row presents the time-invariant \( H \)s for private banks using fixed effect. Coefficients differ significantly across countries, with high values for Chile and Brazil to low values for El Salvador and Argentina. Perfect competition (\( H = 1 \)) hypotheses are rejected at the 5% significance level in all cases but Chile using the whole sample without bank fixed effect. For all countries, we reject the monopoly hypothesis (\( H=0 \)) at the 1% significance level in all specification.

For the purposes of this paper, we are interested in controlling for bank type, particularly along the size and ownership dimensions, to illuminate the incidence of concentration and foreign penetration. In addition, the previous findings are underscored by the presence of state-owned banks that, as shown in the previous section, represent in some cases an important portion of the system. Presumably, state-owned banks tend to differ in their pricing behavior from private banks. In particular, we conjecture that, as they are generally not motivated by profit maximization, they should exhibit smaller factor price elasticity than their private counterparts, biasing the results away from the perfect competition outcome. At any rate, different \( H \) parameters may be reflecting different private state-owned compositions across countries.

To filter the influence of the presence of state-owned banks and test whether foreign or large banks differ from other private banks, we rerun the specification in row 3 for the

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\(^{38}\) Replacing total financial revenue over total assets as our dependent variable.

\(^{39}\) Estimations include all control variables described in the previous section.

\(^{40}\) As we mention below, the former is closer to other estimates obtained for developed countries and is presented for comparison.
sub-sample of private banks, with different $H$ for large and foreign banks.$^{41}$ We report the p-values of pairwise comparisons between large and foreign banks. Surprisingly, once size and ownership are controlled for, private banks do not exhibit higher than average competitive behavior. The presence of state-owned banks does not appear to be reducing our estimation of $H$. In addition, with the exception of Costa Rica where state-owned banks play a predominant role and private banks tend to be small, large and foreign banks are associated with higher $H$s.$^{42}$

The time-invariant $H$ computed in column 1 is directly comparable with similar estimates obtained by Bikker and Haaf (2002) for banking sectors in developed markets in 1997.$^{43}$ Interestingly, our estimates of $H$ for Latin American countries do not differ in range and cross-country variability for those found in more developed countries.

Results from our baseline specification, where $H$ changes over time on a yearly basis, are presented in Table 3. Reassuringly, the results do not deviate noticeably from the constant $H$s reported before. Indeed, the parameters tend to move surprisingly smoothly over time.$^{44}$ As before, we rerun our baseline after excluding state-owned institutions. Results are reported in Table 4.$^{45}$ The private sub-sample displays higher $H$s in Argentina and Costa Rica, but does not differ from estimations using the whole sample in other cases. At any rate, there appears to be no significant bias from estimating the parameter for the whole system.

As a final remark, unlike in the case of concentration indicators, the presence of bank holdings should underestimate $H$. For holdings, due to inside transfers, unit costs may not reflect real costs for the unit implying a less than one-to-one sensitivity even though in the case of perfect competition, it biases our estimates downwards. For Brazil, where bank groups comprise an important portion of the system, previous analysis suggests that the competition level in the banking industry is larger than the one suggested by our estimated $H$.

In sum, while most Latin American banking sectors are far from the perfect competition benchmark, competition estimates do not differ from those computed for developed economies and have remained remarkably stable in recent years, despite the important consolidation that characterizes the period.

$^{41}$ Large is defined, with a view to focusing on market power, as those with a market share in terms of total assets of 5% or more. We tried several other thresholds and market criteria (assets and deposits) to control for market share, with comparable results. Alternatively, we could define large banks based on the sample for all countries (e.g., as the 10% largest for the whole set of countries), also measured in terms of total assets (to facilitate a cross-country comparison). As before, the foreign group excludes regional banks.

$^{42}$ As a robustness test we estimate the model using first difference instead of fixed effects. Results do not change even though there is more noise.

$^{43}$ While Bikker and Haaf (2002) also estimate a time-curve that compounds with $H$ to capture the gradual evolution of competitive behavior, this curve is not pronounced and is often not statistically significant. Molyneux et al. (1994) also presents estimates for five European markets, although their cross-section year-by-year estimation tends to yield highly volatile parameter values.

$^{44}$ While results do not differ qualitatively when we replace macro variables by year dummies, parameters do tend to vary more. The results, available from the authors, are omitted here for conciseness.

$^{45}$ Peru does not have public deposit banks and thus is excluded.
Concentration, foreign penetration and competition

The baseline estimates obtained in the previous section can be used to address the link between competition, on the one hand, and concentration and foreign penetration, on the other, both across time within a country and among countries. It is important to note that the estimated levels of H depend on the specific characteristics of the industry in each individual country, most of which may not be captured by our observable control variables (and fixed effect). Thus, we do not expect that our estimations are fully comparable across countries. On the contrary, our estimates allow us (and are intended) to assess changes in the competition parameter vis-à-vis changes in other indicators.  

With this in mind, we present a first glance at the data in Figure 3, where we plot changes in H against changes in concentration (HI) and foreign penetration (measured over assets) over the period of analysis. The first thing to note is the fact that, with the exception of Colombia, all banking sectors appear to have moved towards more competition in recent years, suggesting that consolidation has not inflicted serious damage in terms of non-competitive practices.

Second, the figures illustrate the difficulties in drawing consistent results using a small sample of countries and dates. At first sight, one would be inclined to see a negative link with concentration indicators and a positive one with foreign penetration. However, two out of seven countries in our sample are clear outliers (Colombia and Costa Rica). The case of Costa Rica does not conform with the general pattern in other ways. In particular, while concentration seems to have gone down lately as a whole, the opposite is true for concentration within private banks (see Figure 1b) which represent a growing but still minor portion of the system. On the other hand, consolidation trends in Colombia display two distinct phases: an early opening of the market with new entry and declining concentration, and a more recent selection process with exit and downsizing of the system, possibly related in part to the economic slowdown.

We take a more rigorous look at these links in Tables 5 and 6. In the first table we present simple correlations between values of our competition parameter H, the two measures of concentration (CRk and HI) and foreign participation (measured in terms of number of banks and in terms of assets) depicted in the previous section, for each individual banking sector.

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46 The temptation to use the PR approach to derive cross-country comparisons is apparent in existing empirical studies. In those cases, we should at least separate the cross-sectional and dynamic dimensions through the use of panel techniques, as we do in this paper. The criticism applies to New Industrial Organization models of competition more in general.

47 The former, in particular, would be consistent with what seems to be the conventional view.

48 The process in fact started even earlier, with Laws 45 of 1990 and 35 of 1993, which simplified entry and exit conditions and moved towards a universal banking model. The number of banks peaked in 1995, when it reached 148 institutions. See Uribe (200X) for a detailed account.
Note that the concentration indices used here can be rewritten as a function of both the size distribution and the number of banks.\textsuperscript{49} As a result, they tend to be inversely correlated with the number of banks (or, more generally, with the size of the banking sector, independently of the size distribution), as can be seen from the table, suggesting that both the index and the number of banks should be used if we want to control for the distribution.\textsuperscript{50}

Table 5 shows a positive correlation between the number of banks and our competition measure (H). Focusing in the most standard measure of concentration, \( H \) and CR, we observe a positive correlation between them and \( H \), although they are not statistically significant. The fact that it is the number of banks rather than the concentration measures what appears to follow the competition parameter more closely, while consistent with the view that a more is better for competition, may also be a cross sectional spurious correlation. This appears to be the case, as indicated by the panel regressions in Table 6. There we report results from selected country fixed effects regression of \( H \) on several combinations of concentration and foreign penetration measures, and year dummies. Once we control for country fixed effect and time trend, we find a positive correlation between our competition measure and all concentration index (measured as number of banks, the Herfindahl and the \( CK_5 \) and \( CK_3 \) indices, all of them over assets). Foreign penetration, in turn, remains positively correlated with \( H \) and is significant at 15\% in two specifications. The results, while still weak, suggest that foreign penetration, if anything, led to more rather than less competition in Latin American banking sectors. Finally we do not observe any negative relationship between concentration and competition level.

As mentioned, these results should be taken with caution in those cases in which concentration measures may be biased by the presence of multibank holdings that may make the consolidation trend even steeper. However, the sign of the basic correlations unveiled in this section should remain unaltered.

What is behind this somewhat unexpected result? While the answer exceeds the purpose of this paper, the point is not unrelated to the policy discussion that follows and, as such, deserves some elaboration. We can think of two candidate explanations to account for these findings. On the one hand, it was recognized that, before consolidation, Latin American banking sectors were characterized by an overpopulation of banks, many of them specialized in niches on which they have some market power despite their relative size.\textsuperscript{51} Thus, concentration levels at the beginning of the period may have been suboptimally low (particularly if we take into account the very limited size of the domestic market), in association with high entry costs and protection from foreign competition that resulted in overall inefficiencies and, to some extent, cartelization of the market.\textsuperscript{52}

\begin{itemize}
\item For example, the HI can be rewritten as \( HI = (\mu^2 + 1) / n \), where \( \mu^2 \) is the variation coefficient of the size distribution, and \( n \) is the number of banks.
\item For this reason, we include the number of banks as an additional control in the regressions that follow.
\item The fact that specialized banks tend to enjoy greater market power has been pointed out by the banking literature. See, e.g., Petersen and Rajan (1995).
\item Using a different approach, Levine (2000) makes a similar argument for the case of Chile: concentration levels are not high compared with those in developed countries. In addition, using survey data on
\end{itemize}
On the other hand, as noted, the nature of the link between concentration and competition depends on the underlying factors driving the consolidation of the sector. For instance, the introduction of ATM networks, by reducing product heterogeneity across banks, may have eliminated the scope for non-competitive rents. The federalization of liquidity services that ensued, with large national banks competing with local banks in small provincial cities, is a good example of the latter.\textsuperscript{53, 54}

We can conclude that the consolidation process, which led to concentration levels that are not above international standards, did not impinge on the competitive environment, and may have even enhanced it through a shift toward more homogenous universal banks that compete with each other in most banking product markets. Indeed, mere size considerations would indicate that the consolidation trends are not over in Latin America, and open the question about the approach that policymakers should adopt in the future.

\textbf{V. Policy Discussion}

The fact that consolidation has so far been indifferent or even beneficial for competition does not imply that we should not be concerned with increased concentration at all; nor should we disregard competition considerations in the event of further concentration, an outcome that, as noted, appears to be highly likely.

Underlying the process of consolidation reported in the paper are a number of common features that characterized the policy approach to changes in the banking sector. The two most salient issues are the increase in the regulatory burden, both as a result of increasing international (Basle-oriented) standards and the cautionary effects of recurrent regional financial crisis, and the prevalence of financial stability considerations in the shaping of regulation and authorities’ reaction to mergers and acquisitions within the system.

In this section we briefly review these two issues, to draw some preliminary policy conclusions on how pro-competition policies should interact with financial stability policies in order to balance financial soundness and efficiency considerations. We conclude that, unlike in the past when financial stability considerations outweighed competition concerns, future mergers and acquisitions should assign greater importance to its competition effects, and should consequently require a coordinated effort of the competition and financial supervision authorities.

\textit{Regulation and market structure}

competition for the economy as a whole, he finds no evidence of a cross-country correlation between concentration and competition.\textsuperscript{53}

The consolidation that followed the elimination of branching restrictions in the U.S. is a standard example of how product homogenization may induce more competition and a fewer number of banks at the same time. On this, see, e.g., Keeley (1990) and Economides (199X).\textsuperscript{54}

A third possibility, namely increased competition, which has been the consequence of the privatization of public banks in some of the countries in our sample, is at odds with the lack of evidence of a significant difference in behavior between public and private institutions.
The current consolidation trends are not independent, in many cases, of the recent implementation of stricter prudential norms, both as a result of changes in international standards and as a response to episodes of financial distress. In particular, there are a number of fronts in which more stringent regulation contributes to concentrate the market in large diversified and well-capitalized institutions.\textsuperscript{55}

For example, it has been noted that the increase in risk-weighted capital to asset ratios favor large (foreign) banks inasmuch as they tend to have better access to capital and concentrate in lower risk clients (with consequently a lower requirement). While this portfolio bias may not be general, it is true relative to smaller local (provincial, cooperative) banks specialized in relationship banking and small- and medium-sized firms.\textsuperscript{56} The same can be said of the tendency, in financially dollarized economies, to require increasing liquid asset requirements to compensate for the limited lender of last resort capacity.\textsuperscript{57}

In addition, in some cases the concentration thrust was fueled by the lifting of restrictions on banks’ activities and entry conditions. A regulatory move towards universal banking during the last decade can be seen, for example, in Brazil and Colombia, leading to mergers of banks and non-bank financial institutions controlled by the same group.\textsuperscript{58}

The relaxation in foreign entry restrictions, in turn, while initially feared based on excessive competition arguments, was curiously triggered by financial crisis as a way to induce well capitalized foreign institutions to absorb insolvent domestic ones in order to prevent massive bank closures.\textsuperscript{59} At any rate, entry conditions have been mostly equalized between domestic and foreign capital, with the latter typically allowed both in the form of a foreign branch or as a subsidiary institution.

This last point is not trivial when it comes to competition. Foreign banks are often perceived as implicitly guaranteed by their parents, and thus tend to enjoy lower funding rates and a privileged position to gain market share at low cost. This can certainly foster internationalization beyond what can be accounted by greater access to international capital in financially constrained countries. However, while the extent of this guarantee is unclear, it certainly differs whether the bank is a branch of a foreign institution (in which case it shares responsibility with the parent) or a subsidiary (in which case, the guarantee does not exist beyond the reputational cost of letting a similarly-named subsidiary fail).\textsuperscript{60}

\textsuperscript{55} The Appendix table presents a brief survey of the main regulatory aspects in selected Latin American countries.
\textsuperscript{56} Schargrodsky and Sturzenegger (2000) present evidence of the gradual disappearance of specialized banks in Argentina \textit{pari passu} with the introduction of stricter requirements after the Mexican crisis.
\textsuperscript{57} Apart from those countries surveyed in the Appendix, we should note the high liquidity requirement in formally dollarized El Salvador and Ecuador, as well as in financially dollarized Uruguay.
\textsuperscript{58} Seeampaio (2001) and Uribe (200X).
\textsuperscript{59} We come back to this below when we discuss the approach to mergers and acquisitions.
\textsuperscript{60} Interestingly, banks tend to differ in the extent to which they exploit the name of the parent. In most cases of foreign acquisitions in the form of a subsidiary, the parent attaches their names to the former name of the local bank, as a way of retaining part of the local brand name value and hint at an internationally
In light of this, the fact that regulations do not distinguish between the two and do not require the bank to do that clearly to their clients is rather puzzling.

Associated with the surge of foreign penetration in post-crisis periods there was in many countries a move toward privatization of state- and province-owned banks, often seen as a source of vulnerability due to political favoritism and unprofessional management. Conditions imposed by multilateral financial institutions or even the supervisory authority when dealing with troubled state-owned banks have deliberately induced concentration through mergers or through purchase by an incumbent bank.

**Mergers and acquisitions**

A good illustration of the financial bias discussed above is given by the extent to which competition concerns played a role in the analysis of mergers and acquisitions (M&A), and whether there is in place a regulatory body and institutions that may cope with the problem should these concerns arise in the future.

A rapid survey of the context in which the majority of M&A took place in Latin American countries indicates that, with minor exceptions, considerations of potential competition problems play second fiddle to questions related to the stability of the financial sector, particularly in those cases in which M&A were contemporary (and event triggered) by episodes of financial disarray.

For instance, a perfunctory analysis of the evolution of the banking sector in Brazil reveals that concentration and internationalization went hand in hand with a deliberate attempt by the Brazilian government to bring new capital to distressed institutions, through their acquisition by either solvent domestic banks or by well-capitalized foreign banks. This was reflected in a number of incentives, above all those associated with the PROER, which assisted bank acquisitions with credit lines.\(^{61}\) Indeed, the opening of the sector to foreign institutions was conditioned on privatization or acquisition of troubled banks.\(^ {62}\) As a result, “existing bank problems induced a preference for keeping the system stable, leaving the principle of defending competition unattended” (Coutinho and Oliveira, 1999, see ref, in Sampaio, 2001).\(^ {63}\)

The same picture appears in the case of Colombia; the Superintendence of Banks is in charge of assessing and approving a merger proposal, and financial solvency and stability

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\(^{61}\) Starting in July 1994, a successful inflation stabilization program (the Real plan) inflicted a considerable blow to the Brazilian banking sector that depended to a large extent on inflationary transfers (or “float”) as a source of income, which, according to Sampaio (2001) dropped from around 4% of GDP between 1990 and 1993 to 2% of GDP in 1994. This combined with the spillover of the Mexican crisis to put the banking sector under considerable stress.

\(^{62}\) Only invoking the interest of the Brazilian government could authorities bypass at the time the impediments previously imposed to expansion of foreign participation.

\(^{63}\) The first exception to this rule occurred in end-1998 with the acquisition of Banco Real by ABN Amro.
considerations clearly outweigh competition considerations, which limit to a quantitative cap of 25% the new bank’s market share in their operating markets.

Financial stability criteria have been predominant also in the Argentine case, where consolidation and foreign participation were part of the strategy of the central bank to cope with banking distress in the aftermath of the Mexican crisis. To our knowledge, competition concerns never entered in the discussion of a M&A.

It is important to note that the financial bias when dealing with M&As in the banking sector, which characterizes many Latin American countries, does not imply that competition concerns are not voiced or dealt with in general and that a competition authority is lacking. On the contrary, what we want to stress is that the competition authorities (deliberately or de facto) abstain from intervening in banking matters, even in tranquil periods.

Chile is in this respect a singular case in that it has been spared episodes of financial distress in recent years. As a result, it appears to be a country in which anti-trust studies have relatively more say in the approval of M&As. The country witnessed its two most important mergers very recently. In 2001, Banco Santander merged with its controlled Banco Santiago to represent at the time about 28% of total assets. Interestingly, the profits in 2001 of the resulting institution represented 36% of total profits of the system, a fraction significantly above its market share. While this triggered some mild domestic resistance to the deal, a study by the Anti-trust Commission did not present objections. With this precedent, in 2002 two banks, representing about 20% of total assets, proceeded to merge. Thus, currently, half of the assets of the banking sector belong to the two largest banks. Besides the standard competition fears, recently there has been some debate about the way in which a concentrated banking sector affects the central bank's capacity to conduct monetary policy. More precisely, some analysts argue that insensitive interest rates conspired against the Chilean Central Bank’s attempt to act countercyclically in the face of the recent recession.

In sum, financial stability considerations may have not only underscored by also stimulated concentration, in line with the view that domestic banking sectors were plagued by too many banks that were too small, too inefficient, or both. As a result, it is not surprising that little if any attention was paid to issues related with competition and distribution of access to credit, to which we turn next.

**Consolidation, internationalization and the distribution of credit**

There is a question about the impact of concentration and foreign penetration on particular sectors or credit types at the cost of the rest. In particular, large as well as

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64 This was also the case in tranquil times. The Argentine crisis resolution scheme relies heavily on asset separation and sale of the failing bank.
65 Such is the case, e.g., of the Argentine Secretary of Competition Defense, which has successfully acted against non-competitive practices in other concentrated industries.
66 Both banks were controlled by the same group at the time of the merger.
foreign banks are usually believed to favor prime clients at the expense of small and medium businesses, and tradable producers at the cost of credit to non-tradable producers and real estate and consumer loans. Previous empirical studies, however, seem to contradict this view.\footnote{See, e.g., Clarke et al. (2002).}

Despite our positive results regarding competition, our data does not discriminate across sectors and thus does not allow us to study the sectoral distribution and its determinants. A perfunctory look at concentration indicators for different types of loans does not unveil a significant concentration in one of these sectors.

However, the issue of distribution merits a more rigorous study. The obvious way to go about it would be to disaggregate loans and interest rate data according to variables such as sector, size, and location of the borrower, as well as some indicator of the borrowers’ risk class.\footnote{While supply and demand effects in equilibrium values could be identified through interest rates, the informational requirement of such a study, which would require data on flows rather than on stocks of loans, is certainly not trivial.} In the absence of this data, one could alternatively try to loosely relate different credit categories to different types of borrowers. For example, credit lines, usually associated with the funding or working capital of small- and medium-sized businesses, could be used as a proxy for credit access for this sector; mortgage and consumer loans could proxy long- and short-term loans to individuals; pledge loans, typically longer-term loans, could be associated with large businesses, and, finally credit to the public sector could be used to test the presumption that large banks tend to display a preference towards safer public bonds as opposed to riskier credits.

At any rate, and despite some existing studies, the issue of distribution is still open and a recurrent source of concern, notably in the context of the discussion of the privatization of public, specialized banks. Analyzing the pattern of specialization can test the hypothesis that concentration and foreign penetration have reduced access to credit from specific borrowers. The issue is further complicated, however, by the presumption that new players tend to change the composition of their supply as they gather information about the market and build track records of their clients. In general, in contrast with the visibility this issue tends to have in the media, there appears to be a significant vacuum in the empirical analysis of credit distribution that needs to be filled primarily by the competition authority.

As a final remark, the policy discussion cannot ignore the question about the optimal distribution of credit. More precisely: even in case a sector has been disfavored by the new composition of the banking industry, how do we know whether the distribution of credit supply before consolidation was to be preferred? If not, restricted access for some sectors (e.g., characterized by higher but previously mispriced risk) may end up being an enhancement rather than an undesired by-product.\footnote{Naturally, the problem relates to the presence of market imperfections (absent which the unregulated market equilibrium would lead to the optimal resource allocation).} Moreover, how should we factor in a potentially harmful effect of credit incentives (if directed towards riskier borrowers) on the stability of the sector, whose cost only becomes visible when a crisis erupts? All this
Banking Competition in Latin America

leads us to conclude that the question of distribution needs to be pondered very cautiously.

**Are some markets more collusion-prone than others?**

Just because there is no overall indication of monopolistic competition does not imply that monopolistic practices do not appear in particular markets. Systemic empirical analysis is too broad to detect this behavior, which should be examined recurrently by the competition authority. Moreover, as opposed to the case of M&A, financial stability criteria have a more limited role to play when competition in particular markets is at risk.

One can think of many examples of specific products for which concentration increases dramatically and may lead to tacit collusion. Credit card interest rates, for example, are always under suspicion; this is not surprising given that typically there is a limited number of issuing banks. Access to ATM networks is another potential source of non-competitive practices, due to network externalities.

Location is a natural barrier, particularly in sparsely populated regions. In the absence of competition from large national banks due to economies of scale, small regional banks serving the area may enjoy significant rents. In this case, concentration, by reducing the number of small banks potentially serving the region, may substantially increase the market power of the remaining banks.\(^70\)

All things considered, while a competition authority should conduct periodic studies on each of the distinct markets in which banks operate, it has to bear in mind that in most cases competition should be measured against national standards. International comparisons based on crude indicators, while useful to assess systemic trends, may be misleading if applied at face value to evaluate the level of competition within specific markets. Thus, the competition authority has to develop its own standards, including the approach to measure the relevant markets and the criteria on which action should be taken.

**Policy actions: Balancing financial stability and pro-competition considerations**

As noted, cooperation between competition and regulatory bodies in Latin American countries has been rare. Competition concerns have taken the lead only in the most developed of these markets and in the absence of financial unrest. Thus, while thorough competition studies are starting to be conducted in Brazil, Chile and Mexico only recently, in other cases these studies have faced limitations due to lack of technical capacity or overwhelming financial considerations.

It has been long acknowledged by the profession that the banking sector enjoys a particular status as an industry, due to its high leverage ratio, its systemic impact on the economy, and the underservicing of low population areas.\(^{70}\) Underservicing of low population areas is indeed one of the strongest arguments for the disciplining presence of a public bank. The argument does not imply, however, that the prices set by the public bank are indeed closer to the social optimum.
real economy and its interrelations within the industry (both through the interbank market and the possibility of contagion effects). As a result, it is not only the most regulated industry but also one in which regulation is based on both anti-trust and prudential considerations. This poses a problem regarding the body that should oversee competitive practices in this case. If the task is left to the supervisory agency (the central bank or the superintendence of banks) it is likely that competition aspects will be dominated by prudential aspects. On the other hand, any competition-related policy action would have to weigh its prudential implications.

As a result, close coordination between the competition and the supervisory bodies appears to be the best way to balance both aspects. In the particular case of Latin American banks, where this balance is tilted towards prudential issues, this recommendation would translate into a strengthening of the analytic capacity of the competition authority and even more participation in the evaluation of M&A and other market practices in the sector.

**VI. Conclusions**

In this paper, we examined the evolution of concentration and foreign penetration in selected Latin American banking sectors in recent years. While in most cases concentration and foreign participation increase substantially, this does not appear to have given rise to a less competitive industry. We find that competition measures remained stable or improved, and that there is some (albeit weak) evidence that consolidation may have had a beneficial effect in this respect. Therefore, we did not think that market consolidation should be taken as an indication of a deterioration of the competitive environment.

Given that, despite these developments, there is still a relatively large number of banks when measured against domestic market depth, it is likely that the consolidation process will continue in most countries, mirroring a trend also apparent in developed economies. Market consolidation was to a great extent triggered by episodes of financial distress and, as a result, competition concerns have played a secondary role to prudential issues. In line with this, we argue in favor of a closer coordination between supervisory bodies and the competition authorities, to strike a balance between prudential and competition aspects.
References:


## Table 1
Applications of the PR model to banking competition

<table>
<thead>
<tr>
<th>Study</th>
<th>Period</th>
<th>Banking sectors studied</th>
<th>Results</th>
</tr>
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<tr>
<td>Shaffer (1982)</td>
<td>1979</td>
<td>New York</td>
<td>Monopolistic competition</td>
</tr>
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<td>Molyneux et al. (1994)</td>
<td>1986-1989</td>
<td>France, Germany, Italy, Spain, United Kingdom</td>
<td>Monopoly (Italy); monopolistic competition (France, Germany, Spain, UK)</td>
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<td>Vesala (1995)</td>
<td>1985-1992</td>
<td>Finland</td>
<td>Monopolistic competition for all but two years</td>
</tr>
<tr>
<td>De Brandt and Davis (1999)</td>
<td>1992-1996</td>
<td>France, Germany, Italy</td>
<td>Large Banks: monopolistic competition in all countries Small Banks: monopolistic competition in Italy, monopoly in France and Germany</td>
</tr>
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### Table 2

Estimates of time-invariant H

<table>
<thead>
<tr>
<th>Method</th>
<th>Coefficient</th>
<th>Chile</th>
<th>Argentina</th>
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<td>OLS</td>
<td>H</td>
<td>0.959*</td>
<td>0.546*a</td>
<td>0.911*a</td>
<td>0.753*a</td>
<td>0.806*a</td>
<td>0.758*a</td>
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<tr>
<td>FE</td>
<td>H</td>
<td>0.849*a</td>
<td>0.470*a</td>
<td>0.850*a</td>
<td>0.676*a</td>
<td>0.675*a</td>
<td>0.641*a</td>
<td>0.428</td>
</tr>
<tr>
<td>FE</td>
<td>H</td>
<td>0.852</td>
<td>0.500</td>
<td>0.875</td>
<td>0.686</td>
<td>0.721</td>
<td>0.641</td>
<td>0.361</td>
</tr>
<tr>
<td>FE</td>
<td>H</td>
<td>0.828*</td>
<td>0.490*</td>
<td>0.835*</td>
<td>0.695*</td>
<td>0.753*</td>
<td>0.631*</td>
<td>0.255</td>
</tr>
<tr>
<td>FE</td>
<td>H Large Banks</td>
<td>0.019</td>
<td>0.035*</td>
<td>0.063*</td>
<td>0.015</td>
<td>-0.101*</td>
<td>0.099</td>
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<td>FE</td>
<td>H Foreign Banks</td>
<td>0.065*</td>
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<td>-0.110</td>
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<td>P-value</td>
<td>HLB=HFB</td>
<td>0.215</td>
<td>0.027</td>
<td>0.962</td>
<td>0.404</td>
<td>0.902</td>
<td>0.815</td>
<td>0.005</td>
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</table>

Period: 94-02, 95-02, 94-02, 94-02, 95-02, 93-02, 97-98

Note: * significant at 5%; ** significant at 1%. a different from 1 at 5%, aa different from 1 at 10%.

H Large Banks and H Foreign banks measure the deviation from private small bank in the system.

All tests based on robust standard errors.
### Table 3
Estimates of time-varying H – All banks
(baseline specification; all banks)

<table>
<thead>
<tr>
<th></th>
<th>Argentina</th>
<th>Brazil</th>
<th>Chile</th>
<th>Colombia</th>
<th>Costa Rica</th>
<th>Peru</th>
<th>El Salvador</th>
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<td>1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>0.483</td>
</tr>
<tr>
<td>1994</td>
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<td>0.725</td>
<td>0.852</td>
<td>0.618</td>
<td>0.511</td>
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<tr>
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<td>0.415</td>
<td>0.751</td>
<td>0.910</td>
<td>0.552</td>
<td>0.677</td>
<td>0.510</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>0.405</td>
<td>0.784</td>
<td>0.897</td>
<td>0.521</td>
<td>0.684</td>
<td>0.487</td>
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<td>0.418</td>
<td>0.826</td>
<td>0.893</td>
<td>0.516</td>
<td>0.682</td>
<td>0.500</td>
<td>0.340</td>
</tr>
<tr>
<td>1998</td>
<td>0.396</td>
<td>0.827</td>
<td>0.878</td>
<td>0.529</td>
<td>0.712</td>
<td>0.548</td>
<td>0.337</td>
</tr>
<tr>
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<td>0.401</td>
<td>0.820</td>
<td>0.839</td>
<td>0.541</td>
<td>0.693</td>
<td>0.542</td>
<td>0.358</td>
</tr>
<tr>
<td>2001</td>
<td>0.411</td>
<td>0.848</td>
<td>0.516</td>
<td>0.693</td>
<td>0.572</td>
<td>0.417</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>0.831</td>
<td>0.874</td>
<td>0.552</td>
<td>0.701</td>
<td>0.559</td>
<td>0.348</td>
<td></td>
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<tr>
<td>Average</td>
<td>0.398</td>
<td>0.799</td>
<td>0.866</td>
<td>0.546</td>
<td>0.692</td>
<td>0.523</td>
<td>0.351</td>
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<table>
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</thead>
<tbody>
<tr>
<td>1995</td>
<td>0.725</td>
<td>0.852</td>
<td>0.618</td>
<td>0.511</td>
<td>0.677</td>
<td>0.510</td>
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</tr>
<tr>
<td>1996</td>
<td>0.784</td>
<td>0.897</td>
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<td>0.684</td>
<td>0.487</td>
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<tr>
<td>1997</td>
<td>0.816</td>
<td>0.893</td>
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<td>0.682</td>
<td>0.500</td>
<td>0.340</td>
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</tr>
<tr>
<td>1998</td>
<td>0.826</td>
<td>0.893</td>
<td>0.516</td>
<td>0.694</td>
<td>0.532</td>
<td>0.308</td>
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</tr>
<tr>
<td>1999</td>
<td>0.827</td>
<td>0.878</td>
<td>0.529</td>
<td>0.712</td>
<td>0.548</td>
<td>0.337</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>0.820</td>
<td>0.839</td>
<td>0.541</td>
<td>0.693</td>
<td>0.542</td>
<td>0.358</td>
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<tr>
<td>2001</td>
<td>0.811</td>
<td>0.848</td>
<td>0.516</td>
<td>0.693</td>
<td>0.572</td>
<td>0.417</td>
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</tr>
<tr>
<td>2002</td>
<td>0.831</td>
<td>0.874</td>
<td>0.552</td>
<td>0.701</td>
<td>0.559</td>
<td>0.348</td>
<td></td>
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</tbody>
</table>

All tests based on robust standard errors.

### Table 4
Estimates of time-varying H – Private banks
(baseline specification)

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<th></th>
<th>Argentina</th>
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<th>Chile</th>
<th>Colombia</th>
<th>Costa Rica</th>
<th>El Salvador</th>
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<tbody>
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<td>1993</td>
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<tr>
<td>1994</td>
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<td>0.749</td>
<td>0.851</td>
<td>0.620</td>
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<td>1995</td>
<td>0.445</td>
<td>0.789</td>
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<td>0.547</td>
<td>0.745</td>
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<td>0.445</td>
<td>0.805</td>
<td>0.901</td>
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<td>0.836</td>
<td>0.898</td>
<td>0.507</td>
<td>0.733</td>
<td>0.349</td>
</tr>
<tr>
<td>Year</td>
<td>Value 1</td>
<td>Value 2</td>
<td>Value 3</td>
<td>Value 4</td>
<td>Value 5</td>
<td>Value 6</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>1998</td>
<td>0.461</td>
<td>0.853</td>
<td>0.804</td>
<td>0.562</td>
<td>0.728</td>
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<tr>
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<td>0.449</td>
<td>0.860</td>
<td>0.880</td>
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<td>0.318</td>
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<td>0.451</td>
<td>0.849</td>
<td>0.841</td>
<td>0.524</td>
<td>0.731</td>
<td>0.336</td>
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<td>0.849</td>
<td>0.496</td>
<td>0.733</td>
<td>0.419</td>
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<td>2002</td>
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<td>0.881</td>
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<td>0.398</td>
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<td>Average</td>
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<td>0.828</td>
<td>0.869</td>
<td>0.531</td>
<td>0.738</td>
<td>0.361</td>
</tr>
</tbody>
</table>

|--------|-----------|-----------|-----------|-----------|-----------|-----------|

The subscript indicates that the hypothesis $H = 1$ (perfect competition) cannot be rejected. All tests based on robust standard errors.
### Table 5
Concentration, foreign penetration and competition measures - Correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>H</th>
<th>H (private banks)</th>
<th>CK₂</th>
<th>CK₃</th>
<th>HHI (assets)</th>
<th>HHI (loans)</th>
<th>FP (assets)</th>
<th>FP (loans)</th>
<th>Log number of banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>H (total)</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>H (private)</td>
<td>0.990</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.000)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C₅</td>
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<td>-0.175</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.133)</td>
<td>(0.192)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>C₃</td>
<td>-0.209</td>
<td>-0.178</td>
<td>0.992</td>
<td>1.000</td>
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<tr>
<td></td>
<td></td>
<td>(0.118)</td>
<td>(0.185)</td>
<td>(0.000)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>HHI (assets)</td>
<td>-0.214</td>
<td>-0.184</td>
<td>0.974</td>
<td>0.978</td>
<td>1.000</td>
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<tr>
<td></td>
<td></td>
<td>(0.111)</td>
<td>(0.171)</td>
<td>(0.000)**</td>
<td>(0.000)**</td>
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</tr>
<tr>
<td>HHI (loans)</td>
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<td>-0.151</td>
<td>0.923</td>
<td>0.903</td>
<td>0.867</td>
<td>1.000</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>(0.258)</td>
<td>(0.264)</td>
<td>(0.000)**</td>
<td>(0.000)**</td>
<td>(0.000)**</td>
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<td></td>
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</tr>
<tr>
<td>FP (assets)</td>
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<td>-0.383</td>
<td>-0.191</td>
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<tr>
<td></td>
<td></td>
<td>(0.152)</td>
<td>(0.217)</td>
<td>(0.014)**</td>
<td>(0.003)**</td>
<td>(0.002)**</td>
<td>0.141</td>
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</tr>
<tr>
<td>FP (loans)</td>
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<tr>
<td></td>
<td></td>
<td>(0.532)</td>
<td>(0.659)</td>
<td>(0.042)**</td>
<td>(0.013)**</td>
<td>(0.009)**</td>
<td>(0.190)</td>
<td>(0.000)**</td>
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</tr>
<tr>
<td>log(banks)</td>
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<td>0.376</td>
<td>-0.580</td>
<td>-0.532</td>
<td>-0.625</td>
<td>-0.561</td>
<td>0.071</td>
<td>0.042</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.013)**</td>
<td>(0.004)**</td>
<td>(0.000)**</td>
<td>(0.000)**</td>
<td>(0.000)**</td>
<td>(0.588)</td>
<td>(0.750)</td>
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</table>

*p-values in parentheses.*
## Table 6
Concentration, foreign penetration and competition indicators – Panel regressions

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<th>H(Private)</th>
<th>H</th>
<th>H(Private)</th>
<th>H</th>
<th>H(Private)</th>
<th>H</th>
<th>H(Private)</th>
</tr>
</thead>
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<td><strong>Banks (ln)</strong></td>
<td>-0.163</td>
<td>-0.173</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.26)**</td>
<td>(2.31)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Foreign Penetration</strong></td>
<td>0.049</td>
<td>0.134~</td>
<td>0.036</td>
<td>0.114</td>
<td>0.022</td>
<td>0.101</td>
<td>0.045</td>
<td>0.128~</td>
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<td></td>
<td>(0.57)</td>
<td>(1.50)</td>
<td>(0.42)</td>
<td>(1.27)</td>
<td>(0.29)</td>
<td>(1.27)</td>
<td>(0.57)</td>
<td>(1.54)</td>
</tr>
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<td><strong>HHI (Assets)</strong></td>
<td>0.487</td>
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<tr>
<td></td>
<td>(1.81)*</td>
<td>(2.58)**</td>
<td></td>
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<td><strong>CK5 (Assets)</strong></td>
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<td>0.267</td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(1.90)*</td>
<td>(2.20)**</td>
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<tr>
<td><strong>CK3 (Assets)</strong></td>
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<td>0.226</td>
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<td><strong>Observations</strong></td>
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<td>57</td>
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<tr>
<td><strong>R-squared</strong></td>
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<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
</tr>
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</table>

Robust t-statistics in parentheses

~ significant at 15%; * significant at 10%; ** significant at 5%; *** significant at 1%
Figure 1
Concentration, Foreign Penetration and Competition Indicators
(changes over the period of analysis; in percent)
Banking Competition in Latin America

Eduardo Levy Yeyati
Alejandro Micco

Latin American Competition Forum,
Paris, 7-8 April 2003
Banking Competition in Latin America

Eduardo Levy Yeyati

Alejandro Micco

Paris

April 2003
Trend in the Banking Industry In Latin America

- The number of Banks has been falling in Latin America, increasing concentration.
- As in many Developing economies, Foreign Bank Participation has increased in Latin America.
### Decrease in number of Banks

<table>
<thead>
<tr>
<th>Country</th>
<th>1996</th>
<th>2002</th>
<th>Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>118</td>
<td>80</td>
<td>-38</td>
<td>-32%</td>
</tr>
<tr>
<td>Brazil</td>
<td>253</td>
<td>180</td>
<td>-73</td>
<td>-29%</td>
</tr>
<tr>
<td>Chile</td>
<td>33</td>
<td>26</td>
<td>-7</td>
<td>-21%</td>
</tr>
<tr>
<td>Colombia</td>
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<td>28</td>
<td>-11</td>
<td>-28%</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>30</td>
<td>21</td>
<td>-9</td>
<td>-30%</td>
</tr>
<tr>
<td>Peru</td>
<td>23</td>
<td>15</td>
<td>-8</td>
<td>-35%</td>
</tr>
<tr>
<td>El Salvador</td>
<td>18</td>
<td>13</td>
<td>-5</td>
<td>-28%</td>
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<tr>
<td>Mexico*</td>
<td>41</td>
<td>32</td>
<td>-9</td>
<td>-22%</td>
</tr>
</tbody>
</table>

Source: Superintendencia de Bancos

* In 1994 there were 23 banks.
Increase in Bank Concentration

C5 in 2002
C5 in 1996

ARG  BRA  CHL  COL  PER  SLV  MEX
Foreign Bank Participation

[Bar chart showing foreign bank participation for various countries in 2002 and 1996.]
Foreign Participation In LDC

- Czech Republic
- Hungary
- Poland
- Turkey
- Venezuela
- Peru
- Argentina
- Mexico
- Thailand
- Malaysia
- Brazil
- Colombia
- Venezuela
- Chile
- Peru
- Argentina
- Mexico
- Thailand
- Korea
- Malaysia

Bar chart showing participation in LDC for various countries.

- 1994
- 2001
How did this Process take Place?

- Financial Liberalization (Mexico).
- Tequila (94-95), Russian (98) and Brazilian (98-99) crises have forced authorities to merge and close banks with problems (recapitalization).
  - Colombia 98-99: 4 banks closed & 3 merges.
- Global trend on Banking Consolidation and Cross Banking Activities.
  - Chile 4 merges.
  - Foreign banks typically buy locals. (Argentina 16, Chile 5, Colombia 3 and Mexico 3).
Issues Behind M&A and Bank Consolidation (1)

- **Efficiency.**
  - Increasing Return to Scale.
    - Overlapped Markets: Overhead Costs, IT
      - No evidence of large Economies of Scale
        » EU, USA
        » Chile. Budnevich et al. (2001)
  - Heterogeneity.
Issues Behind M&A and Bank Consolidation (2)

• Competition Level
  – X inefficiency.
  – Definition of the relevant Market.
    • Overlapped Region or not.
    • Type of Loans:
      – Sectors: Agriculture, Manufacturing, etc.
      – SME v/s Large Firms (access to external resources).
    • Other Financial actors insurance companies and the Stock Market?
      • The role of new products tele-banking and ATM.
  – Asymmetric Information and Competition
    • Informality and Opaque Firms.
Issues Behind M&A and Bank Consolidation (3)

• Competition and Financial Stability
  – Bank Charter Value
    • Reduce agency problem of limited liability banks.
  – To Big to Fail.
    • Increase moral hazard problems. Large Banks Take more risk because they know they will be rescue by the government.
  – Large Capitalization and “perceived” liquidity of foreign Banks.
Implications for Regulation

• Bank Superintendence or Central Bank:
  – Focus on banking stability.

• Competition Authorities:
  – Focus on competition issues (Efficiency and Monopoly practices).

• During Financial Turmoil (frequents events in Latin America) The former predominates.
Competition Measure

- Panzar and Rosse’s (1987) methodology:
  \[ H \equiv \sum_j \frac{\partial R_i}{\partial FIP_{j,i}} \frac{\partial FIP_{j,i}}{\partial R_i} \]
- Monopoly: \( H \leq 0 \).
- Monopolistic competition: \( 0 < H \leq 1 \).
- Perfect competition: \( H = 1 \).
- Constant elasticity \( e > 1 \) and a Cobb-Douglas CRS technology \( \Rightarrow H = e - 1 \) \( \Rightarrow \) H as a measure of the degree of competition.
Competition Measure

• We want $H$ to change over time
  – $H$ depends on industry-specific characteristics
    ➔ Cross-country comparisons may be misleading
  – Correlation between consolidation and foreign penetration trends and the evolution of competition ➔ Emphasis on the dynamic dimension
Competition Measure

\[ H_y = \beta_y + \gamma_y + \delta_y \]

\[
\ln FINR_{it} = \alpha_i + \sum_{y} \left( \beta_y \ln AFR_{it} + \gamma_y \ln PPE_{it} + \delta_y \ln PCE_{it} \right) \\
+ \eta \ln OI_{it} + \sum_j \xi_j \ln BSF_{jit} + \sum_j \lambda_j X_{jt} + \nu_{it}
\]

- \( \beta_y, \gamma_y, \delta_y \) are set to 0 if quarter \( t \) does not belong to year \( y \)
- \( FINR = \) total financial revenue over total assets
- \( AFR = \) annual interest expenses over total funds
- \( PPE = \) personnel expenses over total balance sheet
- \( PCE = \) physical capex and other expenses over fixed assets
- \( BSF = \) Bank fundamentals: Risk (equity, loans and liquidity over total assets); funding mix (demand deposits to total); size (total assets).
- \( OI = \) ratio of Other Income to the Total Balance Sheet
- \( X = \) macroeconomic factors (reference interest rate, inflation rate)
## Estimates of time-invariant H

### Table 2

**Estimates of time-invariant H**

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Coefficient</th>
<th>Chile</th>
<th>Argentina</th>
<th>Brazil</th>
<th>Colombia</th>
<th>Costa Rica</th>
<th>Peru</th>
<th>El Salvador</th>
</tr>
</thead>
<tbody>
<tr>
<td>All banks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1)</td>
<td>OLS¹</td>
<td>H</td>
<td>0.959*</td>
<td>0.546*a</td>
<td>0.911*a</td>
<td>0.753*a</td>
<td>0.806*a</td>
<td>0.76*a</td>
</tr>
<tr>
<td></td>
<td>FE</td>
<td>H</td>
<td>0.829*a</td>
<td>0.459*a</td>
<td>0.862*a</td>
<td>0.684*a</td>
<td>0.676*a</td>
<td>0.60*a</td>
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<tr>
<td>(2)</td>
<td>FE</td>
<td>H</td>
<td>0.832*a</td>
<td>0.488*a</td>
<td>0.886*a</td>
<td>0.695*a</td>
<td>0.734*a</td>
<td>0.60*a</td>
</tr>
<tr>
<td>Private banks</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3)</td>
<td>FE</td>
<td>H</td>
<td>0.807*a</td>
<td>0.478*a</td>
<td>0.846*a</td>
<td>0.705*a</td>
<td>0.765*a</td>
<td>0.58*a</td>
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<tr>
<td></td>
<td>H_L</td>
<td>0.010</td>
<td>0.033*</td>
<td>0.065*</td>
<td>0.016</td>
<td>-0.108*</td>
<td>-0.010</td>
<td>0.109*</td>
</tr>
<tr>
<td></td>
<td>H_F</td>
<td>0.067*</td>
<td>0.010</td>
<td>0.064*</td>
<td>-0.019</td>
<td>-0.096</td>
<td>-0.009</td>
<td>0.643*</td>
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<tr>
<td></td>
<td>P-value</td>
<td>H_L = H_F</td>
<td>0.114</td>
<td>0.090</td>
<td>0.977</td>
<td>0.491</td>
<td>0.863</td>
<td>0.903</td>
</tr>
<tr>
<td>Period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:

¹ Excludes inflation rate and reference interest rate.

* significantly different from zero at 5%; a: significantly different from 1 at 5%.

H_L and H_F are large and foreign bank dummies, and measure the deviation from small private domestic banks in the system.

All tests based on robust standard errors.
### Estimates of time-varying H – Private banks

**(baseline specification)**

<table>
<thead>
<tr>
<th></th>
<th>Argentina</th>
<th>Brazil</th>
<th>Chile</th>
<th>Colombia</th>
<th>Costa Rica</th>
<th>El Salvador</th>
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<td>1993</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1994</td>
<td></td>
<td>0,775</td>
<td>0,805</td>
<td>0,621</td>
<td></td>
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<tr>
<td>1995</td>
<td>0,395</td>
<td>0,788</td>
<td>0,870</td>
<td>0,547</td>
<td>0,750</td>
<td></td>
</tr>
<tr>
<td>1996</td>
<td>0,442</td>
<td>0,803</td>
<td>0,848</td>
<td>0,518</td>
<td>0,757</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>0,458</td>
<td>0,834</td>
<td>0,851</td>
<td>0,507</td>
<td>0,730</td>
<td>0,326</td>
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<tr>
<td>1998</td>
<td>0,456</td>
<td>0,851</td>
<td>0,758</td>
<td>0,562</td>
<td>0,723</td>
<td>0,326</td>
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<tr>
<td>1999</td>
<td>0,448</td>
<td>0,860</td>
<td>0,834</td>
<td>0,509</td>
<td>0,743</td>
<td>0,304</td>
</tr>
<tr>
<td>2000</td>
<td>0,451</td>
<td>0,849</td>
<td>0,800</td>
<td>0,522</td>
<td>0,727</td>
<td>0,319</td>
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<tr>
<td>2001</td>
<td>0,844</td>
<td>0,803</td>
<td>0,494</td>
<td>0,729</td>
<td>0,404</td>
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<tr>
<td>2002</td>
<td>0,869</td>
<td>0,837</td>
<td>0,490</td>
<td>0,723</td>
<td>0,390</td>
<td></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>0.442</strong></td>
<td><strong>0.830</strong></td>
<td><strong>0.823</strong></td>
<td><strong>0.530</strong></td>
<td><strong>0.735</strong></td>
<td><strong>0.345</strong></td>
</tr>
</tbody>
</table>

In all cases, \( H = 0 \) (monopoly), and \( H = 1 \) (perfect competition) are rejected at the 5% significance level, based on robust standard errors.
## Concentration, Foreign Penetration and Competition

<table>
<thead>
<tr>
<th></th>
<th>H</th>
<th>H (private)</th>
<th>H</th>
<th>H (private)</th>
<th>H</th>
<th>H (private)</th>
<th>H</th>
<th>H (private)</th>
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<tbody>
<tr>
<td>Ln num. of banks</td>
<td>-0.156</td>
<td>-0.163</td>
<td>(2.24)**</td>
<td>(2.26)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign Penetration</td>
<td>0.075</td>
<td>0.160</td>
<td>0.060</td>
<td>0.137</td>
<td>0.047</td>
<td>0.126</td>
<td>0.070</td>
<td>0.154</td>
</tr>
<tr>
<td></td>
<td>(0.98)</td>
<td>(1.95)*</td>
<td>(0.77)</td>
<td>(1.66)</td>
<td>(0.69)</td>
<td>(1.73)*</td>
<td>(0.99)</td>
<td>(2.02)*</td>
</tr>
<tr>
<td>HHI (Assets)</td>
<td></td>
<td></td>
<td>0.531</td>
<td>0.706</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(2.05)**</td>
<td>(2.85)*****</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CK5 (Assets)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.230</td>
<td>0.275</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2.04)**</td>
<td>(2.36)*****</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CK3 (Assets)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.236</td>
<td>0.280</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2.30)**</td>
<td>(2.64)*****</td>
</tr>
<tr>
<td>Observations</td>
<td>57</td>
<td>57</td>
<td>57</td>
<td>57</td>
<td>57</td>
<td>57</td>
<td>57</td>
<td>57</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
<td>0.98</td>
</tr>
</tbody>
</table>

~ significant at 15%; * significant at 10%; ** significant at 5%.
Robust t-statistics in parentheses.
Concentration, Foreign Penetration and Competition Indicators
(changes over the period of analysis; in percent)
Competition and Bank Margins
(changes over the period of analysis)
Main results

• Consolidation and foreign penetration, if anything, led to more competition.

What is behind these results?
• Overpopulation of banks before consolidation ➔ concentration levels suboptimally low
• Product homogeneization (ATMs, PC banking, universal banks) eliminates non-competitive rents.

Both effects may still be at play ➔ More consolidation to come
Policy Discussion

Financial bias

• M&A and foreign entry triggered by financial concerns: What role did competition concerns play in the analysis of M&A?
• Is there a regulatory body and institutions that may cope with the problem should these concerns arise in the future?
• What weight, if any, is the competition authority given in the final decision?
Policy Discussion

Open questions

• How do consolidation & internationalization affect the distribution of credit
  o Disaggregation of loans and interest rate data according to variables such as sector, size, borrower’s location and risk class.
• Are some markets more collusion-prone than others?
  o Credit cards
  o Access to ATM networks
  o Location as a natural barrier: small towns and public banks
Policy Discussion

Open questions

• What is the relevant market?
  o Cross-elasticities ➔ Lack of reliable data ➔ Focus on regional (local) markets
  o Legal standards ➔ Trade-off between flexibility and legal contestability
  o Do we need a common benchmark?

• Coordination of policy actions
  o Balance between financial stability and pro-competition considerations
  o The Bank Law should spell out the precise form of coordination between the supervisory and competition agencies.
SESSION III:
COMPETITION IN THE
LATIN AMERICAN
POWER SECTOR
DESIGNING COMPETITIVE WHOLESALE ELECTRICITY MARKETS

FOR LATIN AMERICAN COUNTRIES

Prepared for the
First Meeting of the
Latin American Competition Forum

Paris: 7-8 April, 2003

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Designing Competitive Wholesale Electricity Markets for Latin American Countries

by

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March 29, 2003

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2 The conclusions put forward in this report are those of the author, and do not necessarily reflect the views of the IDB, the OECD, or Members of these organizations.

3 I would like to thank Jaime Millan for assistance and insights throughout the process of writing this report and for his very helpful comments on previous drafts.
Executive Summary

The purpose of this paper is to present a general framework for electricity market design in Latin American Countries (LACs) that addresses the current problems facing electricity supply industries (ESIs) in this region. The major issue addressed is what market rules, market structures, and legal and regulatory institutions are necessary to establish a competitive wholesale market that provides the maximum possible benefits to consumers consistent with the long-term financial viability of the ESI.

The paper first presents a theoretical foundation for analyzing the electricity market design problem. A generic principal-agent model is presented and its applicability to the electricity market design problem explained. It is then applied to illustrate the incentives for firm behavior under regulation versus market environments. The impact of government versus private ownership on firm behavior in both market and regulated environments is also addressed using this model. This discussion is used to guide our choices for the important lessons for electricity market design in developed countries and LACs.

Using the experiences from ESI reform in developed countries, the paper presents five essential features of a successful wholesale electricity market. The first is the need for a sufficient number of independent suppliers for a competitive market to be possible. Merely declaring the market open to competition will not result in new entry unless no single supplier is able to dominate the market. Second is a forward market for electricity where privately-owned firms are able to sell long-term commitments to supply electricity. This report argues that the conventional wisdom of establishing a competitive spot market first leading to a competitive forward market is an extremely expensive process in developed countries and is prohibitively expensive in developing countries. Third is the need for the active involvement of as many consumers of electricity as is economically feasible in the operation of the wholesale market. This involvement should occur both in the long-term and short-term market. In the short-term market, there must be a number of buyers willing to alter their consumption of electricity in response to short-term price signals. Fourth is the importance of a transmission network to facilitate commerce, meaning that the transmission network must have sufficient capacity so that all suppliers face significant competition. This implies a dramatically different approach to determining the quantity and magnitude of transmission network expansions in a market regime. The final lesson is the need to establish a credible regulatory mechanism as early as possible in the restructuring process. An important lesson from developed countries around the world is that the initial market design will have flaws. This implies the need for ongoing market monitoring to correct these flaws before they develop into disasters.

The paper then takes on the issue of the specific challenges to LAC restructuring. Rather than focus on the details of specific markets, the paper instead identifies a number of problems common to LACs and provides recommended solutions to each of these problems. A major theme of this section is a warning that short-term solutions to market design flaws can have long-term market efficiency costs. The paper identifies six major challenges to Latin American ESI restructuring. The first is related to the problem of introducing wholesale markets in systems dominated by hydroelectric capacity. This section also deals with the related issue of using cheap hydroelectric power as a way to keep electricity prices low and the risk of electricity shortages high. The second issue is concerned with the difficulties of establishing an active forward market for electricity in LACs. The third relates to the LAC-specific challenges associated with establishing an independent and regulatory body. The fourth addresses the
advisability of cost-based versus bid-based dispatch of generation units in LAC wholesale markets. The fifth is how to regulate the default provider retail electricity price in LACs. The final issue is the role for government versus private ownership in LACs.

The report closes with a proposed market design that should serve as a baseline market design for all LACs. Deviations from this basic design could be substantial depending on initial conditions in the industry and the country, but the ideal behind proposing this design is to have a useful starting point for all LAC restructuring processes.
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1. Introduction

One lesson from the past decade of electricity supply industry (ESI) reforms in developed countries is that it is easy to make extremely costly mistakes and very difficult to avoid making any mistakes. Wholesale market meltdowns have occurred in California and in New Zealand. All other countries with wholesale electricity markets have experienced sustained periods of very high prices not explainable by fuel or other input cost increases. Many of these episodes have overwhelmed the regulatory institution that oversees the wholesale market. These experiences suggest that the only thing a government considering ESI reform can be sure of is that mistakes will be made in the initial market design and that the regulatory institution will face a number of difficult challenges that it is not prepared to deal with.

Because the legal and regulatory institutions necessary for a competitive wholesale electricity market are less mature in Latin American Countries (LACs), one might expect successful power sector reform to be even more difficult in these countries. Further complicating this task is the fact that the pre-reform financial condition of the ESIs in most LACs is much worse than the pre-reform financial health of the ESIs in all of the developed countries that have restructured. The purpose of this paper is to present a framework for analyzing the electricity market design process in Latin American Countries that addresses the problems facing all ESIs, as well as those that are unique to countries in this region. The major issue addressed is: What market rules, market structures, and legal and regulatory institutions are necessary to establish competitive wholesale markets that provide the maximum possible benefits to consumers consistent with the long-term financial viability of ESIs in LACs?

This paper will first use outcomes from the past decade of ESI restructuring in the United States, Europe and Australia and New Zealand to identify the major challenges facing all
electricity market design processes. These challenges will then be placed in the LAC context. For example, the extreme dependence of many LACs on hydroelectric power makes the experience of hydro-dependent countries such as Norway and New Zealand particularly instructive. The paper will then identify the wholesale electricity market design problems unique to LACs. These problems and their importance to ESI reform in LACs will be identified with respect to the market structure and performance of the ESIs in five LACs that I visited as background for preparing this report: Brazil, Chile, Colombia, Honduras and Mexico.

The countries further along in this process such as Brazil, Chile and Colombia are used to identify problems that arise in the operation of a wholesale market and its regulatory oversight in LACs. The experiences of all of these countries provide useful background for my discussion of the impediments to the reform process in LACs. I will not address country-specific issues in this analysis of LAC reform.

Instead, the goal of this paper is to identify important dimensions of a successful ESI reform, emphasizing the special problems faced by LACs. I have broad aims for my analysis of the Latin American country experience. The first is finding the necessary safeguards to protect consumers from substantial economic harm associated with ESI in the short term. The second is to determine the optimal sequencing of ESI reform to maximize the likelihood that customers receive the greatest possible long-term benefits from ESI reform. My analysis is organized around five major themes. First is the need for a forward market for electricity where privately-owned firms are able to sell long-term commitments to supply electricity. I will argue that the conventional wisdom of first establishing a competitive spot market in order to foster an active forward market has proven to be an extremely expensive undertaking in developed countries.
Most likely, it is prohibitively expensive in developing countries. Experience from developed country ESI restructuring around the world has shown that the major source of supply-side benefits from industry restructuring is the competitive procurement of long-term energy commitments of sufficient magnitude and duration to allow suppliers to fund the construction of new generation facilities. The spread of wholesale forward markets throughout the US during the early 1980s led to new generation capacity investment decisions driven by purely economic factors. This has led to the vast majority new generation facilities having significantly lower operating costs than existing generation capacity. This paper suggests a market design process for LACs that maximizes the likelihood that a transparent and active forward market for electricity will form.

A second theme deals with the difficulties created by restructuring an ESI with significant dependence on hydroelectric capacity. All LACs with significant hydroelectric capacity have experienced energy shortages relative to demand at the prevailing retail price before, during, or after the transition to a wholesale market regime. Different from fossil fuel-based electricity systems, higher electricity prices do not increase the supply of the input energy source. Specifically, rainfall does not increase in response to higher electricity prices. This implies that the greater the share of electricity produced using hydroelectric capacity the larger is the potential risk of these events. Because most all of the hydroelectric capacity in LACs was constructed during the former state-owned monopoly regime, governments find it difficult to resist increasing this risk of shortages by overusing water during low rainfall years. This leads to

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artificially low wholesale electricity prices that discourage investment in fossil-fuel sources that would provide much-needed insurance against water shortages. This paper suggests a number of market rule, market structure and regulatory oversight changes to limit the incentives for inefficient use of water and increase the incentives for new investment in more reliable electricity sources.

The third theme emphasizes and elaborates on the need for the active involvement of as many consumers of electricity as is economically feasible in the operation of the wholesale market. Final consumers must be actively involved in both the long-term and short-term market. In this long-term market, this means allowing as many buyers as possible to make the long-term purchasing commitments from electricity suppliers necessary for them to finance generation capacity expansion. In the short-term market, this means having a number of buyers willing to alter their consumption in response to short-term price signals. Flexibility in consumption is key to increasing the competitiveness of short-term energy and ancillary services market. The ability to shift significant amounts of electricity demand across hours of the day or days of the week in response to price changes is far more important to limiting the market power of firms than is the ability to reduce consumption during all hours of the day in response to price changes.

The fourth theme is the importance of adequate transmission capacity to support a competitive wholesale market. Here I will make the distinction between a reliable transmission network to support a competitive wholesale market and a reliable transmission network to support a vertically integrated monopoly ESI. Because of the initial condition of the transmission network in most LACs, I will argue that this distinction has important implications for the design of the wholesale market and the role of the independent system operator.
The final theme is often overlooked and its importance the most underappreciated. This is the need for a credible regulatory mechanism as early as possible in the restructuring process. Spiller and Martorell (1996) argue this is a key factor in the success of ESI reform in Chile. As discussed above, all governments and regulators can be virtually certain that the initial wholesale market design will have flaws. This implies the need for ongoing market monitoring to correct these flaws before they develop into disasters. As the California electricity crisis demonstrates, even the most experienced regulator can make enormous mistakes. Even though regulation is an imperfect process it is most effective when the regulator has a reputation for technical and economic expertise, and independence from the government in power. Consequently, perhaps the most important challenge facing regulators in LACs is how to establish a reputation for technical and economic expertise so that as few decisions as possible are overturned on judicial review or even taken to judicial review. I will provide recommendations for solving this initial conditions problem in establishing a credible regulatory process that protects consumers from the exercise of market power and suppliers from the attempts of politicians to expropriate the value of their investments.

2. The Market Design Problem

There are two primary dimensions of the market design problem. The first is the extent to which market mechanisms versus regulatory processes are used to set the prices consumers pay. The second is the extent to which market participants are government versus privately owned. Given the technologies for producing and delivering electricity to final consumers in a country, the market designer faces two basic challenges. First is how to cause producers to supply electricity in both a technically and allocatively efficient manner. Technically efficient
production obtains the maximum amount of electricity for a given quantity of inputs, such as capital, labor, materials and input energy. Allocatively efficient production uses the minimum cost mix of inputs to produce a given level of output.

The second challenge is how to cause the simultaneous actions of all suppliers and retailers to set the lowest possible retail price consistent with the long-term financial viability of the industry. Consequently, the goal of the market design process is to devise mechanisms for compensating market participants for their actions, so that final consumers pay the lowest possible retail prices needed for the industry to sustain itself over the long-term. This involves choosing a point in the market versus regulation dimension and government versus private ownership dimension for each segment of the electricity supply industry.

Conceptually, the market designer chooses the number and sizes of each market participant and the rules for determining the revenues received by each market participant to maximize its objective function. There are two key constraints on the market designer’s optimization problem. The first is that once the market designer selects the rules for determining the revenues each market participant receives, each market participant will choose a strategy that maximizes his payoff given the rules set by the market designer. This constraint implies that the market designer must recognize that all market participants will maximize their profits given the rules the market designer selects. The second constraint is that each market participant must expect to receive from the compensation scheme chosen by the market designer more than their opportunity cost of participating in the ESI. The first constraint is called the individual rationality constraint because it assumes each market participant will behave in a rational (expected payoff-maximizing) manner. The second constraint is called the participation
constraint, because it implies that firms must find participation in the ESI more attractive than their next best alternative.

2.1. The Principal-Agent Problem

To make these features of the market design problem more concrete, it is useful to consider a very special case of this process—the generic principal-agent model. Here a single principal designs a compensation scheme for a single agent that maximizes the principal’s expected payoff, subject to the agent’s individual rationality constraint and a participation constraint. Let \( W(x,s) \) denote the payoff of the principal given the observable outcome of the interaction, \( x \), and state of the world, \( s \). The observable outcome, \( x \), depends on the agent’s action, \( a \), and the true state of the world. In general, \( x \) is written as \( x(a,s) \) to denote the fact that it depends on both of these variables.

Let \( V(a,y,s) \) equal the payoff of the agent given action taken by the agent, \( a \), the compensation scheme set by the principal, \( y(x) \), and the state of the world, \( s \). The principal’s action is to design the compensation scheme, \( y(x) \), a function that relates the outcome observed by the principal, \( x \), to the payment made to the agent.

With this notation, it is possible to define the two constraints facing the principal in designing \( y(x) \). The individual rationality constraint on the agent’s behavior is that it will choose its action, \( a \), to maximize its payoff \( V(a,y,s) \) (or the expected value of this payoff) given \( y(x) \) and \( s \) (or the distribution of \( s \)). The participation constraint implies that the compensation scheme \( y(x) \) set by the principal must allow the agent to achieve at least its reservation level of utility or expected utility \( V^* \). There are two basic versions of this model. The first assumes that the agent
does not observe the true state of the world when it takes its action, and the other assumes the agent observes \( s \) before taking its action. In the first case, the agent’s choice is:

\[
a^* = \arg\max_a \mathbb{E}_s(V(a, y(x), s)),
\]

where \( \mathbb{E}_s(.) \) denotes the expectation with respect to the distribution of \( s \). The participation constraint is \( \mathbb{E}_s(V(a^*, y(x^*), s)) > V^* \), where \( x^* = x(a^*, s) \). In the second case, the agent’s problem is:

\[
a^*(s) = \arg\max_a V(a, y(x(s), s)),
\]

and the participation constraint is \( V(a^*(s), y(x^*(s), s)) > V^* \) for all \( s \), where \( x^* = x(a^*(s), s) \) in this case.

An enormous number of bilateral economic interactions fit this generic principal-agent framework. Examples include the client-lawyer, patient-doctor, lender-borrower, employer-worker, and firm owner-manager interactions. A client seeking legal services designs a compensation scheme for her lawyer that depends on the observable outcomes (such as the verdict in the case) that causes the lawyer to maximize the client’s payoff function subject to the constraint that the lawyer will take actions to maximize his payoff given this compensation scheme and the fact that the lawyer must find the compensation scheme sufficiently attractive to take on the case. Another example is the firm owner designing a compensation scheme that causes the manager to maximize the value of the owner’s assets subject to the constraint that the firm manager will take actions to maximize her payoff given the scheme is in place and the fact that it must provide a higher payoff to the manager than she could receive elsewhere.
2.2. Applying the Principal-Agent Model to the Market Design Process

An example of this principal-agent model relevant to ESI restructuring is the regulator-utility interaction. In this case, the regulator designs a scheme for compensating the vertically-integrated monopoly for the actions that it takes recognizing the fact the once this regulatory mechanism is put in place the utility will attempt to maximize its payoff function given this regulatory mechanism. In this case, y(x), would be the mechanism used by the regulator to compensate the firm for its actions. For example, under a simple *ex post* cost-of-service regulatory mechanism, x would be the output produced by the firm, and y(x) would be the firm’s total cost of providing this output. Under a price cap regulatory mechanism, x would be the change in the consumer price index for the United States (US) economy and y(x) would be the total revenues the firm receives, assuming it serves all demand at the price set by this regulatory mechanism. The incentives for firm behavior created by any potential regulatory mechanism can be studied within the context of this principal-agent model.

This modeling framework is also useful for understanding the incentives for firm behavior in a market environment. A competitive market is another possible way to compensate a firm for the actions that it takes. For example, the regulator could require this firm and other firms to bid their willingness to supply as a function of price and only chose the firms with bids below the lowest price necessary to meet the aggregate demand for the product. In this case x can be thought of as the firm’s output and y(x) the firm’s total revenues from producing x and being paid this market-clearing price per unit sold. Viewed from this perspective, markets are simply another regulatory mechanism for compensating a firm for the actions it takes.

It is well known that profit-maximizing firms participating in a competitive market have a strong incentive to produce their output in an technically and allocatively efficient manner.
However, it is also well known that profit-maximizing firms have no unilateral incentive to pass on these minimum production costs in the price they charge to consumers. It is only when competition among firms is sufficiently fierce that this will occur.

Economic theory provides conditions under which a market will yield an optimal solution to the problem of causing the suppliers to provide their output to consumers at the lowest possible price. One of these conditions is the requirement that suppliers are atomistic, meaning that all producers believe they are so small relative to the market that they have no ability to influence the market price through their actions. Unfortunately, this condition is unlikely to hold for the case of electricity given the size of most market participants before the reform process starts. These firms recognize that if they remain large, they will have the ability to influence both market and political outcomes through their unilateral actions. Moreover, the minimum efficient scale of electricity generation, transmission and distribution is such that it is unlikely to be least cost for the industry as a whole to separate electricity production into a large number of extremely small firms. So there is an underlying economic justification for allowing these firms to remain large, although not as large as they would like to be. This is one reason why the electricity market design process is so difficult. This problem is particularly acute for small Latin American countries such as Honduras and other small Central American countries without substantial transmission interconnections with neighboring countries.

This principal-agent model is also useful for understanding why industry outcomes can differ so dramatically depending on whether the industry is government or privately owned. First, the objective function of the firm’s owner differs across the two regimes. Under government ownership all of the citizens of the country are shareholders. These owners are also
severely limited in the sorts of mechanisms they can design to compensate the management of the firm. For example, there is no liquid market for selling their ownership stake in this firm. It is virtually impossible for them to remove the management of this firm. They don’t even have a legal right to their ownership stake in the firm. In contrast, a shareholder in a privately-owned firm has a clearly defined and legally enforceable property right than can be sold in a liquid market. If they own enough shares in the firm or can get together with other large shareholders, they can remove the management of the company. Finally, by selling their shares, they can severely limit the ability of the company to raise capital for new investment. In contrast, the government-owned firm obtains the funds necessary for new investment primarily through the political process.

This discussion illustrates the point that despite the fact that both the government-owned and privately-owned firm have access to exactly the same technologies to generate, transmit and distribute electricity, dramatically different industry outcomes in terms of the mix of generation capacity installed, the price consumers pay and the amount they consume can occur because the schemes for compensating each firm’s management, y(x), differ; the owners of the two firms have different objective functions and different sets of feasible mechanisms for compensating their management. Applying the generic principal-agent model to the issue of government versus private ownership implies that different industry outcomes should occur if a government-owned vertically-integrated geographic monopolist is asked to provide electricity to the same geographic area that a privately-owned geographic monopolist previously served, even if both monopolists face the same regulatory mechanism for setting the prices they charge to retail consumers.
Applying the logic of the principal-agent model at the level of the regulator-firm interaction as opposed to the firm owner-management interaction implies an additional source of differences in market outcomes if, as is often the case, the government-owned monopoly faces a different regulatory process than the privately-owned monopoly.

In the competitive market context, the extent of government participation in the industry creates an additional source of differences in industry outcomes. Because the nature of the principal-agent relationship between the firm’s owner and its management is different under private ownership versus government ownership, an otherwise identical government-owned firm can be expected to behave differently in a market environment from how this firm would behave if it were privately owned. This difference in firm behavior due to its ownership structure yields different market outcomes depending on the ownership status (government versus privately-owned) of the firms in the market.

Consequently, in its most general form, the market design problem is composed of multiple layers of principal-agent interactions where the same principal can often interact with a number of agents. For example, in the case of a competitive wholesale electricity market, the same regulator interacts with all the firms in the ESI. The market designer must recognize the impact of all of these principal-agent relationships in designing an electricity supply industry to achieve his market design goals. The vast majority of electricity market design failures result from ignoring the individual rationality constraints implied by both the regulator-firm and firm owner-management principal-agent relations. The individual rationality constraint most often ignored is that privately-owned firms will maximize their profits from participating in a wholesale electricity market. It is important to emphasize that this individual rationality
constraint holds whether or not the privately-owned profit-maximizing firm is one of a number of firms in a market environment or a single vertically integrated monopolist. The only difference between these two environments is the set of actions that the firm is legally able to take to maximize its profits.

2.3. Individual Rationality Under a Market Mechanism versus a Regulatory Process

The set of actions available to firms in a market environment is different from those available to it in a regulated-monopoly environment. For example, under a market mechanism firms can increase their profits by both reducing the costs of producing a given level of output or by increasing the price they charge for this output. In contrast, under the regulated monopoly environment, the firm does not set the price it receives for its output. Instead, the legal contract between the firm and regulator requires the firm to supply all that is demanded at a price set by the regulator in exchange for the firm being given a legal monopoly to supply a given geographic area and the opportunity to earn a reasonable rate of return on their investment from the prudent operation of their facilities and selling their output at the price set by the regulator.

Defining the incentive constraint for a privately-owned firm operating in a competitive electricity market is relatively straightforward. Because the firm would like to maximize profits, it has a strong incentive to produce any amount of output at minimum cost. In other words, the firm will produce in a technically and allocatively efficient manner. As discussed above, the firm has little incentive to set a price that only recovers these production costs. In fact, the firm would like to take actions to raise the price it receives above both the average and marginal cost of producing its output. Profit maximizing behavior implies that the firm will choose a price or level of output such that the increase in revenue it earns from supplying one more unit equals the
additional cost that it incurs from producing one more unit of output. This is the same thing as saying that the firm will withhold output from the market until the cost savings from withholding one more unit of output is less than or equal to the total revenue loss from withholding that unit of output from the market. This is a more general restatement of a standard result from profit-maximizing behavior when the firm has the ability to influence the market price: The firm will produce at the point that the marginal revenue from selling an additional unit of output equals the marginal cost of producing that unit of output.

Figure 1 provides a simple model of the unilateral profit-maximizing behavior of a supplier in a bid-based electricity market. Let $Q_d$ equal the level of market demand for a given hour and $SO(p)$ the aggregate willingness to supply as a function of the price of all other market participants besides the firm under consideration. Figure 1(a) plots the inelastic aggregate demand curve and the upward sloping supply of all other firms besides the one under consideration. Figure 1(b) subtracts this aggregate supply curve of all other market participants from the market demand to produce the residual demand curve faced by this supplier, $DR(p) = Q_d - SO(p)$. This panel also plots the marginal cost curve for this supplier, as well as the marginal revenue curve associated with $DR(p)$. The intersection of this marginal revenue curve with the supplier’s marginal cost curve yields the profit-maximizing level of output and market price for this supplier given the bids submitted by all other market participants. This price-quantity pair is denoted by $(P^*, Q^*)$ in Figure 1(b). Profit-maximizing behavior by the firm implies the following relationship between the marginal cost at $Q^*$, which I denote by $MC(Q^*)$, and $P^*$ and $\varepsilon$, the elasticity of the residual demand at $P^*$:

$$\frac{P^* - MC(Q^*)}{P^*} = - \frac{1}{\varepsilon},$$

(1)
where \(\delta = DR(P^*)^*(P^*/DR(P^*))\). Because the slope of the firm’s residual demand at this level of output is finite, the market price is larger than the supplier’s marginal cost. The price-quantity pair associated with the intersection of DR(p) with the supplier’s marginal cost curve is denoted \((P^c, Q^c)\). It is important to emphasize that even though the price-quantity pair \((P^c, Q^c)\) is often called the competitive output level, producing at this level is not unilateral profit-maximizing for the firm if it faces a downward sloping residual demand curve. This is another way of saying that price-taking behavior—acting as if the firm had no ability to impact the market price—is never individually rational. It will only occur as an equilibrium outcome if competitive conditions in the market are particularly fierce.

Figure 1(a)-(b) illustrates the essential difference between the firm’s unilateral profit-maximizing level of output when it has the ability to influence the market price through its own actions and its profit-maximizing level output when the supplier believes it has no ability to influence the market price. The supplier withholds output from the market because it knows that by doing so, it raises the price that it receives for all the units it does sell. The firm continues to withhold output from the market until the cost reduction from withholding an additional unit of output from the market is exactly balanced by the revenue reduction the supplier experiences from withdrawing that unit of output from the market. In contrast, a price-taking firm produces at the point that marginal cost associated with an additional unit of output is equal to the willingness to pay of consumers for that additional unit of output.

A firm that influences market prices as shown in Figure 1(a)-(b) is said to be exercising its unilateral market power. A firm possesses unilateral market power if it has the ability to raise the market price through its unilateral actions and profit from this price increase. We
would expect all privately-owned profit-maximizing firms to behave in this manner. This is equivalent to saying that the firm satisfies its individual rationality constraint. I would like to emphasize that as long as a supplier faces a residual demand curve with any upward slope, it has the ability to exercise unilateral market power.

Figure 1(c)-(d) illustrates the extremely unlikely case that the supplier faces an infinitely elastic residual demand curve and therefore finds it in its unilateral profit-maximizing to produce at the point that the market price is equal to its marginal cost. This point is denoted \((P^{**}, Q^{**})\). The supplier faces an infinitely elastic residual demand curve because the SO(p) curve is infinity elastic at \(P^{**}\), meaning that all other firms besides this supplier are able to produce all that is demanded if the price is above \(P^{**}\). Note that even in this extreme case the supplier is still producing at the point where the marginal revenue curve associated with DR(p) crosses its marginal cost curve. The only difference is that this marginal revenue curve is also equal to its average revenue curve, because DR(p) is infinitely price elastic, meaning that it is a horizontal line. Even in this extreme case, the firm continues to set prices that satisfy equation (1). However, because the slope of the firm’s residual demand curve is infinite, \(1/P\), and is equal to zero so that equation (1) implies producing at the point where price equals marginal cost.

Figure 1 demonstrates that the individual rationality constraint in the context of a market mechanism is equivalent to the supplier exercising all available unilateral market power. Even in the extreme case of an infinitely elastic residual demand curve, the supplier still exercises all available unilateral market power. However, in this case the supplier cannot increase its profits by withholding output that can be produced at a marginal cost less than market price, because the
A firm possesses no unilateral market power, which means that it is unable to raise market price by these actions.

Individual rationality in the context of a regulatory process still implies that the firm will maximize profits given the mechanism for compensating it set by the regulator. However, in this case the firm is usually unable to set the price it charges consumers or set the level of output it is willing to supply. Consequently, the firm must take more subtle approaches to maximizing its profits because the regulator sets the output price and requires the firm to supply all that is demanded at this regulated price. In this case the individual rationality constraint can imply that the firm will produce its output in a technically or allocatively inefficient manner because of how the regulatory process sets the price that the firm is able to charge. For example, the well-known Averch and Johnson (1962) model of cost-of-service regulation assumes that the regulated firm produces its output using capital, $K$, and labor, $L$, yet the price the regulator allows the firm to charge for capital services in setting its output price is greater than the actual price the regulated firm pays for capital services. This implies that a profit-maximizing firm facing the pricing-setting constraint implied by this regulatory process will produce its output using capital more intensively relative to labor than would be the case if the regulatory process did not allow a different price for capital services from the one the firm actually pays. The Averch and Johnson model illustrates a very general point associated with the individual rationality constraint in regulated settings: It is virtually impossible to design a regulatory mechanism that causes a privately-owned profit-maximizing firm to produce in a least-cost manner.

The major reason why the regulator is unable to set prices that achieve the market designer’s goal of least-cost production is that the regulated firm usually knows more about its
production process or demand than the regulator. Although both the firm and regulator have substantial expertise in the technology of generating, transmitting and distributing electricity to final consumers, the firm has a much better idea of precisely how these technologies are implemented. This informational asymmetry leads to disputes between the firm and the regulator over the minimum cost mode of production to serve the firm’s demand. Consequently, the regulator can never know the minimum cost mode production to serve final demand.

Moreover, there are laws against the regulator confiscating the firm’s assets through the prices it sets, and the firm is aware of this fact. This creates the potential for disputes between the firm and the regulator over the price level that provides strong incentives for least-cost production, but does not confiscate the firm’s assets. All governments recognize this fact and allow the firm the opportunity to subject the regulator to judicial review of any decision by the regulator about the level of the firm’s price. To avoid the expense and potential loss of credibility of a judicial review, the regulator may instead prefer to set a slightly higher regulated price to guarantee that the firm will not appeal this decision. This aspect of the regulatory process reduces the firm’s incentive to produce its output in a least-cost manner.

Wolak (1994) studies the regulator-utility interaction between California water utilities and the California Public Utilities Commission. He specifies and estimates an econometric model of this principal-agent interaction and quantifies the magnitude of the distortions from minimum cost production induced by the informational asymmetry between firm and the regulator about one aspect of the firm’s production process. Even for the very straightforward technology of providing local water delivery services where the extent of informational asymmetries between the firm and the regulator are likely to be small, Wolak (1994) finds that
actual production costs are between 5% and 10% higher than they would be under least cost production. This result suggests that the deviations from least cost production in the electricity supply industry are likely to be much greater because the extent of the informational asymmetries between the firm and regulator about the firm’s production process are much greater.

The market designer does need to worry about the impact of informational asymmetries on a firm’s mode of production in a competitive market. There is no legal requirement that market mechanism set the price a firm receives for its output above some minimum level. Different from regulated environments, there are no laws against a competitive market setting prices that confiscate a firm’s assets. Any firm that is unable to cover its costs of production at the market price must eventually exit the industry. Firms cannot file for a judicial review of the prices set by a competitive market. Competition among firms leads high-cost firms to exit the industry and be replaced by lower cost firms. Contrary to the regulated regime, there is no need to determine if a firm’s incurred production costs are the result of the least-cost mode of production. If the market is sufficiently competitive and has low barriers to entry, then any firm that is able to remain in business must be producing its output at or close to minimum cost. Otherwise a more efficient firm could enter profitably under the price of this firm. The risk that firms not producing in a least-cost manner will be forced to exit creates much stronger incentives for least-cost production than would be the case under regulation, where the firm recognizes that the regulator does not know the least-cost mode of production and can exploit this fact through less technically and allocatively inefficient production that may ultimately yield the firm higher profits.
This difference in the incentives for least-cost production under regulation versus a market mechanism reinforces the impact of individual rationality constraints on firm behavior under a competitive market regime versus a regulated monopoly regime. In the case of a market mechanism the individual rationality constraint provides strong incentives for each firm to produce its output at least cost, but little, if any, incentive to price this output to only recover production costs. In fact, depending on the extent of competition the firm faces, it may have an extremely strong incentive to price its output vastly in excess of the marginal cost of producing the most expensive unit sold.

For the case of the regulated monopoly regime, the individual rationality constraint implies that the firm does not produce its output in a least-cost manner. However, because the regulator sets the price the firm is able to charge, this price only recovers the firm’s incurred costs.

Consequently, the advantage of regulation is that the market price should not deviate significantly from the average cost of producing the firm’s output. However, the firm has very little incentive to make its actual mode of production equal to the least-cost mode of production. In contrast, the competitive regime provides very strong incentives for firms to produce in a least-cost manner, but unless the market is competitive, little incentive to pass-on these low production costs in the prices charged to consumers. This discussion shows that the potential exists for consumers to pay lower prices under either regime. Regulation may be favored if the market designer is able to implement a regulatory process that is particularly effective at causing the firm to produce in a least-cost manner, or if the market designer is unable to establish a sufficiently competitive market so that prices are vastly in excess of the marginal cost of
producing the last unit sold. Competition is favored if regulation is particularly ineffective at providing incentives for least-cost production or competition is particularly fierce. Nevertheless, in making the choice between market mechanisms and regulatory mechanisms the market designer must make a choice between two imperfect worlds. Which mechanism should be selected depends on which one maximizes the market designer’s objective function.

2.4. Individual Rationality Constraint Under Government versus Private Ownership

The individual rationality constraint for a government-owned firm is difficult to characterize for two reasons. First, it is unclear what control the firm’s owners are able to exercise over the firm’s management and employees. Second, it is also unclear what the objective function of the firm’s owners is. For the case of privately-owned firms, there are well-defined answers to both of these questions. The firm’s owners have clearly-specified legal rights and their ownership shares can be bought and sold by incurring modest transaction costs. Because, keeping all other things equal, investors would like to earn the highest possible return on their investments, shareholders would like the firm’s management to maximize the risk-adjusted rate of return on equity. This implies that the firm’s owners will attempt to devise a compensation scheme for the firm’s management that causes them to maximize profits. In comparison, it is unclear if the government wants its firms to maximize profits. Earning more revenues than costs is clearly a priority, but once this is accomplished the government would most likely want the firm to pursue other goals.

This lack of clarity in both the objective function of the government for the firms it owns and the set of feasible mechanisms the government can implement to compensate the firm’s management has a number of implications. The first is that it is unlikely that the management of
a government-owned firm will produce and sell its output in a profit-maximizing manner. Different from a privately-owned firm, its owners are not demanding the highest possible return on their equity investments in the firm. However, because a government-owned firm’s management has little incentive to maximize profits, it also has little incentive to produce in a least-cost manner. By the same token, this logic also implies that a government-owned firm has little incentive to attempt to raise prices beyond the level necessary to cover its total costs of production. The second implication of this lack of clarity in objectives and feasible mechanisms is that the firm’s management now has the flexibility to pursue a number of other goals besides minimizing the total cost of producing the output demanded by consumers.

Viewed from the perspective of the overall market design problem, one advantage of government-ownership is that the pricing goals of the firm do not directly contradict the market designer’s goal of the lowest possible prices consistent with the long-term financial viability of the industry. In the case of private-ownership, the pricing incentives of the firm’s management directly contradict the interests of consumers. As discussed in the previous section, the firm’s management wants to raise prices above the marginal cost of the last unit produced, because of the desire of the firm’s owner to receive the highest possible return on its investment in the company. The desire of privately-owned firms to maximize profits leads to pricing incentives that directly contradict the goals of the market design process. Unless the firm faces sufficient competition from other suppliers, which from the discussion of Figure 1 is equivalent to saying that the firm faces a sufficiently elastic residual demand curve, this desire to raise the market price will yield market outcomes that cause significant harm to consumers.
However, it is important to emphasize that prices set by a government-owned firm may cause at least as much harm to consumers as prices that reflect the exercise of unilateral market power if the incentives for least-cost production by the government-owned firm are sufficiently muted and the firm is required to set a price that at least recovers all of its incurred production costs. Although these prices may appear more benign because they only recover the actual costs incurred by the government-owned firm, they are in fact more harmful from a societal welfare perspective than the same level of prices set by a privately-owned firm. This is because the privately-owned firm has a strong incentive to produce in a technically and allocatively efficient manner and any positive difference between total revenues paid by consumers and the minimum cost of producing the output sold is economic profit or producer surplus. However, for the case of the government-owned firm there is another reason why the firm is required to raise its price. That is because it is producing in a technically and allocatively inefficient manner, which is socially wasteful and therefore yields a reduced level of producer surplus relative to the case of a privately-owned firm. Because both outcomes, by assumption, have consumers paying the same price, the level of consumer surplus is unchanged across the two ownership structures, so that the level of total surplus is reduced as a result of government-ownership.

Figure 2 provides a graphical illustration of this point. The step function labeled $MC_p$ is the incurred marginal cost curve for the privately-owned firm and the step function labeled $MC_g$ is the incurred marginal cost curve for the government-owned firm. I make the distinction between incurred and minimum cost to account for the fact that the management of the government-owned firm has less of an incentive to produce at minimum cost than does the privately-owned firm. In this example, I assume the reason for this difference in marginal cost
curves is that the government-owned firm uses twice as many units of each input to produce the same level of output as the privately-owned firm. Suppose that the profit-maximizing level of output for the privately-owned firm given the residual demand curve plotted in Figure 2 is $Q^\ast$, with a price of $P^\ast$. Suppose the government-owned firm behaves as if it were a price-taker given its marginal cost curve and this residual demand curve and assume that this price is also equal to the firm’s average incurred cost at $Q^\ast$, $AC(Q^\ast)$. I have drawn the figure so that the intersection of the marginal cost curve of the government-owned firm with this residual demand curve occurs at the same price and quantity pair. However, as noted above the government-owned firm uses twice as much of society’s scarce resources to produce $Q^\ast$ as the privately-owned firm. Consequently, the additional benefit that society receives from having the privately-owned firm produce the good, even though it is exercising significant unilateral market power, is the shaded area between the two marginal cost curves in Figure 2. This example demonstrates that even though the privately-owned firm exercises all available unilateral market power, if the incentives for efficient production by government-owned firms are sufficiently muted, it may be preferable from the market designer’s and society’s perspective to tolerate some exercise of unilateral market power, rather than adopt a regime with government-owned firms setting prices equal to an extremely inefficiently incurred marginal cost or average cost of production.

The example given in Figure 2 may seem extreme, but there are a number of reasons why it is reasonable to believe that a government-owned firm faces far less pressure from its owners to produce in a least-cost manner relative to its privately-owned counterpart. For example, poorly run privately-owned companies can go bankrupt. If a firm’s creditors are not paid, they can demand to have the firm liquidate its assets to pay them. If a firm consistently earns
revenues less than its production costs, the firm’s owners and creditors will force the firm to liquidate its assets and exit the industry. The experience from both developed and developing countries is that poorly run government-owned companies rarely go out of business. Governments can and almost always do fund unprofitable companies from general tax revenues. Even in the United States, there are a number of examples of persistently unprofitable government-owned companies receiving subsidies long after it is clear from all independent observers that these firms should liquidate their assets and exit the industry. Because government-owned companies have this additional source of funds to cover their incurred production costs, they have significantly less incentive to produce in a least-cost manner.

3. Lessons for Designing a Competitive Wholesale Market in Developed Countries

Although there have been some highly publicized wholesale electricity market design failures in developed countries, there have also been a number of wholesale market design successes from ESI restructuring processes over the past fifteen years. This section will describe the important positive lessons from these reforms. This involves describing five essential initial conditions necessary to have a competitive wholesale electricity market. Because countries have and will continue to implement wholesale markets without these initial conditions in place, I will then describe a number of safeguards that limit the potential harm to consumers from implementing ESI reforms with less-than-optimal initial conditions. I will also discuss the long-term implications of these safeguards, because many of them provide short-term protection, but hinder long-term market efficiency.
3.1. **Essential Features of a Competitive Wholesale Market**

As has been emphasized by a number of observers, spot electricity markets are extremely susceptible to the exercise of unilateral market power. Borenstein, Bushnell and Wolak (2002, hereafter BBW) present estimates of the extent of unilateral market power exercised in the California electricity market over the period June 1998 to October 2000. Joskow and Kahn (2002) perform a similar analysis that focuses on the events of the summer of 2000 in the California market and the issue of withdrawing capacity from the market to exercise unilateral market power. Bushnell and Saravia (2002) compare the extent of unilateral market power exercised in the California market to that in the PJM (portions of Pennsylvania, New Jersey and Maryland as well as Delaware and Washington, D.C.) and ISO-New England wholesale markets. The major conclusion from this three-market study is that unilateral market power is common to all of these wholesale markets, particularly during system conditions when the demand for electricity is sufficiently high that a large fraction of the within-control-area generating capacity is needed to meet this demand.

As discussed in Section 2, it is impossible to eliminate the incentive that suppliers in a competitive electricity market have to exercise unilateral market power. The best that a market designer can hope to do is reduce the incentive that a firm has to exercise this unilateral market power. Using the framework of Section 2, this means the market designer must recognize the individual rationality constraint that the firm will maximize profits given the market rules set by the market designer and actions taken by the firm’s competitors. As the discussion of Figure 1 demonstrates, the market designer reduces the incentive the firm has to exercise unilateral market power by facing the firm with a residual demand curve that is as elastic as possible. Although I do not expect the firm’s desire to maximize profits to be diminished by facing it with a more
elastic residual demand curve, as Figure 1 demonstrates, the more elastic the supplier’s residual demand curve, the less the firm’s unilateral profit-maximizing actions are able to raise the market-clearing price. Consequently, the goal of designing a competitive electricity market is straightforward: face all suppliers with as elastic as possible residual demand curves during as many hours of the year as possible.

Wolak (2003) presents evidence consistent with this market design goal. Using bid data from the California Independent System Operators’s (CAISO) real-time electricity market, he computes, \( \frac{1}{\epsilon_{jh}} \), the elasticity of the hourly residual demand curve for hour \( h \) facing supplier \( j \) evaluated at the hourly market-clearing price for each of the five large in-state suppliers to the California electricity market—AES/Williams, Duke, Dynegy, Mirant and Reliant—for the period June 1 to September 30 for 1998, 1999 and 2000. Consistent with the market-wide estimates of the extent of unilateral market power exercised presented in BBW, Wolak (2003) demonstrates that for all of these suppliers the average hourly value of \( \frac{1}{\epsilon_{jh}} \) was higher in 2000 relative to 1998 and 1999. This result implies that the ability of each of these five suppliers to raise market prices by bidding to maximize their profits from selling electricity in the CAISO’s real-time market was much greater in 2000 relative to the previous two years. The average hourly value of \( \frac{1}{\epsilon_{jh}} \) in 1998 was somewhat higher than the same value in 1999, indicating the unilateral profit-maximizing actions of suppliers to the California market in 1999 were less able to raise market prices than in 1998. This result is consistent with the market-wide estimates of the extent of unilateral market power computed in BBW for 1998 versus 1999.

There are five primary mechanisms for increasing the elasticity of the residual demand curve faced by a supplier in a wholesale electricity market. The first is divestiture of capacity
owned by this firm into a larger number of independent suppliers. Second is the magnitude and
distribution across suppliers of financial forward contracts to supply electricity to load-serving
entities. Third is the extent to which final consumers are active participants in the wholesale
electricity market. Fourth is the extent to which the transmission network has sufficient capacity
to deliver electricity to all locations in the transmission network so that each firm faces sufficient
competition from other suppliers. The last is the extent to which regulatory oversight of the
wholesale market provides strong incentives for all market participants to fulfill their contractual
obligations and obey the market rules. We now discuss each of these mechanisms for increasing
the elasticity of the residual demand curve facing a supplier.

3.1.1. Divestiture of Suppliers

To understand how the divestiture of a given amount of capacity into a larger number of
independent suppliers can impact the slope of the residual demand a firm faces, consider the
following simple example. Suppose there are ten equal-sized firms, each of which owns 1,000
MW of capacity and that the total demand in the hourly wholesale market is equal to 9,500
MWh. Each firm knows that at least 500 MW of its capacity is needed to meet this demand,
regardless of the actions of its competitors. Specifically, if the remaining nine firms bid all 1,000
MW of their capacity into the market, the tenth firm has a residual demand of at least 500 MWh
at every bid price. Mathematically, this means the value of the residual demand facing the firm,
$DR(p)$, is positive at $p_{\text{max}}$, the highest possible bid price that a supplier can submit. When $DR(\ p_{\text{max}}) > 0$, the firm is said to be pivotal, meaning that at least $DR(\ p_{\text{max}})$ of its capacity is needed
to serve demand. Figure 3 provides an example of this phenomenon. Let $SO_1(p)$ represent the
bid supply curve of all other firms besides the firm under consideration and $Q_d$ the level of
demand. Figure 3(b) shows that the firm is pivotal for \( DR_1(p_{\text{max}}) \) units of output, which in this example is equal to 500 MWh. In this circumstance, the firm is guaranteed total revenues of at least \( DR_1(p_{\text{max}}) \cdot p_{\text{max}} \), which it can achieve by bidding all of its capacity in at \( p_{\text{max}} \).

To see the impact on a firm’s residual demand curve from requiring it to sell capacity, suppose that the firm in Figure 3 was forced to sell off 500 MW of its capacity to a new entrant to the market. This implies that the maximum supply of all other firms is now equal to 9,500 MWh, the original 9,000 MWh plus the additional 500 MWh divested, which is exactly equal to the level of demand. This means that the firm is no longer pivotal because, its residual demand is equal to zero at \( p_{\text{max}} \). Figure 3(a) draws a new bid supply curve of all other market participants besides the firm under consideration, \( SO_2(p) \). For every price, I would expect this curve to lie to the right of \( SO_1(p) \), the original bid supply curve. Figure 3(b) plots the resulting residual demand curve for the firm using \( SO_2(p) \). This residual demand curve, \( DR_2(p) \), crosses the vertical axis at \( p_{\text{max}} \), so that the elasticity of the residual demand curve facing the firm is now finite for all feasible prices. In contrast, for the case of \( DR_1(p) \), the residual demand pre-divestiture, the firm faces an inelastic demand of at least \( DR_1(p_{\text{max}}) \) for all prices in the neighborhood of \( p_{\text{max}} \).

This is an example of a general phenomenon associated with structural divestiture: the firm now faces a more elastic residual demand curve, which causes it to bid more aggressively into the wholesale electricity market. This more aggressive bidding by the divested firm then presents all other suppliers with flatter residual demand curves, so they now find it optimal to submit flatter bid supply curves, which implies a flatter residual demand curve for the firm under consideration. Even in those cases when divestiture does not stop a supplier from being pivotal, the residual demand curve facing the firm that has less capacity should still be more elastic.
because more supply has been added to $\text{SO}(p)$, the aggregate bid supply function of all other firms besides the firm under consideration. This implies a smaller value for the firm’s residual demand at all prices, as shown in Figure 3.

3.1.2. Forward Contracts and Vesting Contracts

Much has been made of the importance of forward contracts to manage the risk of spot price volatility. However, in electricity markets forward contracts serve an even more important purpose. They make it profit-maximizing for suppliers to bid more aggressively in the spot electricity market. This point is demonstrated in detail in Wolak (2000).

To understand the impact of forward contract commitments on supplier bidding behavior it is important to understand what a forward contract obligates a supplier to do. Usually forward contracts are signed between suppliers and load-serving entities. These contracts usually give the load-serving entity the right to buy a fixed quantity of energy at a given location at a negotiated price. Viewed from this perspective, a forward contract for the supply of electricity obligates the seller to provide insurance against price volatility at a pre-specified location in the transmission network for a pre-specified quantity of energy. The seller of the forward contract does not have to produce energy from its own generating facilities to provide this price insurance to the purchaser of the forward contract. However, one way for the seller of the forward financial contract to avoid any price risk is to provide the contract quantity from its own generation units. This guarantees the firm will earn the difference between the forward contract price, $\text{PC}$, and its marginal cost, $\text{MC}$, times its contract quantity, $\text{QC}$, in variable profits (revenues in excess of variable costs) from the forward contract. This logic leads to another extremely important point about forward contracts that is not often fully understood by
participants in a wholesale electricity market. Delivering electricity from a seller’s own generation units is not always a profit-maximizing strategy given the supplier’s forward contract obligations. This is also the reason why forward contracts provide strong incentives for suppliers to bid more aggressively (flatter bid supply functions) into the spot electricity market, which then leaves all other suppliers with more elastic residual demand curves.

To see this point, consider the following example taken from Wolak (2000). Let $D_R(p)$ equal the residual demand curve faced by the supplier with the forward contract obligation $QC$ at a price of $PC$ and a marginal cost of $MC$. For simplicity, I assume that the firm’s marginal cost curve is constant, but this simplification does not impact any of the conclusions. The variable profits the firm earns during this hour are equal to

$$B(p) = (D_R(p) - QC)(p - MC) + (PC - MC)QC.$$ (2)

The first term in (2) is equal to profit or loss the firm earns from buying or selling energy in the spot market at a price of $p$. The second term in (2) is the variable profits the firm earns from selling $QC$ units of energy at $PC$. As discussed in Section 2, the firm’s objective is to bid into the spot market in order to set a market price, $p$, that maximizes $B(p)$. Because forward contracts are, by definition, signed in advance of the operation of the spot market, from the perspective of bidding into the spot market, the firm treats $(PC - MC)QC$ as a fixed payment it will receive regardless of the spot price, $p$. Consequently, the firm can only impact the first term through its bidding behavior in the spot market.

Because $D_R(p)$ is downward sloping, it is possible if the market price is high, the firm will sell less energy than its forward contract commitments. However, if the price at which $D_R(p)$ is greater than $QC$ is more than $MC$, the firm earns losses on the difference between $QC$
and DR(p) times the difference between p and MC. Therefore, a supplier with a forward contract obligation of QC, has a very strong incentive to submit bids that set prices below its marginal cost if it believes that DR(p) will be less than QC. This is because the supplier is effectively a net buyer of QC - DR(p) units of electricity, because it has already sold QC units in a forward contract. Consequently, it is profit-maximizing for the firm to want to purchase this net demand at the lowest possible price. It can either do this by producing the power from its own units at a cost of MC or purchasing the additional energy from the spot market. If the firm can push the market price below its marginal cost, then it is profit-maximizing for the firm to meet its forward obligations by purchasing power from the spot market rather than paying MC to produce. Consequently, if suppliers have substantial forward contract obligations, then they have extremely strong incentives to keep market prices very low until the level of energy they actually produce is greater than their forward contract quantity.

The competition-enhancing benefits of forward contract commitments from suppliers can be seen more easily by defining $DR_C(p) = DR(p) - QC$, the net-of-forward contract residual demand facing the firm and $F = (PC - MC)QC$, the variable profits from forward contract sales. In terms of this notation $B(p) = DR_C(p)(p - MC) + F$, which has exactly the same structure (except for F) as the firm’s profits from selling electricity if it has no forward contract commitments. The only difference is that $DR(p)$ replaces $DR_C(p)$ in the expression for the supplier’s variable profits. Consequently, profit-maximizing behavior implies that the firm will submit bids to set a price in the spot market that satisfies equation (1) with $DR(p)$ replaced by $DR_C(p)$. This implies the following relationship between $P^e$, the expected profit-maximizing
price, the firm’s marginal cost of production, MC, and \( \zeta \), the elasticity of the net-of-forward-contract-quantity residual demand curve evaluated at \( P^c \):

\[
\frac{(P^c - MC)}{P^c} = -\frac{1}{\zeta},
\]

where \( \zeta = DR_{CN}(P^c)^*(P^c/DR_C(P^c)) \). Because \( DR_C(p) = DR(p) - QC \), this implies that at same market price, \( p \), and residual demand curve, \( DR(p) \), the absolute value of the elasticity of the net-of-forward-contract-quantity residual demand curve is always greater than the absolute value of the elasticity of the residual demand curve. Simple proof of this result follows from the fact that \( DR_{CN}(p) = DRN(p) \) for all prices and \( QC > 0 \), so that by re-writing the expressions for \( \zeta \) and \( \zeta \), we obtain:

\[
|\zeta| = |DRN(p)^*(p/[DR(p) - QC])| > |\zeta| = |DRN(p)^*(p/DR(p))|.
\]

Moreover, as long as \( DR(p) - QC > 0 \), the larger the value of \( QC \), the greater is the difference between \( \zeta \) and \( \zeta \), and the smaller is the expected profit-maximizing percentage mark-up of the market price above the firm’s marginal cost of producing the last unit of electricity that it supplies with forward contract commitments versus no forward contract commitments. This result demonstrates that it is always unilateral profit-maximizing, for the same underlying residual demand curve, for the supplier to set a lower price relative to its marginal cost if it has forward contract commitments.

This incentive to bid more aggressively in the spot market if a supplier has substantial forward contracts also has implications for how a fixed quantity of forward contract commitments should be allocated among suppliers to maximize the benefits of these contracts to the competitiveness of the spot market. Because a firm with forward contract obligations will bid more aggressively in the spot market, this implies that all of its competitors will also face
more elastic residual demand curves and therefore find it unilaterally profit-maximizing to bid more aggressively in the spot market. This more aggressive bidding will leave all other firms with more elastic residual demand curves, which should therefore make these firms bid more aggressively in the spot market.

This virtuous cycle with respect to the benefits of forward contracting implies that a given amount of forward contracts will have the greatest competitive benefits if it spreads out among all of the suppliers in the market roughly proportion to their generation capacity ownership shares. For example, if there are five firms and each of them owns 1000 MW of capacity, then forward contract commitments should be allocated equally across the firms to maximize the competitive benefits. If one firm owned twice the capacity of other firms, then it should have roughly twice the forward contract commitments to load-serving entities that the other suppliers have.

Because of the spot market benefits of substantial amounts of forward contract commitments between suppliers and load-serving entities, most wholesale electricity markets begin operation with a large fraction of the final demand covered under forward contracts. If a substantial amount of capacity is initially controlled by government-owned or privately-owned monopolies, the regulator or market designer usually orders that most of these assets be sold to new entrants to create a more competitive wholesale market. These sales typically take place with forward contract commitments on the part of the new owner of the generation capacity to supply a substantial fraction of the expected output of the unit to load-serving entities at some pre-set price. These contracts are typically called vesting contracts, because they are assigned to the unit as a pre-condition for its sale. For example, if a 500 MW unit owned by the former
monopolist was being sold, the regulator would assign a forward contract obligation on the new owner to supply 400 MW of energy each hour at some previously agreed upon price to one of the load-serving entities.

Vesting contracts accomplish several goals. The first is to provide price certainty for load-serving entities for a significant fraction of their wholesale energy needs. The second is to provide revenue certainty to the new owner of the generating facility. With a forward contract the new owner of the generation unit in our example already has a revenue stream each hour equal to the contract price times 400 MWh. These two aspects of vesting contracts protect suppliers and loads from the vagaries of spot market outcomes, because they only receive or pay the spot price for production or consumption beyond the contract quantity. Finally, the existence of this forward contract obligation has beneficial impacts on the competitiveness of the spot energy market described above. The major cause of the California electricity crisis is the fact that California’s three large load-serving entities purchased 100% of their total energy and ancillary service requirements from the day-ahead and shorter-horizon spot markets. When the amount of imports from the Pacific Northwest was substantially reduced as a result of lower water availability during the late spring and summer of 2000, the fossil fuel suppliers found themselves facing the significantly less elastic residual demand curves for their output documented in Wolak (2003). This fact made the unilateral profit-maximizing mark-up of price above the marginal cost of producing electricity substantially higher during the summer and autumn of 2000 than it had been during the previous two years of the market. Moreover, particularly during the latter part of the autumn of 2000, the price of natural gas increased substantially relative to the levels that existed during the early part of 2000 and the previous two
years. Because during the vast majority of hours of the year natural gas-fired units set the price in California, this natural gas price increase led to a higher value for the marginal cost of the highest cost unit operating in California. Assuming that suppliers still bid to set market prices that satisfied equation (1), this higher marginal cost during the latter part of 2000 should have and did lead to higher electricity prices for the same values of elasticity of the residual demand curve facing each of the five large suppliers in the California electricity market.

3.1.3. Involving Final Demand

Consider the following simple example with no variation in demand or supply across hours of the day. Under these conditions, it would be possible to build enough generation capacity to ensure that all demand could be served at some fixed price. However, the reality of electricity consumption and generation unit and transmission network operation is that demand and supply vary over time, often in an unpredictable manner. This implies that there is always some likelihood that available capacity will be insufficient to meet demand.

Given available capacity, there are two ways of eliminating this imbalance: either price must be increased so as to choke off demand, or demand must be rationed. Rationing is clearly an extremely inefficient way to ensure that supply equals demand. Many consumers willing to purchase electricity at the prevailing price are unable to do so. Moreover, as has been discovered by politicians in all countries where rationing has occurred, the backlash associated with rationing can be devastating to those in power. Moreover, indirect costs of rationing on the level of economic activity can be substantial. In particular, preparing for and dealing with rationing periods also causes substantial losses in economic activity.
A far superior approach to dealing with a shortfall of available supply relative to the level of demand at the prevailing price is to allow this retail price to rise to the level necessary to cause a sufficient number of consumers to reduce their consumption so that supply and demand are back in balance. Although this might seem like a revolutionary concept in the electricity supply industry, this is precisely how markets for all other products operate.

Consumers that pay the hourly price of electricity for their consumption during the hour are not fundamentally different from generation unit owners paid according to the hourly price of electricity from a system reliability perspective. Let \( D(p) \) equal the consumer’s hourly demand for electricity as a function of the hourly price of electricity. Define \( SN(p) = D(0) - D(p) \), where \( D(0) \) is the consumer’s demand for electricity at an hourly price equal to zero. The function \( SN(p) \) is the consumer’s true willingness supply curve for “negawatts.” Because \( D(p) \) is a downward sloping function of \( p \), \( SN(p) \) is an upward sloping function of \( p \). A generator with a marginal cost curve equal to \( SN(p) \) has the ability to provide the same reliability benefits as this consumer. However, as discussed above, an electricity supplier has the incentive to maximize the profits it earns from selling electricity in the spot market given its marginal cost function. In contrast, I would expect an industrial or commercial consumer with a true supply curve of negawatts, \( SN(p) \), to bid her willingness to supply negawatts into the spot market to maximize the profits associated with selling her final output, which would imply demand-bidding to reduce the market price. Consequently, even though the generator and consumer have the same true willingness to supply negawatts, each of them will use this true supply curve in a different manner. The supplier will use it to exercise market power on the supply side to raise market prices and the consumer will use it to exercise market power on the demand side of the market to
reduce the price it pays for electricity. Wolak (2001) describes how a load-serving entity with some consumers facing the hourly wholesale price or a large consumer facing the hourly price could exercise market power on the demand side to reduce the average price it pays for a fixed quantity of electricity.

Besides allowing the system operator more flexibility in managing demand and supply imbalances, the presence of some consumers that alter their consumption in response to the hourly wholesale price also significantly benefits the competitiveness of the spot market. Figure 4 illustrates this point. The two residual demand curves are computed for the same value of SO(p). One, QD, is perfectly inelastic. The other, QD(p), is price elastic. As shown in the diagram, the slope of the resulting residual demand curve using QD(p) is always flatter than the slope of the residual demand curve using QD. Following the logic used for the case of forward contracts, it can be demonstrated that for the same price and same value of residual demand, the elasticity of the residual demand curve using QD(p), is always greater than the one using QD, because the slope of the one using QD(p) is equal to DRN(p) = QDN(p) - SON(p), which is larger in absolute value than SON(p), the slope of the residual demand curve using QD. Consequently, the competition benefit of having final consumers pay the hourly wholesale price is that all suppliers will face more elastic residual demand curves, which will cause them all to bid more aggressively into the spot market.

Politicians and policymakers often express concern that subjecting consumers to real-time price risk will introduce too much volatility into their monthly bill. These concerns are, for the most part, unfounded as well as misplaced. Some entity must manage wholesale spot price risk. Just because a state or federal regulator sets a fixed price or pattern of prices throughout the
day (time-of-use prices), some entity must still ensure that over the course of the month or year, the retailer’s total revenues less his transmission, distribution and supply costs, must cover his total wholesale energy costs. If the regulator sets this fixed price too low relative to the current wholesale price then either the retailer or the government must pay the difference. Eventually, the government must make up the difference because it has the ability to impose taxes to fund its expenditures. However, these tax revenues are collected from consumers of electricity.

This is precisely the lesson learned by the citizens of California. When average wholesale prices rose above the average wholesale price implicit in the frozen retail price California consumers paid for electricity, retailers initially made up the difference. Eventually, these companies threatened to declare bankruptcy, in the case of Southern California Edison and San Diego Gas and Electric, and declared bankruptcy, in the case of Pacific Gas and Electric, so that the state of California had to take over purchasing wholesale power at even higher prices. The major lesson from the California experience is that an option to purchase all retail electricity demand at a price that does not vary with hourly system conditions is extremely valuable to consumers and extremely costly to the government.

This is nothing more than a restatement of a standard prediction from the theory of stock options: the value of a call option on a stock increases with the volatility of the underlying security. However, different from the case of a call option on a stock, the fact that consumers have this option available to them and are completely shielded from any spot price risk in their electricity purchases (but not in their tax payments) makes wholesale prices more volatile. Clearly, a more efficient way to manage electricity spot price risk is to treat consumers the same
way that generation unit owners are treated; as discussed above, consumers have the potential to provide the same level of grid reliability as generation unit owners.

Perhaps the most important, but most often ignored, lesson from electricity restructuring processes in developed countries is the necessity of treating load and generation symmetrically. Unfortunately, very few developed countries do this, which may explain why very few of them have realized substantial benefits from ESI restructuring. Symmetric treatment of load and generation means that unless a retail consumer signs a forward contract with an electricity retailer the default wholesale price he pays for all of his consumption is the hourly wholesale price. This is precisely the same risk that generation unit owners face. Unless they have signed a forward contract with a load-serving entity or a forward contract with some other market participant, the price they receive for any short-term energy sales is the hourly spot price. Just as very few suppliers are willing to risk selling all of their output in the spot market, I would expect consumers to have similar preferences against too much reliance on the spot market and would therefore be willing to sign a long-term contract for a large fraction of their expected hourly consumer during each hour of the month. For example, a residential consumer might purchase a right to buy 2 kilo-watt hours (KWh) each hour of the day at a fixed price for the next 12 months. This consumer would then be able to sell energy it does not consume during any hour at the hourly wholesale price or purchase any power it needs beyond this baseline level at that same price. This type of pricing arrangement would result in a significantly less volatile monthly electricity bill than if the consumer made all of his purchases at the hourly wholesale price. If all customers purchased according to this sort of pricing plan then there would be no residual spot price risk that the government needs to manage using tax revenues. All consumers
manage the risk of high wholesale prices, according to their preferences for taking on spot price risk. Moreover, because all consumers have an incentive to reduce their consumption during high-priced periods, wholesale prices are likely to be significantly less volatile. Rather than continuing to consume when wholesale prices rise, they now see this very high spot price as the opportunity cost of consuming electricity for all of their consumption, with the important difference that if they consume less than their forward contract quantity, they are paid this very high price for each KWh they do not consume below that level.

Symmetric treatment of load and generation does not mean that a consumer cannot purchase a fixed-price full requirements contract for all of the electricity he might consume in a month, only that the consumer must pay the full cost of supplying this product. Imagine a gasoline retailer making a promise to its customers that they can purchase as much gasoline as they would like at a fixed price for an entire year. Given the volatility in wholesale gasoline prices, the price premium that a retailer would require to offer such a service could be expected to be quite high. This sort of price premium should also exist for full requirement fixed-price contracts for electricity. Otherwise, there is an unhedged risk, that could be realized, as a number of developed and developing countries have experienced.

Borenstein (2003) discusses a number of issues associated with involving final demand in the retail market. One roadblock to symmetric treatment of load and generation for all electricity consumers that Borenstein treats is the cost of installing the necessary metering technology at the household level to allow consumption to be measured on an hourly versus monthly basis. Wolak (2001) presents evidence for California that suggests that these costs would be paid for by the lower wholesale electricity prices that result from the more competitive wholesale market that
results from the symmetric treatment of load and generation. Green and McDaniel (1998) perform a social cost-benefit analysis of the transition to retail competition for residential consumers in the England and Wales electricity market, where any consumer that wishes to switch from their default supplier must install a half-hourly meter. Green and McDaniel analyzed a number of likely scenarios for the impact of retail competition on residential consumers and electricity suppliers and found that the net benefits, if any are realized, are likely to come later as more consumers participate in the retail market and competitive pressures reduce retail prices. All of these researchers argue that there are significant benefits net of metering costs from involving commercial and industrial consumers in the wholesale market.

3.1.4. Economic Reliability versus Engineering Reliability of a Transmission Network

The presence of a wholesale market changes the definition of what constitutes a reliable transmission network in a wholesale market regime. As shown in Section 2, in order for it to be profit maximizing for generation unit owners to submit a bid supply curve close to their marginal cost curve, they must face sufficiently elastic residual demand curves. For this to be the case, there must be enough transmission capacity into the area served by this unit owner so that any attempts to raise local prices will result in enough lost sales to make this bidding strategy unprofitable.

I introduce the concept of an economically reliable transmission network as one with sufficient capacity so that each location in the network faces sufficient competition from distant generation to cause the local unit owners to compete with distant generators rather than cause congestion to create local monopoly markets. In the former vertically integrated monopoly regime, transmission expansions were undertaken to ensure the engineering reliability of the
transmission network. A transmission network was deemed to be reliable from an engineering perspective if the vertically integrated monopolist that controlled all of the generation units in the control area could maintain a reliable electricity supply to consumers despite unexpected generation and transmission outages.

The value of increasing the transmission capacity between two points still depends on the extent to which this expansion allows the substitution of cheap generation in one area for expensive generation in the other area. Under the vertically integrated monopoly regime, all differences across regions in wholesale energy charges were due to differences in the location costs of production for the geographic monopolist. However, in the wholesale market regime, the extent of market power that can be exercised by firms at each location in the network can lead to much larger differences in payments for wholesale electricity across regions. For example, even if the difference in the variable cost of the highest cost units operating in two regions is less than $10/MWh, because firms in one area are able to exercise local market power, differences in the wholesale prices that consumers must pay across the two regions can be as high as the price cap on the real-time price of energy. For example, during early 2000 in the California market when the price cap on the ISO’s real-time market was $750/MWh, because of congestion between the SP15 and NP15 zones, prices in the two zones differed by as much as $700/MWh, despite the fact that the difference in the variable costs of the highest cost units operating in the two zones was less than $10/MWh.

This example demonstrates that a major benefit of transmission capacity in a wholesale market regime is that it limits the ability of generation unit owners to use transmission congestion to limit the number of competitors they face. More transmission capacity into a local
area implies that local generating unit owners face more competition from distant generation for a larger fraction of their capacity. Because these firms now face more competition from distant generation, they must bid more aggressively (lower prices) over a wider range of local demand realizations to sell the same amount of energy they did before the transmission upgrade. In all cases, this more aggressive bidding brought about by the transmission upgrade will lower average wholesale energy prices on the congested side of the interface. Moreover, to the extent that the probability of congestion in one direction on an interface is approximately equal to the probability of congestion in the opposite direction, the reduced opportunities for suppliers to exercise market power on both sides of the interface as a result of a transmission upgrade could reduce average wholesale prices at both locations.

The opportunity for generation unit owners to impact location prices through their scheduling and bidding behavior creates another source of benefits of transmission upgrades in the wholesale market regime. In the vertically integrated monopoly regime, one rationale for upgrades of the monopolist’s network was to manage the reliability risk associated with generation or transmission line outages. For example, an upgrade could be justified by the logic that if certain generating units became unavailable the supply shortfall could be temporarily served with distant, but more expensive, generating units. The reliability justification for such upgrades was that the cost of upgrading was less than the economic value created by the additional electricity that the consumers were able to consume because of the transmission upgrade.

Under the competitive market regime generators may have an additional incentive, besides the fact that the unit is physically unable to operate, to declare their unit unavailable.
They may find it profitable to create an artificial scarcity of generating capacity in a geographic area in order to increase the wholesale price they receive for the energy they do sell. This incentive to withhold generating capacity did not exist in the regulated monopoly regime. The monopolist was required by law to serve all load demanded at the regulated retail price. However, in the wholesale market regime, if a generator is able to raise the price it receives for its power by 100% by withholding less than 10% of its capacity, it will find this behavior profitable.

Consequently, in the wholesale market regime, reliability risk has an additional dimension because of the incentive for generation unit owners to withhold capacity from the market to increase prices if they do not face sufficient competition. For example, few, if any, market observers would have predicted as late as August 2000 that the California ISO would experience a daily average of approximately 10,000 MW of generating units off-line during the eight-month period November, 2000 to May, 2001. Additional transmission capacity can render physical withholding strategies, which may lead to load curtailments, less profitable and therefore less likely to occur.

Understanding how transmission upgrades can increase the elasticity of the residual demand a supplier faces, requires only a slight modification of the discussion surrounding Figure 3. Suppose that 9,500 MWh of demand is all located on the other side of a transmission line with 9,000 MW of capacity and the supplier under consideration owns 1000 MW of generation local to the demand. Suppose there are 12 firms, each of which own 1,000 MW of capacity located on the other side of the interface. In this case, the local supplier is pivotal for 500 MWh of energy because local demand is 9,500 MWh but only 9,000 MWh of energy can get into the local area
because of transmission constraints. There is plenty of generation available to serve the local demand. It just can’t get into the region because of transmission constraints. We can now re-interpret $SO_1(p)$ in Figure 3 as the bid supply curve of suppliers to sell energy along the 9,000 MW of transmission capacity.

Suppose the transmission line is now upgraded to 9,500 MW. From the perspective of the local firm this results in $SO_2(p)$ to serve the local demand, which means that the local supplier is no longer pivotal. Before the upgrade the local supplier faced the residual demand curve $DR_1(p)$ in Figure 3 and after the upgrade it faces $DR_2(p)$, which is more elastic than $DR_1(p)$ at all price levels. This is the mechanism by which transmission upgrades increase the competitiveness of wholesale electricity markets.

3.1.5. Comments on Market Design Lessons from Developed Countries

The three best-performing developed country wholesale electricity markets–Australia, England and Wales, and the Nordic countries–have achieved competitive wholesale markets by implementing one or more of the prescriptions described above for increasing the elasticity of the residual demand curve that suppliers face.

For example, since the start of the England and Wales market, the regulator has ordered a series of capacity divestitures from National Power and PowerGen, the two large fossil-fuel generation companies established at the start of the market. In the electricity market in the State of Victoria in Australia, the generation capacity of the former monopoly supplier was sold at the plant level to ensure a sufficient number of competing suppliers. There has been very little divestiture of the generation capacity owned by the large government-owned firms in the Nordic markets. However, as discussed in Section 2, it is unclear whether these firms have as strong of
an incentive to maximize profits as privately-owned firms, which could explain why their
dominant position in this market has not led to the exercise of excessive levels of unilateral
market power.

In all three of these markets the vast majority of final demand is covered by long-term
contracts. It is difficult to get precise estimates of the extent of final demand that is covered by
long-term contracts, because this information is considered a propriety. However, 85% is a
conservative lower boundary on the percent of final demand covered by long-term contracts for
all of these markets. Green (1999) presents estimates of these magnitudes for the mid-1990s for
the England and Wales electricity market. Wolak (2000) discusses the situation in the Australian
electricity market in the mid-1990s. Wolak (1999) describes conditions in the Nordic market
during the mid-1990s. All of these authors find forward contract coverage percentages above
this level.

The development of an active demand side has been much slower in all of these
countries. The England and Wales market and the Nordic market are the only countries that treat
all load and generation symmetrically. Australia is still in the process of moving forward with
retail competition for all consumers.

Finally, all three countries have transmission networks that experience very little
transmission congestion. Although these transmission networks were not built to serve a
competitive wholesale market, they are certainly far better suited to this task than the
transmission networks that exist in the United States and many other developed countries that
have restructured. The National Grid in England and Wales is a privately-owned firm that owns
and operates the transmission network and the balancing mechanism for the England and Wales
electricity market. Since restructuring took place in the early 1990s, National Grid has undertaken a number of upgrades to its transmission network. Because all of the states in Australia had their own government-owned monopoly ESIs before they restructured, the transmission networks in each of these states were designed to facilitate the delivery of electricity anywhere in the state. Consequently, the Australian market only experiences significant congestion across state boundaries. The Nordic market has a similar history to the Australian states. Most of the Nordic countries built extensive transmission networks within their boundaries, so that congestion primarily occurs across national boundaries.

The fact that transmission congestion in all of these markets tends to occur primarily across national or state boundaries has implications for one outstanding problem that is particularly relevant to the US experience because of a significantly higher frequency of congestion within states: the local market power problem.

3.1.6. Credible and Effective Regulatory Process

Any attempt to establish a competitive market without the conditions outlined in the previous four sub-sections is bound to result in periods when the market fails in unintended ways. For this reason, it is essential that there be a credible and effective regulatory process in place to monitor the market performance to detect and correct market design flaws while they are still causing only limited consumer harm. Unlike the case of the vertically integrated monopoly regime, the regulator must be forward-looking and fast-acting because, as emphasized in Section 2, markets provide extremely high-powered incentives for firm behavior, so it does not take very long for a wholesale electricity market to cause enormous consumer harm. The California electricity crisis is an example of this phenomenon. The Federal Energy Regulatory Commission
(FERC), the entity that regulates wholesale markets in the US, waited almost six months from the time it first became clear that there was substantial market power being exercised in the California market before it took action. In addition, the action it took was so timid and ill-conceived that its result was to increase the rate at which consumer harm occurred. Wolak, Nordhaus, and Shapiro (2000) discuss the likely impact, which also turned out to be the eventual impact, of the FERC’s December, 2000 action.

An argument, based on the logic of the individual rationality constraint in Section 2, can even be made that an effective, credible and fast-acting regulatory process will increase the competitiveness of a wholesale electricity market. Specifically, if the regulator makes the penalties associated with any market rule violations more than the benefits that the market participant receives from violating that market rule, then suppliers will find it profit-maximizing to obey the market rules. One lesson from the activities of many firms in the California market and other markets in the US is that if the cost of a market rule violation is less than the benefit the firm receives from violating the market rule, the firm will violate the market rule and pay the associated penalties as a cost of doing business.

FERC’s failure to recognize this allowed the California electricity crisis to last as long as it did and become as big of a disaster as it did. Since the start of the California market FERC refused to implement a system of financial penalties for market rule violations. FERC only required firms to pay back the so-called ill-gotten gains from market rule violations. Clearly, this approach does not deter profitable market rule violations because the worst case scenario for the firm is having to give the profits back and the best case is being able to keep them. Unless the regulator is flawless at detecting market rule violations, under these circumstances it is
expected profit-maximizing for the firm to violate market rules because it earns zero if it is caught violating the rules and positive profits when it does violate the market rules. This is not the incentive for firm behavior a regulator wants to create. Unfortunately, this is precisely the incentive that FERC created in the California market.

Any penalty mechanism the regulator implements should accomplish two goals. First, firms should pay fines for market rule violations that at least exceed the financial damages its actions impose on other market participants. Second, this penalty should also be sufficient to make the expected amount of fines the firm must pay as a result of violating a market rule greater than the expected benefit the firm obtains from this violation. This second constraint implies that the firm finds it profit-maximizing to comply with the market rules. A regulator that does not take decisive action to penalize market rule violations subject to these two constraints on the magnitude of fines imposed will soon find market rule violation more frequent, which will make it more costly for the ISO to manage the transmission network and operate its energy and ancillary services markets efficiently.

The experience of California and all other US states with wholesale markets provides another very valuable lesson for the design of an effective and credible regulatory process. Retail market regulatory policies must be consistent with wholesale market regulatory policies or wholesale market outcomes that are harmful to consumers and ultimately producers will occur. In the US this is a particularly challenging task because of the division of regulatory responsibilities: federal regulators are responsible for wholesale markets and state regulators are responsible for retail markets. FERC regulates wholesale electricity markets throughout the US. It also has far more ambitious plans for wholesale electricity markets than any of the state public
utilities commissions (PUCs) that regulate retail electricity markets within their boundaries. As a result, the state PUCs enact retail market policies that work against many of the necessary features of a competitive wholesale market described above. For example, they do not allow load and generation to be treated symmetrically. In fact, they usually do all they can to shield consumers from electricity prices that vary over time or location. In addition, state PUCs also tend to be skeptical of transmission upgrades to facilitate a more competitive wholesale market. Finally, they are often reluctant to give the load-serving entities they regulate sufficient freedom to engage in the necessary forward financial contracts to manage their wholesale market spot price risk effectively. Pairing these retail market policies with FERC’s very progressive wholesale market policies, which assume load-serving entities have substantial flexibility to forward contract and final consumers are active participants in the wholesale market, can create disasters like California and the smaller, but still very costly, market failures that have occurred in the PJM, New York and New England ISOs.

However, the requirement to coordinate wholesale and retail market policies has a very important implication that should guide the reform process in both developed and developing countries. If a country is not going to follow the five recommendations for a competitive wholesale market outlined in section 3.1, then it must have substantially less ambitious goals for its wholesale electricity market.

For instance, if the political process is unwilling to divest enough of the capacity of the largest supplier to new entrants, this should place limits on the form and operation of the wholesale market. If the regulator or political process is unwilling to allow retailers sufficient flexibility to manage their spot price risk or to require some or all final consumers to be treated
symmetrically with generation unit owners in the wholesale market, this should constrain the
type of wholesale market adopted. These constraints on the wholesale market should not be
relaxed until the regulatory constraints on achieving the five goals outlined above are relaxed.
Similar logic applies to a country or region that refuses to consider the economic reliability
benefits of transmission upgrades in the cost-benefit calculus for transmission upgrades. A
country that is unwilling to establish an independent regulator or regulatory body with the
necessary statutory powers to become credible and effective should not even consider reforming
their ESIs.

The regulatory body is the guiding force for the reform process. Unless the regulator is
able to intervene and change harmful market rules or market structures, subject to judicial
review, significant consumer harm is likely to occur at some point in the future. Establishing a
credible and effective regulatory process in a developing country with no history of regulation is
perhaps the most technically and politically challenging task in establishing competitive
wholesale electricity markets in LACs.
3.2. Implementing Workably Competitive Markets in Developed Countries

Although the previous section provides a roadmap for designing a wholesale electricity market that is as competitive as possible given the set of available technologies for producing, transmitting and distributing electricity, all developed countries that have restructured their ESIs have introduced wholesale competition without one or all of the necessary features described in Section 3.1. This has created a host of market failures, the most notable being the California electricity crisis. The substantial market power exercised in the England and Wales electricity market throughout the 1990s was the result of an attempt to introduce wholesale competition without these necessary features. The initial market design failure in the England and Wales market was due to insufficient competition among suppliers and market rules for dispatching and paying generation unit owners that were taken directly from the former monopoly regime, without sufficient consideration of their impact on supplier behavior. Patrick and Wolak (1997) discuss one such market rule and its impact on the ability of suppliers to exercise market power in the England and Wales electricity pool.

No country has been able to avoid market failures of some magnitude as a result of implementing a wholesale market without the necessary initial conditions described above. Therefore, it seems more realistic to expect that countries will continue to introduce wholesale markets with only a few, if any, of these necessary features in place. This also seems likely for developing countries as well. Consequently, the goal of this section is to describe a number of safeguards that countries have used to guard against adverse wholesale market outcomes.

Because it is impossible to characterize all possible safeguards against less-than-optimal initial conditions in a wholesale electricity market, I will focus on the intersection of safeguards that have been most commonly implemented and those most relevant to the experiences of
developing countries. This discussion will describe how these safeguards have allowed the wholesale market to achieve tolerable outcomes while improvements in the market design along the five dimensions described in Section 3.1 can be implemented. I will also point out the trade-off built into all of these measures. They protect consumers from harmful market outcomes in the short-term by limiting the potential long-term benefits to consumers from a wholesale electricity market.

3.2.1. The Role of Government-Owned Market Participants

Significant participation of government-owned entities in the wholesale market, particularly in the generation sector, can limit the potential for consumer harm. As discussed in Section 2, the incentive for managers of these firms to maximize profits are significantly more muted than those faced by the managers of privately-owned firms.

One explanation for the lack of a significant market failure in the Nordic market is the dominant market position of two government-owned companies—Statkraft in Norway and Vattenfall in Sweden. In Australia, all of the New South Wales generation units are owned by the state. The Snowy Mountains hydro project on the border of New South Wales and Victoria is jointly owned and operated by these two states. Substantial government participation in the market provides more avenues for the regulator and political process to intervene in the market and limit the damage caused by market design flaws. For example, the political process can impose restrictions on the behavior of government-owned entities that it is unable to impose on privately-owned companies.

Clearly, there is a downside to this safeguard. The experience of Norway is instructive on this issue. Wolak (1999) discusses an instance early in the Nordic market when Statkraft
announced that wholesale electricity prices were too low and it would not release any water until
prices rose, which they subsequently did. However, the opposite circumstance could have
occurred if Statkraft felt political pressure to reduce electricity prices. Statkraft would release
water to drive prices down. Privately-owned potential entrants to the Nordic market recognize
this dominant position of Statkraft and its implications for the profitability of fossil-fuel-based
entry into this market. As a result, there have been no significant new generation capacity
investments in Norway since the wholesale market was started in the early 1990s. The chilling
impact on private investment in new generation capacity in markets dominated by the state-
owned firms is particularly relevant in hydro-dominated systems where the variable cost of
producing electricity is zero for most hours, so the only cost of selling water as electricity is the
forgone profit from selling it in another hour. Although significant government participation in
the generation sector may protect consumers from substantial harm, it has a cost in terms of
long-term market efficiency. For the reasons discussed in Section 2, I would not expect
government-owned suppliers to produce their output in a minimum cost manner or undertake the
new investments necessary to meet demand growth in a minimum cost manner. The evidence
from the developed country reforms is that fossil-fuel based markets with few, if any,
government-owned firms have experienced the largest amount of private investment in new
generating facilities. The England and Wales market has had such a substantial increase in new
combined cycle gas turbine capacity that wholesale prices are now so low that many generation
unit owners claim to be on the brink of filing for bankruptcy protection. The US has seen a
similar pattern. A substantial amount of new investment in generation capacity occurred in the
parts of the US with formal wholesale markets. Even the California market has had significant
new capacity investments, with roughly a 10 percent increase in new generation capacity over the past two years.

The combination of new investments and slower growth in demand because of a slowdown in the US economy has led to very low wholesale electricity prices throughout the US, which has adversely impacted the financial health of US wholesale electricity suppliers. In contrast, Victoria and New South Wales, the most populous states in Australia, have seen no new investment, except in peak period generation facilities, despite starting the decade of the 1990s with close to the same reserve margin as England and Wales.

Consequently, one strategy for reform is to allow state-ownership initially and then sell off assets as many of the kinks are worked out of the market design. Implementing market rule changes in a market dominated by state-owned entities tends to be much easier, because most market rule changes re-allocate revenues across firms. If most of the revenues go to government-owned firms, the distributional issues associated with implementing market rule changes should be less contentious. If a country decides to take this path, it is important to recognize the difficulty in selling off government-owned assets once the politicians and regulators realize that intervention in the market will be more difficult and less effective with less government-owned firms. Consequently, this short-term safeguard could easily turn into a permanent barrier to competition in the long-term.

This path may be particularly problematic for LACs interested in forming a wholesale market to attract private investment. The combination of a generation fleet dominated by hydroelectric capacity and a dominant ownership position by the government may be counterproductive to the goal of the reform process. It is reasonable to expect private ESI
investors in LACs to have the same fears about the behavior of the government-owned hydroelectric capacity as potential investors in the Norwegian market. My suggested market design for LACs will provide suggestions for addressing the conflicting goals of protecting consumers and encouraging private investment in new capacity.

3.2.2. Cost-Based Dispatch and Local Market Power Mitigation

A number of markets with transmission networks poorly suited for wholesale competition have addressed this problem by implementing cost-based local market power mitigation mechanisms or simply cost-based dispatch schemes. The local market power mitigation mechanisms usually give the ISO the discretion to determine, depending on current system conditions, whether a supplier possesses substantial local market power. Under those circumstances, the bids of units deemed to possess local market power are mitigated to their variable costs, or variable costs plus an adder, and these mitigated bids are then entered into the ISO’s price-setting process. In a market with cost-based dispatch, suppliers are required to file their start-up, no-load and variable costs with the regulator. Once these costs are approved by the regulator, suppliers are required to bid these costs into the market, and they are paid market-clearing prices based on these cost-based bids.

The logic behind these mitigation mechanisms follows from the discussion of impact of transmission network expansion on the elasticity of the residual demand curve facing a supplier from Section 3.1.4. Specifically, the ISO must judge whether there exists sufficient competition among suppliers on either side of a congested interface to allow market forces to set the price on both sides of the interface. Viewed from this perspective, transmission constraints shrink the number of suppliers that compete to serve demand at each location in the network. Almost by
definition, a higher incidence of transmission congestion cannot lead to more competitive bidding by suppliers.

To understand how a commonly used local market power mitigation mechanism works, consider the example in Section 3.1.4 with 9,000 MW of transmission capacity into the demand center with 9,500 MWh of local demand and 1,000 MW of local generation. Under these circumstances, the local supplier is pivotal for 500 MWh of energy. Allowing this local monopolist to set the market price will cause it to submit an extremely high bid. If there is no price cap in this market, there is no limit on the price this supplier could bid and be called on to supply the needed 500 MWh. Even though there was a price cap in the California electricity market, something like this occurred because FERC required the California ISO to pay all suppliers with local market power their bid price instead of providing the ISO with effective local market power mitigation, as it did for the eastern US ISOs. FERC failed to recognize that local market power problems are endemic to all electricity markets with insufficient transmission capacity to support a competitive wholesale market at all locations in the network, regardless of the mechanism used to manage transmission congestion. As discussed earlier, a strong case can be made that all transmission networks in the US are insufficient to support a competitive wholesale market without effective local market power mitigation.

Although the California market is not unique in having a transmission network that is poorly suited to a wholesale electricity market, it is unique in being required to pay suppliers with local market power their bid price to supply energy. In the PJM, New York and New England electricity markets, FERC allows the ISO to implement mitigation mechanisms that limit the potential harm to consumers from local market power. Under the scheme in PJM, the
ISO implements a two-step process for local market power mitigation. It starts with its best estimate of system conditions for the following day, including the level of demand at each location in the network and the mix of available generation units in the control area, and implements a well-defined process for determining whether a unit possesses significant local market power. If this unit-level determination is affirmative, then the bids of this unit are mitigated to their variable cost plus a 10% adder. Then the ISO’s dispatch and price-setting algorithm is implemented with these cost-based bids in place of the unit’s actual bids. All units are then paid the resulting market-clearing price. The other eastern US ISOs have different local market power mitigation measures. However, none of them involve paying generation unit owners their bid price when they have local market power. Wolak (2002) discusses the PJM local market power mitigation mechanism in detail.

As an additional safeguard during the first year of operation of the PJM market, all suppliers were required to submit regulated start-up, no load, and variable costs into the ISO’s dispatch and price-setting algorithm. Generators were then paid the market-clearing price based on these cost-based bids. The ability of the ISO to dispatch and set prices using cost-based bids or mitigate to variable cost the bids of all units that it deems possess substantial local market power, prevents the wholesale market from causing significant harm to consumers.

It is important to emphasize that this safeguard is not without short-term inefficiencies and long-term costs. Because of the individual rationality constraint on firm behavior, one response to this mechanism by profit-maximizing firms owning a portfolio of generation units is to withhold the less expensive units in their portfolio from the market, either through planned or forced outages, so that higher cost units will be called on to run more frequently and therefore set
higher market-clearing prices earned by all of the units supplying energy in the firm’s portfolio. A longer term response from firms would be to reconfigure their generation units and how they operate them to shift costs from fixed costs to start-up, no load or variable costs in order to justify a higher cost-based bid, and set higher market prices. The problem of variable cost creep could be quite severe if the California crisis is at all representative of firm behavior.

Kolstad and Wolak (2003) find evidence that, during the summer of 2000, suppliers with some plants located inside the South Coast Air Quality Management District (SCAQMD) and others outside of the area used NOx emissions permit prices from the SCAQMD emission permit market to justify higher bids into the California ISO’s real-time energy market from generation units with high NOx emissions rates. This strategy was very successful at raising prices in the CAISO’s real-time energy market during the summer of 2000.

3.2.3. The ISO as a Market Operator versus a Market Participant

The ownership and mode of operation of the ISO provides another method for the market designer to implement regulatory safeguards. The most common model for an ISO in the US is as a non-profit public-benefit cooperation. In most other countries, it is a government-owned corporate entity. Finally, in other markets it is a privately-owned regulated monopoly. ISOs also differ in terms of whether the regulator allows them to take a financial position in the market. The US takes the extreme view that the ISO is simply a neutral market and system operator. In England and Wales, National Grid operates the system in real-time and the regulator allows it to take a financial position in the market. In fact, the regulatory mechanism that sets National Grid’s allowed revenues gives it strong incentives to reduce the real-time costs of operating the system.
The goal of forming the ISO as a non-profit or government-owned entity is to ensure that it will operate the grid in a non-discriminatory manner. However, if as is the case in all US markets and a number of countries around the world, retailers are subject to restrictions on their strategies for procuring energy and ancillary services to meet their load obligations by state PUCs and national regulators, and suppliers do not face these same constraints, then retailers may not be able to take all of the actions necessary to protect themselves from high wholesale prices. In the US, many retailers complain that they are prohibited or limited by PUCs in the sorts of activities they can engage in relative to wholesale electricity suppliers. This is an artifact of suppliers being primarily regulated by FERC and retailers being primarily regulated by state PUCs.

This asymmetry between suppliers and retailers can create circumstances when an ISO that does not take a position in the market is forced to accept extremely high bids for small amounts of additional energy in the real-time market on a consistent basis. Even if the ISO believes that it can meet predictable incremental energy needs in real-time at a lower cost by purchasing more energy in the forward market than in the spot market, it is prohibited from doing so. Under the US approach, the ISOs can only execute feasible trades among market participants.

National Grid provides an alternative solution to this problem. It is a market participant charged with ensuring reliable transmission network operation in real-time. Consequently, if it is able to find a cheaper way to procure the necessary real-time energy and ancillary services in the forward market, then the England and Wales regulator allows it to do so. The amount of revenues National Grid is allowed to earn is based on how well they manage these real-time
system operation costs. For this reason, National Grid rarely accepts bids with very high energy prices, because it has the freedom to take a position in the forward market to protect against these high bid prices.

The upside of this model for the ISO is that it creates another sophisticated buyer of energy and ancillary services with the ability to take action to reduce electricity prices. The downside is that over the long-term, retailers have less incentive to become sophisticated market participants, so that fewer load-serving entities and consumers make the investments required to become sophisticated players. The final downside is that unless the regulator is able to control what actions or financial positions in the market the ISO is able to take, adverse market outcomes beneficial to the ISO but harmful to producers and consumers could occur. The National Grid ISO model requires a far more sophisticated and credible regulator than an independent market operator model, because the privately-owned profit-maximizing ISO is an essential feature of this scheme.

An interesting variation on this theme is a government-owned ISO that is charged with operating the transmission network to facilitate a competitive wholesale market. This organizational form creates an ISO with more discretion to take positions in the wholesale market. However, given its ownership structure the ISO is less likely to engage in privately profitable actions that may cause consumer harm. This model for an ISO may result in the best balance between providing protection for consumers and reliable non-discriminatory access to the transmission network in LACs.
4. Challenges to Implementing a Competitive Wholesale Market Unique to LACs

This section describes six challenges unique to LACs that are associated with implementing a competitive wholesale electricity market. The first is the result of the dominance of hydroelectric capacity in the country’s generation mix. The second concerns the difficulty of establishing a forward market for electricity where privately-owned suppliers can purchase long-term commitments to supply electricity that they can use to fund investment in new generating facilities. The third concerns the difficulty of establishing an independent regulator or regulatory body that has the legal authority and can accumulate the expertise necessary to be a credible and effective regulator. The fourth issue is the costs versus benefits of bid-based versus cost-based real-time dispatch of generation units and pricing of electricity and ancillary services. The fifth challenge is how to set the allowed revenues that regulated retailers can earn. The final issue is the necessity of private ownership in the four segments of the industry—generation, transmission, distribution and retailing.

4.1. The Gambling with the Weather Problem and the Cost-of-Deficit Parameter

There are a number of potential pitfalls in attempting to establish a competitive wholesale market in a hydro-dominated system. The first is what I would like to refer to as the “gambling with the weather problem.” The second is the problem of encouraging fuel diversity. The third relates to the problem of attracting new investment when much of the hydro capacity is owned by the government. A final issue—how to involve final demand in the wholesale market—is a source of potential benefits that should be easy for the market designer to exploit.

Because the only cost of producing electricity from a hydroelectric source is the opportunity cost of producing that energy during some other hour, this creates opportunities for
the market operator to take action to impact this opportunity cost. Given the desire of politicians and regulators to keep the price of wholesale electricity as low as possible, the following strategy for dispatching generation in facilities is particularly tempting for the ISO to adopt in a hydro-dominated ESI.

A number of the hydro-based systems in Latin America use a stochastic dynamic programming approach to determine the opportunity cost of water each day. For example in Chile, the system operator uses a simplified stochastic dynamic programming model that uses as inputs forecasts of the water level of the largest hydro facility in the country, the regulated costs of fossil fuel facilities, and a number of other factors to arrive at an opportunity cost of water. Brazil uses a similar but more complex procedure because of its substantially larger control area and number of river basins to manage. An important input to all of these models is the cost-of-deficit parameter. This is the dollar per MWh cost of having insufficient water to meet the demand for electricity at the prevailing retail price. This cost-of-deficit parameter should be related to the price at which all consumers are willing to reduce their consumption. However, because the default retail price in most LACs is set independent of system conditions, the cost deficit parameter is usually set by the regulator.

However, because of a desire to keep the price of wholesale power as low as possible, the regulator and government have a difficult time not setting this cost-of-deficit unrealistically low. For example, in Brazil the current value of the cost-of-deficit parameter is 350 Real/MWH, which is approximately $100/MWh. Corresponding values of this parameter from developed countries are over $1000/MWh. For example, all of the eastern ISOs in the US have bid caps in their wholesale market of $1000/MWh, which can produce location prices above this level.
Figure 4 illustrates why LAC governments find it so tempting to set the cost-of-deficit parameter so low and why this leads to what appear to be energy shortages. For simplicity I consider only a single demand scenario and two possible supply scenarios—a low water year that occurs very infrequently and a high water year which occurs more frequently. Let $P_{\text{Average}}$ equal the wholesale price implicit in the fixed retail price of electricity. This price is set to recover the total costs of suppliers in both high and low water years. During high water years, fossil fuel facilities can be run less intensively, to the width of the bar labeled “Fossil Generation in High HydroYear,” which is narrower than the box labeled “Fossil Generation in Low Hydro Year.” The height of each of these boxes is the average total cost of supplying fossil fuel-based energy equal to the width of this box. The box labeled “Low Hydro Year” has a width equal to the production of hydro units in a low water year and height equal to the average total cost of producing this energy—the fixed costs of the hydro facilities divided by the output quantity. The box labeled “High Hydro Year” has width equal to the production of hydro units in a high water year and height equal to the average cost of supplying this energy. The reason the dashed line for the “Low Hydro Year” box is higher than the solid line for the “High Hydro Year” box is because the same fixed cost is relevant for both years, but more energy is produced from hydro facilities in the high hydro year.

Because the demand for electricity is the same in high and low water years and the price is the same in high and low water years, this creates an apparent shortage condition in low hydro years that is driven purely by the fact that the price of electricity is not allowed to rise to the level necessary to equate available supply with demand. Note that in both the high hydro years and low hydro years, the product $P_{\text{Average}} \cdot Q_{\text{Low}}$ and $P_{\text{Average}} \cdot Q_{\text{High}}$ both cover the total costs of
producing hydro and fossil-fuel based electricity. Consequently, the government covers the total costs of supplying electricity under both hydro conditions at \( P_{\text{Average}} \). However, because the cost-of-deficit is set too low, the average wholesale price is too low to prevent shortage periods. This is not a problem during high hydro years, which occur more frequently than low hydro years. When low hydro years occur there is a shortage of electricity at \( P_{\text{Average}} \) equal to \( Q_{\text{High}} - Q_{\text{Low}} \).

This example shows that if the government or regulator is willing to gamble with the weather in the sense of setting a low cost-of-deficit parameter and betting on high hydro realizations, the government can achieve the political goal of low wholesale electricity prices and still maintain the financial health of the electricity supply industry. However, the downside of this unrealistically low cost-of-deficit parameter is that when low hydro conditions occur there will be a shortage of electricity at the prevailing fixed retail price.

The example also demonstrates an obvious but often ignored logical implication of using stochastic dynamic programming models to set the opportunity cost of water. If the cost-of-deficit parameter is set at a level that assumes shortages of water are not very costly, then periods of water shortages will occur. If the cost-of-deficit parameter is set at a level that assumes shortages of water are extremely costly, then periods of water shortages will rarely occur. However, an important corollary to these statements is that the price of electricity will, on average, be higher with a higher cost-of-deficit parameter.

Given the enormous economic and political costs associated with periods of shortages at the prevailing retail price, the obvious solution to this problem is to use a cost-of-deficit parameter in the stochastic dynamic programming model that reflects these enormous costs. This will ensure that wholesale prices rise during low hydro years and, if a significant number of
consumers pay a retail price linked to the current wholesale price, these higher prices will allocate this lower supply of electricity to those who value it most.

Ideally, the cost-of-deficit parameter should be set equal to the highest willingness to pay for electricity among all consumers. Then as the amount of available water declines and wholesale prices rise, consumers can choose not to purchase electricity. Under this scheme, any set of hydro conditions can be managed without having to resort to arbitrary curtailments of electricity supply to customers willing to pay for the scarcity value of this electricity.

Setting the cost-of-deficit parameter too low also has important implications for encouraging fuel diversity. Note that \( P_{\text{Average}} \) is always below the average cost of producing fossil-fuel-based electricity. This means that unless the government pays a subsidy to the fossil-fuel-based entrants they cannot make enough money from selling in the wholesale market to justify their investment. Therefore, setting a realistic cost-of-deficit parameter is a necessary first step towards encouraging fuel diversity in hydroelectric-dominated LACs.

The fact that the hydroelectric capacity is government-owned exacerbates the problem of a new entrant earning sufficient revenues to justify his investment. Prospective new entrants are discouraged by the realization that the government does not want to raise the wholesale price during low hydro years. If the price was allowed to allocate the available supply of electricity during low hydro years, the new entrant could recover his total costs plus an additional return to allow him to remain in the market during high hydro years when the average wholesale price is below the average total cost.

All of these problems with hydro-dominated systems underscore the importance of sending real-time price signals to final consumers. Different from the case of fossil-fuel-based
systems, in systems dominated by hydro production, demand response is often the only way to manage the system reliably. For fossil-fuel-based systems, the regulator counts on higher prices to cause a supply response. Generation unit owners will run their machines more intensively or purchase more expensive input fuel on the spot market if electricity prices increase, either of which can eliminate a supply and demand imbalance. Unfortunately, as noted earlier, rainfall does not increase in response to higher prices in a hydro-dominated system. The only way to manage a supply and demand imbalance in this case is to send price signals to final consumers to reduce their consumption of energy.

Because price volatility in a hydro-dominated system tends to be seasonal, rather than hourly or weekly, there is little need for hourly meters in order to treat load and generation symmetrically in a hydro-dominated system. Retail prices could be adjusted prospectively on a monthly basis and existing metering technology could be used to implement retail prices that are responsive to real-time market conditions in the wholesale market—whether is it is a high or low hydro year.

The point that many energy shortfalls in hydro-dominant systems cannot be managed without sending wholesale price signals to final consumers is important to repeat. Moreover, the cost of sending meaningful price signals to retail demand in hydro-dominated systems is virtually zero, because existing monthly or even quarterly metering reading is sufficient to charge consumers prices that vary with wholesale market conditions.
4.2. *Fostering a Forward Market for Electricity*

As is emphasized in Section 3, spot electricity markets are extremely susceptible to the unilateral exercise of market power. The most effective way to limit the ability of suppliers to exercise market power in a spot market is to limit the amount of their production that is sold in this market. This is accomplished by providing strong incentives for suppliers to sign forward contracts with load-serving entities. There are two ways to cause existing suppliers to sign forward contracts: (1) make the forward market very attractive by setting high prices, or (2) drive down the expected spot market price because that is the relevant opportunity cost to suppliers that sign forward contracts. For new suppliers this second avenue is not available. If the spot market is unattractive they are less likely to build new capacity.

Consequently, the challenge to LACs is how to develop a forward market that will support the construction of new capacity. LACs also have the additional problem that negotiations between load-serving entities and electricity producers may result in these two parties coordinating to raise the purchase price of the contract at the expense of final consumers. For example, in Brazil many of the retailers have affiliates that also own generation units, so there is a strong incentive for the retailer to purchase energy from its generation affiliate at an inflated price that is passed on to the retailer’s customers.

One way to deal with this problem is to set up periodic anonymous auctions for standardized load shapes for delivery at specific locations in the transmission network. For example, one auction could be for supplying 1 MWh, twenty-four hours a day for five years, at a pre-specified location in the network, starting next year. All suppliers would submit their bid price and quantity for supplying this standardized load shape. The regulator would then determine the market-clearing price and how much each supplier won. These standardized
contracts could then be traded on the secondary market and used to finance new investments in generation capacity.

The advantage of these periodic formal auctions of standardized contracts is that they would produce prices that could be used to set reference levels for the wholesale price component of retail electricity prices. In addition, because most LACs are dominated by hydro capacity, the primary source of price variation is across seasons, so there may be less need for a large number of standardized contracts. The only important difference in electricity prices may be across locations as a result of congestion, but not over time at that location, because the opportunity cost of water implies equalizing electricity prices at the same location over time.

Although the requirement to sell only standardized contracts may raise the cost of supplying forward contracts for electricity, the increased competitive pressures firms face because these contracts are sold in an anonymous auction according to well-defined market rules open to all suppliers, should make the auction sufficiently competitive that bidders have very little opportunity to exercise any significant market power.

4.3. Establishing an Independent Regulator

Establishing a credible and effective regulatory process is an ongoing process. The US has been involved in this process for almost 100 years at the state and federal level for electricity, telecommunications and natural gas, and significant mistakes are still being made. Regulation is necessarily imperfect, for the simple reason that the regulator can never know as much as the firm does about its production process, demand or service territory and these factors are continually changing.
Regulation also requires turning vague statements such as “just and reasonable prices” into operational concepts. Over the past 70 years there have been a number of legal disputes in the US that have further refined this concept, but the process is far from over. It is important to recognize the need for continuous change in any regulatory process.

An important lesson from the transition to a competitive wholesale market regime in the US is that the regulatory mechanisms that worked in the former vertically-integrated monopoly regime are inappropriate for the new competitive wholesale market regime. In the former regime the process of setting just and reasonable prices focused on collecting and analyzing balance sheet information from market participants according to well defined accounting techniques. Consequently, the rate-setting process involved primarily lawyers managing the process and accountants implementing procedures to compute prices. In the competitive market regime, the US process is concerned with setting just and reasonable market rules, mechanisms for compensating market participants that will result in just and reasonable market outcomes. This means that if firms respect their individual rationality constraints, market outcomes will yield prices that do not harm consumers yet still recover the production costs of all suppliers. This is a process that is very intensive in the use of economists to devise compensation schemes.

The final issue on this topic is how to establish credibility and expertise. Credibility is similar to reputation and the only way to establish a reputation for sound decisions is to always make sound decisions. This implies that the regulator must slowly build up its reputation by making decisions that it believes can withstand judicial review. If the regulator is always upheld on judicial review, this establishes a reputation that the regulator can exploit over time. By starting with smaller decisions that can withstand judicial review, the regulator builds a
reputation for substantial expertise that can be exploited to support some decisions in the future requiring more discretion by the regulator.

4.4. Bid-Based versus Cost-Based Dispatch and Pricing

One lesson from ESI reform in LACs that has not received as much attention in developed country reform is the use of cost-based dispatch and pricing. With the exception of the single transitional year in PJM in 1998 discussed earlier, no developed countries have implemented cost-based dispatch or pricing schemes. All of these markets allow generation unit owners to submit bids, either simple supply curves which give each unit’s willingness to supply energy as a function of the market price, or multi-part bids, usually with a start-up bid, no-load bid and a willingness to supply curve bid as a function of the market price. As noted previously, bid-based dispatch and pricing have two obvious disadvantages, particularly in markets with insufficient transmission capacity to face all suppliers with enough competition at all locations in the network. The first is system-wide market power, which is the ability to raise the system-wide price by bidding a willingness to supply curve that exceeds a unit’s marginal cost curve at the level of output from the unit that the firm expects to sell in the market. The second problem is local market power, which occurs when a unit or set of units faces an extremely inelastic residual demand curve (usually perfectly inelastic) because of transmission constraints into a small geographic area. Under both of these circumstances, prices in a bid-based market can be expected to be substantially in excess of the marginal cost of the highest cost unit operating in the market (the case of system-wide market power) and in a smaller geographic area (the case of local market power).
Starting with Chile, virtually all LACs, with the exception of Colombia, dispatch and set prices using unit-level costs as opposed to bids. This is an important safeguard that allows a country to avoid the enormous expense of setting up a bid-based dispatch and pricing process. The cost-based approach also allows the ISO to avoid the time and expense of formulating a local market power mitigation mechanism, which is essential in an ESI that does not have a transmission network that can support a competitive wholesale market, as is the case in all LACs. The quality of the transmission network in most LACs provides another argument in favor of a cost-based dispatch and pricing mechanism.

One argument in favor of the bid-based system is that it allows hydroelectric unit owners to manage their water more efficiently. They can bid their willingness to supply electricity, or equivalently water, and raise the price of electricity when they believe scarcity conditions are more likely. These higher prices will reduce the likelihood of electricity shortages because fossil fuel units will be run more intensively, much earlier in a low hydro year. However, unless final consumers actually pay these higher prices they will continue to consume at the levels they would in any other year with the same weather conditions and fixed retail price. This is simply a restatement of the discussion that accompanied Figure 5, but it also provides an opportunity to stress that the cause of so-called “shortage periods” is not a shortage of energy to meet demand at any price, but an unwillingness to let the retail price rise to the level necessary to allocate the available water.

Returning to our example in Figure 5, the most likely outcome in a bid-based market during a low water year is that the wholesale prices rise because hydroelectric capacity owners bid higher prices to conserve their water. However, if the retail price is maintained at $P_{\text{Average}}$, 


there is still a shortage of energy, because retail demand stays at \( Q_{\text{High}} \) and there is not enough water to meet this demand. Because hydroelectric suppliers bidding higher prices will cause fossil fuel generation units to operate more frequently than they would with lower wholesale prices, the amount of energy available in a low hydro year should be greater than it would be if the wholesale price were not allowed to rise. However if there is still a shortfall of energy relative to the demand at \( P_{\text{Average}} \), the retail price must be increased above this level or rationing will be necessary. There is no way to avoid the basic reality that demand must be the marginal supplier of additional negawatts of electricity during extremely low water conditions.

There is also a more straightforward way to ensure that the fossil fuel units are used as efficiently as possible during low water conditions. Raise the cost-of-deficit parameter to a level that is at least equal to the highest willingness to pay for electricity among all consumers in the system. This cost-of-deficit parameter will cause fossil fuel facilities to be operated more intensively sufficiently far in advance to provide at least as good of a hedge against water shortages as allowing hydroelectric suppliers to bid their willingness to supply energy. However, this scheme does not have either the system-wide or local market power risk of suppliers creating artificial scarcity to raise the price of electricity.

Consequently, particularly for hydro-dependent systems, shortages must ultimately be managed by allowing loads to be the marginal supplier of negawatts, meaning that the willingness of consumers facing retail prices that vary with real-time system conditions to reduce their purchases is the only way to solve the demand and supply imbalance during certain system conditions. Because higher prices do not cause more rainfall, there is a sufficiently low water level where demand reduction is the only way to maintain system balance. Increasing the retail
prices consumers pay during these circumstances is the only way to make consumers more willing to supply the necessary negawatts.

Although cost-based dispatch and pricing has the long-term efficiency costs discussed in Section 3.2, given the enormous expense of setting up a bid-based spot market, the enormous potential downside of such a market in terms of system-wide and local market power, and the relatively small potential gain from a bid-based dispatch and pricing in an ESI with active demand-side participation in the wholesale market, a superior strategy for LACs is cost-based dispatch and pricing for the foreseeable future. The potential benefits of bid-based dispatch and pricing and the huge uncertainty associated with these benefits in an ESI with a less-than-ideal transmission network and nascent regulatory framework makes cost-based dispatch even more attractive.

4.5. Regulating Default Retail Rates

Determining the wholesale power cost component of the regulated retail electricity price is a challenging task even for developed countries. The regulator must effectively run an energy trading firm to compute the best possible estimate of the least cost combinations of long-term contracts, medium-term contracts, spot purchases and other hedging instrument purchases. Because all transactions but spot purchases are made through bilateral negotiations, it is difficult for the regulator to know which transaction prices are legitimate and which are not. For example, if the buyer and seller of electricity have some sort of financial relationship, the buyer may be willing to buy at an inflated price if these prices can be passed onto final consumers.

Consequently, the challenge for the regulator is how to set up a mechanism that yields the most useful information about the opportunity cost of power delivered on a given date and at a
given location that can used to set the default rate for an electricity retailer. This mechanism must guard against affiliates dealing to raise the prices that consumers must pay. Kolstad and Wolak (2003) present an example of this sort of problem in the California market with respect to NOx permit prices. As discussed earlier, suppliers with units located in and outside of SCAQMD, the geographic area covered by the emissions permit market, were willing to pay inflated prices for these permits because the permits enhanced the ability of firms to raise wholesale electricity prices. Kolstad and Wolak (2003) suggest a mechanism that can be used to limit the ability of suppliers to use NOx permits to raise electricity prices. They argue that rather than allow suppliers to engage in bilateral NOx permit trades at any mutually agreed upon time, SCAQMD should run periodic anonymous auctions in which suppliers bid for the right to buy or sell these permits. A single market-clearing price would then be set for all of the permits sold. This price is more difficult to move because it is the result of the intersection of the aggregate demand bid curve for these permits with the aggregate supply curve.

This solution could be used by a LAC regulator to set the wholesale energy price implicit in the default retail price. The regulator would define standardized forward contract products for specific locations and durations and then require retailers to use the anonymous auction market operated by the regulator to purchase the forward energy requirements (as determined by the regulator) necessary to meet its default provider obligation. In steady state, this process would produce a portfolio of forward prices for delivery at a given location and date in the future. The prices for, say, May 2005 delivery implicit in contracts starting in each month of 2004 could be used to determine the wholesale price component of the default provider’s retail rate. For example, one scheme could use a pre-specified weighted-average of the May 2005 forward
prices that result from these auctions as the wholesale cost component implicit in all regulated retail sales for May 2005.

This would accomplish two goals for a LAC regulator. First, it would limit the ability of the retailers to self-deal with their generation affiliates. Second, it would allow the regulator to avoid the extremely difficult task of setting the level of the wholesale price component of the default provider retail price. Variations on this theme could also be implemented, but the basic idea is to replace negotiated bilateral purchases with periodic formal forward markets for electricity as a mechanism for retailers to purchase the forward market obligations necessary to meet their default provider obligations.

4.6. Government versus Private Participation in the ESI

Section 2 compared the incentives for firm operation provided by government versus private ownership. I now use that analysis to provide recommendations for what portions of the ESI in an LAC should be privately owned and which can remain in government hands initially and even indefinitely. For this discussion it is useful to divide the electricity supply industry into four segments: (1) generation, (2) transmission, (3) distribution and (4) retailing.

Because the technology of producing transmission services for a given geographic area dramatically favors supply by a single firm, the price generators and retailers pay for accessing the transmission network must be set by an administrative process, whether or not the network is government-owned or privately-owned. In addition, the transmission network access charge usually makes up between 10% and 15% of the retail price of electricity. The largest cost associated with providing transmission services after the network has been built is for maintaining the network. These last two points argue in favor of the view that cost differences
due to productive inefficiency differences between government and private ownership will not be a very large fraction of the retail price of electricity.

There are also potential benefits, particularly in developing countries, associated with keeping the transmission network in government hands. Obtaining rights-of-way and environmental approval for transmission expansion may be less costly if the government rather than a private investor owns the transmission network. Consequently, even though the cost of operating the network may be larger for a government-owned firm, this may be offset by these lower transaction costs associated with expanding the transmission network. This logic suggests that keeping the transmission network in government hands would not be harmful to the formation of a competitive market and may even result in lower prices to consumers.

The argument for government versus private-ownership of the distribution network is similar, but slightly stronger in favor of private ownership. The cost of the distribution network is a larger fraction of the price of electricity than is transmission. This means that increased inefficiencies due to government ownership could mean higher prices under government versus private ownership. The siting advantage for government ownership is also less relevant for distribution because there is no alternative path for the distribution wire to a customer’s house, but there are often many possible routes for transmission lines. Also, if consumers want electricity they must be willing to tolerate the construction of a local distribution network.

Particularly, for the case of LACs, where the percentage of the population with access to electricity is significantly less than 100% for most countries, privately-owned profit-maximizing firms should have a stronger incentive to expand their networks to serve these areas than should government-owned firms. Consequently, assuming a properly designed mechanism for setting
the regulated price for accessing the local distribution network, private ownership should be favored.

The case for privately-owned retailers is very strong. In many developing countries the government-owned company often finds it impossible to get a substantial fraction of their customers to pay for electricity. Moreover, the company often finds it difficult to disconnect customers that do not pay because they are well-connected politically. Turning ownership over to private investors provides much stronger incentives for retailers to get consumers to pay their bills. Any money the retailer does not collect from consumers must come out of the pockets of the firm’s owners. In contrast, government-owned firms can fund this shortfall from tax revenue. Private ownership also makes it easier for the retailer to disconnect from the network those who do not pay their bills. For all of these reasons, retailers should be privately-owned as soon as possible.

In most LACs, a large fraction of the generation capacity is initially owned by the government. Clearly, reducing government’s ownership share will give private investors greater confidence in their ability to invest in new capacity and earn sufficient revenues from electricity sales to earn a reasonable return on the investment, because they know that more generation capacity is owned by entities that face the same budget constraints as they do. They are likely to be less fearful that their investments might be expropriated by a future government that releases water from its hydroelectric facilities too quickly in order to reduce wholesale electricity prices for political reasons.
On the other hand, private ownership puts generation capacity into the hands of entities with strong incentives to use it to raise wholesale electricity prices. However, so long as system dispatch and pricing is based on regulated costs, this risk should be of significantly less concern.

A strong point against immediate plant divestiture to private owners is that the capacity may be sold at a discount because the buyers are not confident that the government will support the new competitive wholesale market. By keeping the capacity in government hands and operating under the new regime for a couple of years, investors should gain greater confidence in the government’s support of the new wholesale market regime. The conclusion for the generation sector is private ownership as rapidly possible, consistent with obtaining a reasonable price for the government’s generation assets.

5. Suggested Market Design For LACs

This section builds on the analysis of the previous sections to outline the general features of a market design that accounts for initial conditions in the ESIs of most LACs. I also note how this design can be modified as more of the necessary conditions for a competitive wholesale market are realized in that LAC country.

The first step in any market design process is to establish an independent regulator or regulatory body. The US model of a regulatory body appointed by the executive branch of the government subject to the approval of the legislative branch is preferable. Decisions should be made based on a legal record prepared by the parties involved, managed by an administrative law judge and supported by a regulatory staff of economic, legal, and power systems engineering experts. The staff of the regulatory body should be hired in anticipation of the duties they will perform, rather than in response to the demand for additional regulatory oversight.
As discussed in previous sections, the regulatory process must be forward looking, rather than backward looking. Market design flaws and other regulatory problems must be identified and addressed as quickly as possible. There should be a substantial training component at the start of the market design process. For example, visits to other functioning wholesale markets around the world would provide useful background. Failure to learn from international experience can be extremely costly. Many of the early market failures in the US could have been avoided had FERC taken more seriously the lessons from other markets around the world. Specifically, these markets had substantial experience dealing with system-wide and local market power issues that FERC, for the most part, ignored until the aftermath of the California crisis.

Once the regulatory process is in place, the first task for this entity is to develop a forward market for electricity where private investors sell obligations to supply electricity that can be used to finance new generation capacity. At least for the foreseeable future, establishing a formal bid-based spot market seems too costly in terms of potential consumer harm to justify. Problems with unilateral and local market power have proven extremely difficult for developed countries to solve, and many of them have a long history with regulation and competition policy that most LACs do not have.

Because all suppliers are going to need to buy and sell deviations from their final day-ahead schedules or longer-term energy schedules, a real-time price must be set. This can be accomplished by the former vertically integrated monopolist operating a real-time imbalance market using cost-based bids. All suppliers must file their costs with the ISO and after they are validated by the ISO they are made publicly available to all market participants. The ISO then dispatches all units based on these costs, which also produces locational marginal prices (LMPs)
at all nodes in the network. It is not essential that suppliers be paid or pay their LMP for deviations from their final energy schedules. Retailers and large consumers could also be charged prices aggregated over larger geographic areas.

Initially there is little need to divest capacity from the incumbent monopolist. It is more important for the regulator to focus on obtaining reliable start-up, no load and variable costs for all units in the control area. The dispatch process should also incorporate a more realistic cost of shortage. The easiest way to set the cost-of-deficit parameter is to simulate hydro conditions and fossil-fuel unit variable costs for a number of values of this parameter to determine the relationship between the probability of shortages and the value of the cost-of-deficit parameter. The regulator should then set the initial value of this parameter to achieve the level and probability of shortage less than a value jointly agreed upon by all market participants.

The goal of this cost-based dispatch for imbalances in real-time is to establish a transparent mechanism that all market participants can use to assess the costs and benefits of using this imbalance mechanism. New entrants can factor these costs into their willingness to supply energy on long-term contracts at specific locations in the transmission network. Cost-based dispatch also avoids most of the problems associated with a transmission network that cannot support a competitive wholesale spot market, an initial condition that exists in most all LACs. Setting LMPs using cost-based bids will provide useful information to the ISO about the benefits of transmission upgrades in the network and important input into the long-term process of constructing an economically reliable transmission network.
A cost-based dispatch mechanism also allows the ISO to be a market participant. However, because the ISO must run a cost-based dispatch based on publicly available cost data, there is less concern with having the ISO able to take a position in the real-time dispatch.

Once this dispatch process has been established, the process of opening the wholesale market to consumers can begin. This should be demand driven. By this I mean that to the extent that large consumers are willing to subject themselves to the hourly spot price as their default price, the wholesale market should grow.

This market structure implies two types of consumers. The first are negawatt suppliers, who are the demand-side equivalent of privately-owned generation owners. They must purchase all of their demand at either the hourly spot price or at a forward contract price they have managed to negotiate with some electricity supplier. The second are those who wish to remain with their monopoly retailer. The monopoly retailer for their geographic area must manage the spot price risk associated with serving these captive customers. The regulator should encourage the default suppliers to set retail prices that vary with system conditions for captive consumers.

The difference between the negawatt suppliers and captive customers is that the former group can shop around to any supplier for a better forward contract price for their electricity needs, but can never return to being a captive consumer. Because the negawatt suppliers cannot return to their default provider, in exchange for the opportunity to pay a lower price, they now faced the risk that there will not be enough new capacity to meet their demand. This will give them incentives to enter into forward contracts that can be used to finance new investments.

In order to set the retail price the monopoly retailers must pay for wholesale electricity, the regulator will run periodic auctions for standardized contracts for electricity supply and
retailers will be requested to buy a pre-specified fraction of their load obligations in these markets.

A final issue with this market design is how to handle the issue of system-wide shortages of water. The only way to ultimately solve this problem is to raise the cost-of-deficit parameter to a high enough level to reflect the full economic and political costs of shortages. Because of the potential for a substantial retail price increase if the cost-of-deficit parameter is increased, this parameter should be slowly increased over time, while at the same time all the regulated consumers are exposed to retail prices that vary with actual system conditions. In this way, the theoretical ideal cost-of-deficit parameter can be set, and can consumers decide the retail price at which they are willing to curtail their demand. This cost-of-deficit parameter combined with sensible pricing to final consumers will completely eliminate the possibility of system-wide shortages.

6. Concluding Comments on Designing a Competitive Wholesale Market

Wholesale markets in LACs should be designed for the initial conditions that exist in the ESI. The successful market designs in developed countries and LACs emphasize this very important lesson. The California electricity crisis provides a graphic example of the economic harm that is possible when a restructuring process ignores the initial conditions in the market. In California’s case, coupling a wholesale market where electricity generation unit owners and energy traders had enormous flexibility to take action to maximize their profits, with a retail market that put substantial restrictions on the actions of the large retailers created a recipe for disaster. Combining this with a regulatory process poorly trained to deal with the regulatory
problems that can arise in a wholesale market environment, allowed a flawed market design to turn into an economic disaster that California is still attempting to get itself out from under.

Consequently, the goal for ESI reform in LACs is gradual progress to the ultimate goal of a competitive market that benefits consumers with the appropriate safeguards in place at the start of the market to protect them from significant financial harm. Another important reason for this continuous improvement strategy is that it allows a nascent regulatory process to gain expertise and credibility. With substantial safeguards in place at the start of market, the regulator’s job is much more straightforward. However, as these safeguards are released, her job becomes far more challenging.

Finally, even though a slow, but steady strategy for ESI reform seems optimal for LACs, it is still important to make this process consistent with achieving the market designer’s long-term goals of a competitive wholesale market that deals the maximum benefits possible to consumers. Therefore, the market designer should avoid locking-in beneficial safeguards that are extremely difficult to remove and are also very costly to long-term market efficiency.
References


Figure 1: Residual Demand Elasticity and Profit-Maximizing Behavior

Panel 1(a)

Panel 1(b)

Panel 1(c)

Panel 1(d)

\[ DR(p) = Q_d - SO(p) \]

\[ MR \]

\[ Q^* \]

\[ Q^c \]

\[ P^* \]

\[ P^c \]

\[ P^{**} \]

\[ Q^{**} \]
Figure 2: Welfare Loss from Inefficient Production

Residual Demand Curve

$P^*$ $Q^*$ $MC_g$ $MC_p$
Figure 3: The Impact of Capacity Divestiture on a Pivotal Supplier

Panel 3(a)

Panel 3(b)

$DR_1(p) = Q_d - SO_1(p)$

$DR_2(p) = Q_d - SO_2(p)$
Figure 4: Residual Demand Elasticity and Price-Responsive Demand

Panel 4(a)

Panel 4(b)
Figure 5: Retail Pricing, Hydro Availability and Supply Shortfalls
PRESENTATIONS
Designing Competitive Wholesale Electricity Markets for Latin American Countries

Frank A. Wolak

Latin American Competition Forum
Paris, 7-8 April 2003
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Chairman, Market Surveillance Committee
California ISO
Outline of Talk

- Challenges Facing Electricity Supply Industries (ESIs) in Latin American Countries (LACs)
- Market Design Problem
  - Generic market design problem
  - Necessity of market design problem
- Lessons from Developed Countries for LAC Market Design
- Lessons from LACs for Market Design
- Challenges Specific to Brazil, Chile, Colombia, Honduras and Mexico
- Recommended Baseline Market Design for LACs
Challenges Facing ESIIs in LACs

• Rapid Demand Growth and Future Supply Adequacy
  – Between 5%-7% annual load growth in LACs
    • 2%-3% annual load growth in developed countries
  – Funding new generation capacity with government revenues or backed by government guarantees leaves less funding for important social programs

• Little experience with regulatory oversight or competition law
  – Credibility problem for assuring private entrants they can recover sufficient revenues to justify initial investment

• Government subsidizes electricity consumption for some or all customers
  – Two types of subsidies because most countries are operating at the point where MC > AC given rapid demand growth
    • Price charged to consumers does not equal marginal cost of last unit produced
    • Price charged to consumers may not cover average cost of all units produced
Challenges Facing ESIs in LACs

• Management of government-owned firm faces divergence set of incentives
  – Like all government-owned entities it has limited incentive to choose least-cost mode of supply for present production and new capacity investments

• Many households do not have access to electricity
  – Requires expanding distribution network

• Particularly for Central American countries, small peak demand relative to minimum efficient fossil-fuel plant size
  – Difficult to create sufficient number of suppliers for a competitive spot market
  – Difficult to justify some fixed-cost investments in market infra-structure
Market Design Problem

• Maximize market designer’s payoff function (which depends on market outcomes) by setting
  – Number and size of market participants
  – Rules for determining revenues each firm receives
• Subject to constraints that all market participants will choose their strategies to maximize payoffs given rules set by market designer (Incentive constraints)
• Competitive market may not always maximize market designer’s payoff function
Adam Smith on Market Design

• “It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our necessities but of their advantages.”

The Wealth of Nations, Book I Chapter II
Principal/Agent Problem

• Market Design Problem
  – Multiple Layer, Multiple Principal-Multiple Agent Problem

• $W(x,s) = \text{Payoff of Principal (regulator or government)}$
  – $x(a,s) = \text{observable market outcomes } x \text{ (output produced)}$
  – $s = \text{state of world } s \text{ (level of market demand)}$

• $V(a,y,s) = \text{Payoff of Agent (firm)}$
  – $a = \text{actions (bids, maintenance, employment, fuel use decisions)}$
  – $y(x) = \text{compensation function set by principal (how firms are paid for actions they take)}$

• Usually assume that Principal
  – Cannot observe all actions $a$ or true state of world $s$
  – Can observe $x(a,s)$ outcome that depends on $a$ and $s$
Principal-Agent Theory

- Principal’s problem is to choose function, \( y(x) \), to maximize \( E_s[W(x,s)] \), its expected payoff, subject to
  - (1) Individual rationality of agent--agent will choose \( a \) to maximize \( V(a,y(x),s) \) or its expectation given \( y(x) \) and \( s \)
  - (2) Participation constraint--\( y(x) \) must allow agent to achieve reservation payoff or expected payoff \( V^* \)

- Regulator must recognize that once \( y(x) \) is set, agent will choose \( a \) to maximize its payoff function

- Regulator must set \( y(x) \) to allow agent to achieve at least reservation payoff \( V^* \)
  - Firms must find it in their self-interest to participate in market
Theory of Market Design

- Market Design Requires Solving Hierarchical Principal-Agent Problems at Multiple Levels

- First Level
  - Principal = Market Designer
    - Usually government and/or regulator
  - Agents = Firms and consumers in market

- Second Level within Firm
  - Principal = Owner of Firm
  - Agent = Management of Firm

- Two dimensions of market design
  - Markets versus regulation
  - Government-ownership versus private ownership
Optimal Market Design

• **Proposed objective function for market designer**
  – Lowest possible average annual delivered price consistent with financially viable industry
  – In economist’s language--maximize consumer surplus subject to marginal firm in industry earning zero economic profit

• **Minimum requirement for competitive market is lower average price than under government-owned vertically-integrated monopoly regime**
  – Otherwise it is hard to rationalize industry restructuring
Major Market Design Challenge with Privately-Owned Firms = Market Power

• Electricity supply industry extremely susceptible to the exercise of market power in the spot market
  – Demand must equal supply at every instance of time at every location in the transmission network
  – All electricity must be delivered through transmission network
  – Non-storability of product
    • Demand varies throughout the day
  – Production subject to severe capacity constraints
  – How electricity is priced to final consumers makes real-time demand elasticity effectively equal to zero

• Implication--Firms can exercise enormous amounts of market power in a very short time
  – Ask California and New Zealand
Market Design Challenge with Government-Owned Firms = Productive Efficiency

• How to cause producers to supply electricity in technically and allocatively efficient manner
  – Technically efficiency = produce the maximum amount of output for a given quantity of inputs—capital, labor, input energy, and materials
  – Allocative efficiency = produce fixed amount of output at least cost given input prices

• Can set prices to recover incurred cost of production
• Government-Owned firms have little incentive to raise prices above level necessary to cover average costs
Optimal Market Design for ESI

• Four segments of electricity supply industry
  – Generation
  – Transmission
  – Distribution—Wires only
  – Supply—Retailing only

• For each segment market designer has option to design a regulatory mechanism
  – Market versus regulation
  – Government versus private ownership

• Provide optimal market design rationale for this choice for each segment of industry

• Market design process in network industries--Why?
Necessity of Market Design

• Most markets do not require explicit market design process
  – Markets evolve from locations where economic agents trade
    • New York Stock Exchange (NYSE)

• Economic agents are free to trade at any market they like
  – Buyers search for markets offering lowest selling price
  – Sellers search for markets that offer highest buying price

• Why do network industries, particularly electricity, require market design process?
Necessity of Market Design

• Network required to deliver electricity
  – Despite Nikola Tesla’s attempts, cannot beam electricity to final customers
  – Cost structure favors a single transmission network for a given geographic area

• How network access determined can have an enormous impact on profits of market participants
  – Without access to transmission network generation unit owners can only sell to local consumers

• This requires designing a regulatory mechanism
  – To ensure equal access to network to all market participant
  – To compensate entity that manages transmission network
  – To set prices charged for use of transmission network
Some Form of Regulation Necessary

• Choice is not de-regulation versus regulation, but how much and where to regulate
• All markets are regulated
  – Consumer safety, Environmental quality
• Re-structuring is an alternative regulatory mechanism for attaining higher value for principal’s objective function than government-ownership and vertical integration
  – For market and private ownership to be superior regulatory contract it must do a better job of solving market design problem
Some Form of Regulation Necessary

- “Competitive” regime restricts regulated portion of industry to smallest entity possible
  - Transmission and distribution are only services with their prices set through a regulatory process
  - Generation and electricity retailing are open to competition
    - Economies of scope difficult to capture under this regime
- “Vertically integrated” regime imposes regulatory process on all aspects of industry
  - Final output price of vertically integrated monopoly is regulated--economies of scope possible
- Choice between regulation and competition depends which regime achieves market designers objectives
Market Design Lessons From Developed Countries

• Solving Market Power Problem--First Step in Market Design Process
  – Understanding how firms bid to maximize profits under given set of market rules, $y(x)$
  – How do firms exercise their unilateral market power

• Allows Market Designer to define constraint set it faces in maximizing its payoff function
  – Firms will maximize profits given market rules
    • Individual Rationality
  – Firm must be expect to earn return sufficient for it to participate in market
    • Participation Constraint

• How firms maximize profits in bid-based markets
Bidding in Competitive Markets

• Simple model of profit-maximizing bidding behavior in competitive market
  - $Q_{id}$: Total market demand in load period $i$ of day $d$
  - $SO_{id}(p)$: Amount of capacity bid by all other firms besides Firm A into the market in load period $i$ of day $d$ as a function of market price $p$
  - $DR_{id}(p) = Q_{id} - SO_{id}(p)$: Residual demand faced by Firm A in load period $i$ of day $d$, specifying the demand faced by Firm A as a function of the market price $p$
  - $\pi_{id}(p)$: Variable profits to Firm A at price $p$, in load period $i$ of day $d$
  - $MC$: Marginal cost of producing a MWH by Firm A
Residual Demand Curve faced by Firm

DR(p) = Q_D - SO(p)
Bid to Maximize Profits Subject to Residual Demand
Profit-maximizing behavior implies an profit-maximizing price above marginal cost

- Residual Demand Curve unknown at time generator submits bids
  - Demand uncertainty
  - Uncertainty about actions of other suppliers
- Optimal bid curve depends on distribution of elasticities of residual demand function
Bid to Maximize Expected Profits

[Diagram showing supply (S), marginal revenue (MR), and demand (DR) curves with price (P1, P2) and quantity (Q1, Q2) points.]
Market Design = Limiting Market Power of Firms

• Make residual demand curves perceived by all unit owners as elastic as possible
  – Generators facing infinitely elastic residual demand curve perceive themselves as being unable to impact the market price by their bids
  – Optimal strategy for generation unit owner facing infinitely elastic residual demand curve is to bid marginal cost curve (MC) as willingness to supply curve \([S(p)]\)
  – This will lead to market prices as close as possible to market designer’s optimum
Limiting Market Power of Firm

• Divestiture of Generation Capacity
• Forward Financial commitments make firms bid more aggressively in spot market
• Transmission upgrades to face all unit owners with more elastic residual demand curves
  – Economic reliability of transmission network versus Engineering reliability of transmission network
• Price Responsive Demand makes residual demand curves perceived by all unit owners more elastic
• Credible Regulatory Process
  – Firms must obey market rules
Divestiture of Generation Capacity

Price

\[ \text{DR}_1(p_{\text{max}}) = Q_d - SO_1(p) \]

\[ \text{DR}_2(p) = Q_d - SO_2(p) \]

Quantity
Impact of Forward Contracts on Bidding Behavior

- $Q_{Cid}$: Contract quantity for load period $i$ of day $d$ for Firm $A$
- $P_{Cid}$: Quantity-weighted average (over all hedge contract signed for that load period and day) contract price for load period $i$ of day $d$
Spot Market Bidding With Forward Contracts

- Assume market clearing price $p$ is determined by solving for the smallest price such that the equation $SA_{id}(p) = DR_{id}(p)$ holds.
- The magnitudes $QC_{id}$ and $PC_{id}$ are set far in advance of the actual day-ahead bidding process.
- Generators sign hedge contracts with electricity suppliers or large consumers for a pattern of prices throughout the day, week, or month, for an entire or fiscal year.
- Variable profits (profits excluding fixed costs) to Firm A for load period $i$ during the day $d$ at price $p$ as:
  - $\pi_{id}(p) = DR_{id}(p)(p - MC) - (p - PC_{id})QC_{id}$
- This can be re-written as:
  - $\pi(p) = (DR(p) - QC)(p - MC) + (PC - MC)QC = DR_C(p)(p - MC) + F$
- Note that second part of expression is fixed from a day-ahead perspective.
Bidding With Hedge Contracts

\[ P \]

\[ Q \]

\[ P^B_{NC} \]

\[ P^B_C \]

\[ S_C - Q_C \]

\[ S_{NC} \]

\[ S_C \]

\[ MC \]

\[ DR(p) \]

\[ DR(p) - Q_C \]

\[ MR_C \]

\[ MR_{NC} \]
Profit-Maximizing Bidding
With $Q_C > 0$ and $Q_C = 0$
(For Simplicity Assume $MC = 0$)
Transmission Network and Market Power

• “Over-investment” in transmission capacity relative to engineering reliability concerns can benefit market
  – Economically reliable transmission network requires far greater inter-connection capacity than technologically reliable network
  – Economic reliability—All locations in transmission network can be supplied by number of different firms a large fraction of the time—All locations face sufficient competition

• Consider case that “over-invest” in transmission capacity to increase prices by $1/MWh
  – If increased capacity of transmission network results in more competitive wholesale market and average prices fall by $2/MWh, consumers benefit from upgrade
Retail and Wholesale Market Interactions

• Symmetric treatment of producers and consumers of electricity
  – From perspective of grid reliability, a consumer is a supplier of “negawatts” -- \( SN(p) = D(0) - D(p) \)

• Default price for all consumers should be hourly wholesale price
  – Consumer is not required to pay this price for any of its consumption, just as generator is not required to sell any output at spot price
  – To receive fixed price, consumer must sign a hedging arrangement with load-serving entity or electricity supplier

• There is nothing unusual about hedging spot price risk
  – Health, automobile and home insurance, cellular telephone
Benefits of a Price Responsive Demand

\[ \text{DR}(p) = Q_D - \text{SO}(p) \]
Credible Regulatory Process

- Regulator charged with protecting consumers “unjust and unreasonable prices”
  - For monopoly services this is primarily an accounting and legal exercise
    - Allow firm to recover prudently incurred costs
  - For competitively provided services this means setting “just and reasonable” market rules
    - Rules that yield “just and reasonable prices”
  - For privately-owned firms must be confident they will have opportunity to earn return on investment
    - Regulator protects against ex post opportunism of government
    - Non-discriminatory or preferential application of regulatory rules
Dimensions of Regulatory Process

Regulator must set standard for
  Market outcomes and firm behavior that is consistent with
  workably competitive market outcomes
  ISO system and market operator behavior that is consistent
  with prudent management techniques
Market monitor must know what to look for in order to
  report it to regulator
    Effective market monitoring requires clearly defined protocols for
    acceptable and unacceptable behavior that are known to all market
    participants
Information on market participant characteristics and
  market outcomes essential to effective regulation
    Regulator must have legal right to receive all necessary information
    Sunshine regulation is most effective route to establishing credibility
Abuse of Market Rules versus Exercise of Market Power

- Exercise of market power is raising market price through actions that do not violate market rules
- Abuse of market rules is violating market rules to increase profits or otherwise benefit firm
- Factual nature of rules violation
  - Going 70 miles per hour in a 55 miles per hour zone
  - Violation of terms of a contractual obligation
    - Providing energy with capacity sold for reserve
- A rules violation typically has adverse system reliability consequences
Abuse of Market Rules versus Exercise of Market Power

• Penalties are necessary to enforce market rules
• Recall that firms respond to incentives
  – Unless the cost to violating rules exceeds benefits firms will not follow the market rules
• Not advisable to rely on good intentions of market participants when system reliability is at stake
• Contracts in all markets have penalties for non-performance
• In regulated world firm and regulator had common interest in high levels of system reliability
  – Under wholesale market regime this is not necessarily the case
• If market rules are obeyed, this will prevent many problems
Coordinating Regulatory Policies

• In US, FERC sets wholesale market policies
• State Public Utilities Commissions (PUCs) set retail market policies
• Wholesale and retail market policies must be coordinated or enormous consumer harm is possible
  – Designing a wholesale market assuming active participation by retail demand can be a disaster if retail market policies do not allow this
  – Designing retail market policies ignoring need of retailers to manage spot price risk can be a disaster wholesale market policies allow spot prices to fluctuate hourly or on a shorter time horizon
Market Design Lessons from LACs

- Gambling with weather problem
- Participation by government-owned firms
  - Competitive and monopoly sectors
- Fostering an active forward market
- Bid-based versus cost-based pricing
- Regulating retail electricity prices
- Government versus private participation in ESI
- Country-specific challenges
  - Brazil, Chile, Colombia, Honduras, and Mexico
Gambling with Weather

• Hydroelectric capacity has close to zero incurred marginal cost of production
  – Very tempting for government to use this fact to keep price of wholesale electricity low

• How is this accomplished in LACs
  – ISO dispatches generation units using stochastic discrete dynamic programming (SDDP) model using operating cost of fossil-fuel units and cost of deficit
  – Current spot price reflects opportunity cost of operating fossil fuel units and cost of deficit

• Current cost of deficit in Brazil is 350 $R/MWh, which is approximately $100/MWh at current exchange rates
  – Chile only slightly higher

• Problems with low cost of deficit parameter
  – Sets very low average spot price—approximately $22/MWh in Brazil at current exchange rates
  – Encourages over-consumption of electricity—average retail rate $55/MWh in Brazil at current exchange rates
Gambling with Weather

- Problems with low cost of deficit parameter
  - Fossil fuel units may not used until water levels get too low—Rationing periods occur
  - Lower cost of deficit implies deficits will occur with higher probability

- As long as rain comes this strategy can be a very effective way to keep wholesale electricity prices low

- Discourages fossil fuel entry
  - Extremely volatile revenue stream for fossil-fuel units
Gambling with Weather

System Demand

Fossil Generation in High Hydro Year

Fossil Generation in Low Hydro Year

\( P_{\text{Average}} \)

Low Hydro Year

High Hydro Year

\( Q_{\text{Low}} \)

\( Q_{\text{High}} \)

Shortage
Involving Final Demand

• Final demand can be involved in wholesale market without sophisticated metering in hydroelectric dominated system
  – Very little price volatility within day relative to fossil-fuel based system
  – Price volatility is primarily across seasons of the year
    • Wolak (1999) “Market Design and the Behavior of Prices in Restructured Electricity Markets: An International Comparison” provide evidence for this in Nordpool and New Zealand markets

• No need for hourly meters to involve final demand
  – Real-time pricing of electricity on monthly basis
  – High cost of water implies high price of electricity for coming month or billing period
Fostering Forward Market

• Regulator periodically runs anonymous auctions for standardized products
  – Baseload power (1 MWh—24x7)
  – Peaking-power (1 MWh—16x6)
  – Delivery to specific location in network
  – Date in far advance of delivery
  – Start as financial and then turn “physical” as delivery nears

• Suppliers bid for right to provide power
  – Provides vehicle for supplier to sell forward obligations to finance new investment
  – Prices can used to regulate retail prices

• Default provider auctions in many parts of US can provide model for these types of auctions
  – Standardized rules, restrictions on actions of bidders
  – Eliminate barriers to participation to greatest extent possible
Single Buyer = Gov’t-Owned Monopolist

- Single Buyer is another government-owned monopolist
  - Could be even worse for consumers than vertically integrated monopolist
- Single buyer option was available to state-owned monopolist but it did choose this option
  - Vertically integrated monopolist could have contracted out for all power
- Recall principal-agent framework
  - Single buyer has little incentive to minimize wholesale energy costs due to ownership structure
  - Single buyer may favor political ends over economic ends
- Behavior must change for consumers to benefit
  - Incentives must be different for behavior to change
  - Little difference in incentives for wholesale power supply
  - Market power in forward market due to entry barriers could raise wholesale energy costs if energy is contracted for by a single buyer
Bid-Based versus Cost-Based Dispatch

• Net benefits of bid-based spot markets in developed countries unclear
  – Few markets actually operate bid-based system
• ISO needs to operate system in real-time
  – Cost-based market with realistic cost-of-deficit parameter allow this to happen
  – Little advantage to bid-based system with active demand side participation
• In hydro-based system, demand must be marginal supplier of electricity (negawatts) to manage water shortfalls
  – True in bid-based and cost-based system
  – Cost-based system avoids market power problems
• Cost-based system provides more certainty on imbalance charges loads and generators will be liable for relative to their forward contracts
  – Reduces cost of new investment
  – Makes it easier to sell standardized forward contracts for energy
Regulated Retail Suppliers

- Create two customer classes
  - Negawatt suppliers
  - Regulated customers
- No need to regulate retail prices for negawatt suppliers
- Use results of periodic anonymous wholesale procurement auctions to set regulated wholesale price contained in retail price
  - Use fixed portfolio of forward prices and real-time prices
State-Owned Hydroelectric Supplier

- New entrants recognize that large government-owned hydroelectric supplier may want to keep wholesale prices low for political reasons
- This is most likely to occur during periods when private supplier could recover much of its investment costs
- Norway experience is instructive
  - In fall of 1992, Statkraft—state-owned money hydroelectric owned announced policy to maintain prices above 100 NOK/MWh
    - Although plan was initially successful, prices have subsequently fallen below this level
- Norway has not had any new investment in generation capacity since restructuring took place in early 1990s
- Significant government presence in market underscores importance of fostering forward market through periodic anonymous auctions
- Argues in favor of cost-based dispatch of all units based on transparent model with reasonable cost-of-deficit parameter
Regulatory Oversight

• Countries with former government-owned monopolies face two transition problems
  – Establishing and enforcing market rules
  – Setting prices for monopoly services

• US has had almost 100 years of experience and they still have not gotten it right—California crisis
  – Process must account for continual improvement

• Simple rules that are easy to enforce (that may not get things exactly right) may be preferable, at least during initial stages of re-structuring process

• Credibility is regulator’s most powerful tool
  – Successfully enforced decisions increase credibility
Regulatory Credibility

- Advisory Committee approach to regulatory credibility
  - Establish committee of international experts to provide advice to regulatory body
  - Committee has no power to issue order or impose penalties on market participants
    - Provide advice on best regulatory practices
    - Has right to access information to prepare reports
  - Can issue public opinions on periodic basis
    - Provide cover for regulator
    - Prevent opportunistic behavior by government
Brazil

• Brazilian Energy Reallocation Mechanism (MRE) pays hydroelectric suppliers according to their assured energy certificates (CEA), not their actual hourly production.

• Each hour total amount of hydroelectric energy produced in Brazil is measured and this production is allocated to each hydroelectric supplier according to quantity-weight share of CEAs they own:
  – Firm is paid market price times its share of total hydroelectric output.
  – Payment to firm is does not depend on whether or not firm supplied any energy during hour or was available to operate in that hour.

• Fossil-fuel units paid hourly price based on actual production.

• New hydroelectric entrant makes profit on how many CEAs they are able to obtain, not based on hourly operating characteristics of unit.

• MRE provides little incentive to build new capacity or choose fuel mix that provides maximum benefits to system reliability.
Brazil

• Gambling with weather problem
• Transmission expansion essential to serve Brazilian Market given geographic size of country
  – Regulator must take forward-looking approach to fostering transmission expansion
  – Design funding mechanism to allocate causal costs to those who benefit and share common costs of upgrades
• Establishing credible regulatory process
  – Independent market monitoring committee
Chile

• Managing risk of water shortage
  – Increase cost-of-deficit parameter

• Pricing transmission expansion
  – Given structure of country network is primarily radial
  – Interconnecting northern and southern control areas could yield substantial benefits given large amount of excess capacity in north

• Because of radial nature of transmission network and relatively small peak demand Chilean approach to system operation may not scale to other LACs
Colombia

- Managing risk of water shortage
  - Bid-based approach did not prevent shortage
  - Cost-based with high cost of deficit preferred
- Transmission expansion and congestion
  - Transmission network subject to frequent de-ratings
  - Argues against bid-based dispatch
  - Argues in favor of cost-based locational marginal pricing
- Regulatory credibility problem common to all LACs
Honduras

• Small country problem
  – Peak demand small relative to minimum efficient scale of generating facilities

• Encouraging fuel diversity
  – All fossil fuel must be imported

• Inter-connections with neighboring countries primarily for reliability not economic reliability

• Regulatory credibility problem common to all LACs
Mexico

- **Rapid demand growth**
- **Legal barriers to re-structuring**
  - Constitutional requirement for electricity for public service to be provided by government
- **Encouraging fuel diversity**
  - Domestic natural gas may be insufficient to meet demand growth
- **Substantial opportunities for trade with US**
- **Regulatory credibility problem common to all LACs**
Recommended Market Design for LACs

• Generation sector
  – Competition and Private Ownership
  – Focus on development of forward market for energy
  – Cost-based short-term energy market

• Transmission sector
  – Government-owned and regulated
  – Focus on expanding interconnection with other countries

• Distribution sector
  – Regulation and Private Ownership
  – Focus on expanding access to network

• Retailing Sector
  – Competition and Private Ownership
  – Focus on preventing cross-subsidies between free consumers and regulated consumers
  – Focus of involving all consumers (free and non-free) in wholesale market to extent it is cost-effective
Conclusions for ESIs in LACs

• **Benefits from re-structuring must come from a change in behavior of market participants**
  – Behavioral change does come about unless agents have strongest possible incentive to change

• **Firm operate more efficiently**
  • Short-term operation at least cost
  • Investment decisions based on market signals

• **Consumers make greater effort to use existing capacity more efficiently**
  • Get by with less capacity to serve same number of consumers
  • Holding excess capacity is costly, because capital costs of unused capacity must be paid for whether or not it is used
Questions or Comments
Comments on Frank Wolak’s Paper: “Designing Competitive Wholesale Electricity Markets for LAC Countries”

by

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Principal Energy Economist IADB

Prepared for the

First Meeting of the Latin American Competition Forum
Paris, April 3, 2003
Presentation

• Objectives
• A tale of two cities
• Lessons from OECD
• Competition in LAC electricity markets
  – In theory
  – In practice
• On the challenges
• Conclusions
Objectives

• Apply up to date economic theory and empirical methods to the analysis of competition in selected electricity markets in LAC, to identify:
  – (I) main distortions of competition in the wholesale market that remain in selected countries in LAC;
  – (II) best practices for addressing those distortions and introducing competition, and the major constraints to their successful implementation; And
  – (III) policy options for governments of countries facing difficulties in attaining the welfare benefits associated with the introduction of competition.
A Tale of Two Cities

- Main motivation was efficiency gains in mature markets with slow growth
- Over-installed and over-reliable
- Institutions of market economy

- Main motivation attract private resources to invest in a fast growing market
- Limited coverage and under-installed
- Weak institutions
- Many countries with small markets
The Lessons From OECD Markets

• Market Power exist and institutions matter
• Market Design = Limiting Market Power of Firms
  – Make residual demand curves perceived by all unit owners as elastic as possible
  – Implies restructuring
• Regulatory Institutions
  – For completing design and monitoring transition
Limiting Market Power of Firm

- Divestiture of generation capacity
- Forward financial commitments make firm bid more aggressively in spot market
- Transmission upgrades to face all unit owners with more elastic residual demand curves
- Price responsive demand makes residual demand curves perceived by all unit owners more elastic
Competition in Electricity & Competition in Other Sectors

- Privatization
- Liberalization
- Defense of competition

- Privatization
- Liberalization
- Defense of competition
- Restructuring
- Regulation
- Transition
Challenges in LAC

- Weak institutions
- Growing demand
- Hydro dominated systems
- Government still important player
- Small markets
- Poor or none regulatory & competition experience
Electricity Markets in LAC
LAC Installed Capacity in MW

- Brazil
- Mexico
- Argentina
- Venezuela
- Colombia
- Chile
- Paraguay
- Peru
- Ecuador
- Dominican R
- Uruguay
- Costa Rica
- Guatemala
- T&T
- Panama
- Bolivia
- El Salvador
- Honduras
- Nicaragua
- Jamaica
Hydro Share

- Venezuela
- Uruguay
- T&T
- Peru
- Paraguay
- Panama
- Nicaragua
- Mexico
- Jamaica
- Honduras
- El Salvador
- Ecuador
- Dominican Republic
- Costa Rica
- Colombia
- Chile
- Brazil
- Bolivia
- Argentina
Competition in Theory...

- Private and competitive: AR
- Private becoming competitive: BO, PE, CH, PN
- Competitive becoming private: CO
- Becoming private and competitive: BR, GU, ES, EC, DR, NI
- Thinking in Reform: CR, UR, VE, PR
- and Mexico?
…And in Practice

• Some countries never made it
  – El Salvador and Brazil

• Others have problems in market design
  – Colombia and the transmissions constraints
  – Chile the drought and the governance of the market
  – Forward markets in panama & Dominican republic

• Many ignored market structure issues
  – El Salvador, Guatemala

• Others may have fared well under current conditions but may require further adjustments
  – Argentina

• And most failed to develop credible regulatory institutions
# LAC Wholesale Markets

<table>
<thead>
<tr>
<th>Country</th>
<th>Model</th>
<th>Hydro %</th>
<th>Private</th>
<th>Forward Markets</th>
<th>Concentration</th>
<th>Unbundled</th>
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<tbody>
<tr>
<td>Argentina</td>
<td>Cost</td>
<td>39</td>
<td>75</td>
<td>17%</td>
<td>C5=43</td>
<td>Yes</td>
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<tr>
<td>Brazil</td>
<td>Cost</td>
<td>90</td>
<td>30</td>
<td>85 M</td>
<td>C1=70</td>
<td>Partial</td>
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<tr>
<td>Chile</td>
<td>Cost</td>
<td>40</td>
<td>100</td>
<td>Reg. Price</td>
<td>C2=80</td>
<td>Partial</td>
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<tr>
<td>Colombia</td>
<td>Bids</td>
<td>63</td>
<td>60</td>
<td>Variable</td>
<td>C4=70</td>
<td>Partial</td>
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<tr>
<td>Peru</td>
<td>Cost</td>
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<td>60</td>
<td>Regulated Price</td>
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<td>Partial</td>
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<tr>
<td>D.R.</td>
<td>Cost</td>
<td>13</td>
<td>80</td>
<td>85 M</td>
<td>C3=80</td>
<td>Partial</td>
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<tr>
<td>Guate.</td>
<td>Cost</td>
<td>33</td>
<td>50</td>
<td>100 M</td>
<td>C2=60</td>
<td>No</td>
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<tr>
<td>Panama</td>
<td>Cost</td>
<td>49</td>
<td>100</td>
<td>100 M</td>
<td>C4=83</td>
<td>yes</td>
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<td>Salvador</td>
<td>Bids</td>
<td>36</td>
<td>40</td>
<td>Tie to Spot</td>
<td>C2=100</td>
<td>No</td>
</tr>
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Gaming With the Weather and Security of Supply

- Long-term price signals to investors are weak because low rationing cost but also because extreme volatility and price caps

- Using both pricing and higher cost
  - pricing consumers $\Rightarrow \uparrow$ volatility for them and $\downarrow$ seasonal demand from generators: good for existing hydro
  - $\uparrow$rationing cost $\Rightarrow \uparrow$demands from thermal reallocating rents among generators, & $\uparrow$overall consumers prices

- Do we need additional instruments?
  - capacity charges, markets for capacity
  - emergency purchases to deal with residual hydrologic risk
  - long-term contracts
Countries Have Underestimated Competitive Forward Contracts

• Some have obligations to buy but
  – Have failed in the design: Brazil, Dominican Republic, Panamá
  – Or have not yet tested the procedure: Guatemala
• Some don’t have any obligation
  – Trusted agents to arrange among themselves, Colombia, Argentina, El Salvador
• Some have regulated long-term pass-through
  – The Chilean first generation
The Hidden Cost of Cost-based Markets

- The belief that a cost-based market design is sufficient to control market abuse or gaming proved to be wrong
  - When there is market power it is always possible to abuse, regardless of the chosen market design
- A cost based market involves several interacting features that can create distortions, inefficient outcomes or allow gaming
- Monitoring efficiency and transparency of implementation and market development requires outside help
  - Panamá is a good example of how an external committee of surveillance can help in overcoming initial problems
Strong Independent and Credible Regulator

• Culture of independent regulator is foreign
• Some autonomy in theory, but in practice...
  – Argentina, Brazil
• Some pretend to be
  – Nicaragua
• Some don’t have any illusions
  – Chile
• And most are underpaid and short of resources
Enforcement of Competition: Trade Offs

<table>
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<th>Government</th>
<th>Sector Agency</th>
<th>General Agency</th>
<th>Judiciary</th>
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<td>Sector knowledge</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Very Low</td>
</tr>
<tr>
<td>Regulator Capture</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Independence from Government</td>
<td>None</td>
<td>Depends</td>
<td>Depends</td>
<td>Lots</td>
</tr>
<tr>
<td>Speed</td>
<td>Reasonable</td>
<td>Reasonable</td>
<td>Little</td>
<td>Very little</td>
</tr>
</tbody>
</table>

After Miguel A. Fernandez Ordoñez, 2000
Intervention of General Agencies

After Miguel A. Fernandez Ordoñez
Reform As Development of Initial Capacities

• Two different skills: (i) design of reforms that meet Williamson's remediability criterion and keep open the option for improvements in market design; (ii) design of migration strategies to some ‘superior' equilibrium
Conclusions

• The document identifies:
  – some key issues in development of competition in wholesale electricity markets both from theoretical and empirical point of view
  – lessons from OECD countries
  – major challenges facing LAC countries

• And provides good advise:
  – creating organized markets for electricity is a gradual endeavor that requires good market design, nurture during the transition and acknowledgment of local conditions
  – reaping full benefits from competition may take a while and require some patience
  – how to strike the balance between regulation and competition remains at the heart of the problem
Final Version Will Include

- Further reference to particular problems faced by countries visited during the study
- Further develop some proposed solutions
  - continuity of supply
  - surveillance of competition
  - challenges of Cost-Based Markets
- And…..
  - role of different institutions in oversight and vigilance of competition
  - role of international cooperation in helping to increase credibility of regulators
  - role of regional market integration
Comments on Frank Wolak’s Paper: Designing Competitive Wholesale Electricity Markets for LAC Countries

by

Jaime Millan
Principal Energy Economist IADB
Prepared for the

First Meeting of the Latin American Competition Forum
Paris, April 3 2003
Sector Reform: A Tale of Two Cities

• Deregulation / “Restructuring” (in U.S.)
  • Motives: ↑ Efficiency
  • Arguments: ↓ Scale ⇒ ↑ Contestability
    Markets “get prices (incentives) right”
    Light-handed regulation suffices

• Privatization / “Liberalization” (LAC)
  • Motives: State failure & ↓ Investment
  • Arguments: State out ⇒ ↑ Efficiency
    Markets “get prices (incentives) right”
    ↑ Private sector ⇒ ↑ investment
    competition ↑ ⇒ ↓ Heavy-handed regulation
SESSION IV: PEER REVIEW OF CHILE’S COMPETITION LAW AND POLICY
Competition Law and Policy in Chile

Chile has been a pioneer in the field of competition law and policy in South America since 1973 when the current law was adopted. This report, which provides an overview of competition law and policy in Chile, was the basis of an in-depth peer review at the first meeting of the OECD/IDB Latin American Competition Forum on 7-8 April 2003. This review has been particularly timely as pro-competitive regulatory reforms and improved competition law enforcement are high priorities for the current Chile’s government in the context of its “pro-growth agenda”.

This review is part of the OECD’s ongoing co-operation with non-member economies around the world.
COMPETITION LAW AND POLICY IN CHILE

A PEER REVIEW

This report was prepared by Terry Winslow, consultant to the OECD, previously a member of the OECD Competition Division. Before then he spent 20 years in various positions, including Acting Director, at the United States Federal Trade Commission’s Bureau of Competition.
FOREWORD

“Peer review” has been a core element of OECD co-operation since the organisation was founded. Co-operation has always been founded upon the willingness of OECD countries to submit their laws and policies to questioning by other members. This peer review process promotes transparency and mutual understanding for the benefit of all, while giving the reviewed country valuable insights about possible improvements. Such co-operation has had remarkable success in the area of competition law and policy. In competition law enforcement, OECD countries have become partners in seeking to halt harmful international cartels and mergers. And the OECD’s Competition Committee also played a major role in assessing and demonstrating the usefulness of applying competition policy principles in the process of reforming regulatory systems.

The success of peer review in promoting co-operation and voluntary convergence among OECD countries encouraged the IDB and OECD to include peer review as part of their joint Latin American Competition Forum. This Joint OECD/IDB programme will develop under the aegis of the OECD Centre for Co-operation with Non-Members, which promotes a mutually beneficial dialogue with OECD members and non member economies. The overall goals of IDB/OECD co-operation programme concluded in this area are to help promote economic growth and employment, greater economic efficiency, and a higher average standard of living in the medium to long term. There is increasing consensus that sound competition laws and policies are important to the achievement of these goals, and the IDB and OECD can best promote these laws and policies by combining their resources and taking advantage of each institution’s comparative advantage.

In order to include a peer review in the Latin American Competition Forum, it was of course necessary for a competition authority to volunteer to receive a review. Fortunately, Chile’s competition authority had already expressed interest in being peer reviewed after hearing about the process at a meeting of the OECD Global Forum on Competition. When plans for the Latin American Competition Forum came together in August 2002, Chile
volunteered to be reviewed at the Forum’s first meeting on 7-8 April 2003. By all accounts, the peer review was the most successful part of that meeting, and Peru has now volunteered to be peer reviewed at an upcoming Forum meeting.

The peer review report that follows includes an update that explains steps that Chile and its competition authority have taken since the April 2003 peer review session. Even before the peer review was scheduled, Chile was considering important amendments to its competition law. The report and comments by Forum participants generally supported the proposed amendments, which have now been adopted. In addition, the competition enforcement authority has adopted four internal changes to deal with issues raised in the report.

We would like to renew our thanks to the Research Department of the IDB for helping create the Forum and financing Chile’s peer review and to Chile for being the first country reviewed in the Forum, and to the many competition officials whose written and oral contributions to the Forum are so important to its success.

Eric Burgeat
Director
Centre for Co-operation with Non-Members

Carlo Binetti
IDB Special Representative in Europe
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AN UPDATE ON DEVELOPMENTS SINCE APRIL 2003

This report on competition law and policy in Chile is an edited version of the report that provided the basis for the peer review that was conducted at the IDB/OECD Latin American Forum on 8 April 2003 at OECD Headquarters in Paris, France. Some updates, such as Supreme Court affirmation of two competition decisions, have been incorporated into the text of the report. In addition, several reforms since then merit separate treatment. First, as anticipated, the proposed competition law that is described in the report has been enacted. Second, Chile’s competition enforcement authority, the National Economic Prosecutor, has adopted four reforms that implement the report’s recommendations.

Amendments to the competition law

Chilean Law No. 19.911, published on 14 November 2003, amends the prior competition law by creating a new Competition Tribunal and introducing a number of other reforms. The law will go into effect six months from its publication date.

As proposed, the Tribunal will be an independent entity that has judicial powers but is not formally part of the judiciary. It will have five members. The President of the Tribunal, who must be a lawyer with at least ten years of experience in the competition law field, will be appointed by the President of the Republic from a list of five nominees established by the Supreme Court through a public competition. The other members (two lawyers and two economists) will be chosen as follows. One lawyer and one economist will be chosen by the President from a list of three nominees established by the Central Bank (Council of Governors), also through a public competition. The other lawyer and economist will be appointed directly by the Central Bank from candidates selected by this same public competition. The Tribunal will also have four surrogate members, selected by the President of the Republic and the Central Bank from the same lists of nominees. All candidates are requested to have expertise in competition issues.
The members of the Tribunal have terms of six years, and may serve more than one term. During their terms, they can only be removed for cause. Neither public servants nor officers or employees of publicly held corporations (or their affiliates) are eligible. Members of the Tribunal will receive fixed remuneration plus a fee that will vary depending on the amount of work. (By law, the Tribunal must meet at least twice per week, but it is expected to meet at least three times per week.) The Tribunal will also have its own staff.

Other changes clarify how particular kinds of anticompetitive conduct should be considered and ban “unfair competition” only when the conduct is intended to gain, maintain, or increase a dominant position. The law now provides a limited “settlement” procedure. Imprisonment is eliminated as a sanction, but the amount of fines is raised, to US$ ten million. The head of the competition enforcement entity, the National Economic Prosecutor, is given new powers, including the authority to sign agreements with domestic agencies and foreign entities.

**Reforms by the competition enforcement agency**

The National Economic Prosecutor has adopted four reforms that address issues raised by the peer review. First, the Prosecutor has created a new unit within the Economics Department that is responsible for considering the competitive effects of proposed mergers. Chile still does not have a premerger notification programme and does not regard such a programme as necessary, but the creation of this merger unit is very important as an official and public statement of intention to assess mergers.

Second, the Prosecutor has created a new unit within the Legal Department whose function is to review proposed legislation and proposed regulations that could harm competition. In short, Chile has taken a significant step towards having a systematic programme of competition advocacy.

Third, the Prosecutor has adopted an internal order on how investigators write the “reports” that constitute their findings. For example, the order requires that investigators must always include information about the relevant markets and must co-ordinate their reports with the Legal Department to ensure the legal sufficiency of the analysis.

Fourth, the Prosecutor has taken steps to make the business community and the public more aware of competition law matters. On 30 November, the Prosecutor held Chile’s first “Competition Day” – an event that brought together about 250 lawyers and others to hear about the newly enacted amendments to the competition law and other relevant matters. Among the
speakers was Mr. Fernando Sanchez Ugarte, President of Mexico’s Federal Competition Commission, who had chaired the peer review of Chile at the April 2003 meeting of the IDB/OECD Latin American Forum. Echoing the peer review report, he congratulated Chile for being a pioneer in competition policy, stressed competition policy’s central role in economic regulation, supported the proposed amendments, and suggested further action in some areas to reduce Chile’s vulnerability to international cartels and anticompetitive mergers.
SUMMARY

Over the last thirty years, Chile has been a quiet pioneer in the field of competition law and policy in South America and among developing countries. In the application of competition policy principles in some infrastructure sectors, Chile and its competition institutions have been in the forefront. This review examines Chile’s competition law and policy using the approach that the OECD Competition Committee uses in peer reviews of OECD Members. It describes the current system, considers reforms that Chilean officials are considering or implementing, and recommends additional actions that should be considered in order to maximise competition policy’s contribution to Chile’s economic efficiency and growth.

Chile’s current competition law was adopted in 1973 as part of a program to roll back the previous government’s steps towards a government-owned and planned economy. Enforcement resources were initially small, and enforcement was neither particularly vigorous nor a major part of Chile’s reform program, which emphasised trade liberalisation, privatisation, and deregulation. However, due in part to its relatively low key approach and in part to its consistency with Chile’s general free-market orientation, competition law enforcement has become an accepted, if not central, part of Chile’s legal and economic regulatory system. Although competition law and policy have experienced setbacks in some Latin American countries, Chile’s centre-left government has recently proposed a major “pro-growth agenda,” developed by the government and the private sector, in which pro-competitive regulatory reform is the first agenda item and improving competition law enforcement is the first part of that agenda item. Other elements include regulatory reform in key areas, such as telecom and electricity, and reforms in areas such as capital markets that could also benefit competition and efficiency. The competition law part of this proposal is expected to be enacted this year.

The proposed amendments to the competition law relate primarily to the creation and funding of a new Antitrust Tribunal. The new Tribunal would be independent and would have its own staff. Its members would be chosen for their competence and would be paid for 2-3 days of work per week. This is a very important reform. The institutions it would replace appear to have operated productively and independently, but there were significant handicaps, as some members were from Ministries, all were unpaid, and they worked only one half-day per week. It will be critical that every effort be made to reinforce and safeguard the Tribunal’s independence in practical terms. Even representatives of Chilean business interests seem to believe that the competition institutions need more funding so that they can act more promptly without sacrificing the quality of their analysis. Chile should also consider whether additional legislative changes are necessary to reduce Chile’s vulnerability to anticompetitive mergers.
SUMMARY (Cont.)

The competition institutions have been particularly impressive in their work with infrastructure monopolies. Chile’s Antitrust Commission once prohibited the telecom regulator from allocating spectrum to two firms it had chosen and ordered the regulator to hold an auction instead. Regulators in the telecom and electricity sectors are not authorised to set tariffs unless the Commission has found a market to be not competitive. A Commission ruling that local telephony services were not competitive laid out six provisions aimed at creating a genuinely competitive market.

In traditional law enforcement against firms operating in markets that could and should be competitive, the record is not as strong. In part, the difference is the result of the focus on infrastructure monopolies, a priority which may so far have been better for Chile’s economy as a whole. In part, however, the difference appears to reflect other considerations, many of which are being addressed but which merit further attention. For example, although Chile’s competition institutions, like most of their foreign counterparts, are increasingly basing their policies and decisions on economic principles, the decisions of the Antitrust Commission and the Supreme Court have provided little explanation of the impact of economic principles on the legal standards that are applicable to particular forms of conduct or to such central issues as defining “product and geographic markets” and deciding whether a firm has a dominant or monopoly position. Clarifying the applicable legal standards and increasing predictability should be a priority, particularly since the proposed amendments would abolish the Preventative Commissions, whose decisions have provided the most explanation. Chile’s enforcement authority, the National Economic Prosecutor’s Office, is taking some important steps to decrease uncertainty. Summaries and the full text of all Preventative Commission and Antitrust Commission decisions will be on the Office’s website by year’s end, and the Office’s own decisions will eventually be added. Given the current uncertainty and the conclusory nature of many Commission decisions, however, the Prosecutor’s Office should consider issuing nonbinding enforcement guidelines or policy statements or finding some other way to set forth its position on the elements of particular kinds of violations, to clarify the overall framework for its interpretation of the law and to provide guidance regarding its approach to key issues in competition analysis and procedure.

Competition law and policy are not likely to make their maximum contributions to Chile’s productivity unless enforcement addresses a wider range of industries and becomes more proactive and aggressive in challenging all forms of conduct – mergers, monopolisation, and cartels – with substantial actual or likely anticompetitive effects. The competition institutions’ cautious approach seems to have helped facilitate the gradual acceptance of competition enforcement. But the tradition of caution, including an apparent reluctance to find violations and to impose fines, has in part reflected a view in Chile that economic offences against the public are not serious and that the costs of monopoly may not exceed the...
SUMMARY (Cont.)

costs of competition law enforcement. A combination of general competition advocacy explaining the cost of monopoly and cartels with enforcement guidelines explaining the Office’s increased focus on economic efficiency should help reassure academics, the private sector, and policymakers that the benefits of vigorous competition enforcement in Chile will far exceed the costs.

Chile’s competition institutions have been very active in competition advocacy concerning infrastructure industry monopolies, and Chile is in the early stages of developing a broader programme. Notably, the Ministry of Economy’s Market Development Division also operates as a competition advocate (and provides members of Chile’s competition-related Commissions). Chile should move towards providing the Prosecutor’s Office and the Tribunal the authority and the capacity to serve as an advocate for using competition policy in the analysis of all national law and all national and local regulations that restrict competition. The value of this advocacy role as a complement to the enforcement role is recognised in the recommendations of the OECD’s 1997 Report on Regulatory Reform. The goal is not to promote competition over other values, but to ensure that the protection of other values does not unnecessarily interfere with firms’ ability to respond efficiently to consumer demand. For their part, the Prosecutor’s Office and eventually the Tribunal should seek to demonstrate to government entities, the public, and the business community the value of having a competition policy perspective even in assessing existing or proposed laws or rules that on their face do not appear to be about competition.

For now, the Prosecutor’s Office should actively seek to identify situations where regulations cause significant anticompetitive effects, the Office has some relevant expertise, and a letter, report, speech, submission testimony, or other intervention by the Office could either support the reform efforts of others or explain why some reform is important. For example, the pro-growth agenda is proposing to reduce the harm caused by slow and non-transparent licensing and other procedures, particularly at the municipal level, by enacting a law decreeing that all requests not acted upon within a certain time period are deemed to be approved. One way this “red tape” causes economic harm is by creating unjustifiable entry barriers. Explaining this aspect of the problem and supporting the effort to reduce it may continue to be a relatively inexpensive piece of competition advocacy that is useful in its own right and as a demonstration that competition policy is not anti-business. The Office (and eventually the Tribunal) should also consider devoting significantly more attention to explaining how competition law and policy benefits consumers, businesses, and the economy as a whole. In view of the Chilean government’s concern about equity issues, including social protection, education, and health, the advocacy program could include emphasis on how competition policy can serve as a tool to help policymakers pursue equity goals as efficiently as possible.
1. **The economic and political context**

1.1 **Current economic context**

Chile is a relatively small South American economy with 15 million inhabitants. It is also a very open economy; almost thirty years of consistent trade liberalisation have recently been manifested in a number of free trade agreements. During the 1990s, Chile experienced strong GDP growth, averaging almost 7 per cent annually, which was driven mainly by exports and a strong investment cycle in the natural resource sector (copper mining, salmon, and forestry). After the Asian economic crisis, growth rates declined to 2-3 percent and unemployment rose to nearly 10 percent. Chile’s economy has been quite stable, however, especially in comparison with neighbouring countries. Interest rates are low, fiscal responsibility has been maintained, and Moody’s has given its banking system the highest rating in South America. Moreover, the national government has moved to increase transparency, fight corruption, and develop stable institutions – steps that have given it a favourable rating in world-wide transparency and competitiveness rankings. Implementation of such reforms may have been facilitated by the fact that Chile is not a federation of sovereign states, but a national state. Chile also benefits from its legal system, which is regarded as one of South America’s best.

Since 1997, Chile has responded to the economic slowdown in a number of ways, including capital market liberalisation in 2000-2001. Almost all state-owned enterprises have been privatised, and public ownership of the copper mining firm CODELCO is not maintained for competitive reasons but rather to protect Chile’s future by being an asset that the government cannot spend.\(^1\) Despite its small size Chile is often seen by multinational firms as a platform from which to enter South America because of its economic and political stability. Chileans encourage this process but sometimes fear that it may lead to monopolisation of Chilean markets by the foreign firms (such as Spanish banks). In any event, the current pro-growth agenda embraces improved competition enforcement as means of stimulating greater efficiency and growth.\(^2\) Private sector representatives helped create the agenda, including the competition law aspects, but also criticize the government for hindering entrepreneurship and labour market flexibility.

1.2 **Historical context**

State intervention into Chile’s economy became widespread following the 1925 adoption of a Constitution that greatly increased the power of the executive branch. The government’s promotion of and engagement in
preferred forms of economic activity became more pronounced in 1931, when the worldwide economic depression led to a short-lived takeover of Chile’s government by socialist-leaning military leaders. Over the next two decades, the state pursued policies of import-substitution industrialisation through various means, including the creation of the Production Development Corporation, commonly known as CORFO, which by 1950 owned shares in eighty of Chile’s largest firms and a majority share of 39 of them. These policies created closer links between government and big business, and together with high tariffs they isolated Chile from international markets. By the end of the 1950s, the policies of the past were seen as having run their course, but there was no consensus on what new course to take.

1.3 Chile’s first competition law

Chile’s first competition law was enacted in 1959, one year after an international mission recommended abandoning price controls, enacting a competition law, and managing customs tariffs when prices rose too much. The law prohibited the state from granting monopolies to private parties and provided that acts or agreements tending to prevent free competition were civil (administrative) and criminal violations. The law was enforced by a Commission whose members were a Supreme Court Judge, the Superintendent of Corporations, Insurance and Stock Markets, and the Superintendent of Banking. The Commission could investigate cases, decide whether to recommend criminal cases, issue rulings in non-criminal cases as well as general rules, and decide whether a monopoly concession could be issued. These are strong powers, but it never became a strong agency. There are conflicting reports on the number of matters the Commission handled during 1959 – 1972. Whatever the number, most were completed in the first two years. From 1963 to 1972 the agency had only seven cases, all minor. In fact, since Chile’s government fixed the prices of many products and services throughout this period, it seems doubtful that the 1959 competition law was ever expected to play a major role in preventing enterprises from restricting output and charging monopoly prices.

1.4 General economic policies, 1970 – 1973

Chile’s economic policies changed dramatically in 1970, after a Socialist with Marxist leanings was elected president. The government increased hiring and wages, froze prices, and took ownership or control of farms and firms. Meanwhile, inflation soared, productivity shrank, and shortages (and long lines) became commonplace. In September 1973, military leaders overthrew the government and established a new one that immediately began reversing the policies of the past three years.
1.5 Chile’s current competition law

Chile’s current competition law – the “Law for the Defence of Free Competition” – was adopted in December 1973 as part of the military government’s program. A new enforcement agency was in place two weeks later. The new law was and is substantively similar to its predecessor, but it created a new institutional system that remains in place today. The institutions included an enforcement agency, now called the National Economic Prosecutor’s Office, an important quasi-judicial body often referred to as the Antitrust Commission, and a number of Preventative Commissions (one Central and various regional). Pending legislative proposals would abolish the Antitrust Commission and the Preventative Commissions and replace them with a new Antitrust Tribunal. Before discussing how enforcement of the competition law has developed since 1973, it is useful to review the economic context in which that development took place. That thirty year period may be broken down into four phases.

1.6 Economic policies since 1973

The military government’s major reforms occurred or at least had their beginnings during the period from 1973-1982. At first, the government focused on undoing what its predecessor had done by reducing public sector employment (eventually by 20 percent), returning property that had been illegally seized, and liberalising pricing. (At the outset, the competition law and institutions may have been created largely as a political gesture aimed at calming consumers’ fears about price increases.) The government also began a more general liberalisation programme, including unilateral tariff reduction, which by 1975 had evolved into a programme led by a group of civilian “technocrat” economists who were known as “the Chicago boys” for their youth, their ties to the University of Chicago, and their sometimes extreme faith in market mechanisms. By 1982, the government had eliminated all price controls except for natural monopolies, liberalised capital markets, and privatised most tradable goods and some services, including banking. Competition policy was given little weight during this stage of the privatisation program, which led to some problems that are still being addressed, but the competition institutions were reportedly able to build some popular support by striking down economic privileges granted to or by the state. Towards the end of this period, bad loans resulting from an over-valuation of the peso and an almost complete lack of banking supervision led to a serious financial crisis, which apparently persuaded some policymakers that deregulation can be harmful.

From 1985 to, 1990, the government became more pragmatic on economic policy issues, but liberalising of the economy continued. There was more privatisation, including in the electricity, telecommunications, and
steel production sectors. Eventually, the competition institutions began playing a more important role in some infrastructure sectors. Although economic reforms were quite successful, the social safety net continued to weaken because of government austerity programs and what was viewed by many as excessive deregulation. It has been suggested that since the government was weakening the safety net while deregulating in order to promote competition, some in Chile incorrectly associate competition policy with laissez-faire economics and hostility to welfare programmes.

In 1990, the military government was replaced by the first in a series of elected civilian governments. Although leaders of these governments had criticised aspects of the economic liberalisation programme, the basic programme has continued, albeit with what is seen as a more balanced approach (e.g., seeking to promote competition but not following a laissez-faire approach). Privatisation began to focus on air and rail transportation, mining, and electricity. Patricio Aylwin Azocar, who was elected President in 1989, took the position that “within an efficient economy there is no room for price controls,” and “[t]he market cannot be replaced as a mechanism for consumers to articulate their preferences.” Eduardo Frei Ruiz-Tagle, who was elected President in 1993, pursued similar economic policies. Economic growth of almost 7 percent per year facilitated efforts to rebuild the social safety net. Competition law was part of the rules of the game, but enforcement was not a priority, and few resources were allocated to it. However, the competition institutions continued to play an increasingly important role with respect to the activities and regulation of natural monopolies.

Since 1997, economic policy has focused on producing faster growth. Privatisation continued and is almost complete. Attracting capital was difficult, which led to a greater focus on investment and productivity, which in turn led to capital market reform and to a 1999 law that almost doubled the staff of the Prosecutor’s Office (to about 60 people) while also increasing salaries and relaxing civil service requirements so the Office could obtain a more professional workforce. The new amendments proposed by President Ricardo Lagos Escobar, who was elected in January 2000, indicate that competition law enforcement has again become more of a priority, and in the future Chile’s competition institutions could become much more important contributors to the country’s economic efficiency and the overall welfare of its citizens.
2. The goals of Chile’s competition law

Chile’s government regards the principal goal of its competition law as being to promote economic efficiency with the expectation that in the long run this maximises consumer welfare. The law does not express this (or any other) goal, though, and it contains one provision that implies a non-efficiency goal. For at least the first fifteen years, Chile’s enforcement institutions gave decisive weight to a variety of values other than efficiency and consumer welfare. The absence of specific goals in the law, combined with a shift toward emphasis on efficiency in practice, is a pattern found in many OECD countries. One of the proposed amendments would add a statement of purpose to the law, that its objective is the “protection of competition.” Stating that goal explicitly would tend to make it more difficult for parties to invoke goals that are unrelated to competition or efficiency.

Both the shift in emphasis and the continuing relevance of non-efficiency goals are important. Three key issues are:

- whether the standards for assessing allegedly unlawful conduct have shifted to reflect the new efficiency orientation;

- whether and when non-efficiency goals change the normal analysis; and

- whether the business and the public are fully aware of the current interpretation of the law’s goals and the legal standards applicable in different kinds of cases.

THE GOALS OF COMPETITION POLICY; CONSISTENCY WITH OTHER SOCIAL GOALS

This report focuses on the goals of Chile’s competition law, as contrasted with the goals of its competition policy. In applying their laws, countries have differing priorities and non-efficiency goals, but in a fundamental sense the core goals of competition policy do not vary.

The term “competition policy” is used in different ways. Sometimes it is a synonym for competition law, and sometimes it refers to a set of policies of which competition law is a part. Often, and in this report, it refers to an approach to government regulation – an alternative to central planning, laissez-faire, and command-and-control – whose essence is that laws and regulations should not contain restrictions on competition and consumer choice that are not necessary to achieve their goals. Competition policy in this sense is complementary to competition law, but distinct from it. Some countries have formalised this
THE GOALS OF COMPETITION POLICY; CONSISTENCY WITH OTHER SOCIAL GOALS (Cont.)

sense of “competition policy.” A notable example is Australia, whose explicit National Competition Policy, overseen by a National Competition Council, provides that regulations should not restrict competition unless it can be shown that the benefits of the restriction to the community as a whole outweigh the costs, and the regulatory objectives can only be achieved by restricting competition.

There is broad international consensus that the “core” goals of competition law and policy are promoting and protecting the competitive process for the benefit of economic efficiency and consumer welfare. Discussion of this topic at the February 2003 meeting of the OECD Global Forum on Competition also disclosed, however, that countries with developing economies may find it important to pursue non-efficiency goals, at times giving them primacy. For example, some argued that small economies should pay particular attention to claims that a merger will permit realisation of economies of scale, but others said that in developing economies it may be preferable to give more weight to preserving a competitive market structure, even at the cost of some efficiencies. In addition, most OECD countries are tending to eliminate “public interest” goals, such as export competitiveness, promoting small business, or maintaining employment levels, but it is not uncommon to find such goals in the laws of developing economies.

Applying competition law can create conflicts with other policies, if it prohibits conduct that the other policy goal would permit or even require. To avoid a conflict, the competition law must provide for exemption or exclusion. By contrast, competition policy does not present a conflict with other societal goals such as protecting consumers from unsafe products or providing for disadvantaged members of society. Competition policy does not elevate competition over other values, maximise competitive rivalry at the expense of other goals, or prevent government regulation that promotes other values. Instead, it aims at maximising the welfare of society by preventing the economic inefficiency and waste that is caused when laws and regulations unnecessarily limit the ability of enterprises to respond efficiently to consumer demand. While individuals and societies often differ on what restrictions are in fact necessary to serve other social goals, there is no real disagreement with competition policy’s goal of increasing society’s welfare by increasing efficiency and competition and decreasing economic waste and misallocation of resources.

By calling attention to the costs that overly broad government restrictions impose on society, competition policy is a tool that can help policymakers choose an efficient regulatory system whenever they conclude that some restrictions on competition are necessary because of market failure or other factors. Several examples may help make this point.

–In Canada the Competition Commissioner pointed out, in support of electrical industry restructuring, that market-oriented reform could be done in a way that was not only consistent with environmental objectives, but could actually help to achieve them.

...
THE GOALS OF COMPETITION POLICY; CONSISTENCY WITH OTHER SOCIAL GOALS (Cont.)

—Although licensing requirements and government standards can be beneficial when health or safety is involved, they can harm consumers if they are so broad that they ban efficient conduct. In the United States, competition policy showed that bans on providing optometry services in commercial settings such as shopping centres raised costs without providing offsetting benefits.

Competition policy can help strengthen the “safety net” for the disadvantaged. Chile’s competition-oriented approach to telecom provides service efficiently and at lower cost, leaving consumers and the government more resources to spend on other essentials. And as a sort of “applied microeconomics,” competition policy might be useful in reforming aspects of Chile’s health regulations, which reportedly create perverse incentives that unduly limit care.

The terms “economic efficiency” and “consumer welfare” typically refer to “consumer surplus,” as opposed to “total surplus” or to a subjective measure of consumers’ interests. Here, “consumer welfare” is conceived in terms of the overall benefits to consumers as a group. Efficiencies may benefit the group as a whole even though they have differential impacts and may put some particular consumers in a less advantageous position. This conception is a useful reference point, although there is no consensus definition of economic efficiency or consumer welfare. Express or implied goals that have some relationship to competition, but not necessarily to economic efficiency, can include protecting small business, preserving consumer choice, preventing increases in concentration, or ensuring that firms have freedom to compete. Treating such goals as decisive can permit anticompetitive conduct or prevent the realisation of efficiencies that would benefit consumers. For example, consumer choice and freedom to compete are both general competition policy goals, but they may sometimes be inconsistent with the use of efficient vertical restraints.

In Chile, for at least the first fifteen years of enforcement, the competition institutions apparently considered the freedom to compete more important than economic efficiency. During that period vertical restraints such as exclusive dealing and exclusive territories were essentially per se illegal because they prevent other firms from serving as distributors. There was no consideration of whether the restraints had efficiency justifications and so might benefit competition and consumers.5

Chile’s original approach recognised the importance of economic freedom as a value in Chile. The competition law bans restraints on “free competition in business activities,” and a 1979 amendment added a ban on restricting the “freedom to work,” which seems to have been intended to ban
requirements that a professional join an organisation in order to work. Similarly, like the constitutions of many European countries, the 1980 Constitution gives citizens a right to exercise any economic activity. Most competition enforcers around the world at that time put substantial – sometimes decisive – weight on the goal of preventing restrictions on firms’ autonomy. Chile’s recent enforcement record contains examples of a more efficiency-oriented approach, which focuses on the impact of a restraint on the market rather than its effect on one or more firms. Nonetheless, the Constitutional and statutory emphasis on freedom suggests that Chilean competition cases may continue to give special weight to this value, perhaps even when doing so might seem counterproductive to advocates of a strict efficiency-based approach.\(^6\)

In addition to competition-related goals, some countries either assign other “public interest” goals to competition law or permit competition law’s economic efficiency and consumer welfare goals to be over-ridden in order to protect a policy objective unrelated to competition. These public interest goals, many of which are elements of “industrial policy,” include promotion of employment, regional development, national champions (sometimes couched in terms of promoting an export-led economy or external competitiveness), national ownership, economic stability, anti-inflation policies, social progress or welfare (measure by some standard other than consumer welfare), poverty alleviation, the spread of ownership (or wealth) to historically disadvantaged persons, and national security. Including them in competition laws or permitting them to override decisions in competition cases reduces predictability and certainty, though, and their ambiguity facilitates invoking them to favour politically strong special interests, despite their “public interest” description. Moreover, mechanisms other than competition policy are generally more efficient and effective in achieving these goals.

Chile’s competition law contains one unusual provision implying a non-efficiency goal. In 1979, the law’s list of acts that tend to restrain free competition was amended to recognise the freedom of workers to unionise and to “bargain within each company.” Thus, it became a competition law violation to interfere with unionisation or intra-firm collective bargaining. Because unionisation and collective bargaining restrict competition among labourers and could be considered cartels that lacked an efficiency justification, but they are valued for their role in promoting social goals, most competition laws specifically exempt them. The provision may have been intended to distinguish bargaining within a company from industry-wide bargaining. By implication, interfering with industry-wide bargaining might not violate the competition law.
Chile’s competition institutions have sometimes given decisive weight to non-efficiency goals that are not mentioned in the law. For example, the military government’s unilateral tariff reductions in 1974 and the economic crisis of 1982 both created widespread concern about unemployment, and at least in merger cases the competition institutions reportedly considered the prevention of unemployment, local hardship, bankruptcy, and “the public interest” to be factors that might justify an anticompetitive merger. Sometimes, this was done by the Prosecutor’s Office or the Commissions, apparently with little or no explanation of how these different interests were being balanced. On other occasions, the law’s special exclusion process was used, with an executive decree and Antitrust Commission report finding that an otherwise illegal merger was necessary for the stability or development of domestic investments.

The competition institutions have clearly moved away from these non-efficiency, non-competition goals. Indeed, some statements seem to imply that economic efficiency is not merely the principal priority, but the only real goal of the law. Thus, innovation and consumer welfare are regarded not as goals in themselves but as the expected result of efficiency, while unfair competition is a priority only if it affects the market as a whole, and market structure matters only if it relates to conduct that harms the market as a whole. Protecting small business is said not to be a priority. Under this description, this is as “pure” an efficiency-based system as exists anywhere today.

On the other hand, one cannot help but suspect that non-efficiency goals have continued to play a role. They may help explain why Chile has brought relatively few challenges to potentially anticompetitive mergers. They may also help explain the result in some of the cases. For example, in 1994 the Antitrust Commission considered an appeal by Chile’s two largest airlines of a Preventative Commission decision that their merger would be anticompetitive. The combined firm would have close to 85 per cent of all domestic passenger traffic. The airlines did not offer a conventional failing firm defence, with claims or evidence of imminent bankruptcy or even of unprofitability. Rather, they claimed that their long run sustainability was in danger because they could not achieve scale economies, apparently without offering evidence concerning these economies. The Antitrust Commission’s decision said that the merger would produce efficiencies, but did not explore the issue or consider whether efficiencies would offset deadweight loss. Instead, the Commission apparently permitted the merger on the ground that the market was contestable and that potential entry would be sufficient to prevent the merged firm from exercising market power. But the Commission ordered the firm to set up a “self-regulatory” pricing system that tied its tariffs on noncompetitive routes to those on competitive ones,
suggesting that the Commission was not confident that potential competition would keep pricing competitive. That ambivalence implies that industrial policy may explain this result better than competition policy. Interestingly, three years later, the Antitrust Commission fined the merged firm and one other for engaging in predatory pricing to drive out a small airline by offering large discounts on the one route on which the small airline was competing with them.

The competition institutions’ handling of recent mergers in the banking sector also led some to question the institutions’ view of the law’s goals. A merger of two large Spanish banks that also operate in Chile gave the merged firm 27 per cent of the national market. The Prosecutor’s Office challenged the merger as anticompetitive. The action led to a dispute over whether Chile’s bank supervision laws created an implied exclusion from the competition law. The Antitrust Commission found that it had jurisdiction to consider the merger, but also found that the merger was not anticompetitive. This outcome may have been influenced by the enactment of legislation permitting easier entry for banks. Shortly thereafter, two large Chilean banks merged, creating a bank with 20 per cent of a national market in which the top five firms have a 70 per cent share. The competition authorities’ failure to challenge this merger led some to suggest that the Prosecutor’s Office was applying a looser standard to the mergers of domestic banks.

A provision in a law to protect free speech is perceived as a statement that competition law has a special role in preventing undue media concentration. The Preventative Commissions are required to be consulted on all mergers or acquisitions involving the transfer of television and radio stations, and they must decide within 30 days whether the transfer would be anticompetitive. Special rules or standards are commonly found in many countries, in part because there is no consensus on how (or whether) competition law can provide a principled way to address these issues.

Another non-efficiency goal, fairness, may underlie the recent “general instructions” on price discrimination in the marketing and distribution of pharmaceuticals by laboratories, central distribution warehouses, importers, and drug stores. The government lowered entry barriers and eliminated price caps and maximum mark-ups, which led to a period of vigorous price competition characterised in part by secret discounts. After bringing several specific price discrimination cases, the competition institutions issued a “general instruction” requiring all market participants to make, and adhere to, public and non-discriminatory price lists. The instruction placed a restriction on firms’ freedom to offer secret discounts, and did so in a competitive market in which (presumably) none of the firms had market power. Therefore, in this situation, it appears that fairness concerns (a
dislike for secret discounts) prevailed over both economic freedom and economic efficiency. (The Prosecutor’s Office is currently seeking fines against a number of firms that failed even to create and maintain published price lists. Such follow-up on compliance with Commission orders is very valuable as a means of establishing credibility as a strong enforcement institution).

The evolution of Chile’s position toward an emphasis on efficiency has not been clearly and consistently explained. Some business representatives and academics say that they are uncertain concerning the proper means of assessing dominance and the legal standards applicable to some kinds of conduct, and there appear to be grounds for their position. Competition officials note that Chile is a civil law country, but it should be possible to reduce uncertainty in such a setting. Competition law enforcement in Chile has reached the point at which clarification of the applicable legal standards seems very important to the country’s productivity. The Prosecutor’s Office should consider preparing and issuing nonbinding enforcement guidelines that explain the Office’s views on the law’s goals and applicable legal standards. The new Tribunal should clarify applicable legal standards by writing decisions that articulate the elements of a violation (and the probative value of particular forms of evidence) in terms that relate to the law’s goals. Enforcement guidelines – or policy statements, articles, speeches, etc. – could serve an important competition advocacy function, as well as increasing transparency, if they sought to explain the law’s primary policy goals, how competition enforcement promotes those goals, the key components of the analytical framework used by the Prosecutor’s Office for deciding whether firms’ conduct or mergers are illegal, how efficiency considerations are weighed, and how the legal standards relate to achieving the law’s goals.
3. The content of the competition law

3.1 The competition institutions

The 1973 law created a tripartite institutional framework – an enforcement agency (the Prosecutor’s Office), a special tribunal (the Antitrust Commission), and a number of largely advisory Preventative Commissions. Proposed amendments would replace the Antitrust and Preventative Commissions with an independent Antitrust Tribunal.

The National Economic Prosecutor heads the agency that investigates and brings enforcement cases. The Prosecutor, who must be a lawyer, is appointed by the President of Chile and may be removed by him at any time. For budget purposes, the Prosecutor’s Office (“Office”) is part of the Ministry of the Economy, but the Prosecutor independent of the Ministry. By law, he is subject to the supervision of the President through the Ministry of Economy, and is directed by law to “discharge its duties independently,” to “defend the interests entrusted to him . . . based on his own discretion,” and to represent “the general economic interests of the community.” There is also a tradition of independence by the Prosecutors. Despite the current move to replace the Commissions with an independent Tribunal, there has been no call for greater independence for the Prosecutor’s Office.

The Office has not been powerful, although most of the Prosecutors have been highly respected and influential individuals. Until 1999, when the Office was able to nearly double its size (to about 60 people) and pay higher salaries, the Office was generally seen as a “second-tier” agency and had insufficient resources because its mission was not considered sufficiently important. There is wide agreement that the Office did not at first take advantage of its new resources to become as strong as it could be, but that recent management changes and reorganisation may now make that possible. The current Prosecutor, appointed in August of 2001, is a well-respected career civil servant, a lawyer and sometime law professor who was Head Counsel in Chile’s Securities and Exchange agency, served as a member of the Antitrust Commission in 1994 – 1996, and worked briefly for the old Antitrust Commission in 1972.

The Prosecutor has reorganised the Office, which now has three main enforcement departments. A new Legal Department is mainly responsible for conducting investigations. There is also an Economics Department with seven economists who mainly work with lawyers on the investigations. A new Regulated Markets and Technical Analysis Department is composed mostly of “industrial engineers” – economists with special training in regulated industries – who work on regulatory issues generally, but also perform some day-to-day case work. Reflecting the Office’s increased...
interest in competition advocacy and in participating in international co-
operation, a new Department of Studies and International Affairs has been
created. Another Department serves as the Secretariat to the Commissions.
One person in each region serves part-time as Region Economic Prosecutor,
a position that would be abolished by the proposed amendments. A Deputy
Prosecutor assists the Prosecutor in overseeing the operations of these
Divisions and individuals.

The Preventative Commissions (Comisiónes Preventivas) are the most
unusual element in Chile’s institutional structure. Often described as
consultative organs, these Commissions were charged with answering
questions and determining how individuals, firms, and government entities
had to deal with activities that restrict competition. They also can direct the
Prosecutor’s Office to conduct investigations and may issue orders to halt
any conduct they find illegal. In addition, at the request of the Prosecutor’s
Office, they can (a) issue interim orders that for 15 – 30 days suspend
anticompetitive agreements or set maximum prices, and (b) request any
governmental entity to exercise its regulatory powers to prevent harm from
conduct that is under investigation. The Central Preventative Commission,
which has jurisdiction over Santiago and matters involving more than one
region, consists of a representative of the Ministry of the Economy (who
serves as chair), a representative of the Ministry of the Treasury, two
university professors (a lawyer and an economist) appointed by the
“Rector’s Council of Chilean Universities,” and a representative of the
Neighbourhood Associations. It meets one half-day per week. There are 11
Regional Preventative Commissions, some of which have not taken any
decisions in recent years. All commission members serve without pay.

The Antitrust Commission (or “Resolving Commission”: “Comisión
Resultiva”) is the highest body in the Chilean competition system. Its nature
is that of a special court. It is not an organic part of the judiciary, but is
chaired by a judge from the Supreme Court and is subject to the Court’s
supervision. Its other members are Chiefs of Service from the Economy and
Treasury Ministries, a law school dean, and a dean of an economics
department. The Commission’s main function is to decide cases brought by
either the Prosecutor’s Office or private complainants. (When a case is
initiated by a private complaint, the Prosecutor’s Office may choose whether
to participate as a party, though the Commission can ask the Office for a
report.) In addition, the Commission may (but rarely does) open an
investigation on its own initiative, and it may in appropriate cases call upon
police assistance in “lock-forcing” and executing search warrants. It also
decides appeals concerning the Prosecutor’s information requests and the
Preventative Commissions’ decisions. It has the broadest remedial powers;
its remedies may involve fines, cease and desist orders, dissolving or
restructuring businesses, and disqualifying individuals from holding office in professional and trade associations. Commission members meet one half-day per week. The members of this Commission too serve without pay.

The Commission also has other, less judicial powers. Sometimes an investigation by the Prosecutor’s Office does not lead to a legal challenge, but rather to a report that discusses competitive conditions in a market and urges the Commission to propose the modification or abolition of laws or regulations that are creating competition problems. Also, in addition to issuing binding orders to entities found to have violated the law, the Commission may issue “general instructions” – binding rules that direct all members of an industry to act in particular ways in order to avoid restraining free competition. The previously mentioned general instruction against price discrimination in the pharmaceuticals industry is one example. In another recent situation, acting on a request by the Central Bank, the Commission “instructed” department stores and other suppliers of retail credit to adhere to the same interest rate disclosure rules that the Superintendency of Banks imposes on financial institutions within its jurisdiction. The rationale for the instruction appears to be the prevention of unfair competition by providers of credit that are not covered by the Superintendency’s rules.

In addition, the Antitrust Commission currently plays a role in determining when the normal competition rules do not apply, though this system is proposed to be abolished by the new law. A “well-founded positive report” by the Antitrust Commission is required before the state may confer a monopoly on a private party or authorise conduct prohibited by the competition law. Similarly, the laws regulating the telecom and electricity sectors provide that the regulator may set tariffs only when the Antitrust Commission finds a lack of competitive conditions. The exercise of these powers is described in more detail below.

As a result of orders it has issued in cases involving government procurement and licensing, the Commission has jurisdiction to oversee aspects of those processes. In 2001, the Commission had five cases in which it reviewed whether requests for bids meet the standards laid down in an earlier Commission decision.

**Resources**

The Prosecutor’s Office’s budget is funded almost entirely by the allocation it receives each year in Chile’s Budget Law. For budget purposes, the Office is part of the Ministry of Economy, but it has a separate budget line. Until 1999, the Office was never authorised to have more than about 35 posts. In 1999, legislation intended to improve competition enforcement increased the number of posts to 60 and authorised higher salaries, while also liberalising civil service rules so that the Office could hire qualified
employees. The Office’s resource levels in the last five years are set forth in Annex A, Table A-1.

There is no budget for the Antitrust Commission or the Preventative Commissions. The Commissioners are not paid for their work. A separate Department in the Prosecutor’s Office serves as the Secretariat for the Commissions. Under the proposed amendments, the Tribunal would become a separate, independent body with its own budget and staff.

**Procedures**

The Prosecutor’s Office must investigate all legally valid complaints and may open investigations *ex officio*. The latter used to make a substantial share of the Office’s workload, but the percentage of such investigations has fallen significantly in the last few years. The decline in *ex officio* investigations could be problematic if it develops that the Office does not aggressively look for indications of possible illegal conduct. Upon notice to the chair of the Antitrust Commission, the Prosecutor may declare investigations confidential and may obtain police assistance. The Prosecutor must ordinarily provide notice to the target of an investigation, but the Antitrust Commission may waive this requirement when notice would jeopardise the investigation. The Prosecutor has the power to compel the production of documents and the co-operation of public agencies, state-owned entities, private firms, and individuals. Public officials must keep confidential all information they obtain by reason of their duties, except that such information may be used in enforcement activities and in proceedings before the Commissions or courts. Interference with an investigation by the Prosecutor’s Office is punishable by imprisonment for up to 15 days.

The results of investigations by the Prosecutor’s Office are usually set forth in a “report” – essentially an administrative decision – that is delivered to a Preventative Commission or the Antitrust Commission. If the Office decides that an official proceeding should be begun, the report is accompanied by a “requerimiento” – a formal charge seeking a fine or other remedy. The report is a matter of public record.

Preventative Commission and Antitrust Commission procedures are governed by the competition law and other laws, with Antitrust Commission procedures being more detailed and formal. A complaint by the Prosecutor’s Office or a private party to the Antitrust Commission must be answered within 15 days. Thereafter, although the procedure is primarily a written one, there is generally a 10-day “discovery” period; during the first two days of this period, interested parties may designate up to four people to testify under oath on specified “points of proof,” and other forms of evidence may be submitted throughout the period. A single Commissioner hears the testimony. Even with a limited number of witnesses, this initial taking of
testimony may take weeks, because it seldom takes place more than one half-day per week. The testimony is transcribed and becomes part of the record of the case, together with the parties’ documentary submissions and any evidence the Commission obtains on its own. Eventually, the Commission calls for a “hearing,” which consists of oral argument by counsel for the parties. In theory, the Commission then issues a decision within 45 days, but this limit is often extended; in two ongoing cases, the time period has been extended for very long times.

Proceedings can take a long time, because of the part-time nature of the process and because there can be long periods between the designation of witnesses and the taking of testimony, between the taking of testimony and the “hearing,” and between the hearing and the final decision. Casework sometimes continues during these periods, but in private cases long periods may go by in which little or nothing is happening. Even cases brought by the Prosecutor’s Office are sometimes subject to long delays. It is possible, though, for cases to proceed more rapidly. In July 2002, a mall complained that another mall’s restrictions on its tenants’ activities were illegal. In December, the Prosecutor’s Office decided that the restrictions were illegal and presented the case to the Antitrust Commission. There was no discovery period, oral argument was held in January 2003, a decision was issued in mid-March, and the decisions was affirmed by the Supreme Court before the end of the year.

Individuals may make complaints to the Prosecutor’s Office without being represented by counsel. As a legal matter, complaints to the Preventative Commissions may be made by individuals, but by tradition they are made by counsel. By laws, all complaints to the Antitrust Commission must be made by counsel. Overlaps in the authority of the different competition institutions to open investigations, together with a complex set of rules about taking appeals from negative decisions by the different institutions, have created a situation in which experienced practitioners engage in “forum shopping” to gain advantages.

Parties other than the Prosecutor may appeal Antitrust Commission orders to the Supreme Court only if they require the dissolution or restructuring of a firm, the disqualification of an individual to hold certain positions, or the payment of a fine. The Prosecutor may appeal such orders and also any decision finding that a defendant did not violate the law.

The decisions of the Commissions are public. A private firm has published the Antitrust Commission’s decisions up to 2000. In a major new initiative, the Prosecutor’s Office has prepared a database containing summaries of 334 Antitrust Commission rulings and 344 Preventative Commission rulings, and is publishing the databases on its website.
Additional summaries are being added, and will call attention to key points in addition to being summaries. There are plans to publish by year’s end the full text of the nearly 2,000 rulings that have been handed down since the law was adopted.

The Prosecutor has recently decided that the Office’s “reports” on investigations should also be included on the website, and 17 are ready to be posted. This is an important development, because the reports are public records that can be obtained on request but have never before been published. The reports apparently contain relatively detailed interpretations of the law and applications of it to the facts at issue, and their earlier publication would undoubtedly have meant less uncertainty about applicable legal standards. However, given the current level of uncertainty, the time it will take to publish all reports and rulings, and the fact that even the collected reports and rulings is not likely to provide an overall analytic framework for interpreting the law or an up-to-date interpretation of some of its provisions, one of the most important recommendations of this report is the issuance of enforcement guidelines or policy statements.

**Remedies**

The Prosecutor’s Office may seek criminal sanctions for violations of the competition law, but in practice this does not occur.

The maximum fine is approximately US$ 230,000, but fines are rare and seldom approach this maximum. In fact, as discussed further below, during almost 30 years of competition enforcement, fines have been imposed in only 73 cases (including 9 horizontal, 4 vertical, 43 monopolisation) and have totalled less than US$ 1,000,000. The average fine has been about US$ 13,500. The Antitrust Commission’s highest fines on average (about $55,000) were in eight unfair competition cases, and the Supreme Court has on average reduced the Commission’s fines by almost 50 percent. The proposed amendments to the law would increase substantially the applicable civil fines – to US$ 15,300,000 – and eliminate the criminal sanction. The amendments also provide for fining directors, administrators, and all who have acted in furtherance of the illegal conduct, and will make directors, administrators, and those who have benefited from the conduct, secondarily liable for the fines imposed on their firm.

The competition law does not provide any “consent” or other formalised procedure to dispose of a matter with a binding negotiated order and/or fine. This may essentially force firms to engage in a full defence of their conduct even when they and the Prosecutor’s Office could settle the matter in a much less costly manner. The proposed amendments include a “conciliation” procedure, which will apparently permit the Prosecutor’s Office and a party to agree to a negotiated order, subject to its acceptance by
the Tribunal. This is a significant step, although the amendment apparently would not authorise the Prosecutor’s Office and a party to send the Tribunal an agreed proposal to terminate a matter on the basis of a negotiated order and fine.

In general, anyone harmed by the illegal action of another has the right to sue in court for damages caused by that action. In competition matters, no damages can be awarded unless a Commission has found that the defendant violated the law, because a civil court would not be competent to make that decision of illegality. There may be another avenue for private suit under the 1980 Constitution. Anyone who is denied a constitutional right has a remedy – “recourse to protection” – in the Court of Appeals. This might be a means for obtaining a court order against anticompetitive conduct. Competition officials do not follow private litigation under these general principles of Chilean law, and they do not know how frequently they have been used in the competition area.

Proposed new enforcement structure

The main purpose of the pro-growth agenda’s proposed competition law amendments is to create an independent Competition Tribunal to replace all of the Commissions. The relevant amendments, which are currently being discussed in the legislature, would subject candidates for membership to a public examination of their qualifications, require a minimum of two days of work per week on the Tribunal, provide funding for up to three days of work per week, provide a clear separation of functions between the Tribunal and the Prosecutor’s Office, and provide complete independence from the government.

3.2 The law’s substantive framework

Article 1 of the law contains a very broad prohibition of acts or agreements “attempting to restrain free competition in business activities.” This ban is a criminal provision, but the law’s civil aspects predominate. As amplified somewhat by Article 2’s illustrative list of conduct deemed to tend to restrain free competition and Article 6’s passing reference to “any abuse incurred by whosoever monopolises a business activity,” Article 1’s ban is the basis for all enforcement actions, whether they involve horizontal agreements, vertical agreements, monopolisation (abuse of dominance), mergers, or unfair competition. Both the generality and the criminal nature of the initial ban are consistent with the view that the law was based on the United States’ Sherman Antitrust Act. Chile is primarily a civil law jurisdiction, though, and thus neither its law nor its practice looks to United States cases as a guide.
Article 2 is an illustrative list of anticompetitive arrangements. It sets out five specific categories of “actions or agreements” covered by Article 1. A sixth section clarifies that the list is illustrative, not exhaustive, by referring to any other action for the purpose of eliminating, restraining, or hampering competition. The first, third, and fourth categories are standard; but the second and fifth are unusual. The categories include actions or agreements that relate to the following:

- *The distribution of quotas and reduction or suspensions of production.* This apparently applies to horizontal agreements, and the covered agreements would constitute hard core cartels.

- *Transportation.* It is unclear why the transportation sector is mentioned specifically. At least in recent years, this provision has not had any impact on how transportation cases are handled.

- *Trade or distribution, such as imposing quotas, allocating territories, or exclusive distribution.* This covers a variety of non-price vertical restraints. Some believe that it also covers horizontal market allocation, though this would appear covered by the first category.

- *Determining prices of goods or services.* This applies both to horizontal price fixing agreements and to resale price maintenance.

- *The freedom to work, unionise, and bargain.* This unusual provision is discussed above in connection with the goals of Chile’s law.

There is some continuing uncertainty about the legal effect of Article 2. In the early years, the Prosecutor’s Office and the Commissions apparently took the position that Article 2 was not merely illustrative of conduct that *tends* to restrain free competition, but a declaration that the listed forms of conduct are always (or *per se*) illegal. That approach justified the condemnation of non-price vertical restraints without consideration of efficiencies or market power. The competition institutions no longer take that approach to vertical restraints, and this has been interpreted by some as a recognition that Article 2 (a) is merely illustrative of conduct that *can* violate Article 1, and therefore (b) does not establish or authorise the application of a different legal standard. This argument implies that Article 2 does not authorise *per se* treatment of any competition law violations, including hard core cartels, resale price maintenance, and unfair competition. On the other hand, competition officials generally take the position that hard core cartels are illegal *per se*, basing this position on either
Article 2 or on a flexible interpretation of Article 1. The argument based on Article 1 seems significantly more persuasive.\(^9\)

The amendments proposed as part of the pro-growth agenda will revise the list in Article 2 to drop the two unusual items and to set forth more precise descriptions of the covered conduct. The agenda mentions: (a) explicit or implicit agreements or collusive practices whose object is to fix resale or buying prices, limit production, or allocate zones or quotas; (b) the abuse of a dominant position by an enterprise or group of enterprises with a common owner by fixing buying or selling prices, tying arrangements, allocation of markets or quotas, or other similar conduct; and (c) predatory practices to gain or increase a dominant position. The amendment appears to drop nonprice vertical restraints from the list. If Article 2 is the law’s authorisation for use of the *per se* rule, dropping nonprice vertical restraints codifies the current practice of using rule-of-reason analysis to assess such agreements. However, the new language does not answer the important and long-running question whether Article 2 justifies subjecting the listed forms of conduct to the *per se* rule.

### 3.3 The law’s coverage

Article 1’s ban applies to all individuals, to all enterprises (regardless of state ownership), and in some circumstances to government ministries or other agencies. An unusual feature of Chile’s law, which it shares with Russia and some other transition countries, is that it applies to some extent to decisions by government ministries or agencies even when they are acting in a regulatory capacity, and not just when they are acting in a proprietary capacity. It has been applied to discriminatory government action that creates an “unlevel playing field.” The law is not interpreted as covering governmental “output restrictions” in the form of non-discriminatory quality standards or other limitations on who may enter a market. On the national level, the law has been applied to the Ministry of Transportation, the Telecommunication Undersecretary’s Office, the Electricity and Fuels Superintendency, the General Waters Directorate, and the State Procurement Directorate. It also applies to municipalities.

Virtually all competition laws have an express or implied exclusion for conduct that is required by law, including private action that is authorised by government regulations or official decisions. In general, the basis for this exclusion is a concern that applying competition law could or would interfere too much with other government regulation. Chile’s position concerning regulated conduct is unclear. With respect to competition actions against government entities acting in their regulatory capacity, Chile has apparently attempted to avoid interfering with legitimate government regulation by limiting the law’s coverage to discriminatory regulations or
conduct. Deciding what is discriminatory can be difficult, however, and there is some potential for interference with legitimate regulation. On the other hand, excluding executive action from the law’s coverage would prevent use of a tool that Chile, Russia, and some other countries have found very useful. Deciding when private conduct is “sufficiently” regulated pursuant to some other policy to warrant an exclusion is itself a significant policy problem.

Industry-wide exclusions

There are no express exclusions in the competition law. As in other countries, statutory monopolies do exist and there are instances when laws (such as those governing intellectual property) grant exclusive rights. Since possession of a monopoly is not a violation, these laws do not actually create exclusions, as long as abuse of the monopoly or exclusive right is subject to the law. In Chile, this is generally, and perhaps universally, the case. For example, Chile accords the usual kinds of intellectual property rights, and also provides that anticompetitive use of those rights can be penalised under the competition law. Chile’s Constitution provides that the state is the sole owner of all mines, regardless of who owns the surface land; this includes ownership of the right to explore for and exploit liquid and gaseous hydrocarbons. It appears, however, that the competition law would apply if the state acted to abuse its monopoly. There is no express exclusion for labour, but the Constitution and other laws guarantee the right to create unions and to engage in intra-firm collective bargaining. Under common principles of statutory construction, there is an implied exclusion for the agreements that are inherent in those processes. The Antitrust Commission once declined to rule on a minimum fee schedule for engineers on the ground that labour is not subject to the law. That interpretation has not been tested recently, since other laws authorise such fee schedules if they are strictly voluntary, but competition officials believe that the Commission would today find the law applicable in such a case. There is nothing to suggest that labour organisations are excluded from coverage. There is no express exclusion for agriculture, and since there have apparently been no cases challenging, for example, farmers’ co-operatives, there are apparently no decisions that explore the extent to which the extensive government regulation of farmers creates an implied exclusion. In a recent bank merger case it was argued that the bank supervision law exempted such mergers from the competition law, but the applicability of the competition law was confirmed.

Other Exclusions

Article 4 provides that private parties may not be provided a monopoly to carry out business activities. This provision is interpreted as stating the
general rule that except through legislation, the state may not grant a monopoly to private parties or authorise them to engage in conduct banned by Article 1; such grants or authorisations may ordinarily be given only to “governmental, semi-governmental, public, autonomous, or municipal organisations.” If national interests are at stake, the President of Chile may permit a private party to be given a monopoly or authorised to engage in conduct covered by Article 1, but to do so he must issue a well-founded executive decree, based upon a well-founded positive report by the Antitrust Commission. Since the President must obtain a positive report from the Commission, this process seems less a public interest override than a reflection of Chile’s unusual ban on grants of monopoly rights. In the 1970s and 1980s, this process was used on several occasions, primarily to authorise mergers that were considered necessary for one or both of the parties to survive, but the process has not been used in recent years and it seems likely to be eliminated by the proposed amendments.
4. Substantive competition law violations

Chile’s very broad ban on acts or agreements that attempt to restrain free competition provides a sufficient basis for a full range of competition enforcement. A significant number of basic substantive issues appear to be unresolved, though, because principles have evolved yet explanations of the law’s requirements have been infrequent. In the early years, agreements within the categories of Article 2 were essentially illegal *per se*. Increasing use of economic principles has meant moving away from rules that were clear, although arbitrary and sometimes perverse. Rulings of the Preventative Commissions have sometimes explained their reasoning in a manner that could provide predictability and certainty, but those rulings are not definitive. The Supreme Court decisions are definitive but cannot be expected to develop basic competition law jurisprudence. The Antitrust Commission, which would be expected to develop and explain competition law jurisprudence in a definitive manner, has been hampered by its lack of resources.

Among the issues that have apparently not been systematically or definitively addressed are the following:

- Does Chile continue to have *per se* rules? If so, what conduct is illegal *per se*? Some academics and government officials say that the law requires use of the rule of reason in all cases, and some competition officials have claimed that they are required to prove excess prices or profits, as well as entry barriers, even in price fixing cases. Other competition officials view cartels as illegal *per se* but are less certain about the status of resale price maintenance and unfair competition.

- If hard core cartels are not now considered illegal *per se*, should they be? Would law enforcement be better able to contribute to Chile’s economic efficiency and growth if it used a *per se* approach, under which certain agreements are irrebuttably presumed to harm competition and to be unjustified?

- If the rule of reason is used, what must be proved to establish a violation? Agreements that are not illegal *per se* can sometimes be condemned without the extensive market definition and market power analysis that would be involved in, for example, an abuse of dominance case.

- Is resale price maintenance illegal *per se*? A recent case seems to say no, but some officials say that this may not be the case.
• Should the competition law ban unfair competition that has no effects on the market as a whole? Some value the ability to condemn forms of unfair competition that have no other remedy. The principle that unfair competition violates the law even without market-wide impact may be well enough established that new legislation would be required to take a different approach.

• How are product and geographic markets defined? What is the test, and what evidence is required? There is apparently no general definition of “product market” or “geographic market,” and no general procedure for defining markets in particular cases.

• Are dominant position and market power the same thing? If there is a difference, what difference does it make in an actual case? What kind of evidence is useful, relevant, or required? Is dominance or market power presumed if a firm has a market share above a certain level? Must there also be some showing of barriers or impediments to entry? At what market share does the presumption arise? How can this presumption be rebutted? Could any market share or concentration safe harbours be identified, as in the guidelines of various OECD jurisdictions?

• In merger cases, are there presumptions based on market share? What is the significance of entry barriers? Chilean officials have said that they apply both a “dominance” test and a “substantially lessen competition” test in merger cases. What does this mean, in terms of what must be shown to make a prima facie case? What must be shown in order to establish an efficiency defence? Rules or principles governing these questions are important for substantive merger analysis, whether or not Chile continues not to have a premerger notification system.

The most interesting and unusual aspect of Chilean competition law enforcement is how much of it has involved infrastructure industry monopolies. It has been suggested that many South American countries erred in beginning with a North American model, because that model is not necessarily well suited for addressing fundamental problems that follow a history of state intervention in economic activity. By concentrating first on infrastructure monopoly, Chile appears to be an exception.

The following discussion of how the competition law is applied to particular restraints contains some mention of the number of different kinds of cases considered by the Antitrust and Central Preventative Commissions during the period 1974 – 1993 and in 2001. Such information reflects statistical analysis that is set forth in Annex B to this report.
4.1 Horizontal agreements

During the 1974 – 1993 period, the Antitrust Commission apparently ruled on 45 horizontal agreements, finding 29 lawful and 16 unlawful. The Central Preventative Commission handled only six such cases and found five violations. Available data do not show how many of these cases involved agreements among competitors that were integrating their operations (i.e., potentially efficient joint ventures), how many involved price fixing or other agreements that would be “hard core cartels” under the OECD’s 1998 Recommendation, and how many involved other kinds of “suspect” agreements among independent competitors (e.g., agreements to observe uniform hours of operation or otherwise refrain from particular ways of competing, horizontal agreements to refuse to buy or sell except on collectively defined terms). In 2001, it appears that the Antitrust Commission made an interim ruling on one horizontal case, while the Central Preventative Commission had no such cases.

It is not surprising that there have been few challenges to true hard core cartels, which are hard to investigate and harder to prove. Moreover, Chilean officials and academics agree with the view expressed at the February 2003 meeting of the OECD Global Forum on Competition that in a small economy, the small business elite may be able to restrict output and increase price through tacit collusion (i.e., without reaching an explicit oral or written agreement). It was also suggested that if businesses had reached an explicit agreement, the small and closely knit business community would make it nearly impossible to find an executive willing to provide evidence against his co-conspirators, because doing so would mean never again being able to hold an executive position in Chile. The Prosecutor’s Office was able to use testimony from a cartel member in at least one case, however.

Apparently, the Prosecutor’s Office has generally sought to prove price fixing through surveys showing otherwise unexplainable uniformity of prices or price movements. If there is no other plausible explanation, such uniformity can be persuasive evidence of price fixing. The Antitrust Commission has apparently found price fixing on the basis of such survey evidence. But in other cases the Commission has not accepted economic or other circumstantial evidence of an agreement. According to Professor Paredes, the timing and nature of the price movements and other circumstantial evidence in a 1993 case against Chile’s two most important pharmaceutical laboratories clearly showed a cartel agreement, but the Antitrust Commission rejected the case because of lack of “concrete” evidence that company representatives had actually reached an agreement.

Evidence showing entry barriers and excessive profits and other indicia of monopoly pricing may have been required in some cases in order to show
that competitors engaged in a hard core cartel. In other jurisdictions, evidence on these topics could be relevant circumstantial evidence about the existence of an agreement, but such evidence would not be required to prove it. If there is clear, direct evidence of the agreement, evidence on entry barriers or excess profits would have no independent value on that issue. Jurisdictions in which price fixing and other cartel activity is not illegal per se might regard evidence of barriers as necessary to show anticompetitive effects, but it is unlikely that evidence of monopoly pricing or profits would be required.

The Prosecutor’s Office succeeded in proving price fixing in a 1995 pharmacy case. Low prices by a new entrant set off a price war among the four pharmacies operating in Santiago. To end the price war, the four firms agreed to fix prices, and the Office was able to show this through price surveys and statements from some executives who had participated in the conspiracy. The three incumbent pharmacies were fined about US$ 80,000 each, while the new entrant was fined about half that amount because of its co-operation in providing evidence of the cartel.

There are at least four ongoing cartel cases. Two involve cartels among the same milk processors. The first case began in 1997, the second in 2001. That both cases remain unresolved does not reflect well on efficiency of the litigation process. The gravamen of these complaints is that the processors have set the prices paid to milk producers too low. While these cases have been pending, the Antitrust Commission has regulated the processors’ pricing practices. In the first case, the Commission’s interim order is designed to prevent arbitrary price discrimination by requiring milk processors to have, and to adhere to, written, publicly available statements setting forth the terms and prices for their raw milk purchases. In the second case, the Commission at one point issued an interim order preventing members of the alleged buyers’ cartel from lowering the prices they will pay. That order lasted for several months.

Another ongoing case involves gasoline (petrol) distribution. The market is very concentrated at the wholesale level and increasingly concentrated at the retail level as well. There is little price competition, and it is generally perceived that prices are quick to rise and slow to fall. The Prosecutor’s Office has initiated a proceeding against four firms without specifically alleging collusion. The case is now in discovery. By way of relief, the Office is seeking mainly structural remedies. For example, the Office is asking the Antitrust Commission to recommend that the government modify two laws that create entry barriers (one preventing the installation of new gas tanks in some areas and the other preventing all but the government-owned firm from laying pipelines). It is also seeking an order requiring a firm to grant access to its pipeline, and an order directing
all four firms not to agree to fix prices. The final ongoing cartel case involves collusion between two cable companies.

The Prosecutor’s Office is moving to improve enforcement against hard core cartels. One of the proposed amendments in the pro-growth agenda would decriminalise the law but substantially increase the fines that can be imposed. Since the Chilean public and policymakers have not yet accepted the view that hard core cartels are a serious crime, trading unused criminal sanctions for much more significant fines may lead to more actual enforcement action. The Prosecutor’s Office should review the literature about sanctions for hard core cartels to prepare materials for cases and competition advocacy, to support imposing significant fines against violators. This literature documents the extent of harm cartels cause—estimated by some to be as much as 20 per cent of the volume of affected commerce, and sometimes more—and shows why fines should be several times the illegal gain, in order to prevent firms from simply treating the fines as a cost of doing business. 13

In addition, the competition institutions should clarify that hard core cartels are illegal per se or consider the desirability of reinstating the per se rule. Many countries take an essentially per se approach, which has obvious enforcement benefits. The costs are mainly the result of incorrectly characterising joint ventures as cartels. Given the cautious approach Chile’s competition institutions have shown, there may be little risk of such mischaracterisation.

Finally, Chile should focus also on such horizontal agreements as exclusionary boycotts (which are considered hard core in many jurisdictions), facilitating practices (such as information exchanges), and what might be termed “soft core cartels” (such as agreements to observe uniform hours, or to refrain from truthful non-deceptive advertising or other means of competing for customers). Facilitating practices may or may not be anticompetitive in and of themselves, but they can and should be prohibited when they significantly increase the risk of actual or tacit collusion. Some of these types of agreements are not only potential facilitating practices, but they are usually anticompetitive in and of themselves. Some are illegal per se in some jurisdictions, and when the per se rule does not apply, it may be possible in some cases to make use of rebuttable presumptions. For example, instead of requiring proof of relevant product and geographic markets, one could have a rebuttable presumption that the products or services covered by the agreement constitute valid markets. One could also rebuttably presume that the parties have sufficient power for their agreement to be successful. In any event, all of these sorts of agreements are much easier to prove than secret, hard core cartels.
4.2 Vertical agreements and practices

Chile has devoted far more attention to vertical agreements and other practices concerning the relationship between firms at different levels of the distribution chain. During the period 1974 – 1993 the Antitrust Commission ruled on 53 cases involving vertical arrangements, including discrimination, and 35 monopolisation cases that involved either vertical agreements (tie-in sales) or price discrimination. There were also far more vertical than horizontal cases in 2001.

The competition institutions long gave essentially per se treatment to vertical restraints and practices, condemning them without inquiry into whether the firm had market power or whether the practices had efficiency justifications. Refusal to sell without a plausible justification was consistently condemned. Price discrimination was considered illegal unless discounts or other favourable terms were available to all buyers according to “objective” elements. Cost-justified volume discounts were always seen as objective, but price differences reflecting other cost differences were not accepted. In the late 1980s, other forms of cost justification began to be accepted, but the area remains murky, and the lack of a clear legal standard in this area can be particularly harmful because it can deter firms from offering or negotiating for legitimate, procompetitive discounts.

The economic analysis of vertical agreements and practices has evolved a great deal in the last 30 years. Whether or not nonprice vertical restraints or price discrimination have efficiency justifications, it is now widely accepted that they are not harmful – and are probably efficient – if the firm imposing them does not have market power. In competition enforcement regimes with a strong efficiency orientation, therefore, proof of market power may be a required element in demonstrating a violation. Regimes that do not take such an economic-oriented approach may condemn restraints they consider unjustified even in the absence of market power.

Chile’s increased attention to efficiency considerations was reflected, for example, in a 1992 advisory opinion to Daihatsu approving its proposed exclusive distribution system on the grounds that the market was so competitive that no monopoly abuse was possible. Moreover, the Antitrust Commission’s 2001 decision in a case against Toyota shows that Chile may have gone further than most by suggesting that resale price maintenance is not illegal per se. Toyota fixed minimum resale prices for original replacement parts. The Commission said that resale price maintenance can have efficiency justifications and that there was vigorous competition in the automobile market, but it decided that consumers do not have a choice when buying original replacement parts and that therefore, the efficiency benefits (such as better service) were insufficient. Two members dissented on the
grounds that the automobile market was competitive and the restraint promoted efficiency and consumer welfare,

While somewhat exemplifying Chile’s evolution in this area, the Toyota case is also an example of why its approach to vertical restraints (and other rule-of-reason cases) needs further clarification. Essentially, the majority in the Toyota case found that the relevant market was the sale of original replacement parts for Toyotas. In that market, Toyota obviously was a complete monopolist. On the other hand, the dissent appears to have said that there is no separate market for original replacement parts for Toyotas, and that the relevant market was automobiles and replacement parts. Neither the brief discussion in the decision nor the one-sentence summary of the dissent mentioned the need to define product and geographic markets or began to address the complexities of that process in this case. Both the majority and the dissenters may have rigorously analysed the issues, but since the analysis does not appear in the decision, even competition experts cannot tell how the Commission believes such issues should be addressed.

4.3 Monopolisation or abuse of dominance

More of Chile’s competition cases have involved monopolisation (also called abuse of dominance) than any other kind of potential competition law violation. Chile’s focus on monopolisation during the period 1974 – 1993 is typical for a country whose economy is in transition from government ownership and control. Available data do not indicate how many of Chile’s monopolisation cases involved infrastructure monopolies, although it is clear that the competition institutions have devoted very substantial resources to those sectors.

At least in recent years, Chile’s sectoral regulators have apparently had the authority and the power to deal with matters involving the prices and requirements of the services that the Antitrust Commission has found non-competitive. As a result, unlike their counterparts in Central and Eastern Europe, the Chilean competition institutions have not had to bring monopolisation cases challenging public utilities’ pricing or other practices. Rather, their major cases involving these sectors have involved acquisitions and other structural matters. Those cases are discussed in a later section of this report.

If public utilities were not the targets of many of Chile’s monopolisation cases, then the number of monopolisation cases is surprisingly large. The distribution of these cases, by industries and by practices that were challenged, is not clear, nor is it clear how Chile has treated conduct that exploits market power, such as monopoly or “excessive” pricing, as opposed to conduct that maintains or extends market power, such as predatory
pricing or other exclusionary acts or agreements that raise entry barriers. Competition law challenges to excessive pricing by firms in potentially competitive markets may not have long-term benefits, because they may prolong the monopoly by deterring entry that could destroy it. For this reason, excessive pricing is not considered to be abuse or monopolisation in some jurisdictions, and it is seldom challenged in many others. Efficient capital markets and other factors may make new entry a more effective remedy than litigation. In developing and transition economies, where new entry is less likely to be as quick, such cases are more common, although some of them decline on policy grounds to bring such cases. Chile’s Commissions considered at least two excessive pricing cases in 2001. One involved the Santiago subway, which presumably faces no threat of entry. They seem to have had only one excessive pricing case that may have involved a potentially competitive market (clinical gases), and one predatory pricing case (a complaint against Carrefour that was ultimately rejected). They had at least two price discrimination matters, one of which (pharmaceuticals) apparently did not involve market power at all and the other of which (the purchase of raw milk) involved alleged price discrimination by cartel members whose agreement presumably removed the threat of entry.

One interesting monopolisation case involved a firm with an exclusive right to operate the system for handling inter-bank payments by internet. Access to the firm’s system was required by any firm wanting to provide internet bill-paying services, and the firm itself had affiliates offering those services. The Banking Superintendency’s rules provided that in order to offer services using defendant’s system, a firm had to have a contract with a bank – thus in a sense making the banks responsible for the firms that offer internet bill-paying services. The firm denied a new entrant access to its “essential facility” even though it had the required contract with a bank, and this action was found to have illegally created entry barriers.

Although the Antitrust Commission may order “the dissolution or restructuring of companies,” and the Supreme Court upheld the Commission’s de facto order that Telefonica sell shares of stock, the Commission appears to be very reluctant to use its full divestiture authority to require the sale of assets.

Despite the large number of monopoly cases, the interviews and limited documentary research conducted for this review suggest that the competition authorities’ work in this area has not been very important outside the infrastructure industry sectors. Part of the reason may be that the lack of formal or informal guidelines about market definition and assessing dominance may be deterring complaints by the Prosecutors’ Office and the public.
4.4 Mergers and acquisitions

Mergers have evidently gotten increased attention in the last few years. There are currently four merger investigations being conducted by the Prosecutor’s Office and two cases being considered by the Antitrust Commission. Competition officials observe that in Chile’s very open economy there are few anticompetitive mergers and that in recent years, at least, the potentially problematic mergers have been reviewed. Some of Chile’s most important recent merger cases have involved acquisitions of firms operating in infrastructure sectors such as telecommunications and electricity. Since the cases constitute an important part of Chile’s overall regulatory approach to those markets, they are noted below as part of the discussion of competition law and policy in regulated markets.

Until recently, however, it appears that Chile has never had a significant merger control program except in infrastructure industries. The statistical information on cases during the 1974 – 1993 period does not include mergers as a separate category or subcategory. Some believe that small but potentially anticompetitive mergers have been ignored, while large, controversial ones have been the object of investigations or challenges that were initially publicised and eventually closed without action. There is also criticism of the Antitrust Commission’s finding that the Coca Cola – Cadbury Schweppes transaction was lawful. It seems fair to say that the competition institutions have actively sought to prevent mergers from deterring the development of competition in the few but important potentially competitive elements of infrastructure sectors, but they made less effort to determine whether mergers in other markets were likely to create a monopoly or facilitate collusion. The law’s lack of a specific mandate for merger work may partially account for the extremely cautious approach the Prosecutor’s Office and the Commission have traditionally taken. It could also be that the caution is a legacy of “the Chicago boys,” but the competition institutions’ approach to vertical restraints in the 1970s and 1980s suggests that they had very little impact on competition law enforcement.

The competition law does not include a specific prohibition of anticompetitive mergers, and Chile has no premerger notification system. The absence of a separate merger section does not imply a lack of coverage, though, and Article 1 is broad enough to reach an anticompetitive merger under either of the commonly applied substantive rubrics: “substantially lessen competition” or “create or maintain a dominant position.” The Prosecutor’s Office has said that Chile applies both tests, but it is unclear what this means in terms of what must be proved. The Office has also said that there is an efficiency defence in merger cases.
Prenotification to the competition institutions is required only for transactions involving television and radio. In such cases, a 30-day notice period, which seems too short for a serious analysis, is required. (Transactions involving newspapers must apparently be notified after the fact.) Banks and some other financial institutions must notify the Bank Superintendency before merging, and the Superintendency could ask the competition institutions to review a matter. The parties to proposed mergers sometimes consult with the Prosecutor’s Office in advance of closing, but consultation is at the discretion and timing of the firms. Parties to the largest and most important mergers rarely consult in advance with the Office. Although Office representatives do not say that the lack of premerger notification is a significant problem, it has led to some problems. For example, when challenging the stock acquisition that gave ENERSIS total control of ENDESA, the Prosecutor’s Office argued, unsuccessfully, that ENERSIS was required to give the Office advance notice in the particular situation and thus it should receive the maximum penalty for having failed to do so.

The lack of a general consent order process now makes it impossible to resolve problems in proposed mergers effectively through advance consultation. Discussions between the parties and the Prosecutor’s Office are unofficial, the Prosecutor’s Office is not authorised to enter into an agreement for divestiture or other prospective relief, and there is no procedure by which such an agreement could be considered by the Antitrust Commission. The proposed amendments appear to resolve this problem, through a “conciliation” procedure that will apparently permit the Prosecutor’s Office and a party to agree to a negotiated order, subject to its acceptance by the Tribunal.

The most prominent recent merger outside the infrastructure sectors was the acquisition by Coca Cola of Cadbury Schweppes’ soft drink brands and licenses. Acting on a complaint by Pepsi Cola and certain soft drink bottlers, the Prosecutor’s Office conducted an investigation and made a report that noted risks to competition but did not contain a “requerimiento” – a formal charge seeking a fine or other remedy. Pepsi Cola and the bottlers also filed complaints with the Antitrust Commission, which opened a proceeding to which the Prosecutor’s Office became a party. In that proceeding, Coca Cola argued that the relevant product market was much broader than “carbonated soft drinks”, which was the market definition alleged by Pepsi Cola (based on precedent from other jurisdictions). In the carbonated soft drink market, Coca Cola already had a 73 per cent market share, which the acquisition would raise to 82 per cent (nearly 100 per cent of orange flavoured soft drinks and mixers). This international merger, whose competitive impact was assessed in many different countries, presents an interesting
comparative test of merger oversight. Market conditions in those countries vary, of course. Coca Cola did not even seek to acquire Cadbury Schweppes’ assets in the United States; because recent cases there made it clear that the acquisition would not survive antitrust scrutiny. Australia, France, and South Africa all raised antitrust objections to the acquisition in their markets.

At least until the mid-1980s, Chile’s competition institutions considered a variety of goals in their assessment of mergers. This could be inconsistent with the current focus on efficiency, if other goals are asserted as reasons to strike down an efficient transaction or to permit one that harms competition. It is unclear whether and to what extent the competition institutions have stopped considering non-efficiency public interest considerations such as employment, in merger decisions.

4.5 Unfair competition

The competition law does not mention unfair competition as a violation, but Article 1 is broad enough to cover it, and there have been many cases. Most of the cases have involved trademark abuses (including parallel imports) and comparative advertising. Some in Chile believe that the competition institutions devote too much time to unfair competition cases, which generally involve private disputes, do not necessarily protect competition in the market as a whole, and thus do not make the best use of the competition institutions’ expertise. Typical examples of unfair competition are commercial bribery, misleading advertising, deception (by “passing off” and other means), defamation of competitors, and misuse of trade secrets. In most jurisdictions, claims about these practices are usually dealt with in private lawsuits brought by the injured competitors, while government-enforced consumer protection laws may ban the same or similar practices when they harm consumers.

Despite unfair trade laws’ focus on protecting competitors, unfair trade practices can, in the aggregate, be harmful to competition because they undermine confidence in the market’s integrity, and they may also distort market information and thereby affect purchase decisions. In economies where the “rules of the road” are not clear and access to courts by injured parties is limited, government enforcement against unfair trade practices can be important to the creation of competitive markets. In those conditions, unfair competition enforcement by the competition institutions may well be beneficial, but only if the institutions have enough resources to do such work without interfering with their core obligation to enforce the competition law in cases where market power exists or may be created. But if the rules are reasonably clear and parties injured by unfair competition have a practical way to bring a private action, it could well be preferable to
codify the principle that unfair competition does not violate the competition law if the conduct does not harm the market as a whole.

In Chile, the competition institutions do not seem to be flooded with unfair competition cases. Some of the cases (e.g., parallel imports) may be preventing harm in the market as a whole. In any event, bringing some big, highly publicised unfair competition cases can call the public’s attention to the competition institutions and their mission. Since comparative advertising is another main subject of unfair competition cases, it is noteworthy that a case provided by the Prosecutor’s Office in connection with this review states that such advertising must be objective and verifiable, as well as truthful and nondeceptive. Some OECD countries permit (or even encourage) any comparative advertising that is truthful and non deceptive, and regard it as anticompetitive to insist that such advertisements also be objective and verifiable. Although there is some movement towards this more liberal position, there are also OECD countries whose restrictions on comparative advertising are significantly stricter than those in Chile.
5. Competition law and policy in regulated sectors

For many OECD competition authorities, activity relating to regulated sectors of the economy is largely a matter of competition advocacy because the sectoral regulator has the exclusive power to make many of the key decisions relating to competition. In their advocacy, OECD competition authorities have increasingly sought vertical separation in infrastructure industry monopolies. An OECD Council Recommendation urges consideration of this approach, while acknowledging that it is not always appropriate.\(^{15}\) This issue has been important in Chile,\(^{16}\) where the balance of power is different because the competition law can sometimes be applied even to a sectoral regulator or other part of the government. This section focuses on the competition institutions’ advocacy and enforcement work concerning infrastructure monopolies. The competition institutions never play a direct role in setting prices; in general, tariffs are set by sectoral regulators with the participation of the Ministry of Economy’s Market Development Division.

5.1 Telecoms

Chile’s telecom industry has been privatised. To a great extent, it is owned by foreign firms. The telecoms law states that providers may generally set the price of their services, except that access charges are always fixed, and other prices may be fixed if the Antitrust Commission finds that competitive conditions do not exist. In practice, this means that Chile’s telecom regulator sets tariffs for local fixed telephony (pursuant to Antitrust Commission rulings) and for access charges; in the mobile market, only access prices can be fixed, and long distance charges are free by law. The competition institutions have done far more in the telecom sector, however, than making these periodic determinations on the existence of competitive conditions.

Prior to privatisation, Chile’s telephone system was dominated by two state-owned companies – Compañía de Teléfonos (“CTC”), which provided local telephony services, and Empresa Nacional de Telecommunicacion (“ENTEL”), which provided domestic and international long distance service. By 1990, the national telephone company of Spain (Telefonica) had obtained control of CTC and a twenty per cent share of ENTEL. The Prosecutor’s Office challenged Telefonica’s holdings. The Preventative Commission, the Antitrust Commission, and eventually (in 1993, after having rejected six previous Telefonica appeals) the Supreme Court ruled that Telefonica had to sell its interest in one of the two firms. Telefonica sold its interest in ENTEL.
While this case was proceeding, the competition institutions also played a crucial role in deciding whether competition would be impaired if local telephone companies were permitted to offer long distance service. Asked this question by the telecoms regulator, the Preventative Commission found that such entry would be anticompetitive, the Antitrust Commission affirmed the decision, and the Supreme Court directed the Antitrust Commission to open its own proceeding to examine the issue. In 1993, the Commission concluded that local and long distance should not be separated, because doing so would be difficult and developing technology seemed likely to eliminate the rationale for such separation. It ruled, however, that entry into a new market must be by a separate corporate subsidiary, and it laid out various other principles that should be incorporated into new provisions in the telecom law. The Supreme Court affirmed this decision, and a 1994 amendment to the law added the Commission’s principles, beginning with the obligation of the local service provider to establish a “multicarrier system” so that the user could choose his or her long distance provider. In 1998, the Commission concluded that national and international long distance service no longer needed price controls. By 2001, Chile had ten firms offering the former and ten offering the latter. Overall tariffs had decreased by 30 percent.

The competition institutions also determined how the telecom regulator allocates spectrum in the mobile telephony market. Two firms operating at 800 megahertz petitioned for additional spectrum at 1900 megahertz in order to compete more effectively against two firms that already had some spectrum at that level. The telecoms regulator agreed. One of the incumbents complained, and the Prosecutor’s Office initiated a proceeding. Eventually, the Antitrust Commission ordered that the regulator use an auction to decide which firms should obtain rights to the spectrum. (Another order in this proceeding directed the regulator not to give the first two firms preference merely because they had applied first for the megahertz.) The entire process took about two years, and the two firms initially approved by the telecoms regulator were the successful bidders at the auction. Relying in part on this fact, some telecoms officials regard the case as one in which the competition institutions were used to delay the allocation of new spectrum. While such “nonprice predation” can and does occur, in this situation that criticism does not seem to give adequate weight to the present and future benefits of establishing the principle that spectrum (and other assets) should be auctioned in a competitive and transparent manner. Some telecoms officials also believe that on occasion the competition institutions become too involved in technical matters, but the two agencies apparently work well together for the most part.
A number of other important cases have been decided or are currently pending. In one case, the Commission issued the maximum fine against Telefonica for using its power in the fixed local telephony market to gain a competitive advantage in the mobile telephony market. Telefonica owns a number of mobile firms, which offered a subscription to mobile users under which there was in effect no charge for the network services. The Supreme Court upheld the finding but (as it often does) halved the fine. There is an ongoing case, currently at the discovery phase, involving alleged collusion between two cable television companies.

Under a law to protect free speech, the Preventative Commissions must be consulted on all mergers or acquisitions involving the transfer of television and radio stations. The law’s text provides merely that the Commissions must decide within 30 days whether the transfer would be anticompetitive, but the law is perceived as expressing a special concern for media concentration. The adequacy of a 30-day review seems questionable. The Commissions have reviewed many proposed transfers without objecting to any.

There is an ongoing issue concerning the determination of access charges. Currently, access charges are asymmetric: high for incumbents and low for new entrants. This system has facilitated entry and competitive rivalry, but some are concerned that it may harm efficiency. In addition, Telefonica has sued the government on the ground that the system cost it US$ 237 million in excessive access fees. Notably, the pro-growth agenda originally contained several proposals for regulatory reform in telecoms, but the proposed amendments have apparently been withdrawn and replaced by a programme that involves regulatory changes that are at this point unclear.

5.2 Electricity

Before privatisation began in the 1980s, Chile’s electricity sector was dominated by two SOEs – ENDESA, which operated on the national level and engaged in generation, transmission (through ownership of TRANSELEC), and distribution, and CHILECTRA, which distributed electricity in the Santiago metropolitan area. Had competition policy principles been given serious consideration when privatisation occurred, ENDESA might have been divided vertically (and perhaps horizontally) before it was sold, but this did not occur. Several buyers acquired minority interests in ENDESA, while ENERSIS acquired CHILECTRA. Since then, Chile has been engaged in a lengthy struggle to limit the anticompetitive effects of vertical integration, which relate in large part to the resulting barriers in generation and marketing, both of which are potentially competitive. The struggle has included both unsuccessful attempts by the
Prosecutor’s Office to force vertical separation and the usual sorts of regulatory strategies for preventing abuse of dominance.

The first formal intervention by the Prosecutor’s Office occurred in 1992, after ENERSIS acquired some of ENDESA’s stock. The Prosecutor’s Office sought divestiture of these shares, but the action was unsuccessful. In 1994, when ENERSIS increased its ownership interest to 25%, the Prosecutor’s Office brought another unsuccessful case, but in 1997 the Antitrust Commission issued binding “general instructions” aimed at increasing competition and transparency. The instructions required the electricity regulator to issue new rules and ordered distribution companies to call for bids and sell their supplies on objectively stated and non-discriminatory terms. The order also required that ENDESA transfer ownership of its transmission assets to TRANSELEC and that TRANSELEC be operated as a separate corporation, subject to the same rules as publicly held stock companies, and in which other generators or other firms could invest.

The Antitrust Commission’s 1997 instructions greatly improved the regulatory system, but in 1999, after ENERSIS attempted to increase its interest in ENDESA from 25% to 60%, the Prosecutor’s Office brought yet another action. While the case was pending, the Office’s case was weakened when Canadian interests acquired TRANSELEC. The Prosecutor’s Office again failed to obtain structural separation but obtained improved general instructions and an order that ENDESA and CHILECTRA could not merge or have interlocking directorates, and must be audited by different firms. That order is under review by the Supreme Court.

According to one recent report, there are currently 58 firms in the electricity services sector, 20 of which are concessionaires for generation, four for transmission, and 36 for distribution. The Antitrust Commission plays a special role in this market, since by law prices may be set only for services that the Commission finds are not subject to competitive conditions. The market is regulated by Chile’s National Energy Commission and the Superintendency of Electricity and Fuels, acting under a 1998 regulation that sought to increase transparency and competition. Chile’s pro-growth agenda includes further pro-competitive reform in this sector. An ambiguity in the electricity law is holding up investment in new transmission assets, which in turn is deterring investment in new generation facilities. The main purpose of the proposed amendments is to clarify how investors in transmission assets will be able to obtain a return on their investment.
5.3 Banking and financial services

Chile adopted a new banking supervision law in 1997 to modernise the sector, adopting international supervision standards while also allowing banks to undertake more activities. The sector has been fully privatised, and a recent report indicated that 13 domestic and 17 foreign banks operate in Chile.

The competition institutions have had limited dealings with this sector. As discussed above, the Prosecutor’s Office challenged a merger of two Spanish banks that gave them 27 percent of Chile’s banking market at the national level, but the Antitrust Commission found this not to be anticompetitive. Since the Spanish banks case was decided, the Banking Superintendency has acknowledged the competition institutions’ authority to address competition issues in the sector. In addition, new legislation governs the circumstances when approval by the Banking Superintendency is needed and the procedures for that process.

More recently, Chile’s two largest banks merged and obtained a 20 percent share nationally, but this merger was not challenged although five-firm concentration reached 70 percent in the national market. As also noted above, the competition institutions issued a general instruction requiring non-bank providers of consumer credit to use the system for disclosing interests rates, etc. that the Superintendency imposed on banks.

There is a potentially important debate going on in Chile now about whether the banking and financial services markets are competitive. The Banking Superintendency points out that it has relaxed entry requirements while keeping rules that safeguard the banking system. And although some in the Prosecutor’s Office express concern about increased concentration in banking, others have no such concerns. On the other hand, other government officials do express concern that the industry is not competitive. This review did not analyse these sectors in depth, and the specific concerns that were articulated may be unwarranted for a variety of possible reasons, but the general concern is itself notable. Concentration is high, and despite Superintendency action to facilitate entry, there is a perception that entry is difficult and foreign entry is generally through acquisition rather than the creation of a new firm. It is noteworthy that the debate seems to have focused on national concentration levels for all banking services, without having addressed what would be the first step in any competition analysis – whether and to what extent bank mergers and other practices should be analysed in the context of particular banking services and local or regional geographic markets.

It has also been said that the large banks in Chile make loans almost exclusively to large firms and (sometimes) to individuals. While others
question this view, there are reports that, directly or indirectly, loans to small and medium size firms ("SMEs") come largely from CORFO, which has evolved from being the traditional investor/owner of much Chilean enterprise into an industrial promotion agency; using World Bank and IDB credit lines, CORFO provides the funds that many banks lend to SMEs. Loans to SMEs are riskier and costlier than other loans, but some see the banks as being excessively conservative as a result of a lack of competition. Some Chilean officials express concern over the fact that there is only one credit card network in Chile.

An interesting feature of Chile’s financial system is that 70 per cent of all consumer credit comes from retailers rather than financial institutions. Outside the banking sector, the only financial service that was mentioned as a matter of competition concern involves pension plans. Chile has an elaborate pension system, which this review did not seek to analyse, but it is said that price competition among the plans is apparently not strong. It has also been suggested that the plans’ high administrative costs reflect a lack of competitive pressure that results from oligopolistic interdependence.

5.4 Water and sewer services

Water and sewerage companies are among the few in Chile that continue to be largely state owned. Fifty-two firms operate, of which six are private. In 1997, the Antitrust Commission approved the acquisition of a water company by ENERSIS, the dominant electricity supplier. In doing so, however, the Commission recommended that the conglomeration of public utility companies should be subject to closer government surveillance.

The Antitrust Commission’s recommendation led to enactment in 1998 of the Sanitary Services Act, which increased transparency and sought to pave the way for the future introduction of competition where possible by restricting integration among public service companies operating in the same area. Thus, water and sewerage companies may not combine with gas, electricity, or local telephone companies in the same area if they serve more than one half of the area’s population. Since the Department of Public Works grants concessions to firms on the basis of competitive bidding, there is competition for the market even though there is none within the market. The law also encourages competition by requiring water distribution and sewerage collection firms to permit water production and sewerage disposal firms to use their network and contract directly with “large consumers.” The Antitrust Commission is responsible for deciding whether utility concessionaires are natural monopolies and hence subject to maximum tariffs and other rules set by the relevant agency. The Sanitary Services Superintendency fixes the maximum rates and may authorise utilities with
fewer than 25,000 water connections to provide services jointly if this results in efficiencies that lead to lower rates.

5.5 Transportation

The state does not own or operate any transportation companies except for three companies that are managed by an independent board – Santiago Metro, a passenger train, and a ferry service. Transport companies are free to compete on price and service, subject to safety and other regulations with limited economic impact. The state does not subsidise transport companies except to ensure transportation to isolated areas. In a pending case, the Antitrust Commission is considering a complaint by a consumer organisation alleging that the Santiago subway is abusing its monopoly by charging excessive prices.

In 1979, Chile adopted an open sky policy regarding passengers and merchandise. The air transport sector has been fully privatised. A recent report indicated that 34 airlines operate in Chile, seven of which are private domestic firms. Most transport cargo, mail, and passengers. There are 25 additional non-regular cargo airlines. As discussed in the section concerning the goals of Chile’s competition law, the Antitrust Commission once approved the merger of Chile’s two largest domestic passenger airlines, subject to a requirement that the merged firm in essence set its own maximum tariffs, and several years later found that the merged firm had sought to drive a new competitor out of the market by a predatory lowering of its price on the one route on which it competed with the new entrant.

5.6 Other sectors

Natural gas. When the first natural gas pipeline between Chile and Argentina was created during the 1990’s, the Antitrust Commission played a role in ensuring that the transportation and distribution was conducted under competitive conditions. Natural gas prices may be set freely, but the sectoral regulator may ask the Antitrust Commission to declare that competitive conditions do not exist when the regulator finds that a firm's rate of return exceeds certain guidelines. If such a declaration is made, the regulator may set maximum tariffs.

Mining. Chile’s Constitution provides that the state is the sole owner of all mines, regardless of who owns the surface land. This ownership does not create monopoly problems, however, because a system of concessions provides mining rights to a variety of firms. There is some interest in seeing whether the concession system can be made more efficient. Chile participates directly in mining through its ownership of the national copper company, CODELCO, and the national mining company, ENAMI. There
are also 27 private Chilean mining companies, and 17 foreign firms are engaged in exploration while 27 are engaged in exploitation.

Ports. State-owned ports have been leased on a long-term basis to private concessionaires that are responsible for operating them, and there is to be no future public investment in new ports. The Central Preventative Commission is required by law to establish the competition rules for the operation of Chile’s ports, and it has issued an order laying down rules regulating horizontal and vertical integration. For example, “important users” of a port may not have more than a 40 per cent interest in the port.
6. Competition Advocacy

Chile’s competition law is unusually specific in providing advocacy powers. Supported by the Prosecutor’s Office, the Preventive Commissions may request any public body to exercise its regulatory powers to protect competition, and the Antitrust Commission may request the amendment or repeal of any statutory or regulatory provision. In its response to a questionnaire from the International Competition Network, the Prosecutor’s Office said that it engages in little competition advocacy, but the response understates its activities. The competition institutions have not engaged in a wide range of competition advocacy, but they have done important work, particularly with respect to infrastructure monopoly sectors. Chile’s institutions have used their broader law enforcement authority to order some of the kinds of regulatory reform that OECD competition agencies could only advocate, the clearest example being the order to use an auction to decide which firms would receive additional bandwidth. Therefore, the institutions’ record in promoting competition principles in designing regulatory systems is understated if one looks only at advocacy.

There is no single, all purpose definition of competition advocacy because competition authorities around the world need to use advocacy to deal with a variety of challenges. In general, it means the promotion of competition market principles in policy discussion and regulatory processes. In practice, the scope of advocacy presentations can vary widely. A set of bullet points about basic issues, such as how monopoly harms the public but enriches the monopolist, is advocacy. So is an extended legal and economic argument in a sectoral regulatory process. Advocacy activities can include testifying, making written submissions, or issuing papers to legislature, ministries, courts, sectoral regulators, or municipalities. In addition, they can include making speeches to professional and trade associations, academic institutions, and conferences, and writing articles for publication in specialised or other journals or other publications. Even holding press conferences and otherwise publicly explaining the importance and implications of competition and market principles could be considered advocacy. For developing countries without well established competition regimes, promoting competition principles to the general public is an ongoing task, and indeed perhaps the most important task, at least at first.

Chile’s competition institutions engage in considerable advocacy to other government entities on topics relating to infrastructure monopoly sectors. For example, the competition institution’s review of the competitiveness of the electricity and telecom markets determines whether rates are free or fixed. Although the competition institutions do not necessarily provide “advice” as part of this process, the review itself
manifests both a major competition principle and an unusual way of ensuring that the principle is followed. The major principle is that prices should be free unless there is a finding that conditions are not competitive. The assurance that the principle will be followed lies in assigning this task to the competition institutions rather than the sectoral regulator. Thus, the exercise is competition advocacy, and both the magnitude of the task and the Office’s commitment to it are reflected in the fact that the ongoing review of the electricity sector is being conducted by a team of four economists and two lawyers – more than 25 per cent of the professional in the Office’s three main substantive departments.

There is also some competition advocacy in connection with the Prosecutor’s service on two intergovernmental bodies. Notably, the Prosecutor chairs the national commission that investigates distortions in the price of products that are being dumped. Since antidumping remedies are generally viewed by the competition community as anticompetitive actions that benefit domestic producers at the expense of consumers and the economy as a whole, this is a potentially useful though awkward function. Together with the representative of the Central Bank and sometimes the Ministry of Foreign Affairs, the Prosecutor sometimes successfully opposes the imposition of requested remedies, but his discretion is limited by the law that created the commission. The Prosecutor also serves on a body that hears appeals in certain customs cases, which seldom if ever raise competition issues.
7. Policy options

- Adopt the pro-growth agenda, taking into account some possible changes.

It seems reasonably clear that the amendments will be enacted without major change, hopefully during 2003. Enacting and implementing the amendments should be a priority, because the new Tribunal will have more independence, more qualified members, and a larger budget. Exchanging unused criminal sanctions for substantially increased fines also seems to be a sensible move, even though it runs somewhat counter to the current international trend.

One aspect of the proposal regarding the Tribunal may warrant additional consideration. The proposal requires Tribunal members to work a minimum of two days per week and provides funding that may support up to three days per week. This means that collectively, Tribunal members should be able to devote to the Tribunal about twice the total amount of time worked by all of the current commissioners combined. In addition, the Tribunal’s staff will be somewhat more than twice as large as that of the Department that now supports the Commissioners. These are significant increases. However, the Prosecutor’s Office also recently doubled in size, and more cases are being brought by consumer organisations and other private parties. Moreover, the current Commissions are somewhat slow in deciding cases and tend to write conclusory decisions that leave the private sector unsure of the standards that are being used to judge their conduct. Generating faster and more complete decisions will take more time and resources. Thus, although the resources will be increased, there is already reason to be concerned that even more might soon be needed.

Whether the Tribunal can do what is expected of it with only part-time members is partly a budgetary issue, but it is also an institutional one. Where members are part time, it can be more difficult to pay members enough to address complex matters. Requiring members to work at least two days per week partially addresses this problem. On the other hand, this commitment may make it more difficult to obtain Tribunal members who have expertise but no conflicts of interest. Private-practice lawyers and economists with expertise in competition law may be unwilling to give up their clients and resign from their firms in order to take on part-time work on the Tribunal, and recuse themselves when necessary in particular cases. The commitment could also be problematic for academics, most of whom apparently have private clients or relationships with law firms. If it appears that this could be a problem, Chile could consider a Tribunal with some full-time members and a larger number of part-time members.
The proposed modification of Article 2 should be revised to clarify whether acts and agreements on the list are subject to different legal standards than other acts and agreements covered by Article 1.

The Prosecutor’s Office should also consider whether the proposed conciliation procedure would permit the Office and a firm to enter into an agreement that would, if accepted by the Tribunal, dispose of a matter on the basis of an agreed fine. If it would not, the Office should consider proposing a modified amendment that would permit this practice. The concept of a negotiated fine is apparently not familiar in Chile and may seem to some to be an unseemly “bargaining with the law,” just as a few years ago the idea of giving leniency to a “whistleblower” seemed to some to be improper. However, it is common practice in much of the world, and if a defendant is willing to pay an appropriate fine in order to avoid the cost and uncertainty of litigation, such an arrangement is efficient for the government as well. If the Tribunal considered the agreed upon fine to be too small, it could reject the agreement and order the litigation to proceed.

Clarify legal standards with guidelines or policy statements, while continuing the important initiative to publish the text and summaries of decisions, and eventually the Office’s reports, on the Prosecutor’s Office’s website. Considering the legal and economic sophistication of competition officials and others in Chile, it is remarkable how much uncertainty there is on even quite basic issues such as the means of defining markets, evaluating dominance or market power, assessing the legality of a vertical restraint, and even the standard applicable to cartels.

When a decision-making body does not clearly explain its reasoning, uncertainty about the applicable legal standards can discourage firms from making investments or experimenting with new distribution systems, deprive injured parties of knowledge that they may have a remedy, and reduce respect for law enforcement. The enforcement staff may share the public’s uncertainty, leading it to devote unwarranted attention to matters that the decision-maker would consider frivolous or to disregard issues that the decision-maker would consider vital. The staff may find out “the real story” through informal means, which helps enforcers but does not remedy public uncertainty.

The Prosecutor’s initiative to put more information on the Office’s website is an important one. Moreover, the new Tribunal will have time to prepare more explanatory decisions. Still, a more comprehensive approach, using nonbinding guidelines or other clarification, should be a high priority. The Prosecutor’s Office should seek supplemental funding if necessary to address the following issues, among others:
− What conduct, if any, is illegal *per se*? This issue is related to the above recommendation to clarify whether conduct listed in Article 2 is subject to different legal standards. Is unfair competition a violation even when it has no effects on the market as a whole?

− How are product and geographic markets defined? What is the test?

− What is the test whether a firm has a dominant position or market power? What evidence is useful, relevant, or required? What is the agency’s approach to the key steps in its analysis? Is dominance or market power presumed if a firm has a share above some level in a market (or a market with entry barriers)? At what share does the presumption arise? Can any market share or concentration safe harbours be identified?

− In merger cases, are there presumptions based on market share or concentration levels in markets (or in markets with entry barriers)? What test is used to decide when a merger is unlawful, and what is the agency’s approach to the key steps in its analysis? What must be shown to make a *prima facie* case or to establish an efficiency defence?

The Prosecutor’s Office does not have specific legal authority for issuing enforcement guidelines, and this is not a common practice in Chile. The purpose of guidelines would be to clarify the Office’s interpretation of the law. Guidelines about competition issues have been adopted in other Latin American countries. In response to criticism that its standards were not transparent or comprehensible, Mexico’s competition commission issued guidelines that explain its approach to defining markets and assessing dominance. Brazil used “Resolution 20” to introduce guidelines on evaluating anticompetitive agreements and has also issued merger guidelines. As guidelines have become increasingly common, the cost of preparing them could be minimised by selecting appropriate models and adapting them to Chile’s situation.

If the Prosecutor’s Office questions the propriety of “guidelines,” it should consider other ways to clarify the overall analytic framework it uses and its interpretation of the elements of particular violations. The Office might issue “policy statements” or add an interpretive introduction to the case materials on its website. A series of speeches on law enforcement (with written texts that are more detailed than the speeches), or a series of short articles on the Office’s website or elsewhere, could also be helpful, though perhaps somewhat less so than products that are clearly identified as guides or policy statements.

Increase the amount and the visibility of competition advocacy outside the infrastructure monopoly sectors, so that the Prosecutor’s Office or the
The Tribunal will become central to the government’s consideration of the wide range of regulatory matters that affect competition and to which competition principles should be applied. There is no budget allocated to the Prosecutor’s Office specifically for competition advocacy. The Office manages its own budget and already allocates significant resources to competition advocacy in infrastructure monopoly sectors. Moreover, it is beginning to allocate resources to outreach to law firms, private sector organisations, and universities, and has also been actively involved in developing the competition law aspects of the pro-growth agenda. Since the Office’s work with infrastructure monopolies is sometimes mandatory and in any event valuable, budget reality will for now require very careful selection of advocacy activities in order to keep costs to a minimum. The Office already co-ordinates to some extent with the Ministry of Economy’s Market Development Division, and creative thinking about the way these institutions interact might produce synergies while holding down costs.

Although the Prosecutor’s Office must of course take into account the likely costs of competition advocacy, the lack of a more active programme could also be costly. The competition institutions are not well known in Chile, and although market liberalism seems more firmly established in Chile than in many Latin American countries, it faces continuing challenges in that many consumers are not aware of the benefits of competition and of avoiding unnecessary regulatory restrictions on competition, while some academics and business representatives seem to prefer a more laissez-faire approach. In this context, building a broader competition advocacy programme should include three inter-related goals.

− First, the Prosecutor’s Office (and the Tribunal, when it is established) should work to integrate competition policy into a wider range of the government’s regulatory policy and analysis and to ensure that a competition institution is involved in – if not the centre of – this process. Chile’s inclusion of the competition institutions in the process of regulating infrastructure monopolies provides a model on which the competition authorities can seek to build, but where on some natural monopoly issues the competition institutions have a decisive voice and must invest substantial resources, in many other regulatory issues they would presumably play the smaller but important role of commenting from a competition policy perspective on issues that that will be decided by other parts of the government. And although the Market Development Department of the Ministry of Economy apparently engages in some activities along these lines, the OECD’s 1997 Regulatory Reform Report recommended providing competition authorities the authority and the capacity to advocate reform throughout the government.
− Second, the Prosecutor’s Office should seek to demonstrate the value of competition policy by becoming a more visible advocate and taking positions on important issues that raise competition policy issues. For example, one issue covered by the pro-growth agenda is the harm caused by slow, non-transparent licensing and other procedures by municipal and other government entities. Although direct governmental responsibility for this matter is in the hands of other government entities, the harm they are trying to halt is largely the inefficient and other anticompetitive effects of unjustified entry barriers. If this topic were not on the pro-growth agenda, it could be a good one for competition institutions to study and call to the attention of the government and the public through a published report explaining the cost to Chile of such entry barriers. Since the topic is being addressed, the Office could support the movement for reform by emphasising the competition policy aspects of this problem. In this and other areas where competition institutions may be unable to eliminate competition problems, they can bring concrete benefits to Chile’s economy by helping create consensus on the need for reform, while also winning support for competition policy by showing that it is not anti-business, as some fear.

− Third, the Prosecutor’s Office (and eventually the Tribunal) should engage in a more broad-based effort to explain how competition law and policy benefits consumers, businesses, and the economy as a whole. This programme should seek to educate the public about the costs of monopoly, cartels and competition distorting regulations, while also reassuring the business community that competition enforcement in Chile focuses on economic efficiency. (There would be synergies between this work and the development of guidelines or policy statements.) In view of the Chilean government’s current concern about equity issues, including social protection, education, and health, the advocacy program could include emphasis on how competition policy can serve as a tool to help policymakers pursue equity goals as efficiently as possible.

• **Pursue traditional law enforcement more vigorously in a wider range of industries.**

Despite the benefits the competition institutions have achieved in infrastructure markets, they should adopt a more proactive and aggressive approach to competition enforcement in markets that can and should be competitive. The focus on sectors with natural monopoly elements has led or contributed to a relatively low level of enforcement in potentially competitive markets. Taking into account both the relatively low level of enforcement and the infrequency and low level of fines, it seems unlikely
that Chile’s competition law is currently doing much to deter anticompetitive conduct.

- **Consider providing increased funding for the Prosecutor’s Office.**

  Chile has increased its investment in competition law and policy and will soon increase its investment further by funding the new Tribunal. However, in light of the importance of increased attention to guidelines, competition advocacy, and traditional competition enforcement, the Office’s need to continue its recently increased involvement in international competition matters, and the value of the Office’s work on issues relating to infrastructure monopolies, Chile should consider a moderate increase in funding for the Prosecutor’s Office. This is a crucial time for competition enforcement in Chile, and increased funding could easily pay for itself through increases in the efficiency and productivity of Chile’s economy.

- **Reconsider Chile’s approach to merger control and perhaps to hard core cartels.**

  Chile’s lack of a premerger notification programme should be reconsidered. Developing countries sometimes choose not to have premerger notification or even substantive merger control because they believe they lack the necessary skills, they want to avoid being buried in paperwork, and they seem to embrace the view that mergers which do create anticompetitive problems can later be undone or kept in check by enforcement against abuse of dominance. But Chile has the legal and economic expertise, paperwork burdens can be managed by adjusting filing thresholds, and there is general consensus that it is preferable to prevent an anticompetitive merger than to try break up or to control the dominance created by the merger, once “the eggs have been scrambled”. With respect to hard core cartels, if it is true that Chile’s law now requires applying the rule of reason in all cases, then Chile should consider returning to its previous *per se* approach. The risk created by use of the *per se* rule is that it will be applied to pro-competitive conduct such as the integration of firms’ operations that should in fact be treated as a joint venture. Given the sophistication and caution of Chile’s competition institutions, this seems to be a very small risk.
ANNEX A

Table A-1.: National Economic Prosecutor’s Office Resources

<table>
<thead>
<tr>
<th>Year</th>
<th>Person Years</th>
<th>Budget (in 000s of US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>54</td>
<td>2,224</td>
</tr>
<tr>
<td>2000</td>
<td>57</td>
<td>2,083</td>
</tr>
<tr>
<td>1999</td>
<td>28</td>
<td>985</td>
</tr>
<tr>
<td>1998</td>
<td>34</td>
<td>795</td>
</tr>
<tr>
<td>1997</td>
<td>33</td>
<td>671</td>
</tr>
</tbody>
</table>

Table A-2.: Conduct Fined As % of Total Fines, 1973 – 2002

<table>
<thead>
<tr>
<th>Conduct</th>
<th>Commission Fines – US$</th>
<th>Final (S. Court) Fines – US$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal agreements</td>
<td>25.6 %</td>
<td>31.1 %</td>
</tr>
<tr>
<td>Vertical agreements</td>
<td>2.2 %</td>
<td>3.9 %</td>
</tr>
<tr>
<td>Monopol/Abuse</td>
<td>33.7 %</td>
<td>27.4 %</td>
</tr>
<tr>
<td>Unfair competition</td>
<td>24.5 %</td>
<td>17.9 %</td>
</tr>
<tr>
<td>Merger</td>
<td>0.8 %</td>
<td>0.3 %</td>
</tr>
<tr>
<td>Others</td>
<td>13.2 %</td>
<td>19.3 %</td>
</tr>
<tr>
<td>Totals</td>
<td>100 %</td>
<td>100 %</td>
</tr>
</tbody>
</table>
ANNEX B

STATISTICAL OVERVIEW OF CHILEAN COMPETITION LAW ENFORCEMENT

An overview of the competition regime from historical statistical and other information generally confirms the conclusions reached above. Three main sources of such information exist. First, an article by Professor Ricardo D. Paredes-Molina, a former member of the Central Preventive Commission, lists the number, type, and disposition of all the cases handled by the Antitrust Commission and the Central Preventive Commission in the period 1974 – 1993.\footnote{17} In addition, in connection with its FTAA activities, Chile prepared a listing and brief summary of all the rulings by the Antitrust Commission and the Central Preventative Commission in 2001. Finally, the Prosecutor’s Office has assembled data on the fines that have been imposed during the entire 1974 – 2002 period. This section briefly examines all three sources.

Antitrust and Central Preventative Commission decisions, 1974 - 1993

The Antitrust Commission

The Parades article lists 367 matters decided by the Antitrust Commission, of which 278 fall into three major substantive categories: horizontal arrangements, vertical arrangements, and monopolisation. Although there apparently were some merger cases, the lack of a separate category for mergers is a striking illustration of the Prosecutor’s Office’s priorities during this period. After setting aside a few ambiguous subcategories, one can say with relative confidence that the Commission handled 45 horizontal cases, 53 vertical cases, 42 monopolisation cases that involved vertical arrangements, and 114 other monopolisation cases (some of which may have involved vertical arrangements), and 6 unfair competition cases.
This case distribution is what would be expected in Chile’s circumstances. It is normal for a country in transition from a largely state-owned or state-controlled economy to have a large number of cases involving dominant firms. And the difficulty of investigating and proving cartels makes it not surprising to see more vertical than horizontal cases. On the other hand, when one considers that at least 42 of the monopolisation cases apparently involved vertical restraints by dominant firms, the great preponderance of vertical over horizontal cases does tend to support the previously noted conclusion that the competition institutions may have tended to challenge intrabrand restrictions that limit a firm’s autonomy but may not harm competition in the market as a whole. The current concern that the institutions may spend too much time on unfair competition cases may note a recent trend, because there were only six during this previous 20 year period.

Viewed with caution, statistics on how the Antitrust Commission decided these cases also raise interesting points or questions. First, the Prosecutor’s Office or private party initiating a complaint won only 55 per cent of the cases. Most challenges to horizontal arrangements and unfair competition were lost, while most vertical and monopolisation cases were won.
There are many possible reasons so many cases were lost, and the data do not permit in depth exploration of this issue. They do not disclose, for example, the cases in which the Prosecutor’s Office was a party. It does, however, seem likely that this record reflects reluctance on the part of the Commission to find violations. An often-cited 1995 analysis of competition enforcement in Chile found that Commission members were indeed very reluctant to apply sanctions, and attributed this to a combination of factors, including (a) a strong belief in Chilean society that economic crimes are not serious, especially when the harm is to the public, (b) a perhaps related laissez faire attitude among some who regard the harm from monopoly as probably less than the harm from unwarranted intervention, (c) lack of resources, and (d) lack of an economic regulatory background or other expertise.¹⁸

Comparing the number of successful and unsuccessful cases in the subcategories raises interesting questions, but the data do not provide a means for further analysis. Challenges to horizontal price agreements had almost the highest percentage of losses. It is unclear what kinds of “discrimination” were involved in the cases labelled as vertical, but it is notable that discrimination by firms without market power was apparently condemned much less frequently than price discrimination by dominant firms.

The Central Preventative Commission

The statistics for the Preventive Commission are even harder to interpret. Of the 227 matters, only 118 fit in defined violation categories, and only 78 of these ended with approval or disapproval of the conduct. Of these 78 matters, only six clearly involved horizontal agreements – three price agreements, one territorial allocation, one association case, and one collusion case – of which five were found illegal. There were 38 cases involving vertical arrangements, and at least 27 of the 57 monopoly cases involved vertical restraints – 65 essentially vertical cases, of which 45 were found illegal. It is striking to see the extent to which vertical cases predominate, the much higher rate of disapproval in vertical cases, and the very small number of times in which horizontal conduct was challenged. There were eight unfair competition cases; the conduct was approved in four cases, and there were no formal findings of illegality.
Antitrust and Preventative Commission decisions in 2001

Antitrust Commission

According to information submitted by Chile in connection with FTAA discussions, in 2001, the Antitrust Commission made 55 rulings involving 33 docketed matters and one investigation (in which the Commission authorised arrest warrants for representatives of two companies that had refused to provide information relating to an alleged price fixing agreement on inter-province bus service). Overall, there were eight matters involving telecommunications, two involving electricity pricing, and a number of matters involving airline pricing. The more important infrastructure monopoly cases were the following:

- One telecom ruling was part of the case in which the Commission required the telecom regulator to hold an auction. In addition, the Commission declined to accept several complaints relating to telecom on the ground that the matters should appropriately be handled by the telecom regulator.

- In another important case, the Commission rejected a petition asking it to declare that there are competitive conditions in the local urban telephony market, including in its ruling six provisions that aimed at gradually creating a genuinely competitive market.

- The Commission was petitioned to find that some services connected with the supply of electricity are not provided under competitive conditions (and thus are subject to price control). It found that competitive conditions did not exist in the markets for 25 services, and made several recommendations to the electricity regulator.

Outside the infrastructure sectors, the most substantial matters before the Commission were the following, each of which is discussed in more detail elsewhere in this report:

- The Commission rejected a challenge to Coca Cola’s acquisition of all trademarks and licenses of Cadbury Schweppes.

- In the buyers’ cartel case against milk processors, the Commission issued an interim order suspending the buyers’ price schedules for the period beginning 1 September 2001, ordering them to make payments based on their 1 July schedules.
• The Commission issued the previously described general instruction concerning price discrimination in the marketing and distribution of pharmaceuticals.

• The Commission upheld a decision by the Central Preventative Commission and fined Toyota Chile for fixing minimum resale prices for original replacement parts.

The Commission handled at least five unfair competition cases, at least some of which (e.g., a dispute over a restaurant’s use of the term “express buffet” on its premises) appear to have been disputes without real competitive significance.

It is noteworthy that the Commission’s only contact with horizontal price fixing or other horizontal agreements was its authorisation of arrest warrants stemming from firms’ failure to comply with investigative demands by the Prosecutor’s Office. Outside the infrastructure sectors, the Commission handled only one merger matter (Coca Cola/Cadbury Schweppes).

Central Preventative Commission decisions

The Central Preventative Commission issued rulings in 49 matters in 2001. Two were complaints alleging infringement of the right to work; both were dismissed, in one case with a decision stating the general proposition that such infringements are not cognizable under the competition law unless they involve real restriction of competition in the market as a whole. This is an example of the way in which Preventative Commission decisions have sometimes included the kinds of explanations of their reasoning that helps clarify legal standards.

Eleven cases involved government procurement and licensing, five of which appear to have been a purely formal review of whether requests for bids meet the standards laid out in an earlier Commission order. Four of the cases had some substantive element, which in three cases seems to have essentially amounted to a claim that the government was improperly conferring a monopoly on private parties.

The Commission’s handling of two of the three monopoly cases was very cautious – finding no violation but issuing warning letters. Since the letters seem to warn against essentially the same conduct as that which had been at issue in the cases, they appear to illustrate a continuing reluctance on the Commission’s part to find violations. In one case, it upheld an exclusive contract but warned the Department of Roads that before renewing the contract, it must consider whether other firms might like to bid. In the other,
the Commission declined to overturn municipalities’ grant of exclusive rights to sell compulsory auto insurance on the ground that the awarding process was proper, but it nonetheless issued a warning to the municipalities. The Commission did find a violation in a case involving educational establishments that required school uniforms to be bought from firms to which they had granted exclusive contracts without having called for bids. The Commission issued detailed rules to govern this process and ordered that the operative part of its opinion be published in a newspaper with substantial national distribution.

An additional 14 cases involved infrastructure monopolies. The Commission rejected one pricing complaint on the ground that it should be considered by the telecom regulator. Eleven other cases all involved rulings under a special law on requests by the telecom regulator or private parties for a ruling on whether prospective license transfers would be anticompetitive; the Commission did not object to any of them. And in a case involving the electricity market, the Commission advised that the acquisition of shares in an electric company by the parties that had submitted bids would not raise competition issues. Finally, the Commission received a complaint by a consumer organisation that the Santiago subway system was charging excessive prices and thereby abusing its dominant position. The case is still pending (and offered as an example of the slow decision making process; the complaint was in February 2001, and the hearing in March 2002).

The remaining 22 cases involved firms in competitive or potentially competitive markets. Fourteen of these were unfair competition cases involving trademark or other intellectual property issues, and one was a comparative advertising case. Another four involved parallel imports or other import-related issues. This leaves three more conventional competition cases. In one, the Commission issued an advisory opinion stating that a proposed distribution system would not raise problems if changed in minor ways. In another, it dismissed allegations that Hipermercado Carrefour had engaged in predatory pricing, including in its ruling several specifications on how promotional offers should be handled. The third case was the dog food resale price maintenance that was mentioned above because during 2001 it was appealed to (and affirmed by) the Antitrust Commission.

**Fines imposed, 1974 - 2002**

Statistics on the number and amount of fines tend to confirm the apparent reluctance of Chile’s competition institutions and legal system to impose sanctions. Table 2 shows that fines were imposed in only 73 cases in the last 28 years. The Supreme Court reduced the Antitrust Commission’s
fines by 45 percent, making the average fine about US$ 13,500 and the total less than US$ 1,000,000. The Commission’s highest fines on average were in unfair competition cases, followed by horizontal cases and then “other.” As finally approved by the Court, the highest average fine was for horizontal cases, followed by “other” and then unfair competition. By far the most fines (43) were for monopolisation, but the average fine totalled only slightly more than US$ 6,000. Table A-2 in Annex A shows the total fines for each violation category as a percentage of total fines.

Table B2: Amount of Fines for Different Violations, 1974 – 2002

<table>
<thead>
<tr>
<th>Conduct</th>
<th>No of Cases</th>
<th>Commission Fines – US$ (avg per case)</th>
<th>Final (S. Court) Fines – US$ (avg per case)</th>
<th>Final as % of Commission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal agreements</td>
<td>9</td>
<td>455,460 (50,607)</td>
<td>305,986 (33,998)</td>
<td>67.2</td>
</tr>
<tr>
<td>Vertical agreements</td>
<td>4</td>
<td>38,711 (9,678)</td>
<td>38,739 (9,685)</td>
<td>101.1</td>
</tr>
<tr>
<td>Monopoly/Abuse</td>
<td>43</td>
<td>600,156 (14,000)</td>
<td>269,779 (6,273)</td>
<td>45.0</td>
</tr>
<tr>
<td>Merger</td>
<td>1</td>
<td>13,613</td>
<td>3,403</td>
<td>25.0</td>
</tr>
<tr>
<td>Unfair competition</td>
<td>8</td>
<td>436,776 (54,957)</td>
<td>175,544 (21,943)</td>
<td>40.2</td>
</tr>
<tr>
<td>Others</td>
<td>8</td>
<td>235,875 (29,484)</td>
<td>189,808 (23,726)</td>
<td>80.5</td>
</tr>
<tr>
<td>Totals</td>
<td>73</td>
<td>1,780,591 (24,389)</td>
<td>983,259 (13,469)</td>
<td>55.2</td>
</tr>
</tbody>
</table>
NOTES

1. Other than CODELCO, there are only two real SOEs: the National Petroleum Enterprise, “ENAP”; and a small firm that supports the development of small mining operations, “ENAMI.”

2. Other components of the agenda include procompetitive regulatory reform in electricity and other areas, developing e-commerce and e-government, tax incentives for investment, better use of public expenditure in the higher education and health care, and facilitation of job-training and part-time work. The plan appears to be broadly consistent with views expressed in an article that examines the institutional and economic structure of the state in Latin America, finds it incompatible with an adequately functioning market economy, and calls for reform. Saavedra, Eduardo, and Soto, Raimundo, Reformas Económicas e Institucionales Del Estado en América Latina, Universidad Alberto Hurtado (Diciembre de 2000).

3. Chile’s investment policies during this period are discussed in Eduardo Moyano, Foreign Investment Policy and Promotion in Chile, in Foreign Direct Investment Policy and Promotion in Latin America (OECD, 1999).

4. As originally proposed in the pro-growth agenda, this amendment would have made the law’s efficiency orientation even clearer, by stating that the law’s object is “the defence of free competition in the markets, as a means to develop and preserve the right to participate in economic activities, promote efficiency and, thereby, the welfare of consumers.” This text would have codified Chile’s current position concerning the primary goals of the law while also confirming Chile’s special concern for economic freedom. [During a major “Competition Day” conference in Santiago on 30 November 2003, the head of Chile’s competition authority stated that the more specific goals referred to in the original draft will be used help define the more general term in the final law.]

5. For example, Resolution Nº 257 (1987), explained that exclusive territories infringe competition by “preventing the access by other businessmen who may be interested in distributing such product.”

6. Spain’s competition law has a similar emphasis on what it calls “the exercise of freedom of enterprise.”


9. Article 2 says that the listed acts and agreements *tend* to restrain free competition. This clarifies that the conduct need not have had an effect in order to be condemned, but it does not necessarily mean that the conduct covered by Article 2 should be any more likely to be illegal *per se* than any other conduct covered by Article 1. In the first place, Article 1 refers to “attempts” to restrain free competition, so it too has no requirement of an actual effect. In the second place, conduct that *tends* to restrain competition does not necessarily do so.


17. Paredes, supra n.8

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Competition Law and Policy in Chile

Chile has been a pioneer in the field of competition law and policy in South America since 1973 when the current law was adopted. This report, which provides an overview of competition law and policy in Chile, was the basis of an in-depth peer review at the first meeting of the OECD/IDB Latin American Competition Forum on 7-8 April 2003. This review has been particularly timely as pro-competitive regulatory reforms and improved competition law enforcement are high priorities for the current Chile’s government in the context of its “pro-growth agenda”.

This review is part of the OECD’s ongoing co-operation with non-member economies around the world.

A Peer Review

This work is published under the auspices of the OECD’s Centre for Co-operation with Non-Members (CCNM). The Centre promotes and co-ordinates the OECD’s policy dialogue and co-operation with economies outside the OECD area.

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SESSION V: COMPETITION IN THE LATIN AMERICAN TELECOMMUNICATIONS SECTOR
REGULATION AND COMPETITION IN MOBILE TELEPHONY

IN LATIN AMERICA

Prepared for the
First Meeting of the
Latin American Competition Forum

Paris: 7-8 April, 2003

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REGULATION AND COMPETITION IN
MOBILE TELEPHONY
IN LATIN AMERICA
MARCH 27, 2003

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4 The conclusions put forward in this report are those of the authors, and do not necessarily reflect the views of the IDB, the OECD, or Members of these organizations.
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Executive Summary

The history of fixed-line telephony in Latin America is generally one of low penetration, long waiting lists for obtaining new lines, and poor service quality. Within this context mobile telephony has played an important role. Mobile telephony has expanded rapidly in several countries, partly because mobile networks allow customers to avoid the waiting lists associated with new fixed lines. Mobile phone companies often operate efficiently because they tap the management expertise of specialized foreign investors, and because they operate in a competitive environment. Successful mobile telephony can also prompt the introduction of fixed-wireless service, which offers to increase penetration rapidly. The introduction of mobile telephony has been extremely beneficial for several Latin American countries. We briefly describe this background in Chapter 1.

Adopting appropriate regulatory policies can significantly enhance the success of mobile telephony in Latin American countries. We address three important questions of regulatory policy: access regulation, the participation of fixed-line local service operators in mobile telephone markets, and entry. We analyze these questions in light of the experience of three countries that we have chosen as case studies: Colombia, Bolivia, and the Dominican Republic (Chapter 2).

Mobile telephone companies must sign interconnection agreements with fixed-line local service companies, so that mobile users can communicate with customers on fixed-line networks. Some countries allow companies to negotiate such agreements voluntarily, and at most an industry regulator or the competition authorities will intervene if voluntary negotiations break down. Other countries mandate specific terms of interconnection and specific prices, leaving little to voluntary negotiations among companies.

In Chapter 3 we discuss the appropriate level of government intervention in interconnection agreements. We recommend against relying on voluntary negotiations. Existing fixed-line local service companies have strong incentives to insist on unreasonable terms, or to delay reaching agreement as much as possible. Experience indicates that the intervention of courts or regulators in interconnection disputes is far less effective than proactive regulation that seeks to avoid such disputes. Even if voluntary negotiations succeed, both experience and economic theory indicate that telephone companies have inappropriate incentives to agree to excessive call termination rates. Problems can also be anticipated in the negotiation of roaming agreements among companies.

We recommendation proactive regulation of access. We recognize that limits on the independence, authority or resources of regulators can affect their ability to regulate access effectively. We therefore recommend strengthening regulators, and adopting rules that can minimize interconnection disputes and promote the efficient development of mobile telephony without tasking the regulator excessively.

We propose regulating the terms of interconnection by reference to a model interconnection contract that incumbents would be obligated to offer, but which
companies could voluntarily amend if desired. Regulators should require the publication of amendments, to reduce the scope for discrimination. The regulator should adopt the model contract pursuant to an open consultation process that asks market participants for their views concerning a sample interconnection contract proposed for the market in question.

Regulators should anticipate the need to intervene in interconnection disputes, which can arise as parties disagree on the interpretation of the model contract, or as one party alleges a breach of the contract by another. Regulators should get involved, but do not have to employ panels of experts full time in anticipation of such disputes. We suggest that the model contract stipulate a dispute resolution mechanism based on the rules of international commercial arbitration, where the regulator would sit as the head of the tribunal.

We recommend a requirement for interconnection fees to be no greater than the underlying costs of providing access. We acknowledge that detailed computer models can sometimes help measure the cost of service for particular networks or geographic areas. However, we identify several conditions that regulators should satisfy before relying on such models: a) having sufficient resources to implement such models successfully, b) committing to analyze rigorously in a consultation process the key inputs to the capital costs in the model: the cost of capital and average depreciation lives, c) committing to disclosure of the inputs, methodology and results to ensure maximum transparency. If the commitments cannot be met, we recommend the use of international comparisons to derive interconnection fees, supplemented by analyses of distinctive factors within the regulator’s country.

To help regulate call termination charges with minimal intervention, we propose two ideas. Call termination charges could be tied to either the call-origination charges that each network charges to its customers for calls that cross networks, or to the “implicit” call-termination charges that each network charges for a call that terminates in the same network. We define an implicit call-termination charge as the difference between the total cost of an internal network call and the call-origination charge that the network imposes on customers who call other networks.

In Chapter 4 we discuss the appropriate participation of incumbent fixed-line operators in mobile telephone markets. Incumbent participation raises issues of discrimination and predatory pricing. An incumbent who competes in the mobile telephone market will have incentives to provide inferior interconnection service to its mobile phone rivals. An incumbent can also have incentives to use its market power in local phone service to subsidize mobile telephony, driving rivals from the mobile market. Predatory pricing and service discrimination are of particular concern because regulatory monitoring, prevention and punishment of such behavior is quite difficult. Limiting incumbents to local service markets would avoid these problems, and would also facilitate access regulation. If in some markets it is politically impossible to prevent incumbent participation in mobile telephony, we recommend two alternatives. First, we recommend restricting incumbent participation in mobile phone markets to geographic areas where they do not dominate the provision of local fixed-line service. Incumbents
who face such limits should have the ability to sign agreements with other mobile companies to ensure national coverage and efficient infrastructure use. Second, incumbents should be required to engage in strict management, accounting, and legal separation of their mobile and fixed-line activities.

In Chapter 5 we analyze several different approaches to regulating entry in mobile telephony. One common approach involves an exclusive long-term license for one company to operate in a specific geographic area. Another common approach involves selling a particular number of licenses in an organized auction. We recommend a third policy: allowing unlimited entry in mobile phone markets. We discuss the typical arguments for either exclusive licenses or auctions.

People often believe that exclusivity will promote investment. However, exclusivity creates incentives for monopolistic behavior, which seeks to raise prices by limiting consumption. By limiting consumption, monopolists also limit investment. A more refined argument in favor of exclusivity involves a reduction in investment risk. A prospective investor may find it easy to finance a large capital investment if an exclusive license makes the profitability of the investment more certain. However, we see no evidence or theoretical reason to suspect that a policy of unlimited entry would deter appropriate investment by exposing investors to excessive risk. If the risks of competition make investment unattractive, then a policy of unlimited entry will naturally lead to only one entrant. We prefer to let investors decide how much risk of competition they are willing to bear.

We see only one theoretical economic argument for restricting entry: that unlimited entry may present a “first-mover” problem. No mobile phone company may wish to be the first to enter a particular market if entry imposes a significant risk of failure, while success only invites immediate entry that restricts profitability. However, we note that the assumptions behind this theory are not realistic, and that experience contradicts the predictions of the theory.

We also address and reject other common arguments for restricting entry: that the market can only bear a limited number of competitors, that spectrum is a scarce natural resource that the government should not give away for free, and that auction revenues can help finance universal service. Generally, we conclude that the market can decide on the optimal number of competitors better than the government, that errors on the side of excessive entry only help consumers, that spectrum in most Latin American countries is not close to becoming scarce, and that auctioning mobile spectrum is not an appropriate way to finance universal service.

We also discuss an interesting variant of the question regarding entry in mobile telephony: the freedom that mobile phone operators should have to deploy their spectrum. We conclude that regulatory policy should permit mobile phone operators maximum freedom in the deployment of spectrum, including the use of spectrum to provide fixed-wireless services.
1. Mobile Telephony in Latin America: Overview

The number of wireless communications subscribers in Latin America has expanded rapidly. In 1993 there were virtually no mobile phones in the Region. In the first five years of service provision, annual growth rates reached triple digits.\(^5\) In 2001 subscribers were expected to grow by another 33% to reach 86 million. Considering the population of 530 million, subscriber penetration is roughly 16%, which already exceeds fixed-line penetration. Beyond 2002, firms like Strategis and Strategy Analytics forecast sustained double-digit growth in the mobile telephony segment. Strategy Analytics forecasts 150 million subscribers by 2005, while Strategis predicts 161.4 million.

Mobile telephony has brought particular benefits to low-income users. Operators have used prepaid subscriptions to serve low-income users without incurring credit risk. Pre-paid options tend to be more expensive, but they do not require credit checks, and they have relatively low monthly subscriber fees. Consumers prefer not to submit their credit history for inspection, and they enjoy taking control of their expenses. Pre-paid services have contributed to the exponential growth in mobile subscribers in many countries. In Mexico, Venezuela and Peru, the number of subscribers on pre-paid plans is much greater than the number of subscribers on contracts.

Mobile telephony has become a substitute for fixed-line telephony, which in Latin America has been dominated by inefficient monopoly operators who provide poor service\(^6\) and lack either the financial or management resources to eliminate long waiting lists of prospective consumers\(^7\). Mobile telephony has also brought benefits to other telecommunications markets. Several companies have used mobile services to enter specific countries, establish a brand name, and later expand their service portfolios to include data services, internet access, long-distance and ultimately fixed-line or fixed-wireless services. Examples include the Dominican Republic, Mexico and Brazil. Some evidence also indicates that the success of mobile telephony may also have placed competitive pressure that has yielded improvements in fixed-line telephony.\(^8\)

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\(^{5}\) The average subscriber growth rate across Latin American countries was 103% between 1993 and 1998 (International Telecommunication Union, STAR Database).

\(^{6}\) In 1999, there were an average of 59.9 faults per hundred fixed lines in Colombia, 48.0 in Ecuador, and 17.1 in Peru. In contrast, the ITU reports that there was an average of only 4.1 faults per hundred lines in the United Kingdom during 1999 (International Telecommunication Union, STAR Database).

\(^{7}\) In 1999, the waiting list for main lines was 1,155,000 in Colombia, 29,574 in Peru, 26,547 in Chile and 7,500 in Bolivia. In contrast, the ITU reports that in 1999, there was no waiting list for main lines in France, Germany, the United Kingdom or the United States. (International Telecommunication Union, STAR Database).

\(^{8}\) Gutierrez, L., and Berg, S., “Telecommunications Liberalization and Regulatory Governance: Lessons from Latin America”, Telecommunications Policy No. 24 (2000) 865-884 (the authors find that higher numbers of cellular phones per capita are associated with higher fixed-line penetration, and state that the relationship may reflect a “competition effect” where “competitive entrants stimulate improved performance and additional investment by (public and private) wire firms” (at 879)).
The success of mobile telephony has been possible because of the liberalization of Latin American telecommunications markets during the nineties. Most Latin-American countries introduced competition in long-distance and mobile telephony. Countries frequently granted two or three long-term concessions to competing mobile phone companies. The resulting competition helped reduce prices.

The experiences of different countries show that entry regulation and access problems largely determine the strength of competition in telecommunications. Entry is frequently restricted, as in Mexico where ten geographic zones were introduced with a legal duopoly in each. Colombia adopted the same approach, as we describe in the case study. The OECD paper “Competition and Regulation Issues in Telecommunications” (DAFFE/COMP 2002-6) highlights the issue of access and identifies three categories of access-related problems: (i) whether a particular service must be offered to a rival; (iii) the timeliness and quality with which the service must be offered; and (iii) the price at which the service is offered. The experience of Mexico provides an example of a seemingly excessive fee for access by a mobile network, at 5.5 cents USD per minute “which contrasts with the tariffs subject to incremental costs, as in the United States, where Ameritech applies tariffs of 0.75 cents USD per minute”. Price, timeliness and quality become particularly sensitive issues where the dominant operator offers the same service to itself or its affiliates, and therefore has incentives to distort competition in mobile telephony.

The price of call termination charges presents a particularly difficult access issue. Most Latin American countries have a policy where the “Calling Party Pays” (CPP). CPP has contributed to the expansion of the mobile market in Latin America. Telmex opposed CPP in Mexico, but the adoption of CPP increased the number of subscribers by 1.1 million in three months after its adoption in April 1999. Telmex had problems meeting the demand for increased traffic created by CPP. In Peru, the number of subscribers increased by 150% after CPP was adopted in May 1996.

Despite its success in expanding mobile telephone service, CPP raises issues about the cost of call termination charges paid by fixed-line subscribers and by the customers of competing mobile networks. In the presence of CPP, competition between networks might not suffice to create competition for termination charges.

Below we present three case studies. Each case study provides background information on the mobile telephone market and other telecommunications markets in a particular country. Each study summarizes the country’s regulatory policies and experience. We intend the studies to provide valuable context for understanding the

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11 Americas Telecommunications Indicators, ITU, 2002.
policy recommendations that we develop in subsequent chapters concerning access regulation, incumbent participation in mobile telephony, and regulating entry.
2. Case studies

**Colombia**

*Industry Overview*

Colombia has 44 million people with an average Gross Domestic Product per person of $US 1,911 in 2002. Most local service customers are concentrated in the four largest cities of the country: while these cities comprise 28% of Colombia’s population, they have 59.2% of the operating lines. In 1998, 90.7% of the fixed lines used digital technology. However, fixed wireless service is still in its infancy.

The government owned the telecommunications sector in Colombia until the late eighties. The industry was technologically backward, characterized by low-quality service and reduced coverage. Teledensity was only 8% in 1990. Municipal governments owned the providers of telecommunications services in major and medium-sized cities. There was also a cluster of regional firms under the control of TELECOM (the national long distance monopoly). Most of the local and regional firms were subsidized by long distance profits—mostly made in international calls.

In 1993, Law 37 of 1993 encouraged private participation in the telecommunications industry, through “public-private partnerships” to expand coverage and upgrade equipment. Tariff rebalancing helped remove the financial constraint that made local service unattractive to low-income customers. Law 37 and tariff balancing together contributed to a significant expansion in local service. New local operators, both private and public, installed 467,000 new lines between 1995 and 1999. Fixed local service grew by an average 10.4% per year during the nineties. Teledensity jumped from 8% in 1990 to 18.3% in 1999. The waiting time to install a new line moved from 80 days in 1996 to 46 in 1998. Additionally, service quality improved dramatically. The mean time to repair a fixed line fell from 13.9 days in 1996 to 2.8 in 1998. Four firms dominate local service: TELECOM and its regional and local subsidiaries: EPM, EMCALI and ETB.

The liberalization of long distance witnessed the entry of two new competitors in 1998: ETB, which is the largest local service provider, and Orbitel. Competition in long distance has brought lower prices and higher traffic levels: the average domestic tariff fell from $COL 264/minute in 1998 to $COL 222/minute in 1999. Traffic increased from 4.313 million minutes to 5.268 million minutes over the same period. Competition and lower prices helped erode TELECOM profits in international long distance, which had

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12 See Benavides and Fainboim (2002) and Meneses (2000).

13 Law 72 (1989) had opened the way for entry by private parties. The 1991 constitutional reform allowed private participation in all economic sectors.

14 Orbitel is owned by two domestic economic consortia and by EPM, the second largest local service provider.
mostly been used to subsidize its local service subsidiaries. Use of the illegal “callback” system also eroded TELECOM profits.\textsuperscript{15}

**Mobile Telephony**

In 1993 legal measures\textsuperscript{16} assigned the Ministry of Telecommunications the responsibility of conducting auctions to foster entry.\textsuperscript{17} Prices were left unregulated, but the concession contracts had coverage targets, including obligations to serve the poorest municipalities within the concession areas. Coverage plans had to be implemented within five years. The concession contracts could not be transferred totally or partially within three years of the subscription date. Additionally, shareholders could not sell or transfer their shares during this period. The concession term was set for ten years, with a possible extension for ten more years, although the contract did not specify the conditions for extension. Cellular firms had to contribute 5\% of their gross revenues to fund universal service.\textsuperscript{18} Colombia was divided into three regions, and two participants were allowed in each region. This system effectively created three regional duopolies instead of permitting unrestricted entry. Several cellular operators entered the market in 1994.\textsuperscript{19} The tender yielded US$ 1.2 billion in entry fees to the government (1.2\% of 1994 GDP).

The combination of high up-front license payments and steep investment requirements forced operators to rely on US\$ denominated debt. High financial leverage made operators vulnerable to demand fluctuations and currency devaluation. Both risks materialized as a consequence of a macroeconomic crisis in 1999-2000. Consolidation

\textsuperscript{15} However, international long-distance tariffs remain relatively high. Rates to the US range from US$0.50 to US$1.41 per minute, depending on the time of day.

\textsuperscript{16} Law 37 and Decree 741.

\textsuperscript{17} The national territory was divided into three regions: eastern, western and the Caribbean coast. Service would be provided through two networks for each region (A and B). Private firms could compete to enter in networks A and B. Public firms and private/public partnerships were allowed to participate in the contest for network A. The entry scheme left open the possibility of establishing two national networks, each operating in the three regions.

\textsuperscript{18} These monies were initially transferred to TELECOM, and since 1998, to a trust (Fondo de Comunicaciones) in charge of managing the universal service and coverage process.

\textsuperscript{19} Eleven firms registered to submit bids (eight proposals for the private and three for the mixed network, respectively). Network B concessions were granted in January 1994, and network A concessions in February 1994. The winners of network B were Celumóvil (eastern region) Celumóvil del Caribe (Atlantic coast) and Cocolco (western region). Three of the most important economic groups in the country (Santodomingo, Ardila Lulle and Luis Carlos Sarmiento Angulo Organization) and their foreign partners (AT&T and Telefónica de España) make up these firms. The concessions for network A were awarded to Comcel (eastern region), Celcaribe (Atlantic coast) and Occel (western region). Comcel is made up of TELECOM, ETB and Bell Canada International. Celcaribe is made up of Millicom International and some other local telephone companies. Occel is made up of Cable and Wireless and EEPMM.
resulted,²⁰ partly in response to financial problems and partly in anticipation of PCS entry. There are now three established firms with the following market shares: Comcel 61%, BellSouth 34% and Celcaribe 5%. The PCS auction was finally held at the beginning of 2003. Only one bidder showed up, submitting a US$55 MM bid (close to the reservation value of the auction). The winner is a consortium composed of EPM and ETB. Cellular firms are now concerned about the possibility of discrimination in the provision of call termination service by the local service networks of the consortium.

There have been three major types of disputes between the state and the cellular firms in Colombia:

- **On issues that the concession contracts left unclear.** Ambiguities in the law and the lack of government experience in dealing with Build-Operate-Transfer (BOT) schemes permitted the issuance of concession contracts that did not adequately address asset ownership at contract expiration. The concessionaires argued that they should only return their spectrum to the government, and not equipment. In practice, they interpreted their concessions as Build-Operate-Own (BOO) contracts—which are more lucrative than BOT contracts. In January 1997, the Ministry of Telecommunications decided to move up the due date for license extension from ten to thirteen years. The Ministry accepted the concessionaires’ arguments that uncertainties regarding contract extension made it difficult to obtain long-term credit. In 1995, the government eliminated the obligation to serve the poorest municipalities from the concession contracts. The firms contended that cellular technology was not suited to deliver that kind of service. Ambiguities in the contract facilitated this modification.

- **On the regulation of entry.** In 1996, government announced that PCS licenses would be granted sometime in 1997 or 1998. Cellular operators sought unsuccessfully to become PCS operators, but were able to postpone entry of this new mobile technology until 2003. The licensing of PCS raises an important dynamic question. If the government had permitted unlimited entry into PCS, the cellular firms might have claimed that it undermined the value of their concessions and constituted a form of expropriation or “deregulatory taking”. Although restricting entry with auctions may maximize government income and keep existing companies happy, it may simultaneously keep prices high. High auction fees can slow the growth of mobile telephony²¹ and later produce credit problems that prompt the renegotiation of concession terms and obligations.

- **On tax distortions.** Article 16 of the Colombian Tax Statute (Decree 624, 1989) exempted private/public partnerships from paying income taxes. In 1995, the

²⁰ Celumóvil absorbed Celumóvil del Caribe in October 1997 and BellSouth acquired Celumóvil in 2000. BellCanada, the largest shareholder of Comcel, bought 69% of Occel in March, 1998.

²¹ Overall, entry restrictions may have slowed the growth of mobile telephony. Colombia still has a very low mobile density, in comparison with countries like Brazil (18%) and Chile (33%).
Constitutional Court finally eliminated this exemption as a response to a suit claiming that Article 16 violated the right of equal treatment and freedom of enterprise. However, cellular companies currently pay a 20% VAT while fixed telephony is exempt from VAT.

Bolivia

Industry Overview

Bolivia’s telecommunications sector was deregulated on November 27, 2001, upon the expiration of a six-year exclusivity period that had been granted by law\(^\text{22}\) to Entel and the Local Service Cooperatives\(^\text{23}\). The regulator requires licenses or registration for practically all services, including unregulated services such as the Internet. Licenses do not restrict entry, but serve principally as a source of legal obligations that facilitate SITTEL’s monitoring and oversight of the telecommunications sector. In addition, licenses require operators to pay the regulatory fee of about 1% of gross revenues, which covers SITTEL’s operating costs. The policy of unlimited entry contrasts with the common policy of holding auctions designed to increase government revenues.

Despite market opening, the Bolivian market still retains its traditional industry structure, where monopoly providers control certain services. Entel has provided national and international long-distance services, as well as satellite, telex, telegraph and local services in areas with no telephone cooperative. Entel has been privatized recently, and benefits from foreign capital investment. Entel also maintains the most extensive national telecommunications network. Entel has an advantageous position relative to other companies because it can easily develop and expand its national long-distance network to provide the full array of local services. Entel’s position raises concerns of potential monopolization.

The fourteen cooperatives providing local service have tried to improve and restructure their services and business strategies in preparation for full market opening. However, only the largest cooperatives have made serious strategic reforms.\(^\text{24}\) Most of the small cooperatives, five of which serve less than 1,700 lines, will most likely face some difficult business decisions to survive in the open market.

\(^{22}\) The Telecommunications Law of 1995.

\(^{23}\) Each company had a monopoly for a specific geographic area, defined around one of the country’s main cities and respective departments

\(^{24}\) Cotas and Comteco have gradually improved their coverage, modernized their networks, and increased and diversified their service offerings to compete in a new market structure. Cotas claimed that it had already gained 36% market share from Entel’s long distance market in its service area (“Bolivia’s Cotas-Teledata Offers Domestic and International Long Distance on ITXC.net,” World IT Report (January 28, 2002)). Comteco is expanding its presence in mobile telephony through Nueva Tel, and exploring new opportunities in other service areas.
The recent market opening has already improved the choices available to customers in the largest urban areas. However, only 6.7% of Bolivians had access to fixed telephone lines in 2002.

Superintendencia de Telecomunicaciones (SITTEL) has regulated telecommunications in Bolivia since 1995. One of SITTEL’s key roles is regulating interconnection charges. The law allows operators to set interconnection charges pursuant to voluntary negotiations, but gives SITTEL ultimate authority over the issue. Interestingly, operators have foregone the option to negotiate interconnection charges among themselves. This experience provides useful context for our discussion concerning the relative merits of voluntary negotiations and regulated access. SITTEL sets charges based on international benchmarking and its own analysis of interconnection costs in Bolivia.

Mobile Telephony

TELECEL introduced mobile telephony in 1991, and was later joined by Entel Móvil (1996) and by Nueva Tel in late 2000. Despite having 55% of the market in early 2002, TELECEL faces strong competition from both Entel Móvil and Nueva Tel. Nueva Tel’s entry into the market prompted immediate price reductions and market growth. Through its Viva GSM offer, Nueva Tel reached over 40,000 subscribers in the first 6 months of operations and surpassed their first year goal of 100,000 subscribers. The company estimates that it will have about 200,000 subscribers by the end of 2002. Total mobile phone teledensity was 10.40% in 2002, already surpassing that of fixed telephony. However, growth in mobile telephony is now slowing down. The majority of the population still cannot afford fixed or cellular telephone services.

The regulator has tried to promote universal service by issuing mobile telephony licenses that stipulated network expansion targets and required contributions to the national program for rural development (PRONTER). However, mobile service remains decidedly urban. Mobile service has become the principal substitute for expensive and

25 SITTEL was created by the 1995 Law on the Sectoral Regulatory System (Ley del Sistema de Regulación Sectorial - SIRESE). SITTEL reports to the General Superintendencia and also works closely with the Dirección General de Comunicaciones (of the Ministry of Economic Development) to develop and implement sector policies. Despite its governmental relationships, SITTEL enjoys financial and institutional autonomy to regulate the sector, and supports itself from operators’ fees.

26 Telefónica Celular de Bolivia.

27 A joint venture between Comteco and Western Wireless, which started service at the end of 2000.

28 “Telecom Deregulation,” Bolivian Times (March 21, 2002).

29 Ibid.

30 Operations focus on the three largest urban areas: La Paz, Santa Cruz and Cochabamba.
difficult-to-obtain fixed lines. A walk through the streets of La Paz shows that mobile phones are not limited to the urban elite. Poor street vendors also use mobile phones, both for their communications needs and as a source of business, using their handsets to resell mobile service as informal “phone shops”.

Entel participates in mobile telephony through its subsidiary Entel Móvil. Given Entel’s strong position in the market, participation in mobile telephony raises logical concerns over potential discrimination in the provision of access to Telecel and Nueva Tel.

Dominican Republic

Industry structure

The liberalization process started in the Dominican Republic in the early 1990s, but has accelerated since the General Telecommunications Law of May 1998 established the current legal framework for competition in the industry. Market developments have since prompted rapid growth in basic services, mobile telephony, and value-added services.

The former monopoly operator is the Compañía Dominicana de Teléfonos (CODETEL)\(^{31}\), which is still the dominant provider of local, domestic and international distance, controlling about 80% of the total telecom market.

Since 1998 most telecommunications license holders are authorized to provide local, long-distance, cellular, internet and data transmission services. CODETEL’s main competitor, Tricom, started offering long-distance services and soon after started offering cellular, beeper, internet and pre-paid card services. However, CODETEL delayed Tricom’s plans to offer local service by resisting interconnection. CODETEL was finally ordered to provide interconnection after the new telecommunications law was passed in 1998.

Tricom innovated by introducing fixed wireless telephony in the Dominican Republic. Since then, two other service providers also entered the local service market – Centennial Dominicana and Turitel. Both Tricom and Tirutel invested in wireless local loop solutions to serve urban areas, and to extend services to rural and under-served areas. Their strategy exposed CODETEL’s failure to provide services in those areas.

All service providers are required to have a license in the Dominican Republic. However, a license has become a simple formality to ensure that companies: a) register in the country, b) meet minimum requirements to be successful providers, and c) contribute

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\(^{31}\) CODETEL has been in service since 1930, and is now owned by Verizon.
appropriately to the regulator’s budget and to the development fund. The policy of essentially unrestricted entry has helped promote the development of competition.

Other than the contribution to development, companies do not face any universal service obligation under their licenses. Service providers focus their service in the “corredor de la fortuna” which covers most major urban centers and business clients. Rural areas and certain urban areas continue to be neglected.

INDOTEL regulates the telecommunications industry in the Dominican Republic, but cannot require companies to provide universal service. INDOTEL remains responsible for the advancement of universal service, and administers the development fund to which companies contribute. INDOTEL is in the process of developing a bi-annual project plan that will seek to meet specific infrastructure goals through public bidding processes, such as providing at least one public phone for each of the poorest 1,500 localities that still do not have access.

According to the telecom law, all companies are required to provide interconnection to their networks. INDOTEL has been working on new Interconnection Rules, as the Institute would like to systematize the process and avoid anti-competitive conflict among service providers.

**Mobile Telephony**

Codetel introduced mobile telephony in the Dominican Republic. Three additional service providers have since entered the market: Tricom (1995), Centennial (1998) and France Telecom (2000). Table 1 shows that Codetel’s dominance in local telephony has not produced similar market shares for mobile service. Other mobile service providers have acquired market share by lowering prices, and by marketing services aggressively. Both Centennial and France Telecom (through its Orange service) have lowered prices, and introduced cheaper pre-paid cellular plans. CODETEL and Tricom have since responded by offering cheaper international rates to their mobile subscribers than to their fixed-line subscribers. This incentive targets the approximately 1 million Dominicans with relatives living abroad. The efficiency of this pricing policy is questionable, and may raise concerns that Codetel is using its dominance in long-distance service to secure a competitive advantage in mobile service. We discuss concerns with such abuses in a

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32 Companies are required to contribute 2% of revenues as a Contribution to the Development of Telecommunications (“Contribución al Desarrollo de las Telecomunicaciones” or CDT). Chapter VI of the General Telecommunications Law authorizes INDOTEL to issue a regulation concerning the financing of the Telecommunications Development Fund (FDT).

33 Chapter XII of the General Telecommunications Law establishes INDOTEL as the telecommunications regulatory body of the Dominican Republic, with responsibilities covering all aspects of telecommunications regulation.

34 Chapter XII of the General Telecommunications Law establishes INDOTEL’s primary objective as the promotion of telecommunications development in the Dominican Republic, particularly with regard to the advancement of universal service.
subsequent chapter concerning incumbent participation in mobile telephone markets. However, if France Telecom survives this competitive response, or other companies enter the market, then competition in the Dominican Republic will clearly have succeeded. Competition to date has certainly contributed to reasonable prices and the rapid growth in mobile phone users. The outlook for competition remains optimistic, given the interest of other companies in entering the market (e.g., US-Sprint, Telmex of Mexico, Telefónica de España and Digi Cell from Ireland).

Table 1.

<table>
<thead>
<tr>
<th>Company</th>
<th>Local Lines</th>
<th>Year entered the market</th>
<th>Cellular Lines</th>
<th>Year entered the market</th>
</tr>
</thead>
<tbody>
<tr>
<td>CODETEL</td>
<td>754,360</td>
<td>1930</td>
<td>468,664</td>
<td>1994 **</td>
</tr>
<tr>
<td>Tricom</td>
<td>161,411</td>
<td>1998</td>
<td>302,613</td>
<td>1995</td>
</tr>
<tr>
<td>Centennial</td>
<td>N/A</td>
<td>--</td>
<td>68,000</td>
<td>1998</td>
</tr>
<tr>
<td>France Telecom</td>
<td>--</td>
<td>--</td>
<td>215,000</td>
<td>2000</td>
</tr>
<tr>
<td>Turitel</td>
<td>768</td>
<td>1998</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

Source: Indotel

Table 2. Telecommunications Indicators in the Dominican Republic
Mobile teledensity provides an indicator of successful competition in the mobile telephone market. Mobile teledensity surpassed fixed lines in 2001, at 15.7% compared to 11.8% for fixed lines (see Table 2). Many now perceive the Dominican cellular market as developed.\(^{35}\)

College professors insist they be turned off during class. Children carry them to baseball practice. The government has restricted their use among employees. Homes in remote villages have them hanging on the walls. Beepers and cellular phones are ubiquitous in the Dominican Republic […]

Others see continued potential for expansion, particularly since fixed lines remain expensive and are difficult to obtain.

### 3. Access Policy

Mobile phone companies need access to existing telephone networks, so that mobile subscribers can call fixed-line customers. Mobile phone companies therefore seek interconnection agreements with incumbents. We analyze whether government policy should rely principally on voluntary negotiations or regulation to derive the terms of interconnection.

#### Market Failure

Governments should resort to regulation only if they have strong reason to believe that markets will not provide appropriate solutions. Markets are apt to fail in several

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**Source:** INDOTEL Sector Statistics

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respects concerning the provision of access to mobile phone companies. First, control over access to existing fixed-line networks gives the incumbents significant leverage in signing interconnection agreements. By refusing to sign an agreement, an incumbent can delay the entry of a mobile phone company to the market. In the absence of government control, incumbents have natural incentives to abuse their leverage. Abuse can encompass excessive interconnection fees, the use of such fees to subsidize incumbent participation in mobile markets, and discrimination in the provision of access services.

Economists and government authorities in several countries have recently become concerned with another access problem: phone companies have incentives to charge excessive interconnection fees for terminating calls. In most Latin-American countries, the initiator of the telephone call pays all charges (the “Calling Party Pays” or “CPP”). If a fixed-line customer calls a mobile customer, then the fixed-line customer will pay for two services: the service of originating the call, which is provided by the fixed-line network, and the mobile company’s service of terminating the call. Competition among mobile phone companies might create pressure for low prices for some aspects of mobile service, but not for low termination fees. No mobile company would care to offer competitive call termination fees, since its customers would not end up paying the fees—only the originators of calls on other networks pay.36

In voluntary negotiations to derive an interconnection agreement between a fixed-line network and a mobile network, the fixed-line network might not object to the high call-termination fees proposed by the mobile network. If there is no significant competition

36 Professor Mark Armstrong of Oxford University has produced recent research analyzing the problem of call-termination fees (“Call Termination on Mobile Networks” (11 April 2002)). Since each mobile customer only uses one network at a time, a mobile network has an effective monopoly over call termination services to its customers. This monopoly arises naturally, even if competition dominates the industry. We can imagine a mobile market with 100 different companies, each with a 1% market share, and each company would still have a monopoly over call-termination services to its customers. Each company would still have an incentive to set unreasonably high call-termination charges. Competition in our hypothetical 100-company market would ensure reasonable aggregate profit levels. Competition would push mobile phone companies toward compensating for high call-termination fees by reducing prices for other services. Prior to acquiring a customer, a mobile phone company would anticipate the possibility of high call-termination fees. Perhaps these fees in isolation could produce an average excess profit of $50 per year per customer. Under competition, each mobile phone company would naturally be willing to pay the customer $50 up front to join its network. Competitive mobile phone companies actually offer customers the equivalent of up-front payments to join their networks: the payments come in the form of subsidized handsets. Few customers actually pay the full cost of acquiring handsets. Professor Armstrong’s theory therefore explains a common pricing pattern in mobile telephony: seemingly excessive call-termination fees accompanied by subsidized handsets. Excessive call-termination fees would prompt an inefficiently low level of calls to mobile customers. Subsidized handsets would produce an inefficiently high level of mobile customers in total. If government policy relies on voluntary negotiations to derive interconnection agreements, then these inefficiencies can be expected.
for the customers of the fixed-line network, then the fixed-line network can just pass on the high call-termination fees to customers. To the extent that competition emerges in fixed telephony, the incumbent might still prefer high call-termination fees. The incumbent might recognize that, as long as all competitors have to incur the same call-termination fees, small networks will suffer disproportionately. Small networks will naturally have a higher proportion of inter-network calls. High call-termination fees can therefore discourage companies from entering the telephone business, since the fees would place a disadvantage on the initially small size of entrants relative to established incumbents.

International experience shows that call-termination fees can be excessive. In the United Kingdom, it can cost approximately $0.16 US per minute to terminate a call on a mobile network. The same network, however, might charge only $0.10 in total for one customer to make a call to another customer within the same network. The network has a natural incentive to keep the costs of within-network calls reasonable, since mobile phone customers care about the total price of calls that they originate. Excessive fees are limited solely to the price of calls that a mobile phone company’s customers do not originate. The regulator of the telephone industry, Oftel, has investigated the matter and concluded that mobile phone call-termination fees are excessive. The Competition Commission has followed with its own investigation, and reached the same conclusion.

Another problem with access involves roaming agreements. Customers attach importance to the geographic coverage offered by mobile phone companies. If one mobile phone company offers national coverage, while another only offers coverage in one or two cities, then the company with national coverage will have a significant competitive advantage. Competition will motivate networks to expand coverage even to places where the expected utilization does not offset the associated costs. A mobile phone company may extend coverage to a relatively small city under the full knowledge that the revenues from customers located in the city will not offset the network expansion costs. The mobile phone company would be motivated primarily by the prospect of attracting additional customers in larger cities, who occasionally visit the smaller city and who attach significant value to the broad geographic coverage of their network. The mobile phone company might reasonably expand its coverage to the small city, even if the

37 In 2002, Vodafone and O2’s weighted average termination charge for calls originating on fixed lines was US$0.16 (GBP0.102) per minute. See Competition Commission, “Vodafone, O2, Orange and T-Mobile”, (December 2002), p. 13.

38 Oftel, “Review of the charge control on calls to mobiles”, (September 26, 2001).

39 Competition Commission, “Vodafone, O2, Orange and T-Mobile”, (December 2002). Other countries have investigated call-termination fees and concluded that they were excessive. In Australia, the regulator has set maximum prices on call-termination fees. In Italy, the competition authorities ruled that two mobile phone companies unreasonably harmed the development of competition by negotiating an interconnection agreement with high call-termination fees. The authorities concluded that the high fees threatened a disproportionate impact on a new entrant to the market, whose smaller network would naturally witness a much higher percentage of calls terminating on other networks than the two established companies.
combined traffic of local residents and visitors from large cities did not fully recover the costs.\footnote{A rather simplistic economic theory might suggest that the mobile phone company address this problem by charging higher rates for telephone calls in low-population density areas. However, complex charging systems have been known to generate uncertainty and skepticism among consumers. Some years ago AT&T’s move to a uniform price per minute on all mobile services throughout the United States was hailed as a brilliant marketing strategy. It is therefore logical to expect that a mobile phone company would extend its geographic coverage broadly, and would simultaneously accept losses in low-density areas to preserve an appealing price structure.}

Once a mobile phone company subsidizes network expansion to an area with a low population density, an interesting question arises concerning roaming agreements. A new rival mobile phone network might desire to offer an equally broad geographic coverage. However, it might be wasteful to build a second mobile network in the low-density area. The new mobile phone company might naturally prefer to sign a roaming agreement with the existing network. Since traffic in the area is not high enough to compensate for the network expansion costs, the existing network would naturally have excess capacity available. However, the existing network would have natural incentives to reject a roaming agreement, which would magnify the extent of competition for customers in the high-population-density area. It would not seem realistic to rely on voluntary negotiations in such cases.

In summary, we see three difficult interconnection issues where markets cannot be trusted to deliver optimal answers automatically. First is the potential abuse of mobile networks by fixed-line incumbents who seek high access fees, or who try to delay access, or provide discriminatory access service. Second is the natural tendency for voluntary negotiations to result in excessive call-termination fees. Third is the possibility that some mobile phone companies will resist signing roaming agreements that would enable competitors to expand their geographic coverage efficiently.

**The Case for Voluntary Negotiations**

Although we have identified several difficult interconnection issues related to mobile telephony, these issues do not clearly imply a need for regulation. Some people still see a strong case for relying principally on voluntary negotiations, as long as the government maintains a threat of intervention to stop abuses that may surface. In many countries, the competition authorities handle disputes over unreasonable fees or refusals to sign interconnection agreements with rivals. The relevant choice is not between regulation and complete tolerance of market failure. Rather, the relevant choice is between active regulation and a more passive role that allows the market to seek a solution first, but that threatens government intervention to resolve disputes. Disputes can be raised by the parties who negotiate interconnection agreements, or by consumers or other companies affected by such agreements. Below we outline the arguments in favor of such a policy. In the next section we explain the arguments against voluntary negotiations. We then finish this Chapter with conclusions and recommendations.
We believe that the most compelling rationale for voluntary negotiations comes from the “Chicago School” of economic thought, which has played a major role in the development of competition policy worldwide. The economic theory of the “Chicago School predicts that incumbent telephone companies will have natural incentives to sign interconnection agreements that contain efficient prices. The Chicago School further predicts that incumbents under certain circumstances will have no incentive to delay signing interconnection agreements, or to discriminate in the provision of access service to mobile phone companies, or to use excessive access fees to compete unfairly in mobile telephone markets. If we accept these predictions, it would seem appropriate to limit government policy to a passive role where intervention is limited only to the resolution of disputes.

We explain the Chicago School approach with a simple hypothetical example involving an incumbent local telephone company that also owns a mobile telephony business. A competing mobile phone company seeks to negotiate an interconnection agreement that would allow its customers to call customers of the existing fixed-line network.

Assume in this example that the incumbent’s mobile phone company charges $0.20 per minute for all mobile phone calls that terminate on the incumbent’s fixed-line network. Assume further that, if the incumbent lost a mobile phone customer to a competitor, that the incumbent would save $0.05 per minute in costs. The Chicago School predicts that the incumbent will naturally have an incentive to propose an interconnection fee of $0.15 per minute, and that the resulting price would motivate efficient competition in mobile telephony. The efficient access fee is derived by starting with the retail price of $0.20 per minute, and then subtracting the costs of $0.05 that the incumbent would save if it lost the mobile phone customer to a rival.

We now explain why the proposed access fee of $0.15 would appear to be efficient. The incumbent’s incremental costs of handling the call are only $0.05. Our example simply measures incremental costs by asking how much the incumbent’s costs would decline if it lost the customer. If the competing mobile phone company is efficient, then it should also have incremental costs of $0.05 per minute or less. Any efficient competitor can therefore afford to pay an access charge of $0.15, incur the costs of serving the customer, and still generate a profit at a retail price equal to or lower than the incumbent’s $0.20 per minute.41

Finally, we complete the standard Chicago School theory by explaining why the incumbent would voluntarily offer the $0.15 per minute price, and why the incumbent would have no incentive to delay access or to provide inferior access service to rivals. The access price of $0.15 per minute is high enough to indemnify the incumbent from

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41 The proposed access fee of $0.15 would also seem efficient because it deters inefficient competitors from entering the market. An inefficient mobile phone company would have incremental costs equal to or greater than the incumbent’s costs of $0.05 per minute. The $0.15 per minute access fee would ensure that the mobile phone competitor cannot earn a profit, given the need to compete against the incumbent’s $0.20 per minute retail price.
any losses that from the development of competition in mobile telephony. For every mobile phone customer that the incumbent loses to a competitor, the incumbent loses the opportunity to earn $0.20 per minute, and the incumbent simultaneously saves $0.05 in costs. The net loss is $0.15 per minute. If the incumbent charges $0.15 per minute in access fees, then the incumbent will be indifferent between keeping the customer, and losing it to a rival in exchange for the $0.15 per minute access revenue.

The incumbent can actually earn more money by providing access to rivals at $0.15 per minute. If the incumbent is inefficient, then several mobile phone companies may have incremental costs that are lower. If efficient competitors have lower incremental costs of $0.03 per minute, then they could pay the $0.15 access fee, reduce retail prices to $0.18 per minute, and still survive in the market. The incumbent would make more money by letting the efficient mobile phone companies take over the market. The net reduction in consumer prices, from $0.20 per minute to $0.18 per minute, would stimulate demand and benefit the incumbent. Before the arrival of the efficient competitors, the incumbent was effectively making a profit contribution of $0.15 per minute.\footnote{The profit was measured as $0.20 per minute in revenues, minus $0.05 per minute in incremental costs, but was applied to a lower total volume of traffic.}

The Chicago School predicts that, by sacrificing market share to efficient competitors, the incumbent will earn the same profit margin as before, but on a greater volume of calls as lower retail prices stimulate demand. Since the incumbent will at worst preserve its financial position by offering access to rivals at $0.15 per minute, and may even improve its finances if efficient rivals stimulate demand, the incumbent will have no incentive to thwart access. The incumbent will maximise profits by promoting efficient competition in the mobile telephone market.

Essentially these same arguments can be found in the seminal Chicago School book on competition law called \textit{The Antitrust Paradox},\footnote{Bork, R. \textit{The Antitrust Paradox: A Policy at War with Itself} (1997).} and were also made in the celebrated interconnection dispute of \textit{Clear v. Telecom} of New Zealand, where respected Professors William Baumol and Robert Willig defended an incumbent’s proposal to charge interconnection fees derived in the same manner as the $0.15 per minute in the above example.\footnote{William J. Baumol & Robert D. Willig, “Brief of Evidence; Economic Principles for Evaluation of the Issues Raised by Clear Communications Ltd. on Interconnection with Telecom Corporation of New Zealand Ltd.,” \textit{Telecom Corp. of N.Z. v. Clear Communications Ltd.} (1992) 5 T.C.L.R. 166 (H.C.)} More generally, the access price of $0.15 per minute in this example has been defended by numerous economists as the “Efficient Component Pricing Rule” or “the parity principle”.\footnote{Baumol, W.J. and Sidak, J.G. “The Pricing of Inputs Sold to Competitors,” \textit{Yale Journal on Regulation}, Vol. 11, No. 171, p. 176 (1994).} However, the efficiency of the $0.15 per minute charge has been analyzed closely in the economic literature without many economists noting how its
underlying economic rationale provides the principal support for a policy of voluntary negotiations.

We acknowledge independent arguments in favor of voluntary negotiations, which can involve concerns about adopting inappropriate regulations, or a belief in the effectiveness of dispute resolution. Even someone who does not believe the Chicago School predictions, and is concerned with the potential manipulation of access to thwart competition in mobile telephony, might fear that regulations could do little to improve the situation. Many observers of the telecommunications industry fear that rapid technological developments make it difficult for regulators to develop appropriate regulations. Some regulators share these concerns. With respect to interconnection policy, the fear is that constant changes in market incentives, products and services may convert seemingly innocuous regulations into obsolete impediments to progress. Even in the absence of change, the current complexity of the telecommunications industry may generate skepticism concerning the ability of regulators to develop appropriate rules. Economists in many countries also express concerns with “regulatory capture”, which refers to the gradual loss of a regulator’s independence in favor of incumbent bias. Concerns with ineffective regulation may be heightened in Latin America, as many countries lack truly independent regulators, and where even independent regulators are often young institutions that face the challenge of accumulating technical expertise. Together these concerns may explain a distaste for regulation and a natural preference in favor of a passive government role.

Cynics of regulation may have several reasons to prefer relying initially on voluntary negotiations and the threat of judicial intervention. First, voluntary negotiations may efficiently resolve some technical aspects of interconnection agreements that are not contentious. The simple threat of judicial intervention may motivate the parties to adopt reasonable negotiating stances on the more contentious issues. In the event of disputes, courts may offer the preferred solution. Courts do not risk regulatory capture, and can offer the advantage of well-developed procedural for the detailed evaluation of complex situations. Although courts may know little about the detailed issues concerning interconnection, they can rely upon expert witness testimony. Similarly, the threat of judicial intervention can prevent inappropriate behavior that might occur after the parties sign an interconnection agreement, such as service discrimination or the incumbent’s use of interconnection fees to subsidize its success in the mobile telephone market.

We can summarize the case in favor of negotiated access as drawing upon several perspectives. The Chicago School economic theory would trust voluntary negotiations to derive efficient interconnection fees, and would also predict that incumbents lack incentives to engage in behavior that would distort competition in the mobile telephone market. Proponents of voluntary negotiations may also fear inefficient regulation, or may believe that the threat of judicial intervention will prevent inappropriate conduct, or trust judicial intervention to address the primary issues of concern in a thorough and objective manner.
The Case for Proactive Regulation

The Chicago School perspective contains several important insights that have changed the way that people analyse competition issues in network industries such as telecommunications. However, we see major problems with the potential use of the Chicago School perspective to justify an interconnection policy that relies primarily on voluntary negotiations, even if supplemented by broad guidelines and the threat of judicial intervention to resolve disputes.

For ease of explanation we refer to the same example presented in the previous section: an incumbent charges $0.20 per minute for mobile phone customers, and the incremental costs are $0.05 per minute. The Chicago School perspective predicts that the incumbent would voluntarily agree to an access price of $0.15 per minute, which would stimulate efficient competition in mobile telephony. Below we scrutinize this simple example more closely.

A significant amount of economic literature assesses the efficiency of the gap between the $0.20 per minute retail charge and the $0.15 per minute access charge in the above example. The gap of $0.05 per minute sets the landscape for competition in mobile telephony. Much of the literature analyses interesting issues concerning the complexities of telecommunications networks, which the gap of $0.05 per minute might not reflect. While this literature is intellectually important for many reasons, it is neither necessary nor sufficient to reach appropriate conclusions concerning voluntary negotiations. The efficiency of the $0.05 gap is not sufficient for assessing voluntary negotiations, because the underlying theories involve factors that are difficult to measure. It is difficult to tell from the literature whether the $0.05 gap would be significantly higher or lower than the ideal figure, and whether a regulator would make matters better or worse by adjusting the $0.05. The efficiency of the $0.05 gap is not necessary for assessing voluntary negotiations, because we can simply presume efficiency and still reveal serious flaws in the case for voluntary negotiations.

Even if we accept the efficiency of the $0.05 gap, a major question remains concerning the $0.20 per-minute retail price that served as the point of departure for the analysis. If we rely on voluntary negotiations, then the retail prices in mobile telephony will be limited to either $0.20 per minute, or to the sum of the $0.15 access fee plus the incremental costs of the most efficient mobile phone company. Stating the outcome more generally, voluntary negotiations will convert the $0.20 per minute into a benchmark for mobile phone prices. Prices will only fall by the extent of the cost savings that competing mobile phone companies could offer relative to the incumbent. However, the $0.20 might reflect a significant amount of monopoly profits, even disproportionate to any issue concerning the incumbent’s efficiency in the mobile phone market. If the $0.20 per minute is a monopoly price, then government policy should not allow voluntary negotiations to convert the $0.20 into an industry benchmark.

We explore the issue of monopoly profits by introducing a new assumption into the example above. Assume that the underlying costs of terminating a mobile phone call on the fixed-line network are only $0.09 per minute. Together with the $0.05 incremental cost of originating calls on the mobile phone network, the total costs are only $0.14 per minute.

From a public policy perspective, the goal should be a competitive mobile phone industry with total retail prices of $0.14 per minute. If the incumbent is first charging $0.20 per minute, and we rely principally on voluntary negotiations to derive interconnection agreements, then the access price of $0.15 per minute will never permit the retail price to fall as low as $0.14 per minute on a sustained basis. Competition in mobile telephony may flourish, in the sense that efficient operators may find it viable to enter the market, but the high access price will prevent the final price to consumers from approaching reasonable levels.

There are only two ways to eliminate the problem of monopoly profits in the above example. The first approach would be to regulate retail prices in the mobile telephone market, setting a limit of $0.14 per minute. If the incumbent is forced to charge $0.14, and if we believe the predictions of the Chicago School, then we will trust voluntary negotiations to yield an access price of $0.09 per minute. Recall the Chicago School’s prediction that the incumbent will start with the retail price and subtract the incremental costs of $0.05 per minute: $0.14 minus $0.05 is $0.09 per minute. Of course, the problem with this approach is the absurdity of regulating mobile telephone retail prices. A basic premise of liberalisation is that the potential for competition eliminates the need to regulate retail prices. As we indicated above, the rationale for voluntary negotiations includes concerns with inappropriate regulation, and particularly with the failure of regulators to understand sufficiently the complex, dynamic telephone market. Clearly these problems would be magnified if a regulator were asked to regulate retail prices.

The second possible approach to eliminating monopoly profits in this example would be simply to regulate the price of originating calls on the existing fixed-line network. A regulator could set access fees at $0.09 per minute in the above example, and trust competition among mobile phone companies to produce retail prices that converge on $0.14 per minute. The incumbent could no longer sustain a retail mobile phone price of $0.20 per minute, since efficient competitors could pay the $0.09 access fee, charge retail consumers $0.14 per minute, take the business away from the incumbent, and still recover all costs.

Under our second approach of regulated access prices, the gap between the $0.14 per minute retail price and the $0.09 per minute access price would match the efficient level of $0.05 per minute heralded by the Chicago School. However, the gap would not be dictated by regulatory policy. The regulator would simply set the access charge at a level that prevents the incumbent from earning monopoly profits on the fixed-line network. Competition would determine the final price for mobile telephony, independently applying pressure to narrow the gap between the retail price and the access price. With intense competition, the same $0.05 gap can be anticipated as in the initial Chicago School example.
Recall our earlier assertion that it is not important to explore sophisticated challenges to the efficiency of the $0.05 per-minute gap. We can simply accept the assertion of the Chicago School that the $0.05 gap is efficient, and show that the same gap can arise under two different processes: a) allowing the incumbent to charge a retail price of $0.20 while trusting voluntary negotiations to produce an access price of $0.15, or b) setting the access price at $0.09 and trusting competition to produce a retail price of $0.14. The issue of efficient competition in the mobile phone market cannot distinguish between these two processes, since both processes produce the same gap. The definitive choice between processes “a” and “b” should rest on the ability of “b” to eliminate monopoly profits with minimal regulatory intervention.

We now explore a final issue with our example that is necessary to derive robust conclusions concerning voluntary negotiations. A sophisticated reader might suggest the following policy: instead of asking a regulator set the access price at $0.09 per minute in this example, simply pass a law prohibiting interconnection fees that exceed the costs of terminating calls on the fixed-line network. After passing this law, perhaps we could allow voluntary negotiations to address the details of interconnection agreements. If the incumbent insists on charging excessive fees that would yield monopoly profits, then the court could deal with complaints.

The combination of a proscriptive law and the threat of litigation may seem appealing. However, the proscriptive law would violate a key condition for the success of voluntary negotiations. The Chicago School predicts that incumbents will have no incentive to delay access, or to thwart competition in mobile telephony, as long as one condition applies. The key condition is allowing the incumbent to set an access price high enough to compensate for the prospective loss in mobile telephone market share to competitors. If a law places a ceiling on the access price that would prevent the incumbent from receiving monopoly profits, then the incumbent will immediately acquire incentives to delay or distort competition.

We consider the incumbent’s incentives on the day that a law is passed requiring an access price of $0.09 per minute. If on this day the incumbent is charging $0.20 per minute to mobile phone customers, then the incumbent will be exposed to an enormous decline in profitability as competitors enter the market. Revenues will decline from the $0.20 retail price to the $0.09 access fee, offset only by a $0.05 per-minute cost reduction. Loss of market share will therefore imply a net loss of $0.06 per minute: $0.20 minus $0.09, minus the $0.05 cost savings. A law requiring a cost-based call-termination charge will therefore create the circumstances in which the incumbent becomes hostile to the loss of market share in mobile telephony.

The incumbent’s hostility to access will create several problems. The incumbent may stand to benefit financially from delaying entry, or insisting on unreasonable access terms, or by discriminating in the provision of access services to rivals. We discuss each of these problems below.

It is quite easy to understand the incumbent’s incentives to delay entry. We limit ourselves here to exploring the possibility that courts could somehow overcome such
issues by threatening incumbents with large fines, or by requiring incumbents to grant interconnection on certain preliminary terms while the court adjudicates disputes. In theory, a court could examine whether an incumbent had unreasonably delayed entry for a specified time period. The court in theory could also require the incumbent to pay an amount of damages that perfectly offset the financial benefits that the incumbent received from the delay. However, relying on courts to discourage interconnection delays is not realistic. It is extremely difficult to define the boundary between a reasonable delay and an unreasonable one. It is also difficult to measure the financial benefits that an incumbent actually receives from delaying entry, which would be necessary to deter such delays efficiently with fines.

Perhaps a court could solve the problem of delays by requiring interconnection on some terms that are only preliminary, and that might be revised when the court reaches a final decision. However, this option would expose entrants to more risks than incumbents. Foreseeing the risks of uncertain litigation, potential mobile phone companies may prefer to accept unreasonable interconnection terms that would inhibit their growth. Potential entrants may also simply avoid the market.

We now discuss the potential problem of unreasonable access terms. The law may say that access fees cannot exceed underlying costs, but if we choose to rely on voluntary negotiations then the law must remain silent about the “fine print” in the interconnection agreement. Incumbents can abuse the fine print as a method of raising the total cost of interconnection to rivals. For example, the incumbent may insist on clauses that would prevent any compensation in the event that the incumbent fails to meet performance standards. Such clauses impose a clear economic cost on entrants. Imposing such a clause may be similar to raising the interconnection fee above the $0.09 per-minute level in our

47 The court process itself can delay entry, and the incumbent will have natural incentives to litigate as rigorously as possible, to extend the time-frame required for litigation. Interconnection disputes can last up to five years before all appeals are exhausted. However, it would not be reasonable to ask incumbents to pay damages for litigation-related delays. Such damages would undermine the rights of incumbents to access the courts.

48 Measuring such benefits would require projections of the entrant’s market share, and the possible decrease in prices that the entrant might introduce to the market. Since the entrant has not actually entered the market pending the delay, such projections would not likely meet the normal standards that civil law countries apply to the measurement of damages. Only in the United States have courts relaxed the standards for measuring damages in cases where monopoly power excludes competitors from the market. Courts in the United States have concluded that defendants, if found guilty, should be held responsible for the absence of reliable evidence concerning damages. However, most Latin American countries would require significant changes in law and particularly in legal traditions before following the United States in this regard.

49 An incumbent’s revenues are typically much larger than an entrant’s, particularly where the incumbent simultaneously operates a fixed-line network and an established mobile network. The amounts in dispute therefore constitute a much smaller fraction of an incumbent’s revenues than an entrant’s. Interconnection fees are particularly important for an entrant’s business, given that an entrant’s network will naturally start out small and therefore experience a high percentage of inter-network calls. The uncertainty created by litigation will therefore have a disproportionate impact on the entrant’s business.
example to something like $0.10 per minute. However, measuring the cost of such clauses is extremely difficult. Assessing the reasonableness of such clauses may raise the prospect of court delays, which benefit the incumbent. Incumbents will therefore have natural incentives to insist on such clauses.

We do not discuss the problem of service discrimination in any detail, since it is intellectually comparable to insisting on unreasonable terms in an interconnection agreement. Detecting discrimination may require expensive and protracted litigation, and it is difficult to determine appropriate levels of compensation for companies who have suffered from such discrimination. We see an additional issue with service discrimination: proving discrimination requires access to detailed data concerning the service that an incumbent provides to its affiliates and other companies. Most legal systems outside the United States do not give courts the authority to compel the production of evidence in such cases. New and detailed laws would be required to compel the publication of information relevant to service discrimination. Regulators can be expected to offer more expertise than legislatures in identifying the categories of information that should be produced to monitor service quality.

In summary, voluntary negotiations would only work if incumbents were allowed to charge access prices that would indemnify them from the loss of market share in the mobile telephone market. Such prices are likely to be so high as to permit the recovery of monopoly profits. It would seem reasonable to prohibit monopoly profits by passing laws that require reasonable access prices. However, the creation of such laws would give incumbents incentives to engage in unreasonable behavior, such as delaying entry, insisting on unreasonable access terms, and discriminating against rivals. Courts cannot deter such conduct effectively.

The Chicago School theory has other serious flaws that we do not analyze in this paper. The flaws concern the failure of the theory to consider several real-world complexities, such as incomplete information, the costs of large sunk investments, and the potential desires of management to protect market share even at the expense of profits. One of the authors has already discussed these problems elsewhere, so here we only note that these problems further undermine the case for voluntary negotiations.

We note a final problem with voluntary negotiations. In the previous section concerning market failure, we discussed the incentives of mobile phone companies to impose unreasonably high call-termination fees. Assume for the moment that voluntary negotiations produce a timely interconnection agreement acceptable to all telephone companies involved. Economic theory and experience indicates that the call-termination rates in such agreements may be acceptable to the telephone companies, but excessive for consumers. However, consumers in many countries face significant difficulties in

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bringing court cases that would seek to overturn a privately-negotiated interconnection agreement. Each consumer would only face limited damages from the calls made to mobile phone customers on different networks. The damages for any individual consumer are unlikely sufficient to finance litigation, and in many countries consumers also face difficulties joining forces to bring “class-action” lawsuits. Voluntary negotiations cannot be trusted to produce the best results for consumers.

The discussion above ignores the greater independence, and the potentially fairer procedural rules for the examination of evidence, that courts may offer relative to regulators. However, many Latin American countries have problems concerning the perceived quality of their judicial systems. Entrants to the mobile phone market are often foreign companies, which may be concerned with bias against foreigners in the national courts. It remains unclear whether courts can make better decisions than regulators. In any event, in the next section we offer recommendations intended to address concerns with inappropriate regulation or the investigation of disputes by regulators.

**Recommendations**

We recommend proactive regulation of interconnection for mobile telephone networks, considering the need to keep regulation simple while permitting flexibility.

Our first recommendation is to avoid dictating all the terms of interconnection. In the previous section we expressed concerns with the incentives of incumbents to insist on unreasonable terms. However, the regulator can take several measures to prevent incumbent abuse without specifying all terms of interconnection. We recommend the use of a “model interconnection” contract. Regulations would require the incumbent to offer the model interconnection contract, but would not oblige entrants to accept the contract. Regulations would permit incumbents and entrants to sign contractual provisions that deviated from the model contract.

A model contract would serve several purposes. It would protect entrants from incumbent abuse, since all entrants would be guaranteed a reasonable offer from the incumbents. The model contract would also permit flexibility, since entrants would be able to negotiate different terms if they chose. The flexibility to negotiate different terms would reduce the risk of inefficient regulation. If a regulation is inefficient, then by definition it creates scope for both parties to an interconnection agreement to improve their situation simultaneously. An inefficient regulation may benefit one side at the expense of the other. The party who suffers should see scope to improve its position by proposing an efficient alternative. It can induce acceptance by offering to compensate the other side for any losses. The party who suffers from the regulation will be able to afford the compensation and still be better off, since by definition the costs of an inefficient contract to one side of the agreement must exceed the benefits to the other side. This is a core concept in economics, widely known as the “Pareto principle”. If the model contract is inefficient, then the flexibility to negotiate alternatives will motivate amendments. At the same time, the entrant will be protected from incumbent abuse, because the model contract establishes a benchmark of reasonableness, from which the entrant will not depart unless the amendments offer a net improvement.
Another key benefit of the model contract is to avoid interconnection delays. If the incumbent is required to offer a model contract, then a delay strategy will no longer make sense. The entrant may be interested in negotiating amendments to the model contract, which could take some time. However, the incumbent will not be able to drag out the negotiation process without risking that the entrant will counter by insisting on immediate interconnection pursuant to the model contract. As described above, we would only anticipate amendments that could make both sides to the agreement better off. By delaying agreement on proposed efficient amendments, the incumbent would risk sacrificing the potential benefits of those amendments.

We also believe that it would be possible to derive reasonable model contracts without tasking the expertise of the regulator excessively. We would recommend that the regulator conduct a consultation process with industry representatives, to obtain their views concerning the appropriate terms of interconnection. The regulator should propose as a starting point a sample interconnection agreement actually used in a country where competition in the mobile phone business has already demonstrated success. The goal of the consultation process should then be to seek the opinions of the incumbent and potential entrants concerning the changes to the sample agreement that would better consider the local market or legal framework, and that would improve efficiency. Our experience has been that the companies involved have strong incentives to contribute productively to such a consultation process. Often they contribute their management expertise, or hire outside experts to express views in formal reports for presentation to the regulator. The regulator itself could hire an independent expert to review the sample agreement and propose changes.

We conclude that a consultation process focused on a sample agreement would significantly reduce the risk of inefficient regulation. Combined with the possibility of voluntary amendments to the finalised model contract, we believe that the proactive regulation of interconnection contracts should be superior to relying on voluntary negotiations where the incumbent has strong incentives to insist on unreasonable terms, to delay agreement, and to force litigation.

We perceive a possible concern with amendments to model contracts. The regulator may fear discrimination among different entrants. Perhaps the incumbent would agree to efficient amendments with one mobile phone company, but then become obstinate when a second company proposes identical changes. Through such behavior an incumbent may give one competitor a material advantage over others, limiting the scope of competition. Preferential treatment of one competitor may limit the market to only two companies: the incumbent’s mobile phone business and the favored competitor. Economic theory and experience indicates that mobile phone companies can sustain prices above competitive levels if the market is limited to only two competitors.

To solve this problem, we propose a requirement to disclose all amendments to the model interconnection agreement, and to offer identical amendments to all companies. Companies often protest that the terms of interconnection agreements should be confidential. However, international experience indicates that incumbents can thrive commercially in regulatory regimes that do not even permit negotiated contracts. In
countries with such regimes, each company knows the regulated terms of interconnection, and therefore knows the terms that apply to its rivals. We find it difficult to believe that confidentiality cannot be a serious issue.

We should clarify the term “incumbent” in the context of our proposals. Much of our discussion involves the access problems presented by the owner of the existing fixed-line network. However, similar problems can occur whenever a large, established mobile operator is asked to sign an interconnection agreement with a potential new entrant to the market. We therefore recommend that all established incumbents be obliged to offer model contracts, to disclose amendments, and to treat rivals equally. Even small mobile companies have an effective monopoly over access to their customers, and all telephone companies rely on interconnection to make their services attractive. For ease of discussion we have discussed the concept of a single model contract, but we do not preclude the emergence of two different model contracts, one for mobile-mobile calls and another one for calls that cross between fixed-line and mobile networks.

Limitations to human thought and the precision of language mean that no model contract will be perfectly clear or perfectly anticipate all issues. The model contract should therefore anticipate litigation. We recommend that the model contract require the parties to follow certain procedures in resolving disputes. We recommend procedures that would mitigate potential investor concerns of bias against foreign companies in the domestic judicial system. We also recognize concerns that the regulator may display bias in favor of the incumbent, or may lack the necessary expertise to make appropriate decisions, or may fail to apply procedural rules that facilitate objective decisions.

Specifically, we propose that the model contract require the resolution of disputes pursuant to the rules of international commercial arbitration. However, the regulator would sit as the head of the arbitration tribunal. However, the regulator would be only one of three arbitrators under the typical rules for international commercial arbitration. The regulator would chair the panel, and each side would appoint an additional arbitrator. The two additional arbitrators would help supplement the expertise of the regulator, as could experts appointed by the tribunal or offered by the parties as witnesses. The international arbitration rules would provide a framework for the examination of factual evidence. Our proposal would avoid the pressure on regulators to develop quickly an independent dispute resolution department within the regulatory agency. Our proposal would also permit the regulator to draw upon outside expertise, reducing the need to keep many full-time members with deep economic, technical and legal expertise. Our experience suggests that our proposal will be important especially for the smaller countries in Latin America.

Foreign investors may still be concerned with the potential bias of regulators towards the incumbent. However, we do not believe that it would be realistic to forfeit the regulator’s involvement in resolving disputes. Participation of the regulator is important, because decisions concerning interconnection disputes will indirectly become domestic industrial policy. To alleviate concerns of regulator bias, we make two recommendations. One recommendation is to ensure the independence of the regulator from the government, which often has ownership stakes in the incumbent telephone companies or
may have political motivations to choose a particular side in the dispute. We do not dwell on this recommendation, since we believe that an international consensus has recently developed concerning the importance of independent regulators. We only mention that true independence requires such measures as: a) preventing members of the regulatory commission from simultaneously holding other jobs in government, b) ensuring that members of the regulatory commission have employment contracts of greater duration than the time between elections, c) severely restricting the grounds for dismissing members of the regulatory commission, and d) protecting regulators from personal liability in lawsuits that might otherwise intimidate them into taking particular decisions. Although personal liability would seem to increase accountability, unfortunately it has been abused to intimidate regulators. Unfortunately, the measures that we recommend are not yet standard in Latin America.

In addition to recommending independent regulators, we recommend publication of the decisions by the arbitration tribunal. This recommendation should provoke less controversy or political resistance than the potential restructuring of the regulatory authority. Publishing the tribunal’s decision will create natural pressure on the regulator to be impartial and to undertake rigorous analysis. If a regulator chooses to publish a biased, poorly reasoned decision, then it will risk the acute embarrassment of a critical dissenting opinion from one of the other two arbitrators. We would anticipate that each side of the dispute would naturally appoint arbitrators of considerable expertise and authority, anticipating that the threat of a persuasive dissenting opinion should help discipline the regulator. We conclude that the publication of arbitration decisions is critical.

We now turn to recommendations concerning the level of interconnection fees. We expressed significant concerns with monopoly profits in the previous section concerning the case for proactive regulation. The legal framework should therefore require interconnection fees based on underlying costs. However, many issues remain for setting interconnection fees, which we describe generally as the difficulty of measuring costs allocating costs to different interconnection services. The scope of this paper does not permit us to answer all these issues. Below we provide some recommendations concerning particular issues where we can provide clear answers that should not depend on the particular telecommunications networks or countries involved.

Some economists interpret the term “costs” quite broadly. A reduction in profit can be viewed as a cost. The Chicago School perspective uses the term “opportunity cost” to describe an incumbent’s loss of revenue when a customer stops paying the retail price of its mobile telephone service, and switches to a rival who only pays the incumbent an interconnection fee. We recommend that the legislation contain sufficient clarity to preclude the interpretation of costs as including foregone revenues.

We generally support the use of complex computer models to measure the costs of interconnection, but we make several warnings. First, the wisdom of using such models depends greatly on the expertise and resources of the regulator. Developing rigorous computer models can help measure costs more accurately, but can cost several hundred thousand dollars, and can take several months. Regulators may have to develop
significant internal expertise to update the models effectively or to perform sensitivities as conditions warrant. Regulators should not rely on such models unless their budget, time scales, and independent resources permit.

Our experience has also been that interconnection models can consume extensive of resources without ensuring superior results. In some cases a model’s offer of superior accuracy is more than offset by a failure to measure the cost of capital for the underlying investments. Most all costs of interconnection involve the costs of having appropriate investments in place. Interconnection could be viewed fairly reasonably as a rental of existing investment on one network by another. Analogizing the interconnection fee to a rental payment, it becomes evident that the appropriate level of the fee depends critically on one’s beliefs concerning the appropriate return on investment. The appropriate return on investment, which we call the “cost of capital”, can vary enormously from one Latin American country to another because of discrepancies in their domestic interest rates and the stability of their economies. Our experience has been that enormous sums can be spent on an interconnection model without performing any rigorous analysis concerning the cost of capital.

To solve the problem, we recommend that regulators insist on a rigorous cost-of-capital analysis as a prior condition to reliance on interconnection models. The legal framework should specify that the cost of capital used by the regulator to derive interconnection fees must be defended objectively by statistical analysis that the regulator must publish. The regulator should be required to follow internationally-accepted financial techniques for measuring the cost of capital.

Another problem with interconnection models is their lack of transparency. A model may contain several problems, but market participants will not be able to identify the problems and recommend changes unless the regulator makes electronic copies of the model, with all the inputs, available to market participants. At times key inputs to the model will come from incumbents, but the incumbent does not have any obligation to publish the inputs on a regular basis. We believe that full disclosure is essential, and should include obligations to publish updated inputs.

If proper implementation of a model would demand excessive resources, we suggest the alternative of deriving interconnection fees by reference to international comparisons. International comparisons are also imperfect. Appropriate comparisons require the identification of networks with similar geographic scope and penetration, and in countries whose economies pose similar investment risks. Most of all it is important to select examples where another regulator has not clearly set the fees too low or high, which can be difficult to determine. The regulator would have to derive conclusions concerning the financial viability of companies in the relevant country, and the success of competition. Nevertheless, our experience indicates that the admittedly difficult alternative of international comparisons can be implemented more quickly, and places fewer demands on the regulator.

In previous sections we expressed concern over the excessive call termination charges on mobile networks. Since awareness of the problem is relatively recent,
international comparisons must proceed carefully. Regulators should avoid accidentally importing the unreasonable call termination charges that may exist in another country. If the regulator is using a complex interconnection model anyway, then setting call-termination charges does not present a separate issue from call origination. However, if the regulator uses international comparisons, we recommend a different approach for call-termination charges. We propose linking call-termination charges to call-origination charges, and to the charges for calls completed within a mobile network.

Competition has proven effective in reducing the charges that a mobile business will offer to its customers who call someone else within the same network. These charges implicitly contain a charge for a call-termination service. Each mobile network typically has a separate charge for calls that terminate on another network. These calls are typically charged at a mark-up over the other network’s call-termination fee. The mark-up itself is effectively a “call origination” charge to the customer. Competition tends to restrain the call-origination charge. By subtracting this call-origination charge from the total cost of a call that remains within the same network, we can deduce an implicit competitive “call-termination” charge to the network’s own customers.

Reasonable regulations could tie the call-termination charge in interconnection agreements to either the call-origination charge, or to the implicit call-termination charge that a mobile phone company charges for calls that remain within the network. It could also be reasonable to charge a small fee to recover the costs of interconnection interface costs, since specialized equipment is often necessary to communicate between networks. Reasonable regulations of this nature would likely produce far lower call-termination charges than independent mobile networks have derived, and would not rely on complex computer models to measure costs.

**Summary of Recommendations**

1. We propose regulating the terms of interconnection by reference to a model interconnection contract.

2. The model contract should be adopted pursuant to an open consultation process that asks market participants for their views concerning a sample interconnection contract taken from another country. We recommend that the regulator select a sample contract from another country in which the mobile telephone market has developed successfully.

3. The legal framework should permit voluntary amendments to the model interconnection contract. We recommend requiring publication of all voluntary amendments to the model contract, and prohibiting incumbents from discriminating among companies in its willingness to accept amendments.

4. We suggest requiring a dispute resolution mechanism based on the rules for international commercial arbitrations. The regulator should be the head of the arbitration tribunal, but each party should be allowed to appoint an independent arbitrator.
5. The legal framework should contain measures to ensure the independence of the regulator, concerning such issues as the potential employment of regulators in other parts of government, the duration of employment, the grounds for termination, and the exposure to personal liability in lawsuits.

6. The regulator should be required to publish all arbitration decisions, as well as any dissenting opinion.

7. We recommend a requirement for interconnection fees to be no greater than the underlying costs of providing the services. The concept of “costs” should be sufficiently clear to exclude “lost profits” as a possible interpretation.

8. Complex computer models can play a useful role in deriving appropriate interconnection fees, subject to three conditions: a) the regulator must have sufficient resources to implement the model successfully without undermining other important tasks, b) the regulator must first commit to publish a rigorous, objective analysis that determines the cost of capital for use in setting interconnection fees, and c) electronic copies of the model with its inputs should be given to industry participants for full transparency.

9. If it is not feasible to satisfy all three conditions above for the use of interconnection models, we propose the use of international comparisons to derive interconnection fees. We recommend that the international comparisons consider the following aspects of the comparison countries: a) their geographic scope, population density, and penetration, b) the interest rates and investment risks of their economies, c) the financial performance of their telecommunications companies, and d) the success of competition.

10. International comparisons should proceed with special care in evaluating call-termination charges, which experience indicates are apt to be excessive. We would recommend the alternative of tying call-termination charges to either the call-origination charges that each network charges to its customers for calls that cross networks, or to the implicit call-terminating charges that each network implicitly charges for a call that terminates in the same network. In setting call-termination charges, we recommend accounting for the costs of specialised network interface equipment.

4. Incumbent Participation in Mobile Telephony

Access regulation presents several challenges that involve the potential for abuse of the mobile phone market by an incumbent local-service provider. Abuse can be avoided simply by prohibiting the incumbent from entering the mobile telephony business. However, prohibiting incumbent participation raises several efficiency issues, and is often impossible given the history of the industry or political considerations. Here we focus on the efficiency issues, and we describe some alternatives to outright prohibition. We recommend considering these alternatives if historical or political reasons make prohibition impossible.
Interconnection with local-service providers is crucial for the success of mobile telephone companies. If an incumbent local-service provider enters the mobile phone business, then it will have natural incentives to discriminate in the provision of access service to other mobile phone companies. When a technical problem occurs in the interface with a competing mobile phone company, we find it difficult to see how the incumbent local-service provider could be motivated to address the problem promptly or effectively. A technical interconnection problem may frustrate the incumbent’s local-service customers, but would likely have a far greater impact on the customers of the competing mobile phone network. The competing mobile phone network would naturally be much smaller than the incumbent’s local-service network, and would therefore depend to a much greater extent on inter-network calls. Frustrating the customers of a competing mobile phone network could help the incumbent’s own mobile business. An incumbent local-service network therefore has natural incentives to provide better interconnection service to its own mobile phone network than to competing mobile phone businesses.

Regulators find it extremely difficult to detect, punish and prevent service discrimination. Proving a problem can require access to large volumes of data over an extended time period. The incumbent may seem unusually slow in responding to technical problems that confront a competing mobile telephone business. However, conclusive proof of service discrimination would likely require detailed documents concerning the response times to technical problems with both the incumbent’s own mobile business and the competitor’s business. Courts in Latin American countries typically do not compel the incumbent to disclose all relevant business documents in litigation. The absence of sufficient written evidence places competing mobile phone companies at a disadvantage in offering proof. Even if the incumbent provides sufficient documents concerning its interconnection service, discrimination is likely to be detected only after occurring over a sustained period. By then the discrimination will have inflicted serious damage.

In most Latin American countries, mobile phone companies would face serious difficulties proving the full extent of damages from service discrimination. Damages are likely to involve a diminished reputation, which reduces a company’s market share. It is difficult to establish with objective evidence a change in the reputation of a company, and even more difficult to measure the financial consequences. A company’s market share may fall from 30% to 10% after experiencing service discrimination, but it would not be responsible to conclude that service discrimination is responsible for the 20% difference. Perhaps for other reasons the company’s market share would have fallen from 30% to 12% in the absence of the service discrimination, leaving the service discrimination responsible for only 2% (calculated as 12% minus 10%). Perhaps for other reasons the company’s market share should have increased from 30% to 50%, making the service discrimination responsible for 40% (calculated as 50% minus 10%). A plaintiff’s attempt to prove damages is always vulnerable to accusations of speculation.

We conclude that competing mobile phone companies would logically fear service discrimination. Service discrimination is difficult to prove, and can usually be proved only after occurring over a sustained period. Even if a company can prove service
discrimination, it can expect difficulties proving the full amount of financial loss. We have mentioned some specific problems involving the production of business records in court, and measuring damages in litigation. Although we directed these comments specifically at court proceedings, similar comments apply even if a regulator chooses to handle disputes. Regulators often have difficulty compelling the production of documents, and would logically face difficulties measuring the market-share impact of disputed conduct.

The problem of service discrimination would appear to support a policy of prohibiting incumbent participation in mobile telephony. The most celebrated exercise of this policy was in the AT&T litigation of the United States, which concerned the abuse of local fixed-line networks to distort competition in long-distance telephony. The United States federal court saw serious evidence of service discrimination, and doubted the regulator’s ability to prevent such discrimination, or to compensate the victims of discrimination adequately. The federal court therefore felt compelled to prevent local fixed-line incumbents from competing in long-distance markets. The same logic applies to mobile telephony.

The AT&T decision was both applauded and criticized seriously for more than a decade, until effectively overturned by the 1996 Telecommunications Act. Praise of the decision focused on the subsequent rapid development of effective competition in United States long-distance markets. Latin American countries could anticipate similar benefits for the development of competition in mobile telephone markets, especially in countries where the regulatory regime is not strong enough to police service discrimination effectively.

Much of the criticism of the AT&T decision is either unrelated to the wisdom of barring incumbents from participating in other businesses, or reflects unique characteristics of the United States regulatory regime. One major criticism was the usurpation of regulatory powers by the federal court. However, Latin American countries can avoid this issue by ensuring that the regulatory authorities take the initiative to restrict incumbent participation in mobile telephony. Another major criticism of the AT&T decision involved the belief that subsequent industry developments rendered it obsolete. Some observers pointed to signs of developing competition in local service markets. Some competitive local exchange carriers (CLECs) had developed significant businesses under liberalization measures that permitted large customers to bypass the incumbent’s connections to public switches. Although CLECs had focussed almost exclusively on corporate clients with large traffic volumes, CLEC success created optimism on two fronts: the prospective erosion of local service monopolies, and the ability of regulators to prevent service discrimination. CLECs had thrived despite the potential for incumbent abuse through service discrimination. Their success therefore seemed to confirm that strict regulation could avoid problems. We note that few countries in Latin America have witnessed significant CLEC success in the provision of local service.

The 1996 Telecommunications Act permitted incumbent local-service companies to enter long-distance markets, if incumbents could demonstrate effective competition in
local-service markets. In a regulatory order implementing the Act, the FCC specified the conditions necessary to demonstrate effective competition. Several of the conditions focussed on the absence of service discrimination. We might advocate a similar approach for Latin American countries with respect to incumbent participation in mobile telephony. However, this approach can only succeed in the presence of strong, independent regulators with the power to compel the production of sufficient documents concerning service performance. We see strong reasons to restrict incumbent participation in countries where regulators do not possess these characteristics.

We recognize several conceivable efficiency advantages to incumbent participation in mobile telephony. Advantages can include the use of an established local brand image, leveraging local market knowledge, efficiencies with respect to administrative costs, or even technological efficiencies if the incumbent already provides wireless local-loop services. However, we find it difficult to believe that these advantages would warrant a policy of incumbent participation in mobile telephony.

Experience in Latin America suggests that incumbent local-service providers have reputations for poor service quality. Consumers have been open to purchasing mobile phone services from foreign operators that are new to the market. In most cases it would be mistaken to view the incumbent’s brand image as a valuable resource that would be wasted by limiting the incumbent to local telephone service.

The incumbent’s local market knowledge presents a more interesting issue, but we do not believe that it would justify participation in mobile markets. Much of the local knowledge can be transferred between companies. A foreign company would naturally offer premium salaries to employees of the incumbent telephone company if they have valuable knowledge of the local market. Some local market knowledge may involve the database of existing local-service customers, but the incumbent could sell this data to entrants, perhaps under regulatory guidelines. Access to the incumbent’s customer information has proven important to the development of competition in several countries.

Incumbent local-service providers might save on administrative costs by entering the mobile telephone market. Incumbents may be able to offer consolidated mobile and local telephone bills to customers. However, consolidated bills would raise questions concerning a level playing field in mobile telephony. Entrants would logically complain that the incumbent’s ability to offer consolidated bills does not reflect superior management efficiency, but simply the incumbent’s good fortune to have inherited a local service monopoly. Entrants would logically demand the ability to consolidate mobile telephone bills with the bills for the incumbent’s local service. One of the authors has elsewhere concluded that an incumbent’s refusal to permit consolidated bills with other carriers constituted an abuse of a dominant position.51 Answers to these complicated issues may vary depending on specific circumstances, and the scope of this

51 Telstra New Zealand, Ltd. v. Telecom New Zealand, Ltd. (High Court of New Zealand, Auckland Registry, Commercial List CL No. 16/99), “Affidavit of Carlos Lapuerta in Reply and in Support of Interlocutory Application by Plaintiff for Interim Restraining Orders (May 26, 1999).
report does not permit a full analysis. However, we can safely conclude that the potential administrative cost savings of incumbent entry into mobile telephony do not present clear or compelling policy justifications that could override concerns with service discrimination.

If incumbent local-service providers already use wireless local loop technology, they may be able to provide mobile telephone service efficiently by maximizing the use of their existing technology and infrastructure. Such efficiencies could provide compelling justification for incumbent participation in mobile telephony. However, incumbents can realise efficiency benefits without actually offering mobile phone service to retail customers. An incumbent could build a mobile network under a long-term lease agreement with an independent mobile phone company. The long-term lease could reward the incumbent for its efficiencies in creating a mobile phone network, without simultaneously giving the incumbent perverse incentives to distort competition in mobile telephony. Fixed annual lease payments could reward the incumbent, without giving the incumbent a financial interest in expanding the market share of the lessee. We recognise that the use of leases would raise complex issues, but we believe that the potential for leasing arrangements has not yet been explored sufficiently. We believe that it presents an extremely interesting avenue for maximizing efficiency while reducing problems of service discrimination.

We recommend that countries consider another interesting policy, which could permit incumbent participation in mobile telephony while reducing concerns over service discrimination. Countries should consider allowing incumbents to participate in mobile telephony, but only outside their local service areas. In a country with two large cities, the local service provider in one city could be allowed to offer mobile service in the other city. Incumbents might complain that customers want national coverage. We would agree, and would therefore allow an incumbent to offer national coverage by signing roaming agreements with independent mobile phone companies who operate inside its local service area. Our recommendation would allow incumbents to receive efficiency benefits from participating in mobile telephony, but would reduce their incentive to discriminate in the provision of access.

We find it difficult to believe that a roaming agreement would give an incumbent strong incentives to discriminate in favor of an independent mobile phone company. A rational incumbent should realize the dangers to distorting competition in favor of its roaming partner. If the roaming partner acquires a local monopoly, then it might use the resulting profits to fund predatory competition against the incumbent’s mobile business outside the local service area. An incumbent may also fear discriminating in favor of the roaming partner, because a lack of mobile competition in the incumbent’s local-service area would grant the partner additional negotiating leverage when the current roaming agreement expired. Incumbents would naturally prefer effective competition in the area where they will have to rely on future roaming agreements.

Political or institutional factors may make it impossible to restrict incumbent participation in mobile telephony, either absolutely or partially as suggested above. If the incumbent already participates at the retail level in its local-service area, then at least we
recommend strict separation of its fixed-line and mobile businesses. Below we discuss and recommend four levels of separation: accounting, management, legal, and ownership separation.

Accounting separation means the preparation of separate audited accounts for the mobile telephony and local service businesses. Accounting separation helps identify the costs and revenues of each business separately, which helps a regulator evaluate potential claims of cross-subsidization.

Management separation implies restrictions concerning the interaction between the employees of the incumbent’s local-service business and its mobile business. Managing the businesses separately should help give confidence in the separation of the accounts. If the two businesses are managed as one, then the separate financial accounts may rely heavily on rules of thumb for splitting the costs of shared resources. Such rules of thumb are difficult to evaluate properly. Shared management could therefore hide potential cross-subsidies.

Strong management separation should involve restrictions on the methods of compensating, promoting and dismissing employees. An employee of the incumbent’s local-service business should not receive a bonus tied either directly or indirectly to the financial performance of the mobile service business. An employee of the incumbent’s local-service business should not be disciplined or dismissed if its decisions have adverse consequences for the mobile business. A popular idea in the European Union is the requirement to hire “compliance officers” who monitor the separation between two businesses, to ensure the effective implementation of management separation.

Legal separation refers to the creation of separate legal entities for handling the activities of each business. Legal separation offers two important benefits. One benefit is the increased difficulty of cross-subsidizing activities. In the absence of legal separation, a mobile business cannot borrow independently. When a loan is signed with the owner of two businesses, it is never clear whether the financial strength of one business indirectly supports the loan made to finance the other business. A regulator or court could not easily determine whether the incumbent’s local-service monopoly reduced the costs of borrowing funds for use in mobile telephony. Legal separation would involve the creation of a separate mobile phone subsidiary, which would have the legal authority to sign separate contracts such as loans. If a lender to the mobile subsidiary wants the local-service business to provide financial support, the lender would insist on clear language in the loan. A regulator can reduce the likelihood of cross subsidies by preventing loan agreements that contain financial guarantees backed by the incumbent’s local-service monopoly.

The second benefit of legal separation involves the use of contracts between the incumbent’s mobile phone business and its local-service business. If the incumbent’s mobile phone business has an independent legal status, then it can sign interconnection contracts with the local-service business. A regulator or court could see whether the contract was more favorable than the contracts signed with other businesses, reducing the risk of discrimination.
Ownership separation involves a different distribution of investors for the incumbent’s mobile phone business and its local-service business. Complete ownership separation requires the incumbent to sell 100% of its mobile phone business to an independent company. Full ownership separation would eliminate all of the incumbent’s incentives to engage in service discrimination or other behavior intended to distort competition in mobile telephony. However, immediate ownership separation is rarely feasible politically. However, countries should explore the possibility of setting a deadline for the sale of an incumbent’s mobile phone operations after a specified number of years. Giving the incumbent time would allow several benefits. The incumbent could accumulate a track record for the performance of its mobile business with separate management and accounting. The accumulated track record would reduce the uncertainties faced by potential acquirers of the mobile phone business. With a reliable history concerning the independent performance of the mobile phone business, potential acquirers are likely to offer a higher price. Waiting some years for full ownership separation may also help reduce political opposition to the move, in part by allowing employees to anticipate and respond to the potential impact of an ownership transfer.

Partial ownership separation involves the retention of an ownership stake by the incumbent. Partial ownership separation could significantly reduce incentives to engage in service discrimination or other anti-competitive behavior. If an incumbent local-service provider retains only a 20% interest in its mobile phone subsidiary, then efforts to distort competition in mobile telephony might not seem worthwhile. The incumbent might have to fight expensive lawsuits against other mobile phone companies, while retaining only 20% of the total value that the disputed conduct might confer upon its mobile phone business.

Recommendations

1. We recommend prohibiting incumbent local-service companies from entering the mobile telephone business.

2. We acknowledge that it may not be feasible to exclude incumbents from mobile telephony. If not, then we recommend exploring either of two restrictions: a) keep the incumbent out of retail mobile phone operations, while allowing the incumbent to build mobile telephone infrastructure for lease to independent companies, and b) permit the incumbent to offer retail mobile telephone service, but only outside its local service area.

3. If an incumbent must limit mobile phone operations to outside its local service area, then the incumbent should be permitted to offer national coverage by signing roaming agreements with mobile phone operators inside its service area.

4. If it is not politically feasible to impose any of the restrictions discussed above, then we recommend requirements to separate the accounts, management, legal status, and ownership of the incumbent’s local-service and mobile businesses.

5. Management separation should include rules concerning the compensation, promotion, and dismissal of employees. Employees of the local-service business
should not be rewarded or penalized based on the performance of the mobile phone business. We recommend using compliance officers to monitor separation.

6. Legal separation should be implemented to ensure that a company does not use its local-service monopoly to finance its mobile-phone activities. An incumbent’s mobile business should not be allowed to sign loan agreements that involve financial guarantees supported by the assets or cash flows of the local-service business.

7. Legal separation should carry an obligation for the incumbent’s mobile phone business to sign interconnection contracts with the local-service business, which should be compared with the contracts of other mobile phone companies to prevent discrimination.

8. We recommend full ownership separation because it eliminates all incentives of local-service providers to distort competition in mobile telephony. However, we recognise that immediate ownership separation is rarely feasible. We therefore propose two alternatives. One alternative is to give the incumbent a fixed period of years before requiring the sale of its mobile business. Another is to seek partial ownership separation—selling part of the incumbent’s ownership interest in its mobile phone subsidiary to independent investors.
5. Regulating Entry

Many governments have borrowed the idea of *competition for the market*, which refers to the delineation of a market with a limited number of participants, at times only one, and reliance on a competitive tender process to assure a reasonable outcome. In Latin America, entry in mobile telecommunications usually involves some form of competition for the market. Long-term concessions are typically granted for specific geographic areas, with either an exclusivity period to encourage investment or a limitation on the number of competitors. Auctions may be used to grant a specific number of national licenses. Competition for the market commonly involves one of two parameters: paying the fee that generates maximum income for government, or committing to charge customers the lowest tariff. Competition for the market makes sense for industries characterized by pervasive scale economies and no technological progress. However, we question the usefulness of the concept for liberalizing mobile telephony.

Five factors suggest that limiting the number of entrants in mobile telephony will only reduce consumer welfare. First, scale economies are less of a problem in Latin-American mobile telephony than in other network industries, partly because the low level of fixed-line penetration permits high rates of demand growth. The case of El Salvador illustrates that mobile telephony is not a “natural monopoly”. El Salvador has roughly 6.3 million people with a modest average income, yet has five mobile operators. Second, spectrum is not scarce in Latin-American countries, in contrast to industrialized countries where military and other uses crowd out spectrum. Third, the market borders of mobile telephony are artificial: mobile telephony overlaps with long distance, wireless local-loop services and value added services (data and video transmission). Mobile telephony can compete in these market niches. Fourth, technology changes are frequent and mobile networks can be installed in a very short time. Fifth, from a purely financial view, exclusivity periods facilitate investment by making licenses attractive, in part by reducing risk. However, if risks are significant, or if the market is not attractive, then there will be few companies that enter the market anyway.

Mobile service has decisive advantages for increasing the gap in penetration between industrialized and developing regions, but many Latin-American countries do not maximize the opportunity by liberalizing entry. Entry in the mobile telephony industry is over-regulated. The reasons cited to limit entry are ideological and political. Spectrum is simply assumed to constitute a valuable resource that belongs to the state, which therefore should not be given away for free, especially to large foreign companies.

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52 Mobile telephony started operations in 1998 in El Salvador, when teledensity was lower than 10, and has become the dominant telecommunications medium in the country. We are not saying that the current number of operators will prevail. Consolidation might occur at a later stage. But that is another story.
Restricted entry has served either as an indirect form of taxation to raise government funds (“taxation by regulation”), or to set seemingly low prices within a market structure that is paradoxically designed to be noncompetitive. The quick spread of mobile telephony seems even more remarkable in light of entry restrictions.

We perceive the following problems with entry restrictions:

• Under taxation by regulation, the mobile phone operator’s need to recover the entry fee will produce inefficiently high prices. The welfare of the country as a whole does not improve. Even if the government makes money from selling artificially created “monopoly” rents, the citizens end up paying. Political disputes will inevitably arise over allocating the proceeds among conflicting goals. Disputes will inefficiently dissipate part of the rents.

• Even if the “monopoly” rents are totally devoted to a noble goal such as universal service, we see better ways to finance universal service. We see no reason why mobile customers should be targeted to fund universal service indirectly by paying monopolistic prices. Competitive mobile telephony can foster competition and innovation in other telecommunications sectors, and mobile telephony is often the cheapest technology to expand penetration. Indirectly taxing mobile telephony might reduce penetration and have adverse effects on other markets. Governments should estimate the funds necessary to finance universal service, and raise them directly. If direct funding is not feasible (as in might be the case in HIPC countries), then the burden of universal service should be spread more widely among all telecommunication users. Universal service can be addressed through license obligations to serve customers in specific areas, without limiting the number of licenses granted and without charging entry fees.

• In a dynamic setting, government insistence on entry fees may discourage investment by latecomers to the market. Monopoly rents persist at the expense of insufficient penetration. And if a government decides not to charge latecomers once the first generation of mobile operators has paid the entry tax, legal disputes requesting “fair compensation” are likely to appear.53

• We see problems with the award of licenses to the bidder who offers to charge the lowest tariff. When competition for entry is keen, entrants may accept investment targets than later prove financially unfeasible. Experience has already shown that frustrated entrants will ask the regulator to modify the tariffs or grant other relief. On the other hand, if competition for the market is weak, entrants will enjoy rents during the exclusivity period at the expense of insufficient penetration.

Restricting entry can impede competition between mobile telephony, fixed wireless and long distance. The absence of competition can undermine the benefits of quicker penetration, product diversity and lower prices.

**Recommendations**

We recommend allowing unrestricted entry in mobile telephony. Concerns with excess entry may arise in infrastructure sectors where assets have longer economic lives, and investment is irreversible (like water works and power plants). However, the government should not worry about the prospects of excessive entry in mobile telephony. We recommend leaving the market to worry about the issue, as there is nothing wrong in starting out with “too many” competitors. A policy of unrestricted entry does not automatically produce an excessive number of participants in the market. If “too many competitors” enter the market, it will only be because each company independently believed it had an advantage relative to the others, or that the market could accommodate all of them. As long as “too many competitors” remain in the field, consumers will benefit from low prices. Additionally, if spectrum had any positive value at all, unrestricted competition would transfer its value from mobile phone firms to customers. The benefits of the country’s scarce resource would accrue to consumers.

Market participants are likely to make better decisions than the regulator concerning entry into mobile telephony. Regulators will typically know less than mobile phone companies about product innovation, technological change and specific business opportunities. We prefer trusting management judgment on such issues, since management has natural financial incentives to assess markets accurately. Neither regulators nor legislatures have inherent advantages in choosing the appropriate number of companies.

We recognize a possible “first-mover” argument concerning entry in mobile telephony. Perhaps the first company in a market would reduce risks for subsequententrants. Conceivably, no one would enter the market initially because all potential competitors would prefer someone else to enter. However, a “first mover” also acquires natural advantages. The first mover can target the most attractive part of the market first, and can market easily as the sole provider of mobile telephony. It seems speculative to believe that the “externality” of reducing risk for others could more than offset first-mover advantages.

We also recommend avoiding elaborate procedures such as auctions, which might be used to select the best participants for the market or allocate spectrum. Auctions are *in vogue* these days, perhaps partly because of recent advances in the underlying economic theory, and because of perceived success in some contexts. However, Many Latin-American countries lack strong regulatory and antitrust traditions. Auctions can create problems in this context. Exclusive rights can create powerful firms, which may not be in the interest of a country with a weak regulator. In theory, the firm with the most powerful lobbying abilities could afford to bid highest in an auction, anticipating increased profits from subsequent domination of the regulator. Opportunities to increase profits include the potential extension of exclusivity periods, lowering quality standards and investment
obligations, increasing tariffs more than contractually agreed, or manipulating call-termination charges on other networks. Economists often discuss the winner’s curse in auction theory, which describes the tendency of the bidder to over-value the product for sale. With power firms and weak regulators, the winner may not be cursed at all.

We recognize that a policy of unrestricted entry can increase the likelihood of subsequent industry consolidation. Some firms may not be able to survive, or global corporate strategies may prompt takeovers. Consolidation may go too far and create market power. To protect competition, Latin-American governments must develop analytical capabilities and monitor the extent of competition continuously.

In addition to strengthening the competition authority, we recommend that mobile telephony licenses should make mergers, acquisitions or disposals of assets subject to regulatory approval. The regulator must have an obligation to make approval contingent on a finding that the proposed transactions will not harm competition unreasonably. The regulator should be required to establish a panel of experts to analyze potential mergers and assess their impact on competition. The decision-making procedures and criteria should be clearly stated, as should the rules concerning the composition of the panel.

We also recommend that a government’s responsibility should not stop with allowing unrestricted entry. A government should also take measures to encourage entry. In small countries, harmonizing license rules and technologies with neighboring countries can increase traffic and facilitate investment. Additionally, entry can be encouraged by rules allowing firms to use the spectrum as they see fit without restrictions. We recommend permitting companies to trade spectrum, and recommend against restrictions that would prevent the use of mobile technology to provide fixed wireless services. Permitting entry in fixed-wireless services will help promote entry in mobile telephony while also increasing competition for local services, as in the Dominican Republic.

**Summary of Recommendations**

1. Governments should allow unrestricted entry into mobile telephony. Spectrum auctions and entry fees should not be used to increase government revenues or to fund universal service.

2. Government policy should emphasize strengthening the competition authorities, to prevent excessive consolidation in the industry.

3. Licenses should make mergers, acquisitions or disposals of assets contingent upon regulatory approval. Regulators should be obligated to consider the impact of proposed transactions on competition before granting approval. When reviewing mergers in the telecommunications industry, regulators should have obligations to apply transparent rules for convening expert panels and making decisions.

4. Governments should encourage entry. Small countries should consider harmonizing their rules with neighboring countries as a method of encouraging entry. Companies should be permitted to trade spectrum, and should not face
restrictions on its use. We specifically recommend against policies that would prevent mobile phone companies from using their spectrum to provide fixed-wireless services.
SESSION VI:
CHALLENGES IN THE INTRODUCTION OF COMPETITION IN LATIN AMERICA
Challenges in the Introduction of Competition in Latin America

José Tavares de Araujo Junior

April 2003
The Seven Challenges

1) The international dimension of current competition patterns.
2) Cartel behavior.
3) Regulation and competition.
4) Antidumping.
5) Regional integration.
6) Promoting market transparency
7) Institutional strengthening of the competition agency.
## Mergers in the Brazilian industry - 2002

<table>
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<th>Type of Merger</th>
<th>Count</th>
<th>Percentage</th>
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<tr>
<td>Foreign Mergers with impact on Brazilian Markets</td>
<td>194</td>
<td>66%</td>
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<tr>
<td>Mergers between Brazilian and Foreign Firms</td>
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<tr>
<td>Total</td>
<td>294</td>
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Cartel Behavior

• International cases:
  Vitamins
  Lysine
  Graphite electrodes

• Total cartel cases in 2002: 61.
Regulation and Competition

• Privatization and regulatory reforms in the nineties

• The current scenario

• The antitrust authority and the regulatory agencies
Antidumping

• The interface between antidumping and competition laws.
• The Brazilian position in international forums.

• How SEAE is dealing with this problem?

⇒ Issuing technical reports on antidumping cases.
⇒ Monitoring selected cases.
Regional Integration: The Mercosur Case

- Scope and limitations of the Fortaleza Protocol.
- The potential role of positive comity agreements.
- The elimination of antidumping measures.
Promoting market transparency: the use of economic indicators

• Configuration of the domestic industry.

• Domestic production.

• Import penetration.

• Export share.

• Revealed comparative advantage.

• Price indexes.
Institutional Strengthening

The Brazilian Competition Policy System

- Secretariat for Economic Monitoring (SEAE) of the Ministry of Finance;
- Secretariat of Economic Law (SDE) of the Ministry of Justice;
- Administrative Council for Economic Defense (CADE), an independent tribunal administratively linked to the Ministry of Justice.
- SEAE and SDE have analytical and investigative functions, while CADE is an administrative tribunal. CADE’s decisions can only be reviewed by the courts.
Institutional Strengthening

- Draft-law with a new structure for the Brazilian Competition Policy System.

- The draft-law amends Law. No. 8884/94.
Institutional Strengthening

• New important features of the law: pre-merger notification, early termination for simple cases and the definition of hard-core cartel as a *per se* injury.

• The draft law represents the consolidation of a coordination effort started in the nineties.
SESSION VII:
LOOKING AHEAD – FUTURE WORK
THE OECD OUTREACH PROGRAM IN LATIN AMERICA

Background documentation for Session 7
‘Looking Ahead – Future Work’
of the
First Meeting of the
Latin American Competition Forum

Paris: 7-8 April, 2003

Prepared by the Competition Division of the OECD Secretariat
The OECD Outreach Programme in Latin America

The OECD’s focus has for more than a decade extended beyond its member countries. Increasingly the Organisation is becoming involved world-wide with countries that are committed to embracing a more market based economy. These efforts are currently co-ordinated through the OECD Centre for Co-operation with Non-Members. The Centre’s efforts are broadly designed to further economic growth and global integration by making the experience of OECD countries available to others and by enabling those countries to profit from the insights and perspectives of non-members. In this regard, there is an active outreach programme in competition law and policy. The OECD has conducted scores of seminars, conferences and meetings in which competition policy experts from the OECD Secretariat and from our member countries meet with enforcement officials and others from non-member countries to discuss issues of common interest in this field.

In the early years of the outreach program, which began in 1990, the OECD’s efforts were concentrated in the countries in transition from centrally managed economies in Central and Eastern Europe. Since 1995, however, the geographic scope of the program has expanded dramatically to other parts of the globe. Latin America is now a major focus for the OECD’s outreach activities. Since 1996 the OECD has sponsored at least one event a year in Latin America on competition policy. High level conferences, co-sponsored with the World Bank, were held in Buenos Aires and Rio de Janeiro in 1996 and 1997. Case study seminars were held in Brasilia in 1998, in Lima in 1999, in Caracas in 2000, in Brasilia in 2001 and in Miami in 2002. These seminars, in which experts from OECD and non-OECD countries discuss competition cases originating in participating countries, are the signature product of the OECD outreach programme in competition law and policy. In addition, three events specific to Brazil were held between 1999 and 2001: seminars on civil aviation and natural gas in 1999 and 2000 and a seminar in April 2001 on institutional reforms in Brazilian competition policy. Finally, in 2000 the Secretariat completed and published a comprehensive review of competition policy in Brazil, and as a part of this Latin American Competition Forum, Chile will be the second non-member country to be reviewed under the OECD’s peer review programme in competition law and policy.

Attached is a list of participating countries and international organisations in the various Latin American events described above.
PARTICIPATING COUNTRIES AND ORGANISATIONS IN OECD
COMPETITION LAW AND POLICY EVENTS IN LATIN AMERICA
1996-2002

Note: One or more experts from the OECD Secretariat were present at all of the following events.

**Case study seminar, Miami, Florida, USA, 2-4 December 2002**

**Latin American and Caribbean countries:** Argentina, Brazil, Chile, Costa Rica, Dominican Republic, Ecuador, Honduras, Jamaica, Panama

**OECD countries and international organisations:** France, Mexico, Spain, United States, Andean Community

**Case study seminar, Brasilia, Brazil, 4-6 December 2001**

**Latin American and Caribbean countries:** Argentina, Brazil, Costa Rica, Dominican Republic, Ecuador, Panama.

**OECD countries and international organisations:** Canada, Italy, Mexico, United States, Andean Community

**Conference, “Enhancing Competition Policy in Brazil,” Brasilia, Brazil, 10-11 May 2001**

**Latin American countries:** Argentina and Brazil (including many participants from the three Brazilian competition agencies, legislators, consumer protection agencies, the academic community, regulatory agencies (banks, electricity, energy) and the private sector).

**OECD countries and international organisations:** Spain, United States, Organisation of American States, World Trade Organisation.

**Seminar on Competition in Natural Gas, Porto Alegre, Brazil, 6-8 December 2000**

**Latin American Countries:** Brazil (including several representatives from federal and state regulatory agencies, industry representatives, lawyers and academics).

**OECD Countries:** United States.

**Case study seminar, Caracas, Venezuela, 5-8 December 2000**

**Latin American and Caribbean countries:** Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, Guatemala, Jamaica, Panama, Peru, Venezuela.

**OECD countries and international organisations:** Canada, France, Mexico, Spain, Switzerland, United States, Andean Community.

**Seminar on Competition Policy in the Airline Industry, Brasilia, Brazil, 7 December 1999**

**Latin American countries:** Brazil (including heads of all four major airlines, head of the aviation regulator and several officials from the Ministry of Defense (which is responsible for aviation
regulation), officials from the Ministry of Justice, other aviation lawyers and economists and legislators.

OECD countries: Italy, Mexico, United Kingdom, United States.

Case study seminar, Lima, Peru, 30 November – 3 December 1999

Latin American and Caribbean countries: Argentina, Brazil, Chile, Jamaica, Panama, Peru, Uruguay and Venezuela.

OECD countries: Japan, Mexico, Spain and United States.

Case study seminar, Brasilia, Brazil, 24-27 February 1999

Latin American countries: Argentina, Brazil, Chile, Colombia, Jamaica, Panama and Peru.

OECD countries: Canada, France, Mexico, Spain, United States.

Seminar on Competition Policy and Economic Reform, Rio de Janeiro, Brazil, 10-13 July 1997 (co-sponsored with the World Bank)

Latin American and Caribbean countries: Argentina, Brazil (including many from the private sector, regulatory bodies, government ministries and legislators), Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Nicaragua, Paraguay, Peru, Uruguay, Venezuela.

OECD countries and international organisations: Canada, France, Italy, Japan, Mexico, Poland, Portugal, United States, European Commission, Organisation of American States, World Bank

Conference on competition policy in Latin America and the Caribbean, Buenos Aires, Argentina, 1996 (jointly sponsored with the World Bank)

The list of participants for this event is not available. It was comparable in scope and in participation to the seminar in Rio de Janeiro in 1997, described above.