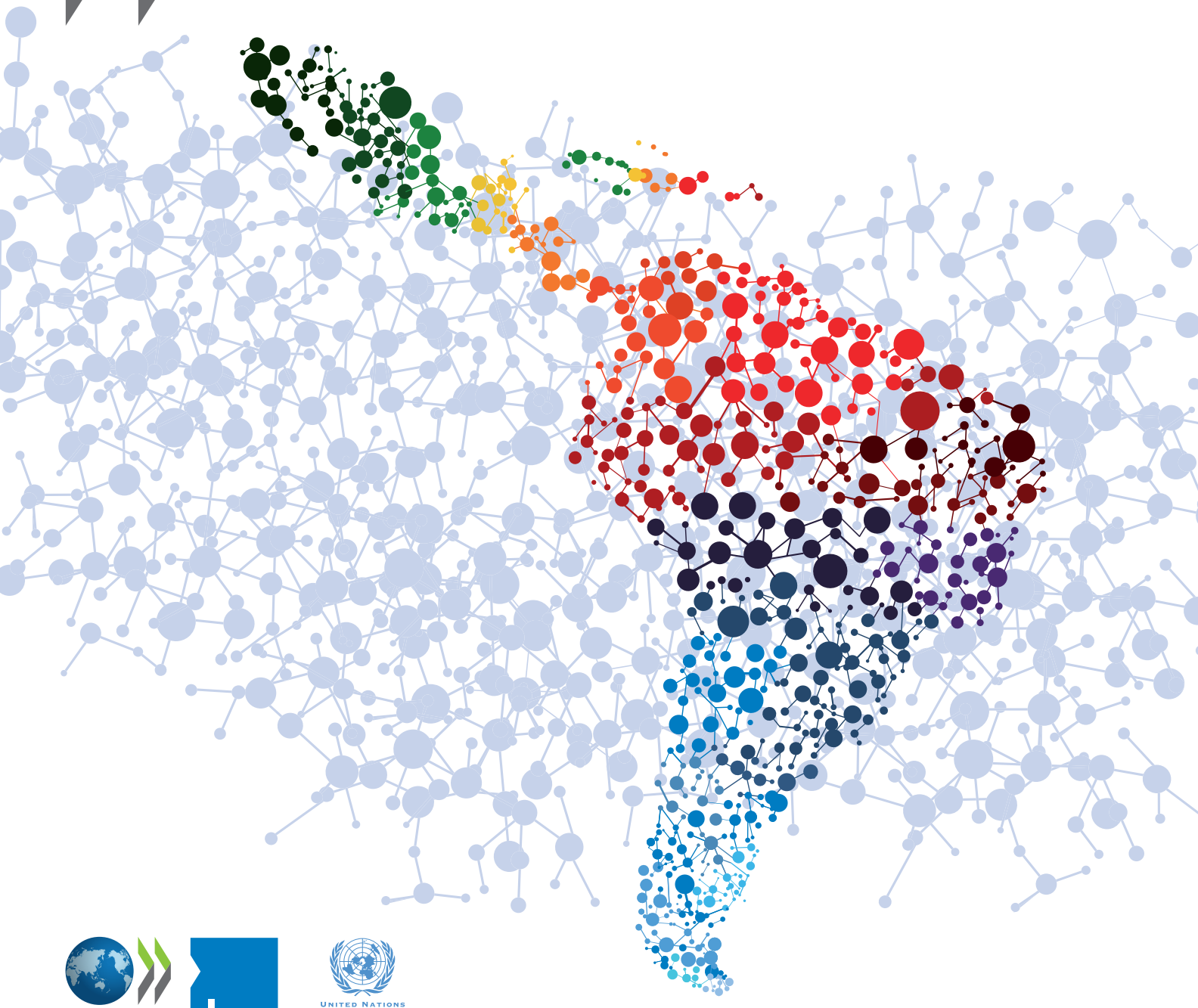
Latin American Economic Outlook 2013

SME POLICIES FOR STRUCTURAL CHANGE



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Latin American Economic Outlook 2013

SME POLICIES FOR STRUCTURAL CHANGE

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BETTER POLICIES FOR BETTER LIVES

UNITED NATIONS
ECLAC

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Preface

Latin American countries are faced with a complex economic situation caused by lower growth and the prevailing uncertainty in the global economy. Although the region has solid macroeconomic foundations to withstand possible drops in aggregate demand in the short term, the medium-term outlook is less favourable than in the previous decade. Because of more sluggish growth in external demand and volatile raw-material prices, on which Latin American economies remain over-dependent, structural weaknesses will impede higher, more inclusive economic growth in the coming years.

To meet these challenges and consolidate recent progress, especially in reducing poverty and inequalities, support must be given for a structural change to boost diversification of the economy, raise productivity and narrow the production and technology gaps. To achieve these objectives, the region's governments ought to redouble their efforts in designing and implementing more and better policies in the areas of production development, innovation, finance and education. Co-operation and economic integration among countries can also be effective tools to create the mutual learning and dynamism needed in the current context.

These questions are addressed in this publication, *Latin American Economic Outlook 2013*, which has been produced thanks to the joint efforts of the Development Centre of the Organisation for Economic Co-operation and Development (OECD) and the Economic Commission for Latin America and the Caribbean (ECLAC). The report puts forward policies aimed at making Latin American small and medium-sized enterprises (SMEs) agents of change by increasing their productivity and competitiveness and enabling them to fully utilise their potential to create good-quality jobs.

The overriding message of this report is that policies designed for SMEs – either to modernise those that exist or create new firms involved in activities with a higher added value and introducing them into the market – should keep in view that SMEs and their environment are highly diverse.

The report discusses experiences and best practices both in Latin America and the OECD and proposes specific policies to promote production linkages, regional development, access to international markets and participation in global value chains. To meet its long-term challenges, Latin America also needs to implement policies to give SMEs greater access to sources of finance, enable them to improve their skills and human resources, and promote innovation in the use of information and communication technologies.

We hope the report – presented at the 22nd Ibero-American Summit of Heads of State and Government in Cadiz – will contribute to the debate on policy options to enhance the role of Latin American SMEs.

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Acronyms and abbreviations

ANII Agencia Nacional de Investigación e Innovación en Uruguay (National Research and Innovation Agency)

APL Grupo de Trabalho Permanente para Arranjos Produtivos Locais (Brazil) Local production clusters

BANCOLDEX Banco Colombiano de Desarrollo Empresarial y Comercio Exterior (Colombian Development Bank)

BANCOMEXT Banco de Comercio Exterior de México (Mexican Foreign Trade Bank)

BICE Banco de Inversión y Comercio Exterior (Argentina) (Bank of Investment and Foreign Trade)

BMI Banco Multisectorial de Inversiones

BNA Banco de la Nación Argentina

BNDES Banco Nacional de Desarrollo Económico y Social (Brazilian Development Bank)

CASFOG Cámara Argentina de Sociedades y Fondos de Garantías (Argentine Chamber of Guarantee Societies and Funds)

CDPYMEs Centros de Desarrollo de Micro y Pequeñas Empresas en El Salvador (Small Business Development Centres)

CEFOTECA Centro de Formación de Recursos Humanos y Tecnología para la Industria del Calzado en Argentina (Footwear Industry Human Resources and Technology Centre)

CFN Corporación Financiera Nacional (Ecuador)

CGAP Consultative Group to Assist the Poor

CGS Credit guarantee scheme

CITEC Centro de Investigación del Cuero (Leather Technology Research Centre)

COCHILCO Comisión Chilena del Cobre (Chilean Copper Commission)

CODELCO Corporación Nacional del Cobre en Chile (National Copper Corporation)

COFIDE Corporación Financiera de Desarrollo de Perú

CONAMYPE Comisión Nacional de la Micro y Pequeña Empresa en El Salvador (National Micro and Small Enterprise Commission)

CONICYT Comisión Nacional de Investigación, Ciencia y Tecnología en Chile (National Research, Science and Technology Commission)

CONOCER Consejo de Normalización y Certificación de Competencia Laboral en México (Job Skills Standardisation and Certification Council)

CORFO Corporación del Fomento de la Producción en Chile (Production Development Corporation)

CRM Customer Relationship Management

CTI Science, Technology and Innovation)

DINAPYME Dirección Nacional de Artesanías, Pequeñas y Medianas Empresas (National Bureau for Crafts and SMEs)

DNI Dirección Nacional de Industrias (Uruguay) (National Industries Directorate)

ECLAC Economic Commission for Latin America and the Caribbean

EPG Public guarantee schemes

EQF European Qualifications Framework for Lifelong Learning

ERP Enterprise Resource Planning

FAMPE Fundo de Aval da Micro e Pequena Empresa (Brazil) (Guarantee Fund for Micro and Small Enterprises)

FANPYME Fondo de Apoyo para la Micro, Pequeña y Mediana Empresa (Mexico) (Support Fund for MSMEs)

FIA Fundación para la Innovación Agraria (Chile) (Foundation for Agricultural Innovation)

FIDECAP Fondo de Fomento a la Integración de Cadenas Productivas (Mexico) (Fund to Support Production Chain Integration)

FINEP Financiadora de Estudos e Projetos (Brazil) (Studies and Projects Funding Agency)

FNG Fondo Nacional de Garantías (Colombia) (National Guarantee Fund)

FOAFI Financiamiento de las Micro, Pequeñas y Medianas Empresas (Mexico) (Fund to Support Access to Finance for MSMEs)

FOGABA Fondo de Garantías de Buenos Aires (Buenos Aires Guarantee Fund)

FOGAIN Fondo de Garantía para Inversiones (Chile) (Investment Guarantee Fund)

FOGAPE Fondo de Garantía para Pequeños Empresarios (Chile) (Small-Business Entrepreneurs' Guarantee Fund)

FOMIPYME Fondo de Modernización e Innovación para la Micro, Pequeña y Mediana Empresa (Colombia) (Modernisation and Innovation Fund for MSMEs)

FONDEF Fondo de Fomento al Desarrollo Científico y Tecnológico (Chile) (Science and Technology Development Fund)

FONTEC Fondo Nacional de Desarrollo Tecnológico y Productivo (Chile) (National Technology and Production Development Fund)

GDF Global Development Finance (database)

GDP Gross domestic product

GTP APL Grupo de Trabalho Permanente para Arranjos Produtivos Locais (Brazil) (Permanent Working Group on LPCs)

ICTs Information and communication technologies

IDB Inter-American Development Bank

IFS International Financial Statistics

ILO International Labour Organization

IMF International Monetary Fund

INET Instituto Nacional de Educación Tecnológica (Argentina) (National Institute of Technological Education in Argentina)

INFOTEP Instituto Nacional de Formación Técnica y Profesional (Dominican Republic) (National Institute of Technical and Vocational Training)

INTA Instituto Nacional de Tecnología Agropecuaria (Argentina) (National Agricultural Technology Institute)

INTI Instituto Nacional de Tecnología Industrial (Argentina) (National Industrial Technology Institute)

ISP Internet Service Provider

ITU International Telecommunication Union

KMS Knowledge Management System

LAC Latin America and the Caribbean

MDIC Ministério do Desenvolvimento, Indústria e Comércio Exterior (Brazil) (Ministry of Development, Industry and Foreign Trade)

MGS Mutual guarantee scheme

MIEM Ministerio de Industria, Energía y Minería (Uruguay) (Ministry of Industry, Energy and Mining)

MSMEs Micro, small and medium-sized enterprises

NAFIN Nacional Financiera (Mexico)

NIS National innovation system

OAS Organization of American States

OECD Organisation for Economic Co-operation and Development

OEDE Observatorio sobre Empleo y Dinámica Empresarial (Argentina) Employment and Business Dynamics Observatory

OTIC Organismos Técnicos Intermedios de Capacitación (Technical training intermediary agency)

PEMEX Petróleos Mexicanos

PFIs Public financial institutions

PISA Programme for International Student Assessment

PROFO Proyectos Asociativos de Fomento (Chile) (Development Partnership Projects)

PROIMPE Programa de Estímulo ao Uso de Tecnologia da Informação em Micro e Pequenas Empresas (Brazil) (Programme to Stimulate IT Use in Micro and Small Enterprises)

R&D Research and Development

SEBRAE Serviço Brasileiro de Apoio às Micro e Pequenas Empresas (Brazilian Micro and Small Enterprise Support Service)

SENA Servicio Nacional de Aprendizaje (Colombia) (National Learning Service)

SENAI Serviço Nacional de Aprendizagem Industrial (Brazil) (National Industrial Learning Service)

SENATI Servicio Nacional de Adiestramiento en Trabajo Industrial (Peru) (National Industrial Training Service

SENCE Servicio Nacional de Capacitación y Empleo (Chile) (National Training and Employment Service)

SEPYME Secretaría de la Pequeña y Mediana Empresa y Desarrollo Regional (Argentina) (Secretariat of Small and Medium Enterprises and Regional Development)

SERCOTEC Servicio de Cooperación Técnica (Chile) (Technical Co-operation Service)

SMEs Small and medium-sized enterprises

SPYME Subsecretaría para la Pequeña y Mediana Empresa (Mexico) (Undersecretariat for SMEs)

TEVTIs Technical education and vocational training institutions

UTN FRA Universidad Tecnológica Nacional, Facultad Regional Avellaneda (Avellaneda Regional Faculty of the National Technological University)

UTU Universidad del Trabajo del Uruguay (Uruguayan University of Work)

Executive summary

Latin America will have relatively strong growth in the short term, and if necessary there is room for countercyclical action. However, the picture for the medium term is more complex. A decline in external demand will expose the limitations of the current growth pattern, which is based on low added value and on exports of natural resources in many countries in the region. Latin American governments must act now, in line with their short-term macroeconomic policies, to strengthen productive structures and overcome the problems of structural heterogeneity through diversification and development. Latin American small and medium-sized enterprises (SMEs) can become catalysts for this structural change and productivity growth. An effort of this nature requires a new approach to public policies for SMEs. For these policies to be effective, there must be greater coherence and co-ordination among infrastructure policies, the provision of services, and sectoral policies. In particular, policies in the areas of finance, skills and training, systems for innovation and the dissemination of technology, and productive linkage policies can help SMEs overcome their obstacles. Policies must be designed in a way that takes into consideration the specificities of sectors, institutions and regions. They must also consider the heterogeneity of all SMEs, since different firms have very different development needs and potential. Many of these tasks require institutions that are able to lead complex processes while being flexible to adapt to the changing requirements of the productive sector.

The economic outlook for Latin America remains relatively positive, but is subject to uncertainty and volatility because of the wider external context.

After nearly a decade of continuous expansion, interrupted only in 2009, the most recent projections indicate growth of 3.2% in 2012 and 4.0% in 2013. These figures indicate an economic slowdown relative to recent performance, which would be accompanied by a decline in inflation. In the short term, this scenario would mean the economy is likely to perform well compared to the rest of the world, providing continued economic stability in the region. In the global economy, sluggish growth is expected in 2012 and 2013 due to fiscal problems, financial fragility and high unemployment in the euro area. Additionally, although the US economy is seeing higher growth than the euro area, economic consolidation is still weak and there remains a risk of a sharp contraction in fiscal strength in 2013. In addition to the slow growth of developed countries there will be a slight slowdown in the Chinese and Indian economies, which have been key drivers of global growth, especially in Latin America.

In the short term, trade will be hit hardest, but if necessary there is room for fiscal and monetary policies to soften the blow.

The impact will vary from country to country, depending on how diversified its export products and destinations are and the size and dynamism of the domestic market. In turn, a decline in international prices of certain raw materials would affect many countries in the region that export such materials, with their trade balance deteriorating and fiscal revenue dropping, although it would provide relief for net importers of food and fuel, especially Central American and Caribbean countries. While there is risk that a reversal in capital inflows might hurt the financial sector, the region has substantially increased its international reserves, which account for around 16% of gross domestic product (GDP) on average. Many Latin American countries have relatively low external debt, their debt is relatively low risk (short-term external debt made up around 15% of the region's total debt) and they have good access to contingent lines of international liquidity. These factors should allow most countries to prevent a contraction in external financing from contributing to an economic downturn. Moreover, good macroeconomic performance and prudent management of macroeconomic policies in recent years have put the region in a strong position. For instance, if aggregate demand falls there is scope for fiscal stimulus thanks to relatively low government debt (39% of GDP on average) and generally well-balanced budgets (-1.8% of GDP on average). Also, in terms of monetary policy, inflation forecasts remain well grounded and the risks of overheating appear to be under control, thanks in particular to macroprudential and regulatory measures adopted by various countries in recent years. Therefore, there is scope for introducing an expansive policy if the external situation makes it necessary.

However, there are significant macroeconomic challenges that could affect economic growth in the medium term and sustain trends of low productivity, scant diversification of production and persistent structural heterogeneity.

There is great uncertainty regarding the next few years, as OECD countries deal with structural problems, since the institutional reforms and changes required are huge in many cases and will take a long time to implement. This uncertainty combined with the low interest rates that are expected in more advanced economies could cause highly volatile capital flows and raw-material prices, possibly causing exchange-rate fluctuations. This could damage the competitiveness of certain tradeable-goods sectors in the region, hinder the diversification of production and condition the capacity for

future growth. Higher capital inflows in the region, as has already been observed in recent years, could lead to unsustainable rises in the prices of certain assets or excessive credit expansion, causing macroeconomic imbalances that would significantly limit economic growth. Falling raw-material prices following the slowdown in Asian growth and the change in its composition could shrink the macroeconomic space available to finance measures to address structural weaknesses in the Latin American economies. This could, for example, happen through investment in infrastructure, which could increase the competitiveness of tradeable-goods sectors. Such a scenario would expose the limitations of Latin America's production structure and the current growth pattern, which in many countries in the region is based on exports of natural resources.

Therefore, coherence must be ensured between short-term stability-oriented policies and structural measures to enhance potential growth.

Greater regional integration is an effective response to sluggish growth in demand from developed countries. Better integration would also enable the region to develop dynamic competitive advantages in non-traditional sectors and activities and increase the diversification of its exports. Economic policy has various tools to protect against the risks of currency appreciation and volatile prices of raw materials. Depending on the causes and nature of the currency appreciations, these tools, which include exchange-rate interventions, macroprudential regulations and fiscal policy, can make the rest of the tradeable-goods sector more competitive. Investment could be channelled into infrastructure, innovation and human capital, which would help transform and diversify production. Institutions and fiscal instruments such as stabilisation funds and fiscal rules can be useful for stemming currency fluctuations and creating sustainable fiscal space for additional investment.

A more integrated approach to public policy to empower SMEs as agents of structural change

SMEs have a key role to play in enhancing Latin America's potential growth. But SMEs are highly heterogeneous in terms of access to markets, technologies and human capital, as well as their linkages with other firms, and these factors affect their productivity, export capacity and potential growth.

On the one hand, SMEs are a fundamental building-block of the productive structure, accounting for around 99% of businesses and employing around 67% of employees. But on the other hand, they contribute relatively little to GDP, which reflects their low levels of productivity. For instance, large companies in the region reach levels of productivity which are as much as 33 times greater than those of microenterprises (*vs.* 2.4 times in OECD countries) and are up to 6 times more productive than small firms (*vs.* 1.6 times in OECD countries). Furthermore, levels of internationalisation for SMEs in Latin America are significantly lower than in Europe and East Asia. For instance, while only around 10% of Latin American SMEs engage in export activities, 40% of European SMEs do so. Within this productive context, well-designed co-ordination policies are essential to ensuring that production is diversified, which is one of the region's major structural challenges. Latin American SMEs are highly heterogeneous, ranging from sole traders running informal microenterprises to highly efficient innovative companies with the capacity to export products. If a set of coherent, co-ordinated policies is introduced, SMEs could contribute to structural change by helping to improve productivity, complementing the economies of scale of large firms fostering the creation of production clusters (and contributing to social inclusion).

Public policies should support the development of SMEs in order to close the gaps with larger enterprises, with the objective of supporting SMEs as catalysts of structural change.

To accomplish this, SME policies should consider six relevant dimensions:

1) First, in addition to their small size, a frequent problem SMEs confront is their inability to achieve economies of scale or the necessary specialisation. Because these firms are isolated, policies are often more effective when: *a)* they focus on the full production cluster or value chain into which SMEs are integrated; *b)* the policy intervention is adjusted to the type of company, taking into account its different policy needs; differentiating, for instance, between microenterprises operating in the local market and an incipient cluster of competitive companies that exports products. There are no blanket solutions, and interventions must be specifically adapted to the production chain, cluster or region.

2) Second, given the significant interactions and complementarities among policies, a high level of co-ordination is needed among sectoral policies, including infrastructure policy and the provision of services to remove the bottlenecks affecting the productive development of SMEs and their sphere of influence. Furthermore, it is of critical importance to facilitate the integration of these policies into other overarching policy areas such as industrial policy and innovation policy, as well as the national development strategy.

3) Third, in addition to these improvements to horizontal co-ordination, greater vertical co-ordination is also necessary given the role that local and regional actors play in policies that support production clusters and chains at the sub-national level. For example, instruments should be operated in a decentralised manner to ensure they reach the intended beneficiaries throughout the country.

4) Fourth, given the long maturation period, policies must have specific objectives that are sustained over time. More than being intensive in financial resources, these policies must provide specific inputs and services with monitoring and assessment mechanisms so they can be tweaked and fine-tuned accordingly. For instance, co-ordination policy initiatives should be accompanied by a business plan with a clear timeframe. Such a plan requires a regulatory framework, including a monitoring system, a set of regulations and a favourable macroeconomic environment.

5) Fifth, better co-ordination is needed among economic actors. With financial restrictions limiting the scope of public policy and a need for investment that is often beyond the capacities of individual companies, incorporating associative actions into programmes for SMEs provides an opportunity to reduce transaction costs. The fixed cost of support activities will thus be shared among a larger number of beneficiaries, boosting efficiency and coverage. Creating opportunities for co-operation among firms stimulates competitive advantages and externalities that will help consolidate and drive forward business modernisation. The main objectives of these partnership programmes to support SMEs are: *a)* to distribute information on markets and technologies; *b)* to adopt new techniques and technologies; *c)* to find and develop processes for the exchange and complementing of resources, knowledge and skills; *d)* to build up trust so actors will come together and engage in dialogue.

6) Finally, the integration of production clusters into global value chains (GVCs) presents opportunities for SMEs. The global production structure has moved towards internationally integrated production systems. This segmentation of the

production process can provide SMEs in the region with new opportunities to access new markets, especially those firms that operate in small domestic markets. The integration of clusters and business networks into GVCs can help SMEs diversify exports, create new jobs and acquire new technological capacities in accordance with international best practices, thereby strengthening competitiveness. However, this integration into GVCs also presents challenges. The distributional effects and spillovers to domestic economies are not automatically guaranteed. Whether SMEs seek to improve their product, production process or function in the chain depends on several factors such as governance of the chain and the specific characteristics of the sector. Despite the challenges these strategies present, governments, non-governmental organisations (NGOs) and transnational enterprises in the region are expanding their activities and programmes to support the inclusion of the region's SMEs in GVCs through various policies, such as supplier development programmes, better access to information on external markets and existing chains in the country, as well as training programmes within universities and businesses to provide specific skills required at different stages of the production within these chains.

The above considerations combine elements of industrial policy and regional development policy and define the main characteristics of an SME policy; however, there are also synergies with other policy areas.

Three areas of intervention are particularly useful for removing bottlenecks for the development of SMEs in Latin America:

- access to finance
- innovation and technology policies, especially access to information and communication technologies (ICTs)
- the development of skills and human capital

Reducing the financing gap for SMEs: new instruments and public policy

Access to finance is one of the principal barriers limiting the development of SMEs.

SMEs in the region receive only 12% of the total credit in the region, while in OECD countries SMEs are the recipients of 25% of total credit. One-third of small businesses in Latin America identify access to finance as a serious restriction. Long-term financing is also more expensive for SMEs, with high interest rates when compared to large enterprises, sometimes doubling the capital costs faced by the latter. This difference in cost is due in part to the transition of the region's banking sector from a relational scheme into multi-service banks. The transition of the banking sector has led to a fall in net interest margins in Latin America to 8.6%, which is still considerably higher than the OECD area's figure of 2.7%, revealing problems in the region's financial structure and level of competition. While few small Latin American enterprises receive financing, the level of approval for loans to SMEs is relatively high (around 80% of applications in Brazil and Argentina are successful, for example). In short, the lack of financing in the region is not only a problem of insufficient supply or the availability of resources, but it also includes issues related to demand and self-exclusion. Other elements, including the ongoing asymmetry of information between the financial sector and SMEs, as well as the lack of collateral, show that new instruments are needed to provide innovative solutions to businesses' requirements according to their sector of activity, stage of development or strategic potential.

In order to fill the gap in long-term financing provided by commercial banks, public financial institutions (PFI) are increasing their support to SMEs through various instruments, such as the provision of guarantees, long-term credit lines and other instruments adapted to the needs of SMEs.

The participation of PFIs in Latin American banking systems is considerable, amounting to 23% of the loan portfolio in 2009 to the tune of USD 600 billion thanks to sustained annual growth of 15% in the 2000s. Furthermore, this has led to increased coverage by national guarantee systems. An interesting development is the growing supply of financial services provided by development banks that, beyond loans and guarantees, include products such as credit cards, electronic transaction systems and factoring. These services provide specific benefits to SMEs, in particular for those companies integrated with GVCs, by promoting increased liquidity, improving cash flow and reducing the risk of default. To facilitate the creation of new enterprises and improve access to credit for nascent businesses that encounter financing difficulties due to their lack of credit history, governments in the region have designed specific initiatives for the distinct stages of a business's development (incubation, initiation, growth and consolidation). Programmes such as Financiadora de Estudios y Proyectos (FINEP) in Brazil, the entrepreneur programme Nacional Financiera (NAFIN) in Mexico, and the business angels network from Corporación de Fomento de la Producción (CORFO) in Chile combine different technical support instruments and actors (incubators, seed capital, angel investors and risk capital) in search of new ways to promote long-term investment.

Enhancing SME competitiveness through the incorporation of knowledge and the use of new technologies

Within the innovative sphere, SMEs encounter significant barriers and demonstrate poor growth, which is aggravated by barriers in other areas.

In part this is due to the smaller size and lesser possibility of the productive use of technology. Given the high risks associated with innovative activities, SMEs need to associate and link more with other companies in order to innovate. In addition, other factors exist that block the innovative work of firms in Latin America, relating to the difficulties of credit access and the shortage of qualified personnel. For their part, Latin American companies have few linkages with the respective agents of national innovation systems, which illustrates the importance of co-ordinating different sectoral policies to boost SMEs' systemic innovation capacity. There exist several challenges in designing public policies that foster innovation and the introduction of technology in the region, particularly in the areas of: infrastructure; investment in basic laboratories; human resources training to exploit new technology; and the establishment of specific programmes to promote business innovation in the SME segment.

More intensive use of ICTs can help SMEs augment their competitiveness, lower the costs of entering international markets and improve management.

However, while access to basic ICT technology such as fixed and mobile telephones is at similar levels for SMEs and large enterprises in Latin America, there persist significant gaps between more advanced technologies, such as possessing websites or an intranet. For example, in Argentina 49% of small businesses have a website, in comparison to 83% of large enterprises. These gaps are even larger in Brazil, Chile and Colombia. Broadband access is critical to facilitate the efficient and productive use of ICTs, but the penetration

of fixed broadband access in the region is far below that of more developed nations. Therefore, there is significant room for creating policies aimed at improving broadband infrastructure, accessibility and the quality of service. Although most countries in the region have a digital agenda within their technology diffusion policies, only 11 countries in the region include a component of ICTs in their productive sectors.

Improving skills in the workforce and the connection between the education system and the productive sector

The region's lag in education and skills represents one of the major challenges that SMEs are faced with.

Low levels of training among the workforce and managers, the problems associated with the school dropout rate and the poor results achieved in the area of quality, as reflected in PISA (Programme for International Student Assessment) assessments, constitute a major barrier to the development and improved productivity of SMEs Additionally, in this region there are big differences between the skills required by the production sector and the training provided by the education system. Indeed, almost 37% of companies in the region believe finding a workforce with the necessary training is one of their main obstacles, a figure that is higher than the global average and the average for other developing regions.

The difficulty in finding an adequately trained workforce affects SMEs in different ways, due to their heterogeneity and the specificity of required skills.

The "skills gap" has a major impact on SMEs. How difficult it is to find the required workforce depends on several factors, including technological complexity, insertion into GVCs or export orientation. The type of capacities demanded by the SMEs in the region can be arranged in two groups: technical skills, which are closely linked to technological subjects and jobs in the new economy; and non-cognitive "soft skills", where the region's entrepreneurs face more deficiencies. These "soft skills" include aspects such as critical thinking, teamwork, problem-solving and change management, oral and written communication, responsibility at work, or the capacity to adapt to new environments.

To overcome these limitations, better co-ordination is needed between the education system and the productive sector.

Training deficiencies in the region pose a great challenge to SMEs, limiting their development and preventing productivity gains. Public policies are needed to help overcome these barriers.

1) First, one of the main recommendations for public policy must be to develop and strengthen the connection between the education system, especially in technical and vocational training, and the productive sector. This requires smooth dialogue between entrepreneurs, workers and instructors to develop mechanisms so that qualification needs can be defined jointly and the skills demanded by the job market can be anticipated. Brazil's existing vocational training system is an excellent example of this type of strategy, though there are other examples in the region. Furthermore, countries in the region should promote training paths that combine classroom and workplace training which continue over the course of a worker's adult life – much like the successful German dual-model system.

2) Second, the syllabus for technical and vocational training must be broadened and strengthened. Certain skills need bolstering, especially "soft skills" – including generic, cross-cutting skills – in the curriculum, since these skills will enable workers to be effectively integrated into employment. Moreover, these skills allow workers to adapt to the changing demands of the job market and to work in a professional environment in which technology is increasingly being used. Also it is important to bolster the professionalisation of management and senior executives in SMEs by focusing more on training for this sector.

3) Finally, it is necessary to establish or strengthen the institutional structure, which provides incentives for SMEs to provide in-house training for their staff in conjunction with external training programmes. Reference frameworks are needed to better define and compare qualifications and accreditation systems for the recognition of practical training. SME networks are therefore needed to spark synergies and exploit economies of scale, develop tax incentives for training and increase the use of ICTs in training programmes.

CHAPTER ONE

Macroeconomic overview

This chapter analyses the main macroeconomic trends in Latin America for the next few years. In the short term, Latin America will continue to witness moderate economic growth amid strong uncertainty worldwide. Countries in the region have some fiscal and monetary space they can use to deal with falls in aggregate demand. But current forecasts suggest that developed countries are on the verge of a long period of sluggish growth. In response, countries in the region would do well to make sure their policies to stabilise the economy are consistent with the actions they need to take to boost medium-term growth while transforming the production structure. Region-wide, greater trade integration could be an effective response to poor demand from developed countries and would at the same time allow non-traditional sectors and activities to boost their competitive advantages. Special attention should be paid to currency fluctuations, which in several countries could threaten the competitiveness of goods that are not linked to commodities. Identifying the causes of these fluctuations and using the appropriate instruments to mitigate them is one of the challenges faced by current macroeconomic policies.

Introduction

This chapter presents the macroeconomic outlook for Latin America, addressing the short-term future as well as more structural aspects. The chapter is composed of five sections. First, it briefly examines the impact that the prevailing situation of sluggish growth, high uncertainty and volatility in the global economy is having on Latin America and the Caribbean's economic growth, inflation, employment and wages. The next section analyses how prepared the region is to deal with trade shocks and financial shocks from other parts of the world in the short term. The third section looks at the space for fiscal and monetary policy in the region to act counter-cyclically and the specific tools countries can use. Next, the chapter considers the medium-term outlook in view of the forecasts of weak external demand and discusses its effects on the region. Finally, the chapter concludes with a brief recap before proposing the main challenge for Latin America and the Caribbean, which is how to sustain economic growth amid the poor, uncertain external outlook.

The economic situation in Latin America and the international environment

Moderate growth will continue in the region in 2012 amid high uncertainty and volatility, primarily from the external sector. According to the latest growth projections, the region's gross domestic product (GDP) will grow by around 3.2% in 2012 and 4.0% in 2013 (ECLAC, 2012a). These are good figures for the region compared to previous years and especially when compared to projections for more developed economies, where far more sluggish growth is expected. We must remember these figures are highly uncertain and subject to complex risks that make it hard to evaluate and quantify what impact they will have on the region's economies.

Latin America and the Caribbean will grow around 3.2% in 2012 and 4.0% in 2013.

Latin America and the Caribbean will record growth of 3.2% in 2012 and 4.0% in 2013.There are signs that growth and inflation are slowing in Latin America and the Caribbean, despite the job market remaining strong. In the first quarter of 2012, the slowdown in GDP was less severe than in previous quarters (Table 1.1), helped by domestic demand. Generally, private consumption continued to expand, and it accounts for most of the growth in the region's GDP in 2011. Private consumption was helped by improving job markets, with more and better-quality new jobs and higher wages, and by sustained credit growth to the private sector. In the early months of 2012 inflation fell in most countries, continuing the downward trend that began in the last quarter of 2011. In July 2012, average year-on-year inflation in Latin America and the Caribbean stood at 5.5%, down from 6.7% and 7.0% respectively in March and December 2011.

Falling international commodity prices caused a slowdown in the growth of exports in the first quarter of 2012, although this was offset somewhat by remittances and tourism. This slowdown began in the third quarter of 2011 in most countries. The year-on-year rate of change in exports for the region fell from 29.3% in the second quarter of 2011 to 10.4% in the first quarter of 2012. Exports to the European Union (EU) have fallen sharply since the start of 2011.

Table 1.1. **Indicators of economic activity in Latin America and the Caribbean[a], 2011-12**
(percentage changes compared to same quarter the previous year)

	2011				2012	
	I	II	III	IV	I	II
Argentina	9.9	9.1	9.3	7.3	5.2	0.0[b]
Bolivia (Plur. State of)	5.6	4.2	5.4	5.5	5.1	5.1[c]
Brazil[d]	4.2	3.3	2.1	1.4	0.8	0.5
Chile	9.9	6.3	3.7	4.5	5.3	5.5[b]
Colombia[d]	5.0	5.1	7.5	6.1	4.7	4.9
Costa Rica	1.9	3.6	4.6	5.4	7.9	5.7[b]
Dominican Republic[d]	4.3	3.6	4.6	5.1	3.8	3.8
Ecuador[d]	8.8	8.5	7.8	6.1	4.8	-
El Salvador	4.4	2.0	4.0	0.6	1.8	0.5[b]
Guatemala	4.8	4.1	3.3	4.6	3.3	3.6[b]
Honduras	5.8	5.1	4.8	6.7	5.3	5.0[b]
Mexico	4.4	3.1	4.3	3.9	4.5	4.1
Nicaragua	8.5	7.8	6.5	4.9	5.8	4.6[b]
Panama	5.9	8.5	7.0	9.8	9.4	9.6[b]
Paraguay	7.0	4.6	2.8	1.9	-2.6	-3.4[c]
Peru	8.6	6.9	6.6	5.6	6.1	6.1[b]
Uruguay[d]	6.7	5.1	7.7	3.5	4.2	3.8
Venezuela (Bol. Rep. of)[d]	4.8	2.6	4.4	4.9	5.8	5.4
Latin America[e]	5.7	4.3	4.3	3.6	3.6	2.4

Notes:
a) Percentage change in economic activity indices. Quarterly GDP is only used for countries without monthly activity indicators. For Mexico, although the country has an activity index, GDP was used.
b) April-June 2012 average compared to the same period in 2011.
c) April-May 2012 average compared to the same period in 2011.
d) Percentage change in GDP compared to same quarter the previous year.
e) Region-wide weighted average.
Source: ECLAC (2012a), *Economic Survey of Latin America and the Caribbean 2011-2012.*

The external outlook across the globe for 2012-13 will be marked by slow growth in the global economy, which is likely to continue until several developed countries end their high-debt and unemployment problems and until emerging countries can rebalance growth towards more consumption, thus raising global demand. External, real and financial volatility will drag on. Because of their low growth and ongoing fiscal constraints, some developed countries are expected to face more problems with the lack of confidence in the sustainability of their sovereign debt. Although this is likely to lead to financial, monetary and fiscal measures to resolve the liquidity and solvency problems, uncertainty will persist.

In 2012, the main assumptions of the most likely scenario are: *i)* the US economy will still see moderate, variable growth; *ii)* euro-area countries will continue seeing low GDP growth, or even negative growth in some countries, but the sovereign-debt problems will not spark a global financial crisis; *iii)* the Chinese and Indian economies will slow down, but mainly due cyclical reasons, with growth remaining higher than in Latin America and the Caribbean.

The impact of the global scenario for Latin America and the Caribbean will differ by country and depend largely on their export structures by markets and products.

As discussed below, the impact that the international economic situation will have on the region will vary from country to country, depending largely on their export structures by markets and products. While Mexico and some Central American and Caribbean countries will benefit from the moderate growth in the US economy, growth in countries that specialise in producing and exporting commodities will depend more on developments in the Asian economies, which are the main destinations for these kinds of exports.

In 2013, slow growth will translate into continued sluggishness in the global economy. Euro-area countries will remain affected by households reducing their debts, banks restricting their lending as they reorganise their portfolios and increase capital, sluggish growth in domestic demand resulting from unemployment and pessimistic expectations, and low or negative fiscal impulses. This weak growth is likely to continue for a few years, as the experience of other developed countries has shown that recovering from similar events takes at least three to four years. In the United States, the main risk for 2013 is likely to be a slowdown in growth, depending on how the country tackles the debt problem and the impending automatic spending cuts in late 2012. In China, the impact on overall demand will depend on how swiftly it changes its spending patterns from heavy investment to expansion of domestic consumption. Early estimates suggest that although consumers have seen their real income go up in recent years, the multiplier effect of growth in consumption is not yet enough to offset the projected drop in investment. This drop was caused by excess idle capacity following several years of very heavy investment (close to 50% of GDP). Several studies suggest that not only a reduction in Chinese economic growth but especially a change in its composition (*e.g.* reducing the rate of investment) would have a high spillover effect on demand for imports from the rest of the world and especially on international prices of certain metals. For instance, copper-producing countries are more exposed to lower investment in Chinese infrastructure than countries that export food and agricultural raw materials.[1] Consequently, risks to growth originating in China are also on the downside.

Short-term impacts

To assess how prepared Latin America is to face these risks one must separate the potential impact by country according to its level of exposure and its resilience or "defences" in terms of its economic structure and space for macroeconomic policy. Next, the region's exposure to trade and financial shocks and the effectiveness of macroeconomic resilience measures and the space available for counter-cyclical policy are considered.

Two useful indicators for a country's exposure to external risk are: the exports-to-GDP ratio and the contribution of exports to the growth of internal demand.

From a trade perspective, the level of exposure and the possible lines of defence vary from country to country in the region. The exports-to-GDP ratio and the contribution of exports to domestic income growth in current dollars are two indicators that can be used to analyse exposure to this risk. Remittances from Latin American migrants working in developing countries are another indicator of the transmission of growth from developed to developing countries. The differences in these indicators reflect different situations (Table 1.2). On the one hand, in some countries with large domestic markets, such as Brazil and to some extent Colombia, external demand is less important, with exports providing less than 20% of GDP in 2011 and less than 20% of domestic income growth for 2000-10. Remittances have no significant macroeconomic weight in these countries. Several countries are more exposed to risk due to the relative size of external demand (in smaller, more open economies) and/or remittances (especially in Central America and the Caribbean).

Table 1.2. **Latin America and the Caribbean: indicators of exposure and resilience to shocks to the current account**

	Exposure indicators			Indicators of export diversification	
Country	Exports (% GDP)	Contribution of exports to nominal GDP growth[a] (%)	Remittances (% GDP)	Product concentration index[b]	Market concentration index[b]
Argentina	21.7	49.0	0.2	0.0	0.1
Bolivia (Plur. State of))	41.2	56.2	5.5	0.2	0.2
Brazil	11.2	10.8	0.2	0.0	0.1
Chile	38.7	41.3	0.0	0.2	0.1
Colombia	15.7	15.6	1.4	0.2	0.2
Costa Rica	38.1	35.2	1.5	0.1	0.2
Dominican Republic	22.3	11.6	6.5	0.0	0.3
Ecuador	32.9	36.5	4.4	0.3	0.2
El Salvador	26.2	26.8	16.3	0.1	0.3
Guatemala	25.1	22.5	10.3	0.4	0.2
Honduras	43.9	36.6	17.2	0.1	0.3
Jamaica	25.6	70.8	14.1	0.2	0.3
Mexico	30.3	34.4	2.1	0.0	0.6
Nicaragua	41.3	72.7	12.6	0.1	0.1
Panama	65.2	59.3	0.9	0.1	0.1
Paraguay	57.1	69.2	3.7	0.2	0.1
Peru	25.1	30.1	1.6	0.1	0.1
Uruguay	26.9	38.5	0.7	0.1	0.1
Venezuela (Bol. Rep. of)	28.7	31.4	0.0	0.5	0.3
Average	**32.5**	**39.4**	**5.2**	**0.1**	**0.2**

Notes: The figures refer to 2011 data, or in some cases 2010 or 2009 for concentration indices.
a) This indicator is calculated as the percentage change in GDP in current dollars for the period 2000-10 versus the percentage change in exports in nominal dollars.
b) Both concentration indices are Herfindahl-Hirschman indices, which can range from 0 to 1. Indices close to 0 indicate greater diversification, while those close to 1 indicate greater concentration. The original data include re-exports and refer only to goods.
Source: Based on ECLAC's SIGCI databases and the World Bank's 2012 *World Development Indicators*.

Diversifying export products or destinations stands out among the economies' forms of structural resilience against shocks to external demand. The more diversified a country's exports are, the more flexibility it has to stand up to external shocks. But given the current plight, it could be easier to redirect exports of standardised goods, such as raw materials, than adapted or manufactured goods, depending on the traits of the target market. The impact of real external shocks on countries in the region depends more on how diversified each country's exports are than on its openness to trade. Analysis of a broader set of emerging and developing countries delivers similar results. When developing and emerging countries' economies were recovering from the 2008-09 global crisis, a high concentration of exports to high-income countries had a negative effect, while openness to trade positively impacted growth (Box 1.1). External vulnerability, therefore, is a multidimensional concept that must be analysed on a case-by-case basis. Developments in the level of exposure and resilience reflect the progress the vast majority of countries have made in recent decades and the still relatively concentrated structure of exports, which amplify external shocks (OECD, 2010).

Fluctuations in the prices of raw materials, meanwhile, affect external accounts; in the economies of countries that are more specialised in producing and exporting natural resources they also affect their fiscal accounts. In several countries in the region, this income makes up a notable percentage of total tax revenues, either as revenue from public enterprises that are included in the fiscal accounts or that transfer monies to the treasury (such as the Mexican state oil firm PEMEX or the Chilean state copper firm CODELCO), or through royalties and taxes on corporate profits in the sector (such as in the Peruvian mining industry).[2] A drop in the price of raw materials diminishes these countries' tax revenue, reducing their response capacity. Turning to external accounts, if the prices of raw materials fall and the terms of trade deteriorate, export income is hit, damaging the trade balance. In Central America, the reverse is usually true. Since the area is a net importer of food and fuel, a fall in world prices of these goods benefits the countries' terms of trade. However, since several Central American countries have schemes to subsidise power generation, a rise in world energy prices would negatively affect their fiscal balances. In the Caribbean, the effect is rather mixed, with some countries more specialised in producing and exporting natural resources while others are net importers.

The region's financial situation improved significantly during the first decade of this century, and it was not largely altered by the 2008/09 financial crisis.

A second important international transmission channel is the financial one. Looking at the region's finances, the overall situation in the region has improved substantially over the past decade, with the 2008-09 crisis doing little to abate this progress. In 2010, average external debt in the region fell to just 1.2 percentage points of GDP above the pre-2009 figure. Only in Jamaica and Nicaragua was external debt much higher than in 2008, and in several countries the 2010 figure was lower (Table 1.3). Private-sector debt showed similar trends. While the region has continued to integrate into global financial markets (assets and liabilities with the rest of the world), the private sector has brought down its net external debt (IDB, 2012). The region has maintained access to international financial markets while keeping country risk indicators relatively low. Looking at capital flows, current account balances have deteriorated slightly compared to the period 2003-08, falling by just under 2 percentage points of GDP in 2011. However, at present the balances of most countries in the region, especially those integrated into international

financial markets and therefore prone to changes in global risk appetite, do not seem to be too negative or especially vulnerable to a sudden stop in capital flows.

Several factors could lower the risk of disruptions in international capital markets causing a sudden stop and financing problems. This section emphasises aspects of the national balance sheet, such as the characteristics of the composition of external liabilities and the availability of liquid assets. International reserves remain high as a percentage of GDP and of short-term external debt. At the end of 2011, international reserves were one percentage point of GDP higher than at the end of 2008. Short-term debt represents only a small amount (about 15%) of total debt. Recent figures show that reserves exceed 100% of short-term debt in all countries. Though there are differences among countries, both indicators show that most countries should be able to cope with short-term external financing problems. In the international context, the expansion of contingent lines of credit and of currency swaps among central banks helps mitigate the associated risks.

Table 1.3. **Indicators of exposure and resilience to capital account shocks in Latin America and the Caribbean**

	External debt (% GNI)[a]			Current account balance (% GDP)				Resistance indicators	
Country	2008	2010	Difference	2003-08	2011	Difference	Reserves (% GDP)	Short-term external debt (% total debt)	Short-term debt (% reserves)
Argentina	37.2	36.1	-1.1	3.0	-0.5	-3.5	10.3	27.4	67.1
Bolivia (Plur. State of)	34.3	27.8	-6.4	7.3	2.2	-5.1	52.4	2.0	1.1
Brazil	16.2	16.9	0.7	0.6	-2.1	-2.7	14.2	18.9	22.7
Chile	41.5	45.9	4.4	1.4	-1.3	-2.7	16.9	30.0	93.0
Colombia	19.8	22.8	3.0	-1.8	-2.8	-1.1	10.2	13.0	29.2
Costa Rica	31.8	26.8	-5.0	-5.7	-5.2	0.5	11.9	27.5	52.5
Dominican Republic	23.2	26.2	3.0	-1.7	-7.9	-6.2	6.6	14.9	55.6
Ecuador	32.7	23.1	-9.7	1.4	-0.3	-1.7	4.6	2.5	14.1
El Salvador	49.1	53.2	4.0	-5.0	-5.9	-0.9	11.1	10.0	38.1
Guatemala	38.7	35.9	-2.8	-4.8	-2.8	1.9	13.4	11.1	26.8
Honduras	25.9	28.2	2.3	-7.6	-8.7	-1.1	16.7	9.6	14.7
Jamaica	76.2	104.2	28.0	-11.4	-9.9	1.5	13.4	8.5	47.2
Mexico	17.3	19.5	2.2	-0.9	-0.8	0.1	12.3	19.5	32.4
Nicaragua	68.8	76.9	8.1	-16.7	-17.9	-1.2	23.5	14.6	38.7
Panama	44.7	45.8	1.1	-6.5	-12.7	-6.3	7.4	0.0	0.0
Paraguay	25.0	25.3	0.4	0.9	-1.2	-2.1	20.8	23.2	27.5
Peru	28.8	24.6	-4.2	0.0	-1.3	-1.3	28.0	16.7	13.7
Uruguay	31.7	29.0	-2.7	-1.5	-2.2	-0.7	22.0	13.7	20.2
Venezuela (Bol. Rep. of)	16.9	14.3	-2.6	13.5	8.6	-4.9	12.3	27.8	52.0
Average	**34.7**	**35.9**	**1.2**	**-1.9**	**-3.8**	**-2.0**	**16.2**	**15.3**	**34.0**

Notes: Reserves are as of the end of 2011. All external debt indicators refer to 2010.
a) GNI refers to gross national income.
Source: Based on World Bank GDF, the IMF IFS, and IDB *Latin Macro Watch* data.

Box 1.1. **What explains the economic recovery in emerging and developing countries?**

Emerging and developing economies have been affected differently by the crisis. Several studies analyse how the initial conditions regarding structural characteristics and policies explain these differences. Berkmen *et al.* (2012) find that the trade channel (trade openness and manufactured exports) in 2009 had a negative impact on growth in developing countries. However, for a sub-sample of emerging economies the authors conclude that financial issues such as greater leverage of the financial system, credit growth and a higher proportion of short-term debt were more influential than the trade channel. They also find some evidence that the fiscal position and exchange-rate flexibility helped reduce the impact of the crisis, but the fiscal-soundness indicators are not significant enough to explain the different effects between one country and another. Similarly, Gallego *et al.* (2010) argue that differences in macroeconomic vulnerabilities explain the stronger recovery in Latin America compared to Eastern Europe. Cecchetti *et al.* (2011) argue that the strong domestic financial system, high levels of international reserves, current account surpluses and low levels of private debt explain why the region's economic growth is higher than the global average. Economies that are less open to trade and have fewer financial ties to the United States suffered least. Rose and Spiegel (2011) argue that few indicators were able to predict where and how severely the crisis would affect economic growth. They argue that current account surpluses are the only consistent indicator that an economy would be dealt less of a blow by the crisis.

As the crisis has not ended, the studies provide no conclusive answer as to which factors will determine how economies perform after the crisis. In a study related to this chapter, Avendaño and Daude (2012) show that more financially open economies (with openness measured as the total value of external assets and liabilities as a percentage of GDP) and economies with a greater presence of European banks (percentage of total external liabilities) have had a slower recovery. Openness to trade, meaning a high exports-to-GDP ratio, has a positive effect, although economies that export mainly to developed countries have been recovering more slowly. Finally, countries with financial systems where credit has grown quickly and has been more leveraged (domestic credit as a proportion of deposits) have also been hit harder by the crisis. There is some evidence that the crisis has been more costly to countries with a high debt-to-GDP ratio. For other factors, such as budget deficit and current account balance, there is no conclusive evidence of their effects. Some of these results are in line with the findings of other studies on the initial impact of the crisis (Berkmen *et al.*, 2012), but others differ, such as the finding by Avendaño and Daude (2012) that financial openness had a significant negative effect on the economic recovery.

Source: Avendaño and Daude (2012).

European banks entered the region mainly as subsidiary firms, that is, banks with their own capital, funded in the local market and subject to national regulation. This has mitigated much of the risk associated with Europe's financial woes. However, if the euro-area crisis were to get worse and the parent banks were to cut off lines of credit to their subsidiaries, credit in the local market could decline, with potential consequences on the region's real economy and financial stability. The figures show a decline in external banking finance to the region, but only slightly, especially in the light of exchange-rate variations. Most international banks in the region have equity and financing, including, for example, in Chile (Banco Central de Chile, 2012). However, some Caribbean countries might be more

exposed to lower international banking flows (IDB, 2012). In any case, central banks and the banking supervisory superintendents of Latin American and Caribbean countries should be ready for potential asset sales by European banks in the region.

Macroeconomic policy spaces

The region has some fiscal space available to address the problems resulting from sluggish growth in other parts of the world. In 2009, several Latin American countries with a relatively strong, solvent fiscal position used countercyclical fiscal policy to offset the recessionary effects of the global crisis (OECD and ECLAC, 2011). Public debt is at similar levels to 2008 in most countries of the region, with the simple average standing at around 39% of GDP. But this figure hides very different realities. Chile, Paraguay and Peru, for instance, have gross public debt levels below 20% of GDP, while other countries have much higher levels. Similar disparities exist in the budget balance figures. Bolivia, Chile, Paraguay and Peru have very sturdy figures, while other countries' figures are much weaker (Table 1.4). These differences in fiscal fundamentals are reflected in the financing conditions, which in turn feed back into fiscal sustainability. Country risk or sovereign spreads are at historically low levels, in part thanks to good macroeconomic fundamentals, but also thanks to general factors such as low interest rates and international liquidity.

Table 1.4. **Latin America and the Caribbean: fiscal indicators**

	Gross government debt (% GDP)		Interest payments (% GDP)		Budget balance (% GDP)
Country	**2008**	**2011**	**2008**	**2011**	**2011**
Argentina	57.8	40.0	2.4	2.7	-2.3
Bolivia (Plur. State of)	43.1	41.4	1.0	1.4	1.0
Brazil	57.4	54.2	6.6	6.1	-2.6
Chile	11.4	16.5	0.9	0.8	0.9
Colombia	42.7	41.2	3.5	3.2	-1.8
Costa Rica	29.9	38.4	2.2	2.2	-3.6
Dominican Republic	24.4	30.3	1.6	2.1	-2.6
Ecuador	25.0	22.2	1.3	0.8	-1.0
El Salvador	36.9	44.3	2.4	2.2	-3.9
Guatemala	20.1	24.1	1.4	1.5	-2.8
Honduras	20.1	27.7	0.3	0.3	-4.6
Jamaica	126.1	139.0	12.5	9.4	-5.7
Mexico	26.9	35.5	1.6	1.8	-2.5
Nicaragua	76.6	42.7	1.2	1.4	0.5
Panama	45.4	41.2	3.2	2.4	-2.3
Paraguay	19.2	13.4	0.7	0.6	1.3
Peru	24.5	19.2	1.6	1.2	1.8
Uruguay	52.4	42.2	2.9	2.5	-0.4
Venezuela (Bol. Rep. of)	14.0	21.7	1.3	2.1	-3.4
Simple average	**39.7**	**38.7**	**2.6**	**2.4**	**-1.8**

Note: The figures are taken from the officially published public-sector data with the broadest institutional coverage. Data cover central government for Dominican Republic, Guatemala, Honduras, Jamaica and Venezuela (Bol. Rep. of); and general government for gross government debt for Brazil (Brazilian Central Bank). Interest payments for Paraguay are for 2010.

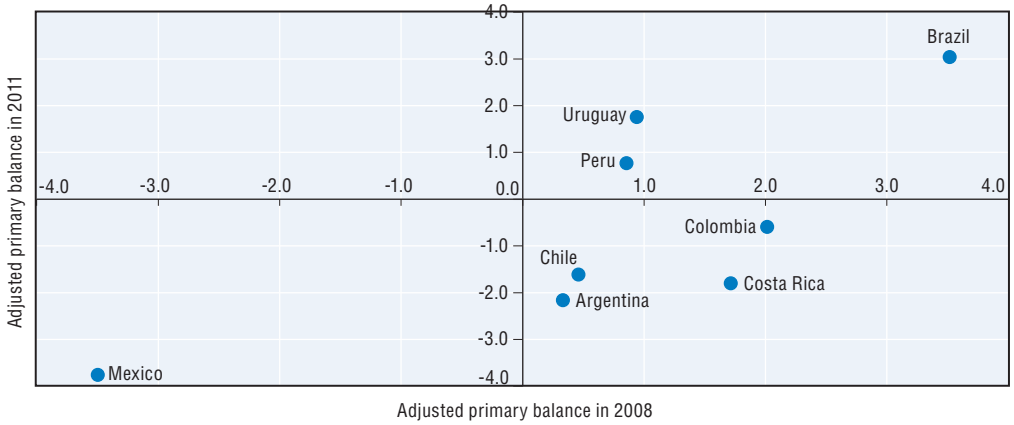
Source: Based on official figures.

Despite public debt reduction, several countries have a lower primary balance than in 2008. The fiscal balance is influenced by the economic cycle and in some countries by commodity prices (if some fiscal revenue is linked to these). But of the eight countries for which an estimated fiscal balance adjusted for the economic cycle and raw-material prices is available, only one has improved its balance (Figure 1.1). From a flow perspective, the region is therefore in a weaker position than during the critical event of 2008/09. However, three factors would help economies better overcome any future international capital-market volatilities like the one seen in September 2008 that followed the bankruptcy of the US investment bank Lehman Brothers: having savings available in sovereign wealth funds in some countries, having continued access to international markets, and drawing on the experience the region and the multilateral and regional financing organisations have acquired in dealing with severe shortages of international liquidity.

Chile, Paraguay and Perú have gross public debt levels below 20% of GDP, while in other countries the figures are much higher.

Figure 1.1. **Primary balance adjusted for the cycle and raw material prices in 2008 and 2011 in selected countries Latin American countries**

(Percentage of GDP)



Note: For methodology details, see Daude *et al.* (2011).

Source: Based on information from national governments, the Chilean Copper Commission (Cochilco), Federal Reserve Economic Data (Federal Reserve Bank of St. Louis), Datastream and *World Economic Outlook* (IMF), April 2012.

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In addition, in the event of a short or moderate real-economy shock and/or financial shock, some countries in the region would have the necessary fiscal space to counter it, at least in part. But the current economic circumstances are highly complex due to both the magnitude and duration of external shocks. The situation that has gradually taken shape is one of sluggish growth in the region's external demand while the world's big economies (the euro area, the United States, China and India) are fighting against their own imbalances, which will likely lead to episodes of uncertainty.

A prudent fiscal strategy for the region should be built around tools that ensure stimulus measures are temporary and are withdrawn when the time is right and that they protect the sustainability of public finances at all times. Because expenditure-side automatic stabilisers are small and there are so few revenue-side stabilisers (compared to the fiscal revenue collected and its composition), an alternative solution for the region

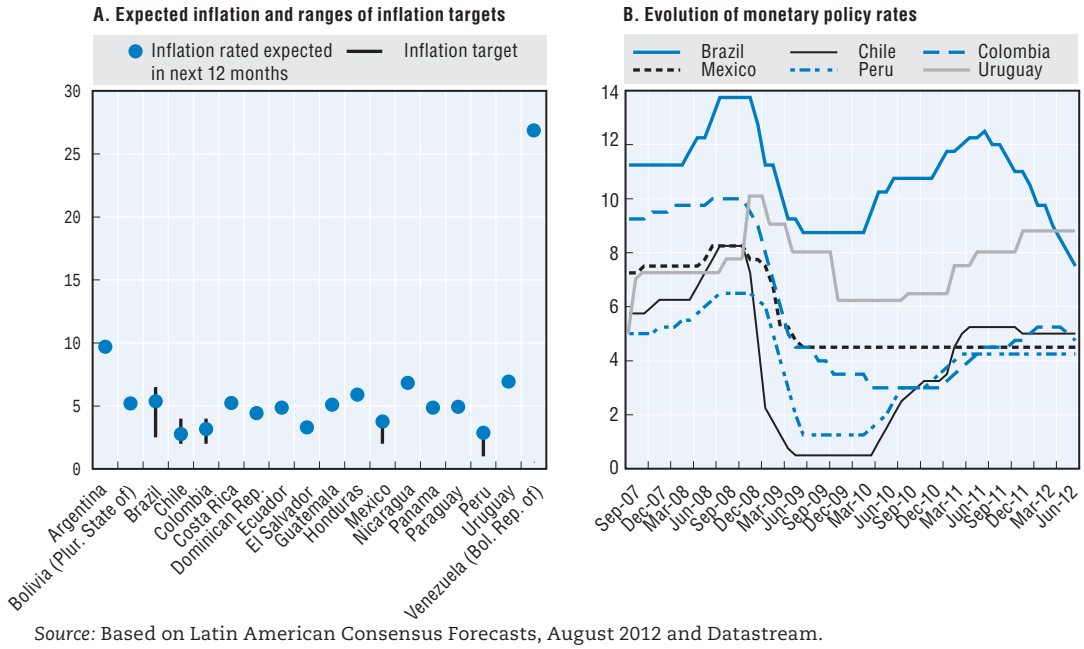
could be to create social spending programmes that are activated and deactivated automatically (for instance, by unemployment levels), depending on each country's institutional capabilities. If the planning cycle contains infrastructure projects whose economic, social and environmental feasibility has been evaluated, investment plans could be brought forward or accelerated according to the economic cycle.

Various countries have the space and credibility to use countercyclical monetary policy, even if food and fuel prices once again push up price indexes in the region.

Monetary policy is another tool available to most countries in the region when faced with a decline in aggregate demand. Inflationary forecasts are generally moderate and stable for the medium term, despite sporadic rises in food prices in the first six months of 2012. Central banks that follow inflation targeting regimes have generally managed to keep inflation within the boundaries they set or moved inflation towards those levels (Figure 1.2, left panel). Several central banks have used some of their policy room to tackle the signs of a slowdown in economic growth and lower inflationary pressures, while others have decided not to act unless they see clearer signals. Various countries therefore have the space and credibility to use countercyclical monetary policy, even if food and fuel prices once again push up price indexes in the region. The strong uncertainty surrounding global economic growth and the trend towards lower external inflationary pressures led most countries in the region to maintain their prudent monetary policies during the first quarter of 2012, with few changes occurring to existing rates. Countries that saw a rise in inflation (Colombia) or high, albeit falling, inflation (Honduras and Uruguay) raise their reference rate. Interest rates fell further where there was a much clearer economic slowdown, such as in Brazil and Paraguay. The second quarter of 2012 confirmed these trends, so more countries have begun to cut interest rates, including Colombia.

Figure 1.2. **Annual inflation rate forecasts for the next 12 months and evolution of monetary policy rates in Latin America**

(as percentages)



Source: Based on Latin American Consensus Forecasts, August 2012 and Datastream.

StatLink http://dx.doi.org/10.1787/888932732481

The region's central banks still have space for expansionary monetary policy if necessary. Well-anchored inflation expectations – which most countries in the region have – are necessary for monetary policy to be effective in stabilising aggregate demand. Because nominal rates are well above the bottom limit of 0%, countries should have sufficient space to support aggregate demand. Estimates of monetary-policy reaction functions – called Taylor rules – show that at present countries with inflation targeting regimes have interest rates that reflect a neutral or slightly expansionary monetary policy (see Box 1.2 for the situation in Brazil).

A prudent fiscal strategy should be built around intervention tools that ensure stimulus measures are temporary and are withdrawn when the time is right and that public finances remain sustainable at all times.

Box 1.2. **Alternative estimates of monetary-policy rules in Brazil**

Taylor rules are a tool traditionally used to check whether monetary policy is expansionary or contractionary. They became popular following the study by Taylor (1993) on US monetary policy in which he argues that a relatively simple equation can be used to base the monetary-policy rate on the deviation of inflation from the target rate and difference between potential and actual output (the output gap). However, there is much criticism regarding which additional variables (such as performance of long-term bonds, real exchange rates and asset prices) should be included in the analysis and what precise methodology should be used to correctly estimate these relationships. In this respect, Brazil is an example of the potential complications.

For the period from January 2003 to August 2012, a series of alternative models were considered to assess Brazil's monetary policy to estimate the following equation:

$$i_t = \alpha + \beta\,(\pi_{t,t+12} - \pi^*) + \gamma\,(y_t - y^*) + \varepsilon_t,$$

where i is the Selic monetary-policy rate, $\pi_{t,t+12}$ is the expected rate of inflation for the next 12 months, π^* is the inflation target, $(y_t - y^*)$ is the output gap and ε_t is an error term. Normally, both coefficients (β y γ) should be positive. The coefficient β should be greater than 1, so the real interest rate increases with inflation expectations and thus raises the real interest rate and cools the economy. The opposite occurs if inflation is below the target rate. Meanwhile, if γ equals zero it means the government focuses purely on achieving the inflation target.

An alternative approach often used includes a lagged interest rate to reflect the central bank's aim of smoothing fluctuations in the interest rate and thus reducing financial markets' uncertainty and volatility. Often additional variables are included, either because they contain information regarding the prices or GDP or because they are part of the central bank's objectives. Here we will consider an open-economy version that includes the real exchange rate. Finally, the estimation of this single equation has potential problems because interest rates influence – although with some lag –inflation (and inflation expectations) and the output gap. The estimates could therefore be biased, especially if movements in the interest rate have a lot of inertia. A related problem in Brazil and other emerging economies is that the time series for interest rates and

inflation are not usually stationary, so the estimated relationships may be spurious. A multivariate cointegration analysis can be performed to counter these problems. The estimated coefficients are shown in the following table:

Alternative estimates of monetary-policy rules in Brazil

	(1) Closed economy	(2) Open economy	(3) Dynamic open economy	(4) Co-integration vector
Constant	12.83	-43.65	-1.02	38.13
	(0.33)	(4.56)	(1.28)	-
Inflation	2.21	1.29	0.07	3.56
	(0.21)	(0.15)	(0.04)	(0.99)
GDP gap	-0.27	-0.04	13.39	-0.33
	(0.18)	(0.12)	(2.41)	(0.64)
Real exchange rate	-	12.58	0.32	-11.84
		(1.01)	(0.33)	(4.37)
Lagged interest rate	-	-	0.96	-
			(0.020)	
R-squared	0.50	0.80	0.99	-
Durbin-Watson	0.04	0.11	0.43	-

Note: Standard error in parenthesis.
Source: Authors' estimates based on data from the Brazilian Central Bank.

The interest-rate projections based on these different econometric models show significant differences. For instance, the simplest model, shown in column (1), suggests the interest rate for August 2012 should be 14.5% instead of 7.5%. However, the Durbin-Watson statistic shows a very high autocorrelation, which means the model is clearly not well specified. When open-economy aspects are included (the real exchange rate), the projection falls to 12.3% for July 2012, while the average interest rate is 8.2%, but the high autocorrelation persists. If the lagged interest rate is included too, the estimated rate would be 9.3% at the same date. The interest rate currently observed would fall within the confidence interval. This means that although the point estimate indicates that monetary policy might be slightly more expansionary than what the estimated rule suggests, the difference is small. However, the high coefficient for the lagged interest rate suggests the interest rate is probably not stationary. The high R-squared value and low Durbin-Watson statistic also indicate problems with the model, which is perhaps spurious. Therefore, the estimate based on a cointegration analysis could give more reliable estimates. In view of this, the projections based on column (4) confirm the above result. Although this equation suggests the interest rate should be 1.3 percentage points higher than at present, this is not a statistically significant difference. In short, at present there do not seem to be indications that Brazilian monetary policy is too expansionary.

The medium-term international environment and its impact on the region

External demand from advanced countries will be fairly stagnant in the coming years. The crisis currently affecting several economies in the euro area will have medium- and long-term effects on many OECD countries. In particular, the significant increase in sovereign debt – coupled with spending pressures related to the ageing population – could stem growth for a long period due to the pressing need for fiscal consolidation.[3] For instance, to cut their gross debt to 50% of GDP by 2050, several countries, including the United States, the United Kingdom and Japan, would need to improve their cyclically adjusted fiscal balances by more than 8 percentage points of GDP (OECD, 2012). In this scenario, several advanced economies could be faced with growth problems similar to those faced by Latin American economies following the external debt crisis of the early 1980s. There are several ways this slower growth could come about. For instance, fiscal adjustments could significantly cut aggregate demand at a time when businesses' and households' balance sheets are still recovering. Since there is no clear roadmap for fiscal consolidation, high levels of debt could trigger expectations of a higher default risk. This would increase the risk premium, holding back private investment and therefore potential growth. Finally, the prolonged high unemployment could wind up raising structural unemployment, dealing a permanent blow to potential output in OECD economies (OECD, 2011).

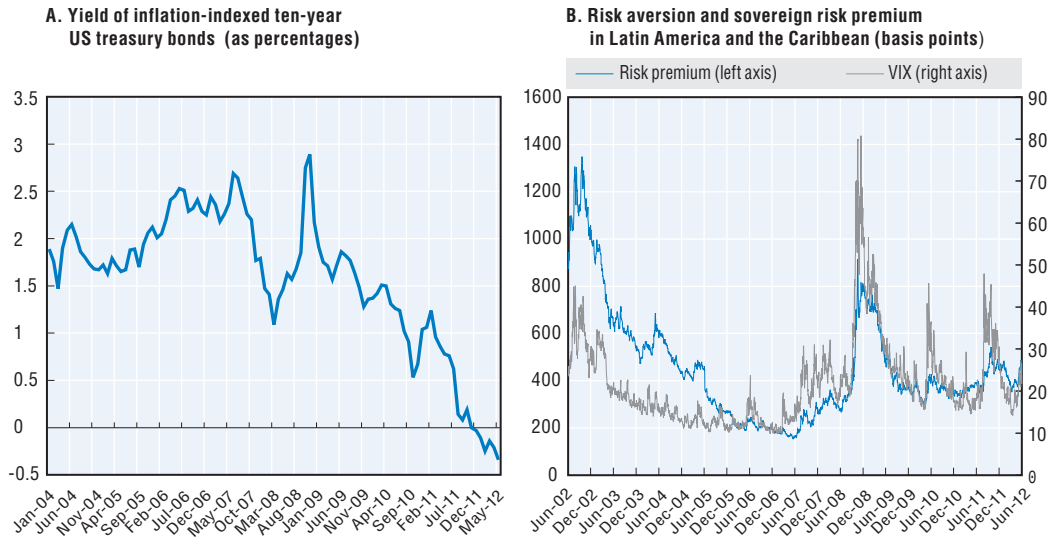
Because of weak cyclical economic conditions and structural problems in OECD economies, interest rates are likely to stay low for a long time.

Because of weak cyclical economic conditions and structural problems, interest rates are likely to stay low for a long time. With GDP growth below potential in many OECD economies and idle capacity high, the next few years will see low inflationary pressures (Figure 1.3, left panel). If so, central banks should not raise monetary-policy rates, and those with mandates not only to meet inflation targets but also to achieve full employment can return to using unconventional monetary-policy tools to reduce long-term interest rates. Several analysts believe governments in developed countries should allow higher inflation while introducing financial constraints to contain interest rates as a way of liquidating the high government debt and cutting debts with private debtors, thus facilitating the deleveraging of economies. This would result in a prolonged period of negative interest rates in real terms (Reinhart and Sbrancia, 2011).[4]

Even if no country abandons the euro zone, international capital markets will remain highly volatile, with capital flows switching from inflows to outflows in emerging markets' assets. Several of the current risks related to economic developments in the developed economies will not be resolved any time soon. Instead, given the significant institutional changes needed to solve the problems, there will be advances and relapses as reforms are implemented, for example in fiscal consolidation during an election cycle in the United States or changes to treaties in the European Union subject to ratification by referendum. Other uncertainties will only fade away gradually. For example, it will take today to assess what share of the slower growth in China that is due to cyclical reasons and what part is related to a reduction in potential output growth. Sporadic hikes in risk aversion in international capital markets are therefore to be expected. Global risk aversion has become one of the most important drivers of asset prices in emerging

markets. As these markets have become part of the international financial markets, some volatility is to be expected in the region over the coming years.(Figure 1.3, right panel).

Figure 1.3. **Risk-free asset rates, global risk aversion of investors and sovereign risk premium in Latin America**



Note: VIX refers to the Chicago Board Options Exchange Market Volatility Index.
Source: FRED (Federal Reserve Bank of St. Louis) database and Datastream.
StatLink http://dx.doi.org/10.1787/888932732500

Greater economic integration to remove trade, administrative and infrastructure barriers among countries in the region could provide a way forward in jointly dealing with the medium-term economic outlook.

A regional response to sluggish growth in external demand is greater regional integration, which would allow the region's economies to develop competitive advantages in non-traditional sectors and activities. Despite weak external demand, several countries in the region have maintained good economic growth by expanding their local markets. However, many countries' domestic markets are small or can quickly face balance of payments problems due to the imports needed for this process. In this context, greater integration to remove trade, administrative and infrastructure barriers among countries in the region could provide a way forward in jointly dealing with the medium-term economic outlook. In addition to providing markets and scale, greater regional integration can also provide a platform for activities and sectors to learn and develop dynamic competitive advantages so they can export to the rest of the world. In many cases it can also improve macroeconomic resilience by diversifying the products exported and their destinations.

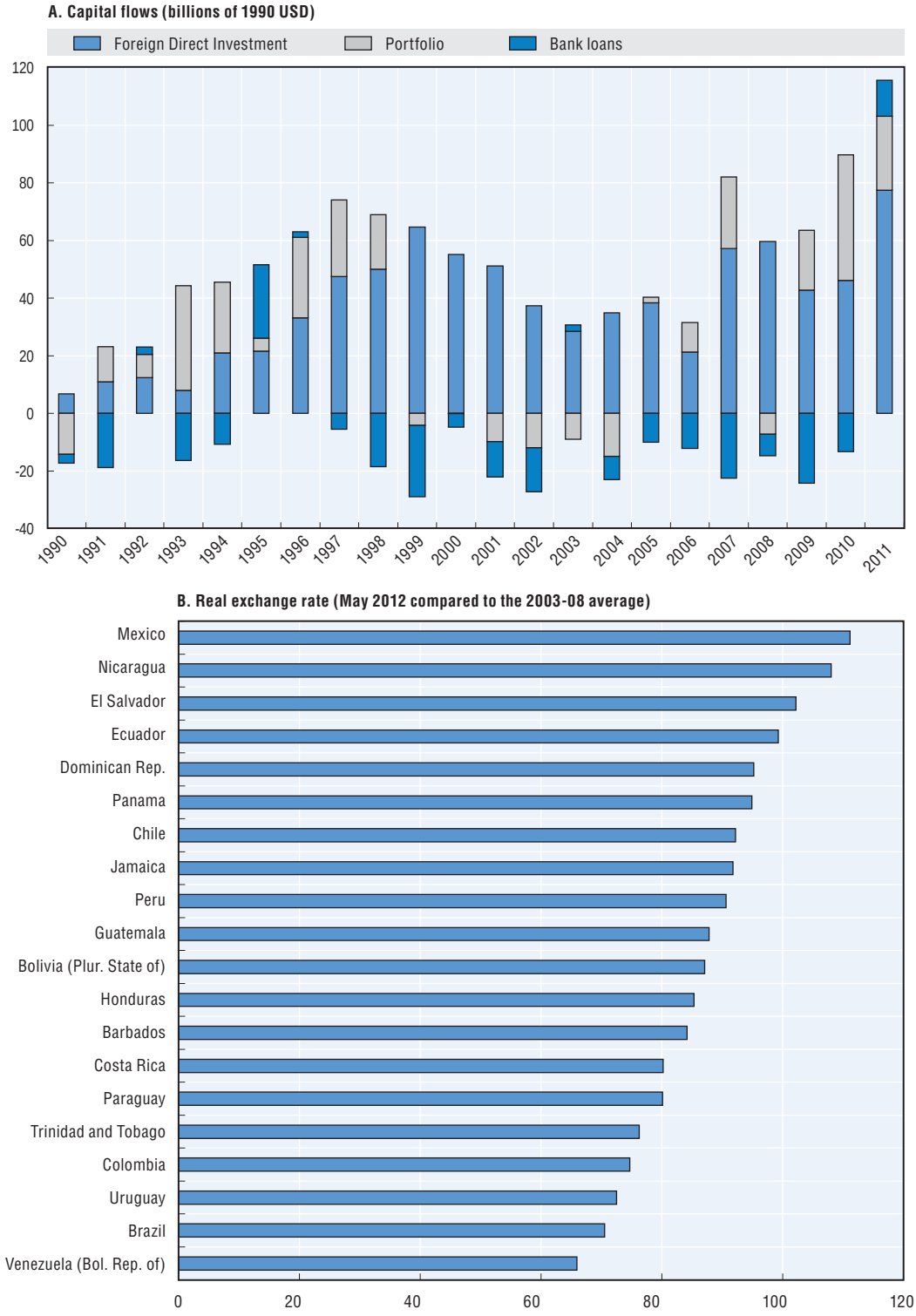
Although, comparatively speaking, Latin America is in a strong position with its low debt and external strength, this scenario means the region will probably be subject to large-scale capital inflows and outflows for a long time. Furthermore, these capital flows could cause major exchange-rate fluctuations. After dropping dramatically in 2009, capital inflows to the region have boomed to historically high levels in recent years (Figure 1.4, upper panel). Since capital inflows can trigger unsustainable price hikes for certain assets (such as real estate and capital stock) or can be channelled into the banking system and cause excessive credit growth, they could jeopardise the region's macroeconomic balance. This risk has recently given greater importance to macroprudential regulation measures and the openness of the capital account. The reasons why these are such important factors lie not only in their short-term macroeconomic effects, but also in the possible consequences of unsustainable real appreciations on the economic structure, since they could weaken the competitiveness of the tradeable-goods sectors and thus wear down future growth capacity (ECLAC, 2012b).

Macroprudential regulation and sterilised foreign-exchange intervention are the first line of defence against excessive fluctuations caused by short-term capital inflows.

The fluctuations in the real exchange rates in Latin American countries show that generally currencies have appreciated compared to their average value for 2003-08 – that is, before the economic crisis. Only the currencies of Ecuador, El Salvador, Mexico and Nicaragua have depreciated, albeit only slightly. But the currency appreciations since that period are greater than 20% in several countries in the region, especially in South America and among commodity producers. There are various reasons for these fluctuations in real exchange rates. Some are those related to the real economy, such as terms of trade, fiscal policy, trade openness and level of net investment. There are also changes in international financial markets, such as a greater appetite for emerging-market assets, and interest-rate differentials, which can trigger short-term capital inflows that could change direction once the external conditions change.

Despite the methodological difficulties, it is important to study and monitor the causes of fluctuations in the real exchange rate to determine the situations in which government intervention is needed and to use the most effective policy tools for each situation. For instance, if the fluctuations are caused by short-term capital inflows, then macroprudential regulation and sterilised foreign-exchange intervention are the first line of defence against these excessive fluctuations (Daude *et al.*, 2012). In other cases fluctuations may be due to short-term changes in the terms of trade. For instance, a drought somewhere else in the world can drive up the price of grain in a particular year. In such situations, foreign-exchange intervention can be effective, although countercyclical fiscal instruments such as stabilisation funds are usually more effective still. To avoid a temporary appreciation resulting from higher spending due to the quasi-rents created, tax schemes can be used that collect a relevant portion of the quasi-rents and invest these funds abroad. Finally, an appreciation could be caused by a permanent or long-term rise in raw-material prices. This is a classic case of "Dutch disease". When this occurs, foreign-exchange interventions are largely ineffective, but economic policy should still act to raise the competitiveness in the non-commodity sector. For instance, investing the additional tax revenue in the infrastructure, innovation and human capital needed by the tradeable-goods sector helps diversify production when the terms of trade do not generate the right market incentives.

Figure 1.4. Capital flows to Latin America and the Caribbean and real effective exchange rate



Note: a) In Figure B, which shows the real exchange rate, levels below 100 show appreciation, and levels above 100 show depreciation.

Source: Based on the IMF's IFS data and national sources, with data obtained in August 2012.

StatLink http://dx.doi.org/10.1787/888932732519

It is important to track appreciations and their causes and potential effects on the economic structure, as well as better co-ordination of macroeconomic policy with production-development objectives. Although Dutch disease is not always easy to diagnose in an economy, potential competitiveness problems can be spotted through monitoring and a careful assessment of the economic situation. Medium-term competitiveness problems can be caused even by temporary fluctuations if they influence important decisions and investments. In several countries there is some implicit co-ordination among policies, but greater transparency can make these measures more effective.

Conclusions and recommendations

The economic context described in this chapter presents a mixed outlook for Latin American and Caribbean firms. The region is faced with uncertainty in the external environment, although some economies are more affected than others, especially those where the uncertainty is amplified by an appreciation in the real exchange rate of the national currency or exports that are increasingly concentrated in primary products. Because of these and other structural issues, Latin American firms, especially smaller firms, are immersed in an environment that poses major challenges to their development. Smaller firms play a vital role in economic growth, and how the fruits of economic growth are shared in the society. It is through these production units that the savings and investments of middle-income households are channelled, and those of poorer households too in the case of microenterprises, and they provide many jobs. If backed up by good policies, such firms can help expand production linkages and improve systemic competitiveness by driving up the productivity of the overall production system, making the most of the benefits of specialisation and the synergies and externalities generated by production clusters. Furthermore, SMEs are frequently a powerful vehicle for innovation and technological progress, which they then infuse into the production structure.

The challenge now is to balance short-term stabilisation measures by introducing monetary and fiscal policies that will prop up aggregate demand if low growth continues in developed countries and take structural measures to raise medium-term growth.

The biggest challenge for the region's macroeconomic policy in the current situation is to find the right balance for short-term stabilisation measures by introducing monetary and fiscal policies that will prop up aggregate demand if low growth continues in developed countries and take structural measures to raise medium-term growth. Governments in Latin America and the Caribbean need to find ways to combine demande policies and structural policies that help maintain macroeconomic stability and increase the region's productive capabilities. Given a less favourable international context, failure to do so would most likely steer the region towards the kind of growth levels and patterns it experienced in previous decades, with sluggish growth and a poor capacity to generate the necessary endogenous growth to transform the economic structure and foster a balanced distribution of income.

Notes

1. See IDB (2012) and IMF (2012).
2. For instance, Mexican oil revenue is worth close to 8% of GDP, the equivalent of almost 40% of total fiscal revenue.
3. Reinhart and Rogoff (2010); Kumar and Woo (2010).
4. Low yields could also be reflecting rising prices of risk-free assets, the supply of which has dropped significantly (primarily because AAA-rated assets, which are considered safe, such as secured mortgages in developed countries and the sovereign debts of several European countries, are no longer classified as risk-free).

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CHAPTER TWO

Traits and policies of Latin American SMEs

Given the right support policies, micro, small and medium-sized enterprises (SMEs) in Latin America can help raise productivity, complement the economies of scale of large firms, contribute to creating clusters in certain sectors and reduce social inequality and poverty. Over the past decade, the attention given to SMEs, a key component of the region's business fabric, has grown. But efforts need to be redoubled to break the vicious cycle of low productivity and lack of competition among SMEs. Public policies need to be more mature so they will last longer, but also more flexible to the changing external environments that affect SMEs. Countries need to build the institutional capacities necessary to implement programmes and initiatives. In particular, policies need to be devised and implemented in a way that takes into account the full spectrum of SMEs, from subsistence-level microenterprises to fully modernised firms that supply large companies which export to foreign markets.

Introduction

Micro, small and medium-sized enterprises (SMEs) are an essential component of the Latin American business fabric. There are various indicators of their importance in the region: the proportion of all businesses that are SMEs, the number of jobs they create, and in some countries even their contribution to gross domestic product (GDP). However, there are several sharp contrasts between SMEs' contribution to GDP in Latin America and in OECD countries. In Latin America, around 70% of GDP is produced by large firms, while in OECD countries large firms contribute only 40%, with the rest produced by SMEs. So while SMEs provide many jobs in Latin America they contribute little to production. This reflects their heterogeneous production structure, their specialisation in low value-added products and the scant contribution SMEs make to exports (less than 5% in most countries). As a result, the productivity gap between Latin America and OECD countries tends to persist over time.

These gaps in productivity and export capacity are caused by the highly diverse economic structures in the region. Latin America's production structure is marked by "the large productivity differences – much larger than those found in developed countries – among sectors, within sectors and among companies within a given country. This is known as structural heterogeneity, which refers to marked asymmetries among segments of enterprises and workers and the concentration of employment in strata characterised by very low relative productivity" (ECLAC, 2010). This phenomenon is also one of the causes of the deep social inequality present in Latin America. The large productivity gaps (among sectors and among businesses), meanwhile, reflect and reinforce the gaps in other areas: skills, adoption of technical developments, negotiating skills, access to social networks, and upward occupational mobility during a career.

The production structure places Latin American SMEs at a disadvantage compared to other firms, so they need specific policies to counter this. Unless SMEs can overcome these difficulties their lack of competitiveness will continue, fuelling a vicious cycle of sluggish economic growth, poverty and slow structural change. Breaking the vicious cycle will require strong policies and institutions that will tackle this crucial challenge for the region (Cimoli, 2005).

This chapter argues that despite the progress made in this area, policies to support SMEs in the region need to advance toward strategies that will form the basis for new public policies with clear objectives for SMEs. These policies should: *i)* incorporate long maturation periods through coherent, prolonged actions; *ii)* build and strengthen institutional capacities to maintain, co-ordinate and implement these policies; *iii)* be flexible enough to adapt to changes in production structures, the international climate and the macroeconomic context, as well as to national and sub-national specificities; and *iv)* take into consideration the full spectrum of SMEs.

If they are given the right policy framework, these firms, especially those that have the greatest growth potential, can become a lever to transform Latin American economies through the following processes:

- Helping boost productivity by introducing technological and organisational changes. SMEs can thus become agents to bring about structural change, helping to create and spread innovations and develop new markets (OECD, 2010). Also, if new firms enter the market they can add to competition and open the way for new

business models that will challenge traditional models. This would create healthy shocks (or "creative destruction" as Schumpeter called it), leading to a constant search for more productive uses of resources[1] and helping boost the economy's aggregate productivity (Altenburg and Eckhardt, 2006).

If new firms join the market they can increase competition and open the way for new business models to come in and challenge traditional models. This would create healthy shocks that help boost an economy's aggregate productivity.

- **Complementing economies of scale of large firms.** Greater flexibility enables SMEs to reduce transaction costs through close contact with customers and fast decision-making. SMEs in particular would be in a position to access diversified markets (through exports or sales to large retail chains) and global value chains, and to benefit from technology transfer (Dini and Stumpo, 2004).
- **Developing an important role in creating production clusters**, which are designed as a form of local co-operation between economic agents and institutions with the aim of creating a competitive advantage. This interaction allows firms involved to increase production, adopt technologies more easily, speed up learning processes, and thus achieve a level of collective efficiency that is beyond the reach of an individual firm (Ferraro, 2010).
- **Contributing to social inclusion by increasing microenterprises' income and reducing their vulnerability.** Many Latin American microenterprises were set up as a survival strategy due to the sluggishness of labour-intensive economic activity. Workers in microenterprises are usually not poor but are often among the most vulnerable sectors of society (OECD, 2011). Microenterprises are not guaranteed to be absorbed by dynamic sectors because this takes quite a long time and the staff may not have the necessary skills. Some policies to support microenterprises (such as multidimensional interventions related to microfinance) effectively and efficiently provide the tools to raise and stabilise incomes in a context of small or incomplete social safety nets.

This chapter analyses the nature of SMEs' involvement in the region's production structure and the development of policies to support SMEs. The chapter is structured in seven sections. It begins by providing a regional overview of SMEs in Latin America, focusing on their huge diversity and poor productivity and on their distribution by sectors and their contribution to employment and exports. Next it analyses the regional environment in which SMEs are operating, especially the business climate and their incorporation into the production structure. The next section examines how the region's development policies for SMEs have evolved. The text then describes the institutional environment of organisations devoted to supporting SMEs, especially their structure and regulatory aspects. The next section looks very briefly at the objectives and strategies of development policies, and the following section addresses the problems resulting from how those policies are designed and implemented. The chapter ends with a series of conclusions and recommendations, putting forward a new vision to move forward under a new public-policy agenda for the sector.

Regional overview of SMEs

A fundamental aspect of Latin American SMEs is how extremely diverse they are. Some microenterprises were born out of an individual person's need for self-employment. Such businesses often operate informally and have low human capital, difficulty in accessing external financial resources, very little internationalisation, and work activities with very few technical requirements. At the opposite end of the spectrum are high-growth SMEs, known as "gazelle companies", which are much more dynamic in terms of sales revenue and job creation and which exploit market opportunities through efficient, innovative business management. Therefore, the concept of company size conceals what is in fact a very diverse reality for this type of production unit.

One of the defining characteristics of Latin American SMEs is that they are highly diverse, ranging from those set up out of a need for self-employment and subsistence to those able to exploit market opportunities through efficient, innovative management.

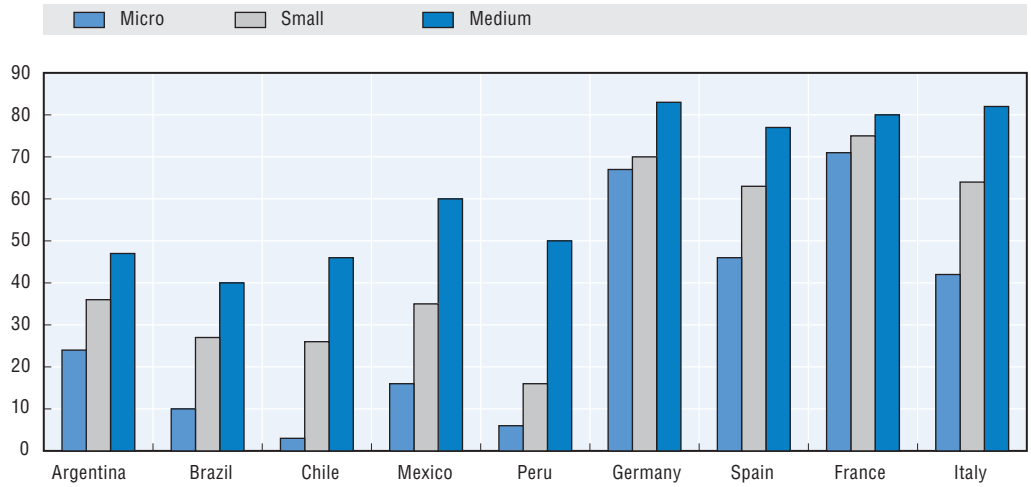
The diverse nature of SMEs conditions how policies geared towards them are designed. Because the concept of an SME covers such a vast array of different types of businesses, a one-size-fits-all approach to policy making is not advisable. In addition to having different growth potentials for productivity and employment, SMEs of different types are usually confronted with very disparate obstacles. For some, most of the obstacles are internal constraints on the company (for instance, the limited capacity of the entrepreneur), while for others they are the result of an unfavourable external environment for the sector, production chain or cluster, or even an unfavourable macroeconomic environment.

Among Latin American countries there are at least two different definitions of an SME. One is based on the number of employees in the firm, and the other uses sales revenue to determine the economic size of production units. The first definition ignores what are usually major differences among sectors (and among branches within each sector), often resulting in SMEs' contribution to the economy being overestimated.[2] However, this is the criterion used in national statistics departments, which often provide the data available in these countries, while the policy-making bodies define company sizes based on the sales-revenue criterion.

Despite these difficulties in comparing data between one country and another, there are certain general patterns in the relative productivity and distribution of firms by size among the region's SMEs. Latin American SMEs' relative productivity levels are, on average, below those recorded in selected OECD countries. For example, the national productivity levels of small firms relative to large firms range from 16% to 36% in Latin America, but from 63% to 75% in Europe (Figure 2.1). The discrepancies in productivity affect the wage gap (Table 2.1), which has major consequences for income distribution and inequality in the region.

The productivity of small firms relative to large firms in Latin America ranges from 16% to 36%, compared with relative productivites of 63% to 75% in Europe.

Figure 2.1. **Relative productivity in selected Latin American and OECD countries**
(as percentages, productivity of large firms = 100%)



Source: ECLAC (2010).
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Table 2.1. **Wage gaps relative to large firms, 2006**
(as percentages)

	Argentina	Brazil	Chile	Mexico	Germany	Spain	France	Italy
Micro	36	43	-	21	69	63	-	-
Small	44	42	52	56	73	74	88	69
Medium	57	64	69	55	81	89	91	79
Large	100	100	100	100	100	100	100	100

Source: For Argentina, Brazil, Chile and Mexico: based on official figures from the countries; for Germany, Spain, France and Italy: Eurostat (2006).

Differences in productivity among businesses are closely related to the production structure and how jobs are distributed across sectors. In 2008, over 70% of workers in the region were employed in low-productivity sectors, such as agriculture, construction, retail and personal services; 20% were employed in medium-productivity sectors, such as industry and transport; and 8% were employed in high-productivity sectors, such as mining, finance and energy (ECLAC, 2010).

In the distribution of firms by size in Latin America, as in OECD countries, about 99% of firms are SMEs. This underlines the importance of SMEs in production and their potential as agents of structural change. Because they are so numerous in the production fabric, any industrial policy and structural change must take into account the variety of characteristics, peculiarities and dynamics of SMEs (Table 2.2).

In 2008, out of every hundred Latin American workers, 8 worked in high-productivity sectors (mining, energy, finance), 20 worked in medium-productivity sectors (industry and transport) and over 70 worked in low-productivity sectors (agriculture, construction, commerce and services).

Table 2.2. **Proportion of firms by size in selected Latin American and OECD countries**
(as percentages)

Country	Micro	Small	Medium	Large
Argentina	81.6	16.1	1.9	0.4
Brazil	85.4	12.1	1.4	1.0
Chile	90.4	7.8	1.2	0.6
Colombia	93.2	5.5	1.0	0.3
Ecuador	95.4	3.8	0.6	0.2
Mexico	95.5	3.6	0.8	0.2
Peru	98.1	1.54	0.34	0.02
Uruguay	83.8	13.4	3.1	0.6
Germany	83.0	14.1	2.4	0.5
Spain	92.6	6.5	0.8	0.1
France	93.0	5.9	0.9	0.2
Italy	94.4	5.0	0.5	0.1

Source: For Latin American countries: based on official figures from the countries; for France, Germany, Italy and Spain: OECD (2011).

Jobs in microenterprises are mainly in retail and in some low value-added services; small firms' employees work mainly in retail and, to a lesser extent, the manufacturing sector, and in construction in some countries. In medium-sized firms, meanwhile, in several countries manufacturing is the sector that employs most people, but retail is also relatively important. In large firms, manufacturing and certain higher value-added services (telecommunications and financial intermediation) provide most employment.

This distribution of employment varies somewhat depending on the shape of each country's production structure. For instance, in countries with less industrial development, commerce can be important for employment and for large firms and in some countries is as large as or larger than the industrial sector. For large firms, telecommunications and financial intermediation services can have a greater impact on smaller economies that are more highly specialised in these sectors.

In all countries in the region, smaller firms, especially micro and small enterprises, operate in the least productive sectors of the economy. These sectors have low entry barriers, and little need and few incentives to work in conjunction with other firms (to create networks or clusters). Consequently, they also have less chance of generating externalities to increase their specialisation (and that of the workforce), their propensity to innovate and their productivity.

Another aspect of the productive environment of Latin American SMEs is its low level of internationalisation (Table 2.3). A huge constraint for these companies to access foreign markets is the structure of the region's exports. Exports focus mainly on natural resources and their derivatives, an area dominated by large firms because of the heavy investment it requires, which leaves little space for the involvement of small and medium-sized firms. Furthermore, this composition of regional exports feeds the heterogeneity of the Latin American production structure because it does not encourage SMEs to access more innovative processes through a stimulus to export. Also, the low internationalisation of SMEs means that many of them supply only the domestic market.

These companies thus become highly dependent on the macroeconomic conditions of the domestic economy (Peres and Stumpo, 2002). It is therefore not surprising that during highly volatile economic cycles the mortality rate of firms is inversely correlated to their size and the entry rate of new firms contracts more among smaller, formal firms (Castillo *et al.*, 2004; Crespi, 2003).

Table 2.3. **Proportion of exports by company size**
(as percentages)

	Argentina	Brazil	Chile	Spain	Italy	Germany	France
Micro	0.3	0.1	-	11.1	9	8	17
Small	1.6	0.9	0.4	13.3	19	12	10
Medium	6.5	9.5	1.5	22.6	28	18	15
Large	91.6	82.9	97.9	47.1	44	62	58

Note: The figures for Brazil do not include special micro and small enterprises, which provide 6.6% of total exports; for Chile, the figure for small businesses includes microenterprises; for Spain, 5.9% of exports are by companies of unknown size, and are therefore not included; for Germany, the figures are only for exports within Europe.

Source: For Argentina, Rotondo *et al.* (2009); for Brazil, SEBRAE (2011); for Chile, ILO/SERCOTEC (2010); for Spain, OECD (2012); for France, Germany and Italy, Eurostat (2008).

According to a comparison of firms' entry and survival rates between Argentina, Brazil, Colombia and Mexico and European countries, there are huge differences in the business dynamics (Bartelsman *et al.*, 2004). Mexico has higher entry rates than Argentina, Brazil and most European countries. However, the survival rate of Mexican SMEs is lower than in other countries in the region, indicating a business environment in which entry is easy but medium-term survival is more difficult. Although there is no detailed analysis of these dynamics in all Latin American countries, it is important to remind ourselves that the region's diversity shows how important the production environment is in determining SMEs' performance.

During highly volatile economic cycles the mortality rate of firms is inversely correlated to their size and the entry rate of new firms contracts more among smaller, formal firms.

The economic context in which firms operate

Sensitive factors that can be adjusted through public policy and that affect SMEs' performance include the business climate and the production structure, which in turn include access to finance, technology, human resources and the existence of production linkages. Both the business climate and the production structure in the region place major limitations on the development of SMEs.

The business climate

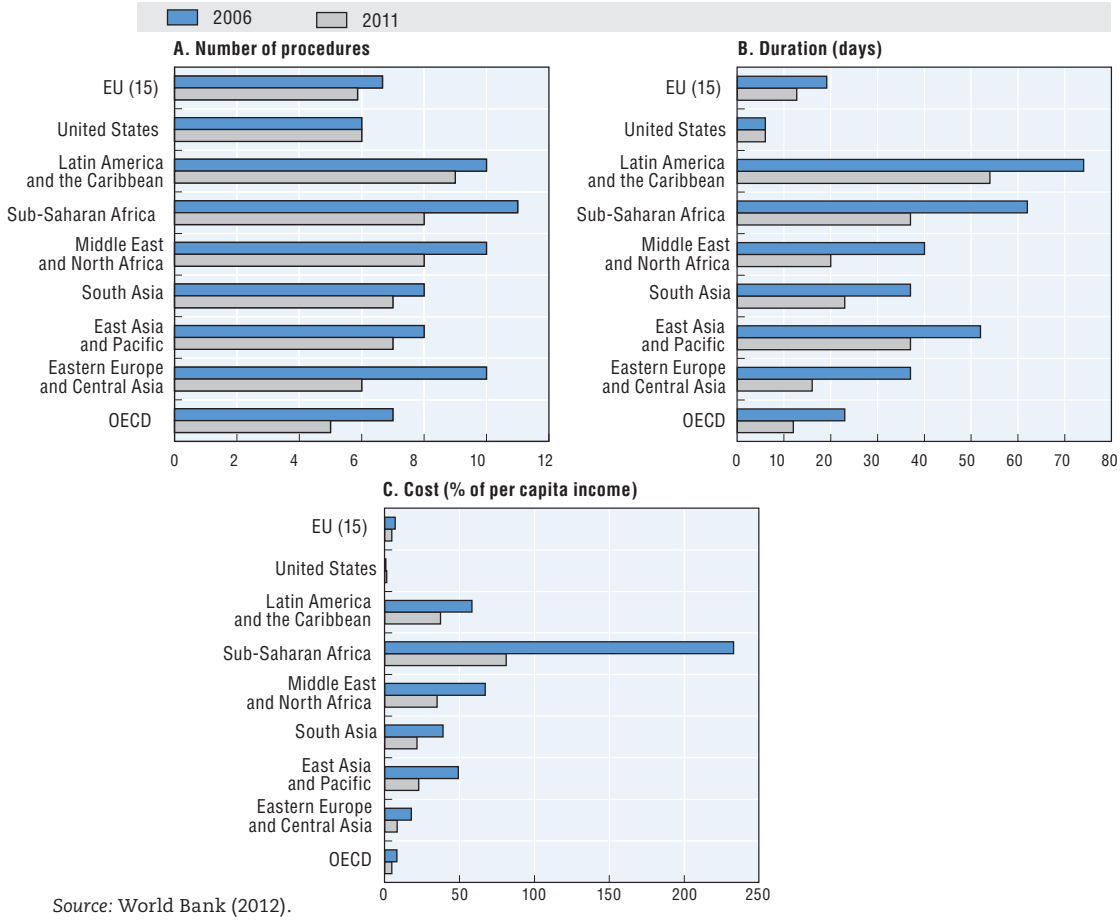
Comparison between advanced economies and Latin America shows a sharp contrast in the cost of market entry for new firms. The experience of more developed countries shows that institutional strength, programmes to support the industrial

sector, the educational system, especially in science and technology, macroeconomic conditions, market size, and the accessibility and quality of finance, among other factors, strongly impact SMEs' characteristics and capacities (Lundvall, 1992; Nelson, 1993; Lazonick, 2008). The healthy interconnections among these factors facilitate the existence of "Schumpeterian-type" SMEs, that is, SMEs with capacities to forge radical innovations that will contribute to economic growth. Although these kinds of firms are also found in less-developed countries, they are less frequent. Instead there are firms marked by sluggishness and few incremental innovations, if any at all. For firms in less-developed countries it is harder to close the technology and competitiveness gaps.

As is seen in more developed countries, factors such as institutional strength, programmes to promote the industrial sector, the educational system, especially in science and technology, macroeconomic conditions, market size and the accessibility and quality of finance strongly impact SMEs' characteristics and capacities.

A variety of factors make it harder for SMEs in Latin America to close these gaps. First, there are socio-economic factors such as the unequal distribution of national income, high levels of poverty, and the poor development of institutions. This context makes it harder to access knowledge and financial resources and to create dynamic, innovative businesses (Stam and van Stel, 2011). Second, there is the regulatory framework: the cost and time needed to complete the procedures required to register and start up a business in Latin America are among the main obstacles to their development (Figure 2.2). Despite the region's progress in the three indicators shown in Figure 2.2, Latin America still lags behind other regions and the global average. These problems translate into higher business costs, which as a percentage of per capita income are almost eight times higher in Latin America than in OECD countries (ECLAC/IDB/OAS, 2011). There are similar administrative problems when closing a business. According to International Labour Organization (ILO) and World Bank data, it takes an average of four years to close a business and liquidate its assets in Latin America, while the percentage of debt recovered by creditors amounts to 17%. By contrast, in the OECD it takes an average of just 1.7 years to close a business and liquidate its assets, and the percentage of debt recovered by creditors is 68% (Tueros *et al*., 2009; World Bank, 2012). Latin American regulations hinder creating and liquidating businesses and encourage micro and small enterprises to operate informally (Capelleras and Kantis, 2009). There are also major differences among Latin American countries in these aspects. For instance, Chile, Colombia and Mexico present similar indicators to more developed countries in the three dimensions analysed in this chapter, while other countries lag far behind (Table 2.4).

Figure 2.2. **Cost indicators for starting a business**
(number of procedures, days and share of per capita income)



Source: World Bank (2012).

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Table 2.4. **Cost indicators for starting a business in 2011**

Country	Number of procedures	Duration (days)	Cost (% of per capita income)
Argentina	14	26	11.9
Bolivia (Plur. State of)	15	50	90.4
Brazil	13	119	5.4
Chile	7	7	5.1
Colombia	9	14	8.0
Costa Rica	12	60	11.1
Dominican Republic	7	19	18.2
Ecuador	13	56	28.8
El Salvador	8	17	45.1
Guatemala	12	37	52.5
Honduras	13	14	46.7
Mexico	6	9	11.2
Nicaragua	8	39	107.9
Paraguay	7	35	47.2
Peru	5	26	11.9
Suriname	13	694	115
Uruguay	5	7	24.9
Venezuela (Bol. Rep. of)	17	141	26.1

Source: World Bank (2012).

Integration of firms in the productive structure

Another key element that determines the performance of SMEs in Latin America is the productive structure seen in most firms in the region. The most modern SMEs in Latin America do not make the same contribution to their country's production system as their counterparts in OECD countries (Diagrammes 2.1 and 2.2). In OECD countries, SMEs can only survive in the industrial development process if they produce specific goods and services that do not compete with products mass-produced by large industrial firms. These goods and services are normally designed specifically for their customers' needs. They are produced in small runs for market niches or are closely related to customer service (installation, customisation, maintenance, etc.). These SMEs also produce services for large firms or to complement their catalogue of services. Economies of scale play a minor role in these areas, pushing the benefits of the flexibility and customer proximity offered by SMEs to the fore. This kind of specialisation demands greater technical and business qualifications, and one particular prerequisite is the capacity to innovate continuously. Most Latin American SMEs do not have these qualifications, and almost all of them operate in standardised forms of production that are not knowledge-intensive, thus competing directly with mass producers and/or large commercial enterprises. An example of this is the mass production of consumer goods (generic food products, footwear, clothing), in which Latin American SMEs do not have competitive advantages.

Diagram 2.1. **Typical industrial organisation in developed countries**

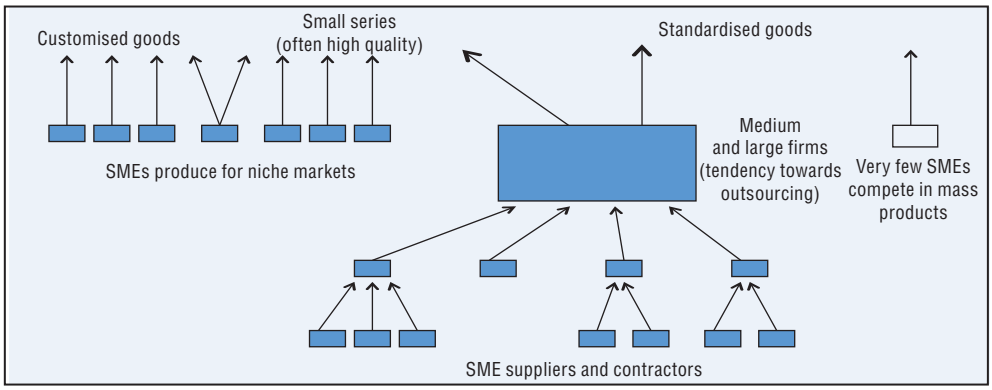
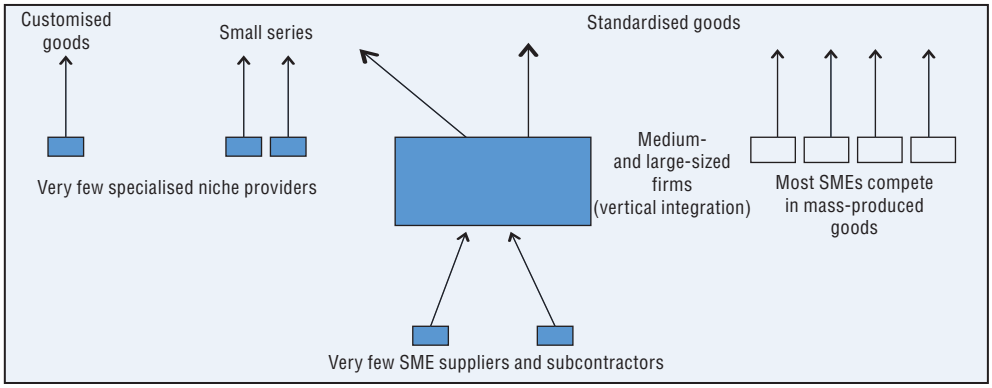


Diagram 2.2. **Typical industrial organisation in developing countries**



Source: Altenburg and Eckhardt (2006).

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This structure of production also affects SMEs' ability to establish linkages with other real-economy agents. Since many Latin American SMEs produce traditional consumer goods for segments of the market with low prices and use standard processes that leave very little room for innovation, they are vastly limited in their ability to forge linkages with larger firms. The larger firms rarely choose domestic suppliers, which struggle to meet the necessary quality or volume of production. This results in a vicious cycle, with the initial low productivity fuelling an absence of knowledge transfer among businesses, and vice versa (Altenburg, 2011). So, the landscape is substantially different from that seen in developed countries, where SMEs operate more as suppliers of large firms or specialise in market niches, and are less involved in mass production.

Changes in development policies

Over the past four decades, Latin American policies for SMEs have moved through various stages. In the 1970s, and to a certain extent in the 1980s, certain isolated measures were taken in a way that was not strategically tailored for this segment.

Governments would generally intervene actively in the economy, but their actions would target specific sectors or groups of companies. Most countries had not yet begun structural reforms. In this context, SMEs were seen as economic agents that at best should be protected; they were not targeted by competitiveness policy[3] or by economic development projects. The main form of intervention for SMEs at that time was through first-tier credit programmes.

Between the late 1980s and mid-1990s (possibly due to an extreme view of state neutrality but also due to the poor results achieved by previous action) Latin America adopted the view that "the best policy was no policy". This viewpoint was reinforced in the early 1990s by the recommendations put forward by the Washington Consensus, which said that the market was the best co-ordinator and allocator of resources in the economy.

Paradoxically, the Washington Consensus helped bring about a resurgence of interest in SMEs. The scant success of the mid-1990s reforms sparked high unemployment in many countries in the region, among other consequences. The high unemployment gave rise to a change in mindset, with SMEs now seen as potential creators of jobs, thus renewing interest in these firms in both academic and political circles. During this period various institutions to promote SMEs sprang up: the SME Secretariat in Argentina (1997), the Undersecretariat for Small and Medium Industries and Crafts in Ecuador (1999) and the National Micro and Small Enterprise Commission (CONAMYPE) in El Salvador (1996). However, this new interest in SMEs was not always accompanied by real progress in implementing policies, which often went no further than declarations or documents that were well publicised but produced little tangible fruit.

The last ten years have seen many institutional and regulatory changes and areas of intervention have been expanded and improved. These changes have benefited SMEs, and have been accompanied by greater efforts by the region's governments to promote these firms, allowing new, innovative instruments to emerge.

In several countries of the region, concerns about job creation have led governments to include microenterprises in the scope of policies that were initially designed for SMEs. This is particularly visible in Chile, Ecuador and El Salvador. In Peru, meanwhile, policies are geared solely to micro and small enterprises, and exclude medium-sized firms.[4] Normally when governments have included microenterprises in their policies it has been the result not so much of a period of reflection on business development as of an attempt to address unemployment, marginalisation and the informal economy in the country.

Because there is no clear analytical framework, the policies' focus has been able to shift to reducing poverty and increasing employment, with the objectives of improving competitiveness and developing exports fading into the background. Medium-sized firms run the risk of being marginalised by the support policies, as do certain areas of intervention geared towards more dynamic firms (for example, gazelle companies, new ventures in dynamic, more knowledge-intensive sectors, and companies with the potential to enter international markets).

The last ten years have seen many institutional and regulatory changes, and areas of intervention have expanded and improved. The growing interest in SMEs led governments to be more resolute in introducing initiatives that focus specifically on developing these economic agents, many of which have created innovative new instruments. This is especially true with regard to the promotion of business co-operation, production linkages and finance. However, in most countries too little time is still given to considering the contribution SMEs make to growing and changing the economy's production patterns. The only recognition they get is limited to generic statements on their potential to contribute to job creation. The role of development policies for SMEs is also ignored.

The institutional context of policies

To understand the specific features of the context in which policies are designed we must analyse two aspects of the context: the institutional framework and the regulatory framework. For SMEs, the political situation is basically marked by their dependence on macroeconomic policy and their subjection to competitiveness policies, though it is true that regarding the latter there have been positive developments over the last ten years. In the 1990s, policies to support SMEs were just one segment of a whole range of initiatives aimed toward boosting competitiveness. Since then the situation has evolved to where it seems that competitiveness policies are limited almost entirely to providing support for SMEs. Brazil, however, has used industrial policy to support SMEs.

Giving greater autonomy to agencies responsible for supporting SMEs could increase their capacity to design and implement policies, help improve the stability and professionalism of staff and make administrative procedures swifter and more flexible. But greater autonomy could also break many of the links between policies to support SMEs and national guidelines on productive development.

The institutional framework

For practical purposes, the institutional framework is complex because it is formed by various bodies and agencies and not just by the institution that is formally responsible for promoting SMEs. Even in countries without a federal political-administrative structure, even if they have a body specifically responsible for promoting SMEs, normally there are various institutions responsible for designing and implementing programmes to support this sector, whether they are banks, institutions to promote exports, public training institutes, government labour ministries, foreign affairs ministries and even home affairs ministries.

There are significant differences among countries in the level of independence and the political weight of the main institution to support SMEs. Institutions that have a certain level of independence can generate a greater capacity to design and implement policies. These institutions can plan further ahead and give greater continuity to their policies and programmes, more stability and professionalism to their staff, and faster and more flexible administrative processes in general (Angelelli, 2007). These factors can foster the development of an institutional learning mechanism. In two Latin American

countries the main agency to promote SMEs enjoys great levels of autonomy: SEBRAE in Brazil and the Production Development Corporation in Chile (CORFO). But even in these two countries, some of the potential benefits of autonomy have not been realised in recent years. Because of changes of government or a shift in their priorities, in Brazil and Chile both the programmes and the technical staff responsible for implementing them have been changed, and at times even suspended (Kulfas and Goldstein, 2011). It is unclear whether these institutions are truly independent of political cycles, even those that enjoy greater autonomy than their counterparts in other countries in the region.[5]

Giving development agencies greater autonomy increases the risk that their strategies might move away from national guidelines on productive development (if, indeed, such guidelines have been set out). One potential advantage of organisations to support SMEs working more closely with government ministries (production, industry or finance) is that it can make it easier to match policies aimed at SMEs with the national economic development agenda. However, there is no clear evidence that this happens in Latin America (Ferraro, 2011; Ferraro and Stumpo, 2010).

Regarding the inclusion of development agencies to support SMEs in the government structure, although many countries made institutional changes in the last two decades to promote the agencies to the level of vice-ministry or secretariat, their new rank in government has not translated into greater executive political power. Whether the agencies have become vice-ministries, secretariats or undersecretariats, the main institution to support SMEs remains a national or regional department (Table 2.5). The type of institution responsible for developing SMEs also varies greatly across the region, ranging from private corporations (often dependent on a ministry) to vice-ministries. There are some major differences among countries in terms of institutional development. Various factors have helped turn these institutions into powerful bodies: national strategic guidelines on SMEs have been continued, the institutions have now existed for a long time, and, albeit a less important factor, the institutions have been given greater autonomy. In addition to agencies with vast experience, scope and operational capacity, such as SEBRAE in Brazil, or bodies set up more recently, like Mexico's SME Fund, which has vastly developed its organisational and institutional role, there are other agencies where the process is at a much earlier stage, such as CONAMYPE in El Salvador. There are also agencies that have carried out a series of isolated actions, with very little co-ordination or continuity, as occurred in the Dominican Republic, Ecuador, Paraguay, Peru, Uruguay and Venezuela (Ferraro, 2011; Ferraro and Stumpo, 2010).

Table 2.5. **Development institutions in Latin America**

Country	Institution	Ministry
Argentina	Secretariat for SMEs and Regional Development	Ministry of Industry
Bolivia (Plur. State of)	Vice-Ministry of Micro and Small Enterprises	Ministry of Productive Development and the Plural Economy
Bolivia (Plur. State of)	Vice-Ministry of Medium and Large Scale Production	Ministry of Productive Development and the Plural Economy
Brazil	Brazilian Micro and Small Enterprise Support Service (SEBRAE)	Independent
Chile	Production Development Corporation (CORFO)	Independent
Chile	Technical Co-operation Service (SERCOTEC)	Ministry of Economy, Development and Tourism
Colombia	MSME Bureau	Ministry of Trade, Industry and Tourism
Dominican Republic	Council for Promoting and Supporting MSMEs	Ministry of Industry and Commerce
Ecuador	Undersecretariat of MSMEs and Crafts	Ministry of Industry and Productivity
El Salvador	National Micro and Small Enterprise Commission (CONAMYPE)	Ministry of Economy
Guatemala	Vice-Ministry of MSMEs	Ministry of Economy
Honduras	The Undersecretariat of the Bureau for MSMEs and the Social Sector of the Economy	Secretariat of Industry and Commerce
Mexico	Undersecretariat for SMEs	Secretariat of Economics
Nicaragua	Nicaraguan Development Programme for MSMEs (PROPYMES)	Ministry of Development, Industry and Commerce
Peru	Directorate-General for Micro and Small Enterprises and Co-operatives	Ministry of Production
Uruguay	National Bureau for Crafts and SMEs	Ministry of Industry, Energy and Mining
Venezuela (Bol. Rep. of)	Small and Medium-Sized Industry Development Institute	Ministry of People's Power for Industries

Source: Based on official information from the countries.

Institutions responsible for designing and implementing policies must deal with huge limits on human and financial resources. All the institutions have a budget of less than 0.1% of GDP, and in many countries it is less than 0.01% (Table 2.6). These figures are in stark contrast to the contribution SMEs make to the production fabric of most of these economies, both in terms of the number of firms and the number of jobs they create. Aware of this situation, some countries have increased the amount of financial resources available in recent years (Argentina, Brazil, Ecuador, El Salvador and Mexico). But these larger budgets have not represented significant changes in terms of percentage of GDP or government spending.[6] Furthermore, a large share of many of these institutions' funds do not come from the national budget. In El Salvador, for instance, 58% of CONAMYPE's budget came from external resources in 2006, and almost all of the budget for Paraguay's agency came from international co-operation in 2007. In other countries, certain strategically important areas, such as credit, function essentially with external resources.[7] Where this happens, the availability of resources depends on strategic decisions that are not adopted by the national authorities responsible for implementing policies. These decisions can affect the continuity of the programmes.

Table 2.6. **Expenditure by institutions to develop SMEs, 2005**
(percentage of GDP)

Country	Expenditure	Country	Expenditure
Argentina	0.004	Honduras	0.005
Brazil	0.085	Mexico	0.015
Chile	0.030	Nicaragua	0.022
Colombia	0.008	Panama	0.027
Costa Rica	0.004	Paraguay	0.005
Dominican Republic	0.033	Peru	0.004
Ecuador	0.005	Uruguay	0.002
El Salvador	0.019	Venezuela (Bol. Rep. of)	0.024
Guatemala	0.006	Latin America	0.018

Source: ECLAC, based on official information from the countries.

Very often poor institutional capacity is combined with budgetary constraints that limit measures to make policies for SMEs more effective. It is therefore important not only to increase the budgets assigned to these development institutions but also to markedly improve their capacity to mark out strategies, draw up policies and roll out the support instruments and mechanisms.

The regulatory framework

Defining a specific legal framework for SMEs is the second important aspect to consider, as it may help give policies greater stability and continuity and make their results easier to forecast. In addition to including a definition of the beneficiaries of development actions, this legal framework reflects the strategy's objectives, or at least its general guidelines, and in some cases may indicate specific policies (Kulfas and Goldstein, 2011). While some countries began drawing up specific regulations for SMEs back in the 1980s,[8] only more recently have such initiatives begun to spread. For instance, in Argentina, the SMEs Act was passed in 1997 and amended in 2000, while in Brazil the Micro and Small Enterprises Act (Law 9317) was passed in 1996 and the Micro and Small Enterprises Ordinance was passed in 1999 (Law 9841), and later, in 2006, the General Law on Micro and Small Enterprises built a new legal framework. Chile passed the SME Ordinance (Law 20 416) in 2010 and Mexico passed the Development of MSME Competitiveness Act in 2002. These initiatives confirm the gradual trend towards greater inclusion of SMEs in countries' strategies and more precise definitions of the role they are given.

In some countries, these new laws enabled existing initiatives to be consolidated and organised, strengthening guidelines that had been in place for many years. This was the case in Brazil and Chile, for instance. In other countries, meanwhile, the new laws laid the foundations for adopting a new strategy of action. The most relevant experience in this regard is that of Mexico. It began its reforms by creating the Undersecretariat for SMEs (SPYME) in 2001 and passing the Development of MSME Competitiveness Act in 2002. In this framework, three programmes were developed to support MSMEs: the Support Fund for MSMEs (FANPYME), the Fund to Support Access to Finance for MSMEs (FOAFI) and the Fund to Support Production Chain Integration (FIDECAP). The undersecretariat merged these three programmes together in 2004 to create the SME Fund, which has become the country's main body for promoting SMEs, using a novel, integrated approach.

Objectives and strategies

SME's role in the development process is reflected in the objectives of the development policies designed for these companies. In this regard, there are differences among countries in the region resulting from the potential role each country gives SMEs and the underlying conceptual framework.

> *While having numerous objectives for policies and initiatives to support SMEs should not pose a problem* per se*, in practice it requires an institutional capacity and a coherence among political instruments that are sometimes lacking in Latin America.*

While it is true that the number of objectives associated with support policies and initiatives has gradually been cut down over the last two decades, there is still a plethora of objectives, which in many cases are unjustified. In theory, policies to support SMEs are geared toward creating jobs, increasing exports, triggering productivity gains, improving innovation capacity and competitiveness, fostering the development of human capital and reducing market failures. In some countries in the region, promoting regional development is another objective. These objectives are not sought in all countries at the same time. Some countries adopt three or four objectives, such as in Ecuador and Colombia (Burneo and Grijalva, 2010; Zuleta, 2011). But some countries set as many as six or more objectives at the same time, such as Brazil, Chile, El Salvador and Mexico (Belmar and Maggi, 2010; Pessoa de Matos and Arrojo, 2011; Cabal, 2010; Brown and Domínguez, 2010). While taking on numerous objectives should not pose a problem *per se*, in practice it requires an institutional capacity and coherence among political instruments that are sometimes lacking in Latin America.

Another problem with multiple objectives is prioritising them. Some institutions responsible for designing and implementing policies still have difficulties with prioritising their objectives. Creating jobs and improving competitiveness usually figure among the essential objectives. But improving competitiveness is only sometimes defined as a clear, unequivocal goal. Sometimes the quest for greater inclusion of SMEs in national and international markets (substituting imports) is cited as one of the objectives. The potential for SMEs to actively take part in developing the economy as a whole is considered explicitly and implicitly. In other cases, improving competitiveness is synonymous with strengthening SMEs to "survive" in contexts in which domestic markets are fully open (Kulfas and Goldstein, 2011).

Design and implementation

Policies that seek to change the situation of SMEs have achieved limited results.[9] This has been blamed on problems in the design and implementation stages. Other aspects that have hindered results are the theoretical framework behind the policies, co-ordination among institutions and programmes, and the capacity of agencies responsible for public policies to produce correct diagnoses.

The theoretical framework

In relation to the theoretical framework, it is important to take into account that SMEs are a highly diverse set of economic agents. This affects which policies are chosen

and should be reflected in their objectives, instruments and forms of implementation. Studies on SMEs in Latin America acknowledge their diversity, and policy makers largely do so too. However, this has not resulted in a coherent model to justify the selectiveness of these interventions.

Some countries, though, have made progress in this area. Brazil, for instance, includes various stages of the business life cycle: entrepreneurs who want to start a business; firms that are less than two years old; and firms that are more than two years old. In Mexico, however, beginning with the process initiated when the SPYME was set up in 2001, the 2002 legislation was passed and the SME Fund was set up in 2004, a model has been drawn up that covers five types of firms (reflecting the possible stages of development of SMEs): new enterprises, microenterprises, SMEs, gazelle companies and market-driving companies.[10] The Mexican business development strategy is built around five stages, beginning with training "new individual entrepreneurs", who turn their businesses into microenterprises and then into SMEs. The SMEs that mature and achieve sustained high growth (20% a year or higher) turn into gazelle companies, which qualifies them to receive support from non-governmental bodies called business accelerators. This support allows them to move into the next phase, associated with market-driving companies (large firms), by integrating into supply chains or becoming exporting SMEs. Each stage is associated with a specific set of instruments according to the particular characteristics of each business segment. The role of the SME Fund is essentially to provide demand-side subsidies, which can generate constraints, particularly for smaller and less dynamic firms. However, an important new characteristic of this policy is that it plans, designs and implements support actions as part of an integrated model.

Despite these examples, in most Latin American countries implicit or explicit acknowledgement of how diverse beneficiaries are has not translated into a coherent model that is able to direct all the interventions. This is reflected in the "horizontal",[11] excessive use of instruments based on the philosophy of demand-side subsidies. Although programmes such as these have had interesting results, they involve assumptions that could prove to be exaggerated. For example, these programmes assume firms are in a position to properly express their demand, and that doing so is enough to create markets. But this seems unlikely for smaller firms. Consequently, demand created by subsidies will not necessarily be for services that respond to the real constraints these firms face.

The assumption that subsidies create new markets for services for SMEs does not always hold true. Stable, efficient policies do not necessarily cause relevant markets to emerge. Particularly in the areas of technological innovation and training the results have been quite poor. A major problem seems to be that it is hard to create a services market for SMEs in areas that require heavy investment by the firms that should be offering the services. Subsidies do seem to successfully generate services in areas that do not need heavy investment by consultancy firms, such as administration, management, computing and marketing. But more sophisticated activities, such as training in industrial processes and the activities of technology centres, represent a hurdle that is too large for private companies whose market consists of SMEs.

Strict application of a policy of demand-side subsidies has strong negative consequences for SMEs: markets that need large-scale investment are not generated and instruments to develop production are designed for the most efficient SMEs, which most are not.

Strict application of a policy of demand-side subsidies has strong negative consequences for SMEs. Certain markets are not generated, such as those that need large-scale investment from companies that want to participate and provide services to SMEs. Moreover, it is difficult to spread the use of instruments to develop production that have proved to be efficient, because they were designed specifically for the most dynamic companies, which are in a position to clearly define their market demand. Most SMEs do not fall under this category.

So, if intervention is built solely around demand-side subsidies it probably will only amplify the differences among firms. Though a small group of highly dynamic firms is able to use the available instruments efficiently, a much larger number of firms cannot. Consequently, only the dynamic companies will reap the rewards of the development programmes, thus widening the performance and efficiency gaps between them and less dynamic firms (Ferraro and Stumpo, 2010).

Co-ordination among institutions and programmes

The vast range of public institutions involved in designing and implementing policies creates problems in co-ordinating intervention measures. These problems are even more complex when the main agency in charge lacks the capacities, rank and resources to exercise the necessary leadership, which unfortunately happens more often than not in the region.

The situation becomes even more complex when the programmes are implemented through second-tier and third-tier systems. In these cases, a set of intermediary agents – sometimes created by the programmes themselves – must be used that require a high control and certification capacity from public agencies. In particular, they need co-ordination to ensure there is coherence among the overall policy objectives, the results achieved and the beneficiaries that are reached effectively. The problems are caused because the policies do not have an integrated vision (or they have a poorly defined perspective) or a guiding theoretical model[12] in which the programmes and instruments are effectively co-ordinated in such a way as to complement each other. SMEs have problems related to innovation, human resources, capital, and specialist technical assistance, but there are few initiatives to co-ordinate the tools available and maximise their impact on the beneficiary firms.[13]

The lack of an integrated vision and institutional co-ordination is also reflected in the duplication of instruments. For example, in several countries in the region, multiple ministries in the same country (finance, foreign affairs, home affairs, etc.) have their own unrelated programmes encouraging SMEs to work together in partnerships, and these projects have different objectives and methodologies, and have little to no contact with one another.

> ***Because there is so little co-ordination among the vast number of existing programmes for SMEs in the region's countries, many experiences have been repeated over and over again without being assessed and without any lessons being learned from them.***

Although SMEs are highly diverse and operate in many different sectors and locations, which partly justifies why there are so many programmes, a lot of co-ordination is needed among these different programmes. As a result, experiences have been repeated, sometimes over and over again, without any corresponding assessment taking place and, more importantly, without any lessons being learned to help redesign and adapt them. This makes the transaction costs for companies to access and obtain information on these programmes expensive (Ferraro and Stumpo, 2010).

Diagnostic capacity

The development institutions' strategic guidelines and programmes make assumptions about the SMEs that are not always justified by thorough strict analyses. This can lead to mistakes in selecting the groups of beneficiaries, instruments, and even objectives. In Latin America, there are still too few permanent mechanisms to help better understand the characteristics of the firms targeted by the policies, verify their performance and monitor the results achieved by the instruments. It is therefore necessary to consider the situation of the information systems and assessment mechanisms associated with the design and implementation of development policies in the region.

In Latin America, the information systems that support policies are either weak or do not exist. In recent years, development institutions have shown more interest in statistical data covering the policies' beneficiaries. This is because it has been recognised that for a long time policies were designed based on isolated, unreliable data. In Argentina, for instance, the experience of the Employment and Business Dynamics Observatory (OEDE), which is run by the Directorate-General for Employment Research and Policy Making, part of the Ministry of Employment's Undersecretariat for Technical Planning and Labour Studies. The OEDE was formed in 2003 through a technical assistance programme between ECLAC and the Ministry of Employment. The observatory gathers information every month on 900 000 formal businesses (400 000 if excluding sole traders). This is a unique project in the region because it uses administrative records collected by public institutions.[14] Another important experience is the implementation of SEPYME's MAPA PyME programme in Argentina in 2007, which has provided new information on SMEs through a survey taken twice a year among 10 000 firms, gathering data on certain key variables on the economic dynamics of smaller firms.[15] In Brazil, SEBRAE conducts research with a large quantitative component to analyse the general characteristics of micro and small enterprises and certain specific aspects such as their access to credit or survival factors and mortality rate.

In recent years, policy makers have shown a growing interest in mechanisms to assess SME support projects. In Chile an external institution, the University of Chile, evaluated the PROFO development programmes in 1996 and 2002 and the National Technology and Production Development Fund (FONTEC) in 2004. In El Salvador, the programme to support the development of micro and small enterprises was assessed in 2004 and the Technical Assistance Fund (FAT) in 2005. In Mexico, the SME Fund has been assessed several times since its inception.

In sum, there is still no systematic effort to introduce assessments as an integral part of programmes or feedback mechanisms used for intervention instruments and modes of intervention. Nevertheless, the experiences described show that progress has been made over the past decade and policy makers are more concerned than in the past about measuring the results of interventions to support SMEs.

Conclusions and recommendations: towards a new vision of policies for SMEs

Since the second half of the 1990s, major changes have been made to policies to support SMEs. In some countries, including Brazil and Mexico, these changes have probably been more pronounced, but in other countries changes have been made to the regulatory framework and institutional structure and the areas of intervention have been broadened (especially through production-linkage programmes). Despite the results achieved by a few individual initiatives, overall the policies have not significantly affected the performance of SMEs.

Certain key aspects need to be dealt with before a new policy agenda can be built. First, it seems necessary to make progress in defining an analytical framework to steer interventions and make them coherent. This involves specifying the roles assigned to SMEs as a whole and within each segment of SMEs in the country's production and businesses. It also involves acknowledging the heterogeneity of the beneficiaries and the potentialities of each business sector, and marking the boundaries that define which businesses can be beneficiaries. These boundaries are not always clear, despite most countries having included microenterprises in their business-development policies. For instance, in the context of policies to support SMEs, there are doubts over the wisdom of including informal enterprises and sole traders and, more generally, all subsistence firms that have no real growth potential in programmes that assume beneficiaries have growth potential. Second, there needs to be a clear separation between economic and competitiveness objectives with other objectives, such as social objectives and poverty reduction.

Policies to support SMEs must match the productive-development guidelines of the countries in the region and become part of those efforts.

Once the heterogeneity of the beneficiaries has been acknowledged, these objectives must be consistent with the specific characteristics of these businesses. Certain areas generate complementary assets for firms, allowing for horizontal policies and approaches. However, it is much more important to define objectives, instruments and intervention methodologies that are effectively adapted to the full range of firms' capacities and potentialities. Smaller firms, for instance, are unlikely to contribute to competitiveness objectives and will not be in a position to sufficiently respond to approaches based on demand-side subsidies. Instead, they will need much more intensive support and monitoring. Medium-sized and high-growth firms can associate with objectives to generate new sectors, enter international markets and develop production chains, and they are more likely to respond to specific incentives. Marking the boundaries of the beneficiaries does not mean excluding certain business sectors, but rather adapting and homing in on the objectives and mechanisms to support the specificities of the economic agents.

In relation to this, there also needs to be greater co-ordination between countries' policies to support SMEs and their broader plans to transform production, if any. If the policy to support SMEs does not include social objectives, it should be integrated into the efforts to change the productive structures. One of the characteristics of Latin America's structural diversity is the highly segmented web of businesses and structures. Given

the little integration of many SMEs in the most important sectors of the production fabric, policies to support them need to be consistent with the countries' guidelines for developing production to become part of those efforts. This is especially important for the most dynamic SMEs, which can successfully become part of national production chains, linking up with large firms to access international markets or helping generate new sectors. Initiatives geared towards SMEs should collectively be considered as a piece in the larger framework of industrial policy.

Policies need to go through a period of maturing and ongoing feedback. This requires an institutional maturing to guarantee the continuity and sustainability of interventions, whatever the political cycle. It also requires spaces for reflection on the results achieved, the effectiveness of the instruments and methodologies adopted, and the coherence and validity of the elements mentioned (analytical framework, objectives, focusing capacity, and coherence and integration with national development plans). At the same time, mechanisms are needed to monitor and adjust interventions, which means that monitoring systems and assessment instruments are vitally important.

Moreover, another element is necessary as a prerequisite for building an analytical framework and focusing actions according to the characteristics of the economic agents: the capacity to generate and update diagnoses through an information system built according to policy needs. Because quantitative information is so scarce in Latin America, it is difficult to diagnose the beneficiary firms' circumstances and performance, and to evaluate the application of assessment mechanisms. Several countries have sources of information they do not use or they underuse.[16] In most countries in the region, the results in this area have been rather poor, despite the innovative projects mentioned. The meagre results reflect the lack of commitment and the inability to see the importance of information in enabling the institutions responsible for the development of SMEs to design and assess policy.

Notes

1. For instance, it is estimated that the entry and exit of firms has accounted for between 20% and 40% of labour productivity growth in some European countries and the United States (OECD, 2003). Similarly, Baldwin (1995) found that 20-25% of productivity growth in US manufacturing was a result of this process.
2. In Argentina and Chile, the two criteria have been used to estimate the difference between the official figures and the real figures. The results found that the official figure for the contribution of SMEs to the total number of jobs was 7 percentage points too high in Argentina and more than 20 points too high in Chile (Stumpo, 2007).
3. "Competitive policy" is used here to mean the set of measures targeting the most dynamic economic agents with the aim of improving the country's integration into the global economy.
4. Brazil is a different case altogether. Although SEBRAE has been dedicated to supporting micro and small enterprises ever since its inception, it does not exclude medium-sized firms from its public policies and has created several industrial development and competitiveness programmes.
5. A case in point is Argentina's Secretariat of SMEs and Regional Development (SEPYME), which since its inception in 1997 (as the "SME Department" in the Ministry of Finance) showed unusual institutional volatility for at least a decade (Sztulwark, 2010).
6. The funds available for implementing policies are greater than what is shown in Table 2.6, since in addition to the main body responsible for supporting SMEs there are other institutions involved in programmes that directly or indirectly benefit SMEs. Nevertheless, the figures suggest there is a huge discrepancy between, on the one hand, the statements, intentions and institutional mandates associated with these policies (which often aspire to cover more than 90% of the country's businesses), and, on the other hand, the real possibility they have of having an effect on SMEs.
7. This is what has happened in Argentina in Chile (Belmar and Maggi, 2010; Sztulwark, 2010).
8. In Colombia, for instance, Law 78 was passed in 1988 with a series of provisions to promote micro-enterprises and small and medium-sized industries. Later, in 2004, Law 905 set a new institutional framework for the development of policies geared to SMEs.
9. However, there are programmes, some of which are quite innovative, that have achieved positive results for specific, usually quite limited groups of beneficiaries, as discussed in other chapters.
10. Market-driving companies are large firms that create jobs and growth for the country. They are a fundamental market for the growth of SMEs and can forge opportunities for SMEs to outsource.
11. It is important to clarify that "horizontal" here refers to both the decision not to set priority sectors and areas for intervention and to the trend to consider all firms that benefit from these policies as having the same capacity to respond to market stimuli.
12. Irrespective of which model is chosen.
13. An example is the separation between financial and non-financial instruments. Often, financial instruments involve different institutions, objectives and beneficiaries from non-financial instruments.
14. Although this experience arose from concerns related to the study of the job market, incorporating a dimension of analysis related to business development has yielded information on SMEs and the creation of areas of study that are relevant to SMEs. For more information, see the OEDE's website (www.trabajo.gov.ar/left/estadisticas/oede/index.asp).
15. Regrettably, this programme has become very weak.
16. Especially those sources related to administrative, fiscal and social security records.

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CHAPTER THREE

Financing SMEs in Latin America

In Latin America, SMEs still have poorer access to finance, less favourable conditions and higher costs than large firms, despite the major improvements in the region in recent years. This gap hinders a greater contribution to development by micro, small and medium-sized enterprises, *i.e.* most production units in the region. The changes experienced by the Latin American financial system, particularly the shift from relationship banking to multi-service banking, have contributed to limiting access to credit for small and medium-sized enterprises (SMEs). Public financial institutions have contributed greatly to narrowing the financing gap, and recently new tools have proliferated to meet the needs of SMEs. However, for smaller companies to live up to their full potential they need greater access to financial and non-financial resources. There is ample space for public action through instruments and services to support (SMEs), a task that must involve national governments and the private sector. The region needs flexible, comprehensive public policies to finance businesses, with options for training, production linkages and innovation.

Introduction

Micro, small and medium-sized enterprises are the economy's main drivers of productivity growth, job creation and a more diverse business structure. However, the importance of smaller firms in Latin America contrasts with the limited finance available to them. The level of finance is essential to understanding how these firms have developed in the region and for understanding their productivity levels, innovative capacity and integration into global value chains, among other traits. Also, the problems faced by SMEs in accessing credit and the unfavourable conditions under which they obtain it, compared to larger firms, remain some of the main obstacles preventing them from growing and developing. Before we can understand the nature of financing for smaller Latin American firms we must first analyse how the financial system has developed, what its structure is and which of its characteristics most affect financing mechanisms for SMEs. An appropriate, beneficial financial system is essential to spur growth in production, especially among SMEs in the region.[1]

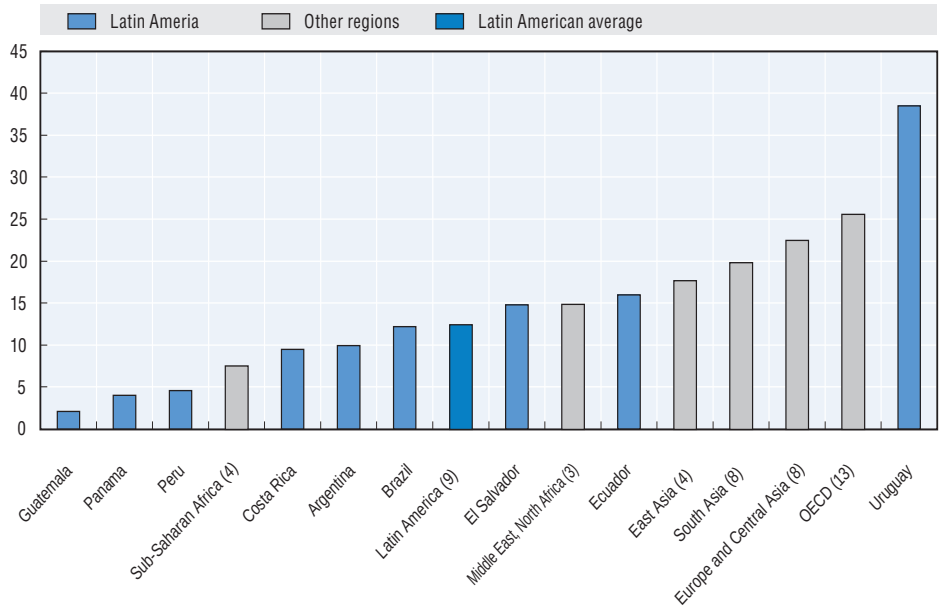
This chapter addresses the financing challenges of smaller firms in Latin America. The text is structured in four sections, followed by an appendix. The first section describes recent trends in access to finance, particularly how the credit model for SMEs has developed, and the factors that help explain the funding gap that affects smaller firms. Next, the chapter examines the role that public financial institutions such as first- and second-tier development banks and public guarantee funds play in lending to these firms and stimulating new sectors. The third section presents new financial and non-financial instruments that provide opportunities to improve finance, including access and conditions, for SMEs. The chapter concludes with a series of recommendations for public policy. These recommendations reflect the need for an integral approach that takes training, production linkages and innovation into account. Finally, the Appendix goes into greater detail on the structure of finance for firms in the region.

Trends in the financing of SMEs in Latin America

A significant proportion of Latin American SMEs still have limited access to finance. Less than 15% of lending in the region goes to smaller firms, even though they form the bulk of production units and provide almost 80% of jobs. This suggests recent changes to the financial systems in the region have not sufficiently matched the demand for lending instruments for businesses (Figure 3.1).

Although few small Latin American companies manage to obtain finance, the loan-approval rate for SMEs is relatively high.[2] This shows that the shortage of financing in the region is due not only to a supply problem or a lack of available resources, but also to aspects related to demand and/or self-exclusion (for failure to meet eligibility standards), which affects SMEs' capacity for financial access.

Figure 3.1. **Credit to SMEs as a percentage of total credit, 2010**



Notes: The definition of an SME varies from country to country, so the following ratios are not directly comparable. The variables used for the classification include number of employees, annual sales, and loan size. For more information, see the CGAP's *Financial Access Report*.
Sub-Saharan Africa: Botswana, Cape Verde, Liberia, South Africa.
East Asia: China; Chinese Taipei; Hong Kong, China; Mongolia.
Europe and Central Asia: Albania, Armenia, Georgia, Kazakhstan, Latvia, Russia, Tajikistan, Uzbekistan.
OECD: Australia, Belgium, Estonia, France, Hungary, Italy, Japan, Netherlands, Poland, Portugal, South Korea, Turkey, United States.
Middle East, North Africa: Iran, Jordan, Morocco.
South Asia: Afghanistan, Bangladesh, India, Indonesia, Malaysia, Pakistan, Singapore, Thailand.
The figure in brackets indicates the number of countries considered.

Source: CGAP (Consulting Group of Assistance to the Poor), *Financial Access Report 2010*.

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Historically, Latin American economies have been lagging behind in terms of depth[3] and financial development compared to other emerging economies and OECD countries. With traditionally low levels of saving and lending, the lack of depth in the region's financial system partly explains the gap in the coverage, quality and cost of borrowing for the business sector. Although in recent years borrowing has significantly increased in several Latin American countries, most of it has concentrated on consumer and mortgage loans rather than business loans.

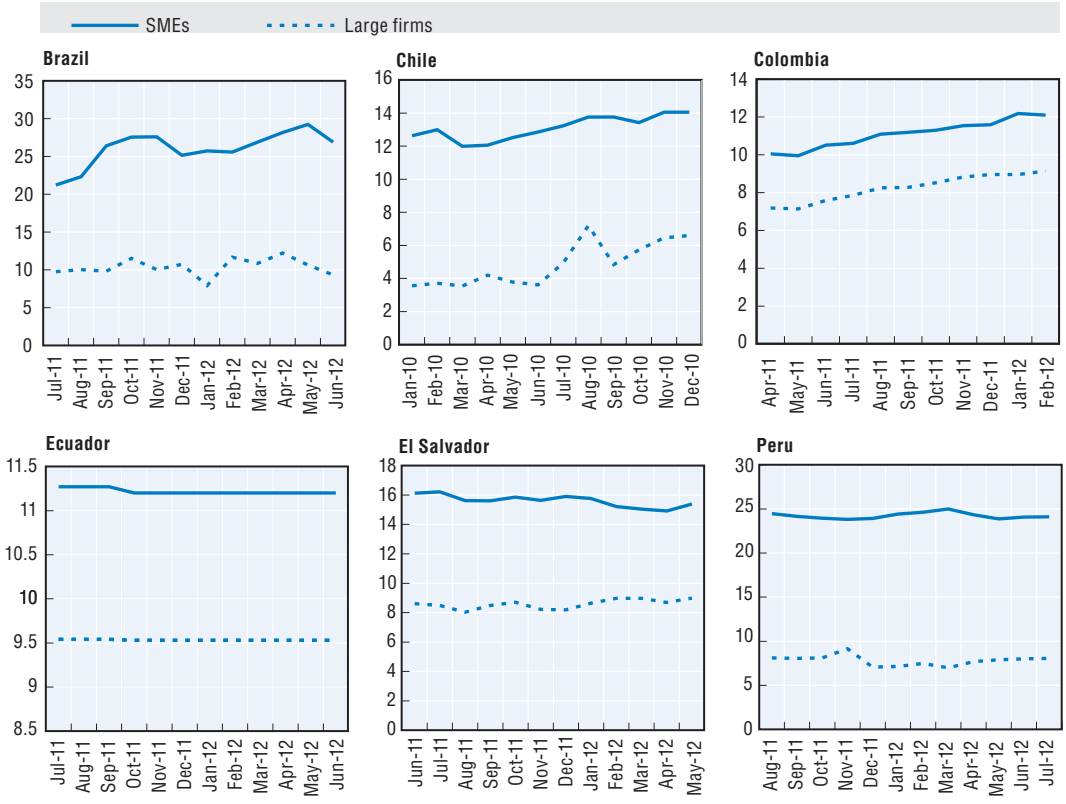
Despite the fact that SMEs account for a large part of the productive sector and nearly 80% of employment, their access to financing continues to be limited. Less than 15% of total credit in the region is targeted towards SMEs.

The transition of the banking business model from relationship banking to multi-service banking is one of the major factors behind the limits on financing for SMEs.[4] In relationship banking, there was a personal relationship between the financial institution and the customer for awarding loans. Multi-service banking, meanwhile, introduced more functional lending technologies that focused on solvency and payment capacity.

For SMEs, this led to poor credit risk assessments, less-flexible financing schemes, high collateral requirements, higher banking fees and high borrowing costs. The effects of this transition still make it harder for SMEs to borrow.

As various studies have shown, in Latin America access to finance for businesses is closely related to a company's size, its presence on the international market and its export capacity. This leads to a higher proportion of large firms that export having greater access to credit (Greenaway *et al.*, 2007; Berman and Héricourt, 2008; Muûls, 2008). Although some countries have expanded corporate credit, the funding gap between SMEs and large firms remains a major challenge for the region. The main differences among business loans are in the interest rates (Figure 3.2) and the maturities.

Figure 3.2. **Interest rates for SMEs and large firms: long-term loans (maturity greater than one year)**



Note: SMEs are defined based on the amount of the loan. Each country uses a different threshold, so the interest rates are not directly comparable among countries.

Source: OECD Development Centre, based on national data (2012).

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Difficult access to finance for SMEs is strongly linked to the transition of retail banking's business model, from a relationship lending scheme to a multi-service banking one.

The shortage of funding for SMEs in Latin America is most prominent for long-term bank loans. SMEs focus on the short term, and a large proportion of working capital loans is funded through equity (Appendix, Figure A.1). Of the little long-term credit that does exist, larger firms take the lion's share, giving them an additional advantage over SMEs and widening the credit gap by company size (Appendix, Figure A.2).

Moreover, because smaller firms are not able to provide as much collateral, it is harder for them to borrow money. SMEs cite the absence of collateral as a major obstacle for obtaining credit in Latin America.[5] As in other regions, the main sources of collateral are fixed assets (buildings, machinery and equipment), with personal assets becoming less important as the size of the company increases.

Although it is still necessary to strengthen the implementation of appropriate finance mechanisms in the region, the recent expansion of instruments specifically for SMEs shows that financial institutions are increasingly adapting their products to SMEs' demands.[6] In several countries in the region, financial institutions have successfully begun introducing instruments that take into account how diverse SMEs are. These innovative instruments are customised to the needs of companies in specific sectors, stages of development and strategic potential.

Development of the financial system in Latin America: the funding gap

This section explores the credit system for SMEs in Latin America to analyse the causes of the sector's funding gap. It describes the history and current state of the region's financial system, particularly the development of the business model in retail banking, the increased presence of foreign banks, the changes in net interest margins and dollarisation levels, and regulatory changes introduced in recent years. In addition, it examines how these elements affect the characteristics of finance for SMEs in the region.

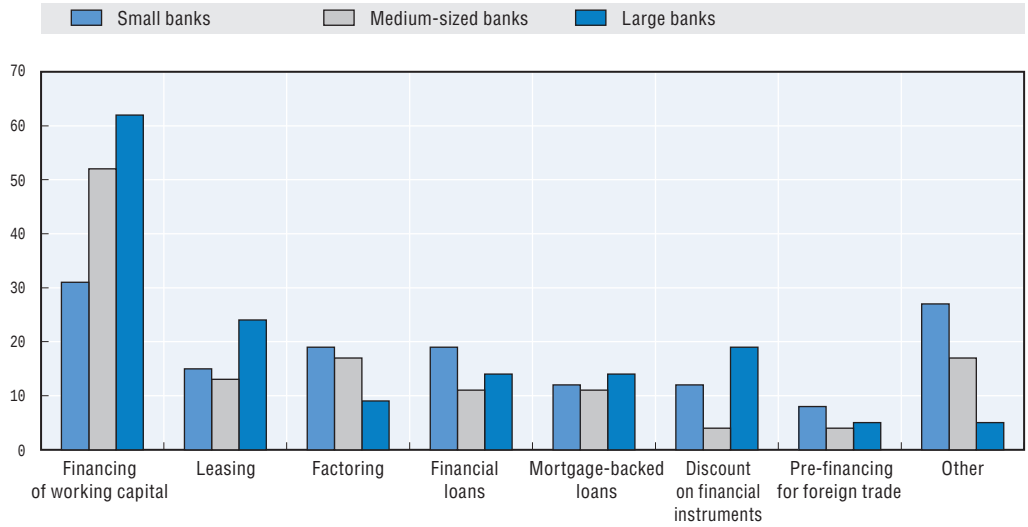
Development and structure of the credit model for SMEs

The financial system in Latin America has gone through major changes over the past two decades. From the 1990s governments in the region began to introduce reforms to liberalise the financial sector, with less government involvement and greater private-sector participation. In particular there was a rise in foreign ownership and banking concentration. Concentration increased substantially in the 2000s, with the three largest banks increasing their average assets from 51% in 2000 to 71% in 2009. Major banks grew in importance in the region while the business model shifted from relationship banking to multi-service banking. Foreign banks have gradually increased their presence in Latin America, raising their share of assets to 31%, one of the highest rates in the world.[7] This figure is far above the rates of foreign ownership in South Asia (8%) and the OECD countries (12%), but close to the rates in sub-Saharan Africa (28%) and Eastern Europe (28%). However, bank ownership varies hugely across the region, with almost all banks in Central America and the Caribbean being foreign-owned.

The changes in the Latin American banking system have affected the finance mechanisms for SMEs. The arrival of larger banks with a multi-service business model instilled the idea that, unlike smaller banks, which have more of a relationship model, large banks provide fewer resources to SMEs, since they would not be interested in doing

business with these kinds of firms because of information problems, high fixed costs for relatively small transactions, and the impossibility of using the economies of scale that exist when lending to large firms. However, in recent years large banks in the region have shown a growing interest in providing services to SMEs, but their supply is still insufficient (Figure 3.3) (de la Torre *et al.*, 2010).

Figure 3.3. **Type of loans offered to SMEs by size of financial institution, 2011**
(as percentages)



Notes: Small banks: Banks with fewer than 300 employees, or more than 300 employees and 10 or fewer branches.
Medium-sized banks: Banks with 301-5 000 employees and 11-150 branches.
Large banks: Banks with more than 150 branches.

Source: IDB (2011), *Banks and SMEs: Raising the Game: 4th Regional Survey in Latin America and the Caribbean.*

StatLink http://dx.doi.org/10.1787/888932732652

Various studies on the presence of foreign banks in Latin America have examined their impact on efficiency and competition in the banking sector, stability, the import of external shocks and credit to SMEs. The studies generally show that these banks are operationally more efficient than domestic banks, with lower interest margins and overhead costs (Yeyati and Micco, 2007). In addition, several studies have found no significant difference in lending to SMEs between foreign banks and major domestic and public banks (de la Torre *et al.*, 2010; Beck *et al.*, 2011). However, there is mixed evidence regarding the relationship between foreign banks and lending to SMEs, or at least there is not such a positive correlation with lending to such firms. Foreign banks seem to be more reluctant to lend to small firms without clear information proving their solvency. When they do lend, they prefer providing short-term loans to larger companies (Berger *et al.*, 2001; Mian, 2006 and Ferraro, 2011). While the presence of foreign banks helped bring stability during the crises of the late 1990s, lending by foreign banks fell sharply during the 2008 crisis, increasing the risk of shocks being imported from developed countries (Cetorelli and Goldberg, 2011; Gianetti and Laeven, 2012).

Despite considerable improvements in recent years, the Latin American credit model for SMEs is still faced with challenges both in the supply and demand of finance. From the point of view of supply, the current multi-service banking model, with methods

based solely on the company's solvency and not its projected profitability, has brought about an inflexible way of assessing and measuring risk, a low debt-recovery rate among financial institutions (due to the lack of information and transparency of balance sheets), lower economies of scale (due to the fixed costs of small transactions) and problems with selection methods, which have segmented the credit market. From the point of view of demand, SMEs are faced with various obstacles limiting their access to finance. These include technical requirements for obtaining a loan, collateral requirements, and high interest rates. Because of the nature of supply and demand for finance, commercial banks tend to lend very little to SMEs, which must therefore rely heavily on self-financing and resources from suppliers. So, although credit is available, bureaucracy, such as balance-sheet requirements (which often SMEs report incomplete) or collateral requirements make it hard to access. Financial institutions and financing mechanisms have a crucial role to play in breaking down these barriers and thus improving access to credit for SMEs, providing them with specific instruments and support in applying for and managing loans.

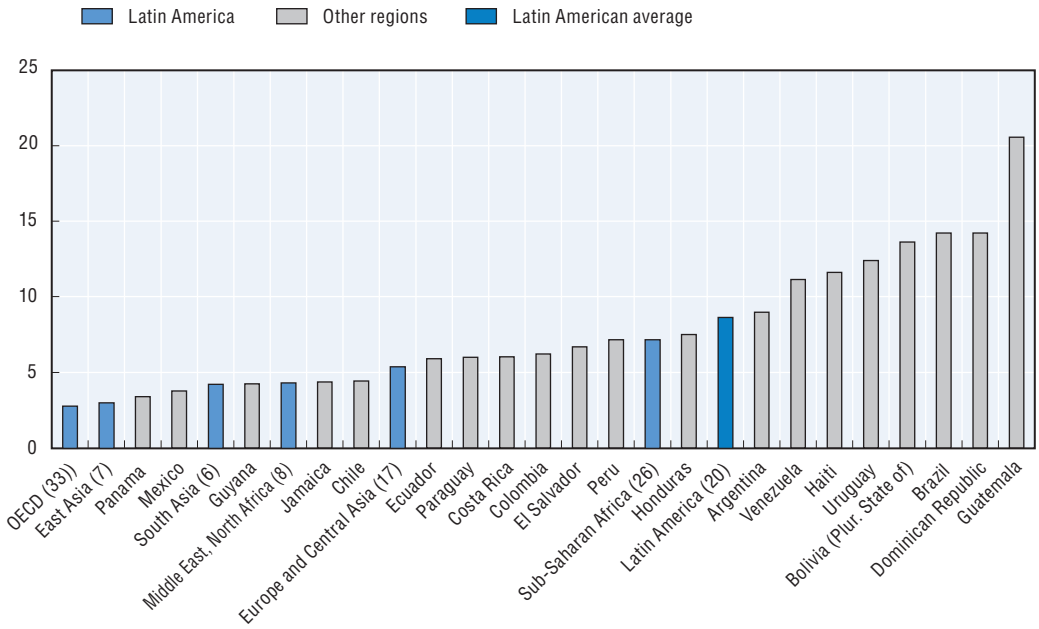
Net interest margins in Latin America

Net interest margins and other factors such as taxation on financial intermediation, market structure and risk determine how efficiently banks can use their resources for financial intermediation. Though there are large differences among countries, several Latin American countries have net interest margins that are among the highest in the world, higher than in OECD countries and other emerging regions (Figure 3.4). For example, Chile's and Mexico's margins are below the Eastern European average, while Brazil, the Dominican Republic and Guatemala have the highest margins among the countries analysed. High net interest margins can reduce the number of profitable investment projects and raise borrowing costs, so they can limit the availability of credit to businesses, especially SMEs.

Net interest margins in several Latin American countries rank among the highest in the world. By increasing the final cost of capital, in particular for SMEs, they have affected credit availability.

Net interest margins cannot be explained only by the risk associated to loans in Latin America, since the percentage of non-performing loans has become one of the lowest in the world (World Bank, 2012a). Another factor behind the region's high margins is the banks' overhead costs[8], which are among the highest in the world, hence the differences with other emerging economies. Reserve requirements and differences in rights of ownership also push margins up, albeit to a lesser extent (Gelos, 2009). To reduce these margins, it is necessary to stimulate competition and bank efficiency, reduce reserve requirements where they have no negative impact on financial stability and improve the legal environment.

Figure 3.4. **Net interest margin, 2009**
(as percentages)



Notes: Net interest margin refers to the accounting value (or carrying value) of net interest revenue as a share of total earning assets. The figure in brackets indicates the number of countries considered.

Source: Bankscope, Thorsten Beck and Asli Demirgüç-Kunt, "Financial Institutions and Markets Across Countries and over Time: Data and Analysis", *World Bank Policy Research Working Paper* No. 4943, May 2009.

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Dollarisation

Dollarisation refers to dollar-denominated debt, and it too has played a role in financing business in the region, especially medium-sized firms. Dollarisation increased in Latin America in the 1990s due to high inflation and large interest rate differentials (Rennhack and Nozaki, 2006; Fernández-Arias *et al.*, 2006). Although macroeconomic stability and the introduction of floating exchange rates led to a decline in foreign-currency debt, many firms, often those with links to the export sector, continued to rely on this form of finance (Zettelmayer *et al.,* 2010). In Peru and Bolivia, the dollarisation of loans for small businesses reached almost 30% and 50% respectively during the last decade (García-Escribano and Sosa, 2011). In addition to the lower cost of capital, foreign-currency loans tend to have longer maturities, which favours medium- and long-term investment. The higher maturity of loans made this mechanism more relevant for medium-sized firms, as is reflected in the rise in foreign loans to manufacturing and tourism firms in various countries in the region (Bodnár, 2009). Although it is an alternative form of credit, foreign-currency borrowing undermined the domestic development of other kinds of instruments for medium-sized firms. Since many medium-sized firms with access to foreign credit lack the financial infrastructure for foreign-exchange hedging, dollarisation has also increased the currency risk for firms using this mechanism.

Although dollarisation represents a borrowing option for some firms, reaching levels of 30% to 50% in some countries, the lack of financial infrastructure for hedging has resulted in a higher currency risk for some SMEs.

International financial regulation and access to credit for SMEs

International financial regulation has been highlighted as a possible explaining factor for why the banking sector largely ignores SMEs (OECD, 2012a). Although Basel II[9] is still being implemented in the region, its effects need evaluating, especially on lending practices for businesses. The gradual, delayed implementation of Basel II in Latin America has focused particularly on capital adjustments (de la Torre *et al.,* 2012). By requiring larger provisions, the capital available for borrowing (personal or corporate) may have declined in some segments of commercial banking. However, previous financial crises endowed countries in the region with domestic regulations to tackle the problems associated with credit risk. But in several countries it is national rather than international regulations that have tended to damage the availability of credit to SMEs.

New regulations for managing liquidity introduced as part of Basel III in 2009 in response to the international economic crisis seek to strengthen certain key measures to prevent the kind of liquidity problems that have come to the fore during the crisis, especially those related to capital requirements.[10] The new regulation can generate two opposite effects on lending to SMEs: it can increase liquidity requirements for the banking sector and reclassify loans to small businesses with a lower risk level. As in other episodes of crisis, higher capital requirements can trigger commercial credit rationing or higher financing costs (OECD, 2012a; Elliot, 2010). Moreover, classifying loans to SMEs as retail banking could allow financial institutions to reduce the sector's risk classification. This approach, unlike a corporate loan classification, can allow the risk premium charged to small businesses to be cut. The net effect on SMEs in the coming years will depend on these two factors, once the regulation has come into force.

Table 3.1. **Implementation of Basel III Regulations in Latin America**

	Argentina	Brazil	Chile	Colombia	Mexico	Peru
Capital adequacy ratio (% of risk-weighted assets)	8	11	8	9	8	10
Standard	Basel I	Basel II	Basel I	Basel I	Basel II	Basel II
Authorisation for Basel II internal models	No	Yes	No	No	Yes	Yes
Power to require a higher capital adequacy ratio for each bank based on regulatory risk assessment	Yes	Yes	Yes	Yes	Yes	Yes

Source: de la Torre *et al.,* (2012).

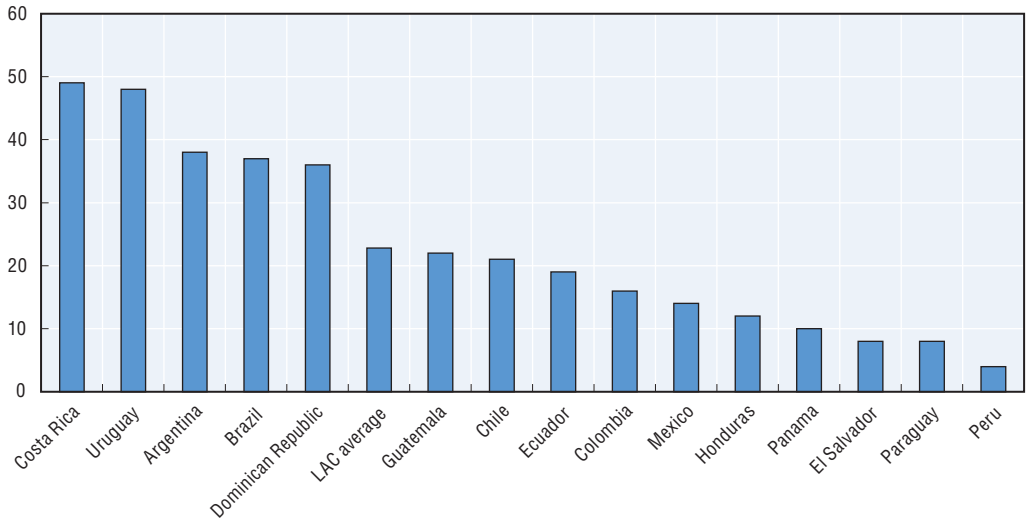
Credit guarantee schemes allow SMEs to use low-risk assets (financial and non-financial) as collateral and can help downgrade the assessed risk, thus facilitating the provision of credit to such firms. The Basel III regulations allow guarantees to be used to reduce companies' risk weight and therefore cut down the reserve capital requirements. This may be one of the most significant changes to finance for SMEs, since it encourages financial institutions to become involved in such programmes. National regulations can complement these schemes, allowing the use of mobile assets (*e.g.* machinery) as collateral. These possibilities open the door for targeted government intervention.

The role of public financial institutions in financing SMEs

Historically, public financial institutions have played an important role in lending to SMEs. In particular they have served to guarantee the availability of medium- and long-term resources for investment by devising financial instruments and by financing segments in which the private sector has not been particularly active. These institutions are heavily involved in the region's banking system, with their participation averaging close to 23% (Figure 3.5) (de Olloqui and Palma, 2012).

With an average participation of 23% in the Latin American financial system, PFIs have played a relevant role in facilitating credit and guarantee schemes for SMEs. Long-term financing by PFIs increased by 85% between 2007 and 2009.

Figure 3.5. **Public financial institutions' participation in Latin American banking systems: 2007-09**
(percentages, loan portfolio balance)



Source: de Olloqui and Palma, 2012, based on data from the Latin American Association of Development Financing Institutions (ALIDE).

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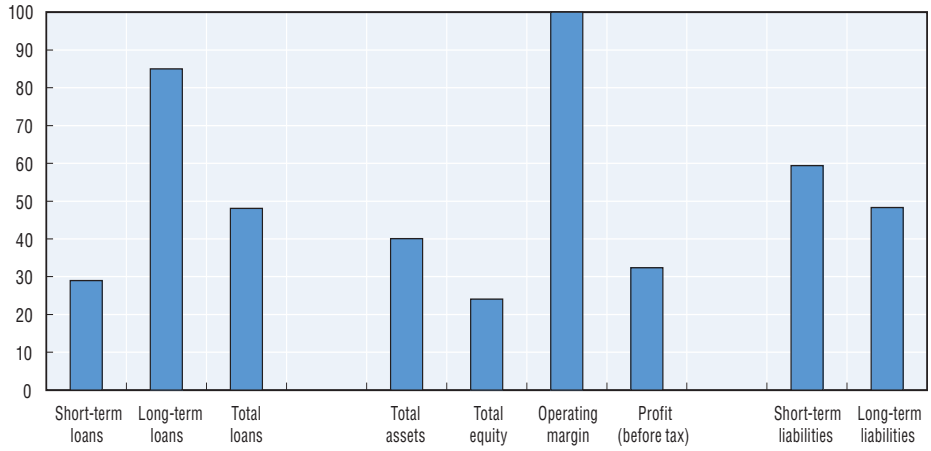
The landscape of public financial institutions is diverse, ranging from agencies that support SMEs to guarantee companies, public banks and development banks. Their problems with governance and their mandate are varied, and depend on each institution's nature and objectives. For instance, besides their importance in financing SMEs, development banks play a crucial role in supporting the production sector. Public banks often try to compensate for the lack of commercial banking services in places where they are not available, or act as a countercyclical instrument when private banks retract, or when the banking system is underdeveloped or unstable. Development banks, however, rather than trying to emulate the private sector or necessarily turn a profit, are an effective tool for government intervention in sectors or projects with positive externalities, in strategic areas or the development of innovative businesses.

Public financial institutions implement finance policies for different types of programmes. Their products include direct and indirect credit, subsidies to make loans cheaper and the provision of guarantees. Recently, a burst of new instruments seek to reduce the information barriers between banks and businesses and/or target specific SME demands.

Figure 3.6. **Variation in the main financial-statement indicators of public financial institutions, 2007-09**

(percentage variation)



Source: de Olloqui and Palma (2012), based on information from 30 public financial institutions, compiled by ALIDE.

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Along with increasing their participation in the credit market, public financial institutions increased their long-term lending by 85% between 2007 and 2009, reflecting the important role they have played in the region. Furthermore, their performance indicators (Figure 3.6) show that their financial sustainability has not been hit in the medium term (de Olloqui and Palma, 2012). However, the effectiveness and sustainability of these institutions' programmes in Latin America has still not been sufficiently tested or guaranteed, and experience suggests it is important to have appropriate governance structures and mechanisms to ensure transparency.

Development banks in Latin America

Although public financial institutions have been operating since the 19th century, development banks began operating in Latin America in the 1930s. The 1929 Great Depression created the scenario for inception of development banks to promote production in certain sectors of the economy (ECLAC, 2010), but the height of activity of development banks was from 1950 to 1980. During this period, the banks responded to the lack of financial depth of production activities, with more than 100 government institutions providing financial aid. The banks thus played a leading role in supporting the import-replacement strategy. At the time, policies to support financing mainly involved providing credit lines at subsidised rates through banks and other first-tier public financial institutions. Private banks and institutions were limited to acting as brokers for second-tier credit lines opened up by central banks and other public institutions (Held, 1999).

Inadequate government intervention and poor financial management left public financial institutions with major losses. Resources were allocated based on credit quotas per sector, interest rates were subsidised and the portfolio was not well assessed, turning the institutions into providers of direct public subsidies rather than facilitators of finance for long-term production activities. As a result, confidence in development banks dropped, and this, along with a wave of reforms in the region in the early 1990s, gave rise to an institutional restructuring process that eventually weakened the role of development banks in industrial policy.

Economic reforms introduced since the 1990s have seen the public sector's role in the economy largely replaced by the private sector, thus redefining the institutional and functional structure of development banks. In terms of policies to support finance for SMEs, this resulted in subsidies on interest rates gradually being abolished (subsidies are directed towards transaction costs and the development of guarantee systems) and the credit process being moved to first-tier institutions. Greater attention began to be given to risk management, reducing overheads and cutting the number of non-performing loans (ECLAC, 2010). A focus on specialist topics such as financing exports (Argentina, Colombia and Venezuela) or lending to microenterprises (Ecuador and Venezuela) enabled public action to focus on areas where it was expected to be most effective. As the subsidiary view of the state's role in the economy gained ground, development banks became less important. Their role as second-tier banks moved to the fore as they stopped financing production directly (ECLAC, 2012).

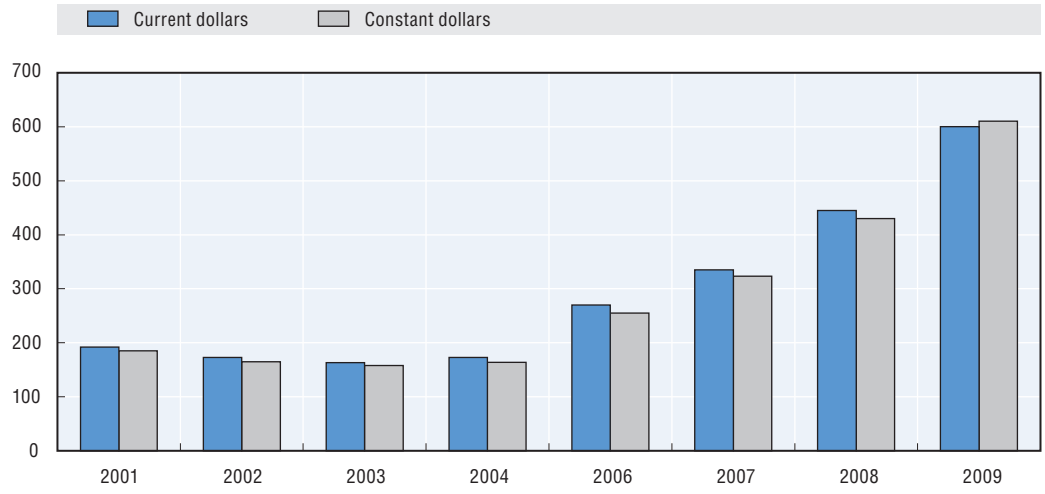
The view of the role of development banks in Latin America has changed again in recent years (ALIDE, 2010; ECLAC, 2012): between 2000 and 2009 their loan portfolio grew by an average of 15% a year, tripling in value to reach about USD 600 billion in 2009 (Figure 3.7). These data reflect a change in perspective on the role of development banks, with first-tier lending institutions previously being considered inefficient. One reason for the change is the recognition of the role of development banks in financing economic and social demands. Other factors that help explain why development banks have once again become key players in production include the lack of interest among first-tier private banks in channelling funds from second-tier banks, the specialisation of development banks in sectors or types of firms in which private banks lack experience, or the fact that clients chosen by private banks are different from the population targeted by development banks (Yeyati *et al.*, 2004).

The role of development banks in Latin America has evolved considerably: between 2000 and 2009 their credit portfolio increased by 15% annually, tripling their value, and reaching nearly USD 600 billion in 2009.

Development banks are adopting an institutional structure in which different models to support the financing of SMEs coexist. Whereas previously development banks' second-tier functions in Latin America were most prominent, today each country has a different institutional structure, with first-tier-only or second-tier-only banks and hybrid systems.[11] Most Latin American countries have development banks, including the Brazilian Development Bank (BNDES) in Brazil; Nacional Financiera (NAFIN) and the Foreign Trade Bank (BANCOMEXT) in Mexico; the Colombian Development Bank (BANCOLDEX), a mixed development bank; Corporación Financiera de Desarrollo S.A. (COFIDE) in Peru; and Corporación Financiera Nacional (CFN) in Ecuador. Alternatively, where there are no development banks, first-tier public banks usually play an important

role in lending and directing loans to smaller firms. Banks that have this role include Banco de la Nación Argentina (BNA) and the Bank of Investment and Foreign Trade (BICE) in Argentina; BancoEstado in Chile; and Banco Multisectorial de Inversiones (BMI), Banco Hipotecario and Banco Agrícola in El Salvador.

Figure 3.7. **Loan portfolio of development banks in Latin America, 2001-04 and 2006-09**
(billions of dollars)



Source: ALIDE (2010).

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The change in the role of public banks and development banks also raises questions as to the most appropriate form of regulation. Public banks are usually guaranteed by the treasury, so they do not need ordinary prudential regulation (including capital requirements), since the state virtually acts as a guarantor. For development banks, meanwhile, this problem is partly remedied by the nature of their mission. Today, it is widely acknowledged that development banks should not compete with the private sector but should complement it. They should not be required to have the same level of financial returns, since their performance level should not only take into account performance criteria used to evaluate private banks, especially when their purpose is to boost sectors that are strategic, innovative or have a high growth potential.[12]

Financing programmes for SMEs are normally run by promotion agencies in co-ordination with development banks, usually using second-tier systems or mechanisms for channelling direct loans. The main purposes of these programmes are to acquire capital assets, working capital and, to a lesser extent, investments. However, today, public financial institutions in Latin America are diversifying their support systems for SMEs by introducing new programmes with more specific lines of finance, such as introducing productivity gains to improve environmental sustainability and supporting specific production sectors. An interesting development is the growing trend of development banks to promote the use of financial-service packages that include products such as credit cards and online and electronic transaction systems. One particularly successful case is the BNDES Card in Brazil (Box 3.1).[13]

Box 3.1. **The BNDES card**

Introduced in 2004 by the Brazilian Development Bank (BNDES), the purpose of this card is to help microenterprises and SMEs access working capital, investment and machinery. The development bank does not issue the card directly but acts as a second-tier bank, allowing private and public financial institutions to issue it. Firms with a BNDES card receive a revolving credit facility. The amount they can borrow depends on the issuing bank's financial analysis, up to a maximum of BRL 1 million (Brazilian reais) – about USD 500 000 – to buy products from suppliers accredited by the bank that appear on the card's transactions portal. Cardholding firms can also use the system as a sales channel by obtaining accreditation as suppliers in the programme, provided that at least 60% of their goods or services are produced in Brazil and they comply with certain requirements set by the development bank in certain areas.

Since the scheme was introduced, 250 000 cards have been issued, 72 000 entrepreneurs have made at least one purchase and 11 000 companies have made at least one sale. The total credit disbursed through the card has risen sharply in recent years, from BRL 845 million (about USD 360 000) in 2008 to BRL 7 billion (about USD 3.45 billion) in 2011. The BNDES card has grown from representing less than 1% of total BNDES disbursements to micro and small enterprises in 2004 and 2005 to 13% in 2009 and more than 18% in 2011, making it one of the main instruments to support SMEs, behind other programmes such as BNDES Automático and the FINAME programme for financing machinery and equipment.

The product owes its success not only to being relatively cheaper than other quickly accessible financial products, but also largely to its accessibility and flexibility, with information available on the BNDES website, where users can make transactions and purchases quickly and simply.

Source: ECLAC, IDB and OAS (2011).

Guarantees requested by commercial banks, in particular for long-term loans, prevented a large number of SMEs from applying for credit. Reciprocal guarantee societies (RGS) are organised through firms' associations and facilitate technical assistance for their members, encouraging their financial sustainability.

In Colombia and Mexico there are other examples of financing programmes for SMEs. In Colombia, BANCOLDEX has gradually moved its activity from the export sector to SMEs,[14] and operates as a second-tier bank using a rediscount mechanism to finance loans.[15] There was a marked rise in its operations for SMEs, both in terms of the amounts disbursed and the number of beneficiaries: in 2010 BANCOLDEX disbursed 40% of its credit to SMEs, and for the period 2005-10 credit disbursed by BANCOLDEX amounted to 10-15% of commercial loans of all Colombian financial institutions to SMEs.[16] In Mexico, too, there was a significant rise in support programmes for SMEs. For example, the NAFIN development programme accounted for 0.8% of GDP in 2001 but had grown to 2.5% of GDP by 2008.[17] Nevertheless, NAFIN's financing programmes still have little impact on Mexican SMEs' access to credit, since their main focus is on short-term credit.

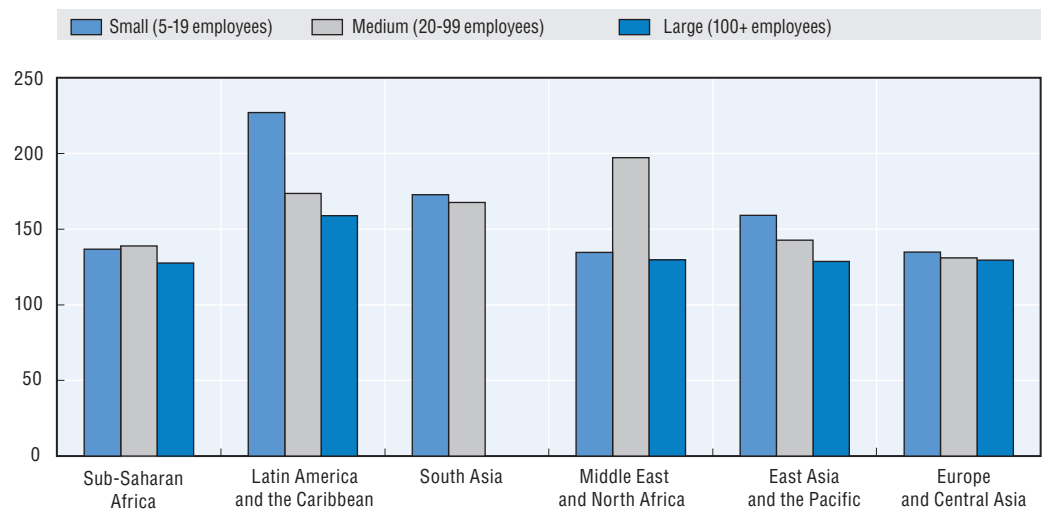
Since the 1990s, there has been less financial support for SMEs through subsidised interest rates or compensation for transaction costs, making space for new financial mechanisms. Nevertheless, there are still some relevant examples of such support. Argentina's Secretariat of SMEs and Regional Development (SEPYME) has the PBT interest-rate reduction scheme, which between 2009 and the first quarter of 2011 has provided ARS 1.6 billion (Argentine pesos), or a little more than USD 400 million. Several factors explain the programmes' lack of continuity, especially the little additional credit they generate. So once again we see how the difficulty smaller firms have in gaining greater access to credit is related not only to the cost of borrowing but also to loan applications and requirements.

Despite the advances that have been made, Latin American development banks' financing programmes for SMEs have several limitations. First, credit normally has a short-term focus and is concentrated on working capital. Furthermore, the bureaucracy of the lines of finance between first-tier and second-tier institutions can inhibit the loan's effectiveness. When approval is needed from a second-tier bank, the process can take a long time, making credit less attractive to both the firm and the first-tier bank that would use the line of finance. Also, a way to improve the definition of development banks' financing programmes is through better assessment of them, which would make it possible to measure the impact and the amount of additional credits disbursed by these institutions.

Guarantee systems in Latin America

The main barriers SMEs must overcome to access credit include the high guarantees commercial banks require for loans, especially long-term loans. Usually, these guarantees must partially or totally cover the debts, nearly always with assets (movable or immovable), which are transferred to the bank as compensation if the borrower defaults. This system has the disadvantage that it selects those firms that probably least need access to credit and excludes many firms that do not meet the guarantee requirements.

Figure 3.8. **Value of required collateral for a loan (as % of the loan) by firm size**



Note: Regional averages calculated for the most recent year available.
Source: World Bank, (2012b), *Enterprise Surveys* 2012,

StatLink http://dx.doi.org/10.1787/888932732747

National guarantee systems have grown in strength in Latin America. There are 83 guarantee institutions that have provided guarantees amounting to USD 20 billion for more than 2.2 million SMEs, which mobilise a total balance of around USD 30 billion. This represents a significant increase in amounts and coverage since 2000, when there were only 23 guarantee institutions and 358 000 SME beneficiaries, with total loans of USD 2 billion (ALIDE, 2011). There is not just one guarantee model, and usually one of two types of systems is used: guarantee funds and guarantee societies.

Most countries have guarantee funds consisting mainly of public capital, such as NAFIN in Mexico; the National Guarantee Fund in Colombia (see Box 3.2); the FOGAPE fund for small-business owners and FOGAIN fund for investments in Chile, both belonging to BancoEstado; the Brazilian Micro and Small Enterprise Support Service (SEBRAE) and the Brazilian Development Fund (BNDES) in Brazil; and the FOGABA fund for the province of Buenos Aires in Argentina. The maximum amount covered by the funds is between 50% and 80% of the loan.[18] Although public resources are still very prominent, there is growing interest among SME-support agencies, development banks and governments to encourage the involvement of the private sector, particularly by promoting new guarantee societies.[19]

Box 3.2. **Colombia's National Guarantee Fund**

In 1981, the Colombian government set up the National Guarantee Fund (FNG), which was tied to the Ministry of Trade and Industry, with contributions from the now-defunct Industrial Development Institute. The fund facilitates access to credit for SMEs[a] by providing guarantees for credits related to working capital, investment, capitalisation, leasing, revolving credit, loans from BANCOLDEX and Colciencias (the Colombian Administrative Department for Science, Technology and Innovation), and business start-up loans. Requests for guarantees are submitted to the financial intermediary to which the firm applied for the loan and the amount guaranteed varies between 50% (for BANCOLDEX loans) and 60% (capital and fixed investments).

The number of beneficiary SMEs has mushroomed, from 50 000 in 2002 to more than 200 000 in 2008, as have the resources mobilised by the FNG, from COP 950 billion (Colombian pesos) (about USD 350 million) to about COP 5.2 billion (about USD 2.8 billion) over a similar period. Between 2003 and 2009, the amount of credit guaranteed by the FNG grew from 33% to 59% of the total commercial credit of financial intermediaries specialising in SMEs. According to recent studies assessing the impact on firms benefiting from the fund's guarantees compared to those that do not, beneficiaries have 5.8% higher growth in production and a 4.6% higher employment rate. Since 2008 the number of beneficiaries has fallen by 2.6% while the default rate has risen 5.7%, reflecting the global economic crisis.

Notes: a) The FNG only provides guarantees to SMEs, which are defined in Law 905 of 2004 as firms with assets worth less than the equivalent of 30 000 minimum wages, which is about USD 8.3 million.

Source: Based on Zuleta (2011).

Public guarantee schemes (PGS) represent the main guarantee instrument in emerging and developing economies; they can have additional effects by encouraging SME financing through short-term counter-cyclical lending.

In Latin America the importance of guarantee societies has increased dramatically.[20] They can be financed with public or private resources, and generally it is the guarantee society itself that analyses and assesses the risk associated with the transaction, assumes the risk of defaults and bankruptcies and takes on responsibility for recovering unpaid repayments. SMEs that have obtained guarantees have better access to credit, better loan conditions and longer loans.

A unique case is that of mutual guarantee schemes (MGSs), in which those who receive the guarantees are integrated into the society as part of an association. In this type of society, SMEs that receive guarantee and consultancy services are defined as participating partners, contributing capital stock (Class A shares) and they cannot receive guarantees for more than 5% of the total amount guaranteed by the society. The sponsoring members may be national, regional, local or foreign public or private entities of various sizes (small, medium-sized and large firms) that contribute to the capital stock (Class B shares) of the risk fund, receiving income and tax exemptions. The tax exemptions make this mechanism attractive to private investors, since although MGSs may initially rely on public funds, their aim is to function autonomously, limiting the state almost exclusively to eliminating tax collection (REGAR, 2008). MGSs were developed particularly in Argentina, and their growth has accelerated in recent years (Box 3.3).

Credit guarantee schemes (CGSs) can have knock-on effects by promoting the financing of SMEs. In addition to providing guarantees, CGSs provide short-term and countercyclical loans, which enable the postponement of loan-guarantee repayments, the provision of support to mutual-guarantee associations, the bundling of guarantee loans with other business services, and the guarantee of venture capital (OECD, 2012b). Public guarantee schemes are CGSs' main guarantee instruments in emerging and developing economies, where they have spread.[21] In 1995 Brazil launched the FAMPE fund for micro and small enterprises, the country's largest guarantee fund. Operated by SEBRAE, it provided guarantees for around 44 000 firms in 2009. The MGSs are characterised by the active participation of the private sector, SME associations and banks. They generally have a thorough knowledge of the businesses, and participants continuously monitor each other. This prevents firms that need credit from taking excessive risks and increases the likelihood of the loan being repaid.

In addition to reaching their target users, MGSs must guarantee financial sustainability. The experience of Asian countries shows the importance of guarantee funds having enough capital and prudent risk-management practices. The financial sustainability of MGSs is difficult to examine because of the operational and financial differences among the different schemes. One study that compared 76 MGSs around the world found that new schemes recorded lower losses (as a percentage of the total) (Beck *et al.*, 2009). Schemes with greater private-sector involvement have lower average default rates, which suggests the private sector has an important role to play in managing risk.

Box 3.3. **Guarantee societies in Argentina: the case of Garantizar SGR**

The system of guarantee societies in Argentina is formed largely by private investment, with heavily subsidised taxes on investment, supervised and supported by SEPYME and the Argentine Chamber of Guarantee Societies and Funds (CASFOG). The country has 24 private MGSs,[a] with all but one funded exclusively by the private sector. Only Garantizar SGR receives state contributions, which still provide a large proportion of the society's risk fund.[b] Garantizar SGR has significantly improved its performance in the last five years, having increased its share of guarantees issued by Argentine guarantee societies from around 30% in 2006 to almost 40% in 2010, making it the national market leader for such guarantees for SMEs. Meanwhile, the default rate fell to less than half of 1% of guarantees in 2010.[c]

Officially formed in 1997, Garantizar SGR was the result of an agreement among the leading professional business associations that represent SMEs. The society began with a core group of 120 SMEs from various sectors as participating partners and a risk fund formed by the contribution of the Banco de la Nación Argentina, which was the first and only sustaining partner. The number of partners and the amounts guaranteed have both continued to rise. In 2010 there were more than 4 900 participating partners and the risk exposure[d] had almost doubled since 2007, reaching close to ARS 830 million (around USD 180 million).

Garantizar SGR's participating partners hold 51% of the capital stock and the sustaining partners hold the remaining 49%, with the latter also contributing to the risk funds. The resources that form the general risk fund and the specific risk funds are of mixed origin (public and private), but the MGS must remain self-sustainable, except for the indirect state subsidy of a tax exemption on contributions to the capital stock and the risk fund. Private-sector contributions have been brought up to 75%, with public financial institutions contributing the remaining 25%: Banco de la Nación Argentina, which is the main contributor, Banco Ciudad de Buenos Aires and the Bank of Investment and Foreign Trade (BICE).

In response to the economic crisis that hit Argentina in 2001-02, Garantizar SGR developed new products offering a comprehensive financial alternative to SMEs. These products include, in particular, financial trusts for productive value chains, paycheque negotiation (factoring) and leasing services, the guarantees for which accounted for almost 20% of the value of the society's risk exposure in 2010 (the remaining 80% consisted of guarantees for bank loans, in line with Garantizar SGR's traditional mission).

Note: a) Some Argentine MGSs are tied to specific sectors, such as steel, dairy, oil, agriculture and trade (REGAR, 2008).
b) REGAR (2008).
c) Ferraro (2011).
d) Risk exposure refers to guarantee certificates that have been issued and are still valid that provide a guarantee on returns not yet fully or partially settled (www.garantizar.com.ar).

Source: Based on REGAR (2008) and www.garantizar.com.ar.

Experience shows that MGSs can leverage financial access for SMEs, assuming they work with the target population that requires the support and not companies that would have access anyway (OECD, 2012b). The financial additionality brought by MGSs depends strongly on low-risk companies with a low payment capacity having access to the credit market without needing these schemes while higher-risk firms without collateral do use them. A study of what effects guarantee schemes had in Indonesia found that most companies with access to them had access to credit anyway (BRI, 2009).

In Latin America, the implementation of guarantee programmes has been effective in making credit cheaper and more widely available, but the programmes still have various limitations. Firstly, public guarantee fund programmes frequently have problems with defaults, insufficient resources to meet commitments, and slow approval and payment processes for guarantees (OECD, 2006). Further, the banks' lack of confidence in public funds has led to cases of public guarantees being undervalued and not widely accepted. One possible response to these limitations is to develop guarantee systems in which the private sector is most prominent. In this respect, the trend in the region for more guarantee societies and MGSs to be formed is positive, but in most countries they are still in their infancy and provide only a small proportion of total borrowing by SMEs. Despite their private funding, guarantee societies and MGSs are also a policy instrument, so their autonomy and self-sustainability must be compatible with the general framework of public policy for SMEs (REGAR, 2008).

Improving credit and financing for SMEs in the region: trends and innovative instruments

More innovative solutions to support financing are beginning to join the traditional instruments used in Latin America to try to meet the specific demands of SMEs according to the type of company. The last few years have seen an explosion of new types of initiatives, such as sector-specific programmes to support the financing of SMEs that are specifically designed for a certain sector, size of business or type of business; funds to finance innovations and exports; and non-financial support to improve management and the business culture. In some countries, but not all, initiatives are being rolled out to support businesses, taking into account their stage in the business cycle and potential growth. These initiatives foster the creation of innovative or technology-based firms through business incubators and programmes for the provision of seed and venture capital.[22] Moreover, the expansion of the Internet has enabled the development of new online support mechanisms, which have often represented huge steps forward in streamlining and accelerating the processes.

The next section presents the main trends and developments in instruments to support the financing of SMEs in Latin America.

Innovative programmes for firms include SME financing support by sector, size and firm type, special funds for innovation and exporting firms, and non-financial assistance for improving managerial and corporate culture among SMEs.

Cutting down information problems

One of the main obstacles preventing SMEs in the region from accessing credit is information asymmetries and deficiencies. These problems are reflected in the excessive red tape required when applying for a loan, disproportionate requirements for putting together projects to be financed and even little knowledge of the products available among SMEs. To reduce these barriers, strengthening and improving business services has begun to be seen as an additional, effective way of improving access to credit for SMEs in many countries. Thus non-financial support for SMEs through alternative measures is growing. These measures include consultancy, training and services to support business

management. Prominent examples of these non-financial services are SEBRAE in Brazil and the Financial Outreach Programme in Mexico.[23]

Public financial institutions and governments in the region could be essential in fostering a business-friendly environment. In recent years there has been growing interest in the study of public institutions and public policies aimed at fostering entrepreneurship among SMEs and developing a favourable business climate for them (Kantis *et al.,* 2005). There is a consensus on the importance of governments' role in creating the right institutional environment, especially in terms of the problem of asymmetrical information. Although several Latin American countries are taking measures in this direction, there is still plenty of scope in public policy to reduce the lack of knowledge among entrepreneurs in SMEs on finance instruments, budgeting tools and accounting. Transparency in accounting practices and the adoption of various corporate governance regulations are areas where entrepreneurs in Latin American SMEs can make progress (OECD, 2006).

Factoring and leasing

The instruments to support SMEs have multiplied in the region, prioritising the possibility of an integrated package of financial services. Commercial banks, development agencies and development banks are promoting the use of new financial instruments, including electronic payment systems, credit cards and leasing and factoring services.[24] With factoring, SMEs receive immediate liquidity on credit sales, improving the firm's cash flow and enabling the risk of default to be transferred.[25] E-factoring enables firms to obtain immediate liquidity from a financial institution for outstanding invoices. It is fast becoming a better alternative to traditional factoring, in which the supply firm uses a third party (called a "factor") to discount outstanding invoices received by the buying company.

The expansion of the available financial products with new instruments responds to the need to serve all SMEs in all business segments. The development of these instruments has also been facilitated by the expansion of online banking services, allowing businesses to use banking services even if they do not have any branches nearby.

One of the main forms of electronic factoring is NAFIN's Production Chains Programme in Mexico, which lets companies in production chains have immediate liquidity for receivables through an electronic discount on their invoices before the due date. In practice, the finance is provided by NAFIN, which as a second-tier institution encourages the participation of other bank and non-bank financial institutions with attractive interest rates. The loans mature after 30 to 120 days and no fees are charged. The programme thus provides a supplier with more liquidity more quickly than traditional factoring and avoids the problems of costs and maturity dates that affect credit for SMEs (Leucona Valenzuela, 2009). The programme has been very successful in terms of the number of firms that have used it and the amount of finance it has provided.[26] It also allows large firms to strengthen their relations with suppliers and SMEs to build up a credit history that will help them obtain longer loans.

Within the examples of factoring, NAFIN's Production Chain Programme in Mexico stands out, letting companies have immediate liquidity for receivables through an electronic discount on their invoices before the due date.

Financing for firms in production chains

An example of a specific instrument for certain SMEs developed in the last decade is the funding programmes for production chains. In Mexico, NAFIN's Production Chain Programme has been providing this kind of assistance to SMEs since 2002,[27] and currently has 584 chains in operation. The programme takes into account the need for these agents to co-operate and network and seeks to promote the inclusion of SMEs in value chains. It has managed to successfully cut down the procedures SMEs must go through to access credit, with the help of new instruments such as e-factoring, and has helped reduce one of the most critical problems in Mexico's production system: the disintegration of production chains since the 1990s.[28]

Start-up finance and creating new businesses

The lack of finance remains one of the main obstacles to creating new businesses in Latin America. Banks tend to consider start-ups as high-risk with no credit history. This limits their access to commercial loans and forces them to use self-financing or take on informal loans from acquaintances, relatives or suppliers in the early stages of their development. Public-sector intervention is therefore vitally important for new businesses to help them become part of the financial systems, since firms of this kind are usually highly dynamic and can transform economies and create positive externalities through innovation, productivity and employment. Since businesses' financial needs change as they move through different stages of development, a financial support strategy must offer alternatives for these different stages, allocating resources to firms during their start-up phase and their first few years in business. Furthermore, in the four stages of a business's development (seed, start-up, growth and maturity) there are four categories of financial-support instruments: technical support and incubators, seed capital, business angels and venture capital (Echecopar *et al.*, 2006).

Latin America is beginning to promote comprehensive technical- and financial-support mechanisms for business start-up, especially for the firms with the greatest growth potential, such as innovative and technology-based firms. Although there is very little empirical evidence of their results, most countries are promoting business incubators. Various countries also have seed-capital programmes and incentives to boost the venture-capital industry, which is still in its infancy, as seen by the small number of capitalist angels. Despite some progress, the initiatives have seen mixed results, and there are too few impact-assessment mechanisms to show how effective they are.

Seed: initial technical support and business incubators. Most countries in the region have initiatives of this kind.[29] During this initial phase, instruments to support business start-ups cover not only financial aspects but also technical-support programmes run by agencies that promote SMEs for business incubators and local support centres, as well as other business-development services. In Colombia, the National Learning Service (SENA) has led the development of the National Business Start-Up and Incubation System. The service was created through an alliance between public (governments and local councils), private (businesses, chambers of commerce and trade unions) and educational (technical schools and university) agents. The programme provides training services in business management and aims to improve training for entrepreneurs by focusing on business skills and interaction with customers and suppliers.[30]

Start-up: seed capital. In many countries, the most common form of intervention to support start-ups is through direct seed-capital subsidies. Successful examples of such projects can be found in various countries: the Brazilian Development Bank's Criatec Fund and the Innovation Programme run by the Studies and Projects Funding Agency (FINEP) in Brazil; the Seed Capital programme run by CORFO and the Venture Capital programme run by the Technical Co-operation Service (SERCOTEC) in Chile (Box 3.4); and programmes in Argentina, Colombia, El Salvador and Mexico. In Colombia, the Entrepreneurs' Fund was set up as part of the SENA to support innovative business projects by professionals who have recently graduated. In Brazil, the Criatec Fund was created in 2007 with Brazilian Development Bank funds and focuses on innovative firms in high-technology sectors such as information technology, biotechnology, new materials, nanotechnology and agribusiness.

The National Business Start-Up and Incubation System in Colombia, the Criatec fund in Brazil and CORFO in Chile are examples of technical and financial assistance to help in the creation of new firms.

Growth and maturity: business angels and venture capital. In the area of venture capital, in some countries agencies and/or development banks encourage the creation of investment funds and in some cases even make financial contributions. In Brazil, where the capital market is heavily regulated by independent bodies, FINEP and the Brazilian Development Bank play an important role in promoting venture capital and both are involved in investment funds, such as the Brazilian Development Bank's Investment Funds Programme (BNDESPAR), with the aim of increasing the capitalisation of firms of various sizes. Launched in 2000, FINEP's innovation programme promotes the creation of a venture-capital system for technology-based SMEs. Up to 2009 around USD 45 million had been leveraged with the aim of benefiting 100 firms over the following three years (de Matos and Arroio, 2011). In Chile, CORFO also provides long-term loans so that investment funds contribute to innovative firms (Box 3.4). In Mexico there is NAFIN's Entrepreneurs Programme, while in Colombia BANCOLDEX offers incentives for creating private equity funds. Furthermore, business angel networks are still poorly developed in the region, and those that do exist, such as those set up by CORFO in Chile (Business Angels Network) and SEPYME in Argentina, have been underutilised.[31] Because programmes to identify early-stage investors have not been successful, there must be space for improving such mechanisms. It seems that sufficient financial incentives are needed for these kinds of initiatives to develop in the future (OECD, 2006).

Despite these new instruments, start-ups still find it difficult to access credit. Commercial banks and private investors are still reluctant to lend to this segment of business, especially firms with no credit history and innovative firms. Instead, these firms must use their own equity or sources other than bank loans, such as vendor finance. Many problems still persist: credit programmes by second-tier institutions are biased towards larger firms, there are not enough long-term resources, and loans take too long to process.

Box 3.4. **CORFO's support strategy for Chile**

The experience of the Chilean Production Development Agency (CORFO) to support SMEs, especially innovative ones, is an excellent example of the region's mechanisms to promote business start-up. CORFO offers a comprehensive support strategy and provides firms with options that, depending on their stage of development, go beyond mere financial support.

For start-ups, CORFO uses the SSAF seed grant system to channel grants to incubators. The programme is aimed at start-ups with a high growth potential that are seeking a strong commitment from incubators and incubated projects, which must make a mandatory contribution to cover 25% of the project costs.

In addition, there are two types of cofinancing programmes for start-up firms to support the creation and growth of competitive, highly productive companies of excellence: the SERCOTEC, which aims to benefit 2 000 small entrepreneurs a year, and InnovaChile, which has focused mainly on innovative firms since 2005. InnovaChile promotes innovation and technology transfer in business and the development of a national innovation system. The body consists of four main areas: pre-competitive innovation, business innovation, technology transfer and entrepreneurship. The programme includes tools like business incubators, seed capital in the form of non-repayable grants for innovative entrepreneurship (including innovation in services), business angel networks, support for creating an entrepreneurial environment, and attracting foreign entrepreneurs.

In the area of venture capital, CORFO's management has significantly changed the nature of its support to businesses since 2010, closing the direct financing programmes and focusing on credit guarantee schemes and the development of venture capital. Its strategy is to encourage the rise of a venture-capital industry through programmes to provide long-term finance and credit so the investment funds channel their investment towards innovative firms. It also seeks to encourage the foreign capital inflows to interact with local funds.

Source: Ferraro (2011); ECLAC, IDB and OAS (2011).

As for non-bank financial instruments (*e.g.* venture capital), public institutions can play an important role in ushering in an investment-friendly climate and a suitable economic environment. Information problems in the venture-capital market are varied and the government can help reduce them through education and training for entrepreneurs, managers and investors, by supporting clusters and incubators, and by encouraging networking between investors and entrepreneurs (OECD, 2006).

Microfinance in Latin America

Given the importance of microenterprises in Latin America's business fabric, microcredit plays a fundamental role in financing the production sector. Access to finance for microenterprises in Latin America is inseparable from the recent major growth of microfinance in the region. This growth has enabled the financing of work for people on low, unstable incomes who are refused credit by other institutions. Microcredit involves small, short-term loans (usually one year), with short repayment periods and high hidden interest rates.[32]

Traditionally, the main reasons for the lack of microcredit have been the high perceived risk of these loans and the lack of profit they generate. However, the region's past experience shows that microcredit is profitable and the risk is moderate. In the last decade, microcredit grew to around 45% of total lending (EIU, 2011), and in 2011 Latin America had a total portfolio of USD 27.6 billion for 18 million customers. The vast experience gained by some countries in the region in managing microcredit in recent years has resulted in more services being offered and greater penetration in formal financial institutions. Despite this progress, the portfolio remains relatively small compared to total lending.

During the last decade microfinance in Latin America has grown at an annual rate of 45% (EIU, 2011), and in 2011 the regional portfolio reached USD 27.6 billion for 18 million customers.

However, there remain various challenges to the stability and growth of microfinance in Latin America, especially in the area of the regulatory and supervisory system. The regulatory aspects are essential to ensure the finance system is fair and affordable.[33] The development of regulatory standards has not kept up with the pace of growth in the sector, and supervision remains weak, so stronger systems are needed to monitor lending institutions, while customer protection needs bolstering.[34] Furthermore, the demand for credit from microenterprises has still not been clearly identified (whether it is for working capital, the purchase of assets or consumption).

Microcredit can be an intermediate platform towards more formal, more complex instruments and channels for access to credit. If microcredit were expanded in Latin America, the finance sector would become more formal as people and microenterprises build up a good credit history, giving them access to a wider range of services.

Conclusions and recommendations

Finance remains one of the main obstacles to the development of SMEs in Latin America, despite the progress that has been made in developing and deepening the financial system. Many SMEs are unable to access formal credit conditions due to high interest, high collateral requirements and complex technical and bureaucratic requirements brought about by asymmetrical information. Instead, they are forced to use internal funds or request credit from suppliers. The other problem they have is the type of access, as SMEs that receive finance regularly cannot access the instruments or loan maturities they need. These kinds of limitations are in stark contrast to the conditions offered to large firms, which have better and greater access to commercial credit. The unequal conditions of access to credit have become another form of inequality and structural heterogeneity for the region's production sector, holding back development.

The development and structure of Latin America's financial system partly explain the failures in the finance mechanisms for SMEs and their access to credit. Commercial banks' business models have moved from relationship banking to multi-service banking due to the introduction of unique credit-risk assessment methods based on payment capacity rather than the feasibility of the project, together with inflexible finance schemes, high collateral requirements and banks' increased dependence on banking fees; this transition made it harder for smaller firms to access finance. Other features of

the financial system, such as banking consolidation, high margins, foreign ownership and even dollarisation also affect credit mechanisms and can help shed light on the ongoing difficulty of ensuring there is greater access to credit.

SMEs must prepare for new international regulations on managing liquidity (Basel III), which will have implications for the cost and availability of credit. Higher capital requirements for banks could result in less available credit. In terms of regulation, the recent crisis seen in OECD countries illustrates the importance of having a set of indicators exclusively for SMEs, which would enable supervisory bodies to act in real time. These indicators can be put together using information available from financial regulatory bodies.

Since commercial banks continue to prefer financing large firms, public financial institutions are essential to improve the financing of SMEs in Latin America, as they can gear their policies towards SMEs. Development banks are particularly important. They have different criteria on profitability, risk management and funds, so they play a key role in providing countercyclical finance in sectors with no private-sector involvement or in economically important sectors with growth potential.

In recent years there has been a new change of perspective on the role of development banks in Latin America. The development banks are returning to the fore, and some countries are seeing a transition to a system that combines first-tier and second-tier institutions, which has proved to be beneficial. However, the financial sustainability and additionality of these institutions must be ensured, and they must be given the appropriate governance structures, control mechanisms and incentives. The choice between a first-tier or second-tier development-banking scheme depends on the context of the financial system. Consideration must be given for how developed the financial system is and whether there are other public financial agents, such as public banks and guarantee funds, that can complement the work development banks do to support SMEs. A business-friendly environment will only come about if there is co-ordination and complementarity among public financial institutions.

Guarantee systems have become more firmly established almost throughout the region in recent years as an effective form of public action. Although guarantee systems that use public or mixed finance have spread, they encounter a number of problems (repayment arrears, lack of resources, instalments, etc.), which strain the relations with the banks that provide the loans. To overcome these problems commercial banks must work together with the guarantee systems so that the guarantees are accepted and properly valued, and so that the credit lines are managed together with the guarantees. Guarantees should generate additionality by enabling banks to increase their customer base, bringing in new business customers.

Guarantee societies are one possible answer to the limitations of guarantee funds, which are mainly privately owned. These societies have begun to spring up across the region, but their coverage is still very limited. A special case is MGSs, which aim to be financially self-sufficient and stimulate greater private-sector involvement through tax exemptions for partners who finance the risk funds. Despite being private, guarantee schemes are a public-policy instrument that should be considered when defining how institutions will be used to promote the development of production. The state's role in this area is crucial and involves fitting the necessary, essential independence of guarantee societies into the framework of general policies for SMEs.

Thanks to the presence of public institutions such as development banks and development agencies, the development of a financial system is being promoted in the region that will be able to respond to the needs of the entire, diverse production sector by incorporating new, novel instruments specifically designed for smaller firms. Successful examples of these mechanisms include the development of online instruments, lease-purchase contracts, factoring, guarantee schemes, incubators, seed-capital initiatives and the development of venture-capital markets. In particular, as Internet access has grown, new online instruments have been developed that have often markedly streamlined the process of providing credit and other financial services.

Since one of the main obstacles making it difficult for Latin American SMEs to access credit is asymmetrical information and a lack of information, many new instruments are being introduced to provide a broader package of business services that reaches beyond credit and to improve knowledge of the financial instruments available to smaller firms. Public policy can play a leading role in this respect by helping supply to match demand and by furnishing businesses and retail banks with legal and financial training. Financial assistance for SMEs must therefore be accompanied by technical-assistance policies.

Public policy must be sufficiently flexible to stimulate private equity funds. For innovative and technology-based start-ups, public intervention is important to encourage their inclusion, since these kinds of firms are highly dynamic and can generate positive externalities through their innovation, productivity and jobs. A financial support strategy must offer alternatives for the different business stages, allocating resources to firms during their start-up phase and their first few years in business. Initial support is key, fostering, for example, business incubation, the creation of seed capital or the involvement of business angels rather than venture-capital investors, who usually focus on later stages of the cycle. Due to the limited development of these support mechanisms in Latin America, appropriate initiatives need creating to open the way for more private capital. Such initiatives could include, for instance, tax reductions for investors.

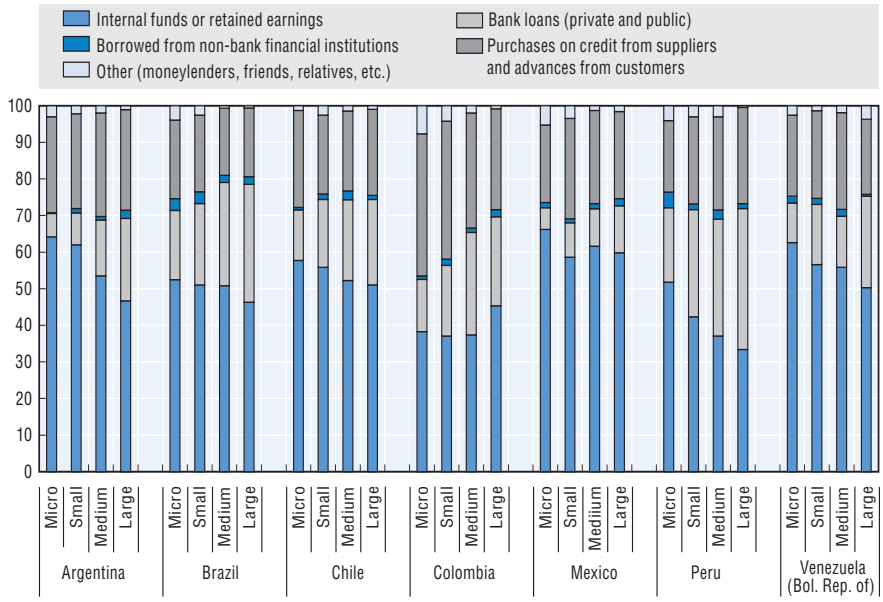
In addition to entirely new instruments and a stronger institutional structure, the introduction of monitoring and impact-assessments mechanisms is also vital. Impact assessments must monitor the programmes' coverage and how they affect additionality, their development goals (productivity and employment), their role as a catalyst for attracting the financial sector, and knowledge transfer, among other objectives.

Although more instruments and services to support SMEs have been introduced in recent years, they are still in the early stages of their development and reach only a small fraction of the sector. There is ample space in the region for a wide range of financial products to be developed that take into account the diversity and specificities of the production sphere. Public policy has a duty to play a key role by generating incentives and necessary instruments. Policies need to be designed and implemented with the inclusion of tools to support businesses in their various stages of development and the provision of services to improve business management, training and technical consultancy.

Finally, systems to finance and provide access to credit for SMEs cannot be defined in isolation. These systems are part of a comprehensive system of support for smaller firms in which supporting training, production linkages and innovation are also critical.

Annex 3.A1. Financial structure of companies in Latin America: working capital, fixed assets and collateral

Figure 3.A1. **Source of financing for working capital, by company size**
(as percentages)



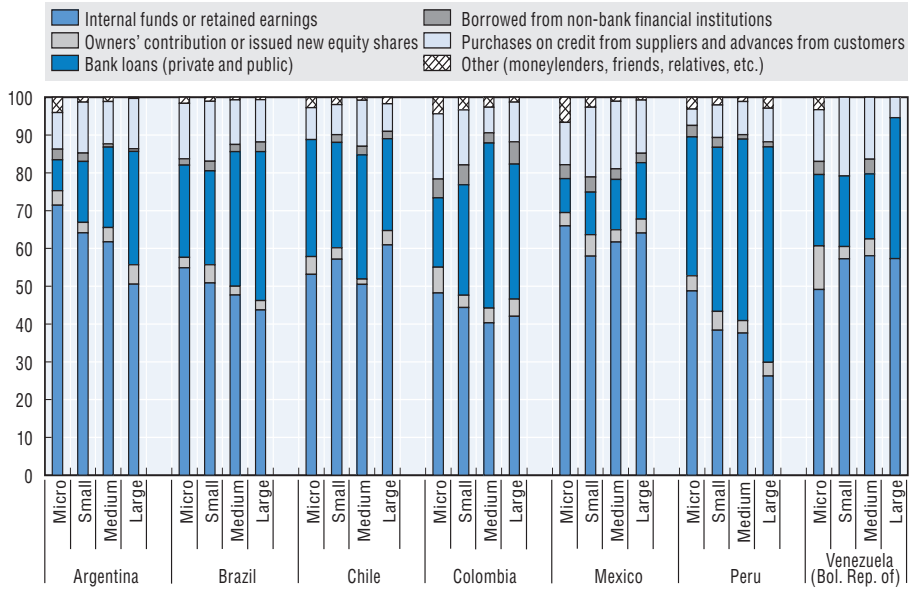
Notes: Micro: Firms with fewer than 5 employees. Small: Firms with 5-19 employees. Medium: Firms with 20-99 employees. Large: Firms with 100 or more employees.

Survey results for 2010 and 2011.

Source: OECD Development Centre, based on the *Enterprise Surveys*, (World Bank, 2012b).

StatLink http://dx.doi.org/10.1787/888932732766

Figure 3.A2. **Source of financing for fixed assets, by company size**
(as percentages)

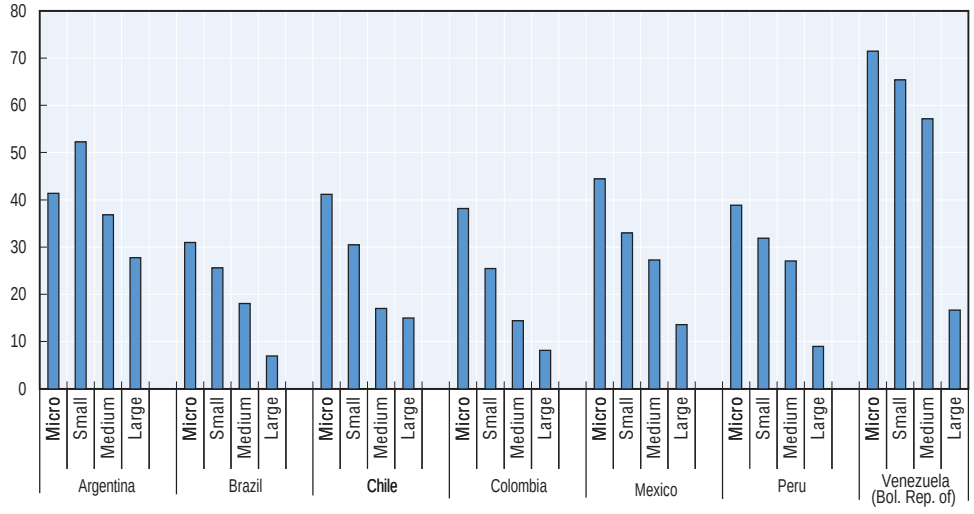


Notes: Firms with fewer than 5 employees. Small: Firms with 5-19 employees. Medium: Firms with 20-99 employees. Large: Firms with 100 or more employees.
Survey results for 2010 and 2011.

Source: OECD Development Centre, based on the *Enterprise Surveys*, (World Bank, 2012b).

StatLink http://dx.doi.org/10.1787/888932732785

Figure 3.A3. **Proportion of personal assets as collateral, by company size**
(as percentages)



Notes: Micro: Firms with fewer than 5 employees. Small: Firms with 5-19 employees. Medium: Firms with 20-99 employees. Large: Firms with 100 or more employees.

Source: OECD Development Centre, based on the *Enterprise Surveys*, (World Bank, 2012b).

StatLink http://dx.doi.org/10.1787/888932732804

Notes

1. See Acemoglu and Zilibotti (1997); Beck *et al.* (2009); Beck *et al.* (2011); Beck and Dermirgüç-Kunt (2005); Levine *et al.* (2000).
2. Argentine SMEs received an estimated 20% of total lending to the private sector in 2008-10. A similar level was recorded in Brazil in 2006: 20% if including loans from public banks, but only 13% if only including Brazil's five leading private banks (Morais, 2006). One study shows that the percentage of SMEs obtaining credit in Bolivia was no more than 14% in the first quarter of 2010 (Ferraro, 2011). However, there seems to be a high loan-approval rate for SMEs, with studies in Argentina finding that 33% of SMEs applied for a loan in 2003-06 and 80% of applicants were successful (Ferraro, 2011); similar figures were found in Brazil (SEBRAE, 2006).
3. The term "financial depth" refers to the amount of private credit or bank loans as a percentage of GDP.
4. For a description of the relationship and multi-service banking models, see de la Torre *et al.* (2010).
5. For 24% of Latin American companies, lack of income or collateral is the reason why they do not apply for loans (de la Torre *et al.* 2012).
6. Loans, leasing, factoring and other instruments are expected to cause credit to SMEs to grow by 60% among small banks and 90% among large banks (IDB, 2011).
7. Since Mexico legalised majority foreign ownership of banks in 1999, significant foreign capital has been invested in commercial banks: in April 2009, the six largest banks in the country held more than 80% of total assets in the sector, and the four largest banks, which are foreign-owned, held more than 70%. El Salvador is a more extreme case: in 2009, only 1% of the shares of financial conglomerates were owned domestically (Ferraro, 2011).
8. "Overhead costs" refers to a financial institution's indirect, fixed or variable operating costs, including administrative costs, depreciation of assets, accounting costs and office equipment, etc.
9. The Basel Accords are recommendations on banking laws and regulations issued by the Basel Committee on Banking Supervision. Published in 2004, the Basel II Accord extensively updated the regulations established by the original 1988 Accord, and introduced elements to distinguish between and evaluate various loan portfolios.
10. The main regulations included increasing the solvency ratio (Tier 1 capital) and the liquidity ratio and introducing an additional 3% leverage on the increase in the solvency ratio (OECD, 2012a).
11. Most development finance institutions (DFIs) in the region are publicly owned (70% in 2009). There are more first-tier DFIs (62%) than second-tier ones (21%) (ALIDE, 2010).
12. However, applying standard regulations could magnify the Sisyphus syndrome (named after the king in Greek mythology). The metaphor suggests that if public banks are restricted by the same performance parameters as private banks, they will end up emulating them.
13. In 2009, BNDES disbursements to SMEs amounted to 22% of total credit. In addition to BNDES Automático, BNDES FINAME and the BNDES card, the bank offers alternative forms of financing exports and sectoral development programmes for sectors deemed "strategic" (computer software, telecommunications, aeronautics). BNDES loans to SMEs have almost double the maturity (60 months) of market loans (36 months) (Ferraro, 2011).
14. BANCOLDEX has two financing instruments for SMEs: the three-year "countercyclical liquidity mechanism", and "aProgresar", which provides loans for up to 12 years for firms to increase and modernise their production capacity. These tools lengthened the average term of loans from 7 to 12 years between 2006 and 2010 (Zuleta, 2011).
15. Firms apply for the loan from a private financial institution, which uses the BANCOLDEX rediscount mechanism, assesses the application and assumes the credit risk. As a result, there is significant interaction between the public instruments and the private intermediary, which improves access to credit for SMEs (Zuleta, 2011).
16. BANCOLDEX also operates in co-ordination with the Colombian National Guarantee Fund (FNG) to provide automatic guarantees that cover 50% of the loan amount without the need for another assessment in addition to that already carried out by the financial intermediary (Meléndez and Perry, 2009).
17. During the international crisis that hit the Mexican economy, NAFIN played an important role in maintaining the supply of financial resources for SMEs, which grew by 52% in 2009 (Ferraro, 2011).

18. In Colombia, the National Guarantee Fund (FNG) guarantees up to 50% of the value of loans; in El Salvador, the PROGAIN programme for industry and agro-industry guarantees up to 50% and the PROGAPE programme for small businesses guarantees up to 70%; the funds in Brazil and Argentina guarantee up to 80% and 75% respectively (Ferraro, 2011); in Mexico, the Undersecretariat for SMEs' fund, financed by NAFIN's SME fund, guarantees up to 75% of operations and has cut down the requirements imposed by banks, which, for instance, now accept bank statements instead of audited financial statements (Garrido, 2011).

19. Guarantee funds with "mixed" and public–private finance are springing up in the region. Although the government provides part of the capital, the funds are managed by private firms. One example is Chile's FOGAPE fund, in which the public sector guarantees private banks' portfolios in exchange for a risk-adjusted commission and banks bid on the public guarantees. The Brazilian Development Bank launched the Investment Guarantee Fund (FGI) in 2010, which uses private resources and is a fluid mechanism that allows online processing of applications and payments, which helps reduce bureaucracy and operational problems (Ferraro, 2011).

20. Some examples of the early development of guarantee societies in countries where the guarantee system is most widespread are the Brazilian and Chilean funds. In Brazil, SEBRAE issued a public call to support the creation of credit-guarantee societies with technical and financial assistance with the aim of offering alternatives to cover corporate loans; in Chile, the Production Development Corporation (CORFO) has a programme to strengthen mutual guarantee institutions (Pombo González *et al*., 2008).

21. In India, for example, the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) has grown considerably over the last decade, eventually providing 22% of guaranteed loans according to the Ministry of Micro, Small and Medium Enterprises (Reserve Bank of India, 2010). In Indonesia, the Business Credit Programme (Kredit Usaha Rakyat, KUR) provides credit through various public financial institutions.

22. For example, in Brazil SEBRAE offers support to companies according to their stage of development. In Chile, CORFO offers a comprehensive support strategy that follows the development and potentialities of firms (see Box 3.4).

23. SEBRAE is undertaking initiatives to reduce these information problems among SMEs by disseminating information about the programmes available, training entrepreneurs and banks to tailor credit assessments to the realities of smaller businesses, and strengthening credit unions and micro-finance institutions for micro and small enterprises. The Mexican Financial Outreach Programme has a similar objective but different systems. The programme is set up as a fund for hiring executives that advise SMEs on accessing credit offered by financial intermediaries authorised by the SME Fund. The consultants help companies check their finance needs and payment capacities, identifying the best financial product for them, and help them through the application process and to properly manage their financial information. They also ensure the financing is properly granted (Ferraro, 2011).

24. For example, in Argentina SEPYME introduced a leasing line into the PBT interest-rate reduction scheme, and the Brazilian Development Bank has leasing products and is studying the introduction of e-factoring systems. In Colombia, BANCOLDEX offers SMEs leasing and factoring products and they have been very popular in recent years. In 2010 the leasing line represented almost 10% of the bank's total commercial portfolio and was used to finance leasing contracts for fixed movable and immovable assets, including machinery, vehicles, equipment, land, factory buildings and premises. Its factoring portfolio is much smaller (0.42% of the commercial portfolio in 2010), but offers specific products such as Liquidex Pesos-Dollars, which allows firms to buy up to 80% of the value of bills of exchange with a discount, under a predefined BANCOLDEX credit insurance policy (Zuleta, 2011).

25. There is also a form of "reverse factoring", where buyers give financial institutions access to their accounts payable to supplier SMEs that require a discount.

26. Participating in the programme are 39 financial intermediaries who provide their services to 68 000 affiliated suppliers and complete 10 000 transactions a day. As of May 2010, over 10.7 million discount operations had been recorded over the previous decade, amounting to MXN 1 billion (Mexican pesos) (USD 77.5 million) (ECLAC, IDB and OAS, 2011).

27. In 2009, 75% of NAFIN's second-level finance was for the Production Chains Programme. This is a significant increase on the first-year figure of 32% in 2002 (ECLAC, IDB and OAS, 2011).

28. Large corporate participants and participating government institutions invite their suppliers (SMEs and individuals) to form a chain. NAFIN offers the chain attractive finance options and the development of an online tool for information exchange and as a platform for technical assistance and marketing (Ferraro, 2011; ECLAC, IDB and OAS, 2011).

29. For instance, the SEBRAE-FINEP incubator programme in Brazil; the incubators and technology

services of the Argentine Technology Fund (FONTAR); the Incubator Programme run by the Mexican Undersecretariat for SMEs (SPYME) and the SME Fund; CONAMYPE's business and incubator development services in El Salvador; and various business incubator and accelerator programmes, especially for companies with the potential for innovation, in Costa Rica, according to the sectors marked out as being a priority in each region of the country (Ferraro, 2011).

30. Another interesting experience is the Peruvian NGO "Colectivo Integral de Desarrollo", which promotes the creation of businesses by young entrepreneurs, improving their business skills by providing management training, consultancy services on markets, taxes, the formal economy and access to seed capital (ECLAC, IDB and OAS, 2011).

31. Other examples of networks include the Uruguayan Business Angel Network, the Business Angel Network of the Andes (Colombia), Gávea Angels and the Business Angel Network (Brazil) and the Invest Business Angel Network (Peru).

32. In 2011, the average microloan was for about USD 1 000 (Mix Market, 2012).

33. Although the bulk of the portfolio and most customers are in regulated institutions (banks, co-operatives and credit unions, regulated NGOs), in terms of their actual number unregulated institutions make up nearly 70% of all institutions that provide credit (Pedroza and Navajas, 2010).

34. Peru and Bolivia stand out as the countries with the best regulatory framework in the region according to the results of an Economist Intelligence Unit study (EIU, 2011). The countries have clear, well-established regulatory standards and a good supervisory capacity. Together the two countries account for 40% of microcredit in the region.

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CHAPTER FOUR

SMEs, innovation and technological development

This chapter analyses the position of small and medium-sized enterprises (SMEs) in Latin America in terms of their capacity for innovation and technological development. It addresses the obstacles that hinder SMEs from accessing technology and benefiting from knowledge dissemination and transfer. The chapter pays special attention to SMEs' use of information and communication technologies (ICTs) and their reaction to the innovation policies being implemented. It looks at how these restrictions lead to productivity gaps and structural heterogeneity. The chapter concludes by presenting a series of recommendations and identifying opportunities and challenges for the design of public policy.

Introduction

The new techno-economic paradigms, which are creating a "third industrial revolution", increase the dependency of economic growth and development on capacities to create value by incorporating knowledge, innovation and the dissemination of productive technology use (ECLAC, 2012). These are essential factors to accelerate growth and make productivity gains, create good-quality jobs, reduce structural heterogeneity and move forward in long-term processes to improve income distribution and increase equality. Technological development and innovation play a leading role in this dynamic. It is a complex social process that evolves from the interaction between individual people who create social ties and relationships.

In 2009, investment in R&D in Latin America was equal to 0.7% of GDP, way below the level of investment seen in OECD countries (2.4%). This gap and the concentration of R&D in only a few countries help explain why the region is lagging behind in this area.

This chapter focuses on the factors that determine to what extent firms, particularly SMEs, are able to innovate and incorporate new technologies into their production activities, as well as on the key policies and instruments to achieve this. In particular, increasing the intensity and changing the orientation of the innovation process requires: *i)* developing firms' and institutions' technological and organisational capacities; *ii)* strengthening the architectures of the networks that the companies belong to and creating "small-world networks";[1] *iii)* creating a more virtuous connection between the parts of existing networks (companies, universities and technology centres, and consultancies and intermediate institutions); *iv)* creating larger markets and a broader division of labour to bring about a cumulative causation;[2] *v)* taking into consideration the form of competition (how salaries are set and the relative importance of "creative destruction"); and *vi)* analysing institutions open to innovation (if they exist) and their capacities. An innovation process is necessary both because of the characteristics of firms and because of the macroeconomic environment and the socio-economic characteristics that are defined by the national innovation system (NIS). The system of competition and the processes of structural change and creative destruction, as well as the dynamics of learning and the linkages and capacities of firms, determine business innovation (ECLAC/SEGIB, 2008).

This chapter is structured as follows. The first section analyses the state of innovation region-wide. The next section focuses in on SMEs' capacities and what they are doing to foster innovation. The third section identifies SMEs' strengths, weaknesses, results and main obstacles. In the fourth section, the focus shifts to the access and use of ICTs and new opportunities for the computerisation of SMEs and regional broadband connectivity. In the fifth section, we present some recommendations on the institutional structure and public policies needed to drive forward innovation and dissemination of technology in Latin American SMEs.

Innovation in the regional context

Latin America is lagging behind the OECD economies in terms of innovation and technology adoption, but performance varies from country to country across the region

(OECD/ECLAC, 2011). This is in contrast to developing countries such as China, which have narrowed their technology gaps by making their production structures more complex, more sophisticated, more knowledge-intensive and more technology-intensive. Latin America has made little progress in this area and remains well behind advanced countries (ECLAC, 2010).

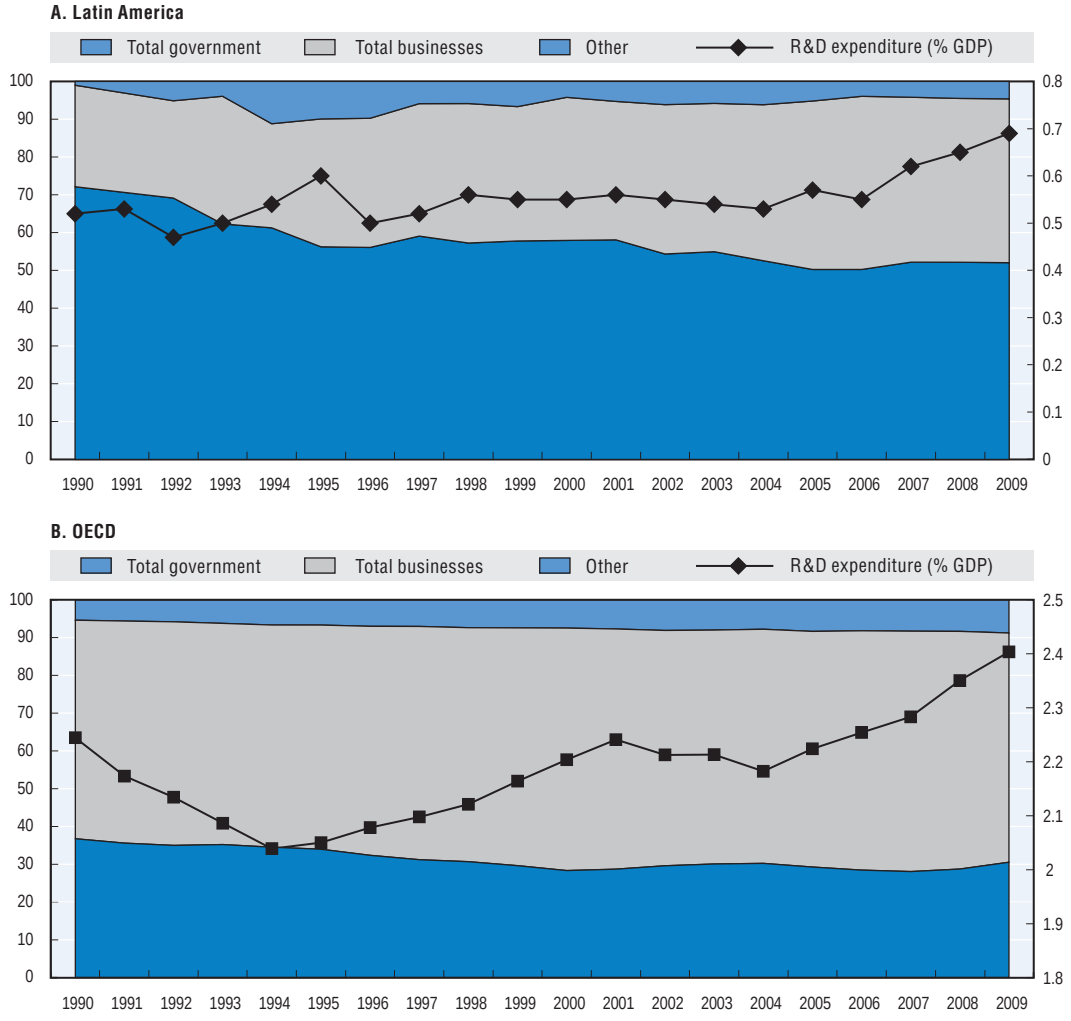
One reason the region still lags behind is because investment in research and development (R&D) is low and is concentrated in only a few countries. In 2009, OECD economies invested 2.4% of gross domestic product (GDP) in R&D, more than three times the figure for Latin America (0.7%). The gap has remained over the past few decades (Figure 4.1). There are also large differences among countries in the region. For instance, in 2009 Brazil invested 1.2% of GDP in R&D, while Bolivia spent less than 0.2%. Even *within* Latin American countries there are equally large differences in the nature of investment in R&D depending on the type of company and the economic sector. Moreover, Latin America is also lagging way behind in terms of the sources of investment in innovation. While in OECD countries businesses provide 60% of investment in R&D, in Latin America the business sector tends not to prioritise innovation and technological development, providing only around 40% of investment in R&D.

Various factors influence a firm's capacity to innovate. A general factor is the institutional environment, which has a bearing on the firm's innovative behaviour. A sector-specific factor is the characteristics of the business activity and its linkages with organisations involved in the national innovation system [businesses, universities, technology centres, consultancies, government institutions, non-governmental organisations (NGOs) and civil society]. A company-specific factor is the firm's internal capacities and the efforts it makes. Innovation improves the quality of products and processes, increases productivity and competitiveness, and helps a company better position itself in national and international markets and move towards activities with a higher added value (Cimoli *et al.* 2011; Dini and Stumpo, 2011). As firms strive to innovate, they need good learning and knowledge-accumulation processes developed within the company and through their relations with other actors.

Companies are key stakeholders in an NIS because they use scientific and technological advances in production to develop new products and processes or improve upon existing ones, enabling greater productivity and competitiveness.

Four factors, among others, determine a firm's innovative capacity: its ability to absorb knowledge, the size of its workforce, its sector and the context in which it operates. Given the business diversity and the importance of SMEs in the production fabric of Latin American countries, we must examine companies' innovation capacities and limitations. Innovation by SMEs is usually a spontaneous reaction to competitive pressure from large firms, and their innovative strategies and activities are often part of informal strategies rather than the result of planning. Given their limited capacities, they usually seek to capture market niches rather than work their way into mass markets.

Figure 4.1. **Latin America and the OECD: investment in R&D and distribution by origin of finance, 1990-2009**



Source: Based on RICYT and OECD.Stat.

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A company's size directly affects its capacity to innovate. While large firms benefit from growing profits from R&D activities, SMEs are heavily restricted by their size, so their innovations are weaker and they are less likely to use technologies productively. Despite their heterogeneity, SMEs share many constraints. These notably include access to credit and qualified human resources, a lower tendency to export, a lower capacity to interact with other companies and institutions that train human resources and carry out research, and their limited membership in networks. Diversity among and within sectors influences their tendency to innovate. Latin American SMEs are usually concentrated in sectors whose characteristics in the region mean they require little knowledge (trade, informal services and basic manufacturing).

Companies are key stakeholders in an NIS because they use scientific and technological advances in production to develop new products and processes or improve existing ones, enabling greater productivity and competitiveness.

Public research centres and universities provide essential support for the development of technology and innovation for SMEs. A central theme for innovation is co-operation and linkages between public and private actors (Nelson, 1993; Dosi and Cimoli, 1994; ECLAC/SEGIB, 2010). Alongside institutions and current regulations, these actors form the national innovation system (NIS). This system sets out the processes for incorporating technology and determines the rate at which technological knowledge will be generated, adapted, acquired and disseminated in production activities (Lundvall, 1992). The linkages and interaction between NIS actors are important for a country's scientific and technological development and the drive that knowledge can give to the production sector (Nelson, 1993; Dosi and Cimoli, 1994; ECLAC/SEGIB, 2010).

Other key players include government bodies, higher education institutions, research centres and businesses. Businesses are essential, since in collaboration with other actors they use scientific and technological advances in production, developing new products and processes and improving existing ones to increase productivity and competitiveness (ECLAC/SEGIB, 2010). Large firms generally develop different levels of co-operation within Latin American NISs, but SMEs often have neither the resources to carry out research nor the capacity to link up with other NIS actors.

The weaknesses of the region's NISs make it harder for companies, especially smaller ones, to have the capacities to compete when technology is moving forward so quickly and there is growing specialisation. Latin American NISs are faced with restrictions in the capacities of their members, whose diversity makes co-ordination difficult. In science, technology and innovation (STI), Latin America is lagging way behind more developed economies because demand for STI by the production sectors is low and investment in R&D is scant, especially in the private sector. SMEs can only achieve the capacities they need by working in networks, where information and technology can flow between businesses and organisations as abundantly as inputs and goods. The SMEs can thus increase their added value and markedly boost productivity (ECLAC, 2010).

Innovations and SMEs: activities, strengths and weaknesses

Economic development and innovation processes are associated with companies generating and accumulating the technological capacities to function and trade. They are also associated with knowledge flows, which greatly impact the results of innovation activities, which in turn impact the flows. Learning and knowledge accumulation are essential for a firm to develop its skills and innovative capacities. A company's experience and its interaction with other companies and other types of agents influence its learning process. Innovation processes are brought about by complex social interactions that do not occur spontaneously, in isolation, but are the cause and consequence of knowledge flows and interaction between NIS agents. Other important variables also exist, especially sector-specific and region-specific variables and the competition dynamic among companies.

SMEs and their capacities to innovate

Despite the differences among countries, sectors and companies and their effects on a firm's export prospects, innovation is always important to drive forward productivity and competitiveness (Box 4.1).

Compared to larger firms, SMEs face major constraints that make it harder for them to innovate. Investment in R&D requires large-scale initial spending and there is much uncertainty regarding the resulting benefits. This is not an obstacle for larger firms, but it is for smaller ones. Restrictions on access to domestic and foreign financing, as well as requests for guarantees and high interest rates, represent major barriers to innovation and the incorporation of knowledge in smaller firms. Furthermore, innovation requires economies of scale and of scope, adding a further difficulty for SMEs. Large companies are better placed to take on the high risks associated with innovation and benefit from its returns (Box 4.1). SMEs have to team up with other firms to promote and facilitate the integration of learning and knowledge. Despite these constraints, SMEs bring flexibility to innovation processes, thanks to their more malleable organisational structure. They can respond quickly to changes and they make decisions quickly, with their staff participating in the process.

Innovation processes do not occur spontaneously, in isolation, but are the cause and consequence of knowledge flows and interaction between the actors that form the NIS. The sector in which a company operates, its location and the competition it faces are factors that influence innovation.

Differences in innovative behaviour also exist among SMEs. Those targeting international markets have a greater capacity to innovate, and indeed innovate more, especially if they operate in sectors dominated by dynamic efficiencies (Schumpeterian and Keynesian).[3] Access to international markets requires technologies, encourages firms to strengthen their technology skills and improve their organisational and business models, making it easier for them to innovate. Qualified human resources (absorption capacity) are essential to improve firms' innovative capacity in products and processes. Some sectors are more likely to innovate, often because they have a greater capacity to accumulate knowledge.

Government support is good for business innovation, with significant "crowding-in" effects on investment in innovation.

Box 4.1. **Innovation, exports and productivity: a positive relationship in Latin American and OECD countries**

Large firms perform more innovation than SMEs, according to comparative studies on Latin American and OECD countries. The effects that larger production units have on innovation are similar in several countries. For instance, large firms are 10% more innovative than small ones in Argentina, Chile, Colombia and Costa Rica, 8% in Panama, and 17% in Uruguay (where the figure is highest). As in Latin America, in OECD countries there is a clear positive correlation between company size and propensity to innovate. While in Norway (the country with the largest gap) large firms are 32% more innovative, in the UK the figure falls to 4.6%.

Several studies confirm that companies that export are more likely to engage in innovative activities than those that serve only the domestic market. This relationship is evident in Latin American countries including Argentina (15%), Chile (11%) and Colombia (7%). The same pattern is found in OECD countries, especially in France (78%), Norway (64%), Denmark (64%) and Belgium (62%). The OECD countries where the relationship is least evident are Canada (29%), Switzerland (31%) and New Zealand (35%), but these figures are still higher than those found in Latin America.

There is a positive correlation between innovation and productivity. After controlling for relevant variables such as human capital, the relationship between these variables in OECD countries is positive and statistically significant. In European countries, the correlation between sales from product innovations and productivity is high for large firms, while in Canada and New Zealand this correlation is more pronounced among SMEs.

Government financial support for innovation has positive effects on businesses. In Latin American countries such as Chile and Colombia, the firms that received financial support invested 80% more in technological development than other firms. Costa Rican firms benefit most, with those receiving such funding investing twice as much as those that do not. A similar pattern occurs in OECD countries. In Germany, Finland, the Netherlands and Italy, firms that receive government financing invested 40-50% more than average, while in Austria, Belgium, Denmark, France and Norway the difference rises to 70%. This shows the tremendous impact public innovation policies have on companies' innovative effort, which has a strong "crowding-in" effect on investment in innovation.

Source: Based on OECD (2009) and Crespi and Zúñiga (2010)

Two features stand out in relation to the innovative capacity of SMEs:

- SMEs' innovation strategies are less formal than those of larger firms. These differences also exist between SMEs, as well as between different sectors of the economy. Generally, companies operating in knowledge-intensive sectors have more formal strategies and consistently invest more money in R&D.
- There is little interaction with their peers, other institutions and other agents, which prevents their innovation strategies from having a greater impact. SMEs can access formal innovation strategies through their linkages with other economic agents that do not face restrictions of scale, such as large firms (Dini and Stumpo, 2011).

Access to international markets for SMEs increases their propensity to innovate because they need new technologies, greater technological skills and better organisational and business models.

Activities, results and obstacles

Companies innovate to increase their productivity and competitiveness and reduce their operational costs. When analysing business-innovation activities and production structures in Latin America, the concept of innovation should be used "in the broadest sense", since most of the companies operate in non-knowledge-intensive and non-technology-intensive industries. SMEs generally focus their efforts on informal, incremental innovation activities, investing little in radical innovation activities such as investment in R&D, so unless we expand the definition of innovation we will underestimate the innovative capacity of SMEs and non-technology-intensive sectors.

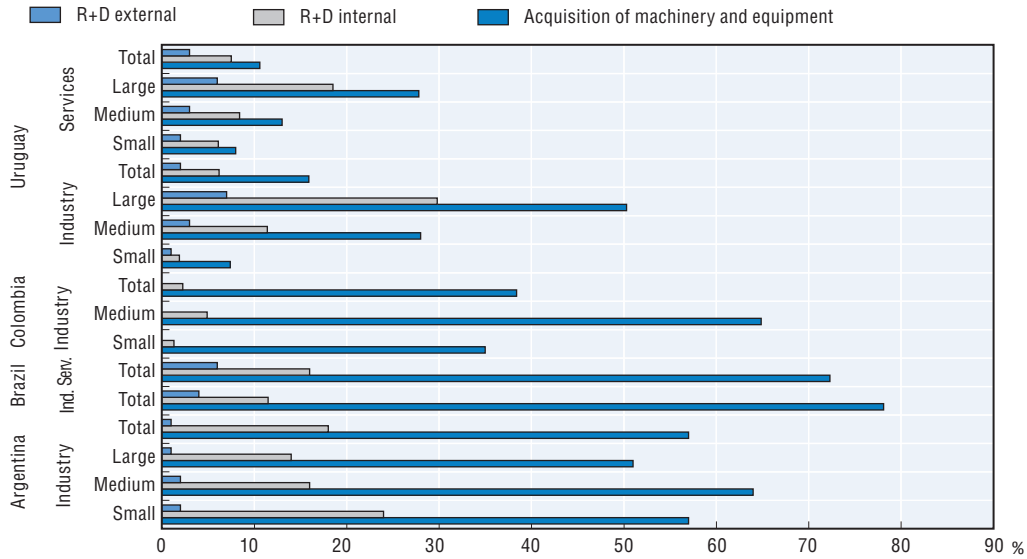
The latest innovation surveys carried out in several Latin American countries reveal certain patterns in the behaviour of SMEs. Company innovation processes have only just started being measured in the region, through national innovation surveys. Based on data from surveys in five countries (Argentina, Brazil, Chile, Colombia and Uruguay), the next section analyses and describes the main innovation and technological dissemination activities conducted by Latin American companies. But we must remember that much work still needs to be done in the region for surveys to provide homogeneous, comparable data that can be used to obtain true measures of firms' technological and organisational capacities and their ability to absorb technology and connect with other firms. The surveys need an improved design and the focus of the data extracted needs to shift in order to capture companies' innovation capacities, effort and obstacles. This would make the surveys and other tools for obtaining data useful for developing and evaluating public policies to innovate and develop technology (Cimoli *et al.*, 2011).

The data from these surveys provide only a partial view of innovation activities in companies, especially SMEs. While they do not allow an exhaustive analysis of the region and the different aspects of scientific and technological development at the company level, these surveys do reveal certain common characteristics of their innovative capacities, as well as the main results of those activities and the obstacles that companies face.

Latin American SMEs concentrate their innovation activities on technology transfer and imitation. This is reflected in the high level of investment in machinery and equipment compared to investment in radical innovations such as R&D (Figure 4.2). While large firms share their investments more evenly between R&D and capital goods, SMEs invest more heavily in the latter. Furthermore, company size and sector are key factors in determining the type of innovation activity carried out. The nature of the innovation activities also varies from country to country in Latin America. Some countries, like Uruguay, are increasing the percentage of investment used to acquire machinery and equipment, while others, like Argentina, have shifted the balance more towards R&D.

Latin American SMEs concentrate their innovation activities on technology transfer and imitation. This is reflected in the high level of investment in machinery and equipment compared to that in R&D.

Figure 4.2. **Investment in capital goods and R&D according to company size and sector**
(percentage of innovative companies)



Note: The company sizes are those defined by each country for their surveys.

Source: National Business Survey on Innovation, R&D and ICTs (2002-04) Argentina, Survey of Innovation Technology in Brazil (IBGE, 2010), (Gutiérrez, 2011), 3rd Uruguayan Industry Innovation Survey (2004-06) (ANII, 2008a) and 1st Uruguayan Services Innovation Survey (2004-06) (ANII, 2008b)

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There is a strong correlation between company size and the results of innovation activities, with large companies obtaining better results than SMEs.

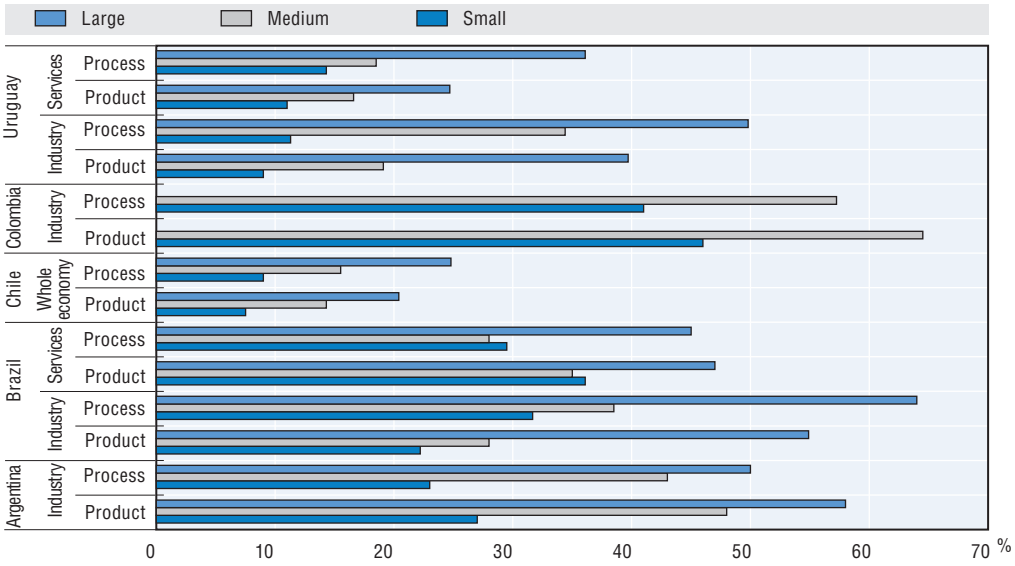
Turning to human resources and sources of funding, in these areas too there are vast differences according to company sector and company size. Human resources devoted wholly or partially to innovation activities are an indicator of companies' commitment to technological and organisational innovations. In the countries surveyed, firms devoted to innovation in the strictest sense of the term allocated more staff to this area than firms that innovate in a broader sense. In Uruguay, in 2006, firms devoted to innovation in the narrow sense allocated 7% of their staff to developing innovation activities, while firms that innovate in a broader sense allocated just 3% (ANII, 2008a). Moreover, the proportion of workers engaged in innovation activities is higher in large firms. This is because those firms' human resources are more qualified, have greater access to finance and have formal organisational structures and innovation strategies. SMEs employ relatively less-skilled workers in their innovation activities, who generally conduct their activities in informal units or departments. In addition, SMEs have financial constraints that restrict their capacity to innovate. Latin American companies, especially SMEs, generally have to fund their own innovation activities, since they are faced with obstacles in accessing the financial system and being included in government programmes to promote business innovation.

According to the results of innovative activities in selected Latin American countries, companies mainly make incremental innovations in products and processes aimed at the production unit itself or the local market. There is a strong correlation between company size and the results of innovative activities, with large companies obtaining better results than SMEs. SMEs' focus on marginal, incremental innovations in products, processes and activities produces very little impact, if any, on their access to international markets. This is mainly due to the stronger investment in machinery and equipment by Latin American companies and weaker investment in radical innovation activities such as R&D (Figure 4.3).

A company's sector is also a crucial factor. In Argentina, for instance, engineering-intensive activities and the car industry are the sectors of industry with the highest proportion of innovative firms, while in the tertiary sector IT services are most innovative (Barletta *et al.*, 2011). In Colombia too, innovation varies greatly among different industrial sectors. SMEs that produce machinery and electronic goods innovate the most in products, while SMEs involved in manufacturing cars, trailers and semi-trailers innovate the most in processes (Gutiérrez, 2011). The situation is similar in Brazil and Uruguay.

Among SMEs, the sector of activity determines the level of innovation. In Argentina, innovation is led by the car industry and engineering-intensive companies, while in Colombia it is led by SMEs that manufacture machinery, electronic goods, cars, trailers and semi-trailers.

Figure 4.3. **Innovation results by company size and sector**



Note: The company sizes are those defined by each country for their surveys.

Source: National Business Survey on Innovation, R&D and ICTs (2002-04) Argentina, (Barletta *et al.* 2011,) Brazilian Technological Innovation Survey (2010), (Gutiérrez, 2011), 7th Chilean Innovation Survey (2012), 3rd Uruguayan Industry Innovation Survey 2004-06 (ANII, 2008a), 1st Uruguayan Services Innovation Survey 2004-06 (ANII, 2008b).

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Microeconomic, sectoral and macroeconomic factors affect innovation processes by influencing whether firms choose to innovate, how much they choose to innovate and the quality of the innovation. In Latin America there are several common elements that hinder innovative behaviour, including the difficult access to credit and the shortage of qualified staff. These are particularly relevant to SMEs and must be taken into account when designing or implementing policies and instruments to promote science, technology and innovation.

The poor linkages and co-operation among companies and agents belonging to the NISs create an obstacle to technology and knowledge transfer, innovation processes and co-ordination between the production sector and academia. The smaller the company, the greater these difficulties become.

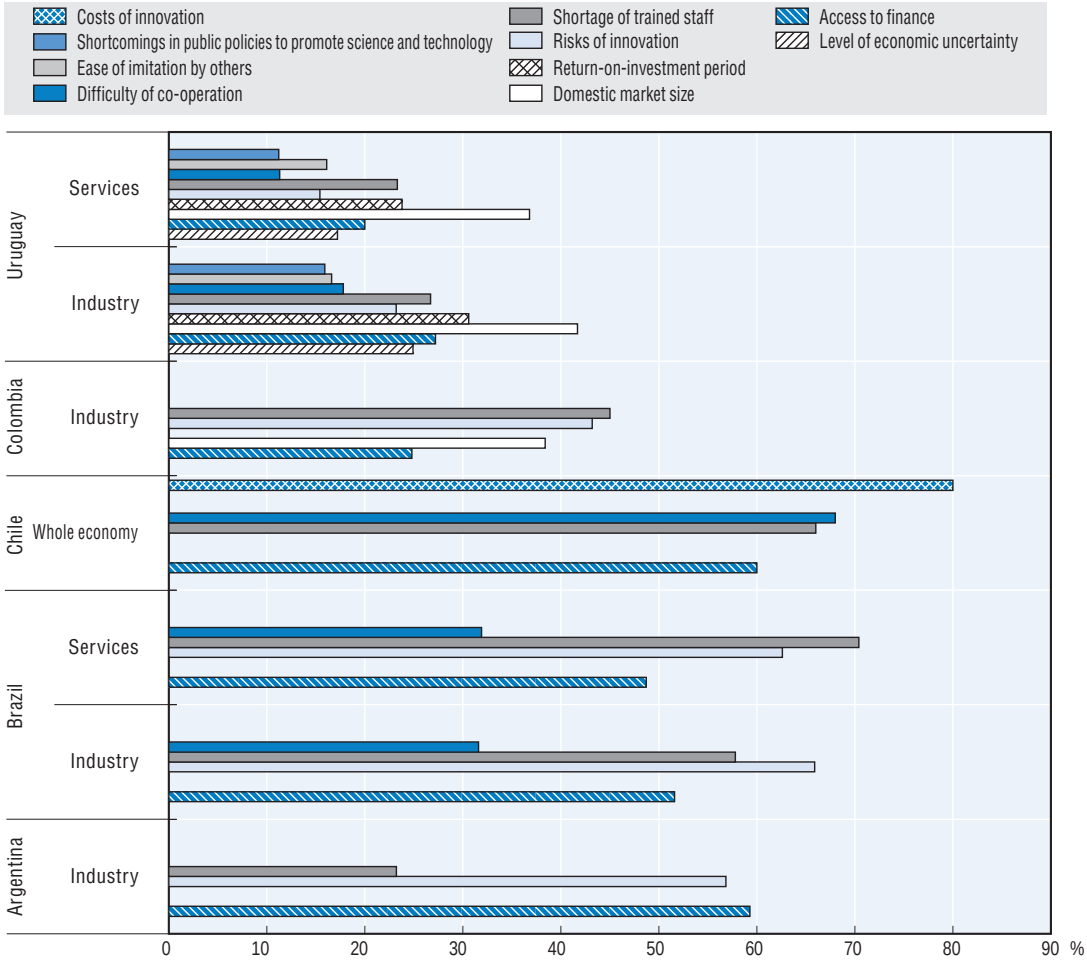
The high costs and risks of innovation are the main factors that hold back this activity, especially among SMEs. In Brazil, service companies also point to the lack of qualified staff as an obstacle.

The very characteristics of innovation discourage innovative behaviour, especially among SMEs (Figure 4.4). The high costs and risks hold back or inhibit this activity, especially among SMEs and non-innovative companies. For example, non-innovative companies in Argentina cite the high costs (57%), excessive economic risks (55%) and lack of funding (49%) as the main obstacles, which can be explained by their high risk aversion (Barletta *et al.* 2011). In Brazilian industry, innovative companies identify as their obstacles to innovation the high cost (73%), the high risks (66%) and poor access to finance (52%). In the service sector, the obstacles are the lack of qualified staff (70%) and, as for industrial companies, the high cost (72%), the associated risk (63%) and the restricted access to finance (49%) (IBGE, 2010). The major obstacles identified by innovative Colombian SMEs are finding and training human capital (45%), the risks (43%), organisational and management problems (40%), problems with the market structure and size (38%) and information problems (37%) (Gutiérrez, 2011).

Public policies to support innovation vary greatly across the region. Although progress has been seen in several countries, SMEs are still faced with obstacles and restrictions that make it difficult for them to benefit from government policies and programmes.

In addition to the obstacles mentioned above, there are also country-specific factors. In Uruguay, for instance, the small domestic market makes it harder for firms to develop innovations, since they are faced with diseconomies of scale.

Figure 4.4. **Major obstacles to business innovation, by country and sector**
(as percentage of innovating firms)



Note: The company sizes are those defined by each country for their surveys. For Chile, "Limited co-operation with other institutions/companies" is calculated as the simple average of limited co-operation with institutions and limited co-operation with companies. In the Uruguayan services sector, "Macroeconomic instability" was replaced by "Level of economic uncertainty".

Source: 3rd Uruguayan Industry Innovation Survey (2004-06), 1st Uruguayan Services Innovation Survey (2004-06), Brazilian Technology Innovation Survey (2008), 5th Chilean Innovation Survey, *Innovación y sus determinantes en la pequeña y mediana empresa: el sector manufacturero colombiano* (Gutiérrez, 2011) and *La conducta innovativa de las pymes industriales y de servicios argentinas* (Barletta *et al.* 2011).

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Box 4.2. **Awareness of policies to promote innovation in Chile and Brazil**

Although participation rates in innovation activities in Chile are below other regions like the European Union (26.5% in Chile vs 28.5% in the European Union), the knowledge and use of public programmes has increased between 2005 and 2010. So, as one would expect, innovative firms are more aware of public support programmes for innovation and use them more than non-innovative firms. Specifically, knowledge of public programmes increased 10 percentage points among innovative firms (vs. 3 percentage points for non-innovative), with the use increasing 13.8 percentage points (vs. 4.5 percentage points).

Table 4.1. **Knowledge and use of government support programmes by innovative and non-innovative Chilean companies**
(as percentages)

Chile	2005		2009-10	
	Awareness of public programmes	Use of public programmes	Awareness of public programmes	Use of public programmes
Non-innovative companies	20.5	1.5	24.0	5.6
Innovative companies	38.3	5.2	47.8	18.7

Source: Based on data from the V Innovation Survey of Chile (2009), and VII Survey of Innovation, Ministry of Economy (2012).

In Brazilian industry, 22.8% of innovative firms have obtained at least one piece of government support to help them innovate products or processes. However, the percentage is lower among small firms than among large ones. While 36.8% of large firms have received at least some government support, the figure falls to 23.7% among medium-sized firms and 22.2% among small firms. Among industrial companies, the most common thing that grants are spent on is purchasing machinery and equipment (14.2%).

Box 4.2. (contd).

Table 4.2. **Use of support programmes by Brazilian companies, by company size**
(as percentages)

	Support programmes used by innovative companies, by company size											
	Small			Medium			Large			Total		
	Industry	Services	R&D	Industry	Services	R&D	Industry	Services	R&D	Industry	Services	R&D
Funding for R&D and for purchase of machinery and equipment	14.3	3.3	0	14.7	4.6	10.5	12.1	1.3	16.7	14.2	3.4	10.3
Research projects in association with universities and research centres	0.7	0.9	37.5	1.1	2.5	78.9	4.2	2.5	83.3	0.8	1.1	71.8
Research projects not associated with universities and research centres	1.3	0.9	50	0.9	2.1	52.6	4.7	1.1	83.3	1.4	1	61.5
Financial subsidies for R&D and employment of researchers	0.4	3.1	12.5	0.9	4.1	21.1	4.1	3.6	50	0.5	3.2	28.2
Computer Technology Act	1.8	0.6	25	1.6	3.1	57.9	3.2	5	33.3	1.8	90	43.6
R&D and Technology Innovation Act	0.5	0.5	0	1.9	6.7	26.3	16.2	16.5	33.3	1.1	1.5	23.1
Other support programmes	7	7.6	37.5	7.6	12.9	57.9	9.2	2.5	83.3	7.1	7.9	61.5
TOTAL	22.2	14.1	75	23.7	26.2	100	36.8	25	100	22.8	15.3	94.9

Source: Based on Ministry of Economy, Chile (2009) and IBGE (2010) figures.

There are few linkages between Latin American businesses and other NIS participants. Multidisciplinary collaboration and linkages through interaction with these agents generates forums to address, disseminate, transfer and acquire knowledge and information and technology. However, universities and businesses have had a complex, difficult relationship with each other because of their different roles in society and their respective characteristics. Universities have not played a significant or dynamic role in the innovation of business. There is little co-ordination between the two, which means little scientific and technological knowledge is transferred to the production sector and instilled in businesses' innovation strategies (ECLAC/SEGIB, 2010). Given the constraints faced by SMEs restricting them from increasing their potential for innovation and technological modernisation, they need platforms for linking and communicating with other NIS firms and institutions to reduce their costs and uncertainty, access new knowledge and strengthen their internal capacities. There are major advantages for

firms establishing such links, which can take many different forms with varying levels of frequency and intensity.

In Chile, 55% of innovative firms believe the lack of government incentives is an obstacle to innovation. Although nearly 40% of firms are aware of public support programmes, only 5% have used them.

Box 4.3. SMEs and their linkages with the NIS

The degree of linkage between firms in the service and industry sectors and NIS agents is positively correlated with the company size. In Brazil, a breakdown by sector and size reveals that 9% of small innovative industrial firms and 12% of small service-sector firms had linkages with other NIS actors; in medium-sized companies, the figures rise to 15% in industry and 14% in the service sector; and in large firms the figures jump to 35% in industry and 24% in the service sector.

Although there are few linkages between Brazilian firms (industry and services) and universities, firms view such linkages as important. Indeed, 30% of industrial firms and 43% of service-sector firms consider it important to co-operate with universities (IBGE, 2010). In Colombia, there are very few linkages with universities. Only 6% of small firms and 10% of medium-sized firms have such linkages. In both countries, linkages and co-operation with NIS agents increases as the company's size increases. As in other Latin American countries, Colombian universities have not helped boost innovation among SMEs in the manufacturing sector (Gutiérrez, 2011). Similarly, in Uruguay innovative companies in industry and the service sector develop linkages with various NIS agents, but co-operation between them and universities and research centres is very low, though it is higher among larger firms. About 4% of small firms, 10% of medium-sized firms and 24% of large firms have such linkages. The importance of this form of co-operation for innovation is highlighted by the fact that 32% of firms that innovate in the strict sense of the word have linkages with universities, compared with just 12% of firms that innovate in a broader sense. Similarly, government bodies responsible for operating STI programmes have very few linkages with Latin American firms.

It is vital to develop policies focused on strengthening the capacity for co-operation between NIS agents and innovation in the region. Although few countries have strong NISs, there is a consensus that innovation is important to improve economic growth and competitiveness. Several Latin American countries have thus bumped the topic up their agenda, introducing policies to foster linkages among NIS agents in national STI plans.

Source: Based on data from innovation surveys.

In short, the innovation survey results bring to light a series of characteristics shared by SMEs and the main factors that hinder innovation activities. Innovations introduced by SMEs have a far narrower scope than those introduced by larger firms. SMEs generally allocate few resources to radical innovation activities such as investment in R&D, focusing instead on acquiring machinery and equipment, with ICTs playing a prominent role. This, they say, is due to the obstacles they face because they are not large companies and the high costs and risks associated with innovation activities, along with their limited access to financing. Innovation activities exhibit economies of scale,

making it difficult for SMEs to make any profit from them. The poorly qualified human resources and unfavourable characteristics of the sectors in which they operate – with little incorporation of technology, knowledge acquisition and information – discourage them from investing in innovation. These factors are constraints that must be taken into account by policy makers and those who design instruments to promote innovation and the incorporation of knowledge into production processes.

These conclusions reaffirm the need for governments to step up and broaden the scope of public policies to promote and support SMEs, because without such support they have been unable to undertake complex, wide-reaching innovation activities.

Although some Latin American firms have come close to the international technology frontier in some fields, such firms tend to be "technology islands" in a region characterised by a highly diverse production structure.

Although in Latin America there are some firms, production clusters and sectors that have come close to the international technology frontier, they tend to be "technology islands" in a region characterised by a highly diverse production structure. For Latin American countries to converge upon a pathway of inclusive development, it is essential that they increase business investment in innovation and R&D to significantly boost productivity and competitiveness. It is therefore important that they make progress in designing and implementing industrial policies accompanied by science, technology and innovation policies. These policies must take into account the specificities of SMEs, encourage complementarity among NIS agents and facilitate linkages between SMEs and all other production and innovation firms and organisations to improve their access to new technologies and their capacity to innovate. Policies should help these companies overcome the barriers they face, expand the spillover effects into other sectors and foster productive links in both directions. This will increase the added value and improve income and salaries in SMEs and the wider economy.

ICTs in Latin American SMEs: access and adoption

As we have seen, one of the fundamental innovation activities that occurs in Latin American firms, especially smaller firms, is the incorporation of technologies through investment in machinery and equipment. ICTs have become particularly prominent in recent years. Therefore, it is important to analyse the penetration rate of ICTs in SMEs, what access SMEs have to more complex technologies, what limitations they face, and the potential of these new applications.

ICT penetration in SMEs

Although more SMEs have adopted and begun using basic tools (personal computers, Internet and e-mail), there is still a wide gap between Latin America and OECD countries in terms of the sophistication of the ICTs they use. Although SMEs have narrowed the gap in terms of basic ICT infrastructure, they are now lagging even further behind in their use of complex technologies.

Formal Latin American SMEs do not lag very far behind in terms of access to basic ICTs such as mobile and fixed-line phones, computers, ordinary software and Internet use.

Data on ICT access and use in the region is sparse and difficult to compare among and within countries because of the different methodologies and coverage. Data tend to be for basic indicators (Internet access and number of computers), and very little information is available on complex applications and effective use of ICTs in businesses. This makes it difficult to identify gaps between Latin American and OECD countries from which to draw lessons.

In recent years, there have been several initiatives to improve how ICT use in the region's businesses is measured. Current methods focus on basic data, and new indicators are still in the early stages of development. Generally the data available in the region are as follows: computer availability, intranet and Internet access, online sales and purchases, and human resources who use these technologies, sometimes including information on the type of Internet connection, how the connection is used, and extranet access, without details on the hardware or its use. In several cases, the data only cover the manufacturing sector, rather than all production sectors, and in other cases data from microenterprises are not included or are not proportionally represented. For instance, statistics often do not measure the incorporation of ICTs in agricultural SMEs.[4]

Despite these limitations, we can analyse certain indicators that provide a partial view of the extent to which ICTs have spread in Latin American companies of different sizes. The adoption of these technologies is the result of an evolutionary process that requires certain minimum thresholds for technology infrastructure, which are necessary to move into maturer, more advanced stages (Peirano and Suárez, 2006; Kotelnikov, 2007; Rivas and Stumpo, 2011). Completing one phase and moving onto the next requires additional efforts and complementarities in firms' skills and organisation. Firms can make progress in the ICTs they adopt and use by moving from unsophisticated technologies such as mobile and fixed-line telephones and computers with basic software to more advanced technologies like e-commerce and information and communication systems.

Compared to large firms, formal SMEs do not lag very far behind in terms of access to basic ICTs, which represent the first stage of adoption and use. This is attributable to the sharp drop in the cost of access to these technologies. Although there are very few follow-up surveys to investigate the dissemination of ICTs among firms of different sizes, existing surveys show that in several countries SMEs have gradually been acquiring computers and their level of Internet access is similar to that of larger firms. The gap is minimal for the use of basic tools such as e-mail, with data across the region indicating around 98% of small firms and 99% of large firms using this means of communication.

Many Latin American SMEs seem to have entered the second stage of incorporating ICTs. The second stage involves creating and managing databases that, with a small amount of investment in computer infrastructure, can be used to speed up and standardise administrative procedures, which has an impact on information-generating activities. Changes in computer and communications infrastructure mainly affect routine operations. The main benefit for the company is that procedures are automated,

improving the productivity of human resources and lowering costs for the company itself and for third parties. This stage involves relatively advanced uses of technology, such as transactions with government bodies and banking and financial services. Although many smaller firms do use these technologies, the gaps among firms of different sizes are beginning to widen (Table 4.3). The gaps in ICT use are also widening among firms that have their own website, but the statistical data do not indicate how firms use their website, and include in this category those who use their site solely for informational purposes rather than to form a link with their customers or suppliers.

Table 4.3. **Use of intermediary ICTs, by company size**
(as percentages)

	Country	Microenterprises	Small enterprises	Medium enterprises	Large enterprises
% of companies using the Internet for transactions with government agencies	Argentina*	-	50	66	82
	Brazil	-	66	78	87
	Chile	70	83	95	97
	Colombia	39	53	68	78
% of companies using the Internet for banking and financial services	Brazil	-	83	91	94
	Chile**	-	77	89	93
	Colombia	67	84	91	93
% of companies with their own website	Argentina	-	62	76	83
	Brazil	-	50	75	91
	Chile	9	21	53	75
	Colombia***	2	23	60	77
	Uruguay	-	45	60	75

Notes: (*) Average for businesses that undertake transactions (independent of the frequency) of a) liquidation and payment of AFIP, b) assessment and payment of contributions and c) other transactions with the state-based OEDE-DGEYEL-MTEySS (2011). (**) Survey Data Access and use of Information and Communication Technologies in Chilean companies (2006). The stages of firm size are used in the surveys of the respective countries, based of their respective definitions. (***) For Colombia, data based on their Core Indicators Study of Information and Communication Technologies ICT (2006 and 2007), DANE (2008).

Source: Produced by author based on several surveys. For Argentina, data based on OEDE-DGEYEL-MTEySS (2011), ICT-EIL module. For Brazil, data based on homes and businesses ICT 2011 (CETIC, 2012). For Colombia, based on DANE ICT Survey (2008). For Chile, based on 2nd Business Longitudinal Survey, Business Centre, Ministry of Economy (2012). For Uruguay, based on ICT module developed by the INE (2007).

In the third stage, ICTs support decision making and allow changes to be made to how information is processed and how it is co-ordinated with the firm's strategic areas. For these more advanced applications and uses, there is a much wider gap between SMEs and larger firms. Relatively speaking, the effort required of SMEs to incorporate and use these tools is much greater in terms of training up staff and acquiring the prerequisite skills. The staff's skills even become more important, since new tools need to be used for management tasks in order to be effective. One indicator of how well firms can co-ordinate their different areas is whether they have an intranet, and the vast differences among agents of production in their adoption of an intranet is significant for the region's production fabric.

Table 4.4. **Frequency of ICT use**
(as percentages)

	Country	Microenterprises	Small enterprises	Medium enterprises	Large enterprises
% of companies placing online orders	Argentina	-	22	24	25
	Brazil	-	56	68	68
	Chile	5	10	15	14
	Colombia	33	43	49	49
	Uruguay	-	36	49	54
% of companies receiving online orders	Argentina	-	18	22	23
	Brazil	-	11	14	18
	Chile	4	6	10	9
	Colombia	35	45	49	46
	Uruguay	-	37	47	44
% of companies with an intranet	Argentina	-	18	34	61
	Brazil*	18	35	49	72
	Colombia**	19	21	37	62
	Uruguay	-	22	38	56

Notes: * For Brazil, the values correspond to the percentage of companies that have ICT. For other countries, the values are with respect to the Internet. (**) For Colombia, value based on a study of Basic Indicators of Information and Communication Technologies ICT (2006 and 2007), DANE (2008).

Source: Values based on data from various surveys. For Argentina, data based on OEDE-DGEYEL-MTEySS (2011), ITC-EIL module. For Brazil, based on homes and businesses ICT 2011(CETIC, 2012). For Colombia, based on DANE ICT Survey (2008). For Chile, based on the second Business Longitudinal Survey, Business Centre of the Ministry of Economy (2012). For Uruguay, based on an ICT module developed by the INE (2007).

Firms that use ICTs more intensively and for more complex applications, and therefore need an intranet combined with highly specialised software such as enterprise resource planning (ERP) and customer relationship management (CRM), are in the fourth stage of adopting ICTs. In this stage, investment focuses on technology infrastructure and highly qualified staff. Firms fully adopt ICTs when the technology enables them not only to carry out the activities described above for the previous stages but also to innovate better. Innovations can be enhanced by greater interaction among different areas of the company or by fluid, permanent contact with suppliers and customers.[5] There are differences in the use of these systems, which are related to the technological, organisational and absorption capacities of each company, and not just its size or lifetime. For example, in Argentina, ERP systems are used by 25% of small firms, 32% of medium-sized firms and 60% of large firms, while in Brazil the respective figures are 31%, 51% and 72%.

Much of the production sector in Latin America, especially SMEs, is in the first or second stage of using ICTs. Such firms mainly operate in industry, basic services and business. At the third stage are a small proportion of firms, especially medium-sized and large firms, with a higher proportion of industrial activities or more specialised services. Finally, the fourth stage, in which ICTs are used to adapt equipment and human resources' skills, has been reached by only a very small proportion of businesses in the region, mainly large companies (especially transnational and large domestically owned corporations) and other firms of various sizes operating in more technology-intensive sectors, in industry and in specialised services.[6] Some companies often incorporate more complex technology without having the internal resources to use it productively, which creates organisational problems (Breard and Yoguel, 2011).

When firms use ICTs to help them develop innovations, they are considered to have fully adopted ICTs.

New opportunities to digitise SMEs

ICTs have revolutionised various aspects of modern life. One of these aspects is the business sector, with ICTs becoming ever more vital in making companies competitive. Thanks to their ability to speed up communication, streamline management processes, generate market information and knowledge and open up new distribution channels and business models, businesses have rapidly adopted them, especially large firms. For SMEs, using the Internet provides new opportunities to supplement or replace traditional advertising. And with e-commerce applications, they can expand their markets, especially internationally.

Latin American SMEs have been slower to take up ICTs because many are unaware of their benefits for business, and more importantly, because they find them expensive. For example, the early development of integrated management programmes and applications, such as knowledge management systems (KMSs) and, as mentioned above, ERPs and CRMs, are better adapted to large firms than to SMEs, which have a much simpler business structure. Also, the high cost of computer software and hardware remains an obstacle, despite ever-falling prices. Finally, to adopt these technologies firms must invest in giving staff the technical training they need to use, benefit from and maintain them.

Driven by the recent expansion of broadband services, cloud computing is an opportunity for SMEs, since it significantly reduces the weight of ICTs in their cost structures. Cloud computing is the provision of standardised, configurable, on-demand, online computer services. These services include computing, storage, software and data management using shared physical and virtual resources (networks, servers and applications, among others). Since cloud computing takes place online, with shared resources and on-demand services, it offers major advantages over traditional computing. Being online, the service is constantly available, allowing users to access their data and applications using various types of devices wherever they are located, provided they have a suitable Internet connection.

Cloud computing gives SMEs the opportunity to access low-cost, standardised, configurable online computer services. These services include computing, storage, software and data management using shared physical and virtual resources (networks, servers and applications).

Since they are on-demand services and you pay for what you use, users can access a catalogue of services and pay only for those ones they need for their business, adapting what they use to their demand and workflow. Providers of cloud services, meanwhile, use economies of scale, user-demand aggregation and the diversity of demand patterns to offer a scalable, customised service more cheaply, since the cost of the computer resources is shared among a wider user base. Finally, the cloud-computing model minimises management efforts, as the service can be provided without users knowing details about the infrastructure, such as where it is located. This brings down the cost of managing and maintaining equipment and systems.

The main impact of cloud computing is that it reduces costs, especially for SMEs.[7] Businesses benefit from greater flexibility to respond to cyclical fluctuations and a lower cost of entry. In some countries the use of SaaS CRM solutions reduces costs by an estimated 20-25% compared to conventional applications, while migrating infrastructure to cloud services can reduce costs by over 50%.[8] The impact on the number of businesses started up varies from country to country and sector to sector, but the greatest impact takes place where SMEs are strongest and ICTs are adopted quickest, and in sectors in which the fixed cost of ICTs is very high, such as wholesale and retail trade, and property.

Cloud computing can have a very positive effect in Latin America, given the strong presence of SMEs in the business sector and the slow adoption of ICTs. The extent to which the model is used in the region is marked by the characteristics of the region's businesses, including their capacity to adopt the technology, and by the development of cloud computing services that meet business needs, and the expansion of broadband services and the quality of the connection. These factors form the platform for enabling cloud computing.

Regional broadband connectivity

A critical factor for efficient, productive use of ICTs is the availability and quality of broadband services, which facilitates the development of complementarities in social and production sectors. Analysis of broadband Internet connectivity and its determining factors in Latin America shows that certain problems restrict access to the service, both for home and business users, by affecting connection speed and quality, teledensity and prices.[9] These problems include:

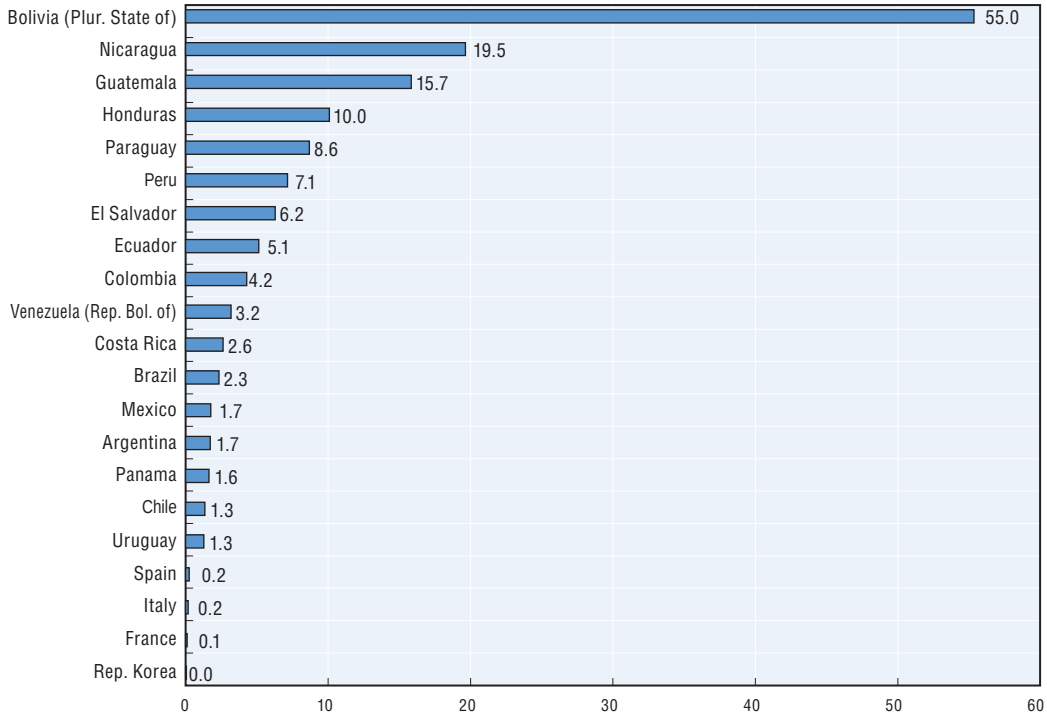
- Economies of scale: Due to the low purchasing power of most Latin Americans and the high cost of broadband in the region, Latin America does not achieve the economies of scale seen in developed countries. Broadband is significantly more expensive than in developed countries, both in absolute terms and relative to per capita income. Both factors severely limit broadband services from spreading through market mechanisms.
- Cost of international Internet access: The greater distances involved in connecting Latin American countries to the global network raises the cost of broadband access. The transmission capacity required to access the Internet, usually via the United States, is high. Furthermore, low traffic prevents better use of the infrastructure deployed, making relative costs more expensive than in other regions. The cost of international access has an impact of between 20% and 40% on the end cost of broadband services.
- Non-optimal regional connectivity: The limited direct connectivity among Latin American countries raises the cost and reduces the quality of Internet access due to the two-way, long-distance international transport needed to move data from one country to another, usually via the United States. Often, data moving from one Internet service provider (ISP) to another ISP in the same country must go through foreign-based Internet exchange points. If regional traffic were to increase significantly, economies of scale would justify direct links among Latin American countries.

According to the International Telecommunication Union (ITU), the penetration of fixed broadband in the region is well below that of more developed countries and regions. This means the benefits of using broadband are available only to a small part of the population.[10] The positive effects of broadband on GDP growth exhibit returns to scale:

broadband makes a greater contribution as its penetration rate increases, and must reach a critical mass of users to maximise profits. In this context, the large access gaps among countries in the region and between the region and developed countries, both in absolute terms and relative to per capita income (Figure 4.5) are a major hindrance to the development. For output, given the financing problems encountered by SMEs, costs are also a key factor in determining their capacity to access broadband services.

Broadband penetration in Latin American countries is well below the rate in developed countries and other regions around the world. It is available only to small segments of the population.

Figure 4.5. **Cost per megabit per second of fixed broadband, relative to GDP per capita, February 2012**
(percentage of GDP)

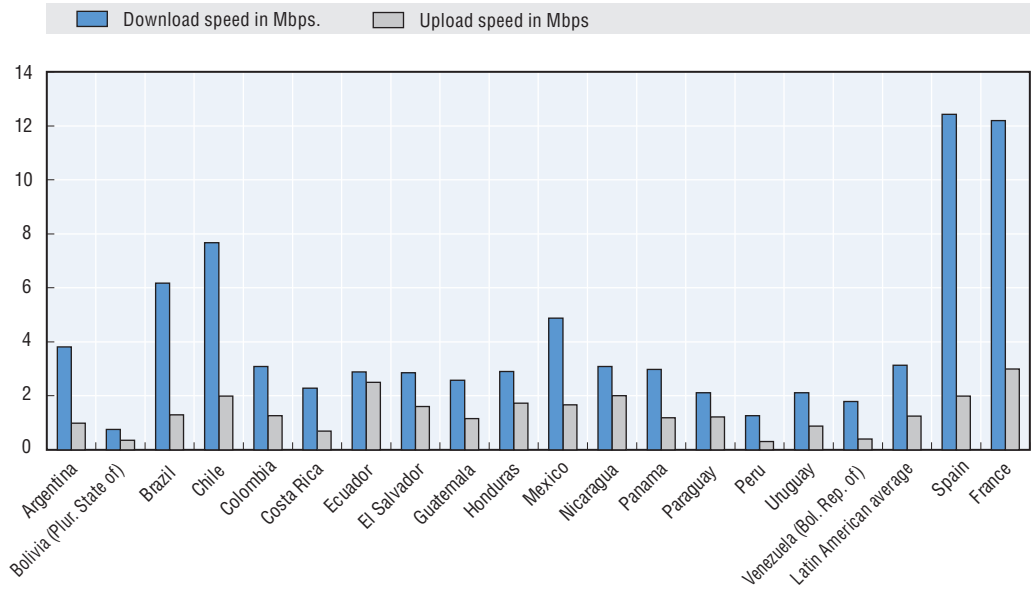


Source: ECLAC Regional Broadband Observatory (ORBA).

StatLink http://dx.doi.org/10.1787/888932732899

Connection quality also restricts broadband use in the region. A traditional measure of quality is bandwidth speed. Bandwidth is important because many applications can be inaccessible with slow connections, including most advanced applications, which provide the most benefits. Such applications are highly interactive, require real-time communication and use video-based multimedia tools. High levels of connectivity are needed to ensure services are provided without interruptions. Although sometimes high speeds are not required, broadband improves users' Internet experience, so they use it more often and more intensively and are able to benefit more from the electronic services (OECD, 2009).

Figure 4.6. **Average broadband Internet connection speeds**
(in megabits per second, as of 1 April 2012)



Note: Mbps.: megabits per second.
Source: ORBA, based on information from Ookla.
StatLink http://dx.doi.org/10.1787/888932732918

There is an important space for policies and strategies aimed at expanding network infrastructure and improving access and quality of service. But until the aforementioned problems have been solved, broadband use in Latin America will remain limited to small segments of the population, and the region will not be able to fully benefit from ICTs. This situation could even widen the technology-access gaps, hindering the potential interaction among different production sectors, especially between small and large firms.

In terms of connection speed, the quality of broadband services is lower than in developed countries.

Conclusions and recommendations: institutional structure and policies for innovation and the dissemination of technology

Business leaders and policy makers in Latin America are showing increasing concern for innovation. Innovation is also working its way on to government agendas, although often this does not translate into action. Innovation plays an increasingly more important role for entrepreneurs as well as policy makers in Latin America, thus gaining added importance in national agendas, but often discourse translates into few concrete activities that promote technical change, innovation or technological development. Creative actions taken by firms explain their innovative behaviour, and although these

reactions are not spontaneous, they are strongly influenced by and dependent upon internal capabilities and the environments in which they are embedded. Institutions, laws, regulatory frameworks and public policy play a crucial role in promoting, or inhibiting, technological innovation and dissemination, just as relations between institutions and agents facilitate access to knowledge for the most disadvantaged sectors and exchanges with other agents. Innovation activities and activities to create knowledge-based added value involve trial and error; there is great uncertainty as to the results, the costs are high, and the time frame is often unpredictable. For all these reasons, it is crucial to promote an effective, efficient, focused public policy for the long term that will foster linkages between the public and private sectors and knowledge-production centres. This will lead to synergies and complementarities, economies of scale and knowledge spillovers.

In general, national science, technology and innovation plans in Latin America now explicitly mention SMEs, but this does not translate into instruments and actions to close the technology and innovation gap. The institutional structure is hugely complex, with different bodies connected together in this area, thus reinforcing the presence of the private sector in co-ordination with the public sector. A key feature that largely explains why the institutional fabric is so complex is the lack of institutions dedicated exclusively to promoting and financing innovation in SMEs (Ferraro, 2011). In some countries, this role is the responsibility of institutions and bodies that promote innovation, such as the Financier of Studies and Projects (FINEP) in Brazil and the National Research and Innovation Agency (ANII) in Uruguay, while in others it is the responsibility of bodies that promote production, such as the Production Development Corporation (CORFO) in Chile. In some countries in the region, the institutions responsible for policies to support SMEs and innovation are of little importance in the government structure and have deficiencies such as a lack of resources to sufficiently manage the programmes. Part of the finance comes from international co-operation, which often poses a challenge to the continuity of public policies. Other problems are the lack of available human resources and weaknesses in the training system. These programmes are often determined by governments for their term of office, and there are not enough true state policies in this area (Ferraro and Stumpo, 2010).

While the budget for science, technology and innovation policies has increased in several countries in the region, such as Brazil and Uruguay, the funds earmarked specifically for this activity in SMEs, though difficult to quantify, seem to have changed very little (Dini and Stumpo, 2011).

Latin American countries' policies to promote innovation in SMEs can be summarised as being instruments that directly or indirectly encourage innovation, focusing on demand, supply and linkages among actors. The policies and instruments to support innovation generally do not discriminate in favour of smaller firms or give them any special treatment (see Annex 4.A1).

Regarding policies to facilitate ICT access and use, since the mid-2000s most of the 26 Latin American countries have drawn up a digital agenda, but only 11 of them have included ICTs and the production sector as a strategic line of action (albeit only a minor one).[11] Generally their digital strategies attach great importance to ICTs as a means of social integration and improving the population's quality of life, yet there are few references to the possibility of using these technologies to boost economic development.[12] Some programmes try to promote the integration of ICTs in the production sector, particularly in SMEs. Two years ago, programmes were introduced

in the region to stimulate the digital inclusion of SMEs in order to bring ICT supply in line with the demand. The programmes were a step forward towards policies that approach the problems associated with incorporating and using ICTs from an integrated perspective (Box 4.4).

Most Latin American countries have defined digital agendas since the mid 2000s. However, only 11 of 26 countries have incorporated ICTs into the production sector as a strategic line of development, albeit only marginally.

The way SMEs innovate varies greatly between one firm and another, with little use of technologies and at a lethargic pace. Development policies recently introduced in Latin America have been too weak and have failed to significantly abate the companies' difficulties. The structural diversity persists and SMEs have not raised their productivity relative to that of large firms, so they still cannot dynamically join the production structure. However, there is a consensus that STI policies need designing and implementing to help develop the economies in the long term and eradicate the gaps that exist.

To achieve this, they must focus those public policies on reducing the gap between firms of different sizes. These policies must deal with the restrictions and entry barriers faced by SMEs when innovating. Among other factors, the policies are based upon variables inherent to innovation activities, such as high sunk costs and high risks, which affect SMEs the most (Dini and Stumpo, 2011). Similarly, policies should consider the lack of qualified human resources, poor access to credit and international markets, and their linkages with government programmes to promote STI. It is important to strengthen the NISs to encourage linkages, co-operation, scientific and technological capacities and bring about closer ties between knowledge-production centres and the production sector. This will create business opportunities, improve competitiveness and create good jobs.

Box 4.4. **New programmes to improve SMEs' ICT competitiveness**

Despite the progress made by some countries in the region to incorporate ICTs into their production strategy, the common denominator is a lack of an integrated policy. Below are some of the innovation programmes that have shifted their focus to developing a new strategy that will have a greater impact on the production fabric.

Table 4.5. **New direct programmes for incorporating ICTs into businesses: co-ordinating supply and demand**

Country	Programme	Institution	Objetives
Brazil	PROIMPE	Brazilian Development Bank (BNDES)	To promote greater competitiveness among SMEs by stimulating digital inclusion and developing a market for ICT solutions for SMEs.
El Salvador	Promoting digital maturity in small companies and microenterprises	National Micro and Small Enterprise Commission (CONAMYPE)	A training programme for ICT consultants providing tools for managing and delivering ICT services to Salvadoran craftsmen and craftswomen
Uruguay	Pilot Project (promoting the incorporation of ICTs in SMEs to support modernisation and technological development)	Ministry of Industry, Energy and Mining (MIEM))	To identify sectoral technology solutions and link suppliers with their clients to improve take-up of ICTs by industrial value chains.

Brazil's and Uruguay's programmes focus on equating ICT supply and demand to open the way for concrete solutions for SMEs, improving their competitiveness and creating specific markets for ICT solutions.

In Brazil, the PROIMPE stimulus programme aims to match ICT supply and demand, focusing on micro, small and medium-sized enterprises (SMEs). Its objectives are to stimulate SMEs' digital inclusion, improve the competitiveness of SMEs that use and develop ICTs, and stimulate the production of applications for SMEs. It also aims to create finance and capitalisation mechanisms for SMEs that develop and deliver ICT services and guide SMEs in purchasing ICT solutions.

In Uruguay, as part of the sector-by-sector intervention strategy through the Tripartite Boards promoted by the Ministry of Industry, Energy and Mining (MIEM), the overall objective of technical assistance is to support the National Industries Directorate (DNI) in defining programmes geared at incorporating ICTs into businesses. The goal is to provide tools to help increase productivity. An institutional structure is being built and reinforced in which the public areas of productive development, participating sector-specific chambers of commerce (private sector), and ICT firms are involved.

Digital training programmes include, in particular, the programme recently developed by El Salvador, which has a different objective from the Brazilian and Uruguayan programmes. The National Micro and Small Enterprise Commission (CONAMYPE) is carrying out a training process with technical institutions to give these programmes the technical skills to develop digital maturity in micro and small enterprises in the craft sector. The areas that are being addressed are: the profile of the technology consultant, ICTs in SMEs in the craft sector, online marketing, the use of social networks in business, technology trends in the craft sector and the implementation of ecommerce activity.

Source: Authors' work.

While Latin American countries have added the subject of innovation to their agendas and realised its importance, and they have moved towards a more solid institutional structure for development, many challenges remain, and efforts need to be channelled towards concrete actions (OECD/ECLAC, 2011). Governments in the region should focus their action on promoting and drawing attention to their business innovation instruments and programmes, especially among SMEs. According to innovation surveys conducted by various Latin American countries, entrepreneurs cite the poor awareness of public instruments as one of the factors holding back innovation. This is particularly true for SMEs, among which awareness of such programmes is even lower.

In Latin America, policies are needed to promote innovation in SMEs and include microenterprises too. Since there are no appropriate programmes for less-dynamic SMEs, or if there are any they are inaccessible to them, the gap between them and larger firms, where most innovation takes place, widens.

Co-ordination and greater co-operation among institutions seeking to promote SMEs is also necessary. In particular, policies are needed to promote innovation among smaller firms, where there is little innovation, and even among microenterprises, which are generally outside the scope of institutions to promote SMEs. Business-innovation development programmes are normally fashioned for the most dynamic companies, which can use and benefit from the programmes and instruments made available. However, for many less dynamic SMEs there are no appropriate programmes or they do not have access to them, which serves to widen the gap between them and larger firms. Consequently, those who design and introduce policies to stimulate innovation need to take into account the characteristics of smaller, less dynamic firms, thus opening the way for innovations in such firms, resulting in productivity gains (Dini and Stumpo, 2011).

For public policies designed to break down the barriers to adopting technologies and encourage innovation and the effective introduction and use of technologies in Latin American business, especially among SMEs, major steps forward need to be taken in various directions at the same time. These steps are related to improving the business environments and factors associated with companies' technologies and specific characteristics.

a) **Infrastructure:** There are still problems with the coverage and cost of certain major infrastructures and the quality of service they offer. Any innovation strategy involving SMEs requires good-quality laboratories and public research centres to support and work with those firms. For ICTs, it is particularly important to have high-quality broadband so that applications based on these technologies can be utilised. Regulations to increase competition among suppliers are also needed, as well as differentiated pricing to improve access to basic services provided by laboratories and specialist centres, and even to Internet services and computer tools.

b) **Human-resource training:** Using new technologies and inciting firms to adopt them is vital for innovation, and must become a higher priority in countries' strategies to improve business performance. In addition to improving general education plans, specific training programmes must be developed in areas related to production processes and management and business techniques.

c) **Specific programmes:** Latin American countries need SME-focused programmes to promote business innovation, because SMEs are very often unable to access or benefit from government innovation programmes. They also need to create incentives to adopt ICT-based solutions that will help improve business management, especially among smaller firms.

d) **Other indirect instruments:** Other initiatives that can promote business innovation and the dissemination of technology are indirect instruments that can stoke up the creation of the types of environments needed for businesses to innovate and NIS actors to co-operate with each other. Such initiatives can also target a specific sector, for instance with the aim of promoting better quality goods and services for exporting. Improving access to high-quality infrastructure services will improve innovation capacities and access to new markets while protecting consumers and improving well-being (Göthner and Rovira, 2011).

e) **Information system:** Designing policies and specific instruments requires vast knowledge to adapt them to each country's sectoral and business specificities and to companies' characteristics and needs. If a system is built providing information on firms' innovative behaviour and their adoption and use of technologies, follow-up studies will be able to analyse the results of the policies and tie them to company performance. The system's design and application can then be fine-tuned. This means moving towards a solution to the problems currently identified by surveys held in the region (duplication of efforts, lack of continuity in data collection, and poor coverage, representativeness and comparability). It also means taking steps towards defining indicators to analyse in greater depth aspects that better represent the complexity of innovation processes and the use and dissemination of technology in the production fabric, as well as the impact of technologies on business performance.

In Latin America, industrial policies are needed to encourage the development of new sectors and technologies, co-ordinate public and private efforts, increase investment in innovation (quantity and quality), create the right environment for innovation, provide finance for these high-risk activities, and encourage the training of qualified human resources.

It is imperative that policies have targets at different levels to ensure that modernisation spreads throughout the production sector, especially among smaller firms, and to respond to the more stringent demands of larger firms and more advanced sectors. Such policies will make it possible to expand productive inclusion, reduce structural heterogeneity and speed up productivity growth.

Annex 4.A1. Policies directly affecting business innovation in SMEs

The following table, though it does not cover the full depth of innovation in Latin America, provides an overview of what happens in some countries in the region. The table reveals a shortage of instruments and programmes to support innovation in SMEs, especially those tailored specifically for this type of company. These factors should be especially promoted to ensure that modernisation reaches the entire production sector in the region.

Table 4.A1. Policies directly affecting business innovation in SMEs

Country	Institution	Managed by	Type of institution	Purpose of the SME innovation support programme or fund								Support for innovation	Financing method
				Supply	Demand						Transfer / linkages / co-operation		
				Human resources	Innovation	Equipment	Improvement to business productivity/ competitiveness	Technology transfer	R&D	Transfer / linkages / co-operation			
Argentina	National Science and Technology Promotion Agency	Ministry of Science, Technology and Productive Innovation (MINCyT)	agency to support science, technology and innovation				Argentinian Technology Fund (FONTAR), Argentinian Sector Fund (FONARSEC)				direct	loans, tax incentives and subsidies
	National Scientific and Technical Research Council (CONICET), through the Technology Transfer Office	MINCyT	agency to support science, technology and innovation	grants, researchers in companies					researchers in companies	consultancy, agreements, high-technology services	direct and indirect	loans and subsidies
	National Agricultural Technology Institute (INTA)	Ministry of Agriculture, Livestock and Fisheries	agency to support innovation in farming and livestock					technology transfer agreements	R&D agreements	technology-transfer agreements through specialist technical support agreements	direct	loans and subsidies
	National Industrial Technology Institute (INTI))	Ministry of Industry	government ministry	human-resource training						technical services/ support	indirect	subsidies
	Secretariat of Small and Medium Enterprises and Regional Development (SEPYME)	Ministry of Industry	agency to support SMEs	SME experts			Programme for Access to Credit and Competitiveness (PACC) for companies, National Fund for the Development of Micro, Small and Medium-Sized Enterprises (FONAPyME)				direct and indirect	loans and subsidies

Table 4.A1. (contd.)

Brazil*	Studies and Projects Funding Agency (FINEP)	Ministry of Science, Technology and Innovation (MCTI)	support agency		Economic Subsidy Program, PAISS****		Innova Brazil		Innova Brazil	Innova Brazil	direct	loans and subsidies
	Brazilian Development Bank (BNDES)		national development bank			BNDES cards					indirect	loans
	Ministry of Science, Technology and Productive Innovation (CTI)	Ministry of Science, Technology and Innovation (MCTI)	government ministry	HR training for innovation	SIBRATEC*****		SIBRATEC		SIBRATEC, financial support for R&D and investment	Brazilian Technology System (SIBRATEC), Pro Innova	direct and indirect	loans and subsidies
Chile	Production Development Corporation (CORFO)	Ministry of Economy	agency to support production	innovation management	high-tech business innovation programme	CORFO credit for micro and small enterprises	InnovaChile	technological dissemination programme		innovation hubs, transitory basal funding programme for technology consortia	direct and indirect	loans, tax incentives and subsidies
	National Research, Science and Technology Commission (CONICYT)	Ministry of Education	agency to support science, technology and innovation				Science and Technology Development Fund (FONDEF)				direct	subsidies
	Foundation for Agricultural Innovation (FIA)	Ministry of Agriculture, Livestock and Fisheries	agency to support innovation in the food and forestry industries		national innovation systems					consultancies	direct and indirect	loans and subsidies
	Innova Bío Bío				business innovation	technological equipment for SMEs		technology transfer centres		consultancies and technology missions	direct and indirect	loans and subsidies
Colombia	Modernisation and Innovation Fund for MSMEs (FOMIPYME)	Ministry of Commerce, Industry and Tourism	government ministry	Innova Prize	INNpulsa MiPyme***		INNpulsa MiPyme***			Innova Prize	direct and indirect	subsidies

Table 4.A1. (contd.)

Mexico*	National Council on Science and Technology (CONACYT)	Ministry of Education	agency to support science, technology and innovation		INNOVAPYME**		INNOVAPYME**, INNOVATEC**, Technology Innovation Fund			INNOVAPYME, PROINNOVA**, AERIS	direct	subsidies
Uruguay	National Research and Innovation Agency (ANII)	Ministerial Bureau of Innovation (GMI)	agency to support innovation	qualified human resources for companies	wide-coverage innovation projects, high-impact innovation projects, projects to support innovative potential prototypes		certification projects and new export markets			projects to stimulate technology demand, in-house experts, supplier-development programme	direct	subsidies
	National Bureau for Crafts and SMEs (DINAPYME)	Ministry of Industry, Energy and Mining (MIEM)	agency to support SMEs	human-resource training							indirect	subsidies

Notes: FONTAR and FONARSEC are funds.
* National funds and programmes are considered, not those from the states (regions) or the Federal District.
** They form the three schemes in the Innovation Stimulus Programme.
*** iNNpulsa MiPyme has replaced the Modernisation and Innovation Fund for MSMEs. It is managed by BANCOLDEX.
**** Programme to support innovation in the sugar-energy and sugar-chemical industries together with FINEP-BNDES
***** Brazilian Technology System; joint programme with FINEP-MCTI.

Source: Produced by the author based on official information provided by each institution as well as by Dini and Stumpo (2011) and Ferraro and Stumpo (2010).

Notes

1. These are networks in which non-contiguous hubs (companies and people) can be reached from any source hub via a relatively small number of links (knowledge/relations) between them (Albert-Laszlo Barabasi, 2003).
2. Myrdal's theory of cumulative causation (Myrdal, 1957) warns that regional growth is an unbalanced process. He predicts that greater initial development in one region rather than a neighbouring region results in a relative stagnation in growth, because investment and the more productive resources are attracted to the more developed region. This contributes to a greater geographic concentration of the economy and explains the natural trend for differences in per capita income among regions to expand. Such an effect is of particular concern to smaller companies.
3. "Schumpeterian efficiency" is related to the presence of sectors leading innovation with faster-growing productivity and greater transfer of knowledge and skills to the economy. The resulting productivity boosts spread to other sectors. "Keynesian efficiency" is associated with specialisation in sectors that benefit from higher rates of growth in domestic and external demand, which has a positive impact on output and employment. (Cimoli *et al*., 2010; ECLAC, 2012).
4. According to data from the Brazilian Geography and Statistics Institute (IBGE) and the Chilean National Statistics Institute (INE), there is a significant lag in the agricultural sector in the use of basic information technologies, particularly among smaller establishments.
5. When ICTs can replace learning processes with trial-and-error processes in simulations that require developing special applications, innovation is boosted.
6. This analysis should be supplemented by information on what these technologies are used for, which is related to the firms' internal capacities.
7. The drastic change in the model is from supplying products to providing on-demand services. The result is that the fixed costs associated with investing in ICT capital become operational and may be adjusted depending on production needs.
8. See McKinsey & Co. (2011), *Winning in the SMB Cloud: Charting a Path to Success*, Zoe Diamadi, Abhijit Bora, Darren Pleasance and Ashish Vora.
9. See de León (2012).
10. According to a study by Katz (2012), the benefits of broadband on GDP growth depend on the widespread availability of the service.
11. Bolivia, Chile, Colombia, the Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, Peru, Trinidad and Tobago, and Uruguay.
12. There is an important difference between the approach taken by European Union countries and that taken by the Association of Southeast Asian Nations (ASEAN). For example, Spain's digital strategic plan (Avanza 1 and Avanza 2) has two key features. First, there is an interconnection and integrity among four major areas that are central to the plan: the digital citizen, the digital economy, the digital context (infrastructure) and digital public services. Second, the digital economy (production) and the digital context (infrastructure, security and digital content) are prioritised (mainly through the allocation of budgetary resources) above the other two areas.

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CHAPTER FIVE

Human capital and skills for SMEs

Despite recent progress in the field of education and skills in Latin America, there are still challenges that should be confronted through careful analysis and new public policies. A relatively untrained workforce and management, a high dropout rate from school, and low-quality education stand in the way of increasing SMEs' productivity. Another obstacle is the mismatch between the skills that the production sector demands and the training that the educational system provides. The technical education and vocational training systems are key factors to deal with this. These challenges have been responded to in this region through programmes that try to address the needs of the production sector and SMEs. However, many areas need government action to strengthen institutions and need policies to better align the education system with the needs of the job market, foster training paths that combine the classroom with the workplace, add new skills and abilities to training curricula, develop certification schemes for acquired skills and abilities, and establish institutional frameworks to encourage co-operation among SMEs.

Introduction

The barriers to productivity growth faced by small and medium-sized enterprises (SMEs) are very diverse, as described in the previous chapters. One aspect that the literature deems essential to understanding an economy's productivity is the production sector's access to human capital and skills. In this sense, the low productivity of this business segment is partially explained by some of the major educational and training challenges faced by the region.

On the one hand, Latin America continues to trail other regions in access, reach and number of years of schooling completed, even with great educational advances in recent years. This lag is reflected in the educational levels of the workforce, much lower than those seen in more developed countries, and in the high dropout rate, as reflected in the number of people who enter the job market at a very young age with little training.

SMEs face problems involving the quantity and quality of human capital and skills in the region. This is a major barrier to the expansion of their productivity and to their development.

On the other hand, the region is far behind other parts of the world in the quality of education, understood as the education system's ability to give new generations the knowledge and skills needed to enter the job market and succeed there. This gap can be seen in the comparisons outlined in the report by the Programme for International Student Assessment (PISA).

Studies of human capital and the job market agree on an additional factor that needs to be analysed in order to understand SMEs' low productivity. That factor is the mismatch between the training that the education system provides and the skills that the production sector demands. Many SMEs in the region say they have difficulties finding workers with the skills they need, which shows there is a skills gap that acts as a barrier to increasing productivity.

This manifests itself in highly varied ways and reflects the vast spectrum of SMEs in Latin America. Depending on factors such as business size, sector and geographic location, these enterprises demand different skill sets and have greater or lesser difficulty in finding them.

This imbalance between the training that the education system supplies and the skills that the production sector demands appears to be worsening and it can be expected to continue growing. The globalised economy is characterised by fast technological change and a production dynamic that is evolving towards a knowledge-centred model. This leads to an ever greater demand for human capital trained in skills related to technical aspects and to non-cognitive dimensions of learning, yet the region's education system does not seem to be able to adapt in order to respond satisfactorily.

In short, SMEs face problems involving the quantity and quality of human capital and skills in the region, which are a major barrier to increasing productivity. This is a key challenge for Latin America. The expansion of potential growth in the region, a greater ability to compete and innovate in the global economy, and the creation of jobs

and opportunities for Latin American society require strengthening and promoting the SME sector. For these reasons it is necessary to consider the role that public policy can play in confronting this challenge.

This chapter addresses these issues using the following structure. The first section analyses the training challenge faced by the region's SMEs by examining how this problem affects different types of SMEs, and explores the role that public policy can play in helping to overcome this challenge. The second section reviews the technical education and vocational training systems in Latin America as a main linkage mechanism between the education system and the production sector, seeking to identify lessons learned and pending challenges. Lastly, the third section proposes a set of public policy recommendations.

SMEs' training challenge

How lagging behind in training impacts the region's workforce

In recent years, Latin American governments have made considerable efforts in education, which have translated into advances in access and reach, especially the gradual increase in the number of years of schooling among the economically active population in the region.

From 2000 to 2010, the working-age population whose education terminated with secondary school rose 8.2 percentage points, while the rate of tertiary education rose by 2.4 percentage points (Table 5.1).

Despite progress in recent years, the region's workforce has relatively little training. In Latin America, 46.6% of the people entering the workforce have no education beyond secondary school and 12.2% have tertiary education, while the percentages in the OECD are 54.9% and 23.8%.

Compared to figures from other, more developed regions, these data show that the gap is still very wide. The portion of the Latin American workforce that reaches secondary education and tertiary education are 46.6% and 12% respectively, a far cry from the figures from OECD countries, in which 54.9% of workers have secondary education and 23.8% tertiary education.

Table 5.1. **Global regions and the OECD: working-age population by highest level of education**
(as percentages and percentage-point change, 2000-10)

	Latin America		OECD		East Asia and Pacific		Central Asia	
Population over 15 years	2010	Change, 2000-10	2010	Change, 2000-10	2010	Change, 2000-10	2010	Change, 2000-10
Primary education	33.1	-7.1	18.4	-6.7	32.7	-4.2	13.5	-4.6
Secondary education	46.6	8.2	54.9	3.6	42.9	2.9	67.1	1.9
Tertiary education	12.0	2.4	23.8	4.3	14.1	4.2	18.2	3.7

Source: Produced by the author based on data from Barro & Lee (2010).

The workforce's limited education seems to have a greater impact on smaller businesses. According to the International Labour Organization, 75.9% of the people employed in microenterprises and SMEs in the region have a maximum educational level of uncompleted secondary. The situation varies by country. People employed in microenterprises and SMEs (MSMEs) who have not completed secondary school total 57% in Argentina, 51% in Chile (the figure excludes medium-sized enterprises), 38% in Mexico and 40% in Peru (Tueros *et al.,* 2009). In addition, the less educated workers are concentrated among independent non-professionals, women and people working in rural microenterprises.

Another notable phenomenon in the region is the school dropout rate, which has a major effect on the educational level of the workforce entering the production sector. Although some progress has been made, the overall dropout rate among 15- to 19-year-olds in the region averaged about 29% in 2009, and nearly half of these dropped out before secondary school.[1] As a result, on the one hand, a large number of young people leave the education system without gaining the knowledge and skills needed to be even minimally employable and increase their chances of attaining a satisfactory career path. On the other hand, since one of the main reasons for dropping out of school is the need to find work for subsistence, this leads young people to enter the job market with little education. Therefore, they generally find unstable employment in the informal sector where micro and small enterprises have a greater presence.

Workers in MSMEs who started but did not finish secondary school total 57% in Argentina, 51% in Chile (the figure excludes medium-sized enterprises), 38% in Mexico and 40% in Peru.

Another relevant topic for understanding the training landscape of Latin American SMEs is the level of skills found among their management. In general, there is a significant shortage of management skills and business leadership in the region. Many small and medium-sized enterprises are limited by their management's inability to lead processes of development, technology adoption, innovation, and expansion into new sectors and markets, which is definitely a barrier to increasing productivity.

All of these issues show that there are still broad educational gaps to close, but that considerable advances have been made in terms of access and years of schooling. Nonetheless, more people spending additional time in the education system does not necessarily mean that skills are being taught and learned effectively, or that students are being trained in skills and abilities needed to find a job in the real economy. These considerations are part of the qualitative side of education, a field in which Latin America is facing its toughest challenges.

On the one hand, international comparisons reflect a particularly worrying gap in the quality of education. According to data from the PISA report (OECD, 2010), 15-year-old students in the region scored far below those in OECD countries in the three subject areas analysed by the study (Table 5.2). Nearly 49% of 15-year-old Latin American students scored at the lowest possible level in reading tests, whereas about 19% of students in OECD countries are at that level. Similarly, 84% and 80% of the students tested achieved the lowest possible level in mathematics and science respectively, twice the rates seen in OECD countries. This shows that young people in the region have trouble performing skills that are basic for participating in the workforce and society.

Table 5.2. **Latin America and OECD: students aged 15 and over with the lowest score in the PISA tests**
(as percentages)

Country	Reading	Mathematics	Science
Argentina	51.6	84.3	79.1
Brazil	49.6	88.1	83.0
Chile	30.6	78.3	67.4
Colombia	47.1	90.8	84.3
Mexico	40.1	79.1	80.9
Panama	65.3	92.6	88.3
Peru	64.8	90.4	90.0
Uruguay	41.9	72.7	71.9
Latin American average	**48.9**	**84.5**	**80.6**
OECD Average	**18.8**	**44.0**	**42.3**

Source: PISA 2009 results (OECD, 2010).

Then again, the problem of quality is aggravated by the major gap in this region between the skills the education system teaches and the abilities the production sector wants.

Mismatch between the education system and the production sector

Economic globalisation has fostered a profound transformation of the production model, largely defined by an intense process of technological change. Knowledge is now at the core of the economy and is vital to understanding the production dynamic and the ability to compete and innovate. Part of the business world is moving towards new sectors and new working arrangements, making increasingly intensive use of new technologies in their production processes.

The nature of the skills demanded by the production sector has also changed over time. This has created a gradual move away from the training traditionally offered by education systems, a phenomenon known as "skills gap". To the extent that it limits businesses' ability to find the skills they need, this skills gap impedes productivity growth. This is why it is important to understand its impact on Latin America and how it affects SMEs.

In Latin America there is a "skills gap" due to a mismatch between the training given by the education system and the abilities SMEs demand, which acts as a barrier to expanding these businesses' productivity.
In Brazil, 71% of managers say they have difficulties filling vacancies, while in Panama the figure is 47%, 45% in Argentina and 43% in Mexico.

In several Latin American countries, managers say it is hard to fill job vacancies in their establishments. Notable examples include Brazil, where 71% of managers have difficulty filling positions, Panama (47%), Argentina (45%) and Mexico (43%) (ManpowerGroup, 2012).

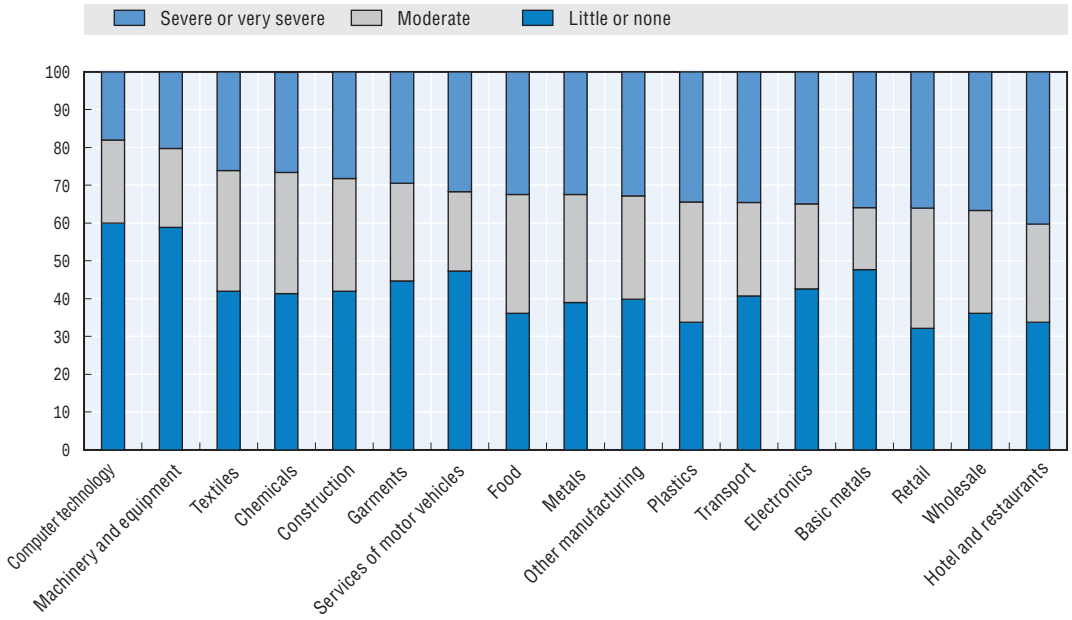
This has a major impact on SMEs, which also have trouble finding the workforce they need. Factors such as the production sector they belong to, how extensively they have adopted technology, their participation in global value chains, and how much export-focused they are will determine, to a large degree, what type of skills SMEs need and therefore how the skills gap affects them. About 37% of SMEs in the region consider this gap to be one of the main obstacles faced in their everyday operations (World Bank, 2012).

SMEs in different sectors face differing problems in finding a suitably trained workforce (Figure 5.1). On the one hand, there are sectors such as computer technology services in which 80% of SMEs say they have from moderate to severe or very severe problems finding the workers they need, and other sectors, such as machinery and equipment, textiles and chemicals, in which the percentage of businesses with severe or very severe problems is also very high, at 40% to 60%. On the other hand, there are areas such as the hotel and restaurants sector and the wholesale and retail sectors, where some 40% of businesses report no problem in finding the workforce they seek, and only around a third of the businesses say they face severe or very severe problems (World Bank, 2012).[2]

The type of skills SMEs demand depends on factors such as the sector they belong to, how extensively they have adopted technology, their participation in global value chains, and how export-focused they are.

Figure 5.1. **Difficulty encountered by Latin American SMEs in finding skilled labour, by sector and level of difficulty, 2010**

(as percentages)



Source: Based on data from the World Bank's Enterprise Surveys.

StatLink http://dx.doi.org/10.1787/888932732937

The difficulties faced by SMEs are based on the sector in which they operate and largely depend on the relative shortage of the type of skills they demand. As a result, it is important to know what type of skills these businesses are looking for, to better understand the fields in which they do business and the limitations they may face in specific economic sectors, and to get an overview of the skills the education system is not providing and whose scarcity blocks productivity.

Recently, important progress has been made in understanding these issues, which confirms the transformation seen in recent years in the demand for skills in the regional economy. The effect of technology change mentioned above and the parallel transformation of the production model have created new types of jobs that demand new skills, while repetitive activities traditionally performed by workers with secondary education are being replaced gradually by technology (Aedo and Walker, 2012).

This broad trend in the region is at odds with an education system still very focused on training in traditional disciplines which, though relevant, need to be complemented with the new type of professional skills demanded by job markets in the new economy (Aedo and Walker, 2012). In this sense some studies (Bassi *et al.,* 2012; EIU, 2009; ManpowerGroup, 2012; Schwalje, 2011) identify various fields in which there is a mismatch between demand in the economy and the supply provided by the education system, which could be grouped into two categories.

There is evidence that some investment decisions in Latin America are made based on the limited availability of human capital and are generating a barrier to growth and limiting the expansion of productivity.

First, the production sector in the region has trouble satisfying its demand for technical competencies, both company-specific ones and more general skills, especially those related to technology, occupations in the new economy, and the knowledge of foreign languages or the use of computer systems (EIU, 2009).

Furthermore, recent studies indicate that besides cognitive skills, companies increasingly are asking in the job market for non-cognitive socio-emotional skills, known as "soft skills". These include elements such as critical thinking, responsibility, teamwork, the ability to solve problems and handle change, oral and written communication, and the ability to understand and relate to one's environment. Managers in the region appreciate such skills sometimes even over technical skills, whether general or specific, but say it is very hard to find workers who have them (Bassi *et al*., 2012).

In short, there are major mismatches in the region between skills demanded and those available in the job market. This increases the training challenge that SMEs face, as it poses a barrier to access to the skills that should allow productivity gains, especially among the more dynamic businesses with growth potential.

However, many SMEs are in sectors that contribute little added value and whose production processes make little use of technology or of skills most closely related to technical matters and knowledge. This suggests that Latin America has an insufficient supply of well-trained workers, but also a limited demand for higher competencies among SMEs, which generates a stagnant production dynamic.

The production sector in Latin America has difficulties meeting its demand for technical skills related to technology, occupations in the new economy, knowledge of foreign languages, using computer systems and the so-called "soft skills", such as critical thinking, responsibility, teamwork, the ability to solve problems and handle change, oral and written communication, and the ability to understand and relate to one's environment.

In this sense the shortage of skills and competencies in the job market also affects productivity and the production structure due to demand-side considerations. Some evidence indicates that businesses' demand for skills sometimes adapts to the skills' limited supply, meaning investment decisions are adopted based on the limited availability of human capital (Aedo and Walker, 2012). This would constitute a barrier to growth and limit expansion of productivity in the region, especially since the sectors that would be adapting to the shortage are precisely those most connected to the global economy and with greater growth potential, and, due to the scarcity of human capital, must do without the skills they would need. At the same time, the low demand for skills can also discourage a broader, higher-level supply of competencies. This could stimulate a sort of vicious cycle that hinders productivity growth and does not foster development of the production sector.

Facing the training challenge: the role of public policy

The limited training of the workforce and of business managers, together with the problems associated with the school dropout rate and the poor quality of education, translate into a major mismatch between the education system and the needs of the job market. All these factors, which are a barrier to economic development and to productivity gains, suggest the need for public policy that helps meet these challenges and transform the education system in general and vocational education in particular. This is the nature of the training challenge faced by the region's production sector.

However, the design of public policy should arise from a greater ability to diagnose training challenges and from the availability of further empirical evidence. Decision making must be backed up by a better understanding of the knowledge and competencies available in the population, of the ability of the education and technical/vocational training systems to foster the inclusion of adults in society and in the workforce, and of the gaps between the education system and the production sector. A key challenge for Latin America is to expand the ability to make better diagnoses and establish comparisons between countries and across time. In this regard, the experiences of OECD countries can be very relevant (Box 5.1).

Public policies for the training of the workforce and of business managers should make SMEs a priority, both because of their growth potential and ability to generate jobs and because it is a sector that generates inefficient dynamics.

In particular, in competing for a limited number of suitably trained workers, SMEs are in a weaker position than large businesses. Big enterprises are able to offer workers better salaries and incentives, along with potential for promotion and internal mobility, the reputation associated with the company, and even greater in-house training opportunities, among other advantages.

Box 5.1. **Assessing adults' competencies: the OECD PIAAC study**

With the aim of assessing the knowledge and skills of the adult population aged 16 to 65 in 26 countries (25 OECD member countries plus Russia), the OECD launched the Programme for the International Assessment of Adult Competencies (PIAAC). This initiative is meant to broaden and improve the way adult knowledge and skills are evaluated, to get a more detailed, accurate picture of the training a country's population has for facing the challenges of the knowledge society. The results from the first edition of this study will be ready in late 2013. Chile is the only Latin American country participating in the project.

PIAAC is contributing two main innovations. First, it examines adults' competencies through direct assessment. This system has advantages over more traditional ways of analysing a country's human capital, based on the population's educational levels. PIAAC's form of direct assessment acknowledges that a diploma does not guarantee specific skills when it is obtained, and especially not after time has passed. By contrast, direct assessment of adult knowledge and skills through tests and surveys helps build a more accurate picture of a country's human capital.

Second, the PIAAC evaluation incorporates new elements that help achieve a broader vision of adult knowledge and skills and their usefulness in the job market. The programme measures skills in the fields of reading, mathematics and writing, and analyses the ability to solve problems in an environment that includes technologies and the abilities used in the workplace, as well as the socio-economic context of the adults surveyed.

The goal of PIAAC is for all of the collected information to provide governments with elements for the design of public policy affecting adult competencies. Its analysis is useful because: *i)* it provides a more accurate view of competencies among a country's adult population, broken down by age or demographic and socio-economic characteristics; *ii)* it helps give a deeper understanding of the education and technical/vocational training systems' ability to impart knowledge and competencies that let adults function satisfactorily in society and the work world; *iii)* it fosters analysis of the type of competencies and abilities that improve job performance and that the production sector is demanding, while also examining the evolution of skills over the course of people's working life and the role that training plays in careers; and *iv)* it allows comparisons among countries and over time within a given country, since the programme is intended to be ongoing.

Source: www.oecd.org/piaac.

The focus of the Programme for the International Assessment of Adult Competencies (PIAAC) acknowledges that a diploma does not guarantee specific skills and abilities, neither when it is obtained nor after time has passed, which is why they are assessed directly through tests and surveys of adults to determine a country's human capital.

While many large firms opt for in-house training as a strategy to overcome the scarcity of qualified workers, SMEs have little incentive to adopt a similar solution, given the risk that large companies will hire the personnel away once they are trained. As a result, it is only in their interest to offer a specific type of training applicable to the company's particular activities, without emphasising broader competencies, though these ought to be part of what is taught by the education system.

Since a portion of the undertrained workforce takes jobs in SMEs, the lack of incentives for in-house training leads these businesses to not substantially increase their capabilities, and the learning that does occur tends strongly towards imitation and repetition of business activities with little need for technical skills. Together with the sector's minimal ability to embrace technology, this leads to SMEs not broadening their production knowledge base in any meaningful way and not innovating significantly, which prolongs the stagnation of production.

In light of this, and given the wide range of SMEs in Latin America, it is particularly important to bolster institutional capabilities and the design of policies that respond to the sector's training demands. The efforts to compensate for gaps in basic education, increase the educational level of management and develop job skills in those SMEs with low levels of organisation and formalisation should be accompanied by a concern for promoting those enterprises that have a certain technical and/or managerial capability, to focus education on the most knowledge-intensive fields, which bring with them greater dynamism and added value. This translates into more focused approaches that differentiate methodologies and action tools based on businesses' characteristics and capabilities.

Besides, training SMEs' human resources requires deploying a wide range of services related to management, technology and access to knowledge. Information and communication technologies (ICTs) play an essential role in this. Training programmes that use ICTs have advantages in terms of their flexibility, ease of access, freedom from specific schedules and locations, and lower costs. They therefore have great potential to expand the scope and depth of the response to the training needs of SMEs, the type of businesses with the greatest barriers to training access.[3]

Because of their advantages in terms of flexibility, ease of access, freedom from specific schedules and locations, and lower costs, training programmes that use information and communication technologies are especially suitable for SMEs.

The training that is in demand among SMEs can be transmitted through three channels: *i)* within the formal education system, meaning primary, secondary and tertiary education; *ii)* technical education and vocational training, which is more focused on greater practical applicability and whose offerings are associated with public and private institutions, which make up the technical education and vocational training institutions (TEVTIs); and *iii)* informal education, referred to as on-the-job training, in which sharing and interaction in the workplace are the channel for knowledge transfer.

Informal education and traditional formal education will be the subject of some of the recommendations put forward in the third part of this chapter. Technical education and vocational training are the fields most closely linked to providing job skills and the type of abilities the region's job market demands. The next section analyses the general state of technical education and vocational training in Latin America.

Regional overview of technical education and vocational training for SMEs

Policies to strengthen SMEs' human resources have advanced considerably in the region. Nearly all the countries have institutions and programmes to develop these businesses' human capital. This section analyses the progression of trends in the supply of technical/vocational training, and delves into the situation in various countries in the region to understand the strengths and pending challenges of this process.

Regional trends in the supply of technical/vocational training for SMEs

Since the 1940s, vocational training institutions started to be founded and expanded in Latin America, mainly to meet the production sector's needs arising from the period of import substitution. Since then, governments have been heavily involved in funding and regulating their policies and in providing training services.

The institutional model that has been spread and replicated almost throughout the region is that of Brazil's National Industrial Learning Service (SENAI), founded in 1942.[4] One notable feature of this model is that most of its management is trilateral, with participation by representatives of workers (with varying degrees of involvement and influence), managers and government. The funding formula specified in the laws that created most of the TEVTIs includes corporate payroll tax. Thus this formula grants enough financial autonomy and allows ongoing adjustment to demand variations.

The training policy institutions came into being with a bias towards the needs of large enterprises, with SMEs having little influence on their focus. In the first decades the dominant approach was defined based on supply, with the government determining which courses would be launched and continued and what their priorities were. Companies acted mainly as consumers of the training services, playing a lesser role in defining courses and identifying the competencies to be developed (Gallart, 2001). SMEs had little influence in plotting the path for these policies, despite being subjects of a set of specific programmes to increase their productivity.

In the 1980s and especially the 1990s there was an important shift in the focus of vocational training policies, with a notable general trend towards strengthening policies defined based on demand in the production sector ("demand subsidies") (Gallart, 2001; Labarca, 2001). While concern about SMEs grew, support institutions targeting this sector began to be established, and the goal of having qualified human resources was incorporated into the framework of policies for SMEs in various countries, such as Argentina, Brazil, Chile, Ecuador, El Salvador and Mexico (Goldstein and Kulfas, 2011). These include the activities of the Brazilian Micro and Small Enterprise Support Service (SEBRAE) in Brazil, the Secretariat of SMEs and Regional Development (SEPYME) in Argentina and the Undersecretariat for SMEs (SPYME) in Mexico.

This demand-focused trend in human-resource policies occurred in response to changes in the modes of production, which required human resources who were more qualified, with increasingly flexible knowledge and skills, able to adapt to new forms of production, as well as the budget constraints arising from the structural shift of the 1980s and 1990s. Amid a rethinking of the state's role and the spread of the perception that market forces would be the most efficient mechanisms for the allocation of resources, an attempt was made to encourage the creation of a training market that would serve to meet the demands expressed by the production sector.

Latin America has vocational training systems defined and applied by national government institutions, as well as a model in which the government provides resources and regulation but does not provide the service.

Two main trends in opposite directions arose in this process (Gallart, 2001). On the one hand, where there were still vocational-training policies defined and implemented by government institutions, the transformations tended towards a decentralisation by economic sectors and branches for greater alignment with the production sector's demands, as well as a regionalisation of institutions to meet the more specific local requirements. Examples include the National Learning Service (SENA) in Colombia and the National Institute of Technical and Vocational training (INFOTEP) in the Dominican Republic, both of which are government agencies that retained their responsibilities for planning and execution of vocational-training services to develop human resources and boost companies' productivity.[5]

On the other hand, systems appeared with a stronger trend towards creating a training market, in which the state remains in charge of providing resources and regulating services, but withdraws from providing the services directly. In this approach, resource allocation is done by the market, through interaction between the supply offered by (public and private) training institutions and the demand (among companies and individuals). The National Training and Employment Service (SENCE) in Chile is an example of this model. It subsidises demand through tax exemptions (for companies) or scholarships (for individuals), without providing direct training services, leaving the training institutions in charge of allocating the public funds in keeping with the demand observed.

The situation in Chile illustrates the limitations of this type of mechanism in which the state handles the design, funding and oversight of the training system, leaving the more important responsibilities to the companies. Several studies and assessments indicate that demand subsidies for training, if not accompanied by other mechanisms to co-ordinate and focus the training supply, cause segmentation of the training supply which particularly benefits larger firms (Geo Consultores, 1999; Dini and Stumpo, 2002; Jara, 2002; Belmar and Maggi, 2010).

The diversity of the training programmes targeting Latin American SMEs reflects the coexistence of these two trends. This variation, which is also seen in the nature and scope of these government programmes, is closely related to funding, not only in terms of where the resources come from but also in the means of financing the training activities.

If demand subsidies for training are not accompanied by additional mechanisms to co-ordinate and focus the training supply, they cause segmentation of the training supply which particularly benefits larger companies, according to several studies and assessments.

Many countries allocate specific funds from payroll taxes, as occurs in Brazil, Colombia, Costa Rica, the Dominican Republic, El Salvador and Guatemala, among others. In some countries (Brazil, Chile, Costa Rica and Mexico) training is a line item in the national budget (Lengfelder and Schkolnik, 2011). Another funding model for training is subsidies to companies in the form of tax exemptions, such as the tax reduction administered by SENCE in Chile. This subsidy can consist of a monthly credit in the case of SMEs (or annual credit for larger firms) or scholarships in the case of microenterprises. Subsidies can also be given to training centres, by branches or regions, managed by chambers of commerce, as in the case of SEBRAE in Brazil. Lastly there are subsidies to workers, often used as a way to target training (for instance, at the unemployed, youth and women).

Even if some common traits are identified in the Latin American governments' responses to meeting the human-resource training needs of SMEs, in each country these institutions have evolved based on the country's specific circumstances and on the approaches of its policies. Besides TEVTIs, the universe of support to SMEs consists of technical education agencies, such as the National Institute of Technological Education (INET) in Argentina and the Uruguayan University of Work (UTU), and the chambers of commerce in most of the countries and even private institutions such as the ICAM GROUP in Mexico and Interfases in Chile, which also develop training programmes to improve productivity (Table 5.3).

Table 5.3. **Institutions and programmes supporting human capital development in SMEs**

Types of institutions	Characteristics
Institutions dedicated to vocational training	Primarily public and national, some private and more specialised (ICAM/México; Interfases/Chile)
Institutions providing technical education	Support and training programmes (INET / Argentina; UTU / Uruguay; DUOC / Chile)
Ministries of Labour, Industry, Economy and Culture	Specific programmes for supporting SMEs: such as the Support Fund for Micro and Small and Medium Enterprise (FONDO PYME) in Mexico
Other private organisations	NGOs

Source: ILO/CINTERFOR (2012).

In short, there is a wide variety of public and private institutions active in supplying training, funding sources (public, private, and international organisations, among others) and government programmes with different approaches to strengthening the human resources of companies in general and SMEs in particular (ILO and CINTERFOR, 2012).

There are still very important challenges, especially in two areas. SMEs generally are somewhat wary of devoting resources to buying these services, which translates into insufficient investment in training. Development agencies, meanwhile, lack a clear sense of the priorities to be addressed, with the result that the support instruments are not focused enough (Goldstein and Kulfas, 2011). In the first case, the SMEs' reluctance to invest in training is often reinforced by the proliferation of the demand subsidy mode, resulting in later underutilisation of support programmes. In the second case, the lack of a clear strategy for SMEs in the region and the inability to prioritise a core of knowledge-intensive activities, in which these activities would strengthen their chances of development, ends up being reflected in the lack of training strategies for these businesses.

SMEs are somewhat wary of devoting resources to training, which leads to insufficient investment in it, and the development agencies lack a clear sense of the priorities to address, so the focus of the support instruments is insufficient.

Country-specific cases: programmes to strengthen human resources in SMEs

Argentina: tax credit programmes and activities run by the training centres of the sectoral chambers of commerce

In Argentina the demand-side approach to policy is dominant, primarily through tax credit programmes. For example, the Worker and Management Training Tax Credit Programme run by SEPYME is aimed at SMEs. This tool lets these businesses get partial refunds of their investment in training their human resources, in open-enrolment activities (administered in public or private institutions) or closed-enrolment activities (courses custom-designed for the business) (SEPYME, 2012). The programme operates in two modes depending on the size of the business. The first enables large companies and SMEs that fund training for other SMEs to be reimbursed. The second is for "beneficiary SMEs", which can claim reimbursement for training activities carried out by company owners and in-house employees.

The Ministry of Labour, Employment and Social Security also has a tax-credit programme consisting of incentives for SMEs and large enterprises to generate projects along one of the following fundable lines: *i)* vocational training; *ii)* design and certification of primary, secondary, tertiary or higher education; *iii)* occupational training for the unemployed; and *iv)* strengthening and/or certifying management quality in vocational-training institutions based on the benchmark defined by the ministry. The programme supports bolstering the job skills of employed and unemployed workers, while letting vocational-training institutions obtain new equipment and become stronger institutions (MTEySS, 2012).

For training of SME workers in Argentina the demand-side policy approach is dominant, especially through tax-credit programmes.

Another relevant experience is related to increasing co-ordination between the training supply and the training needs of the production sector. In Argentina this has been implemented through the Sectoral Chambers' Training Centres. As previously mentioned, INET plays an important role through the vocational training programme.

This has promoted the establishment of sectoral networks for vocational training for the following industries: *i)* car repair; *ii)* electricity; *iii)* metallurgy; *iv)* wood and furniture; *v)* tourism, hotels and catering; *vi)* leather and footwear; *vii)* construction; and *viii)* agriculture. A new network is also being set up for the textile and clothing industry. Two types of institutions make up these networks: those that provide vocational training; and agencies, associations or bodies that sponsor, promote or use vocational training services.

Notable examples are the initiatives conducted by the footwear and graphics sectoral chambers. The former has the Footwear Industry Human Resources and Technology Centre (CEFOTECA), active in supplying training to operators and technicians specialised in footwear, and consulting and technical assistance. This centre has support from the Avellaneda Regional Faculty of the National Technological University (UTN FRA) and the Leather Technology Research Centre (CITEC), affiliated with the National Industrial Technology Institute (INTI). Since 1907, the graphics industry has had the support of the Gutenberg Foundation as a provider of technical vocational training at the higher-education and continuing-education level. This private foundation's activities also include applied research, technology assistance and services, and management for development of the graphics sector, and it works closely with the production sector and the education system, especially with regard to vocational and specialised training.

Another notable feature of the Argentine approach is the role of technical education (in secondary and tertiary education) and INET's efforts to strengthen it and integrate it into the national education system. This includes initiatives to promote the institutionalisation of technical education providers and recognition and validation of the material taught. INET is responsible for co-ordinating industry-specific forums, which bring together representatives of workers, management, science and technology institutions, and industry experts. The forums aim to identify the training needs in each sector and outline the professional profiles required, as a preliminary step to designing the course offerings.

Brazil: the spread of distance learning through SEBRAE and the SENAI model for promoting dialogue among workers, management and trainers

Two helpful models for meeting SMEs' training needs stand out in Brazil: the one run by the Brazilian Micro and Small Enterprise Support Service (SEBRAE) and the one from the National Industrial Learning Service (SENAI), one of the region's largest education systems for vocational and technology-based training.

SEBRAE is a private non-profit organisation which has been fostering the competitiveness and sustainable development of SMEs since 1972 through programmes that promote training, co-operation, regional development and access to markets. It develops these programmes in collaboration with the public and private sectors. The institution has a network of nearly 700 in-person service centres throughout the country and increasingly invests in developing new channels and formats for communication, transmission and dissemination of knowledge through ICTs, which are accessible to smaller businesses and facilitate training via distance learning (SEBRAE, 2012).

Founded in 1942 on the initiative of the production sector, SENAI embodies the so-called "Industry System" and has 797 operating units, supporting 28 industrial areas. Training human resources and providing technical and technological services are their main activities, which aim to serve more than 2.3 million workers a year. SENAI has

federal directorates and regional offices spread over 26 states, to meet the professional and local development needs of these territories (SENAI, 2012).

Brazil has two large systems for training in SMEs: SEBRAE, which offers in-person training as well as distance learning, and SENAI, one of the region's largest institutions for vocational and technology training.

Besides its impressive scope, SENAI's operations stand out in the region thanks to various experiences, but particularly two: creating and implementing sectoral technical committees for dialogue among workers, managers and trainers; and creating a long-term planning model for training (Box 5.2), through which it works with the sectoral committees to identify future training needs and meet this demand. Given its success, this system is spreading to other countries in the region.

Box 5.2. SENAI's long-term planning model for training

SENAI's long-term planning model was developed in co-operation with Brazil's main universities to answer this question: "How many workers should be trained in the future and what qualifications should they have?" in order to reduce potential imbalances between the supply and demand of training.

This model makes it possible to estimate how quickly various emerging technologies will spread and likely organisational structures in the short term, and to generate estimates of the demand for workers every five years. Based on these estimates regarding technology, organisation, jobs and education, subsidies are issued to develop proactive measures in the areas of vocational education, technical services and technology services (Martins, 2008).

The analysis that this method produces takes into account:

Emerging technologies most likely to catch on in the next five and ten years in a given sector or segment of Brazilian industry.

Organisational trends most likely to occur in the next five and ten years in a given sector or segment of industry.

Educational trends regarding changes in skills among SENAI's target public and identifying education gaps in that same public.

Occupational trends in the sector's job market over the next five years, in light of the spread of emerging technologies.

Occupational impacts that may be caused by the spread of emerging technologies and consolidation of organisational trends.

The earlier stages are correlated and contextualised to generate recommendations, in a moment known as a "thematic antenna". This planning method has been used to analyse and make recommendations to numerous industries, including textiles, petrochemical, machinery and equipment, telecommunications, construction (building), footwear, food (meats), foundries, shipbuilding and repairs, and industrial automation.

Source: Caruso (2011).

Sectoral technical committees hold sector-specific consultative forums for discussion of issues around education and work. The participants in these events are professionals and experts from within and outside SENAI whose practical and theoretical knowledge helps inform the decisions that are made about professional-education activities. The main functions of these committees are to: *i)* define skills-based professional profiles, including performance assessment parameters; *ii)* update these profiles on an ongoing basis; and *iii)* provide input for the development of professional certification standards (Martins, 2008).

Chile: SENCE's experience with the tax exemption programme

The Tax Exemption Programme implemented by SENCE consists of a tax deduction for businesses that plan, design and execute training programmes for their workers. This tax deduction is capped at 1% of taxable payroll for the year, or for the month in the case of SMEs. Through this tax exemption, businesses can use three mechanisms to train their staff: *i)* direct training, in which the business organises and develops its own training processes for its workers; *ii)* hiring specialised staff; and *iii)* education through technical training agencies ("OTECs" in Spanish), which are institutions authorised by SENCE to provide training services (professional institutes, private institutions, technical training centres and some universities).

The third approach is the most widely used. This involves technical-training intermediary agencies ("OTICs" in Spanish), which are recognised by SENCE and provide consulting services and technical support to businesses. Grouped by sector or region, these agencies do not provide courses directly but administer training resources that businesses give them in order to develop, organise and oversee training and technical-assistance programmes for the development of human resources. (Poblete, 2004).

Although technical agencies are the most common source of such training in Chile, they are little used by SMEs.

It has been clear for years that SMEs rarely use this instrument and that it is unable to generate training options in areas that would require major investment by PTIs (industrial technology and processes, for example).[6] The attempts at correcting this situation in Chile have yielded no relevant results, basically because there was no change in the underlying logic that gives the market the role of connecting businesses' training demand to the available supply (Dini and Stumpo 2002; Belmar and Maggi, 2010).

Colombia: support for starting up SMEs and improving business management

The National Learning Service (SENA) fosters the strengthening of SMEs through its training, modernisation and technical-consulting programmes, which include both in-person and virtual vocational training. Its SME strengthening programme provides support to improve their business-management indicators related to ICTs, logistics and human-talent management. Another form of assistance to SMEs is through the national government's Entrepreneurship Fund, administered by SENA. This fund is intended to facilitate business start-up resulting from groupings of apprentices, interns and recently graduated professionals. It prioritises projects targeting the rural sector, especially those that are part of the Young Rural Entrepreneurs Programme.

Mexico: support for strengthening SMEs' capabilities based on the type of business and the certification of competencies (CONOCER)

The training and consulting programmes of the Undersecretariat for SMEs (SPYME) in Mexico were structured based on the type of business (entrepreneurs, micro-enterprises, SMEs, "gazelle companies" and "market-driving companies").[7] This is a distinctive feature of this policy towards SMEs, in which the beneficiaries are segmented based on their current phase of growth.

SPYME has the Support Fund for Micro, Small and Medium-sized Enterprises (SME Fund), an instrument that grants temporary aid to programmes and projects that encourage the creation, development, consolidation, viability, productivity, competitiveness and sustainability of micro, small and medium-sized enterprises. One of its areas of activity is training and/or consulting, through seminars, workshops, certificate programmes and specialised courses for SMEs, which help bolster management skills and foster an increase in productivity and competitiveness, and improving the businesses' organisation.

Also notable in Mexico is the structuring of a national skills certification system, co-ordinated by the Job Skills Standardisation and Certification Council (CONOCER), an agency affiliated with the Secretariat of Public Education and Secretariat of Labour and Welfare, with a three-part structure including representatives of the government (from the areas of agriculture, finance, education, the treasury, and labour, among others), business managers and workers. CONOCER organises the Skills-Based Management Committees, represented by business managers and workers, which, with support from technical groups, develop the competency standards applicable to their respective sectors. Once these standards are defined they are recorded in the National Register of Competency Standards.

The competency standards serve as inputs for developing training curricula (in greater alignment with the requirements of the production sector, society, government, and the education system) and are also used as criteria in assessing and certifying various organisations and institutions. Only agencies accredited by CONOCER to train, assess and/or certify these labour competencies can do so based on the standards documented in the National Registry ("Certification and Assessment Agencies").

Peru: small-business service centres

The National Industrial Training Service (SENATI) was founded in 1961 on the initiative of the production sector to develop professional skills needed for successful performance in industrial manufacturing and jobs related to installation, repairs and maintenance. To fund it, they agreed to a monthly financial contribution or self-imposed tax. This is a privately managed public agency, devoted to vocational training and the development of technical services. Business managers take part in the decision making, planning and development of the vocational training, which focuses on specific job skills.

SENATI offers specialised training at different levels (technical and vocational) in the following areas: business administration, agribusiness, graphic arts, communications, electrical engineering, travel and tourism, food industry, information technology, jewellery, goldsmithing and silversmithing, car repair, metallurgy, textile/fashion, and woodworking.

To meet SMEs' needs, the agency has Small-Business Service Centres (CENTROPYMEs), which seek to boost productivity, the quality of products and innovation, and access to new technologies in smaller businesses. The centres offer business diagnostics, training, consulting, information and technical assistance, and have consultants to address different areas of production related to clothing and fashion, metallurgy, business management, processing of food, carpentry and environmental management.

Towards a human-capital training strategy for SMEs: conclusions and public-policy recommendations

SMEs in Latin America face major challenges related to the shortage of human capital and job skills, which affect the sector's productivity. The challenges the region has traditionally confronted in terms of availability and quality of education are exacerbated by the challenges of globalisation and technological change with new training demands that the education system and job training system must respond to. Further progress is needed in developing institutional capabilities and in designing and applying policies to satisfactorily meet SMEs' various demands for competencies.

Strengthening the institutional framework among managers, workers and trainers to advance a shared definition of qualifications that promote co-ordination with job skills, the development of mechanisms to anticipate demand for competencies, and promotion of classroom training and workplace training are some of the policies that can have a relevant impact.

A description of some of the fields where public policy in the region can have a relevant impact follows.

1) Developing the link between the education system and the job market, between supply of training and the demands of the production sector. Progress can be made in several directions:

- Strengthening the institutional framework to foster dialogue between managers, workers and trainers; and opening a steadier flow of communication, to help understand the nature of the supply and demand. Countries such as Finland, for instance, have developed an interesting system of dialogue between labour and management, which leads to jointly defined qualifications and fosters consistency between the available skills and employers' needs.
- Developing mechanisms to anticipate the market's demand for competencies. Brazil's SENAI long-term planning model is a good point of reference.

Other Latin American examples that aim to strengthen co-ordination between the education system and the production sector include Mexico's CONOCER, while on the sectoral level there are the Sectoral Certification Councils sponsored by Argentina's Ministry of Labour, Employment and Social Security, Brazil's SENAI Sectoral Technical Committees, and Colombia's SENA Sectoral Committees.

Besides more traditional training, it is important for the training curriculum to include so-called "soft skills" and give greater relevance to generic competencies applicable to different work environments.

2) Promoting training paths that combine classroom sessions with workplace training, and which continue throughout the worker's adult life. The two-prong model of vocational training in Germany is perhaps the most representative example of this strategy, which combines training in companies and learning centres, and enjoys a high participation rate among the workforce, besides being well regarded in German society.

3) Reforming the technical- and vocational-training curriculum to include "soft skills" and give greater weight to generic competencies. This helps resolve some of the main training gaps identified in the region and which are demanded by the production sector. It also fosters the workforce's ability to adapt to changing professional requirements and boosts the employability of the workforce throughout their adult lives.

4) Make progress in establishing credible benchmarks to suitably define assessment scores and their relationship with the various education levels, whether resulting from formal education, vocational training, practical experience or some combination of these. A certification system would make it possible to validate hands-on training and give it the greater recognition and the social prestige it deserves. This is especially relevant in Latin America, where young people often drop out of school to work for a living, and as a result the recognition of training obtained through informal channels or in the workplace is vital for one's prospects for professional success. A useful approach that could be adapted to each country's needs is the European Qualifications Framework for Lifelong Learning (EQF), a fairly advanced scheme for recognising, interpreting and converting qualifications among EU countries. To be effective, however, this framework requires institutional capabilities and a certain amount of social capital, both within the government and among the private and social agents involved.

An essential challenge facing SMEs in Latin America is to strengthen the professionalisation of these businesses' managers and senior executives to identify training needs and implement the production advantages of worker training.

5) Strengthening and broadening the co-ordination of vocational training with the social and regional context, as well as the production and technology environments. This is a key way to achieve synergies, foster results and contribute to the specific development of comparative advantages. Also, it is an education policy not focused exclusively on demand, but also an instrument to help generate a supply of training that is high in quality and therefore aligned and co-ordinated with industrial policy.

6) Promoting professionalisation of small businesses' managers and senior executives, a central challenge that is very important in order to properly grasp the existing qualification problems and boost productivity by making the most of the training available to workers. At the same time, managers' ongoing acquisition of specialised knowledge about the specific area or sector they work in is important for their development. A notable case is SENA's SME Strengthening Programme in Colombia,

which promotes training initiatives to improve business management with emphasis on ICTs, logistics and human-talent management.

7) Establishing and/or strengthening institutions and the incentive programmes to encourage SMEs to provide in-house training for workers and have greater participation in externally provided training programmes. More progress could be made in creating networks of SMEs to activate synergies and take advantage of economies of scale, instituting frameworks of tax incentives for training, and using ICTs in training.

8) Improving information and broadening the basis for empirical proof of job skills to get a more accurate diagnosis of the region's training challenges and how well aligned its education systems are with the needs of the production sector. This favours a more efficient, sustained and focused design for public policy in this field. Initiatives such as the OECD's PIAAC can represent a chance to improve this diagnosis and make international comparisons.

9) Putting in place assessment mechanisms and programmes to evaluate the impact of the policies applied and appropriate use of the invested resources. This will focus policies on quality assurance, guaranteeing compliance with the established goals and continual improvement of the policies' design and application.

It is important to move forward in establishing credible benchmarks that make it possible to suitably define qualifications and foster recognition of practical training. Additionally, strengthening the institutions and the programmes by providing incentives for SMEs to conduct in-house training and co-operation among themselves can be very useful.

Notes

1. Estimates based on data from ECLAC, ECLACSTAT, 2012.
2. Estimates obtained from data of the World Bank *Enterprise Surveys*, 2012.
3. An interesting example of working to promote the use of ICTs in SMEs' training is the *Guía metodológica para diseñar estrategias de capacitación basada en TIC para mipyme* (A Methodological Guide to Designing ICT-Based Training Strategies for MSMEs), prepared by ILO/CINTERFOR in co-operation with institutions in various countries in the region.
4. Such training agencies are found in Colombia, Costa Rica, the Dominican Republic, Panama and Uruguay.
5. SENA and INFOTEP are public institutions funded mainly through corporate payroll tax.
6. According to SENCE's annual statistical report (2010), of all the large enterprises and SMEs that took advantage of the tax exemption in 2010, the economic sector that provided the most training to its employees was retail and wholesale; followed by property, business administration and leasing activities; and then non-metal manufacturing. These three sectors account for about 43.5% of the participants trained in 2010 who were claimed under the tax-credit programme, and the most requested type of training was in business administration.
7. See Chapter 2.

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CHAPTER SIX

Production linkages, clusters and global value chains: seeking answers for SMEs

Bridging the gap in SMEs' production and exports in the region justifies the need to implement efficient production linkage policies based on instruments to promote business co-operation and institutional collaboration in order to improve businesses' competitive performance and create a dynamic, innovative business environment. There is a whole range of partnership projects in Latin America, aimed at promoting clusters, business networks and regional programmes, as well as SMEs' participation in global value chains. However, these projects have been based on approaches and instruments whose operational modes of action are not always consistent with the goals being pursued.

For production linkage policies to have more impact it is essential for them to be part of countries' national development policies. These strategies being broader and more long-range, provide clear signals to enhance the efforts of companies, link them with sector priorities, and seek greater co-ordination between public instruments and an environment of dialogue and consensus with private support initiatives. When there are scattered development initiatives in a weak institutional context with a lack of priorities for industrial policy and for selecting production chains and sectors, there is less chance for complementarity, co-ordination of support and institutional learning that are required in promoting this type of action from the public sector with co-operation from the private sector.

Introduction

Small and medium-sized enterprises (SMEs) are part of a heterogenous universe of extremely diverse economic agents, whose characteristics vary depending on the business sector they operate in, the markets they serve, the products they produce and how involved and connected they are with the macroeconomic context and support institutions.

In the past two decades, the governments of different Latin American countries have implemented various support instruments and programmes for SMEs to create a favourable business environment, encourage structural change and improve such agents' performance. These initiatives have often focused on reducing levels of informality, facilitating financing and access to credit, promoting improvements in management and quality, introducing business-development mechanisms and human-resource training, and fostering the search for and entry into markets.

International experience indicates that actions and policies to support SMEs should consider various aspects. With specific reference to this segment, important factors include bolstering co-operation among businesses and inter-institutional co-operation, intended to improve production performance and competitiveness, by stimulating a dynamic, innovative business environment. This involves implementing production linkage policies to strengthen links and integration among companies in different lines of business. Often, SMEs are part of production linkage chains made up of different-sized companies from different sectors. Embracing this type of production requires a comprehensive, systemic policy approach, which can have a large impact if it includes elements that make it possible to boost businesses' productivity and competitiveness and consider regional, sectoral and institutional variables that are important to ensuring the quality and efficiency of public policy.

Given these motivations, this chapter will analyse several aspects of production linkage policies in Latin America. To do this, it assesses the lag in production and exports among SMEs in the region, which justifies the need for efficient production linkage policies. It also defines this type of instrument and illustrates its implementation in the region. This is followed by a specific analysis of SMEs' integration into global value chains, an example of a more complex associative strategy that has gained relevance in the wake of worldwide fragmentation of production. Lastly, it gives a general assessment of these types of projects in the region.

Production context, performance of exports, and SMEs' productivity in Latin America

Though the world economy is tending towards globalisation, the economic system consists of a set of very different business activities. While some of this activity is integrated into the globalised core of dynamic activities whose meeting place is the global market, most of the region's economic activity takes place in restricted markets (local or national) that are not fully integrated or are still on the margins of globalisation.

Latin American SMEs generally have a hard time entering the trade and production streams that characterise the globalised economy and most of them participate in local or national, rather than supranational, production systems. This is due to the nature of

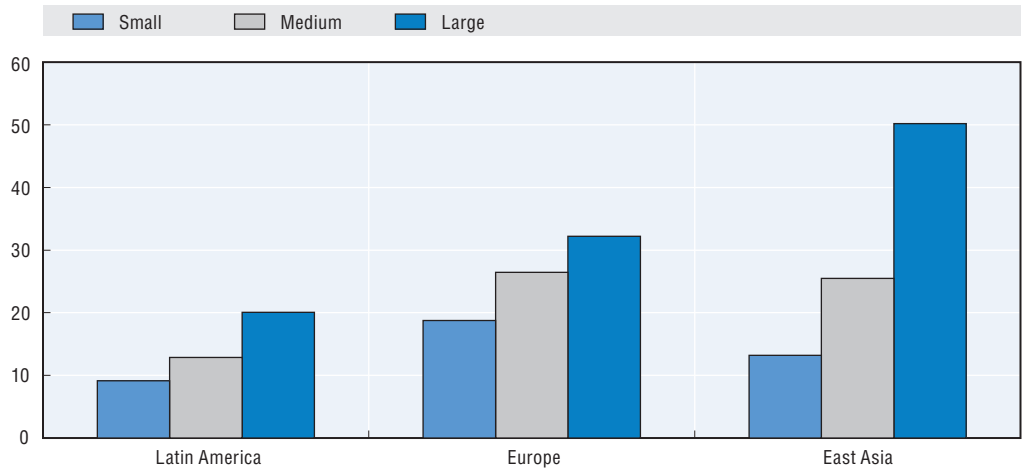
the goods they produce and the types of markets they serve, among other reasons (such as management and production capabilities, quality, scale and pricing).

The greater trade integration of economies is a result of changes in technology, industrial organisation and an international division of labour. These have facilitated a fast and profound fragmentation of production systems that has made it possible for large companies to outsource certain activities, some of which have been assigned to smaller firms. Export strategies vary depending on the size of the business (Abel-Koch, 2011). Most major companies export directly, while SMEs have low participation in exports and seek to access foreign markets indirectly, through partnership schemes, consortia, sales groups and market operators.

SMEs in Latin America are less internationalised than those in other regions. According to World Bank data, direct and indirect export levels of Latin American SMEs are only half of those recorded in Europe and are one-third less than those seen in four East Asian countries (Figure 6.1). In short, there are two realities in Latin America: one group of companies, comprised mostly of SMEs, that operate on a local, national or regional scale, and another globalised core, clearly weighted towards larger companies.

Figure 6.1. **Enterprises that export directly or indirectly, by size and by region, 2009-10**

(as percentages)



Note: East Asia includes 4 countries (Philippines, Indonesia, Lao People's Democratic Republic and Viet Nam), Europe 12 and Latin America 18.

Source: based on data from the World Bank (2009-10 *Enterprise Surveys*).

StatLink http://dx.doi.org/10.1787/888932732956

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Participation in export markets is related to the productivity gaps between SMEs and larger companies. As mentioned in Chapter 2, Latin America's micro, small and medium-sized enterprises have an average productivity that is respectively 13%, 32% and 43%

that of large firms (very low percentages compared to other regions). This is linked to the limited participation of the region's businesses in international markets. According to World Bank Enterprise Survey data (2009-10), there is evidence that production growth rates are higher in businesses that export directly or indirectly than in businesses that exclusively serve the domestic market.

Overcoming Latin America's lag in productivity requires differentiated policies, since the distinct business categories (globalised and domestic) operate based on a different underlying logic. As shown below, this difference between types of businesses justifies a broad range of production linkage policies, with considerable differences in their design, actions and goals.

Production linkage: a course of action to improve SMEs' production performance and competitiveness

This chapter groups together under the heading of production linkages different types of collaborative agreements between economic agents designed to increase businesses' competitiveness and the efficiency of support institutions. In general, these are partnership programmes that aim to bolster interaction and ties among businesses and institutions. In practice, this definition includes a range of experiences, programmes and projects, including business networks, production clusters, other clusters, industrial districts, supplier development, large market-driving buyer companies, and global value chains.

Production linkages include several types of collaborative agreements between economic agents designed to increase businesses' competitiveness and the efficiency of support institutions.

Support programmes based on production linkages have become widespread in Latin American countries, especially since the second half of the 1990s. They have yielded numerous projects designed and implemented by governments and, less often, by the private sector, with support from international organisations that have seen such initiatives as a way to improve the effectiveness of SME development projects. This led to such pioneering business partnership programmes as the Development Partnership Projects (PROFOs) (Chile), business development centres (Argentina, El Salvador), outsourcing exchanges (Argentina, Brazil, Colombia, Mexico), supplier development schemes (Argentina, Brazil, Chile, Mexico), horizontal network programmes (Honduras), clusters and production chains (Peru), clusters (El Salvador, Nicaragua, Uruguay) and export consortia (El Salvador, Uruguay). These evolved from a scheme to support individual businesses to a more complex programme targeting groups of businesses (ECLAC, 2007). Some of these programmes were discontinued and new ones continued to appear, such as the local production clusters (APLs) in Brazil, production linkages and market-driving companies in Mexico, and Micro and Small Business Development Centres (CDMYPEs) in El Salvador.

Fostering production linkages gained acceptance among political and financial decision makers due to the need to co-ordinate public policies, complementing them with private agents' greater participation in discussing, designing and executing

instruments, as a way to ensure a public-private consensus, a medium- and long-term working perspective, and greater coherence of activities. Creating environments for co-operation among businesses fosters competitive advantages and externalities that help strengthen and drive the modernisation of companies. Amid financial constraints that limit the scope of public policy, adding partnership projects to the SME development schemes offers a chance to reduce the programmes' operating costs, since the fixed cost of the support activities is spread among more beneficiaries and increases the programmes' efficiency and reach.

The main instruments used in fostering production linkages in Latin America have been:

- subsidies in the form of grants to fund group actions to boost the businesses' competitiveness, as in the case of PROFOs and supplier development (Chile), export consortia programmes (Argentina, Uruguay) and programmes led by technology funds and agencies (Argentina, Chile);
- professional technical assistance to support the creation and launch of partnership projects;
- fiscal support through favourable tax conditions associated with the development of group projects,
- credit through special paths to incorporate or develop shared assets (such as effluent treatment plants and joint purchasing of machinery).

Beyond the differences among the programmes, the resources have had only a partial reach, since they only cover part of the expenses and are allocated for a limited time. Though most programmes combine more than one instrument, the most common ones to promote production linkage mechanisms are subsidies and technical assistance.

By incorporating findings from academic research and lessons from successful international projects, the policies supporting production linkage help overcome simplistic viewpoints, contributing innovative elements for analysing, designing and implementing actions in different social, institutional, economic and production contexts. In many successful projects it has been possible to observe strong links between the production side (relationships among companies, division of labour, specialisation) and the social and institutional context. In projects carried out in the Italian industrial districts and in different regions it became clear that the region can play an important role in creating an environment favourable to business development and is a key element in creating external effects. The region, seen broadly as more than just the physical and administrative space where the businesses operate, is the point of interaction among the key players and development agents, where co-operation between businesses occurs and the social division of labour is organised. From this perspective, the region is part of a historically and socially constructed process.

In Latin America, production linkage projects should not be considered just for technologically advanced regions that have numerous local, domestic or foreign industrial companies, that use information and communication technologies, or that produce sophisticated products. In less developed areas as well, a strategy based on production linkages can help promote development processes that could not get off the ground through isolated, individual efforts.

Though they operate in many different ways, production linkage mechanisms must meet certain basic conditions to produce positive results. Such initiatives must occur in a clear, predictable business environment, which requires a regulatory framework, a set of

standards, and a favourable macroeconomic environment. Production linkages cannot resolve contradictions beyond the control of the participating agents (such as distortion of the relative prices), but they can be very vulnerable to higher-level decisions beyond the scope of their internal governance mechanisms (such as changes in standards and regulations). In addition, the basic conditions for better performance and application of production linkage mechanisms include: *i)* incorporating these mechanisms into industrial policy and into the national development strategy; *ii)* operational decentralisation of the instruments to broaden the programme's reach into the various regions; and *iii)* availability of all the agents, especially those in the public sector, to implement participatory processes that use consensus to define short-, medium- and long-term action plans.

Production linkage mechanisms are operational solutions to weaknesses and shortfalls in production, competitiveness and development that individual companies often are not in a position to confront on their own.

Production linkage mechanisms are operational solutions to weaknesses and shortfalls in production, competitiveness and development that individual companies often are not in a position to confront on their own. They should not be conceived as free-standing, self-contained tools, since they also need to seek and generate responses in the environment of the production cluster itself. In a context like the current one, the goal is to promote programmes of co-operation, co-ordination and linkage of efforts and resources that must also develop and rebuild links outside the production cluster as a source of information, technologies, markets, human resources, and so on. Though one of its goals is to create and strengthen internal capabilities and thus develop collective functions such as collective learning, its potential will be determined by successful competition with the outside world (*i.e.* outside the production cluster) and in other markets.

The main goals of partnership programmes in support of SMEs focus on seeking and developing processes to exchange and complement resources, knowledge and skills, while building a foundation of trust that facilitates contact and dialogue among the agents. The projects in this region face similar challenges associated with establishing processes for change and with introducing new practices that involve eliminating existing routines and behaviours and generating intangible capital for collaborative work (Dini *et al.*, 2007; Ferraro, 2010). Evidence shows that the different projects have very similar goals and difficulties (Box 6.1). In Latin America we can identify three basic approaches: networks, clusters and regional development programmes.

Box 6.1. **Successful linkage projects in the region**

The results of more than a dozen production linkage projects were analysed as a way to use partnerships and other types of co-operation to improve the competitiveness of SMEs operating in various business sectors in ten Latin American countries (Argentina, Brazil, Colombia, the Dominican Republic, Ecuador, Guatemala, Mexico, Nicaragua, Peru and Uruguay). The analysis indicates that these projects produced results in two areas relevant to policy design: promoting innovation and improving access to more demanding markets.

These experiences have differing traits depending on the business sectors they target, which range from primary production (goat product linkages in Córdoba, Argentina, and Isabella grapes in the Cauca Valley, Colombia), agro-industrial linkages (dairy products in Nicaragua and agro-businesses in Guatemala), traditional manufacturing sectors (fashions and furniture in Brazil, the Dominican Republic and Ecuador), mines and quarrying (Brazil), tanneries (Mexico) and crafts (Guatemala, Honduras and Nicaragua), to information and communication technologies (Argentina).

The results show the ability of partnership projects to meet qualitative and quantitative goals. Results were achieved in innovation of products and processes, creation of new functions in the production chains and even institutional innovation and new examples of co-ordination. Regarding access to markets, the projects generated economies of scale and of scope by giving small producers new abilities to market and sell, which lets them formalise relationships with their clients and intermediaries and gain access to more demanding markets. All these abilities have important positive external effects on SMEs' production.

The analysis of this group of projects shows two other interesting results. The first is to do with the initiatives' sustainability, meaning the strategies adopted to extend the activities past the end of each project's operation. These results vary depending on the projects' strategic focus (networks, clusters or regional development). Generally, the time needed to ensure a project's sustainability is longer than four years. This leads to the second, more conceptual result, which helped identify three types of actions in the different projects that can be grouped into three categories: networks (collective actions by businesses), clusters (collective actions by businesses in the same production sector, which involve support institutions) and regional development programmes (collective actions among different agents, businesses, and public and private institutions, focused on the region). Depending on the emphasis of each type of action, the results vary in their maturation time, agents involved, governance mechanisms, suitability of results, and generation of external effects. These differences in the types of results are worth bearing in mind when designing and implementing policies, and when formulating a comprehensive production-development strategy that gives complementary consideration to the three types of actions to foster the businesses' competitiveness through integrated production.

Source: Dini *et al.* (2007); Economic Commission for Latin America and the Caribbean (ECLAC).

Business-network development strategies

A network is a set of independent businesses that work together on projects to achieve shared goals they could not achieve by working alone. When generating and bolstering business networks, the main protagonists are groups of businesses in the same industry (or related industries), possibly in the same geographic area. The businesses associate in a relatively formal manner to achieve a shared goal. Notable examples analysed in the region include the tannery and ceramics SME networks in Guanajuato, Mexico, the fashion networks in Gamarra, Peru, the craft networks in Guatemala, Honduras and Nicaragua, and the furniture and fashion networks in the Dominican Republic (Dini *et al.,* 2007). Other examples of networks are the supplier-development programmes, in which larger private companies promote linkage projects with their network of suppliers to improve particular aspects of the production chain. These initiatives can be part of public policy facilitated by development instruments or can be implemented separately using private resources. Since these are links between large companies and SMEs the relationships are not symmetrical, and hierarchical criteria dominate the governance of such networks.

The most common joint activities are:

- buying consumables to cut costs or improve the terms with the suppliers (delivery terms, variety, quality, payment methods, etc.);
- hiring consulting firms to access knowledge that the businesses could not afford on their own;
- joint sale of products to achieve economies of scale and access high-volume markets (such as supermarkets or exports), or sale of complementary products to achieve economies of scope;
- shared use of costly, highly productive facilities and equipment that can be paid for and, above all, used efficiently by groups of small and especially medium-sized enterprises.

This type of collective action has certain distinctive features. First, membership in a business network is defined by the rules set by the members themselves. Second, these organisations' joint activities are designed and performed to give a competitive edge solely to the businesses that the membership rules recognise as part of the network. The networks' management mechanisms are the responsibility of the beneficiary businesses or their representatives. Once an agreement is reached to establish joint actions, these can be one-off or recurring, which means the agreements will have different time frames depending on their nature and traits. However, assembling and developing networks is a medium-term process, given the time needed to build trust among the parties.

The analysis of successful production clusters highlights externalities as well as the collaborative relationships among agents in the cluster to confront on their own.

The networks tend to be small, with few members. Having too many members can produce a disproportionate rise in transaction costs that the businesses must bear in building trust and managing joint actions. Nonetheless, relatively large groups can always exist, especially in the agricultural and agro-industrial sectors.

The literature about clusters and production linkages shows there are location advantages that yield benefits generated outside the companies but within the industry, business sector or location (Marshall, 1920). These external effects are static advantages important to the growth of the production cluster, but are not enough to overcome changes in the product market and factor market. The analysis of successful production clusters that were able to react to and confront challenges and compete in both domestic and international markets highlights another aspect that complements the external effects: the network of collaborative relationships among agents in the cluster. These relationships are established through intentionally sought joint actions. There are two types of joint actions: *i)* co-operation among individual businesses; and *ii)* groups of businesses joining together to create business associations (Schmitz, 1995). When the production sector includes both elements (externalities and joint action) we can talk about collective efficiency. This helps explain how companies in business clusters gain greater efficiency and capabilities to improve competitiveness.

Strategies aimed at promoting the competitiveness of production clusters

Though there is no one definition of the cluster concept, we can find broad consensus in a basic meaning describing it as a set of specialised businesses in one sector, or in related fields of production, including the institutions that interact with these businesses and affect their competitive performance. In this region it is possible to analyse some examples of clusters in the fashion sector in Atuntaqui, Ecuador; metallurgy in Rafaela, Argentina; underwear in Nova Friburgo, Brazil; furniture in Bento Gonçalves and Uba, Brazil; dairy products in Chontales, Nicaragua; and aerospace in Queretaro, Mexico.

In general, attempts to develop clusters' competitiveness reveal problems shared by all businesses in the sector or in the production chain. The joint actions they undertake have significant external effects and may be related, for instance, to generating specialised technology services, setting up testing or measurement laboratories, creating specialised training centres, applied research, establishing product standards and promoting a particular product typical of the cluster. So the point is to promote actions that seek to foster collective-efficiency mechanisms.

The beneficiaries of these actions are all the businesses and institutions that belong to the cluster, without distinctions. It is important to stress that the promoters of the initiative do not get to choose who is and is not a member; membership is determined by the agents' location and type of business. In other words, if a business or institution is located or works in areas related to the cluster's activities, it is part of that cluster and would benefit from the actions to support this type of partnership programme. These initiatives are driven by collective entities, with participation by public and private agents, generally related to the cluster's main business sector. The results are not accessible individually and generally are achieved beyond the short term.

The main limitation of the cluster approach as a policy instrument is that the region's production systems have only some partial cluster-like traits, with embryonic relationships among agents or in less developed production contexts in which production linkages, to succeed, must extend into regional development actions. This opens the door to regional actions and programmes.

Programmes incorporating competitive aspects of the regions (where networks and clusters are located)

Regional programmes are an approach to organising the agents in a community which, through a participatory action mechanism, aims to develop a shared strategy focused on generating collective goods that bolster the local system's competitiveness and thus improve the quality of life and employment conditions of its inhabitants. A regional development programme is defined as all production agents and all institutions that belong to a location and participate in its economic development. In this case, unlike clusters, the sectoral facet is not most relevant and the essential trait is geographic location and adherence to the system of traditions, values and standards that define the community. Emphasis is placed on the agents of production, but we must also consider the social, cultural and political variables that determine community members' ability to enter into dialogue and act in unity. In some cases the scope of the support extends into activities that benefit not just the businesses in a network or cluster but all members of a given community (regardless of sector). In these cases, the activities include an even greater component of public good and generally have to do with creating or strengthening general competitive factors that affect all economic activity in the target geographic area.

For instance, these projects can include land-use planning, development of schools and basic-education programmes, building or upgrading basic infrastructure, improving administrative procedures and streamlining municipal processes. In these cases, projects are carried out with the co-operation of numerous local agents from different branches of production and various support institutions. Because such projects are so focused on the public good, leadership of these activities tends to fall to public institutions.

One limitation of the cluster approach as a policy instrument is that the region's production systems have only some partial cluster-like traits, with embryonic relationships agents or the existence of less-developed production contexts.

Implementing this kind of production linkage mechanism involves focusing on both sectoral and local advantages, given that both facets (the production sector and the region) are acting in an integrated, interrelated way.

While some projects only seek to develop business networks, others also focus on developing clusters and the regional production system. This leads to major differences, both in the project's design/implementation phase and in the assessment stage, especially when it comes to comparing experiences. These differences reflect a complementarity between the development processes driven by the various partnership and production integration instruments.

In the design/implementation phase, the development of these divergent strategies involves major differences in their co-ordination arrangements, governance mechanisms, public-sector and private-sector leadership, corporate commitment, and motives of the people promoting the initiatives. In the next stage (assessment), the most important differences are maturation times for the results and their sustainability.

To define this complementarity between strategies based on networks, clusters and regional development projects, we must highlight two important issues: *i*) most

initiatives that implemented a cluster development strategy also promoted the forming of business networks within them; and *ii*) measures favouring development of the regional production system usually were accompanied by actions to foster production networks and clusters (Box 6.1).

Therefore business networks and the initiatives to develop the competitiveness of a cluster or region can help develop differing, complementary competitive factors: the networks generate benefits available to a limited number of businesses, while the partnership activities promoted by clusters and regional projects aim to produce collective benefits for the public. To the degree that the strategies are put into practice, the former produce a significant change in the behaviour of the businesses that implemented the strategies (generally real, profound changes though limited in scope). The latter, by contrast, generate potential benefits for many more companies. In fact, they represent a great opportunity for the competitive development of businesses, which only become effective when they make real use of these goods, services or actions, building them into their competition strategies (Dini *et al.*, 2007). Based on these arguments, a production linkage initiative would be more effective if it included strategies implementing all three approaches mentioned above.

In short, the success of production linkage policies depends largely on their ability to adapt to their geographic, historical and institutional context. For example, in the clusters that characterise production linkage mechanisms there are both formal and informal relationships. Sometimes being in the same region makes it easier to upgrade human-resource training because the education and labour systems create re-training options and learning opportunities. This is a collective competitive edge, based on effective interplay of institutions and businesses, which SMEs benefit from in the job market. In other cases, development and benefiting from the advantages requires the company to take on a more active role or participate directly in building new capabilities.

Each production environment has its own history and culture, and a set of political/institutional conflicts that must be taken into account when designing and implementing support activities.

Each production environment has its own history and culture, and a set of political/institutional conflicts that must be taken into account. Clusters can succeed even in the presence of such conflicts. The secret is in channelling them appropriately so the collective interactions can yield positive results, and so some intangible assets (such as trust, good governance, respect for shared rules and reciprocity of effort) can spread progressively.

Towards an integrated national-policy approach: local production clusters in Brazil

The policy for local production clusters (APLs) in Brazil is the most important example of promoting production linkages in Latin America. APLs are the Brazilian version of industrial districts and clusters, adapting those concepts to the country's culture and production conditions, and to the historical and institutional characteristics of the various geographic locations and sub-national realities. They are clusters of a region's economic, political and social agents that engage in specific production activities in a co-ordinated but independent way. They are characterised by the presence of businesses from the same production sector and heavy participation by SMEs. Participants in APLs

also include public and private institutions that support production development and offer training for human resources, technical assistance and financing for partnership activities. APL participants also include suppliers of raw materials, consumables and services associated with production.

The Ministry of Development, Industry and Foreign Trade (MDIC) supervised the creation of the Permanent Working Group on Local Production Clusters (GTP APL), which has the participation of more than 30 public and private institutions that have programmes to promote SMEs. This group co-ordinates projects nationwide among the various agents associated with the policy to support APLs, identifies their needs and provides responses through the existing support instruments or by creating revitalisation projects as part of each APL's strategic-development plan prepared by its steering committee.

To further this policy, an initial phase in 2004 identified some 450 local production clusters in various types of businesses. The Brazilian Micro and Small Enterprise Support Service (SEBRAE), which was involved with more than half of these clusters, developed a participation method based on international best practices. Later, another 955 APLs were identified, including established projects, incipient projects, and ones with development potential. The sectors covered range from farming and livestock to mining, tourism, and manufacturing industries, whether traditional and labour or capital-intensive, including innovative and technology-intensive sectors. There is thus coverage of a wide range of sectors and a great diversity of activities with different degrees of maturity and development.

A critical look at the APL policy shows the problem of the large number of goals being pursued through this instrument: reducing social and regional inequality, innovating technology, modernising the production base, boosting employment and income, cutting the mortality rate of micro and small enterprises, and increasing training, competitiveness and production, while bolstering exports. It is hard to analyse the results quantitatively since there are no data on these policies' impact on business, even though they have been in operation for some time.

The MDIC has held five Brazilian APL conferences to analyse the progress of this instrument in collaboration with the institutions in the Permanent Working Group on APLs. At the last conference, held in Brasilia in 2011, a decision was made to move forward in four areas. First, an agreement was reached to promote the regionalisation of macro policies and national programmes (Greater Brazil, Brazil Without Poverty, and the National Regional Development Policy) and their relationship with state and local policies through the APL policy. In a new generation of policy instruments, it is necessary to try out mechanisms to align macro policies and co-ordinate them with state and municipal policies and with private initiatives at the local level, where the needs and opportunities of the production systems manifest themselves. In this context it is crucial to try models that take an integrated view of sustainable development and adapt actions to each region's specific traits. This requires classifying situations (dynamic, stagnant or weak production systems or systems with heavy investment) to apply the most suitable differentiated intervention instruments.

Following that up, the goal is to strengthen and increase density in production chains. It is necessary to try different mechanisms that take advantage of business opportunities presented by major investments or global value chains to achieve a sustainable generation of greater local added value, affecting employment, income, the use of economies of scale, access to markets, and so on. To design new policy instruments one must identify the bottlenecks that hinder fuller participation by other economic agents in these value chains to indicate specific solutions.

Next, it is necessary to promote the public procurement system and its knock-on effect in the region. There is an identified need to work with the national and local government to encourage micro and small enterprises to participate in public bidding processes and the region's businesses to become more directly involved in providing goods and services. To inform the process of defining new policies, a need has been identified for public procurement policies and practices to be aligned with the specifics of scale; capacity for high-quality provisioning; credit; risk appetite; and liquidity. There also need to be limits on the aggregate offerings of small producers, which can lead to their exclusion from this market.

The policy for local production clusters (APLs) in Brazil is the most important example of promoting production linkages in Latin America. These comprise established projects as well as ones with development potential in a broad range of sectors.

Last, collective businesses need to be encouraged. The idea is to take advantage of collective activities for production, distribution and sales among private economic agents. This involves exchange of knowledge and practices that could improve the firms' competitiveness. To make good use of the advantages and savings these approaches enable for Brazilian businesses, different models must be tried which encourage collective action and overcome the main initial barriers identified, such as co-ordination costs and the lack of density in the network of producers.

The experience of APLs in Brazil has been rich and diverse. Moreover, the country's varied production sector shows a great ability to design and implement convergent policies among different institutions, emphasising the co-ordination of actions to take advantage of synergies and generate greater benefits for businesses. These APLs are an environment for co-ordinating policies for sectoral production development, technology, and support for SMEs.

Towards greater complexity in associative strategies: insertion of partnership approaches into global value chains

Deepening the trend towards greater globalisation has led to the emergence of international systems of integrated production, global production networks and concepts such as global value chains (UNCTAD, 2002; Gereffi *et al.*, 2001). Intermediate products and services account for 56% of world trade in goods and 73% of world trade in services, which shows that finished products are less important in trade flows (Miroudot *et al.*, 2009). Though Latin America is not as integrated into international production systems as Asia and Europe, there is an observable increase in trade links with Asia and the North American Free Trade Agreement zone. These changes in the international production structure

are due to quick advances in information and communication technologies, which help reduce the costs of co-ordination, logistics and monitoring. Reducing the costs of freight and easing restrictions on trade and foreign direct investment have been accompanied by bilateral and multinational agreements, regional integration processes and investment treaties. These factors help reshape business strategies worldwide among the main agents in global value chains: transnational corporations. The resulting segmentation of the production process offers the region's SMEs new opportunities and challenges in accessing markets, especially for those operating in limited domestic markets.

Benefits from integration into global value chains

Integration into global value chains can lead to a broad range of benefits, such as helping diversify exports, creating new jobs and obtaining new technological capabilities in keeping with international best practices. Additionally, this integration can offer potential benefits in efficiency or productivity, in the following categories (UNIDO, 2004):

- production process efficiency upgrading
- product upgrading
- functional upgrading, which involves adding new functions to the chain, with a greater added value
- inter-sectoral upgrading, which involves expanding the clusters towards new production activities

Nonetheless, achieving these benefits is not automatically guaranteed. An analysis of the advantages and challenges of global value chains from the Latin American perspective should consider the size and traits of the participating businesses, the type of products and services they produce, and institutional frameworks that regulate businesses in the countries, since these factors determine the features and relationships essential to their operation.

The greater complexity of these structures also helps generate greater diversity in the benefits to SMEs. Entry into global value chains generally raises the quality requirements for participating businesses. In addition, relationships among the agents involved are often characterised by a greater level of sophistication. Industrial clusters' entry into global value chains involves a wider range of sources of competitiveness, both local and global, thanks to the possibility of simultaneously exploiting horizontal relationships within the cluster itself and vertical relationships with other members of the value chain. Despite everything, the literature shows that SMEs' entry into global value chains, both individually and through local clusters, does not guarantee higher productivity, greater added value or more innovative processes (Humphrey, 2004).

The importance of governance structure and the global-value-chain sector

Humphrey and Schmitz's research on production chains sheds some light on the variability with which the benefits described play out (Humphrey and Schmitz, 2000 and 2002). In their analysis, the concept of governance (leadership) is central, since at any point in the chain some degree of governance or co-ordination is needed to decide what is produced (product design), and how it is produced (process standards, technology, quality).

The governance relationship within the chain plays a fundamental role in defining the SMEs' ability to access the benefits in question. Based on how hierarchical they are, we can group the chains into four categories ranging from ones where there is little control by the leader (market relations) to those that are completely hierarchical, in which the leading company handles the operations of the chain in house (Humphrey and Schmitz, 2010). Between these extremes are two types of chains notable for their intermediate level of hierarchy, which are particularly relevant to production in developing countries. First there are the network chains, characterised by mutual dependency among the businesses, which tend to facilitate highly co-operative processes involving intensive exchange of information. In this case, there are conditions favourable to local businesses enhancing their performance, provided they possess at least a moderate level of skills. Then there are the quasi-hierarchical chains, emphasising control of the production process by the chain leader, sometimes as a result of doubts that may arise about local businesses' ability to embrace the quality standard that the chain requires. Participation in quasi-hierarchical chains also offers favourable conditions for local companies to successfully upgrade their process and product, but considerably complicates functional upgrading (Humphrey and Schmitz, 2000). In both cases, there is a conspicuous similarity to local and national production linkage projects, but in a more demanding, sophisticated context.

In research about production chains, the concept of governance (leadership) is central, since at any point in the chain some degree of co-ordination is needed to decide what is produced (product design) and how (process standards, technology, quality).

Anecdotal evidence offers some clues about the interaction among governance, the sector and the benefits to companies. Pietrobelli and Rabellotti (2006) look at the experiences of 35 clusters in the region and shows that the levels of collective efficiency and upgrading vary significantly by sector, governance of the chain, and the cluster's learning patterns. In some clusters, such as the salmon cluster in the Austral Zone of southern Chile, co-operation between the private sector and public agents (the Chile Foundation) has promoted high collective efficiency and product and process upgrades, along with functional and inter-sectoral upgrades (all through a collective learning process strongly supported by the high demand for salmon). Other cases, such as the furniture cluster in Chipilo, Mexico, show that the dominant position of one business together with a drop in demand reduced collective efficiency and the opportunity for upgrading. Because of this, some sectoral parameters are put in place which provide some indication of smaller companies' prospects for upgrades (OECD, 2013). First, in traditional manufacturing sectors that typically have little technological complexity, the environment is more favourable for local businesses to acquire knowledge through the exchange of tacit knowledge within the cluster. This is considerably less likely in industries with greater technology requirements (transport equipment, aeronautics, telecommunications and electronics, and so on). Involvement in these sectors requires a prior accumulation of knowledge and technologies that generally excludes smaller businesses from meaningful participation in these industries' value chains. Last, in sectors related to natural resources, chain leaders can find incentives to foster the efficiency of local businesses if, for instance, the resources are geographically concentrated.

Table 6.1. **Selected experiences of clusters integrating in global value chains**

Cluster	Product(s)	Sector	Collective efficiency	Product upgrading	Process upgrading	Functional upgrading	Intersectoral upgrading	GVC governance
Sinos Valley, Brazil	Shoes	Manufacturing	High	3	3	1.5	0	Market, Quasi-hierarchy
Guadalajara, Mexico	Shoes	Manufacturing	Intermediate	2	2	1	0	Quasi-hierarchy
Chipilo, Mexico	Furniture	Manufacturing	Low	2	2	1	0	Market
Colchagua, Chile	Wine	Natural resources	Intermediate	3	3	0	0	Market
Austral Zone, Chile	Salmon	Natural resources	High	3	3	2	2	Network, Quasi-hierarchy
Boaco and Chontales, Nicaragua	Milk-dairy	Natural resources	Intermediate	2	2	2	0	Quasi-hierarchy
Santa Catarina, Brazil	Apples	Natural resources	High	3	3	0	0	Quasi-hierarchy
Juárez, Mexico	Automotive	Complex products	Intermediate	3	3	2	0	Market, Quasi-hierarchy
San José, Costa Rica	Intel ICT	Complex products	Low	3	3	1	0	Market
Espírito Santo, Brazil	Metalworking	Complex products	Intermediate	2	3	0	0	Quasi-hierarchy

Note: Scale: 0-absent to 3-high.
Source: Pietrobelli, C. *et al.* (2005).

Reviewing these experiences confirms that the benefits from participating in global value chains are not independent of the type of chain and, in particular, its governance and sector. Hence the role of public agents can be vital not only to facilitate the inclusion of SMEs in chains, but also to attain benefits for participating businesses.

The role of public agents in SMEs' entry into global value chains

Though there is no single recipe for introducing clusters into global value chains, it is well known that public agents play a prominent role in creating favourable conditions. An example of such initiatives is the software cluster in Mexico City, where the Monterrey Institute of Technology and Higher Education and the University of León created specific training programmes for universities and businesses. In addition, public agents can promote links among firms by forming business associations or by providing services. This is the case with the Chilean salmon cluster, where the Chile Foundation bought a fish farm from the foreign private sector and also provided help in founding a producers' association, SalmónChile. It was these initiatives that ultimately facilitated the cluster's development. Public agents can also play a role in strengthening businesses' position within value chains. For example, through supplier-development programmes like the ones in Chile and Mexico, governments can increase SMEs' ability

to boost productivity and increase sales, while creating stable, qualified suppliers for large companies (Arráiz *et al.*, 2011). Public agents too can help SMEs by providing them with information about external markets and about the chains operating within the country. Programmes supporting international certification, such as ISO, also help SMEs become part of these structures.

In most countries in the region, there are instruments to help SMEs enter foreign value chains. Some are isolated measures, while others are part of a more comprehensive strategy, which includes activities to establish ties with foreign entrepreneurs, consulting and market-research services, and lines of finance. The existence of special institutions in charge of promoting foreign trade, and even development banks with programmes to finance exports, indicates governments' intention to improve SMEs' entry into foreign markets.

Though there is no single recipe for introducing clusters into global value chains, public agents play a prominent role in creating favourable conditions; for instance, by promoting links between firms, creating business associations, providing services, and in general, promoting actions that foster development of the cluster.

However, most of these strategies are incomplete and lack resources. In this context, it is also important to consider the diversity of SMEs. Though only a small segment is able to enter foreign markets, it is appropriate to implement specific strategies to bolster the growth of that group. The strategy should be comprehensive and not only include business loans but also technical assistance, and must be co-ordinated with policies that promote SMEs' competitiveness in the local sphere.

National governments must play an active role in internationalising SMEs, both through facilitating and supporting direct exports and through a broader approach to internationalisation involving participation in production networks aimed at foreign markets. Administrative support for foreign trade is certainly important, but it is not enough. Horizontal measures to streamline administrative procedures and upgrade transport and logistics systems should be complemented with training and support initiatives for SMEs that export and that have the potential to seek market niches and opportunities that allow a leap in quality and improvement of productivity and competitiveness. The impact of these instruments and programmes is greatest when they are part of a country's strategy for internationalisation within a production-development policy.

Box 6.2. **Developing local suppliers in global value chains: the case of BHP Billiton-CODELCO**

A project is currently underway in Chile's mining industry to insert a national cluster into global production chains, in which the benefits to local companies include both internationalisation and an upgrade in production. This programme, initially launched by the multinational mining company BHP Billiton and later joined by the state-owned company CODELCO (National Copper Corporation), aims to develop the productivity and efficiency of local businesses that participate in the copper mining sector as suppliers.

The programme focuses on various segments of Chile's mining cluster, which includes more than 3 000 firms and is located in central and northern Chile. These businesses are notable for their diversity: there are large mining companies (including eight multinationals and CODELCO), businesses that support the mining companies (machinery, engineering services, transport, etc.), which make up a large group of 80 multinationals, and local firms of various sizes.

The reasons why BHP set up the suppliers programme are related to demand factors in the copper market, as well as the functioning of production in the company's mining operation in the Escondida deposit in Chile (the largest copper deposit in the world, with an annual output that reached 1 078 million tonnes in 2010, representing 21% of domestic production). Meanwhile, at the sectoral level, production costs in Chile's mining industry have risen steadily since the mid-2000s.

The suppliers' programme offers participating local businesses the chance to increase their efficiency and competitiveness through technical-training activities about the production process, setting targets for improving the quality of products and services, and providing consulting services to improve business management. The programme's ultimate goal is for 250 suppliers to meet an international quality standard by 2020 and improve competitiveness and their prospects for internationalisation.

Under the categories used in this section, the type of relationship between businesses in the mining cluster and the multinational BHP reflects a medium level of hierarchy, typical of network chains and quasi-hierarchical chains. BHP is a case that could be defined as a network relationship, given the mutual dependence between the leader company and the other members of the chain. This dependence is largely determined by the chain's sectoral nature: since the chain is for mines and quarrying, the chain leader has little ability to relocate geographically (and thus establish relationships with other businesses), since it needs to operate where the natural resource is located.

The goals of the BHP programme centre on boosting the efficiency of the work the suppliers are already doing within the production chain (though in some cases there are also product upgrades). Because this value chain is built around a natural resource, with copper as its end product, it has a relatively short value chain with limited room for product upgrades or inter-sectoral improvements. This is even more important given that the transition from copper to derivative products requires competencies and technologies largely unrelated to the ones used in mining.

Since 2008, 50 BHP Billiton suppliers and 20 CODELCO suppliers have joined. Though it is not yet possible to assess the programme's results, the participating companies' performance has improved noticeably, both in production and in administrative management. Following the addition of the Production Development Corporation (CORFO) to the initiative in 2011, it is expected to achieve a greater impact on the supply chain, heavier participation by other agents and institutions, and greater involvement of public policy, with spillover effects into other business activities and production sectors.

Source: Based on interviews with BHP and CODELCO.

Outcomes and lessons from the experiences in Latin America

In the last two decades, production linkage initiatives were developed in Latin America based on business co-operation and institutional collaboration, to improve businesses' competitive performance and create a dynamic, innovative business environment that is more inclusive of SMEs. This has resulted in further experiences and a dissemination of innovative instruments in almost every country in the region.

Production linkage mechanisms provide a generic conceptual framework that aims to foster different types of initiatives (such as clusters, business networks, regional programmes and global value chains) through partnership instruments focused on different goals that seek, among other things, to reduce transaction costs, overcome lack of co-ordination among agents, eradicate distrust, and facilitate capacity building and internationalisation. The region offers a broad range of experiences whose outcomes can be analysed to draw lessons that can be useful for policy makers.

One major challenge for countries in the region is to go from having individual successful projects to implementing effective policies. Doing this requires overcoming conceptual doubts and ambiguities by explicitly stating goals in order to ensure greater consistency and coherence between the goals pursued and the operational approaches used in pursuing them.

For production linkage policies to have more impact it is essential for them to be part of countries' national development policies, which, being broader and more long-range, give clearer indications to make the most of the companies' efforts, link them with sectoral priorities, and seek greater co-ordination between public instruments and an environment of dialogue and consensus with private support initiatives. When there are scattered initiatives in a weak institutional context with a lack of priorities for industrial policy and production chains, there is less chance for complementarity, co-ordination of support and institutional learning.

In terms of creating institutional capabilities, the political context and the institutions' strength and quality influence the continuation of successful projects and generating learning. Sometimes, political and institutional changes alter time frames and affect the continuity of projects and of the local partner's technical teams, which affects the accumulation of institutional learning.

Thanks to the support that the local production clusters (APLs) receive in much of the country, Brazil is the most important example of institutional development and continuity for these types of policies in the region. APLs were formally implemented starting in 2004 under the auspices of the Ministry of Development, Industry and Foreign Trade, which co-ordinates a network of more than 30 development institutions that are part of the Permanent Working Group on APLs.

In Latin America, the public sector usually plays a major role by promoting this type of activity and offering support tools. Public institutions act directly, participating in the execution of projects, or indirectly, by adopting an operating model that seeks to correct implementation problems by trying to improve the allocation of public funds through intermediaries or transfer units. In the three-tiered model (consisting of a government agency, intermediary operators and final beneficiaries) the intermediary operating agents seek to facilitate the programmes' management and success by acting as a middle party in the distribution of public incentives.

One major challenge for countries in the region is to go from having individually successful projects to implementing effective measures. For production linkage policies to have more impact it is essential for them to be part of countries' national development policies.

The experiences analysed show that incentives of this kind require a fairly long maturation period before the benefits become obvious (especially when the intent is to change behaviours entrenched in the business culture) (Ferraro, 2010; Dini *et al*., 2007). Actions must be sustained over time and management buy-in must be increased, with appropriate institutional oversight and technical assistance.

It has also been proven that three time frames should be kept in mind when designing and implementing production linkage initiatives: *i)* the political time needed to produce agreements between the parties and to design and approve the initiatives; *ii)* the time the projects will last (generally two to three years, or four at most); and *iii)* the business time, which is much shorter given the production and market requirements, and which does not necessarily match the previous two.

The studies cited show that once the subsidy is withdrawn, the initiatives' sustainability is not guaranteed through partners' income or contributions. Therefore a long-term strategic vision is needed that combines short-term results with longer-term results and requires broadening the commitment and participation of public and private agents.

It is interesting to note that the production linkage projects have led to a surge of new demand for developing technical and vocational skills. This raises important public-policy issues. On the one hand, launching production cluster initiatives and projects requires access to technical services and professional consulting that have not necessarily been developed or may not be available in the market. One important result has been the inclusion of scientific research institutions, universities and centres of excellence in the offerings of support services. Despite having knowledge and high-quality infrastructure for the production environment, these support institutions often were not properly connected or integrated into production activity for cultural or regulatory reasons. This translates into government efforts to stimulate, facilitate and expand support infrastructure by incorporating scientific and technological units into production linkage programmes.

Moreover, production linkage policy has had to meet new needs linked to the governance and management mechanisms of production clusters, facilitating the hiring of managers, facilitators and project developers. This situation reveals the limitations of financial resources, which need to be backed up by the development of capabilities to manage joint activities that require group decisions to carry out complementary, co-ordinated actions. This lack of learning, which is expressed in the shortage of specialised human resources, can only be overcome through experimentation as a way to add capabilities, which puts new time pressures on production clusters.

Ultimately, the production linkage policies, programmes and instruments are a method of public action with multiple potential effects, because they not only can meet the productive and competitive challenges of a group of companies or a sector, but can help strengthen various factors related to competitiveness and business development.

Though many production clusters achieve targets and positive results as planned, they also help generate, as collective intangible by-products, new processes of public-policy co-ordination and public-private co-operation that define, with different styles, speeds and characteristics, new modes of action and interaction in the production and institutional sphere.

To achieve a positive, lasting impact on the circumstances of SMEs, it is important to continue moving forward in implementing public policies that address ways to improve implementation systems and establish mechanisms for institutional co-ordination among the various agencies, implementation levels and action areas of the government sector. These development initiatives should be supplemented by fostering private-sector measures to promote SMEs, aiming to create forums for dialogue and consensus to build a support strategy that extends beyond a government's term of office, giving the programmes continuity and generating greater institutional capabilities for performance and learning. The prior experiences of production clusters have not been neutral, and formal mechanisms of governance and representation may be central to a strategy of production linkages. Thus, the varied wealth of experience providing support to SMEs in the region could be turned into tangible capital of best practices that advance towards more co-ordinated, integrated types of support.

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