International Regulatory Co-operation: Case Studies, Vol. 2

CANADA-US CO-OPERATION, EU ENERGY REGULATION, RISK ASSESSMENT AND BANKING SUPERVISION



OECD

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AND BANKING SUPERVISION



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Foreword

This report is part of a mini collection of books on the topic of international regulatory co-operation (IRC). It comprises four case studies, upon which the synthesis report (*International Regulatory Co-operation: Rules for an Interdependent World*) builds:

- The Canada-U.S. Regulatory Cooperation Council;
- European Union energy regulation;
- The Global Risk Assessment Dialogue; and
- Prudential regulation of banks.

These case studies have sought to capture the main characteristics of selected IRC experiences and follow a common structure to ensure comparability of approach.

This work on IRC has been conducted under the supervision of the OECD Regulatory Policy Committee whose mandate is to assist both members and non-members in building and strengthening capacity for regulatory quality and regulatory reform. The Regulatory Policy Committee is supported by staff within the Regulatory Policy Division of the Public Governance and Territorial Development Directorate.

The OECD Public Governance and Territorial Development Directorate's unique emphasis on institutional design and policy implementation supports mutual learning and diffusion of best practice in different societal and market conditions. The goal is to help countries build better government systems and implement policies at both national and regional level that lead to sustainable economic and social development. The directorate's mission is to help governments at all levels design and implement strategic, evidence-based and innovative policies to strengthen public governance, respond effectively to diverse and disruptive economic, social and environmental challenges and deliver on government's commitments to citizens.

This publication was co-ordinated by Céline Kauffmann, Senior Economist, under the supervision of Nick Malyshev, Head of the OECD Division on Regulatory Policy. The case study on Canada-U.S. Regulatory Cooperation Council was provided by Jeff Heynen in the Canadian Secretariat of the Canada-U.S. Regulatory Cooperation Council in coordination with officials in the US Office of Information and Regulatory Affairs (Office of Management and Budget). The case studies on EU energy regulation, the global risk assessment dialogue and prudential regulation of banks were written by Julia Black, Professor of Law, London School of Economics and Political Science. The report was prepared for publication by Jennifer Stein.

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Acronyms and abbreviations

ACER	Agency for the Cooperation of Energy Regulators
BCBS	Basle Committee on Banking Supervision
BIS	Bank of International Settlements
CBRSP	Committee on Banking Regulations and Supervisory Practices
CEER	Council of European Energy Regulators
CPLG	Core Principles Liaison Group
CPSS	Committee on Payment and Settlement Systems
EC	European Commission
EFSA	European Food Safety Agency
ENTSOs	European Network Transmission System Operators
ERGEG	European Regulators Group for Electricity and Gas
EWAG	Exposure Assessment Workgroup
FSB	Financial Stability Board
GDP	Gross Domestic Product
IAIS	International Association of Insurance Supervisors

IASB	International Accounting Standards Board
IOSCO	International Organisation of Securities Commissioners
ITS	Intelligent transportation systems
NAFTA	North American Free Trade Agreement
NRAs	national regulatory agencies
OIRA	Office of Information and Regulatory Affairs
RCC	Regulatory Cooperation Council
RM	Risk Management
TEN-E	trans-European energy network
TSO	Transmission System Operators
WTO	World Trade Organization

Chapter 1

The Canada-U.S. Regulatory Cooperation Council

By Jeff Heynen[*]

Given the highly integrated nature of the Canadian and US economies, Prime Minister Harper and President Obama created the Regulatory Cooperation Council in 2011, with an aim to establish more effective approaches to regulation that enhance the economic competitiveness of both countries, while maintaining high standards of public health and safety and environmental protection. This case study shows how and through which instruments the RCC, an umbrella regulatory co-operation agreement between both federal governments, aims to achieve greater alignment in regulatory systems as well as smarter, more effective and less duplicative regulations and regulatory practices in specific sectors.

[*] Jeff Heynen is a policy advisor in the Canadian Secretariat (Privy Council Office) of the Canada-U.S. Regulatory Cooperation Council.

Introduction: The context

Canada and the United States are two of the most integrated economies in the world. The commercial relationship, which supports millions of jobs on both sides of the border, is essential to the prosperity of both countries. In 2011, bilateral trade in goods between Canada and the US amounted to over USD 1.9 billion every day. One in seven Canadian jobs is linked to exports to the US, and eight million jobs in the US are supported by trade with Canada.

To further enhance this relationship, President Obama and Prime Minister Harper created the Canada-U.S. Regulatory Cooperation Council (RCC) in February 2011. The RCC is an initiative between both federal governments aimed at pursuing greater alignment in regulation, increasing mutual recognition of regulatory practices and establishing smarter, more effective and less burdensome regulations in specific sectors.

The RCC Joint Action Plan, announced by leaders in December 2011, is an important step in the ongoing process of regulatory co-operation between Canada and the United States. It addresses four key sectors encompassing 29 initiatives in total: agriculture and food (10 initiatives); transportation (10 initiatives); health and personal care products and workplace chemicals (4 initiatives); the environment (3 initiatives); and two cross-sectoral initiatives – nanotechnology and small business lens. These sectors are characterised by high levels of integration; however, unnecessary regulatory differences still exist that impede trade. The specific initiatives are aimed at addressing those barriers.

Based on greater co-ordination of regulatory practices, processes, and activities, Canada and the US are also seeking to develop, where possible, ongoing alignment mechanisms as a means of avoiding future misalignments. As such, each of the 29 initiatives under the RCC's initial Action Plan strives not only to address existing differences or misalignments, but to develop ongoing arrangements or mechanisms to avoid regulatory divergence in the future.

Short history of the development of the RCC

The RCC builds upon a solid foundation of existing regulatory co-operation between Canadian and US regulators. This includes informal collaboration undertaken between regulators – at times underpinned by memorandums of understanding or similar international instruments – as well as more formal commitments to reduce technical barriers to trade (e.g., standards, conformity assessment procedures) including under the North American Free Trade Agreement, which came into effect in 1994. In 2007, Canada, the US and Mexico negotiated a "Regulatory Cooperation Framework" under the trilateral Security and Prosperity Partnership initiative. This initiative led to the development of principles and objectives for regulatory collaboration, although there were limited efforts at sustained implementation of this Framework.

The Canada-US RCC initiative arose out of the recognition that high level, focused, and sustained effort would be required to reach a more substantive level of regulatory co-operation. Given that the bulk of remaining trade impediments between Canada and the US are no longer tariff based, the reduction of unnecessary regulatory differences between the two countries was widely acknowledged as a priority for enhanced trade, economic growth, and job creation.

The following is an overview of the key milestones of the Canada-U.S. RCC initiative to date:

- 4 February 2011: Prime Minister Harper and President Obama announce the creation of the RCC.
- Spring 2011: Stakeholder consultation process in Canada and the US (the latter through the *Federal Register* process) to seek input on possible items for inclusion in the forthcoming Canada-U.S. RCC Action Plan.
- Summer 2011: Discussions between US and Canadian government regulators, co-ordinated by the Treasury Board Secretariat (Canada) and the Office of Information and Regulatory Affairs (US) to agree on content of Action Plan.
- August 2011: Government of Canada publishes report on consultations concerning regulatory co-operation.
- 7 December 2011: RCC Action Plan involving 29 initiatives is released containing both issues to be resolved as well as introducing the concept of ongoing alignment mechanisms.

- January 2012: Major external engagement/outreach in Washington DC, bringing together Canadian and US working group leads with industry representatives and other stakeholders.
- 1 May 2012: President Obama issues an Executive Order on "Promoting International Regulatory Cooperation" underlining the importance of the Canada-U.S. RCC and compelling US federal agencies, when developing or reviewing significant regulations, to consider international regulatory co-operation with countries where such RCC work plans are in place.
- July 2012: Detailed work plans completed and publicly posted for each of the RCC sectoral initiatives – on www.actionplan.gc.ca/rcc (Canada) and www.trade.gov/RCC (US).

Looking to the future, the RCC will continue to undertake stakeholder outreach to ensure that outcomes continue to address real regulatory barriers. Periodic progress reports will also be required from the 13 Working Groups to ensure adequate momentum in implementing commitments agreed to in the various work plans. As implementation of the initiatives progresses, the RCC will seek to apply learning across the various initiatives, with a focus on the development of ongoing alignment mechanisms.

In terms of determining the future direction of the initiative, preliminary work is presently underway to consider what a stronger and more formal regulatory partnership between Canada and the US would entail. Analysis considering necessary enablers to enhance co-operation will inform each government's decision on the direction of regulatory co-operation efforts beyond 2013.

Main characteristics of the Canada-U.S. RCC

Actors involved

The co-ordinating bodies for the Canada-U.S. RCC are located in the central agencies in both governments. In the US, the Office of Information and Regulatory Affairs (OIRA) – part of the White House's Office of Management and Budget – co-ordinates the activities of the implicated regulatory departments and agencies under the RCC Action Plan, namely the Department of Agriculture, Department of Transportation, US Coast Guard, US Food and Drug Administration, the US Environmental Protection Agency, and the Occupational Safety and Health Administration.

In Canada, a dedicated 15-person secretariat to this function at the Privy Council Office (PCO) co-ordinates Canadian government participation in the RCC. The main implicated departments include the Canadian Food Inspection Agency, Agriculture and Agri-Food Canada, Transport Canada, Health Canada and Environment Canada.

The 29 specific initiatives under the RCC Action Plan are advanced through 13 bilateral working groups, which are each comprised of Canadian and US agencies. Each working group is responsible for implementing detailed work plans for each of the initiatives for which it is responsible as well as for engaging relevant stakeholders in the course of implementing these commitments. Table 1.1 lists the 29 initiatives and the lead Canadian and US departments.

Table 1.1. RCC Working Groups and their respective lead departments/agencies

Working Group and assigned initiatives	Canadian lead department	U.S. lead department/agency
Agriculture and food 1 • Equivalence of meat safety systems • Meat and poultry product export certification • Zoning for foreign animal diseases • Perimeter approach to plant protection • Meat cut nomenclature • Financial protection to produce sellers	Canadian Food Inspection Agency Health Canada Agriculture and Agri-Food Canada	U.S. Department of Agriculture
Agriculture and food 2 • Common approach to food safety • Mutual reliance on food safety testing • Veterinary Drugs	Canadian Food Inspection Agency Health Canada	U.S. Food and Drug Administration
Crop protection products • Product approvals and maximum residue limits/tolerances	Pest Management Regulatory Agency, Health Canada Agriculture and Agri-Food Canada	Office of Pesticide Programs, Environmental Protection Agency
Personal care products and pharmaceuticals • Electronic submission gateway • OTC therapeutic product approval and licensing • Good manufacturing practices	Health Canada	U.S. Food and Drug Administration

Table 1.1. RCC Working Groups and their respective lead departments/agencies (*cont.*)

Working Group and assigned initiatives	Canadian lead department	U.S. lead department/agency
Motor vehicles • Existing motor vehicle safety standards • New motor vehicle safety standards	Transport Canada	Department of Transportation
Rail safety, dangerous goods and ITS • Rail safety standards • Dangerous goods means of containment • Intelligent transportation systems (ITS)	Transport Canada	Department of Transportation
Locomotive emissions • Locomotive Emissions	Transport Canada	Environmental Protection Agency
Air transport • Unmanned aircraft systems	Transport Canada	Department of Transportation
Marine transport • Marine transportation security regulations • Regulatory oversight regime on the Great Lakes & Seaway • Life saving appliances • Construction standards for small craft	Transport Canada	U.S. Coast Guard
Environment • Emission standards for light-duty vehicles • Air pollutants (particulate matter)	Environment Canada	Environmental Protection Agency
Occupational safety issues • GHS of Classification and Labeling of Chemicals (workplace hazards)	Health Canada	Occupational Safety and Health Administration
Nanotechnology • Nanotechnology	Environment Canada Health Canada	Office of Management and Budget
Small Business Lens • Small Business Lens	Treasury Board Secretariat	Office of Management and Budget

Source: Canada's Regulatory Cooperation Council Secretariat.

The Regulatory Cooperation Council itself involves senior officials from the two governments' central co-ordinating bodies (PCO in Canada and OIRA in the US) along with senior representatives from the international trade and industry/commerce departments. It has a mandate to meet semiannually and to provide strategic direction to the overall initiative, including the review of working group progress.

Intended objectives

An important driver behind the RCC is the desire to improve the efficiency and effectiveness of regulations while providing economic benefits to both countries through increased regulatory alignment. Unnecessary regulatory differences and duplicative actions hinder cross-border trade and investment, ultimately imposing a cost on citizens and businesses. These differences can also affect trade with third countries, stemming from differentiated requirements for goods imported from outside North America and the resulting possibility of one country being a pathway (as opposed to origin) for health or safety risks impacting the other.

Canada and the US are highly integrated economies, with USD 689 billion in two-way trade in 2011, approximately one-third of which was intra-firm. As such, greater alignment and better mutual reliance of our regulatory approaches is intended to lower costs for industry and consumers, create more efficient supply chains, increase trade and investment, generate new export opportunities and strengthen protections at the perimeter (while decreasing unnecessary border measures).

In June 2011, both governments agreed to a terms of reference for the RCC. The broad objectives were elaborated as follows:

- Increased regulatory alignment and transparency at the earliest possible stages of the rule-making process; participation by relevant stakeholders and the public in general; and "early warning" of upcoming rules that are significant and of mutual interest.
- Greater alignment in regulations and recognition of regulatory practices. There are opportunities to align regulations, the process of developing new regulations and, most importantly, the activities associated with the application of regulations (testing procedures, inspection and certification activities, etc). Additionally, efforts should be made to accept and recognise the regulatory work done in each other's jurisdiction.
- Smarter, less burdensome regulations in specific sectors. Sectors selected under the RCC Action Plan are characterised by high levels of integration; that have well developed pre-existing regulatory

frameworks; that offer significant, emerging growth potential; and where regulatory co-operation will support export growth in North America.

As the work of the RCC progressed, it has become increasingly clear that the RCC Action Plan represents an important commitment between the two countries both to resolve existing regulatory differences *and* build new co-operative mechanisms to secure alignment into the future. As the Canadian and US regulatory systems were built independently, the intention is to build institutional mechanisms or bridges between our regulatory systems to take advantage of the work being done in the other country.

Forms of co-operation

The RCC Action Plan constitutes an umbrella agreement between both countries. Although it is not a treaty-based instrument and therefore not enforceable under international law, its announcement by leaders and co-ordination by central agencies assist in both its public visibility and implementation by regulators. As an umbrella agreement, however, the Action Plan calls for actions among regulators that may require additional authorities in the completion of individual initiatives (e.g., consideration to expand an existing Canada-US agreement to further address transboundary air pollution).

Under each of the 29 initiatives, there are a range of regulatory functions or forms of collaboration that are being pursued. Some initiatives, for example, are simultaneously addressing several of the functions listed in Table 1.2, which are roughly organised by increasing intensity of co-operation.

Table 1.2. Forms of collaboration under the RCC

Function	Description
Technical or scientific collaboration	Can include both formal (e.g., collaborative studies) and informal elements (e.g., scientific work-shops or policy discussions on emerging technology areas).
Information sharing through ongoing working group	Tools include seminars, audits, surveys and info gathering. Allows for "early warning" for impending regulatory changes that could affect the other partner.
Info-sharing protocol	These agreements – typically MOUs or confidentiality commitments – establish mechanisms to share and exchange documents or information in the course of reviewing marketing applications, investigations, compliance activities and post-market surveillance, etc.
Certification or administrative streamlining	Implies reducing administrative constraints on the other country to ease the compliance or enforcement burden, without changing the nature of the regulations.

Table 1.2. Forms of collaboration under the RCC (*cont.*)

Function	Description
Common labeling or product information	Entails developing common criteria for labeling or product information in order to minimise costs to business (by eliminating the needs for differing labeling requirements). Differing regulatory regimes, however, can be respected.
Joint compliance and enforcement information	Inspection or compliance information of regulated parties is shared and utilised among regulators in order to leverage each country's work to mutual advantage.
Mutual recognition of testing, conformity or inspection processes	Allows for products of one country to be assessed in same country (before export) and deemed as conforming to requirements of partner country, which are different. Requires accrediting testing labs or inspectors based on standards of the other country.
Mutual recognition or equivalency agreement	Mechanism to recognise and accept another country's regulatory system and therefore similar regulatory objectives/outcomes, while still acknowledging variations between the systems
Harmonised testing or inspection procedures	This process builds upon technical information sharing to ensure that compliance testing or inspection is the same and thus accepted in the other country. This aims to eliminate duplicative testing for industry and to facilitate cross-utilisation of testing results.
Joint reference of international or 3rd party standards	Canada and the US agree to adopt common international standards (even though respective regulations may not be identical).
Joint standard setting agenda	This process entails a prospective commitment on the part of regulators to develop a common agenda for upcoming regulation making. The intention of such processes, which occur at the earliest stage of the rule-making process, is generally to synchronise the promulgation and implementation of aligned regulations.
Joint regulatory development	Regulators in both countries would devise common standards and single reviews, although working through distinct regulatory institutions.

Source: Canada's Regulatory Cooperation Council Secretariat.

Early assessment

While it is too early to assess the outcomes of this initiative – given that the initial work plans were only been finalised in the spring/summer of 2012 – some general observations can be made.

Benefits/success factors

Despite the complexity and technical nature of regulations and the regulatory or rule-making processes in Canada and the US, the significant senior-level engagement on this initiative – including by both the Canadian Prime Minister and US President – has increased the pace and scope of

regulatory co-operation between both countries. Regulator-to-regulator contact has always been a hallmark of the Canada-US relationship, but lack of sustained focus at senior levels of both governments in the past failed to address more systemic barriers to collaboration. The RCC initiative also comes at a time when both governments are pursuing significant change agendas in their regulatory policies – e.g., US efforts to undertake retrospective review of regulations (Executive Order 13 563) and Canadian efforts to reduce overall regulatory burden (e.g., Red Tape Reduction Commission). Accordingly, the RCC project buttresses these efforts in seeking administrative efficiencies on a bilateral basis.

Contrary to criticism suggesting that regulatory co-operation results in a "race to the bottom in standards", there is evidence to suggest that RCC efforts can have the opposite effect. For example, collaboration on a bilateral basis – such as on joint product reviews – can increase the precision and efficacy of risk management decisions by expanding regulators' access to scientific and socio-economic information on product subject to review. The RCC remains committed to making the two regulatory systems more efficient and effective without compromising protections for health, safety, the environment, and privacy.

Strong stakeholder engagement – both in helping initially to identify elements in the Action Plan and then supporting the development of detailed Work Plans – has been a hallmark of this initiative. Stakeholder interest and involvement in regulatory co-operation is a key driver in moving towards more advanced forms of international regulatory co-operation. It is the intention that stakeholders will continue to have opportunities to comment on technical, directional and strategic elements of the joint Action Plan. This is critical in ensuring that stakeholders understand the impact of RCC initiatives on them and that solutions to address regulatory impediments on a bilateral basis respond to real concerns experienced by industry.

Finally, this is the first Canada-US effort at regulatory co-operation that aims to address the systemic barriers impeding more advanced forms of collaboration (e.g., constraints in sharing confidential business information among regulators in the course of product reviews). While it is recognised that addressing these barriers will, in many instances, take several years, the RCC nonetheless represents an important early step in developing new and innovative regulatory partnerships with the US. The long term objective is to secure greater alignment and regulatory co-operation between Canada and the United States such that regulatory measures impeding the flow and efficient production from industry operating in our shared territory are reduced or eliminated, thereby creating benefits for regulators, industry and consumers.

Challenges

International regulatory co-operation is widely regarded as a positive undertaking. However, it is sometimes difficult to substantiate this claim with quantitative evidence. An early challenge identified by the RCC was the difficulty of undertaking *quantitative* analysis on the benefits of regulatory co-operation and, as a corollary, the costs associated with a lack of regulatory co-operation in specific sectors. While there is considerable *qualitative* or anecdotal evidence when defining benefits, the imprecision of this information (e.g., estimated price reductions of certain consumer products as a result of regulatory co-operation) renders it difficult to communicate publicly the precise benefits of this initiative. Going forward, the RCC Secretariat in Canada will be devoting efforts to improve both micro- and macroeconomic analysis to fill this gap, such as through sector-based case studies.

Another challenge of the RCC relates to the federal-only nature of the regulatory initiatives that form its initial Action Plan. While the RCC has engaged sub-national governments since its inception, it became evident early on that it would be difficult to address regulations at two different levels of jurisdiction given the range of actors that would need to be involved (provincial/territorial and state levels) and certain differences in federal regulatory authorities based on the constitution or legal systems. As an initial comprehensive umbrella agreement, the joint Action Plan focused instead on regulatory issues: *i)* under exclusive federal jurisdiction; *ii)* that would have high economic impact (e.g., motor vehicle safety standards, given the integrated auto industry in North America); and *iii)* that, once addressed, could bring momentum in addressing other regulatory differences.

Costs

The funds required to establish and implement the RCC Joint Action Plan are minimal, especially when considered in relation to the potential savings and contributions to GDP of enhanced regulatory co-operation. In both countries, the costs of the RCC have been covered through internal reallocation, which means that participating departments have absorbed the costs and not sought any new funding.

Chapter 2

European Union energy regulation

by

Julia Black*

Energy networks within the EU have historically been constructed and operated on a national basis by vertically integrated monopolies, usually in full or partial state ownership, with the state's interest exercised either by central or regional governments. The EU's interest in enhancing co-operation and integration of EU-wide energy networks has grown since the 1980s. EU policy was initially focused primarily on economic objectives of liberalisation and the development of an efficient internal market. However, the objectives have broadened over the last ten years to encompass issues of environmental sustainability and security of supply. This case study shows how co-operation on energy regulation has evolved over the years to become increasingly formalised and legally binding.

* Julia Black is Professor of Law at the London School of Economics and Political Science.

Introduction

This case study focuses on international regulatory co-operation within the EU with respect to the energy markets. It does not look at the co-operative arrangements in place in this domain between the EU and neighbouring countries.

EU policy with respect to energy has three key components: market competition, sustainability and security, enshrined in the Lisbon Treaty (Article 194 of the Treaty on the functioning of the European Union; EU Commission, 2011a). Energy networks within the EU have historically been constructed and operated on a national basis by vertically integrated monopolies, usually in full or partial state ownership, with the state's interest exercised either by central or regional governments. Energy policy has thus been primarily nationally based, with limited cross-border trading. Geographical barriers such as mountains and seas have also limited interconnections.

The EU's interest in enhancing co-operation and integration of EU-wide energy networks has grown since the 1980s. EU policy was initially focused primarily on economic objectives of *liberalisation* and the development of an *efficient internal market*. However, the objectives have broadened over the last ten years. Development of integrated network is now seen as critical to the attainment of *environmental sustainability*, by facilitating the connection of energy generated by renewable sources to the energy grids. It is also seen as necessary to ensure *security of supply*, by facilitating the movement of electricity and gas within the EU and between EU and neighbouring states. Finally, the Commission hopes that it will contribute to EU solidarity (e.g. EU Commission, 2011b, 2011c; EU Commission, 2008).

The fulfilment of these aims requires slightly different strategies in the electricity and gas sectors: in electricity the key is seen to lie in the development of an integrated grid and the connection of renewable energy sources; in gas, it is to increase diversification of supply (EU Commission, 2008, 2011c). However, in both cases international regulatory co-operation between EU member states (and indeed with neighbouring countries) is critical if the goals of competitiveness, security and sustainability are to be met.

Identification of the main characteristics of IRC

The actors involved currently comprise a co-operative grouping of national energy regulators (the Council of European Energy Regulators, or CEER), a new EU regulatory agency (Agency for the Cooperation of Energy Regulators, or ACER), and two approved associations of industry actors for the electricity and gas sectors: the European Network Transmission System Operators (ENTSOs), responsible for developing codes of practice for cross-border transmission within guidelines set by ACER.

In addition, the EU provides funding to support the development of the trans-European energy network (TEN-E), to the value of about EUR 20 million in 2008.[1]

The intended objectives of enhancing regulatory co-operation between EU member states are:

- *Competitiveness* the development of a single integrated EU energy market by 2014 based on principles of liberalisation and competition;
- *Sustainability* – the development of sustainable energy supply based on renewable resources;
- *Security of supply* – to create a pan-European energy network in order to contribute to ensuring security of energy supply for individual member states and the EU as a whole.

The principal means to be used to achieve these ends are:

- Development of effective internal market in electricity and gas based on principles of separation of ownership and/or control of electricity generators from transmission system operators, overseen by independent national regulatory agencies;
- Setting minimum standards/regulatory harmonisation of technical provisions to enhance inter-operability, the development of regional energy systems and the elimination of energy "islands" within the EU, including rules on non-discrimination with respect to network access;
- Enhancing co-operation between national regulatory authorities, in particular through the creation of ACER;

- Enhancing co-operation between transmission system operators through the creation of formal associations charged with developing network codes to facilitate inter-operability and the development of regional, cross-border energy networks.

Forms that the co-operation is taking

Formality

International regulatory co-operation in the field of energy has become increasingly formalised over the last 10-15 years. Initial EU legislation focused on liberalisation and regulation of national energy markets. International co-operation was sought through a voluntary committee of national regulators (the Council of European Energy Regulators, CEER, established in 2000), deliberative Forums on gas and electricity comprising national regulatory authorities and other stakeholders, and voluntary agreements between national regulatory agencies (NRAs), industry associations and other stakeholders. Under the Third Energy Package 2009 (in force from 2011), international co-ordination between national regulatory agencies has been formalised by the creation of the Agency for the Cooperation of Energy Regulators (ACER), based in Slovenia, though CEER continues to exist (see below).

The Third Energy Package also comprises a series of directives and regulations which provide for the enhancement of the efficient functioning of an internal market in energy, and for increased co-operation and co-ordination between network operators. The new laws provide for the formation of binding EU-wide Network Codes, which are to be formulated by newly created organisations of transmission system operators (European Transmission System Operators, or ENTSOs). The Network Codes have to conform to framework guidelines proposed by ACER and approved by the Commission (discussed further below), and are monitored by ACER.

The EU is the world's largest energy importer, and so relations with third countries are also critical. The Commission estimates that the EU's energy import dependence will jump from 50% of total EU energy consumption in 2007 to 65% in 2030. Reliance on imports of gas is expected to increase from 57% to 84% by 2030, of oil from 82% to 93%. This dependence creates significant economic and political risks (EU Commission, 2007). Member states have their own bilateral contracts with neighbouring countries, though the Commission has tried to encourage EU-level agreements instead, arguing that the EU as a whole has greater leverage to negotiate agreements than member states alone (EU Commission, 2011a). There is a variety of separate agreements between the European institutions and neighbouring states relating to energy supply.

These range from binding legal agreements, such as the Treaty establishing the Energy Community (2006)[2] to multi-lateral non-binding agreements such as the Baku initiative,[3] to bilateral dialogues, e.g. the EU-Russia dialogue (see Youngs, 2007). IRC with non-EU countries is not covered in this case study, however.

Scope

The IRC covers the whole of the electricity and gas markets, partly through ACER and partly through a voluntary grouping of national regulatory agencies (CEER).

Mode of co-ordination

Managed networks of *i)* national regulatory agencies to be co-ordinated by ACER and *ii)* industry operators to be co-ordinated through the creation of ENTSOs under EU Regulations (EC Regulation 714/2009 and EC Regulation 715/2009). The draft statutes, list of members and draft rules of procedure, including the rules of procedures on the consultation of other stakeholders, had to be submitted to ACER and the Commission for their opinion on them before the ENSTOs could be adopted, though no provision was made for them to have to be altered to conform to those opinions.

Market based – implementation through market operations, subject to provisions designed to contribute to the development of an effective internal market in energy. These include the provisions comprised in Network Codes.

Instruments of co-operation

There are three main sets of instruments of co-operation, itemised here and detailed further below.

- Formal – based in EU law and now overseen by an EU regulatory agency, ACER;
- Informal – association of energy regulators which advises ACER and which co-ordinates on issues outside ACER's remit (CEER); and deliberative forums in gas (Madrid Forum) and electricity (Florence Forum) which include regulators, the Commission, industry operators and other stakeholders;
- Sector-based co-operative agreements (EU-wide Network Codes) produced by formalised industry associations (ENSTOs) within guidelines set by ACER and approved by the Commission.

Functions being co-ordinated / components covered in agreements?

- *Ex ante* exchange of information – under the Directives, national regulatory authorities (NRAs) are required to consult and co-operate, and to share such information with each other and with ACER as is necessary to the other perform their tasks (Directive 2009/72, a.38.);
- Agenda setting / setting goals – through the agreement of EU Directives and Regulations that comprise the Third Energy Package, viz: market liberalisation and competition, sustainability and security of supply;
- Formulating rules / norms / standards – through the agreement of framework guidelines and associated Network Codes; ACER can also decide upon the terms and conditions for access to and operational security of cross-border infrastructure where member states cannot agree after six months; Guidelines formalising the decision can be proposed by the Commission and approved through the regulatory scrutiny procedure (which requires approval by advisory committee, Council and the European Parliament);
- Monitoring, data collection – ACER is charged with monitoring the activities of NRAs and ENTSOs to ensure that the regulatory objectives are being achieved;
- Supervision and enforcement – ACER has powers to notify the Commission where EU provisions are not being implemented and the Commission can take infringement proceedings;
- Dispute resolution – if Member States cannot agree terms of network co-ordination after six months ACER may resolve the dispute. The decision is formalised in Guidelines recommended by the Commission (on ACER's advice) and passed through the regulatory scrutiny procedure (involving the Council and Parliament);
- Crisis management/emergency measures – Member States and gas companies are encouraged under EU legislation to co-ordinate their preventive actions and emergency plans at regional and European levels. Companies are required to be able to deliver gas for at least 30 days of average demand as well as in the case of an infrastructure disruption under normal winter conditions.

Short history of the development of the IRC

EU concern with energy markets dates back to its formation, with a common approach to energy at the core of the 1952 with the Coal and Steel Treaty and the 1957 Euratom Treaty. However, energy markets have historically been organised as publicly owned monopolies operating at national or regional level. To the extent that there was cross-border trade in electricity, this was confined to wholesale transactions between owners of the high-voltage grids, managed in accordance with rules of an industry association established in the 1950s (Vasconcelos, 2005; Matlary, 1997).[4]

In the mid 1980s, the Commission adopted a policy of liberalisation and independent regulation in a number of markets, including energy, to promote the single market agenda. It also determined to promote the development of a cross-border internal market for energy. These principles were enshrined in the Single European Act, adopted in 1987.

Within the EU, privatisation and liberalisation of the energy market commenced in the UK in the 1980s but proceeded at very different rates in different member states. The first independent regulatory agency for electricity was established in the UK in 1989 (Offer), followed by the Nordic countries (Newbery, 2002; Matlary, 1997). By 1994, seven member states had introduced independent regulatory agencies.[5]

The liberalisation agenda was met with resistance by a number of member states, however, who were reluctant to liberalise their markets or to cede powers to the EU to regulate what many saw as a sector which was of key strategic geo-political and economic significance, and an important public service (Padgett, 2011; Eberlein, 2008). In many countries liberalisation was therefore opposed by an alliance of national governments and powerful incumbents. In contrast to telecommunications, technological change and global competition were not powerful forces for change at the national level (Jabko, 2006; Eberlein, 2008; Bartle, 2005).

Liberalisation – the "first package"

In 1996 the Commission nonetheless succeeded in negotiating two Directives aimed at ensuring the liberalisation of national energy markets. These included provisions on minimum unbundling requirements applicable to vertically-integrated undertakings, minimum eligibility thresholds, and network access regimes. However, although these measures stimulated liberalisation in most member states, they allowed for considerable national discretion with respect to critical issues such as the unbundling of vertical integration, leading to a patchwork of national positions (Hancher, 1998). Furthermore, the directives provided little guidance as regards cross-border

energy trade or the supra-national integration of energy markets. They did not ensure either that the terms of liberalisation and regulation agreed within each member state be compatible with those in other member states. At the same time, developments in the ownership structure of the industry had led in some instances to the development of pan-European energy companies which were operating within a framework of essentially national supervision. Hence, as the head of CEER from 2000-05 commented, a "regulatory gap" emerged between national markets and the cross-border EU internal energy market (Vasconeles, 2005).

International co-ordination and the "regulatory gap"

Lacking direct powers to require member states to co-ordinate the regulation of their energy markets, and also lacking expertise in the energy markets, the Commission used "soft" powers instead to establish co-operation between national regulatory agencies, both to facilitate integration and to provide a resource of expert knowledge on which it could draw (Eberlein, 2008; Eberlein and Grande, 2005). It facilitated the creation of two fora in which the national regulatory agencies (NRAs) could meet and begin to negotiate and co-operate both with each other, with the Commission and the European Parliament, and with network operators and users, including producers, consumers, traders and system operators.[6] The European Electricity Regulation Forum was convened in Florence in 1998[7] and the European Gas Regulatory Forum convened in Madrid in 1999. Thereafter the groups met on average twice a year.

The Commission charged them with the task of gathering, or generating, relevant information and then developing and implementing voluntary rules for co-ordination. The most pressing concerns were essentially to enable customers at any point on the grid to get electricity or gas from any of the suppliers to the grids. This required, *inter alia,* the definition of common access rules, agreed pricing rules for transmission of the electricity or gas across the network, different parts of which are owned by different operators, and the development of mechanisms for technical co-ordination, including mechanisms to manage congestion, and for payments between transmission operators to compensate for cross-border trade (Vasconcelos, 2005; Eberlein, 2005, 2008).

Progress was slow, however, largely because member countries had different interests, particularly in the pricing mechanism adopted for transmission, arising both from the different structures of their national industries, and from their geographical positions within the network and their roles as producers, consumers or transmission operators. In essence, countries which are predominantly producers or and consumers want electricity or gas to flow as cheaply as possible across the network but

countries which are predominantly transmission countries want to ensure sufficient cost-recovery for the use of their network (Padgett, 2011; Eberlein, 2008). For example some countries, notably Germany, which would be significant transmission countries in any integrated European grid because of their geographical situation, were resistant to measures that would enable other producers' electricity to flow across their grid without ensuring that the German networks were adequately compensated (the tariff issue) and potentially harming German electricity producers and suppliers by facilitating cheap access of electricity from other countries to German consumers (Eberlein, 2008).[8]

The Florence and Madrid Fora gave impetus to the creation of organised groupings both of regulators and of system operators. In order to rationalise the industry operators with whom regulators and the commission had to negotiate and to encourage independence within their own national polities (Eberlein, 2008), the Commission put in place the European Association of Transmission System Operators (one for gas, one for electricity) in 1999, formalising existing industry groupings. In 2000, the regulatory agencies decided to form their own co-operative group, the Council for European Energy Regulators (CEER). Initially based on an MOU between the initial ten NRAs, as membership expanded it was decided to create CEER on a more formal basis, and it was established as a non-profit association based in Brussels in 2003.

The Commission encouraged this development, mandating CEER to develop a system for cross-border trade within the Forum context, though on a non-binding basis. It developed a number of non-binding guidelines on pricing, access, and transparency, notably publication of available transmission capacity. However, voluntary agreements proved difficult to reach (agreement on transmission was not reached until 2003, for example). They were also difficult to implement and to monitor. This was partly because vertical integration between generators, traders, transmission system operators and end-user suppliers still existed in some countries, which created conflicts of interest within and between member states, particularly between those who had liberalised their markets and those who had not (yet were accessing the liberalised markets without opening their own, such as France) and also because two countries whose geographical position made them critical to the development of an EU internal energy market, Germany and Switzerland, did not have NRAs and so were not represented within CEER (Vasconcelos, 2005; Eberlein, 2005, 2008).

The "second package"

The Commission therefore continued to use legal means to ensure co-ordination. It was helped by the fact that the development of an integrated energy market had received additional political impetus through its inclusion in the Lisbon agenda in March 2000. As a result, the "second package" of directives and regulations was passed in 2003. Under these directives, member states were required to establish independent NRAs for the regulation of the electricity and gas markets, with certain minimum sets of powers. Member states were required to fully liberalise their markets by specified dates; stricter provisions were made with respect to network access regime and the unbundling of vertically integrated utilities, though a degree of national discretion was still allowed (Cameron, 2005). In addition, the NRAs were required to co-operate both with each other and with the Commission.[9] Under a separate regulation, the development of new rules related to cross-border issues was subject to negotiated comitology procedures, involving a specialist advisory committee and the EU institutions, rather than to agreement between regulators.[10] The Commission also introduced a regulation on cross-border trade in electricity that formalised the agreement reached by Forum, providing it with a legal basis.

However, as member states were still reluctant to cede regulatory powers to the Commission, no institutional mechanism was created to co-ordinate regulation at the European level. Instead, the Commission established the European Regulators Group for Electricity and Gas (ERGEG) as an advisory body to the Commission, with the objective of facilitating "consultation, co-ordination, and co-operation of national regulatory authorities, contributing to a consistent application" of Community legislation (Decision 2003/796/EC). The creation of ERGEG essentially formalised CEER's role in the Fora, but CEER still continued to operate as a facilitator of national regulatory co-operation, and part to act as a bulwark against the Commission (Coen and Thatcher, 2008; Eberlein, 2010). CEER and ERGEG shared the same board, had joint taskforces and working groups and CEER's secretariat provided support to ERGEG (ERGEG, 2010a).

In 2006 the ERGEG embarked on a series of regional initiatives in electricity and gas based on a number of multi-country regional energy markets, in which it created seven electricity and three gas regions as an interim step to complete the single energy market. The aim was to integrate national electricity and gas markets into coherent wider regional markets, and to promote convergence between these regions as a stepping stone towards the establishment of competitive single European markets (EU Commission, 2008). The initiatives brought together energy regulators, the European Commission, EU Member States, companies and other

interested parties, through Stakeholder Group and other meetings. ERGEG in turn reported to the Florence and Madrid Fora. Through these regions, specific barriers to trade and competition (such as a lack of transparency and different balancing regimes) were tackled by each country working with its neighbours, and solutions found so as to improve market integration, for example with respect to managing bottlenecks, calculating and allocating grid capacity, and making information (e.g. about capacity) available to the market.[11]

The regional initiatives have been judged to have been successful in facilitating co-ordination in that they create a forum in which NRAs and TSOs can meet and develop the habit of interaction through discussion of common issues, in some cases changing relationships from one of mutual distrust to constructive communication (Everis and Mercados EMI, 2010). They have also permitted regions to pursue integration at different speeds, and facilitated experimentation through the use of pilot projects, benchmarking and dissemination of best practice (*ibid*). However, the same study found that progress has been hindered by a number of factors, including lack of clear policy guidance and terms of reference as to what the initiatives are to achieve, inappropriate definition of the boundaries of the region in some cases, lack of leadership, lack of a clear role for national governments, duplication with other initiatives, variation in NRA powers, sub-optimal consultation mechanisms and poor project management (*ibid*).

Despite the introduction of legal measures, however, implementation still remained a significant problem. Lacking powers to intervene directly, the Commission used its competition law powers to conduct an inquiry into the energy markets which was aimed at assessing the prevailing competitive conditions and establishing the causes of the perceived market malfunctioning.[12] The inquiry included within its scope the issue of lack of market integration including lack of regulatory oversight for cross border issues (EU Commission, 2007a).

The inquiry found that, three years after the deadline for implementation of the directives had passed, wholesale level, gas and electricity markets were still national in scope, and "generally maintained the high level of concentration of the pre-liberalisation period" (EU Commission, 2007a). For example, new entrants lacked access to networks, even where liberalisation had formally occurred, raising suspicions of discrimination. Incumbent suppliers were favoured by long term supply contracts, particularly in the gas markets. With respect to cross-border trading, insufficient or unavailable cross-border capacity and different market designs hampered market integration both in the gas and electricity markets, with capacity reservations still existing on certain national borders despite their being contrary to EU

law. There was also insufficient transparency on generation capacity, gas storage and network availability.

The Commission argued that market deficiencies were due not only to anti-competitive practices, but to other more generic issues, notably, systemic conflicts of interest caused by insufficient unbundling of networks, lack of liquidity and transparency and a persistent gap in the regulatory structures, particularly for cross border issues, stating that "[t]he regulatory systems in place have loose ends, which do not meet" (Commission, 2007a). It argued for a strengthened regulatory framework, consisting of enhanced powers for independent national energy regulators, reinforced co-ordination between national energy regulators, forced co-operation between Transmission System Operators (TSO), and substantially enhanced consistency of regulation in cross-border issues, with a stronger role for Community oversight "to ensure the Internal Market interests" (EU Commission, 2007a).

On the basis of the inquiry the Commission initiated infringement proceedings against 21 member states. In parallel, it issued a Strategic Energy Review, which signalled a shift in energy policy from a pure market liberalisation and competition agenda to one which coupled competition with concerns for environmental sustainability and security of supply (EU Commission, 2007b). With respect to regulatory co-ordination, the Review argued that national regulators needed to be charged with the task of promoting the development of the Internal Energy Market. It argued that the voluntary approach pursued to date had not provided the governance required and that progress had fallen far short of what was needed. In particular, most of the relevant technical standards remained different in each Member State, making cross-border trade difficult and often impossible (EU Commission, 2007b). It used the threat of the creation of an EU level agency as an impetus to persuade national regulators to work together more closely (EU Commission, 2007b). In addition, it argued that given the high degree of reliance of the EU as a whole on external suppliers of oil and gas, and the sole reliance of a number of countries on one gas supplier, effective mechanisms needed to be put into place "to ensure solidarity between Member States in the event of an energy crisis" (EU Commission, 2007b). Finally, a new regulatory approach was needed to enable the fulfilment of EU energy and climate policy goals by providing incentives to modernise energy infrastructures and facilitate the integration of renewable energy sources into the network.

The "third package" – formalisation of co-ordination and the creation of ACER and ENTSOs

In 2007-08 the Commission proposed a "third package" of energy measures. Most significantly, the package included the proposal for the creation of an EU regulatory agency to oversee market integration and cross-border regulatory co-ordination: the Agency for the Co-operation of Energy Regulators (ACER). The proposals were adopted in 2009. The third package comprises:

- Two directives laying down common rules for the functioning of the gas and electricity markets and for an enhancement of the powers and independence of national NRAs from government (which the Commission sees as vital to liberalisation);
- Two regulations setting out the conditions for access to cross-border networks for cross border trading and formalising the role of the existing TSOs through the creation of two legally based European Network of Transmission System Operators (ENTSOs), one each for electricity and gas, whose role is to facilitate the cross-border trade in electricity and gas and to manage the transmission networks;
- A regulation establishing the Agency for the Co-operation of Energy Regulators (ACER) to co-ordinate the work of the NRAs;
- A regulation allowing for exceptional measures to be implemented to ensure security of gas supply within the EU, adopted as a late addition in 2010 a result of the gas crisis in January 2009, when Russia cut off supplies to Europe which travelled through Ukrainian pipelines.[13]

ACER is essentially a formalisation of ERGEG, and it became operational in January 2011. The chairman and president of ERGEG and CEER, Lord Rees Mogg, has become the chair of ACER, and another of its board members has become vice-chair. ERGEG was dissolved and its tasks distributed between ACER and CEER. ACER has continued EGREG's work in developing regional initiatives for co-operation and co-ordination, which has been given additional impetus by the Council of Ministers' target date of 2014 for the completion of the internal energy market (European Council, 2011). CEER will take on ERGEG's responsibilities with respect to customers, and pursue co-operation and the development of common interests in areas outside ACER's remit, including international energy issues (ERGEG, 2010a).

ACER's governance structure

ACER formalises the existing co-operative network of NRAs, and has therefore been described as a "network agency" (Thatcher, 2011; Lavrijssen and Hancher, 2008).

Unusually for a European regulatory agency (but following the same model as the EU agencies for financial regulation) its governance structure consists of a Board of Regulators comprising a senior representative and one alternate of the EU Member States' 27 national regulatory authorities (NRAs) and one non-voting Commission representative. It also has an Administrative Board comprising nine members and one alternate for each, of which two members (and their alternates) are appointed by the European Commission, two (and their alternates) by the European Parliament and five (and their alternates) by the Council. The Administrative Board appoints the Director and is responsible for the governance of ACER, including the development of its work programme. The work programme has to be approved by the Board of Regulators and the Commission. There is also a Board of Appeal.

ACER's role

ACER's core tasks are:

- Ensuring the co-operation of transmission system operators (ENTSOs), who are to develop binding Network Codes, formulated in accordance with Framework Guidelines of ACER and then evaluated by ACER, taking into account their compliance with the Guidelines and with the three objectives of EU energy policy: internal market, sustainability and security of supply. ACER can then recommend them for adoption by the Commission through the regulatory scrutiny process, having consulted the Madrid Forum and Florence Forum;[14]
- Approving ENTSOs' ten year development plans for the development of the energy networks and their annual programmes; monitoring progress on the implementation of projects to create new interconnector capacity, monitoring the security of the network and approving the compliance program of vertically-integrated transmission system operators (TSOs) co-operating within a joint undertaking covering two or more Member States for capacity allocation;

- Monitoring NRAs' implementation of the energy directives and regulations and where, in its opinion NRAs are not compliant with the directives or with the Agency's legally binding opinions or decisions, of reporting this to the Commission;
- Dispute resolution powers with respect to the terms and conditions for access and security applicable to cross-border infrastructure when the national regulatory authorities have not been able to reach an agreement within a period of six months or they have jointly requested it;
- Monitoring the internal markets in electricity and natural gas, in particular the retail prices of electricity and natural gas;
- Re-invigorating the Regional Initiatives process and using it as a basis to develop a pan-EU integrated energy market;
- Advising the Commission on the use of its powers to certify ENTSOs, to require the provision of information, to approve the Network Codes, and to determine details of investment incentive rules for interconnector capacity.

Role of ENTSOs

The third package also formalised the role of existing industry groups of transmission operators by requiring the formation of two bodies (ENTSOs – European Network of Transmission System Operators), one for gas and the other for electricity. These have a number of tasks, one of which is to develop Network Codes in accordance with ACER's Framework Guidelines. In practice, the ENTSOs work with ACER and the Commission in developing the codes, which are subject to public consultation. They have to be approved by ACER and by the EU institutions before becoming legally binding (see e.g. ENTSO-E, 2011). Codes are to cover cross-border issues including network security and reliability, network connection, capacity allocation and congestion management, trading rules relating to network access, balancing, transparency, third-party access, data exchange and settlement, interoperability, and emergency operation procedures. The aim is that the Codes will become the framework of consistent detailed rules needed for the development and implementation of a liberalised Europe-wide electricity market, and for the secure operation of European power systems. Both ENTSOs and ACER are responsible for monitoring the implementation and impacts of the Codes, once in place.

Continuing role for CEER

Finally, CEER continues to operate as a forum for the co-operation of national regulators and as an informal advisory body to ACER and the Commission, including preparatory work on the framework guidelines. ACER has a small staff of 50, so is likely to be heavily reliant on NRAs and CEER for expertise and advice. CEER will also continue NRA co-operation in areas which fall outside the "third package", such as financial markets, sustainable development, retail market monitoring, quality of energy supply, promoting education and the cross fertilisation of information and experience amongst regulators themselves in the Union and at the international level (CEER, 2010; ERGEG, 2010a).

Box 2.1. **Time period, main landmarks**

1951	Establishment of the European Coal and Steel Community – ECSC;
1957	Establishment of the European Atomic Energy Community – Euratom;
1987	Single European Act – SEA;
1989	Creation of the first national energy regulator in Europe (Offer – UK);
	Entry in force of the First Electricity Directive on internal electricity market[1]
1997	Informal co–operation among national regulators begins (Italy, Spain and Portugal);
1998	Entry in force of the First Gas Directive on the internal market of natural gas[2]
	1st meeting of the European Electricity Regulation Forum in Florence;
1999	1st meeting of the European Gas Regulation in Madrid;
2000	Approval of the "Lisbon Agenda"
	Establishment of the Council of European Energy Regulators (CEER);
	New package of regulation is approved focusing on cross-border electricity trade;[3]
2003	Establishment of the European Regulators Group for Electricity and Gas (ERGEG);
	Institutionalisation of CEER with as a non-profit association under Belgian law;
2009	Adoption of the "Third Package" of legislative proposals
	Establishment of Agency for the Co-operation of Energy Regulators (ACER);
2011	ACER becomes fully operational and ERGEG is dissolved.

1. Directive 96/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity, published in the O.J. No. L 27 of 30 January 1997.

2. Directive 98/30/EC of the European Parliament and of the Council of 22 June 1998 concerning common rules for the internal market in natural gas, published in the O. J. No. L 204 of 21 July 1998.

3. Regulation (EC) No. 1228/2003 of 26 June 2003, published in the O.J. No. L176 of 15 July 2003.

Assessment

Known benefits

The goals of IRC are to develop an integrated energy market within the EU which is competitive and efficient, which supports the goals of environmental sustainability, and which ensures security of supply. As yet, these benefits have yet to be fully realised. Although there is an impetus for co-ordination generated by a strong interdependence between countries which are producers, consumers and transit points, the different positions of countries in the EU energy market, and their different national patterns of liberalisation, generates a diversity of motivations and perceptions of benefits and challenges. Consequently, co-ordination has taken a long time to develop. It has been eventually enforced from the top through the supra-national prerogatives of the EU. It is difficult to find quantified estimates of the anticipated benefits of the third legislative package, however.

Nevertheless, it is widely recognised that there are two main areas in which co-ordination is needed if the objective of an integrated energy market is to be achieved. These relate first to economic co-ordination and market structure, and second to technical issues specific to energy.

With respect to economic co-ordination and the development of a single integrated market, in order to move to a market-based system of integration, rules have to be co-ordinated and harmonised with respect to the break-up of vertically integrated monopolies, which have historically been state-owned "national champions", to open access to pipelines and wires (to facilitate new entrants) and to ensure fair and transparent terms of transit. Even if rules are agreed, however, there is considerable pressure within countries to defect to give "national champions" hidden privileges (Padgett, 2011; Youngs, 2009), as the Commission's competition investigations revealed (discussed above).

In addition, there are certain technical issues on which co-ordination is needed. These include: technical integration of transmission systems; economic integration of transmission systems (e.g. through common tariffs); effective systems of cost-allocation and compensation mechanisms for transmission operators; sufficient capacity of interconnectors; and effective systems of balancing and of congestion management (Vandenborre, 2008; Kapff and Pelkmans, 2010).

Regulatory co-operation through CEER and ERGEG attempted to address these issues and was partly successful, developing a number of regional initiatives to secure regional integration with different parts of the EU, and securing pan-EU agreements on cross-border exchange and trade.

In the late 1990s, each Member State had different export, import and transit electricity tariffs, so cross-border trade was subjected to as many tariffs as Member States involved, and did not reflect the actual costs incurred. Different methodologies also existed for the allocation of cross-border capacities (Jones, 2006). ERGEG succeeded in producing consensus for a provisional cross-border tariff system involving the abolition of import or export charges and the adoption of a tariff scheme which compensated network operators for hosted flows, which became legally binding in the form of Regulation 1228/2003 on cross-border exchanges (Hancher and de Hauteclocque, 2010) and has now been replaced with a permanent scheme on similar lines, following further negotiations through the Florence Forum.

However, in other respects, regulatory co-operation has been slow to develop, and has yet to produce positive impacts in dealing with cross-border issues (CEER, 2010; EGREG, 2010b; EU Commission, 2007). The creation of ACER is meant to address these weaknesses. Indeed co-operation intensified once the "third package" was introduced as a policy proposal, in anticipation of its adoption. In 2010, EGREG and CEER began an intensive process of formulating Framework Guidelines, using the same procedures as were being proposed for ACER, in order that these could be introduced as quickly as possible after ACER's powers formally coming into force. It also prepared the ground for the process through which the Network Codes have to be agreed in order to speed up co-ordination as much as possible (EGREG, 2010a). This has had positive effects, and to date Framework Guidelines have been proposed for electricity with respect to capacity allocation and congestion management; grid connections; and system operation. With respect to gas, there are guidelines for capacity allocation mechanisms and for gas balancing in transmission systems. The Codes are not expected to be approved and implemented until 2013-14, however.

Challenges

The core need is to create a stable framework which will meet the needs of consumers and producers, which will meet the EU's objectives of security of supply and sustainability, and which will address the inherent investment risks (EU Commission, 2011). However international regulatory co-operation with respect to energy has met with a number of challenges:

Entrenched regulatory path:

Historical differences in the ownership structures of the electricity and gas industries and of state involvement, combined with differences in national policies on liberalisation, means that industry structure varies considerably between member states, with vertical integration persisting in

some not others. Successive legislative packages combined with the Commission's active use of its competition powers have been introduced to address these challenges.

Regulatory sovereignty

National governments have been unwilling to cede power either to national independent regulatory agencies or to the EU with respect to industries which are seen of high strategic importance and with an important public service role. This has had significant implications on the pace of IRC and on the institutional form which it has taken, in particular the interests of member states in retaining as much national control over their energy markets as possible, either directly through ownership or indirectly through regulation, whilst the EU seeks to co-ordinate member states actions and pursue policies in what it considers to be the interests of the EU and/or its institutions as a whole. This tension is an on-going characteristic of relations between member state and EU institutions in the EU's system of multi-level governance.

Unequal distribution of risks, costs and benefits within and across countries

There are several distributional issues which have proved challenging to overcome. In particular, the market structure creates different distributions of risks, costs and benefits within and across countries (Vasconcelos, 2005; 2008; Eberlein, 2008; Padgett, 2011; Youngs, 2009; Stern, 1998).

There are structural conflicts between countries depending on their position within the market. Risks arising from fluctuations in demand or prices are also differently distributed depending on the economic structure of the industry (Padgett, 2011; Haghighi, 2007, Youngs, 2009; CERA, 2007). In oligopolistic markets characterised by long-term supply contracts, which are common in the gas markets (where pipelines are expensive and static and so producers and pipeline operators want to ensure "lock-in" supply contracts to make pipeline investment worthwhile), monopolistic behaviour of firms tends to prevent new market entries and set higher prices (at the expense of consumer surplus). Producer countries have thus resisted moves to market liberalisation, which would have threatened their national champions with the risk of new market entries – on the other hand, it would have meant lower energy prices for users. By contrast, importing countries seek a reliable supply at lowest possible costs. Countries which are predominantly transit countries are concerned to ensure cost-recovery by users of the transmission system and to ensure that local generators and suppliers are not disadvantaged by the flow of electricity or gas from other countries to their consumers (Eberlein, 2008). Furthermore, countries that

develop cross-border transmission networks can find, paradoxically, that domestic energy prices are higher than they were when the country was isolated (e.g. France: Kapff and Pelkmans, 2010).

Therefore depending on whether they are importers, transmitters or exporters of energy, on the structure of their industry, and the state's ownership interests in it, national governments will favour one or the other form of market organisation and some market actors over others. They will consequently pull the negotiations within the EU in one or the other direction.

Interpretation of "national interest"

Different countries have different national interests, in part arising from the distributional effects noted above, and in part from their views on the benefits of a market-based model as opposed to alternative modes of co-ordination.

It has proved difficult for member states to act in the interests of the region or EU as a whole, where this would not also provide direct benefit to their own country (EU Commission, 2011b). This is particularly pressing with respect to the investment needed to upgrade and maintain the network as a whole, in particular with respect to the interconnection systems, which are the key to the creation of an internal energy market. An overall increase of interconnection capacity by 40% up to 2020 will also be needed, with further integration after this point (ERGEG, 2010b). The Commission estimates the needs for investment in EU energy transmission systems at around EUR 500 billion in the next decade to improve security and reliability and to enable energy from renewable to be incorporated into the transmission system, of which EUR 200 billion is needed for transmission networks alone (EU Commission, 2011b). Further investment will be needed in power generation: currently, nearly 45% of European electricity generation is based on low-carbon energy sources, mainly nuclear and hydropower. Parts of the EU could lose more than a third of their generation capacity by 2020 because of the limited life-time of the installations (EU Commission 2011a). Overall, the Commission estimates that over EUR one trillion is needed in order to attain the Energy 2020 goals (EU Commission, 2011a).

The bulk of the costs will have to be paid for through regulated tariffs and congestion charges. However, it has thus far proved difficult to get member states to set tariffs or charges at a level which covers full costs at the regional or EU level, as it would entail important issues of cost redistribution across borders. The third package creates an obligation for regulators to take into account the impact of their decisions on the EU

internal market as a whole, and so not to evaluate issues solely on the basis of benefits in their own member state. Furthermore, the requirement for the ENTSOs and ACER to produce a European 10-year planning of infrastructure needs and development is intended to provide a longer term vision for investors and to create an environment conducive to attracting long term investment, and to promote regional co-operation in this area. In addition, the Commission has powers to determine compensation payments for transmission operators for costs incurred as a result of hosting cross-border flows of electricity on their networks. However, the system has still been criticised for failing to provide adequate incentives for investment either by national governments or the private sector (Kapff and Pelkmans, 2010).

Technical challenges

There are a number of technical challenges in integrating the national systems of member states into one system, including the interoperability of transmission systems, the calculation and management of capacity including congestion management, the balancing of supply on a continual basis, and reliability. In addition, the electricity transmission systems as a whole need radically updating in order to be able to cope with the introduction of energy from renewable sources into the system. The broadening of EU membership to 27 countries has brought further technical co-ordination problems, requiring the integration of transmission systems and infrastructure into the network of the previous 15 member states, many of which need significant upgrading. A challenging aspect of further integration of the EU energy network is that failures at one point can affect a significant number of people and countries, illustrated by the electricity black outs in 2006 and 2009.[15] The creation of EU-wide Network Codes is in part aimed at addressing these different challenges.

Differences in the organisation of regulatory structures and regulatory capacity at the national level

Differences in the organisation of ownership and regulatory structures have had an impact on co-operation (Everis and Mercados, 2010). In particular, in the past, the lack of an independent regulator in Germany effectively meant that regulatory co-operation had to proceed in its absence, yet its geographical position in the network meant its participation was critical (Vasconcelos, 2005). Further, the scope of authority and the instruments available to each regulator vary from country to country, which has led to different perceptions as to what competences can and should be shared, what initiatives should be carried out at supra-national level, which degree of harmonisation may be needed and how regulatory diversity should

be accommodated. Through successive Directives the EU has tried to provide a minimum level of harmonisation for national regulatory structures, but difference in powers can still impede some areas of co-ordination. For example, although there is greater transparency and reporting of available network capacity, for example, some NRAs still lack the powers needed to gather the relevant data from system operators (ERGEG, 2010b).

In addition, with respect to the regional initiatives, as noted above, challenges have included lack of clear policy guidance and leadership, lack of a clear role for national governments in the process, inappropriate definition of regional boundaries, and weak administrative processes particularly with respect to consultation and project management (Everis and Mercados, 2010).

Costs of IRC

As noted above, it is difficult to find a clear cost-benefit analysis of the legislative measures adopted under the "third package". The direct costs of maintaining the institutional infrastructure of regulatory co-ordination relate to ACER and CEER. ACER's expenditure in 2011 was EUR 5 119 000 in 2011; its budget for 2012 is EUR 7 489 097 (ACER, 2011). CEER's budget is agreed in its General Assembly but is not published on its website. However, the costs relating to the substantive aspects of IRC, including investment, are much higher; ultimately it is the one trillion Euros estimated to be necessary to attain the Energy 2020 and 2050 roadmaps.

Next steps envisaged

The next steps for co-ordination are the work programme needed to implement the "third package" and the completion of the internal energy market by 2012 (ACER, 2011). These include the formation of further Framework Guidelines, the creation of the Network Codes and their approval, the development and approval of the 10-year network development plans, cross-border congestion management, and the continued development of Regional Initiatives and Regional Workplans. ACER will also commence the preparatory work necessary in order to be able to fulfil its new responsibilities in monitoring wholesale energy trading.

Conclusion

International regulatory co-ordination in the EU energy sector has been a gradual process which has had three key characteristics:

- increasing legalisation,
- increased development of formal institutional structures for co-ordination, and
- a shift of power from national to the supranational level.

At the same time, EU policy on energy has moved from one focused almost solely on liberalisation and the development of an internal market to one focused in addition on climate change and sustainability, and on the security of energy supply. The EU's current 20-20-20 policy – 20% of renewable energy; 20% reduction in carbon emissions compared with 1990 and a 20% cut in energy consumption by 2020 – was hard fought but encapsulates this broadening of the focus of energy policy.

Several factors have come together to move energy policy in this direction and to push it to the forefront of the EU policy agenda (EU Commission, 2011a; Eberlein, 2008). These include: first, continuing concerns to improve the competitiveness of the European economy, to which the energy markets are seen as key; second, the increasing political salience of climate change and the drive for sustainability; third, the EU's security of supply and its vulnerability arising both from its dependence on oil and gas from neighbouring countries (illustrated by successive oil price spikes and the Russian-Ukrainian gas dispute in 2009), and from inter-EU dependence on energy supply (illustrated by the effects of the black-outs in 2003 and 2006).

Nonetheless, despite the cross-border impacts of domestic regulations and the need for management of cross-border risks, IRC has faced a number of challenges, both technical and political. In particular, the different interests of national member states arising from different patterns of state and non-state ownership, the structures of their industry and their positions in the energy supply chain, combined with a reluctance to cede powers over such a strategic industry to the EU level have meant that co-ordination has been slow to develop. Where IRC has developed, it has been through a combination of "bottom-up" pressures from those member states that have liberalised and want others to open their markets in a similar way, and "top-down" pressures from the Commission, looking to assert the interests of the EU as a whole into national policy making.

The result has been an increased formalisation of co-ordination at the EU level while developing and maintaining domestic institutional arrangements based around competitive markets regulated by independent national regulatory agencies. The EU institutions are now legally empowered to act as a network co-ordinator through a newly created regulatory agency, ACER. However, ACER and the Commission will continue to rely on NRAs for advice and expertise, both through the continued existence of CEER and through the presence of NRAs on the Board of ACER. The model also includes considerable co-regulatory elements, with certified industry associations (ENTSOs) charged with producing codes and development plans to be approved by ACER and, with respect to the Codes, made binding by the Commission through the regulatory scrutiny process. There has been progress in cross-border co-ordination at regional level, within different areas of the EU, however pan-EU co-ordination, particularly on technical issues, is really only now getting under way and so its impacts (whether positive or negative) have still to be realised.

Notes

1. In 2007, the European Commission published a priority interconnection plan (PIP) which set out the Commission's priorities (EC, 2008). These included identifying the most significant missing infrastructure and ensure political support to address them, including appointing European co-ordinators to accelerate the development of particular projects. These were a high-voltage electricity connection between France and Spain; offshore wind connections in the Baltic and North Sea areas; northern Europe power link between Germany, Poland and Lithuania; and the natural gas axis linking the Caspian Sea countries and the Middle East to the European Union including the Nabucco gas connection project between Turkey and Austria through Romania, Bulgaria and Hungary. http://europa.eu/legislation_summaries/energy/internal_energy_market/l27081_en.htm

2. Contracting parties are the EU, Albania, Bosnia-Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Serbia, Kosovo pursuant to United Nations Security Council Resolution 1244, Republic of Moldova and, as of 1 February 2011, European Council 2010, Ukraine.

3. Launched in 2004 in Baku by the European Commission and the Black Sea and Caspian Littoral States and their neighbours. The initiative aims to enhance the integration of the energy markets of participating countries with that of the EU to create transparent markets, encourage investment and enhance the security of energy supply (European Council, 2010).

4. Union for the Co-ordination of Transmission of Electricity, established in 1951.

5. UK, Hungary, Finland, Sweden, Spain, Portugal and Italy.

6. For those several countries that still did not have NRAs for energy, government representatives were sent instead.

7. Italian, Spanish and Portuguese regulators had already formed in informal co-operative arrangements through meetings, working groups and seminars (Vasconcelos, 2005).

8. The very late adoption of an NRA for electricity in Germany was attributed by other members of the Forum to the capture of the ministry by powerful industry operatives, Vasconcelos, 2005.

9. Electricity directive 2003/54/EC, Article 23.12; Gas directive 2003/55/EC; Regulation (EC) No. 1228/2003 on conditions for access to the network for cross-border exchanges in electricity; Regulation (EC) No. 1775/2005 on conditions for access to the natural gas transmission networks.

10. Regulation (EC) No. 1228/2003. Comitology procedures is an umbrella term referring to decision making processes in which the Commission is advised by committees of representatives in exercising its powers to implement legislation. The procedures are set out in the legislation conferring powers on the Commission (Decision 1999/468/EC, amended in 2006. For details see http://ec.europa.eu/transparency/regcomitology/index.cfm?do=FAQ.FAQ#5). In the energy sector, the procedures currently used are termed 'regulatory with scrutiny' under which implementing measures have to be approved by the committee, the Council and the Parliament. However, some are sceptical as to their utility. Comitology processes in energy have been colourfully analogised to "hanging two dozens colourful balloons to the Pisa Tower: it can be done, but clearly it does not fit the architecture and it does not improve the stability of the building." (Vasconcelos, 2005).

11. www.energy-regulators.eu/portal/page/portal/eer_home/eer_activities/eer_initiatives, accessed 21 March 2012.

12. Based on Article 17 of Regulation (EC) No. 1/20031 on the implementation of the Treaty rules on competition.

13. Directive 2009/72/EC concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC; Directive 2009/73/EC concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC; Regulation (EC) No. 713/2009 establishing an Agency for the Co-operation of Energy Regulators; Regulation (EC) No. 714/2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No. 1228/2003; Regulation (EC) No. 715/2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No. 1775/2005; Regulation (EU) No. 994/2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC.

14. Thus far its work has in effect been to finalise and publish guidelines already formulated by ERGEG prior to its reformation as ACER (ACER, 2011; ERGEG, 2010a).

15. The black-out in 2006 was caused by transmission failure in Germany which left 10 million people in Germany, Belgium, France, Spain and Austria without electricity for half an hour. The black-out in 2003 left 50 million people in Italy without power for several hours, due to congestion in transmission networks from Switzerland and France.

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Chapter 3

The Global Risk Assessment Dialogue

by

Julia Black*

Differences in the degree of social or cultural acceptance of events or states of the world, political sensitivities, economic and distributive consequences have important impacts on the way evaluations of risk are carried out and on risks management. Whilst there is a recognition that enhancing co-ordination on the scientific dimension of risk assessments should not necessarily lead to a common political response on how to manage risks, there is also a strong concern that divergences on risk assessment methodologies and in the terminology used to express assessments of risk and uncertainty are hindering sound risk governance. To address some of these issues, individuals within the European Commission and the governments of the United States and Canada initiated a Transatlantic Risk Dialogue early 2008, and later broadened it to create a "Global Risk Assessment Dialogue". This case study illustrates how collaboration has been developing through dialogue and collaborative work between members of the scientific community within government agencies and in research institutions.

* Julia Black is Professor of Law at the London School of Economics and Political Science.

Introduction

Society is confronting highly challenging decisions on risk which can have profound consequences, ranging from climate change to security, from health to biodiversity, and from nuclear accidents to earthquakes. Differences in the degree of social or cultural acceptance of events or states of the world, political sensitivities, economic and distributive consequences mean that evaluations of risk are always going to be contested, as are decisions on whether and how that risk should be managed (e.g. Renn, 2011).

Many risks will be contested even if all scientists agree, for the governance of risk poses a particular set of challenges arising from their inherent ambiguity and contestability. These arise from three main sources. First, risks are things that might happen in the future. Even if we are fairly sure that they might happen (because we have a good idea of the probabilities) we never know exactly when or with exactly what impact. There is thus lack of complete certainty surrounding facts: how likely it is that "*x*" will produce effect "*y*". Second, controversial values mean that there may be disputes as to whether "*y*" is an adverse event or not. Third, political and economic stakes require us to consider for whom is "*y*" a "bad thing" (and over what time period), who would benefit from not acting now to mitigate "*y*", and how powerful is each group; in other words, on whom do the adverse effects fall in the short/medium term, who benefits from the status quo, and what is the relative economic and political power of each group.

Differences in scientific approaches and methodologies can have a significant impact on the risk assessments that are made, and as such can lead to quite divergent responses both on the management of risks and on social and political choices in risk-risk tradeoffs. So whilst there is a recognition that enhancing co-ordination on the scientific dimension of risk assessments will not and should not necessarily lead to a common political response on how to manage risks, there is at the same time a strong concern that scientifically sound risk governance is being hindered by divergences in the scientific community on a number of important issues, in particular the

scientific methodologies being used in assessing risks, in the strength of the evidence bases underlying different assessments, and in the terminology used to express assessments of risk and uncertainty. These differences in scientific assessments have led in part to significant divergences in risk management decisions between countries, with widespread implications, not least for global trade (notably disputes under the WTO rules).

To address some of these issues, individuals within the EU Commission, and the governments of the United States and Canada initiated a Transatlantic Risk Dialogue in early 2008, prompted by the publication of the US Office of Management and Budget's risk assessment guidelines in 2007. In the interests of fostering wide participation in an open dialogue, it was decided to broaden participation to create a "Global Risk Assessment Dialogue". The key objectives were to improve mutual understanding of risk assessments across jurisdictions and to promote consistency on specific methodological and substantive issues relating to risk assessment. Achieving these objectives is intended to reduce divergences in approaches to risk between countries, improve the governance of risks, and to build trust by facilitating communication between scientists, political risk managers and the public at large. To date, collaboration has been developing through international and collaborative working between members of the scientific community, both within government agencies and in research institutions, and on an issue by issue basis.

Identification of the main characteristics

The principal form that IRC is taking is dialogue and collaborative work between scientific experts in government agencies and research institutes, which is focused on developing common approaches to several key issues which are central to risk assessment,

To date, the Dialogue has taken the form of *two International Conferences* on Risk Assessment, organised and hosted by the EU Commission, and between three and five multi-lateral working groups consisting of agencies and scientists who agreed to work together on particular themes. The conferences were each attended by over 200 experts in risk assessment including scientists, practitioners, stakeholders and representatives from various European institutions as well as international risk assessment bodies including the World Health Organisation. At the first conference, speakers included experts and representatives from academia, industry as well as various authorities, departments and bodies involved in Risk Assessment and Risk Management (RM) from the United States, Canada, China, Japan, Russia, Australia and the European Union (in particular the EC, the EU Agencies involved in risk assessment and their

Scientific Committees and Panels and the European Parliament-STOA) as well as international expert groups. Although an open invitation to participate in working groups and in the second conference was issued, in practice participation narrowed after the first conference, and representatives were from the EU, US, Canada and Australia, and principally from governmental agencies.

The 1st Conference in 2008 identified the following specific themes around which the dialogue would initially focus discussion:

- the terminology used in risk assessments;
- communicating uncertainty; and
- exposure assessments.

The initiators of the dialogue selected these issues as among the main sources of difference in risk assessments, both within their own countries and between them, leading in turn to misinterpretations, misunderstandings and to differences in policy responses.

Following the 1st Conference, from 2008-2011 three *ad hoc working groups* were established from scientists in the US, Canada and the EU to pursue collaboration in these areas. The groups were self-steering, i.e. they designed their own work programme, schedules and outputs (these were not organised by the Commission). In the intervening period they collaborated through virtual meetings and face to face mid-term meetings in Ottawa, Canada (June 2010).

The results of their work were presented and discussed at the *2nd Conference*. It was agreed that work in these areas would continue (though the groups on terminology and uncertainty would be merged, as there was considerable overlap between them). In addition, initial discussions were held on two further areas, which would be followed up by specific working groups:

- Approaches to weighing scientific evidence that underlie risk assessments;
- Risk assessments of exposure to mixtures of chemicals.

Other specific initiatives proposed were to conduct a stock taking exercise of existing harmonisation activities, and to consider some possible vertical issues (e.g. harmonised criteria for food additives) and cross-sector issues for future work.

More generally, it was also agreed that future collaborative activities should focus on:

- Reinforcing the dialogue and interaction between risk assessors, policy makers and risk managers;
- Integrating data from new scientific knowledge into the assessment process;
- Adopting a more holistic approach to scientific risk assessment which connects scientific assessments to cost/benefit assessments and "concern" assessments arising from socio-economic factors;
- Connecting risk assessment to the consideration of policy options in which the risk balance was more systematically evaluated.

As yet there have been no definite outputs, however, beyond the progress reports presented at the 2nd Conference. The 3rd Conference was scheduled for 2013, where it was expected that the outputs of these groups would be presented and discussed, and new areas identified for further collaboration. However plans for a 3rd Conference are currently on hold.

Short history of the development of the Dialogue

The development of the dialogue on risk assessment was prompted by the recognition that there is a need for a greater understanding and transparency in risk assessments being made by scientists in different sectors and different countries, in order to promote both better risk governance and greater trust in risk governance institutions. More specifically, the need for greater co-operation is seen to arise from three key factors (Yu, 2011):

- The increased globalisation of risks arising from globalisation of technology, production, trade and human travel promotes a need for consistent, shared and accepted approaches to risk analysis across jurisdictions, and increased co-operation in risk governance, including mechanisms for rapid exchange of information across jurisdictions, consistency in regulatory decisions and co-ordinated responses to crises.
- Increased public scrutiny of policy makers and scientists requires greater transparency in decision making.
- Innovation and technological developments reveal gaps in knowledge and uncertainties as to the risks that they create, requiring new tools and methodologies of risk assessment.

- Whilst risk governance requires the integration of scientific, social and economic factors, there is a need for scientists to promote common approaches and improve communication of risk assessments to enhance the evidence-base of regulatory policy making.

Between 2008 and 2011, progress on international regulatory collaboration was made in three specific areas, each of which is considered in turn below: risk assessment terminology; expressing uncertainty in risk assessments; and exposure analysis.

Risk assessment terminology

Developing a common risk assessment terminology is seen as important for a number of reasons. These include (Hardy, 2011; Hartley, 2011):

- Enhancing the utility of the risk assessment for regulatory purposes on a global basis;
- Promoting robust and transparent risk assessments and decision making;
- Delivering consistent information to consumers and the public about specific risks;
- Facilitating public dialogue on risk and on the nature of risk-risk tradeoffs (e.g. the risks of nuclear waste versus those of climate change in considering the relative risks of nuclear and fossil fuel energy sources);
- Promoting confidence in risk assessments from other governments/organisations;
- Developing a basis for a common set of principles, understandings and approaches both to risk assessment and risk governance.

Differences in risk assessment methodologies and terminology can exist not only between countries, but within countries, and indeed within agencies. They arise for a number of reasons, for example (Hardy, 2011; Hartley, 2011):

- Different methodologies used for estimating risks (e.g. actuarial vs. modelling);
- Different metrics used for expressing risks – e.g. monetary, quality of life years assessments vs. disability life years assessments; percentiles vs. averages;

- The use of qualitative rather than quantitative terms to express risk assessments;
- Different languages, understandings and use of qualitative terms.

Moreover, harmonisation becomes increasingly difficult as one moves from lower to higher levels of integration: it is easier within specific sub-sectors and between people from the same or similar expertise, but gets harder as it becomes inter-sectoral and/or involves people from different disciplinary or professional backgrounds (e.g. research, public health).

Thus far collaboration has not produced any joint output between dialogue partners in the form of, for example, common definition of terms, classifications, agreed principles for risk assessments, standard risk assessment methods or similar, but progress has been made in some areas.

The groups have drawn on a number of existing initiatives. For example, the European Food Safety Agency (EFSA) has conducted an analysis of the different terminologies used by its scientific panels in the risk assessment evaluations they provide to EFSA, and DG SANCO has also commissioned a study of the terminology and expressions used by its three non-food scientific advisory committees (Hardy, 2011). Both studies found a high degree of variability in the qualitative terms used to express uncertainty.[1] The report for EFSA, for example, analysed descriptions of risk in 20% of the opinions given by its scientific panels.[2] It found that qualitative assessments of risks, uncertainty and benefits significantly exceeded quantitative assessments, and there were no quantitative assessments of benefits at all.[3] Moreover, each scientific panel had its own preferred terms to describe risk. The report suggested that this difference in terminology could lead to ambiguity, and also potentially different interpretations of risk by risk managers due to unintentional variations in drafting opinions. As a result, an EFSA cross panel working group has been set up to identify lessons and best practices for improving harmonisation across EFSA to improve consistency and transparency and to reduce ambiguity in communicating risk assessments.

The conference also included a presentation from the World Health Organisation on its initiatives to promote harmonising risk assessment methods, practices and terminology (Hartley, 2011). It has developed a generic terminology of hazard and risk, followed by more specific frameworks on chemical adjustments, modelling and modes of action; it has also developed a generic terminology for the expression of exposure assessments, including characterising and applying human exposure models and characterising and communicating uncertainty in exposure assessments, and has developed a set of criteria for data quality in conducting such assessments. It has found that having a common terminology helps risk

assessors to organise the information being used, clarify the weight of evidence that exists, develop consistent documentation and enhance the transparency of the risk assessments. Similar benefits have been found with respect to assessments of the impacts of mixtures of chemicals in its WHO Combined Exposures Framework. Notably, the Framework describes scenarios, rather than using descriptive terms which might be differently understood.

The conference agreed that it would build on the work which had already been done by, for example, the WHO/OECD and EFSA, focusing initially on a sub-sectoral approach, starting within existing organisations to decrease ambiguities, then proceeding to push for a common set of legal terms for specific sectors. In particular it would focus on key terms which are essential in the interaction between risk assessors, risk managers and the general public:

- sources and nature of uncertainty and variability;
- level of confidence;
- levels of risk;
- seriousness of effects;
- grading of evidence in experimental, clinical/epidemiological work;
- exposure levels.

It would also research the reasons for concerns in relation to terminology used by scientific risk assessments, engaging with social scientists develop the correct language in communication, and promote training and education at all levels.

Future plans for collaboration discussed in 2011 were for further exchange and discussions with Risk Dialogue partners to develop best practice and recommendations, with a joint workshop scheduled for 2012, and further discussions anticipated a the third conference in 2013. However, since the second conference the priorities of the participating agencies have shifted somewhat and, as noted above, at present there are no firm plans for a future conference.

Uncertainty

Describing and communicating degrees of uncertainty is important in risk assessments, particularly when facing risk-benefit tradeoffs, or risk-risk tradeoffs where uncertainty is differential across risks; and where there are real dangers to make the wrong choice (Gray, 2011). Devising a common set of terminology for describing degrees of uncertainty is particularly difficult, for as Lasfargues (2011) identified, there are a number of dimensions to uncertainty:

- *Technical* – the difficulty in technical terms of being able to state with accurate precision what the degree of uncertainty is, by its very nature;
- *Methodological*: the difficulty of devising reliable methodologies to assess uncertainties, for example the almost impossibility of ascertaining the likelihood and impact of low probability/high impact events or "black swans";
- *Epistemological* – the difficulty in dealing with "unknown unknowns"; and
- *Societal*: the extent to which society is willing or able to accept different risks.

Communicating these different forms of uncertainty in a way which is comparable across risks is important if appropriate choices are to be made. It is also important that they are recognised in the risk assessment process itself. However, it seems that issues of uncertainty tend to be overlooked at the pre-assessment phase, and that in the process of assessment, more attention is given to variables that are easily quantifiable, distorting the risk assessment process itself (Lasfargues, 2011). Furthermore, the use of standardised assumptions or estimates could mask the degree of uncertainty that exists (Gray, 2011).

Further, even if risk assessments do recognise and try to communicate that uncertainty exists, there is inconsistency in how uncertainty is treated in the different components of a risk assessment and degrees of uncertainty are not always adequately differentiated. As a result, assessments could be misleading, minority views could be unreported and opportunities to share methods between disciplines could be missed (Lasfargues, 2011).

There was general agreement amongst participants on the need for definitions and methods for identifying and addressing different sources of uncertainty and variability, and that risk assessments should characterise and communicate uncertainty and variability in all the key computational steps of a risk assessment (Hart, 2011; Lasfargues, 2011; Greim, 2011; Gray, 2011; Hartley, 2011). However, there was recognition that using numerical indicators, particularly single point estimates (which risk managers often prefer), could hide the existence of important differences between risks.

Instead, collaborative work had been proceeding to develop scales to express judgements of uncertainty diagrammatically, using scales of "+ or –" or arrows, ↑ ↓, to indicate the degree of uncertainty and its direction (e.g. may be 20% higher, or 20% lower), or to adopt a common understanding of descriptors such as high/low, likely or unlikely (Hartley, 2011; Hart, 2011).

The objective of the working group was to improve the way uncertainties are treated and expressed in risk assessment, focusing on qualitative and semi-quantitative approaches. The group had tested the framework using case studies, and it was further tested in workshops at the 2nd IRA conference in 2011.

The project had worked on the assumption that the minimum requirements for addressing uncertainty were:

- systematically identifying sources of uncertainty affecting the assessment;
- evaluating their combined effect on the outcome;
- identifying and characterising any deep uncertainties; and
- communicating assessment to risk managers.

The key products of the project are:

- a tiered approach to evaluating and expressing uncertainty;
- the uncertainty tables; and
- a template for presenting assessments to risk managers.

The tiered approach integrates elements from some of the many different existing approaches to expressing uncertainty. It consists of three tasks:

- list uncertainties – and if any are "deep", consider using other approaches such as description and social appraisal;
- evaluate uncertainties using uncertainty tables; and
- if necessary, refine the evaluation with quantitative methods, focusing on key uncertainties and using the uncertainty table for unquantified uncertainties.

The uncertainty tables take two forms, related to the two main types of assessment question identified:

- quantitative questions, which calculate risk on a quantitative scale, e.g. benchmark doses of medication, chemicals, and express uncertainty in terms of how different the true value could be from the risk estimate;
- categorical questions, which are based on weight of evidence on a yes/no scale (e.g. relevance of effect to humans) and express uncertainty in terms of the probability of alternative outcomes.

The tables set out both a process and establish a scale of descriptors for degrees of uncertainty, as summarised in Table 3.1.

Table 3.1. Outline of the uncertainty tables

Uncertainty table for quantitative questions (e.g. how much?)	**Uncertainty for qualitative questions** (e.g. how likely?)
Specify quantity being assessed	Specify question being addressed
List uncertainties affecting assessment	List lines of evidence relevant to the question and strengths and uncertainties affecting each one
Define a scale for estimating the impact of uncertainty and express numerically or diagrammatically (e.g. +/- %, x2, x3, or "---, --, -•, +, ++, +++"), and "?" for cannot evaluate	Define a scale for estimating the impact of uncertainty and express numerically or diagrammatically (e.g. as a probability, or ↑ / ↓ to indicate whether answer tends to yes or no, e.g. ↑↑↑ = could be sufficient alone; ↑↑ = important contributor; ↑ = minor contributor; • = no importance; and similarly for ↓, ↓↓, ↓↓↓, using "?" for cannot evaluate
Estimate the impact of each uncertainty on how it affects what the true value might be, using "?" for cannot evaluate	Evaluate the influence of each line of evidence taking into account its strength and accuracy
Use judgement to estimate the combined impact of all uncertainties and express using the scale	Considering all the lines of evidence, evaluate the probability that the answer to the question is positive and express using the scale
Add narrative description of overall uncertainty for use in the assessment summary	Add narrative description of overall uncertainty for use in the assessment summary
Describe any uncertainties that cannot be evaluated	Describe any uncertainties that cannot be evaluated

Source: Hart, A. (2011), Food and Environmental Research Agency (FERA) UK, Treatment and expression of uncertainties in risk assessment: Presentation of the collaborative project.

The template for presenting the assessment to risk managers includes the following categories:

- overarching summary of uncertainties, including quantitative bounds or probabilities where applicable;
- overall judgment of confidence;
- where uncertainty is great, identify major sources;
- clearly acknowledge the presence of any uncertainties which were unquantifiable; and
- supporting information.

The project also proposed a simple graph for presenting the combined evaluations for multiple questions with respect to a particular hazard.

The tables and process were used in one of the Workshop sessions and judged by participants to be useful. Further development and refinement was then planned in preparation for a third conference in 2013, but these are at present on hold.

Exposure assessments

Exposure assessments are the processes of estimating or measuring the magnitude, frequency and duration of human exposure to a chemical agent. It involves, amongst other things, analysis of the number and characteristics of the population exposed, the sources, routes, and pathways of exposure and issues relating to uncertainty of assessments (Özkaynak, 2011).

The first set of collaborative exercises was initiated as a result of the 1st Conference, after which an Exposure Assessment Workgroup (EWAG) was established. The members were representatives from the US-EPA, Health Canada and the EU Commission (DG SANCO). Its aim was to move towards a common international understanding of exposure assessment and risk management approaches. At the 2nd Conference, this focus was developed and expanded to include combined risk exposure assessments (i.e. assessments of the impacts of exposure to different combinations of chemicals or medicines, as well as exposure to single chemicals on a "one at a time" basis).

The EWAG operated in a similar manner to the other collaborative initiatives, working through a combination of virtual meetings, face to face meetings, conferences and peer review (Greim, 2011). By the 2nd conference, it had produced a draft paper assessing human exposure for risk assessment and risk management, which surveys approaches used internationally, and a second paper on methodologies for incorporating biomonitoring in exposure assessment (i.e. the actual impacts on humans of the environmental chemicals to which they have been exposed). It also made proposals for future collaborative studies on particular aspects of exposure assessment studies in areas of common interest based on criteria of complexity and significance, and taking into account the availability of data and relevant expertise. The papers and proposals were presented and discussed in workshops at the conference.

The aim of the first collaborative paper was to move towards a common international understanding and use of reliable and appropriate exposure approaches in support of risk assessment and risk management evaluations (Özkaynak, 2011). Focusing on four specific case studies, it compared and contrasted the different approaches to assessing exposure used by the different agencies, and whether these led to differences in the outcome of a risk assessment. Whilst there were commonalities, there were also

differences in approach which were significant enough to affect the outcomes. As a result, the group recommended further work be taken forward on harmonising methods through future collaborative case studies, data sharing, biomonitoring issues, and in conducting joint training on modelling.

The aim of the second collaborative initiative was to produce a common set of international guidelines for biomonitoring, with the aim of improving and harmonising the way biomonitoring studies are used in exposure assessment and incorporated into the risk assessment process internationally. Again, the aim was to work through specific case studies, and to identify the key data/knowledge requirements to design, conduct and evaluate biomonitoring studies and incorporate the results in the exposure assessment and risk assessment process. Draft proposals were discussed at the conference and are still being formulated.

Assessment

Benefits of collaboration

Various benefits of collaboration were identified by participants at the Conferences. In particular, the WHO argued that in its experience collaboration and harmonisation conferred the following benefits (Hartley, 2011):

- enhanced transparency of risk assessments, and thus facilitated comparisons;
- reduce duplication of work between agencies and scientific experts in different countries;
- enabled scientists and agencies to share information, thus enhancing the work of both;
- increased the scientific integrity in risk assessments; and
- enhanced confidence in the concept of "safety".

Participants also agreed that there was particular value in having a common terminology for expressing risk assessments and uncertainty. A common language helped risk assessors to organise the information being used, clarify the weight of evidence that exists, develop consistent documentation and enhance the transparency of the risk assessments. It is important to emphasise that the goal of the Dialogue is not necessarily to agree a common language for risk assessments, but to facilitate a common understanding of each others' methods and rationales, so that misinterpretations and misunderstandings can be avoided.

The key benefits of the Dialogue are that it created space for an open discussion between scientists inside and outside regulatory agencies, and thus enabled participants to understand each others' methods and rationale. This was achieved by deliberately focusing discussions on broad, general matters which were not issue-specific, and so on which political positions were not entrenched which representatives from the different agencies involved would feel bound to defend. This abstraction facilitated open dialogue and discussion, and enabled considerable progress to be made in developing a common understanding of each others' methods. It enabled the identification and diagnosis of a common broad set of issues that lay at the root of many differences in positions and identified ways to address them, even if it has not yet produced firm outcomes as to how they should be addressed.

Challenges and ingredients for success

One of the key challenges to date has been maintaining the momentum of the Dialogue in the absence of clear high level political support. The initiative grew from the "bottom up" – from the interest and commitment of individuals particularly within the EU Commission (DG SANCO), and agencies in the US and Canada. The Dialogue has not yet received higher political commitment, however, and as such has not been mainstreamed into the work programmes of any of the agencies. It therefore lacks political momentum and organisational infrastructure to ensure that resources are allocated to the project, and that clear timelines and deliverables are set. The broad nature of the Dialogue, which facilitated progress on key issues, also means that it is difficult to map onto existing organisational programmes, as it is deliberately non-issue specific. As a result of these different factors, there is no institutional underpinning for the Dialogue to enable it to continue if key individual participants within the agencies move on to other roles or to other organisations.

The potential benefits of the Dialogue could be considerable. However, certain factors need to be in place. The WHO, for example, identified several factors which were relevant to the success of any harmonisation initiative. These were the need for:

- Collaboration that is open, transparent, receptive to new ideas, flexible, efficient and pragmatically focussed on results;
- Involving national influencers/decision makers (i.e. ground the activity in practical/real application);
- Outreach: globally, with a wide involvement of stakeholders and decision makers;

- Access to practical guidance and training on the terminology adopted.

The Dialogue is not aiming for harmonisation, but it is trying to develop a mutual understanding. Nonetheless, experience of the Dialogue suggests that further preconditions necessary to achieve this are:

- The need to create space for an open dialogue by focusing on fundamental questions, abstracted from existing specific issues, in order to avoid defensive positions being taken to justify existing policy choices, and to focus on future challenges where political positions are not yet entrenched;
- The need for high level support for the initiatives;
- The need for clear ownership of the initiative within and between agencies participating, with a clear set of objectives and deliverables against an agreed timeline, with appropriate resources dedicated to the project; and
- The need for a common commitment to adopt the outcomes agreed.

Neither costs nor benefits (direct or indirect) of collaboration have been quantified.

Next steps envisaged

The working groups established and/or re-confirmed at the 2011 Conference were due to report on progress in 2013. However, in the intervening period there have been changes in personnel within the agencies and organisational priorities have also shifted. Progress has thus stalled. It is open to existing working groups to continue their work, even in the absence of a further Conference at which their products could be shared more widely, but for the present institutional momentum has dwindled.

Notes

1. DG SANCO report found that these included ambivalent, appear, approximately, arbitrary, believe, borderline, cannot be assumed, cannot be excluded, considered, could, disagreement, estimated, expected, few/most , in general, incorrect, increasing evidence, indicate, likelihood, *may* (46), might, not detected/detectable, not established, open questions, outlier, perhaps, possible, potential, probably, prone to, reasonable, seem, should not, some, suggest, suspected, theoretically, *uncertain* (20) unclear, under- or overestimate, unexplained, unknown, variable (Hardy, 2011).

2. The report analysed 3792 descriptions of risk in 219 opinions, examining the abstract, summary, concluding sections and conclusions of 219 opinions published in 2008, 2008 and early 2010 and constructed a database to archive and analyse the relevant opinion sections and the identified quantitative and qualitative descriptors: ibid.

3. There were 2 161 qualitative assessments of risk; and 252 quantitative; 1 120 qualitative assessments of uncertainty as opposed to 68 quantitative assessments; and with respect to benefits, there were 97 qualitative assessments and no quantitative assessments: *ibid*.

Bibliography

All references are to presentations given at the International Conferences on Risk Assessment. A list of participants and copies of presentations from both Conferences (including those cited here) are available at the following websites:

- 1st Conference (2008): http://ec.europa.eu/health/risk_assessment/events/ev_20081113_en.htm
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Chapter 4

Prudential regulation of banks

by

Julia Black*

There is extensive international regulatory co-operation in financial services regulation, co-ordinated through several global regulatory committees. However, the financial crisis has revealed some of the shortcomings in the international co-ordination of financial regulation and their consequences for global financial stability. This case study focuses on international co-operation with respect to the prudential regulation and supervision of banks at the global level. In particular, it describes how global standards for the prudential regulation of banks are set and implemented.

* Julia Black is Professor of Law at the London School of Economics and Political Science.

Introduction

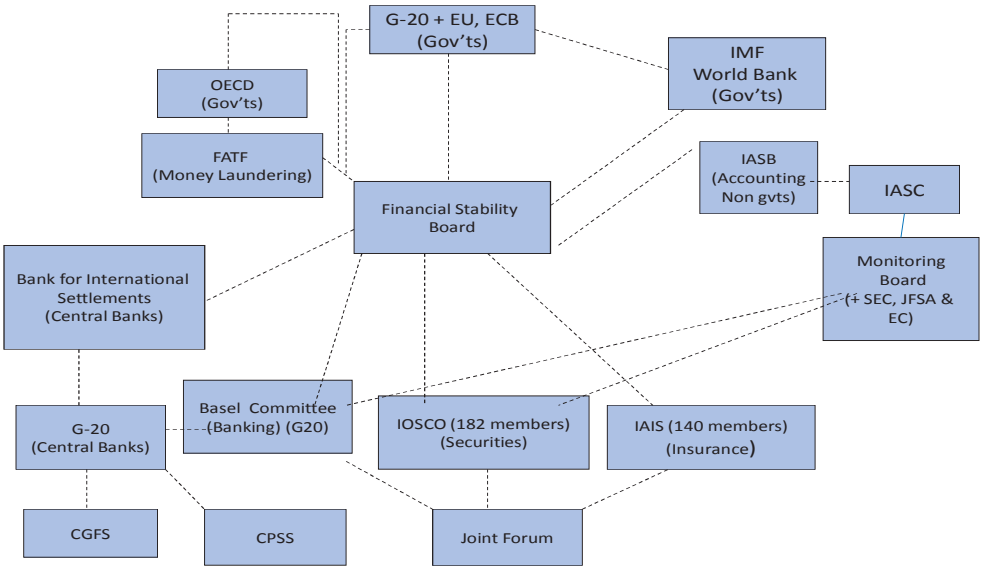
There is extensive international regulatory co-operation in financial services regulation, co-ordinated through several global regulatory committees. Figure 1 sets out the architecture of global financial regulation. However, the financial crisis has revealed some of the shortcomings in the international co-ordination of financial regulation and their consequences for global financial stability. This case study focuses on international co-operation with respect to the *prudential regulation and supervision of banks at the global level*. This is only one aspect of global financial regulation; there are examples of international regulatory co-operation with respect to a number of other aspects including market surveillance and macroprudential regulation; regulation of trading in financial instruments, such as equities and derivatives; insurance regulation; regulation of particular market actors, such as credit rating agencies; and regulation to prevent/investigate fraud, money laundering and other financial crimes.

The Basle Committee on Banking Supervision (BCBS) is the forum which co-ordinates the formation, and increasingly the implementation, of global standards for the prudential regulation of banks. Other bodies are also engaged in this sub-sector of financial regulation, notably the Financial Stability Board (FSB), the International Accounting Standards Board (IASB) and the global committees of securities regulators (IOSCO) and insurance supervisors (IAIS). The BCBS, IOSCO and IAIS co-ordinate mainly through a co-ordinating committee of the three bodies, the Joint Forum, on issues arising with respect to the supervision of global financial conglomerates which combine securities, banking and insurance activities.

Collectively and individually, these bodies set a wide range of standards addressed to member state regulators concerning the regulation of financial services and markets. Under the expectations of membership, these globally agreed standards inform national regulatory standards. The IMF and the World Bank monitor implementation of some, but by no means all, of these standards as part of their broader reviews of members' financial sectors under their Financial Sector Assessment Process, initiated in 1999.[1] Since the financial crisis of 2007-09 the global committees are also starting to

perform their own peer review processes to monitor implementation of some of their own standards. In addition, there has been a growth in co-ordination between national banking supervisors with respect to the supervision of individual global banks. Co-ordination in this activity occurs through international supervisory colleges.[2]

Figure 4.1. Structure of global financial regulations



Source: Based on the case study on the prudential regulation of banks, 2012.

Identification of the main characteristics

Area where IRC is taking place

The regulatory co-ordination focused on in this case study is occurring in a sub-sector of financial regulation: the prudential regulation of banks.

Actors involved: number and nature

There are several actors involved, most of whom are international committees of regulators. There is one "supra-committee", the Financial Stability Board, whose membership comprises the international committees of regulators and other international organisations including the international financial institutions (World Bank and IMF) and the OECD.

The other actors are what may be termed "meta-organisations": their members are national regulators. The principal body responsible for the formation of global standards relating to banking regulation is the Basle Committee on Banking Supervision, a sub-committee of the Bank of International Settlements. The principle actors are:

- *Bank of International Settlements* – three subcommittees: Basle Committee on Banking Supervision; Committee on the Global Financial System; Committee on Payments and Settlement Systems. The BIS committees were initially comprised of the G10 central banks and banking supervisors; membership was expanded in 2009 to G20 countries.
- *Financial Stability Board* – The FSB was formed in 2009 out of a prior group, the Financial Stability Forum, and is a group of G20 financial regulators and finance ministers, the global regulatory committees (BIS and the three committees; IOSCO, IAIS), the International Accounting Standards Board (IASB), plus additional members: IMF, World Bank, European Central Bank, European Commission and the OECD.
- *International Accounting Standards Board* – The IASB is a non-state body of accounting professionals. In the wake of the crisis, political involvement in the IASB has increased and a Monitoring Board was established to monitor its activities, comprised of IOSCO, Japan's FSA, the European Commission and the US Securities and Exchange Commission. The BCBS is an observer.
- IOSCO *(International Organisation of Securities Commissioners)* and IAIS *(International Association of Insurance Supervisors)* are international committees of national regulators; IOSCO has 199 members; IAIS has 190.

Intended objectives of the Basle Committee on Banking Supervision

The objectives and purposes of co-ordination of banking supervisors have evolved over the course of the BCBS's existence. The overriding objective, which has sharpened since the crisis, is to ensure global financial stability, although other concerns have been relevant over the course of its history. Since its creation, its objectives have predominantly been:

- co-ordination of responsibilities for cross-border banks;
- exchange of information on national supervisory arrangements and "best practice techniques"; and

- setting minimum standards to ensure regulatory harmonisation, co-ordination and a "level playing field" for internationally active banks.

In addition, the BCBS has developed an increasing interest in the development of common accounting standards for financial institutions, as common accounts are seen as necessary to enable investors to make efficient investment decisions.

Form that the co-operation is taking

Formality

The Basle Committee has produced standards on a number of key issues in financial regulation, notably:

- Core Principles on Banking Supervision (2006) (revised in 2012);
- Principles for Sharing Information between Home-Host Supervisors (2006);
- Basle Capital Accords: Basle I (1988); revised 1996; Basle II (2004), revised 2009 and Basle III (2010);
- Good Principles for Supervisory Colleges (2011).

The standards produced are not legally binding but there is significant peer pressure for their adoption by members. The Basle I capital accord was adopted by nearly all countries; the Basle II accord has been adopted in the EU, and by most OECD countries (the US was a late adopter); and the Basle III standards are in the course of implementation in all G20 countries.

Scope

The standards are intended to be comprehensive and to set minimum standards. Countries are free to set standards which are higher than those agreed by the Committee.

Mode of co-ordination

The Basle Committee is a "meta-organisation": in other words, its members are other organisations. It operates on the basis of consensus, recognising that all members have their own legislative mandates, objectives and responsibilities. To date, the mode of co-ordination has been predominantly through consensus in the formation of the standards, and exhortation and peer pressure with respect to their implementation.

Since the crisis there are indications that the Committee is moving to adopt a more directive stance on implementation, and it is instituting its own system of peer reviews to monitor the implementation of both the Basle Accords and the other standards which its members have agreed. As such the mode of co-ordination exhibits a tension between being hierarchical – one institution as clear leader setting standards others implement, and one based on community/peer groups – operating through mutual recognition, MOUs and peer review.

There is an attempt to ensure implementation through market operations by increasing disclosure on compliance but thus far this has been a relatively under-developed feature of the co-ordination.

Functions being co-ordinated/components covered in agreements?

- *Ex ante* exchange of information;
- Agenda setting/setting goals;
- Formulating rules/norms/standards;
- Monitoring, data collection: note in particular *Principles For Sharing Information Between Home-Host Supervisors* issued by BCBS in 2006;
- Supervision of implementation of the BCBS's own standards by national supervisors – increasing, see below;
- Supervision of firms themselves through meta-supervision: supervision of supervisory colleges that oversee internationally systemic banks (recent and increasing).

Instruments of co-operation

Standard setting

- Co-ordination between member countries is through consensus decision making between members of the committee;
- Co-ordination with non-member countries on standard setting is through the Core Principles Liaison Group (CPLG), a BCBS working group which includes representatives from sixteen non-BCBS jurisdictions, the Western African Monetary Union, the IMF and the World Bank;[3]
- Co-ordination in standard setting is through liaison with other transnational committees of financial regulators:

– Through membership of supra-committees (committees whose members are other committees or international organisations) – notably with IOSCO and IAIS through the Joint Forum, with other international organisations through membership of the Financial Stability Board;

– Informal liaison and formal communications.

Monitoring and implementation

- Co-ordination between member countries as to their implementation of BCBS standards in national law and supervisory practice – through surveys, and since the crisis, through provision of standard interpretations of the Basle Accords, and through peer review, overseen by the Standards Implementation Group (a subcommittee of BCBS);
- Co-ordination between member states in their supervision of international banks through liaison with global supervisory colleges;
- Moves to monitor implementation by investigating banks directly, rather than addressing their activities at national supervisors.

Short history of the development of the IRC

Short history of the BCBS and of international co-ordination in developing capital accords for banks

Regulatory co-operation in the area of banking supervision has evolved considerably over the last 35-40 years. Whilst the interests and objectives of each participant will always differ, the principal triggers for enhanced co-operation in banking supervision have been essentially twofold: to address the mismatch between global banking and national supervision by attempting to ensure that no foreign branches or subsidiaries go unsupervised and that lines of supervisory responsibility are clear; and to create a "level playing field" for competition between financial institutions which are operating cross-border by setting minimum standards to prevent a "race to the bottom" in supervisory practices. Since the financial crisis of 2008, increased emphasis has been put on the need for co-ordination in order to ensure global financial stability.

The key co-ordinating institution is the Bank for International Settlements (BIS). The BIS was created in 1930 to handle the payments of reparations from Germany after the First World War. This function fell away but the BIS remained a focal group for central banks to discuss issues of monetary and financial stability.

Initial steps to formalise co-ordination on the supervision of cross-border banks were prompted by the failure of Bankhaus Herstatt in West Germany in 1974, which revealed considerable uncertainty as to where principal responsibility for the supervision of cross-border banks lay. The central bank governors of the G10[4] therefore formed the Committee on Banking Regulations and Supervisory Practices (CBRSP) subsequently renamed the Basle Committee on Banking Supervision (BCBS). The CBRSP produced the first Concordat on co-ordination in 1975, setting out the responsibilities of home and host supervisors.

Basle Capital Accords

Co-ordination on the development of capital standards for banks was initiated in the 1980s. The formation of the initial Basle Capital Accord (Basle I) in 1988 was prompted by concerns, particularly by supervisors in the US and the UK, that lack of co-ordination on capital requirements was leading to a "race to the bottom", with banks from some jurisdictions, notably Japan, entering US and UK markets and competing with home banks which were subject to stricter rules. The first Accord was agreed in 1988 between the G10 countries plus Spain, and had been implemented by all members (excluding Japan) by 1992. By 1999, nearly all countries in the world, including China, Russia and India, had adopted Basle I, at least in form.

Basle I was amended in 1996 to take into account changes in banks' trading practices (the Market Risk Amendment). It was then substantially revised in 2004 (Basle II). The 2004 Accord put in place the "three pillar" structure of supervision. Pillar 1 set out the capital requirements; Pillar 2 focused on supervisory practices; and Pillar 3 on disclosure and market discipline. Under Pillar 1, capital requirements were more aligned with risk, and banks given the option of using the standardised risk assessments of Basle II, or using their own internal models to assess risk, which were then approved by their national supervisors.

By the time Basle II was adopted, membership of the BCBS had expanded to include the EU Commission, and Basle II was implemented across the EU by the Capital Requirements Directives. Implementation of Basle II proved harder to secure than Basle I. In particular, the refusal by the US to adopt Basle II initially, and then the agreement (only reached in 2007)

to adopt it only for its most internationally active banks, was a disappointment. However, the crisis gave a significant additional impetus to adoption by individual countries, and by the end of September 2011, the majority of BCBS members (now expanded to G20 countries) had adopted Basle II. Implementation of Basle II.5 was either in place or planned for January 2012 for the majority of members,[5] and proposals for the implementation of Basle III were underway.

The Accord was revised again in 2009 and 2010 to take account of lessons learned from the crisis (Basle II.5 and Basle III).[6] There is a long transitional period for the introduction of these requirements, and full implementation of most the Basle III provisions is not scheduled by the Accord to be in place until 2019, with all elements scheduled to be in place by 2023. Many countries are moving more quickly than this timetable, however.

Core Principles for Effective Banking Supervision

Core Principles for Effective Banking Supervision were initially introduced in 1999, and revised in 2006 (www.bis.org/publ/bcbs123.htm). The crisis revealed a number of gaps in the Principles, however. In December 2011, the BCBS published revised Principles for consultation, adopted in September 2012, which included a number of new elements. These include provisions:

- on the need for enhanced risk management practices;
- for greater intensity and resources to deal effectively with systemically important banks;
- on the need to applying a system-wide, macro perspective to the microprudential supervision of banks to assist in identifying, analysing and taking pre-emptive action to address systemic risk;
- for a greater focus on effective crisis management, recovery and resolution measures in reducing both the probability and impact of a bank failure;[7]
- a new principle on corporate governance of banks.

In addition, the expectations of what standards are necessary to demonstrate implementation have increased, with criteria for implementation which were deemed optional or "additional" under the 2006 Principles now upgraded to "essential".

Monitoring the implementation of Basle Committee standards – the BCBS Standards Implementation Group

Since the crisis the Basle Committee has also adopted a much firmer stance on implementation. The agent for this increased review of implementation is the Standards Implementation Group, a subcommittee of the BCBS (in place since 2003). Until the crisis, it aimed to provide a forum for information sharing and co-operation between supervisors, with the view that through such exchanges, consistent practices would develop and be implemented at the national level. It did not seek to give authoritative interpretations of the Accords, seeing their precise implementation to be at the discretion of national supervisors; nor did it systematically review the manner in which the Accord was being implemented, beyond formal enactment. For example, it conducted surveys of members to assess the extent to which the Accord had been implemented into national legislation. Together with the Core Principles Liaison Group (comprised of regulators from sixteen non-G10 countries) it developed principles for information sharing between home-host supervisors (BCBS, 2006a). It also issued some guidance on implementation of the Accord (BCBS, 2006b). The Group was also instrumental in establishing colleges of supervisors for large, internationally active banks. The crisis prompted greater recognition by the Committee of the need to take firmer control over the system of rules that they had developed. In particular, the Committee realised that relying on national supervisors only to put its guidelines in place was not enough.[8]

The role of the SIG has thus changed significantly in three respects since the crisis. First, in 2009 the remit of the Group has been expanded to monitor implementation of all the principles and guidance emanating from the BCBS, not just the capital accords, and its name changed to the Standards Implementation Group to reflect this change (BIS, 2009). Second, it is seeking to ensure that there is far greater consistency in the interpretation and application of the capital Accords through for instance providing guidance on interpretation in the form of "FAQs" on aspects of Basle III[9] or publishing formal interpretations. It has also developed a Standards Surveillance Framework, applicable to all Basel Committee standards, with the aim of promoting consistency and comprehensiveness of the standards and ensuring that the standards keep up to date with market practices and financial innovation (BCBS, 2010a).

Third, it is moving to ensure that the standards are implemented in practice, and not simply enacted into legislation in national rule books. To this end it has also decided to undertake thematic peer reviews related to the implementation of selected Basel Committee standards, a significant practical and cultural shift in the approach of the Committee. Peer reviews will be conducted of all member countries, and the SIG will monitor follow

up action plans to help promote the implementation of standards. The review process will be supported by appropriate public disclosure to reinforce incentives for member jurisdictions to implement Basel III in a full, consistent and timely manner (Caruana, 2011).

Co-ordination between national supervisory authorities: home-host information sharing and global supervisory colleges

One of the key concerns of the BCBS since its inception has been to try to address the mismatch between nationally based regulation and internationally active banks.[10] In particular, given that banks may be complex structures of legal entities operating in several jurisdictions, it has encouraged regulators to supervise global banks on a consolidated basis.

Home-host information sharing

The system of supervision, both within the EU and at the global level, operates on the basis of a division of responsibilities between the "home" supervisor, who is meant to be the lead supervisor, which is the country where the bank has its headquarters, and the "host" supervisors – regulators of countries in which the bank operates. It is not necessarily the case that the most significant activities for the bank are located in its host country, however; nor is it the case that supervisors are the "home" supervisor for institutions which pose the greatest systemic threat to their national financial systems. In some cases, a subsidiary or branch of a bank may be systemically important for the host country, but not for the bank as a whole. Conversely, a subsidiary or branch may be significant for a banking group but not for the host country, particularly if that host country is a major financial centre. Host supervisors need to have sufficient information about the banks' operations and policies at group level to be able to supervise effectively, for example strategies being adopted at group level to manage group capital, and which of the options it is adopting under Basle II and III for measuring its risk exposures. Home supervisors need to have sufficient information from host supervisors as to the bank's local activities and exposures in the different jurisdictions in which it operates.

Significant issues arise with respect to legal limitations on information sharing within national jurisdictions, in particular because much of the relevant information will relate to banks' proprietary models for measuring risk. Countries have therefore been encouraged to ensure that national laws do not impede the cross-border flow of information necessary for effective co-ordination and which also protect the confidentiality of information which they receive from other supervisors.[11] In addition the BCBS has set out a set of core elements which it recommends should be included in any formal or informal co-operation agreements between national supervisors.[12]

Supervisory colleges

Supervisory colleges are multilateral working groups of relevant supervisors that are formed for the collective purpose of enhancing effective consolidated supervision of an international banking group on an ongoing basis (BCBS, 2010b). The potential for supervisory colleges to facilitate information flows between supervisors and the BCBS, hence promoting financial stability at the macroprudential level and a coherent and consistent implementation of standards across jurisdictions, has come to the fore since the crisis.

In order to function effectively, colleges require a high degree of understanding and strong levels of mutual trust and confidence between national supervisors. The structure of the college is the responsibility of the home state, and colleges can have a variable geometry. For a very large global bank, such as HSBC, there will be over 70 members, reflecting the number of countries where the HSBC is active. Its supervisory college consists of a small core of supervisors from the countries which constitute the majority of its business activities, and a larger group which comprises all of the relevant countries. For other banks, a unitary college is possible. For yet others, there may be a large universal college, but different sub-colleges focused on particular risks or business lines.[13] The BCBS's *Good practice principles for supervisory colleges* (BCBS, 2010b) require colleges to notify the BCBS of the membership and structure of the college.

Within the EU there is a separate requirement to form EU level supervisory colleges.[14] These can operate in parallel to the global college with respect to an individual bank.

Co-ordination with other regulatory committees in developing standards

There are a number of examples of co-ordination between the international regulatory committees in developing standards. These include co-ordination with IOSCO on the Market Risk amendment in 1996, and risk evaluation methodologies to be used for Basle II.

The BCBS is also an observer on the Monitoring Board which IASB established in 2009 to further enhance its accountability to the principle users of its standards (other members are IOSCO, the U.S. SEC, the Japanese FSA and the European Commission). The BCBS was also an observer member on the joint ISAB and FSAB (US accounting standards board) committee convened in the wake of the crisis to consider, amongst other, revisions to international accounting rules on financial instruments, in particular the application of the rules on fair value accounting, which can have implications for prudential supervision and financial stability.[15]

There are also indications of new practices of co-ordination in the formation of standards. These take the form of inter-referencing with conditionality: principles issued by one regulator will reference those issued by another, and help to reinforce them through the imposition of conditions – "if you comply with X rule from Y organisation, then you comply with our requirements or get Z benefit within our part of the regime". For example, the most recent Basle capital standards, Basle III, include the provision that the amount of capital a bank needs to hold to cover exposure to central counterparty (CCP) will reduce if the CCP is established and acting in accordance with standards on CCPs issued by the Committee on Payment and Settlement Systems (CPSS) and IOSCO. Further, only credit ratings agencies which are compliant with IOSCO's Code of Conduct for Credit Rating Agencies will be an eligible to provide credit ratings within the Basle III framework.[16]

Assessment

The financial crisis revealed some of the consequences of insufficient international co-ordination for global financial stability.

Known benefits

Expected benefits in greater co-ordination are progress in managing risks across borders and avoiding global systemic risks. In addition, there are administrative benefits to regulators from greater trust, co-ordination and transparency between national supervisors and more efficient administrative relations in the day to day business of supervision. The Institute of International Finance (main representative body of large financial institutions), for instance, has emphasised the key role of supervisory colleges, working with supervised firms, in achieving greater co-ordination and convergence of regulation and co-operation among supervisors and "ensuring a substantial increase in supervisory efficiency and effectiveness by aligning the efforts of multiple supervisors, allocating tasks and responsibilities among them, avoiding duplications and ensuring consistent common interpretations of the rules." (BCBS, 2010b)

It is not clear that any regulator or any of the co-ordination body has attempted to quantify the administrative costs or benefits of co-ordination, however. For financial institutions, the BCBS undertakes regular impact assessments of the implications implementation of the Basle capital accord standards on banks, but not on the specific question of co-ordination.

Challenges (and when they exist mechanisms to overcome them)

The challenges to co-ordination have been principally to move beyond co-ordination on standard setting and general information sharing between a relatively small group of countries, and to extent co-ordination to include more countries and implementation and day to day supervision.

The BCBS has traditionally had a narrow membership. The expansion in the wake of the credit crisis to include the G20 countries has brought all the major economies into the decision making, but its membership is still considerably narrower than that of IOSCO and IAIS. Nonetheless, its standards are adopted globally. The mismatch between membership and adoption has led to a number of issues, not least the question of the applicability of the standards to less developed countries, and although the BCBS did consult more widely, including through the Core Principles Liaison Group, there have been criticisms from developing countries that the consultation comes too late in the drafting process.

The crisis has prompted a recognition of greater need for co-ordination in financial regulation, but there are relatively low levels of co-ordination between the committees. There is greater co-ordination between the BCBS and the FSB – both have the same core membership of G20 countries and they are also located in the same building, which facilitates overlap of personnel and communication. However, BCBS, IOSCO and IAIS each have a different membership, and each area (securities, banking and insurance) still has its own focus, mandate, and supervisory traditions. As a result, regulation at the global level (and often at the national level) is "siloed" into three distinct areas. In addition, one committee may not agree with the provisions of another. In particular, gaining agreement between the BCBS and IASB on accounting standards for a number of financial instruments and transactions remains an issue, notably loan loss provisioning and the applicability of fair value accounting for a number of financial instruments.

Finally, the BCBS has faced a number of difficulties in ensuring consistent implementation of its standards. These difficulties lie in part in the opacity of banks' practices and partly in the standards themselves: in allowing individualised calculations of risk exposure based on banks' own internal models, it is difficult for observers, including the BCBS, to assess whether the standards really are being applied consistently. Issues of national sovereignty, national supervisory discretion, and the capacity of national supervisors to implement the provisions have added to these problems. Issues of regulatory competition have also arisen, and are a key motivating factor in the BCBS's shift in approach. As the BCBS's standards

are not legally binding the BCBS has no formal sanctions to reinforce its greater focus on ensuring implementation, but the disclosure of peer reviews can create peer pressure to conform through "naming and shaming".

Next steps envisaged

New or forthcoming areas for co-operation

New areas for co-operation, as noted above, are with respect to ensuring implementation and co-ordination of supervisory practices on the ground, notably through:

- closer monitoring of implementation;
- peer review;
- supervisory colleges;
- greater co-ordination of all the global regulatory committees, either bilaterally or through the Financial Stability Board.

Emerging challenges

Emerging challenges include addressing the technical complexities of the assessments required by the standards themselves and ensuring that there is no "backsliding" by individual countries in implementation, particularly if it is perceived that requiring banks to have higher capital standards is having a negative effect on economic growth.

Involvement of new actors

Extension to G20 has brought a wider range of countries into the core of BCBS decision making and aligned its membership (in terms of countries) with the FSB.

Evolution of new modes and mechanisms of co-ordination

Modes of co-ordination have evolved progressively from information sharing to joint formation of standards, through more recently to peer review assessments of implementation and the enhancement of co-operation in the day to day business of supervision through global supervisory colleges. These mechanisms are also intended to facilitate the application of mechanisms to address macroprudential risks.

The dynamics of these more recent modes of co-ordination are still evolving. The role of the FSB is changing from a body which operates as a loose co-ordinating mechanism to one which is the lead conductor, with a

key role in driving the agenda of global financial regulation. The role of peer reviews is also developing rapidly at the global and EU level as a mechanism for ensuring co-ordination and consistent implementation of standards. However, just what peer review consists of can range considerably along a spectrum from a general sharing of best practices and building technical capacity to a more critical and even sanction-orientated process, including "naming and shaming" non-compliers. Whilst the BCBS has indicated that it wants to move further to this latter end of the spectrum, the peer review dynamic can become dominated by a reluctance to "blow the whistle" on another regulator if the peers realise that they have faults of their own. The dynamics of the peer review process will therefore have to be closely monitored.

Notes

1. Under the Report on the Observation of Standards and Codes, which forms part of the FSAP, the IMF and World Bank review compliance with the Basel *Core Principles for Effective Banking Supervision*; the International Association of Insurance Supervisors (IAIS) *Principles for Insurance Regulation*; the International Organization of Securities Commission (IOSCO) *Objectives and Principles of Securities Regulation*; and the Committee on Payment and Settle Systems (CPSS) and IOSCO *Recommendations for Central Counterparties* (CCPs).

2. Within the EU, co-ordination on implementation of global standards is achieved through the EU institutions and the new European Authorities for financial regulation, through EU colleges of supervisors for pan-European banks, as well as through bi-lateral member state co-ordination on supervisory matters. With respect to the rules governing the capital requirements for banks, the relevant EU Authority is the European Banking Authority, created in January 2011, who also co-ordinates the EU supervisory colleges.

3. Argentina, Australia, Brazil, Chile, China, Czech Republic, Hong Kong SAR, India, Korea, Mexico, Poland, Russia, Saudi Arabia, Singapore, South Africa.

4. Belgium, France, Germany, Italy, Japan, Netherlands, Sweden, Switzerland, United Kingdom, United States, and Luxembourg.

5. Progress report table on the Basel 2.5 adoption, www.bis.org/publ/bcbs/b2_5prog_rep_table.htm, accessed 12 December 2011.

6. Adjustments were made to the calculation and management of market risk, the definitions of capital were tightened, additional capital buffers were put in place together with a leverage ratio, and banks were now also required to put in place strategies to manage their liquidity risk.

7. BCBS, Consultative Document – Core Principles for Effective Banking Supervision, December 2011.

8. A key example is the principles on liquidity management, first issued in 2000. S. Ingves (Chairman, BCBS), "Talk is Cheap – Putting Policies into Practice", Speech, San Francisco, United States, 16 November 2011: "It is worth reflecting on how much of the risk management failures we witnessed during the crisis might have been avoided if supervisory sound principles and guidance had been implemented by banks and enforced by supervisors. The Committee's liquidity risk management guidelines issued in 2000 serve as an instructive example: The guiding principles would have effectively addressed many of the issues observed during the crisis if they had been effectively implemented."

9. October 2011 and December 2011 (capital); November 2011 (counterparty credit).

10. E.g. BCBS, Report on the supervision of banks' foreign establishments (the "Concordat"), 1975; Principles for the supervision of banks' foreign establishments (1983), Minimum standards for the supervision of international banking groups and their cross-border establishments (1992), The supervision of cross-border banking (1996), Essential elements of a statement of co-operation between banking supervisors (2001), High-level principles for the cross-border implementation of the New Accord (2003) and Home-host information sharing for effective Basel II implementation (2006).

11. BCBS, Home-Host Information Sharing for Effective Supervision, 2006.

12. BCBS, Essential elements of a statement of co-operation between banking supervisors, set out in Good Practice Principles for Supervisory Colleges, Annex 2.

13. Examples are set out in the Principles based on a BCBS survey of practices.

14. Under Article 131a of the amended CRD, all EEA cross border banking groups were required to have a college of supervisors in place by the end of 2010.

15. Report of the Financial Crisis Advisory Group (2009), available at www.ifrs.org/News/Press-Releases/Documents/FCAGReportJuly2009.pdf .

16. BCBS, Basle III.

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