Structure, Principles and Effectiveness of Insurance Regulation in the 21st Century: Insights from Canada

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The 2007–2009 financial crisis resulted in failures of many large financial institutions and among the G8 countries, only Canada did not have to provide financial support to distressed financial institutions. We first examine the existing Canadian regulatory architecture in relationship to underlying principles arising from the public theory of regulation. Elements of the Canadian regulatory framework that contributed to the success of the insurance industry in weathering the crisis include the presence of a federal regulator who monitors system-wide issues also ensures consistent solvency standards; investment guidelines that encourage prudent risk-taking; and a holistic approach to insurer monitoring. A comparison of the Canadian experience with that of other jurisdictions highlights the importance of a holistic risk management approach to firm viability, especially in light of the inherent risks arising from complex group structures. A lesson from the crisis is the need for effective ex ante and ex post cross-border and holistic supervision as most distressed institutions belonged to large complex groups operating in multiple regulatory jurisdictions.

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Introduction

Insurance represents a promise to pay contingent on a future event. Because insurance companies are entrusted with the public interest, developed nations worldwide have an interest in maintaining both the integrity and solvency of the insurance industry. A key question that arises is how to effectively regulate insurers in an increasingly complex environment. As we look across the globe, we see important differences in how financial institutions in general, and insurance companies in particular, are regulated.

In this paper, we provide an overview of the primary principles of regulation, a description of the regulatory framework in Canada, noting some important differences with other jurisdictions, and a discussion of the role of regulation in the recent financial crisis. Specifically, we examine tenets of regulation in Canada that were instrumental in preventing market failure. We conclude with recommendations

regarding the regulatory architecture—both *ex ante* and *ex post*—that will help to ensure a stable insurance industry in the future.

Primary principles of regulation

Property/casualty (P/C) insurance companies operate within the most regulated industries in developed economies: they are regulated with respect to capital holdings, investments, reinsurance agreements and loss reserve adequacy to ensure their ability to pay claims in the future. In addition, they are regulated with respect to the design, pricing and sales of insurance products to enhance consumer protection.¹ The public interest theory of regulation provides a rationale for this regulation: it exists to serve the public interest and therefore governments regulate industries to improve or protect public safety, to increase social welfare and to prevent market failure.²

Skipper³ argues that government intervention into insurance markets is desirable in the presence of actual or potential market failures that could lead to decreased public welfare, but only if the government can actually reduce the likelihood of market failure. He notes that market failure can arise from one or a few sellers having market power, information asymmetries, externalities or free rider problems. Although there is minimal concern about market power imperfections in the highly competitive Canadian P/C insurance market, market failure may arise from the confounding effects of information asymmetries, externalities and free rider problems.

In theory, markets may fail if information asymmetries between buyers and sellers are so great that contracting cannot take place.⁴ However Baltensperger *et al.*⁵ argue that because insurers recognise these information asymmetries as a cost of doing business, they have developed mechanisms to control adverse selection and moral hazard using both contract design and pricing mechanisms. Therefore, regulation of this aspect of the industry is not essential.

However, asymmetric information *is* relevant when policy-holders do not have information about the financial strength and stability of insurance companies. Because insurance protection is purchased before its true cost is known, in the absence of regulation, it is incumbent on purchasers to monitor the solvency of insurers in order to protect their interests. As noted by Plantin and Rochet,⁶ most policy-holders are

¹ We use the term *ex ante* regulation to refer to policies and practices put in place to ensure appropriate market conduct and effective management of risks and the term *ex post* to refer to policies promulgated to discipline market infractions or remedial interventions after failure has occurred.

² In contrast, private interest theories of regulation contend that regulation exists to promote the interests of a specific stakeholder. Thus, regulation exists to generate benefits for a specific party, whether it be the regulated entity, the regulator or the consumer. Political theories of regulation contend that the actual state of regulation is shaped by the relationship between the bargaining powers of interest groups, the industry and the existing political structure. Regulation may improve social welfare and also allow some parties to accrue private benefits.

³ Skipper (1998).

⁴ For example Akerlof (1970).

⁵ Baltensperger *et al.* (2008).

⁶ Plantin and Rochet (2007).

small and uninformed compared to insurers. This gives rise to the free rider problem: the costs of monitoring far exceed the benefit to one policy-holder. This provides motivation for centralised monitoring.

Regarding externalities, Skipper³ conjectures that regulatory oversight is required to prevent cascading failures (primarily of reinsurers) that could cause disruptions throughout the economy. Although such failures could arise from the investment decisions of insurers, historically, insurers have been less exposed to systemic risks arising from capital market imperfections than other financial institutions. Instead, failure is more likely to be caused by massive insured losses. This provides motivation for monitoring of reinsurance contracts and intra-group insurance transfers to reduce the likelihood of multiple insurer failures arising from a catastrophe.

The potential problems created by asymmetric information, free rider problems and externalities suggest there is an important role for *ex ante* regulation in ensuring the financial stability of insurance companies. The role of a prudential regulator is to develop and enforce standards to ensure the functioning of the insurance market. A fundamental reason why market discipline alone (in the absence of regulation) may not prevent market failure was illustrated by the recent financial crisis. The crisis underscored the fact that a necessary and sufficient condition for effective market discipline is financial transparency. Britain's Financial Services Authority,⁷ in a discussion of Solvency II's third pillar notes "*Greater transparency is aimed at fostering market discipline through public disclosure, and through private reports, providing supervisory authorities with the information required for effective, risk-based and proportionate supervision*". Because many insurance transactions are across nations or involve complex transactions within a group of related companies, it is difficult to determine the true level of risk transfer that occurs. Given the difficulty in achieving transparency, there is a role for regulators—both nationally and internationally—to monitor such transactions.

The recent financial crisis also underscored the necessity of strong *ex post* or protective regulations in the event that *ex ante* provisions are not sufficient to prevent financial distress. In particular, regulation is needed to take corrective actions to prevent failure of an insurer and to develop a well-functioning distress resolution plan in case failures occur.⁸ This may include the presence of formalised solvency insurance. Furthermore, the likelihood of market failure is reduced in the presence of a well-functioning *ex post* regulatory framework as this increases the willingness of participants to enter financial contracts in the presence of asymmetric information.

⁷ Financial Services Authority (2010).

⁸ To prevent the taxpayer from becoming the lender of last resort, a formalised solvency insurance program exists, the Property and Casualty Insurance Compensation Corporation (PACICC). PACICC is an industry-funded, non-profit programme that will pay claims of policy-holders in the event a P/C insurer becomes insolvent. PACICC covers claims under most policies issued by P/C companies. Although private, it is approved by government regulators. Unless they are covered by another authorised plan, all P/C insurers licensed in a province or territory of Canada are required to be members of PACICC. All participating P/C insurance companies pay a small levy to PACICC to cover its running costs. Should insolvency occur, PACICC responds to claims, up to CAD\$250,000 per occurrence, and participating insurance companies are assessed for their share of the cost involved.

Some of the specific elements of the *ex ante* and *ex post* regulatory framework in Canada are discussed further below.

The P/C insurance market in Canada

The P/C insurance market in Canada is remarkably competitive. The top five insurers have one-quarter of the market when measured by legal entity and over one-third when measured by insurance group. Over 200 insurers compete for CAD\$41.4 billion in premiums written in 2009. Approximately half of premiums written are for automobile insurance. Because of the relatively small size of the Canadian insurance market (according to the OECD, the Canadian insurance market, life and P/C combined, is approximately 3 per cent of the global market), most insurers write both personal and commercial lines. In 2008, 105 of 147 insurers that wrote commercial lines also wrote personal lines.

Foreign insurers make up a significant share of the market. At year end 2007, 53.8 per cent of the industry by premium volume was written by foreign-owned insurers. Foreign insurers can choose to set up a head office and be incorporated in Canada or can operate branch offices in Canada. In 2008, branch insurers wrote approximately 35 per cent of commercial lines in Canada, but less than 10 per cent of personal lines.⁹

Foreign insurers provide a number of benefits to policy-holders, including potentially lower prices and innovative products due to expanded competition and access to foreign capital. However, when a foreign parent exits the market involuntarily, the Canadian operations may also fail or, in the case of branches, present a liquidity risk to Canadian policy-holders.¹⁰ Branch insurers also present a distinct solvency risk. While Canadian insurers fail as a result of their operation and exposure to the Canadian economic/underwriting environment, branch companies may fail due to the economic/underwriting environment in a foreign jurisdiction. A study by Leadbetter and Dibra¹¹ found that failure of a foreign parent (home office) was the second leading cause of involuntary exit in Canada, behind inadequate pricing and deficient loss reserves. This contrasts with other countries where fraud or asset risks were the second leading cause of involuntary exit.¹²

Overview of regulation in Canada

Insurers in Canada have the option to be federally or provincially incorporated. Federally incorporated insurers can write insurance in all ten provinces and three territories, and provincially licensed insurers are primarily restricted to those provinces

⁹ Kelly *et al.* (2011).

¹⁰ A liquidity risk exists when the insurer has sufficient assets to meet its contractual obligations, but there exists a high probability that those assets could disappear. A solvency risk occurs when assets are not large enough to cover contractual obligations.

¹¹ Leadbetter and Dibra (2008).

¹² McDonnell (2002), A.M. Best (2004) and Chen and Wong (2004).

or territories in which they are licensed and require extra-provincial insurance licenses to operate in other jurisdictions. In 2007, there were 154 provincially regulated insurers (CAD\$9.5 billion in premiums) and 192 federally regulated insurers (CAD\$30 billion in premiums).¹³

Both provincial and federal governments have authority for supervising and regulating insurance in Canada. The Office of the Superintendent of Financial Institutions (OSFI) is the federal body that oversees the functioning of the financial services sector. As the federal prudential regulator of deposit-taking institutions, federally regulated life and health insurers, P/C insurers and private pension plans, their mandate is to supervise member institutions to ensure that they are in sound financial condition; to advise institutions and take corrective actions to restore financial health; to develop a regulatory framework that supports prudent risk taking; and to monitor system-wide issues that may negatively impact institutions.¹⁴

At the federal level, there are two key statutes governing the activities of P/C insurers: the *Office of the Superintendent of Financial Institutions Act*¹⁵ and the *Insurance Companies Act*.¹⁶ In most jurisdictions, the provincial superintendents have responsibility for financial supervision for insurers with provincial charters.¹⁷ However, for all insurers operating in their jurisdiction, provincial authorities are charged with oversight of market conduct including supervising terms and conditions of insurance contracts, and the licensing of companies, agents, brokers and adjusters.

Provincial Insurance Acts define the responsibilities of the local superintendents. Although the scope of responsibility may vary somewhat between jurisdictions, the underlying mandates are very similar: to protect the public interest and enhance confidence in regulated industries (which may extend to more than insurance). For example, according to the Alberta superintendent: “*The Office of the Superintendent of Insurance regulates and creates policy for the insurance market in the province to ensure that Albertans have affordable access to the insurance coverage they require, by monitoring the effectiveness of the market, and responding to the needs of the province and its citizens*”.¹⁸

The separation of regulatory authority has both advantages and disadvantages. A key disadvantage arises from the inconsistency that exists in solvency supervision for federally and provincially chartered companies. Whereas OSFI’s track record on solvency surveillance is commendable, at the provincial level the experience has been more problematic. Leadbetter and Stodolak¹³ note that the highest insolvency rates in Canada from 1990 to 2007 were provincially regulated insurers in Ontario and Newfoundland. In addition, the separation of authority has the potential to result in problems due to the interplay between rate regulation (charging an adequate price)

¹³ Leadbetter and Stodolak (2009).

¹⁴ http://www.osfi-bsif.gc.ca/app/docrepository/1/ra/0506/eng/responsibility_e.html.

¹⁵ Office of the Superintendent of Financial Institutions Act (1985).

¹⁶ Insurance Companies Act (1991).

¹⁷ One province, Nova Scotia, does not undertake prudential regulation. All Nova Scotia-based insurers are supervised by the federal prudential regulator and the provincial regulator oversees market conduct only.

¹⁸ Government of Alberta: Finance and Enterprise (2011).

and overall solvency. While provincial regulators may be focused on keeping rates affordable, this can have a negative effect on the solvency of insurers, a federal responsibility for most insurers. Furthermore, Leadbetter and Stodolak¹³ note that a stringent rate regulation system that weakens the link between pricing and claims increases the risk of insolvency.

Ex ante regulatory structure

The solvency of insurers is threatened when existing capital resources are not sufficient to pay claims. Broadly speaking, in the absence of obvious misappropriation of resources or fraudulent behaviour, this can occur because insurers did not invest premium dollars prudently, did not have additional capital resources to cover adverse experience, did not have sufficient loss reserves or did not correctly price insurance. In order to ensure solvency, regulations are in place to establish prudent investment strategies, minimum capital requirements and support adequacy of reserves. These are briefly described below.

The investments of Canadian P/C insurers are guided by the prudent person standard. As stated in item 492 of the *Insurance Companies Act*,¹⁶ this requires that the company must “*adhere to investment and lending policies, standards and procedures that a reasonable and prudent person would apply in respect of a portfolio of investments and loans to avoid undue risk of loss and obtain a reasonable return*”.

The federal *Insurance Companies Act*¹⁶ assigns responsibility to monitor solvency to OSFI for federally regulated insurers and the provincial Insurance Acts either transfer the responsibility to OSFI (for Nova Scotia) or assign the same authority to the provincial and territorial Superintendents of Insurance. The federal capital adequacy test is the Minimum Capital Test (MCT) for Canadian companies and the Branch Adequacy of Assets Test (BAAT) for branch insurers. The intent of MCT/BAAT is to reflect the risk arising from both the asset and liability sides of an insurer’s business. The tests set capital requirements considering both the size and the degree of risk taken by an insurer in both its on and off balance sheet investments and in the risks that it underwrites. MCT/BAAT promote a prudent investment strategy to the extent that they require greater surplus holdings for riskier investments. Long-tailed and more volatile lines of business also require greater capital holdings to protect against adverse experience. MCT/BAAT differs from U.S. statutory filings in that financial information is determined in accordance with generally accepted accounting principles (GAAP) used in Canada. It has been suggested that the use of GAAP accounting as opposed to statutory accounting principles provides regulators and investors a better measure of the true risk of an insurer.¹⁹

MCT/BAAT calculates a ratio of excess capital to mandatory minimum capital holdings where excess capital is defined as the adjusted surplus holdings of insurers. Although a ratio of 100 per cent is a pass rate, the minimum supervisory target is 150 per cent, and in practice OSFI requires insurers to set targets in excess of

¹⁹ Cummins *et al.* (1995).

170 per cent.²⁰ This higher capital target is intended to capture an insurer's unique risk profile and account for risks not already incorporated explicitly in the MCT.²¹ The setting of an insurer's capital target is the outcome of an integrated risk management process that engages firm management, the Board of Directors and the appointed actuary in a review of risk tolerances and management of risks.

The combination of the prudent person investment guidelines and a solvency test that promotes less risky investment vehicles has compelled P/C insurers in Canada to heavily invest in government bonds and high grade corporate debt. Using OECD insurance statistical data,²² Figure 1 provides an international comparison of the percentage of P/C insurance company portfolios held in fixed income securities, equity and real estate. In comparison to other countries, Canada and Australia appear to be the most conservative in terms of investment choices with high liquidity and lower risk assets.

A second critical issue for P/C insurers is setting loss reserves. Swiss Re²³ notes that reserves are 160 per cent of shareholder equity in Canada, representing insurers' largest liability. In the absence of regulation, insurers in a competitive marketplace may have the incentive to under-reserve in the short run to grow market share. Clearly, this is not sustainable in the long run as under-reserving threatens the ability of the insurer to pay future claims. To address this problem, the OSFI oversees the valuation of loss reserves. Every P/C insurer in Canada must have reserves valued by an appointed actuary, where the duties of the actuary are laid out in the *Insurance Company Act*, and are subject to peer review. Item 369.1 notes that "*The actuary of a company shall report in writing to the Chief Executive Officer and Chief Financial Officer of the company any matters that have come to the actuary's attention in the course of carrying out the actuary's duties and that in the actuary's opinion have material adverse effects on the financial condition of the company and require rectification*".²⁴

In addition to the supervision of specific requirements (capital, loss reserves, investment strategies), the OSFI takes a holistic approach to the management of insurance company risks, using an (undisclosed) risk rating system that examines each company based on its specific circumstances. The OSFI's approach to solvency monitoring is intentionally different from the U.S. approach:

In Canada, we do not look at ratios; we try to analyze the risks facing the company and the quality of its risk management. Our approach is really based on understanding each company and the unique risks that the company faces. (Private communication, OSFI, 11 June 2009)

The OSFI also monitors the products offered by financial institutions that could negatively impact the financial health of institutions. In 1991, the OSFI issued a memorandum to all P/C insurers effectively banning the underwriting of financial

²⁰ Financial data on OSFI's website reports that the combined MCT (BAAT) ratio for the industry at the end of the third quarter of 2010 was 236.8 per cent (332.2 per cent).

²¹ Mariga (2009).

²² Organisation for Economic Co-operation and Development (2010).

²³ Swiss Re (2008).

²⁴ http://www.osfi-bsif.gc.ca/osfi/index_e.aspx?DetailID=527.

guarantee insurance. The memorandum noted that the purpose of this coverage was to enhance the credit rating of borrowers or support lending arrangements outside of what might otherwise be offered. The risks inherent with this product differed substantially from the type of risks that insurers traditionally underwrote and that capital and regulatory requirements were not designed for that type of product. As a result, financial guarantee risks were not deemed to be properly insurable risks for registered insurers. The OSFI has since modified its position, allowing for exceptions to be permitted under certain conditions for infrastructure projects; however, the restriction remains generally in effect.

Ex post regulatory structure

To promote confidence in the insurance industry, there is a role for *ex post* regulation to take corrective actions to prevent failure of an insurer and to develop a formalised distressed resolution plan in case failure cannot be prevented. Insolvency rules in Canada (as in most other countries) apply on a legal entity basis and differ across types of business within the financial group. In Canada, distress resolution for financial institutions is governed for the most part by four statutes: the *Bankruptcy and Insolvency Act*, the *Companies Creditors Arrangement Act*, the *Canada Deposit Insurance Corporation Act* and the *Winding-up and Restructuring Act (WURA)*. The applicable statute depends upon the legal entity.

The insurance company distress resolution framework is the *WURA*, and other financial institutions may use a combination of statutes depending on their operations. Issues arise because the *WURA* is an outdated statute with many of its original provisions for insurance companies from 1882 still largely intact. Internationally, most jurisdictions have more recently updated their insolvency legislation. For example, the European Union Directive on Reorganisation and Winding-up of Insurance Undertakings was introduced in 2001.

The international nature of most financial institutions further complicates issues because international agreements and insolvency frameworks may also have a role to play. These various frameworks have different approaches and in some areas are in conflict, creating the potential for a difficult, messy and confidence-reducing resolution of a financial group. With substantial and complex intra-group financial transactions that generate additional complexity, conflicting approaches to distress resolution embedded within the statutes create additional risks.

In addition to formalised *ex post* regulation, Canada has formalised solvency insurance plans for life insurance products, P/C insurance products and bank deposits to protect claimants if financial institutions fail. Unlike distress resolution statutes that apply to legal entities, formalised solvency insurance schemes apply to the individual purchasers of the products. Within a group structure, there may be different legal entities covered under different solvency insurance schemes; legal entities may sell products that are uninsured and because solvency insurance schemes protect individuals and not corporations, protection is not afforded to affiliate companies that hold these insured products. These issues can create conflicting incentives both in distress resolution and in the risk-taking behaviour of distressed financial institutions.

Figure 1. International comparison of investment in securities for P/C insurers.
Source: Organisation for Economic Co-operation and Development.²²

Regulation and financial crisis

The global financial crisis of the period 2007–2009 resulted in the failure of a number of large financial institutions across many international jurisdictions. At the height of the crisis, nearly three dozen large international financial institutions with assets of more than CAD\$24.5 trillion were financially distressed. National governments provided an estimated CAD\$1.6 trillion in bail-outs or financial support to banks,

insurance companies and investment banks. Some estimates put the total support at CAD\$15.16 trillion, which includes central bank actions, government guarantees and capital support for institutions.²⁵ While the bulk of the crisis occurred within the deposit-taking industry, several insurance and bancassurance groups in the United States and Europe were also affected, largely by their non-insurance operations.

Among the G-8 group of countries, only Canada did not provide financial support to distressed financial institutions.²⁶ Structural factors as well as the regulatory architecture contributed to this stability. Despite weathering the crisis better than most countries, Canada was not fully insulated from the crisis largely due to the global nature of its financial services industries. The Canadian operations of all of Canada's banking and insurance companies remained solvent throughout the crisis, but 26 companies (9 deposit-taking institutions and 17 insurance companies) with total assets in Canada of CAD\$82 billion were subsidiaries of at-risk foreign institutions, and as such were vulnerable to dissolution during the crisis period.

Structure of Canadian financial sector and the financial crisis

One key lesson from the financial crisis is the need for effective *ex ante* and *ex post* supervision of financial groups. In Canada, this is facilitated by the structural organisation of related entities in the financial services sector. Because of ownership laws, the largest financial groups are organised with the regulated entity (usually a bank) as the primary institution. The large banks own the various OSFI-regulated institutions (insurance companies); non-OSFI-regulated financial institutions (securities dealers and mutual funds) and non-financial institutions (holding companies and distribution agencies).²⁷ This is in contrast to other jurisdictions in which holding companies are the controlling entity for many financial groups.

With the OSFI-regulated entity at the top of the organisation, the prudential regulator can more effectively oversee the entire set of risks within the financial group. It is also effectively able to extend its supervisory system into the non-regulated entities of the group. For example, most of the securities dealers (by volume) in Canada are owned by OSFI-regulated institutions. Thus, even though they are not formally regulated by OSFI, they are held to the same prudential standards as the parent-regulated institution.²⁷ With respect to *ex post* measures, the structural features of the large financial groups enable OSFI to intervene and require corrective action in problem areas for all members of the group, regulated and non-regulated. In the event of a failure, the regulator is also better positioned to coordinate a fair and effective resolution process.

However, many smaller deposit-taking institutions and insurance companies are organised through a holding company structure. As such, the benefits that arise from

²⁵ Haldane (2009).

²⁶ From Claessens *et al.* (2010), the size of financial sector capitalisation programmes for the other G-8 nations ranged from a low of 0.7 per cent of GDP in Italy to a high of 5.2 per cent of GDP in the United States. Of "advanced" economies, Canada, Australia and Spain alone did not provide capital injections to the financial sector.

²⁷ Dickson (2009).

having the OSFI-regulated entity at the top of the organisation do not apply. Nonetheless, even in the holding company structure, the key issue is the ability of the supervisor to see the entirety of the group. Absent the ownership rules cited above, this can be achieved by having an integrated solvency supervisor or having appropriate powers to demand records and information of all affiliated entities, both regulated and non-regulated.

Ex ante regulatory framework and the financial crisis

The Canadian *ex ante* supervisory system has been credited with maintaining the stability and soundness of the Canadian financial system through the global financial crisis.²⁸ As Table 1 illustrates, higher Canadian and Australian capital standards and compliance with the International Association of Insurance Supervisors (IAIS) standards appear to stand out as key differences between these two countries and jurisdictions that required taxpayers to support financial institutions.

Three particularly salient components of the supervisory system that contributed to the stability of the Canadian financial system are capital requirements, a holistic risk management approach to firm viability and oversight of the inherent risks in the system.

The IMF found that Canadian capital requirements for deposit-taking institutions were more stringent than required under Basel II and other G-7 countries.²⁸ Similarly, an Insurance Bureau of Canada sponsored study²⁹ and an AON Benfield report³⁰ found that Canadian P/C insurance capital requirements were higher than other comparators. In addition to maintaining higher capital requirements, differential margins in insurer solvency tests encourage insurers towards less risky assets, as can be observed in Figure 1. Further, the capital framework requires the Board of Directors to directly participate in the setting of capital targets for the institution.

In terms of compliance with IAIS core principles, particularly those related to prudential oversight, both Canada and Australia prudential supervisors were found to be highly compliant. Table 1 summarises the core principles and the level of observance for each jurisdiction. Canada was found to comply with 26 of the 28 principles (92.9 per cent), with oversight of intermediaries and consumer protection being the two core principles in which Canada was not compliant. However, this stems from the fact that the OSFI does not have a market conduct mandate. In contrast, the table illustrates that most other jurisdictions were found not to be in observance for one or more critical elements of prudential supervision. These elements include conduct of on-site reviews, group supervision and information-sharing among supervisory authorities. The data in Table 1 suggests a correlation between the financial support given in each jurisdiction to groups with insurance subsidiaries and the lower level of prudential oversight.

²⁸ IMF (2009).

²⁹ Insurance Bureau of Canada (2003).

³⁰ AON Benfield report (2009).

Despite the overall success of the Canadian supervisory system in preventing insurer failures, it is important to note that weaknesses remain. The IMF reviews of OSFI conclude that the OSFI observes the IAIS core principles. However, there are also nine provincial prudential supervisors overseeing predominantly smaller but numerous insurance companies. Many of these provinces would not be found in compliance with the IAIS standards.

Ex post regulatory framework and the financial crisis

Table 2 shows a comparison of the *ex post* regulatory frameworks for the same countries as shown in Table 1—focusing on both the solvency insurance schemes and the distress resolution frameworks.

In most jurisdictions the distress resolution framework is an important but generally neglected component of the regulatory architecture.³¹ This was highlighted in the global financial crisis, where it was demonstrated to be one of the weakest links in most national financial sector stability frameworks. This uncertainty in both the process and outcome leads to reduced consumer confidence in financial institutions.³² In addition, the lack of a credible resolution framework and the implicit government guarantees generate moral hazard, encouraging greater risk-taking in the future.

In addition to having a modern insolvency framework to provide public confidence in the fair resolution of financial institutions, coordination within complex financial groups is essential. Typically, existing protection systems are not focused on the legal group entity but on a specific financial product, providing protection and resolution services for consumers of that product. Guarantee funds have specific mandates and objectives related to achieving resolution for the entities for which they provide protection. A guarantee fund may need to ring-fence its own position to protect the consumers that it serves, potentially impacting other consumers of that financial conglomerate. With complex intra-group transactions and information technology systems, unilateral action by any one guarantee fund could lead to a cascading failure throughout the financial group.

Financial groups with international business operations face additional challenges due to cross-border issues. Jurisdictions may have different resolution frameworks based on fundamentally different approaches. With a territorial approach, the domestic authority ring-fences assets within the jurisdiction, giving preferential treatment to claimants within that jurisdiction. The universal approach looks at the failed institution across all jurisdictions, treating creditors of the same class from different jurisdictions in the same manner. Countries like Canada and Australia use

³¹ This is true in Canada as well as elsewhere. It is also reflected in the IMF's Financial Sector Assessment Programme (FSAP). While sections 5 and 9.3 of the FSAP handbook recognise the insolvency framework for financial institutions, it has generally not been included in the FSAP country assessments. In the June 2000 Canadian assessments, only the report on the securities industry reviews the guarantee fund system, but the insolvency framework is not assessed for any financial services industry. Subsequent updates have not addressed this gap.

³² See, among others, Bruni and Llewellyn (2009), Claessens *et al.* (2010).

Table 1 Comparison of selected international insurance solvency supervisory systems

	Canada ^a	Australia	United States	United Kingdom	Solvency I	Solvency II
Capital support to financial institutions (2008) CAD\$billion CAD ^b	CAD\$0	CAD\$0	CAD\$155.47	CAD\$68.61	France: CAD\$8.81 Netherlands: CAD\$47.24	
Industries under common regulator	Banks, trust & loan, P/C, life, pension funds	Banks, P/C, Life, credit unions, superannuation	Insurance	Banks, insurance, securities, stock exchanges	France: Insurance Netherlands: banks, insurance, securities, pensions	
Capital level required (as a ratio of U.S. RBC)	2.3	2.7	1.0	2.1	0.6	2.5
Financial condition test	Yes	Yes	Yes	Yes	No	Yes
Financial Sector Assessment Program (FSAP) review on IAIS Insurance Core Principles (out of 28 core principles)						
<i>Observed</i>	92.9%	71.4%	39.3%	70.6%	France: 75% Netherlands: 42.9%	
<i>Broadly observed</i>		14.3%	50.0%	23.5%	France: 14.3% Netherlands: 32.1%	
<i>Partially/Not observed</i>	Intermediaries, consumer protection	Licensing, sanctions, winding-up, AML	Group supervision, supervisory authority, AML	On-site reviews	France: Supervisory authority, intermediaries, AML Netherlands: information sharing, licensing, market analysis, group supervision, liabilities, intermediaries, consumer protection	
<i>Date of assessment</i>	2004	2005	2010	2009	2005, 2004	

^aCanadian analyses undertaken separately by Lawrie Savage & Associates.

^bAnnounced capital support to targeted financial institutions/groups with insurance subsidiaries. Does not include TARP funds.

Source: AON Benfield "Regulatory Capital: Requirements on the Rise", June 2009, IMF Financial Sector Assessment Program, Lawrie Savage & Associates (for Canada).

Abbreviation: Anti-Money Laundering.

Table 2 Comparison of selected international insurance distress resolution frameworks

	<i>Canada</i>	<i>Australia</i>	<i>United States</i>	<i>United Kingdom</i>	<i>France</i>	<i>Netherlands</i>
Policy-holder protection fund	PACICC; P/C Assuris; Life	None	State guarantee funds for P/C and life	FSCS; P/C, life	FGAO: Compulsory P/C FGAP: life	None
Coordination among national financial sector guarantee funds	Some Annual meeting of financial sector funds	N/A	No, but national coordination within insurance	Yes. Single financial sector guarantee fund	No. During financial crisis, central bank led international coordination	N/A
Insolvency approach ^a Universal, territorial or modified	Modified	Modified	Universal within U.S.; Territorial otherwise	Universal	Universal among EU institutions; Territorial otherwise	Universal among EU institutions; Territorial otherwise

^aThe universal approach assumes that one insolvency proceeding will be universally recognised by the jurisdictions in which the entity has assets or carries on business; creditors of the same class from different jurisdictions will be treated the same.

A territorial approach assumes that each country has jurisdiction over the insolvency of institutions within their borders. Assets are ring-fenced and no recognition is given to proceedings in course or completed in other jurisdictions.

Modified approaches coordinate across borders where possible but can adopt a territorial approach if necessary.

the universal approach as a default, but when another jurisdiction uses a territorial approach they switch to a territorial approach in their dealings with that country. This is the so-called modified or mixed approach. A lack of coordination can result in resolution authorities adopting approaches that increase the potential for conflict among themselves, with the most challenging situations occurring when there is a misalignment between resolution authority's mandates and the costs of resolution.

It is not surprising that historically, with financial distress situations, the priority of national resolution authorities has been domestic objectives.^{33,34} For example, during the Lehman Brothers resolution, American resolution authorities supported the domestic broker-dealer subsidiary but refused to support or coordinate the resolution of subsidiaries in 49 other countries. Similarly, the resolution of Fortis during the global crisis was largely managed separately by Belgium, Luxemburg and the Netherlands. In contrast, the Belgian, French and Luxemburg authorities cooperated effectively to provide joint support for the resolution of Dexia. This cooperation was facilitated by the structure of the shared exposures to the conglomerate's failure.

International coordination and cooperation have been successfully applied in a number of cross-border financial sector insolvencies. However, the lack of such coordination in the resolution process has in some cases also been a significant impediment, ultimately undermining public confidence. Claessens *et al.*,³⁴ in a review of financial institutions (primarily banks and securities dealers) in crisis, illustrate how a lack of coordination created challenges to resolution. Cairns³³ estimates that the lack of coordination in the resolution of Lehman Brothers destroyed US\$75 billion in value. These issues may not be as severe for P/C insurance companies because the industry is not as susceptible to runs caused by a lack of consumer confidence. However, better international coordination (both supervisory and distress resolution) could have resulted in better outcomes for distressed insurers such as HIH Insurance, Confederation Life and Reliance Insurance Company.³⁵

Recommendations for the regulatory structure of the future

The cause of failure for specific institutions during the financial crisis has been covered in-depth elsewhere. However, a common theme among most of the distressed institutions during the crisis, and prior international distressed institutions, is that they typically belonged to large complex groups and operated in multiple regulatory jurisdictions. Further, as events unfolded, the frameworks in place to respond to failing institutions were insufficient to support public confidence. This was evidenced by the wide variety of extraordinary measures that different jurisdictions took to protect both depositors and policy-holders. Going forward, there is growing concern about the moral hazard engendered by these extraordinary measures.

³³ Cairns (2009).

³⁴ Claessens *et al.* (2010).

³⁵ McQueen (1996), Owen (2003).

Fundamentally, regulation exists to prevent market failure that may arise from market imperfections that vary across different financial institutions. The systemic risks for deposit-taking institutions are fundamentally different from the systemic risks facing insurance companies: investment risk and lack of consumer confidence may induce systemic failures and runs for banks whereas catastrophes are more likely to cause systemic failures in the insurance market. Effective regulatory intervention should ameliorate the impact of the underlying risk. This implies that the regulatory requirements governing deposit-taking institutions should be fundamentally different from those governing insurance companies.

Our review finds that countries at the epicentre of the financial crisis (United States, United Kingdom, Netherlands, France) had relatively low observance of international solvency supervisory standards, particularly with key prudential core principles such as group supervision. In contrast, countries like Canada and Australia that were in observance of prudential core principles did not experience the insolvency of any insurance or other financial institution during the crisis.

We have identified a number of general observations relevant to solvency supervision of financial institutions in general, and P/C insurers in particular. These observations suggest gaps in both the *ex ante* and *ex post* solvency architecture. Given the international nature of the P/C insurance industry, there is a need for improvement in group oversight (especially in the area of enhancing transparency of complex financial transactions) and international development of robust resolution frameworks if firms do fail.

Historically, group relationships have not been accounted for in solvency oversight.³⁶ Given the continuing trend towards internationalisation and the emergence of large international financial conglomerates, the need for solvency assessment at the group level and cooperation across jurisdictions has been noted by supervisory authorities such as the IAIS.³⁷ Fundamentally, prudential regulators have already been tasked with reducing asymmetric information in the insurance marketplace; this now requires an expansion to the international arena. The two *ex ante* regulatory architecture suggestions below recognise the need to improve transparency of transactions in this increasingly global, interconnected marketplace.

- Solvency supervisors should require all financial institutions to annually submit an organisational infrastructure map, identifying all legal entities, the location of critical information technology systems and the interconnections across affiliates with respect to instruments such as guarantees, contractual commitments or other significant intra-group transactions.
- Supervisors should ensure that regulated financial institutions maintain legal connectivity with assets and information technology during intra-group transactions.

Prior research on insurance company insolvency found that many of the causes of insurance company insolvency—particularly governance and operational risks—

³⁶ Darlap and Mayr (2006).

³⁷ IAIS (2009).

cannot be found through analysis of financial indicators.³⁸ Financial risk metrics generally begin to fluctuate up to two years prior to insolvency but also fluctuate for companies that do not become insolvent. Further, no single indicator is a reliable predictor of insolvency. This highlights the importance of using a broad-based enterprise risk management approach to solvency supervision.

The cost of preventing failure is high. There are costs to holding capital in terms of prices, competition and management incentives. Regulators must balance these costs against capital requirements. The role of *ex post* regulation is to ensure confidence in the industry and minimise the possibility of cascading failures within the national and global insurance marketplaces in the event of a failure. Wind-up legislation is meant to provide a legal framework giving policy-holders priority in liquidation. Policy-holder solvency insurance schemes exist to provide liquidity and protection from shortfalls for policy-holders.

The need for a robust resolution framework of multinational insurers is of particular importance for Canada. With its significant foreign ownership, international and cross-border issues are critical for Canadian regulators. All but one of the institutions wound up by OSFI since 1990 were liquidity risks rather than insolvency risk, reflecting the mandate of the supervisor to protect Canadian policy-holders in instances where the foreign parent is financially weak. This also appears to be an increasing trend in Europe where 23 insurers have had winding up proceedings initiated under the Winding-up Directive (which applies to cross-border cases) in the period 2007–2010, compared with nine primarily national failures during the period 2001–2006.³⁹

The lack of a robust framework for resolution of distressed financial conglomerates has been noted by Herring⁴⁰ and more recently by the Basel Committee for Bank Supervision.⁴¹ It has also been recognised by the Financial Stability Board, which, at the behest of the G-20 countries in the November 2008 Washington declaration, has begun to study the issue. The United Nations Commission on International Trade Law also has a working group developing a framework for cross-border insolvencies.⁴² However, there has been less research addressing approaches for winding-down a financial conglomerate.⁴³ The literature rarely goes so far as to propose a framework, typically focusing on specific tools such as supervisory colleges for cross-border coordination and contingent capital. While extremely useful, none of these tools is a panacea.

Because of the interconnectedness of the financial sector, our recommendations with respect to improvements in *ex post* regulatory architecture contain both national and international elements:

- Include the insolvency framework in IMF's FSAP reviews of the financial sector.

³⁸ Leadbetter and Dibra (2008), Kleffner and Lee (2009).

³⁹ Data compiled from Oxera (2008) and from notices published in accordance with Article 14 of European Parliament and Council Directive 2001/17/EC on the Reorganisation and Winding-Up of Insurance Undertakings.

⁴⁰ Herring (2003).

⁴¹ BCBS (2010).

⁴² This initiative is for all sectors, including but not exclusive to the financial sector.

⁴³ Kaufman and Seelig (2002), Herring (2009), Claessens *et al.* (2010), Huertas (2010).

- Establish an integrated insolvency framework that encompasses a complete resolution framework for financial institutions to increase the capacity to respond to group failures and enhances the transparency and comprehensibility of the resolution framework for stakeholders. Understanding of the rules for distress resolution is a key element in establishing public confidence in the distress resolution framework.
- Modernise the insurance insolvency statutory provisions to enhance asset realisation and reduce timelines for the resolution of a failed insurance company.
- Establish a protocol for resolution of distressed financial conglomerates that activates the contingency and readiness plans of the relevant guarantee funds.

This review, comparing the experience of the Canadian regulatory architecture during the global financial crisis with that of other jurisdictions, highlights the importance of a holistic risk management approach to firm viability and oversight of the inherent risks to the legal entity and the complete group structure. Further, a robust distress resolution framework is necessary to mitigate moral hazard and provide policyholders with confidence in the system.

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References

- A.M. Best (2004) *Best's Insolvency Study Property/Casualty U.S. Insurers 1969–2002*, Oldwick, NJ: A.M. Best.
- Akerlof, G.A. (1970) 'The market for "Lemons": Quality uncertainty and the market mechanism', *Quarterly Journal of Economics* 84(3): 488–500.
- AON Benfield (2009) 'Regulatory Capital: Requirements on the Rise', June 2009, from http://www.aon.com/attachments/reinsurance/200909_ab_analytics_regulatory_capital_report.pdf.
- Baltensperger, E., Buomberger, P., Iuppa, A.A., Keller, B. and Wicki, A. (2008) 'Regulation and Intervention in the Insurance Industry—Fundamental Issues', *The Geneva Reports—Risk and Insurance Research* 1, from http://www.genevaassociation.org/Publications/Geneva_Reports.aspx.
- BCBS (2010) 'Report and recommendations of the Cross-border Bank Resolution Group', March 2010, from <http://www.bis.org/publ/bcbs169.htm>.
- Bruni, F. and Llewellyn, D.T. (eds.) (2009) *The Failure of Northern Rock: A Multidimensional Case Study*, Vienna: SUEF.
- Cairns, A. (2009) 'Breaking the insolvency mould', *International Corporate Rescue* 6(2): 115–117.
- Chen, R. and Wong, K.A. (2004) 'The determinants of financial health of Asian insurance companies', *Journal of Risk and Insurance* 71(3): 469–499.
- Claessens, S., Dell'Ariccia, G., Igan, D. and Laeven, L. (2010) *Lessons and policy implications from the global financial crisis*, IMF Working Paper 10/44.
- Claessens, S., Herring, R.J. and Schoenmaker, D. (2010) 'A safer world financial system: Improving the resolution of systemic institutions', *Geneva Reports on the World Economy* 12.
- Cummins, J.D., Harrington, S.E. and Niehaus, G. (1995) 'Risk-based capital requirements for property-liability insurers: A financial analysis', in E.I. Altman and I.T. Vanderhoof (eds.) *The Financial Dynamics of the Insurance Industry*, New York: Irwin Professional Publishing.
- Darlap, P. and Mayr, B. (2006) 'Group aspects of regulatory reform in the insurance sector', *The Geneva Papers on Risk and Insurance—Issues and Practice* 31(1): 96–123.

- Dickson, J. (2009) 'Remarks by Superintendent Julie Dickson, Office of the Superintendent of Financial Institutions Canada (OSFI) to the INSOL Eighth World Quadrennial Congress', Consolidated Oversight and the Special Nature of Financial Institutions, Vancouver, BC, from http://www.osfi-bsif.gc.ca/app/DocRepository/1/eng/speeches/insol09_e.pdf.
- Financial Services Authority (2010) 'Reporting, Disclosure and Market Discipline (Pillar 3)', from <http://www.fsa.gov.uk/Pages/About/What/International/solvency/reporting/index.shtml>.
- Government of Alberta: Finance and Enterprise (2011) from <http://www.finance.alberta.ca/business/insurance/index.html>.
- Haldane, A.G. and Alessandri, P. (2009) *Banking on the State*, 25 September 2009, from <http://www.bankofengland.co.uk/publications/speeches/2009/speech409.pdf>.
- Herring, R.J. (2003) 'International financial conglomerates: Implications for bank insolvency regimes', in G. Kaufman (ed.) *Market Discipline in Banking: Theory and Evidence*, Amsterdam: Elsevier.
- Herring, R.J. (2009) *Wind-down plans as an alternative to bailouts*, Pew Financial Reform Project, Briefing Paper no. 15.
- Huertas, T.F. (2010) 'Living Wills: How Can the Concept be Implemented?', Director, Banking Sector, Financial Services Authority, Vice Chairman, CEBS, from http://www.fsa.gov.uk/pages/Library/Communication/Speeches/2010/0212_th.shtml.
- IMF (2009) *Canada: 2009 Article IV Consultation—Staff Report; Staff Statement; and Public Information Notice on the Executive Board Discussion*, IMF Country Report no. 09/162, from <http://www.imf.org/external/pubs/ft/scr/2009/cr09162.pdf>.
- Insurance Bureau of Canada (2003) *International Capital Requirements for the P/C Insurance Industry: A Summary Report*, Toronto, ON: Insurance Bureau of Canada.
- Insurance Companies Act, S.C. c. 47. (1991) Published by the Minister of Justice, Canada.
- International Association of Insurance Supervisors (2009) *Guidance paper on the use of supervisory colleges in group-wide Supervision*, IAIS Guidance Paper no. 3.8, from http://www.iaisweb.org/_temp/Guidance_paper_No_3_8_on_the_use_of_supervisory_colleges_in_group-wide_supervision.pdf.
- Kaufman, G.G. and Seeling, S.A. (2002) 'Post-resolution treatment of depositors at failed banks: Implications for the severity of banking crises, systemic risk, and too big to fail', *Economic Perspectives* 26(2): 27–41.
- Kelly, M., Kleffner, A.E. and Li, S. (2011) *Insurance regulation and the composition of insurance markets*, Working paper. Wilfrid Laurier University and University of Calgary.
- Kleffner, A.E. and Lee, R.B. (2009) 'An examination of property and casualty insurer solvency in Canada', *The Journal of Insurance Issues* 32: 52–77.
- Leadbetter, D. and Dibra, S. (2008) 'Why insurers fail: The dynamics of property and casualty insurance insolvency in Canada', *The Geneva Papers on Risk and Insurance—Issues and Practice* 33(3): 464–488.
- Leadbetter, D. and Stodolak, P. (2009) 'Why insurers fail: Inadequately pricing the promise of insurance', Property and Casualty Insurance Compensation Corporation Publication.
- Mariga, V. (2009) 'Finding the black sheep', *Canadian Underwriter* 76(5): 36–38.
- McDonnell, W. (2002) 'Managing risk: Practical lessons from recent "Failures" of EU insurers', Financial Services Authority *Occasional Paper Series* 20.
- McQueen, R. (1996) *Who Killed Confederation Life? The Inside Story*, Toronto: McClelland & Stewart.
- Office of the Superintendent of Financial Institutions Act, R.S. c. 18 (1985) (3rd Supp.), Published by the Minister of Justice, Canada.
- Organisation for Economic Co-operation and Development (2010) *OECD Insurance Statistics*, DOI: 10.1787/ins-data-en.
- Owen, N. (2003) *The failure of HIH: A Corporate Collapse and Its Lessons*, Vol. 1, in Report of the HIH Royal Commission from <http://www.hihroyalcom.gov.au/finalreport/index.htm>.
- Oxera (2008) *Insurance Guarantee Schemes in the EU: Comparative Analysis of Existing Schemes, Analysis of Problems and Evaluation of Options*, Final report prepared for the European Commission DG Internal Market and Services.
- Plantin, G. and Rochet, J-C. (2007) *When Insurers Go Bust: An Economic Analysis of the Role and Design of Prudential Regulation*, Princeton: Princeton University Press.
- Skipper, H.D. (1998) 'Rationales for government intervention into insurance markets', in H. Skipper (ed.) *International Risk and Insurance*, Boston, MA: McGraw-Hill, pp. 236–260.
- Swiss Re (2008) 'Non-Life Claims Reserving: Improving on a Strategic Challenge', Sigma no. 2/2008, from http://media.swissre.com/documents/sigma2_2008_en.pdf.

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