LEARNING FROM THE CANADIAN AND AMERICAN SUBPRIME EXPERIENCE: DIFFERENCES, SIMILARITIES AND LESSONS

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**Presented at the 2nd CUTS-CIRC Conference
On Reviewing the Global Experience with Economic Regulation –
A forward looking perspective
April 18-20 2011 New Delhi**

"... I didn't see the subprime crisis coming ... I was aware a lot of these [questionable lending] practices were going on, I had no notion of how significant they had become until very late. I didn't really get it until very late in 2005-2006 ... There's nothing to look into particularly because we knew that there was a number of such practices going on, but it's very difficult for banking's regulators to deal with that."[2]

"Bankers – and the rating agencies – believed in financial alchemy. They thought that financial innovations could somehow turn bad mortgages into good securities, meriting AAA ratings. But one lesson of modern finance theory is that, in well functioning financial markets, repackaging risks should not make much difference ... Worse, banks failed to understand the first principle of risk management: diversification only works when risks are not correlated, and macro-shocks (such as those that affect housing prices or borrowers' ability to repay) affect the probability of default for all mortgages ... The only thing we got wrong was how bad banks' lending practices were, how non-transparent banks really were, and how inadequate their risk management systems were".[3]

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[2] Alan Greenspan, interviewed on the CBS program 60 Minutes, September 2007

[3] Joseph Stiglitz interview on "Financial Alchemy", September 18 2008

Abstract

The American subprime mortgage crisis and subsequent financial crisis of 2007-2008 had devastating effects on the American and many other OECD country economies. In sharp contrast, Canadian problems with subprime and other higher risk mortgages were relatively modest, the economic recession in Canada was shorter and less severe, and through to the early Spring 2011 the Canadian economic recovery has been somewhat stronger.

Canada's stronger, more concentrated and comprehensive, and better enforced financial regulatory regime has received most of the credit for the country's comparatively favorable financial and economic performance over the past half decade. And yet, the lending practices and subprime mortgage agents, lenders, and insurers that were major causes of the American crisis were starting to creep into Canada just before and then during the period when the American subprime boom turned into the subprime bust.

The major argument of this paper is that, while the mortgage and some other aspects of the Canadian financial regulatory regime may be superior to their American counterparts, many non-regulatory factors are also important to explaining why an American style subprime mortgage crisis did not take place in Canada. Canada's financial sector is more highly protected and concentrated, and less competitive and innovative than the American financial sector. The high profits that result from supplying financial services to oligopoly markets indicate that Canadian commercial banks and other financial intermediaries did not have to adopt higher risk products, lending practices and related strategies in order to remain profitable and expand their scale of operations during the past decade.

Non-regulatory factors are also important. The more conservative and risk averse character of Canadian banks, non-financial businesses, financial consumers, regulators and governments likely played some role. The target market of vulnerable consumers for high risk mortgages and predatory and fraudulent lending practices is much smaller and geographically more dispersed in Canada. Some credit should be given to the efforts of Canadian bankers, regulators, consumer protection agencies and civil society groups to increase financial literacy and consumer awareness of mortgage and other financial risks. Political decisions in the past that impeded the efforts of Canadian banks to become larger global players in international financial markets also contributed to the "Canadian escape" from the subprime mortgage crisis south of the border.

When these and other non-regulatory factors are fully considered, Canadian pride in the "superiority" of its financial regulatory regime and Canada's current complacency that such a crisis "could never happen here" could be misplaced. Canadian and other governments should assess in detail the demand-side consumer protection lessons from the American subprime mortgage crisis and incorporate these lessons into future national and international financial sector regulatory reforms in order to better protect their financial consumers from the next national and global financial sector crisis.

The paper illustrates as well that analyses of major regulatory failures in one country and comparative analysis of regulatory performance in different countries require more holistic analytical approaches that take account of a wide range of economic, cultural and political economy variables and relevant economic, financial and business strategy literatures.

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1.0 Introduction[4]

The American subprime mortgage crisis of 2007 and the first half of 2008 subsequently "morphed" into (i) the global housing bubble and financial crisis, (ii) an American and then global economic recession that is now judged to be the most serious since the Second World War, (iii) unprecedented declines in virtually every stock exchange in the global economy though 2008 with only modest and fitful recovery since then, (iv) the bankruptcy of one sovereign state, Iceland, (vi) the bankruptcy, government bailout and/or partial or full nationalization of major international (and once highly profitable) commercial and investment banks and insurance companies, which started with the forced sale of Bear Stearns to JPMorgan Chase in March 2008, continued with the Lehman Brothers bankruptcy in September 2008 and ended with federal government conservatorship for Fannie Mae and Freddie Mac and the virtual disappearance of the New York based investment banking industry during the rest of 2008 (Reiss 2009 and Fell 2009), and (vii) the weak and perhaps unsustainable global economic recovery since then, which feels more like the continuation of the 2008-2009 recession for many countries, businesses, workers and consumers.

The purpose of this article is to explore and attempt to answer why the American subprime mortgage boom, bust and debacle did not also take place in Canada, and what this might mean for future financial market regulatory reform in Canada, other national economies, and the global economy. Particular emphasis is placed on the consumer protection issues and the insights provided by recent advances in the literatures on information, behavioural and industrial organization economics and financial literacy. The insights from these literatures are relevant not only to the original household

[4] An earlier version of this article appeared in Ireland and Webb (2010).

purchasers of these high-risk mortgages; but as well to the purchasers of the subsequent "innovative financial products" that packaged together these subprime mortgages into what were first considered to be high-grade mortgage backed securities but are now called "toxic assets".

The two authors' major argument is that, while the mortgage and some other aspects of the Canadian financial regulatory regime may be superior to their American counterparts, Canadian pride in the "superiority" of its financial regulatory regime and Canada's current complacency that such a crisis "could never happen here" could be somewhat misplaced. The lending practices and subprime mortgage agents, lenders, and insurers that were major causes of the American crisis were starting to creep into Canada just before and then during the period when the American subprime mortgage boom turned into the subprime bust.

Non-regulatory factors were also important in preventing an American style subprime crisis in Canada. These include: Canada's more protected and concentrated and less competitive and innovative financial sector; the "second-mover" advantages that are at times associated with more conservative and cautious governments, regulators, financial service providers and their customers; arguably Canadian political decisions at the end of the 1990s that prevented full deregulation and bank mega-mergers, which their proponents argued were imperative for Canada's major banks to reach global scale and become globally competitive and fully integrated into the American and international financial markets; as well as timing and a bit of luck.

The structure of the analysis is as follows. Section two examines the American subprime mortgage crisis largely from a demand-side consumer protection perspective.

The third section looks at why Canada was largely spared a serious subprime mortgage problem, with special attention to the interactions between regulatory and non-regulatory explanatory factors. The final two sections provide a conjecture on what might have occurred in Canada if the subprime boom had lasted 3 to 5 years longer in the United States, and summarize the major conclusions and possible lessons for future regulatory analysis and reform in Canada, other countries and the global economy.

2.0 Overview of the American Subprime Mortgage Crisis[5]

2.1 Its History and Major Consequences

For over a decade, subprime mortgages in the United States were a good news story that had strong political, financial sector, and voter support. This support included but went beyond the second Bush administration and its political and ideological advocates. As described in Figures I and II below, the number of subprime mortgages grew slowly during the 1990s but became much more popular in the first half of the current decade to account for better than 20% of all home mortgages in the mid-2000s.

These mortgages, which charge higher interest rates to higher risk households with weak credit ratings or no credit history, allowed a large number of lower income, often minority, households in the inner cities and working class suburbs to own their first home and thus participate in the "American dream" of building equity and wealth through home ownership. As a consequence, the overall home ownership rate in the United States increased from 64% in the early 1990s when subprime mortgages were first

[5] This and the next section are essentially a shorter and updated version of a case study that one of the authors, Derek Ireland (2008), prepared for the Office of Consumer Affairs (OCA), Industry Canada, in the Spring of 2008. Of course, all of the usual disclaimers apply.

introduced to 69% in the mid-2000s, which moved the U.S. into the top tier of countries in this housing indicator.[6]

The financial service provider that originates the mortgage loan normally carries the risk of default. However, through using a form of financial engineering or "product innovation" called securitization, the higher risks to mortgage issuers of lending to lower income households were mitigated, shared and passed along the subprime mortgage "value chain" to typically larger investment banks, pension funds, hedge funds and other investors first in the United States and subsequently throughout the global economy.

This was accomplished though packaging these subprime mortgages into residential mortgage backed securities (RMBS), which often were then repackaged (through "resecuritization") in whole or in part into collaterized mortgage obligations (CMO) or collaterized debt obligations (CDO). "Resecuritization" was conducted in order to further improve their investment quality and attractiveness to mutual and pension funds and other institutional and retail investors (Gelpern and Levitin 2009).[7] These "wonders of securitization" received high ratings for a long time from credit rating agencies. In the process, all participants in the "value chain" summarized in Figure I on the next page, except of course for the original homebuyer, earned huge fees from these transactions (Fell 2008).[8]

Figure I: Overview of the American Subprime Mortgage "Value Chain"

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[6] For purposes of comparison, Canada had a similar home ownership percentage in 2006 despite income per capita that was 23% below the American figure (based on purchasing power parity).

[7] Throughout the rest of this article, the terms RMBS and mortgage based securities will be used to cover all of these securitization products.

[8] The two way-arrows on the right hand side in Figure I attempt to capture how information asymmetries, overly rigid products and contracts, behavioral biases, and incentive, agency and collective action problems at one stage generate negative externalities that affect preferences, decisions, and outcomes at other stages of the subprime mortgage value chain.

American and global regulatory regime: virtually non-existent for cross-border transactions and an American regime with many serious gaps (no regulation of the "shadow banking system"); limited regulator understanding of and interest in the transactions and products that comprise the value chain; and regulators that faced political, business and ideological pressures and related incentives to apply regulatory forebearance (shirking), intervene rarely, and respond hesitantly to emerging subprime crisis.

Buying and selling subprime mortgage backed securities in an expanding **secondary market**, which in time included Fannie Mae and Freddie Mac (whose charters supposedly limited them to the <u>prime</u> secondary market). As well as to financial intermediaries in other countries, which allowed them to participate and "more fully share in" the American housing boom and higher subprime yields and the subsequent subprime crisis and global financial contagion.

Other financial intermediaries, including many that are not mortgage lenders and therefore have limited knowledge of the real estate market, purchase the mortgage backed securities in order to benefit from the higher interest rates and yields and future income flows, their apparently lower risk and high credit ratings, and the expanding secondary market.

High safety ratings from **credit rating agencies**, partly because the subprime business generated high fees for them and all other participants in the value chain. Rating agencies as well started to be investment bankers – a clear conflict of interest.

Mortgage originators sell mortgages to **special purpose vehicles (SPVs)** for packaging (securitization) into RMBS, which are then sold under very rigid pooling and service agreements (PSAs). SPVs, which are passive managers and cannot file for bankruptcy in order to save on income tax, add to rigidity of RMBS and the entire value chain through effectively precluding the renegotiation of the PSAs and underlying mortgages.

Banks and other mortgage originators conduct (often minimal) due diligence using automated underwriting/loan approval techniques, and then receive and process the mortgage agreement and sell the agreement along with many others. Originator incentive is to issue as many high-rate subprime mortgages as possible and package and sell them as quickly as possible to transfer the risk to other financial intermediaries. This allowed them to ignore questionable and declining borrower and subprime product quality as the subprime market became saturated by the mid-2000s. If low income households default, the bank can simply foreclose and sell the house at a profit because of the housing boom which they expected to continue for a long time.

Independent mortgage brokers, acting on behalf of mortgage lenders, compete vigorously and sell adjustable rate mortgages largely to lower income minority families with poor credit histories and limited financial literacy skills and experience, who live for the most part in inner cities and lower income suburbs. **Broker incentive** is to sell as many mortgages as possible – regardless of the socioeconomic circumstances and ability to repay of the borrower – leading to fraudulent and predatory lending and deceptive selling practices. **Borrower incentive** is to accept the adjustable rate subprime mortgage given: limited understanding and high pressure sales tactics, the hope that household income will be much higher in a few years time (despite limited gains for most lower income households for decades), the hope that the house will appreciate in value to allow later refinancing at more affordable terms, the fear that this is their last chance to "live the American dream" and own their own home, and perhaps the knowledge that the costs of default and "walking away" are serious but bounded for a "nonrecourse" mortgage; therefore, major declines in house prices make the "walking away" option comparatively attractive.

The two way-arrows on the right hand side in Figure I attempt to capture how information asymmetries, overly rigid products and contracts, behavioral biases, and incentive, agency, collective action and related demand-side problems at one stage generated negative network effects and externalities that affected preferences, decisions, and outcomes at other stages of the subprime mortgage value chain.

By 2006 when the subprime market had become saturated, subprime mortgages often required no down payment, no mortgage insurance and 40 years to repay the principal and interest. 80% of these subprimes were adjustable rate mortgages, which contained a low "teaser" interest rate at the outset which increased significantly a few years later. The most extreme example of questionable lending practices was the "NINJA mortgage" which was provided to borrowers with no income, job or assets (Daglish et al 2007 and Fell 2008). Moreover, a growing number of subprime mortgages were being issued to middle income households that were eligible for a conventional mortgage.

This "win-win" situation collapsed like a house of cards starting in late 2006, when relatively small increases in interest rates resulted in sharp declines in house prices, major increases in mortgage defaults and foreclosures particularly by holders of adjustable rate mortgages, and the start of the American subprime market meltdown.

The adjustable interest rate mortgages were often set at rates that many households could no longer afford, particularly after the American economy turned downward and unemployment rates and gasoline prices moved sharply upward. The dramatic increase in defaults therefore was the combined result of higher interest rates, falling house prices, deteriorating household budgets, the end of the "teaser" rates, and other features of the zero down, no insurance, floating-rate interest-only mortgages that made default and walking away from the house the preferred option of many householders.

Another factor was the overly rigid nature of the contracts for both the mortgages and the mortgage backed securities that made modification of these contracts in response to rising interest rates and the collapse of the housing market virtually impossible (Daglish et al 2007 and Gelpern and Levitin 2009). Recent estimates and projections indicate that from 1998 to 2007, about seven million homeowners used subprime mortgages to purchase their homes. About one million had already defaulted on their loans before the end of 2007. This number is expected to exceed two million foreclosures before the crisis is over, since, based on current (late 2010) estimates, the resale value of nearly one-quarter of American homes is less than their mortgages. Furthermore, better than 40 million homes in the same neighbourhoods experienced price declines because of their proximity to these foreclosed properties (Atlas and Drier 2007 and Center for Responsible Lending 2008).

As defaults and foreclosures accelerated, the financial intermediary buyers of RMBS found themselves with too many highly complex and rigid low and no value assets with virtually no buyers. Once it became abundantly clear that the high quality of the subprime mortgage backed securities had been seriously exaggerated by their sellers, purchasers and credit rating agencies (Fell 2008)[9], their market value dropped like a rock to junk bond status, and the safe high quality securities of the recent past became the "toxic assets" of today.

[9] Fell (2008:15-16) notes that many of these very complex structured products received Triple A ratings, which gave them the same credit rating as the U.S Treasury and the Government of Canada, which of course have the ability to tax and print money. When the subprime crisis hit, the ratings on many of these products were downgraded not by one or two levels but rather by up to 15 levels.

Despite assurances from government regulators and financial experts in 2007 that the crisis would be contained within the American mortgage and real estate markets, the subprime crisis was transformed within a year into the global financial crisis of 2008 and the global economic recession of 2009. The impacts of the subprime crisis on global financial markets and the real economy are exacerbated because all of the "bubbles" made possible by deregulation are interrelated and thus resulted in "contagion effects" throughout the global economy (Kuttner 2007).

2.2 The Major Causes of the American Subprime Meltdown

The macroeconomic, financial market, regulatory and other supply-side causes of the subprime meltdown have been well understood and documented, at least after the fact. Interest rates were too low for too long, resulting in excessive leverage in the American and global financial systems and too much money chasing too few high yield low risk investments. The large American investment and other banks from 2000 on were looking for new innovative financial products that provided high returns with little risk. Mortgage backed securities were used to fill this gap for a number of years. Current account and savings imbalances between the United States and its major trading partners particularly China resulted in dissavings in the United States; and households used their houses as "piggybanks" by acquiring subprime mortgages to buy their first home, refinance their existing home, or finance vacations and other regular consumption (Dodge 2008).

According to many critics of the American financial sector, deregulation in the U.S. had gone too far. Many subprime mortgage lenders, brokers and transactions, including the mortgage backed assets, were not regulated under federal law. State law was often weak, poorly enforced or non-existent, and there was a reluctance by all regulators to apply the rules to a market that was providing such obvious economic, social and political benefits. By 2005, only 20% of subprime loans were made by banks and thrifts (savings and loan companies) that were supervised by federal regulatory entities. The remainder were sold by state regulated entities and by totally unsupervised mortgage lenders (Urban Institute 2008).

In many ways, the subprime market and the markets for subprime mortgage based assets collapsed under the weight of their own success. When subprime mortgages to higher risk borrowers represented only 5% of the home mortgage market in the mid-1990s, the situation was for the most part manageable and beneficial. However, ten years later, the market share of subprime mortgages had increased by more than four times and the absolute value of subprimes issued by mortgage lenders had increased almost twenty times. As a consequence, the mortgage market and the American and global financial systems became much too dependent on high-risk subprime mortgages.

As the subprime market became larger and even more profitable, subprime mortgages by 2006 were being provided to increasingly high-risk borrowers at more favorable terms, which approached those of more conventional mortgages. Therefore, the quality of the borrowers and of the subprime product declined significantly, despite evidence of expanding defaults among subprime borrowers. This was the result in part of automated underwriting, which allowed approval of new mortgage applications within thirty seconds (Daglish et al 2007 and Yuliya and van Hemert 2008).

2.3 The Causes and Consequences from the Consumer Protection Perspective

The demand-side, consumer protection and related perspectives and causes of the subprime crisis have also been addressed in detail in academic, think-tank, and other research. This research applies recent advances in information, behavioral, institutional, industrial organization, financial literacy and other economics literatures in order to better understand the American subprime mortgage crisis from a consumer perspective. The following paragraphs summarize some of the major insights from this largely American demand-side literature.

Most of the information asymmetries, behavioral biases and related market failures from the consumer oriented theoretical and empirical literatures are important to understanding the American subprime crisis. The information asymmetries, behavioural biases and mistakes, and incentive, agency, and related problems associated with the questionable lending practices in the initial transaction between the mortgage broker and the lower income households with limited financial literacy skills, were compounded throughout the value chain. This was because many of the subsequent purchasers of the high risk mortgages and mortgage backed securities as well as the government regulators of these financial products and transactions shared many of the same information, behavioural, incentive and agency problems (Figure I and Tasic 2010).

The latter included: (i) the financial intermediary purchasers of the highly complex RMBS; (ii) the American and global financial industries which were too confident in their information, rationality and intelligence, and overly optimistic that the American and global housing booms and strong economic growth would last virtually forever (Fell 2008 and 2009 and Stiglitz 2010); and, (iii) the central banks, financial and other regulators, politicians and other government "consumers" of the advice from financial intermediaries and their experts and lobbyists that the American and global financial sectors knew what they were doing, would not place their financial corporations and the total financial sector at risk, and therefore there was no cause for concern.

In short, greed, stupidity, irrationality, limited cognition, information and foresight, and a total inability to understand risk and risk management were not confined to lower income households (Fell 2008 and Stiglitz 2010). The behavioral bias of over-confidence is particularly important to understanding the rise and collapse of the subprime market. All participants in the value chain in Figure I suffered from too much confidence in their information, their own rationality, cognitive capacities, and decision-making abilities, and in the rationality, cognitive capacities, decision-making capacities and honesty of their financial service providers, advisers and partners (Avgouleas 2009). They all suffered as well from over-confidence in the "self-healing" abilities of markets to solve all financial and other problems in a relatively rapid and painless fashion; and all participants were overly confident that the good times would continue in the North American housing sector and economy and in the international economy.

Similar to the global financial crises of the past, too much confidence and optimism were also displayed by the central bankers of the major G20 economies, the global central bank the International Monetary Fund, and other international financial institutions such as the World Bank. All of these institutions ignored the warning signs of impending financial collapse and therefore were constantly surprised that the contagion started by the American subprime crisis spread so quickly and in so many unanticipated ways to "infect" the entire global financial system and economy (Fell 2008 and 2009).

Incentive and agency problems leading to moral hazard and adverse selection also permeate all parts of the subprime value chain. The household purchasers of subprime mortgages knew that the economic and social costs of default were significant. However, they also knew that these costs were limited to the value of the property itself since the mortgage issuer typically had no recourse to the household's other assets. The mortgage brokers were compensated based on the number and value[10] of the loans they wrote, and earned even higher commissions from writing complex adjustable rate mortgages and convincing households to borrow beyond their means and ability to repay. The broker therefore had no reason to be worried about the ability to repay of their low income customers.

The financial intermediaries that were issuing the mortgage conducted limited due diligence, and often did not require mortgage insurance since they were using mortgage backed securities to shift the risk up the value chain. Securitization and inadequate screening by the issuers and packagers of subprime mortgages facilitated predatory and abusive lending practices, since subprime lenders were able to cover up their predatory and other high-risk loans through securitization, resulting in the adverse selection or "lemons" problem (Akerlof 1970, Engel and McCoy 2007 and Stiglitz 2010).

The subprime crisis was the result as well of too much dependence on, confidence in and deference to so-called financial experts, whose incentives were very different from

[10] Mortgage brokers therefore had a strong incentive to encourage low income households to purchase a house they could not afford, and to encourage somewhat more prosperous households to purchase a larger and more expensive house than they needed or could afford – resulting in two kinds of incentive misalignment that negatively affected the entire "value chain" (Stiglitz 2010).

the recipients of the advice and the purchasers of the subprime mortgages and mortgage backed assets. At times, many financial advisors and experts were in conflict-of-interest situations, leading to information asymmetry and agency problems. They suffered as well from many of the same information and product choice overload and over-confidence problems as the other contributors to the subprime mortgage value chain and crisis.

Many of these incentive and agency problems have focused on the role of rating agencies in the subprime meltdown and subsequent global financial crisis. Under financial deregulation, American governments transferred significant regulatory power to rating agencies, which now have the mandate to determine which securities are safe enough to be purchased by regulated financial intermediaries (Calomiris). Rating agencies nearly always provided the mortgage backed assets with high safety ratings, despite the growing evidence on the low quality of these assets, declining underwriting standards and rising subprime mortgage defaults by households.

Based on these high ratings, the mortgage based assets with their higher yields were purchased at premium prices by banks, pension and hedge funds and other regulated and non-regulated intermediaries. These assets therefore became a very important line of business for rating agencies operating in an oligopolistic but still highly competitive market, where lower ratings would mean the loss of future business (Kuttner 2007). Some rating agencies also became part-time investment bankers and therefore started to rate products that they helped to structure – resulting in an additional conflict of interest (Fell 2008).

Two ironies arise when the above developments are compared with the more conservative prime mortgage market, which features easy-to-understand fixed-rate long term mortgages that are sold to higher income households under tight regulatory controls. The more complex adjustable rate subprime mortgages are sold mainly to lower income households, with less financial market experience, literacy and self-confidence, who in many instances were desperate to own a house for the first time. Furthermore, compared with conventional mortgages, these much higher risk and more complex subprime mortgages issued to lower income households were often not covered by existing federal and state level financial market regulatory regimes in the United States. One would anticipate that more complex financial products sold to less experienced consumers should be subject to more not less regulatory scrutiny.

Perhaps most importantly, the American housing bubble and subprime mortgage crisis and the subsequent global financial crisis provide abundant evidence that adding more suppliers and greater competition and product and vendor choice to financial and other experience and credence goods markets can at times diminish rather than increase consumer welfare and aggregate economic efficiency. The subprime crisis points out the limitations of competition and other supply-side solutions to the challenges and risks posed by financial and many other markets for experience and credence goods to consumers, businesses, regulators and governments.

In many American cities, there were large numbers of brokers and issuers of adjustable rate subprime mortgages; and competition for what appeared to be a highly profitable business was intense. More intense competition led to declining underwriting standards by mortgage issuers (Gerding 2009), and to misrepresentations and other forms of predatory and fraudulent practices by mortgage brokers and other sales agents directed towards a relatively vulnerable and even desperate group of consumers and households. The American subprime mortgage crisis demonstrates that more product choice, more competitors and greater competition are not the solutions to many financial market imperfections, failures, crises and "wicked problems" (Stiglitz 2000, 2001, 2008 and 2010).

Finally, the subprime mortgage crisis demonstrates that protecting consumers from excessively risky loans and predatory and fraudulent lending practices is not simply a regulatory add-on to protect vulnerable consumers from their information, financial literacy, cognition and other behavioral "weaknesses". Rather, consumer protection must be seen as a complementary and integral component to financial health and soundness regulations that are intended to protect financial markets from the collapse of financial institutions and from systemic risk. This is because systemic risk and the risk of financial market contagion and collapse are exacerbated by (i) the information problems and behavioral biases of consumers; (ii) the collective action failures of lenders who conduct questionable lending practices to maintain profits and market share even though such practices place the entire financial system in jeopardy; and (iii) the information problems, cognitive limitations and related behavioral biases of all other participants in financial markets including government regulators.

As a consequence, consumer protection laws are needed not only to protect "unsophisticated" consumers from excessive risk, but also to protect financial institutions and markets from excessive systemic risk. Effectively enforced consumer protection laws that (i) decreased the number of consumer defaults; (ii) made consumer defaults more predictable to lenders as well as to investors in asset backed securities; and (iii) reduced the correlations between consumer defaults; would have decreased systemic risk and the severity of the subprime mortgage and global financial crisis (Gerding 2009).

However, to date, these well documented demand-side insights have played only a small role in current discourse on how catastrophic events and "wicked problems", such as the American subprime debacle and subsequent global financial crisis and economic recession, can be avoided in the future. One major exception is the establishment in June 2009 of the Canadian Task Force on Financial Literacy, which reported to the Minister of Finance in December 2010 (Government of Canada 2010).

A second important exception is the debates on and the establishment of the independent Consumer Financial Protection Bureau in the United States. This was a major component of the Dodd-Frank Wall Street Reform and Consumer Protection Act, which was signed into law by President Obama on 21 July 2010. Critics of the financial sector reform package contend that this bureau is one of its only major accomplishments; however, strong leadership and government support and protection from industry lobbying are essential for the new Bureau to fulfill its mandate to protect consumers from information asymmetries, risks and outright fraud (TWN Third World Network 2010).

3.0 The Evidence and Arguments on Why Canada was Largely Spared from the American Subprime Collapse

This section explores the available evidence on the hypotheses, conjectures and possible reasons why Canada had no equivalent to the U.S. subprime crisis and was spared from the worst of the American subprime market collapse – although not from the subsequent global financial crisis and economic recession. This analysis is based on the very sparse Canadian literature (mainly media reports and a few articles and speeches),[11] the authors' interviews, and the two authors' previous work on consumer policy and consumer protection law in Canada and their implications for financial markets and consumers.

3.1 Comparing the Subprime Histories, Trajectories and Discourse in the Two Countries

Figure II starting on the next page summarizes the quite different histories between the American crisis and Canada's more modest problems with subprime mortgages.

Figure II: Short History of the Subprime Mortgage Crisis In the United States and of the Smaller Problem in Canada

[11] Regarding the media articles and other sources, see in particular: McArthur and McNish (2009a and 2009b), McNish and McArthur (2008), Carrick (2008), Chronicle Herald (2008), Vancouver Province (2008), Durocher (2008), Dobbin (2009), Economic Reform (2009), Francis 2009, Virani (2010) and Banks in Canada (2011). As noted later in this paper, data, academic articles and policy studies on the extent and current and future impacts of subprime and other higher risk mortgages in Canada are very limited, and perspectives vary greatly depending on the source.

Much deeper financial market deregulation and restructuring in U.S. compared with Canada

United States

Introduction of subprime mortgages in **early 1990s** and some growth for the rest of decade.

2000-2004: Major growth in subprimes, mostly (but not only) to lower income households, the result of housing boom, low interest rates, no insurance, no down-payment and/or no income verification, mortgage backed securities (RMBS), and political support and lax regulatory oversight from the Administration and Congress.

2005-2006: housing prices and subprimes move up together and reach their peak; subprimes account for about 25% of all mortgages, and 80% of subprimes are rate adjustable. Serious deterioration in quality of subprime borrowers and of mortgages and RMBS products; while growing numbers are issued to households eligible for regular mortgages. First signs of subprime crisis in late 2006 as interest rates show modest increase and house prices begin their rapid descent.

First Half of 2007: Rapidly falling house prices, rising interest rates and increasing foreclosures result in full subprime crisis – but "experts" contend that crisis will be fairly modest and contained within the American housing and subprime markets.

Second Half of 2007: US housing and subprime markets in freefall. Growing concerns that the subprime crisis will not be contained to US but concerns largely ignored by governments and financial experts.

Canada

Subprime mortgages became visible in Canadian housing market only in 2000s.

Small growth in subprime and other non-standard mortgages with greatest advances in B.C. and Alberta where housing markets were most similar to US. Critics say Canada is behind the US in "innovative financial products".

Some entry of US mortgage insurers (e.g. AIG) and subprime lenders, brokers and agents into Canada, as American housing and subprime markets deteriorate. Arguably encouraged by provisions in first budget of new "laissez faire" Harper government in May 2006.

Subprime penetration on the rise, reaching a peak of about 5% by 2007, but conventional wisdom is that looming US crisis will have no impact on the Canadian housing and financial markets.

Subprime lenders, insurers and mortgages (e.g. 40 years, nothing down, interest-only payments, no proof of income) expanding in Canada. But Canadian governments and experts still say that crisis will be limited to US and will have little impact on more stable and better regulated Canadian housing and financial markets and economy.

Falling house prices and some increase in defaults and foreclosures especially in BC and Alberta indicate Canada is not totally immune (e.g. 10,000 foreclosures with 50% subprime). But extent of problem and risk obscured by limited published data, media coverage and academic, government and NGO research and more stable and stronger Canadian housing market and economy in most regions. Subprime and other non-standard mortgages continued in Canada for 18 months after subprime crisis began in US.

2008-2009: Because of the links between consumer defaults, securitization and systemic risk in financial markets, subprime crisis becomes the global financial crisis in 2008 and the worst global recession of the post-war period in 2009.

Dramatized by the near collapse and forced takeover of Bear Stearns, bankruptcy of Lehman Brothers, federal conservatorship for Fannie Mae and Freddie Mac, and government bailouts and restructuring of most other major American banks and many other global financial institutions in second half of 2008.

With much discourse especially on the supply-side causes and solutions, but limited progress on financial reregulation since then – and with growing financial sector opposition including from the same banks that were bailed out by government.

Subprime problem smaller, Canadian subprimes fewer in number and higher in borrower and product quality e.g. fewer variable rate and no interest products, insurance on all higher risk mortgages, less rigid products and bankers.

American subprime firms retreat (CMHC a clear winner in insurance market), and federal government bans 40-year no down payment mortgages (now 35 years and 5% minimum down payment for government insured mortgages). Canadian banks experience drop in profits but no restructuring and government bailouts.

Canada still affected significantly by global financial crisis and Canadian economy into recession in last quarter of 2008. With less discourse and even less progress on financial reregulation – while contending that Canada provides the financial regulation model for other countries.

Four aspects of the Canadian story are particularly important to our analysis. Media reports provide an interesting shifting narrative.[12] In 2006 and 2007, the media generally said that the crisis cannot happen here. In the first half of 2008, the media tended to say that subprimes did enter Canada but only to a modest degree. From the middle of 2008 and especially in 2009, the media reports more often argued that Canada had a quite

[12] A brief review of media reports and blogs on the subprime crisis and its effects on Australia indicated a similar shifting narrative in that country. Many financial sector analysts see similarities between the Canadian and Australian financial sectors in terms of market structure and other characteristics. Media reports indicated that, compared with Canada, higher risk sub-prime mortgages accounted for an even smaller proportion of the total mortgages issued in Australia at the end of 2007.

Nonetheless, concerns were expressed in 2009 that the government's first home owners program could result in Australia's own subprime mortgage crisis. Future research that compares the two countries in terms of their financial sectors, financial market regulation and their experiences with subprime mortgages and the global financial crisis of 2008-2009 may provide important insights on financial market regulation and re-regulation in the future. See e.g. Yardney (2007) and Robertson (2009).

serious problem. There are more affected homeowners than is generally believed, especially in British Columbia and Alberta. Moreover, the Canadian problem would be much worse if the American crisis had started later and if a few key stakeholders, starting with David Dodge who was then Governor of the Bank of Canada, had not pointed out the dangers of too much subprime lending. This more negative (or realistic) tone has continued through 2010 and into the early months of 2011 (see e.g. Dowsett 2010).

In many respects, the Canadian story begins in the late 1990s when the Government of Canada under Prime Minister Chrétien and Finance Minister Martin decided, based on an interesting mix of competition and political considerations, to not allow the Royal Bank/Bank of Montreal merger and the subsequent TD Bank/CIBC merger. Based on the four banks' stated rationale for their two mergers, a positive unintended consequence of this decision is that the major Canadian banks failed to achieve the global scale and scope that they believed were needed for them to become more competitive and innovative, and more integrated into the American and international financial markets. Remaining small, conservative, risk averse, boring, and "Canadian" may have saved them and Canada from the full fury of the American subprime crisis and the global financial crisis.[13]

Growth in the Canadian subprime mortgage market and entry by important American players continued up to the summer of 2008, which is more than 18 months after the subprime and housing markets started to collapse in the United States. Claims that the Government of Canada responded quickly to the U.S. crisis appear to be overstated.

[13] An alternative conjecture, which also has merit and was noted by one of our interviewees, is that, if the Canadian bank mergers had been allowed to proceed, Canadian financial markets would become even more concentrated and profitable and the major banks would have had even less interest in participating in more innovative but higher risk products and markets.

Finally, media reports suggest that, while the Canadian problem is much smaller, there could be a delayed reaction in a few years time when banks and other mortgage lenders may refuse to renew 3 to 5 billion dollars worth of high-risk mortgages involving 25,000 households – except at very high interest rates. Canadian banks are now more risk-averse and reportedly capital has dried up for high-risk borrowers, including those that have never missed a payment. Some commentators have argued over the past year or so that government support for mortgage holders who are making their payments will be needed in the future (McArthur and McNish 2009 and Dowsett 2010).

3.2 Role of Financial Market Regulation, Structure and Culture in Explaining Why the Canadian Subprime Problem was Smaller

Most of the discussion on why the subprime problem was smaller in Canada focuses on differences between the two countries in financial market regulation, the structure of financial markets, and banking, business and consumer cultures.

Differences in tax and banking rules and regulations are clearly important. Mortgage interest is not tax deductible in Canada, which reduces the financial incentive to own your own home. Most mortgages in Canada are full recourse loans. Therefore, Canadian home owners who walk away from their mortgages place more than the value of their home at risk, which further dampens home ownership for lower income households (Perry 2010).

Compared to the United States, despite some financial sector regulatory reform and deregulation in the 1990s and shared responsibilities with the provinces, the Canadian financial regulatory framework is more conservative, comprehensive and concentrated in a comparatively few federal regulators. There are more financial sector rules, fewer regulatory gaps, better enforcement at both the federal and provincial levels, and for the most part better cooperation between the two levels of government. Canada as well has comparatively fewer independent mortgage brokers, issuers and insurers that are not divisions and employees of regulated financial institutions. It is reported that most Canadian mortgages are issued by the five major Canadian banks, and only 35% are originated by mortgage brokers compared with 70% in the United States (Eric Jackson 2011). Nonetheless despite these regulatory strengths, some gaps and failures to act occurred in Canada, as indicated for example by the much smaller but still important collapse of the subprime linked asset backed commercial paper market in 2008.[14]

It is difficult to ascribe causation and different outcomes to national differences in financial, business and consumer cultures. Nonetheless, the much lower take-up of subprime mortgages in Canada is consistent with the "conventional wisdom" that Canadian financial institutions are more prudent, conservative and risk averse, and are less aggressive, rivalrous, and innovative than their American counterparts. Canadian business customers and final consumers arguably are less demanding and innovative and more risk averse, are more loyal to familiar bank brand names, and are less likely to conduct product searches and comparisons and switch financial service providers in response to small differences in interest rates, fees or product quality and innovation (see e.g. Porter and the Monitor Company 1991, Lipset 1990 and Adams 2003). The more risk averse behaviour of Canadian banks, non-financial businesses and final consumers can be ascribed in part to Canada' less diversified and more vulnerable economy, which

[14] Harris (2010:73-78) provides a good summary of Canada's much smaller but still significant problem with subprime and related asset-backed commercial paper (ABCP). In the second half of 2007, non-bank sponsored ABCP valued at approximately CAD 32 billion effectively defaulted, which left "both institutional investors and individuals at the mercy of a restructuring process designed not to make them whole … The ABCP crisis in Canada had similar characteristics as the subprime mortgage crisis in the U.S." that is described in the previous section in this paper (Harris 2010:74).

continues to be overly dependent on the natural resource sectors, motor vehicles, a few high technology companies now led by Research in Motion (RIM – the BlackBerry product line) and previously by Nortel until its recent financial collapse, and strong growth in the three most westerly provinces.

The major Canadian banks, operating in a quite concentrated and stable oligopolistic market, enjoy a well protected, secure, and profitable retail business and therefore had less incentive than their American counterparts to diversify into higher risk wholesale products such as residential mortgage backed securities (RMBS) in order to expand, increase market share and remain profitable.

Investment banks in Canada are a division of rather than separate from and competing with the major commercial banks. This helps to explain why the Canadian banks were comparatively minor purchasers of RMBS and were never issuers of their own mortgage backed securities. This limited their exposure to the downside financial and reputational risks of these securities. Moreover, the smaller number of subprimes originated by Canadian banks and other mortgage lenders were for the most part insured, were less often adjustable, typically had shorter amortization periods, employed more thorough underwriting practices, and were issued to higher quality borrowers with reasonably stable incomes.

Compared with the United States, Canada has comparatively few independent mortgage brokers, issuers and insurers, and most mortgage brokers and agents are employees of regulated financial institutions. Fewer financial institutions and market participants can mean less competition and consumer choice. However, fewer financial institutions and participants and smaller less complex value chains result as well in fewer information asymmetries; fewer confused and vulnerable consumers; lower incentives to conduct overly aggressive inter-firm rivalry and fraudulent, predatory and other questionable lending practices; and less costly and more effective enforcement of financial regulations.

Among these many inter-related factors, the Canadian sources give special attention to the protection from foreign and domestic entry provided to the major Canadian banks that result from: the remaining regulatory restrictions on foreign entry; the inertia/loyalty of the major banks' customer base; and the high (largely sunk) costs of establishing an extensive retail branch banking network that would be needed for an entrant to compete on equal terms with the major incumbents (see e.g. Ratnovski and Huang 2009 and Kiff 2009). Without that investment, new domestic and foreign entrants are largely confined to being "niche players" within the Canadian banking market.

3.3 Importance of Non-Financial Regulation Factors in Explaining the Canadian Escape

Home ownership is important in both the United States and Canada, but is a more integral part of the American culture and dream and has been given prominent support by previous American administrations, especially the Bush presidency from 2000 to 2007 when the subprime market experienced unprecedented growth. While both countries have comparatively large and expanding lower income populations that in the past were unable to secure a mortgage to purchase a home, the American underclass is much larger in absolute terms and more concentrated in the inner cities and working class suburbs of its many major metropolitan areas.

While the subprime mortgage crisis affected many parts of the U.S., one-half of these mortgages were concentrated in eight American cities. All eight cities had easy to identify and target neighbourhoods of lower income financially vulnerable households, which included ethnic minority and immigrant families as well households led by older people and single women (see e.g. Chronicle herald 2008, Gramlich 2007, AARP 2007, Indovino 2008, and Lusardi and Mitchell 2008). Canada also has lower income communities, but these are located in a fewer number of cities and their absolute size is much smaller. Similar to honest businesses, unregulated mortgage brokers, predatory lenders and fraudulent marketers also target large highly concentrated markets that are easy to access, service and exploit. Lower income Canadian households also appear to be more conservative and less influenced by the dream of home ownership; and many urban aboriginal people and new Canadians do not have the financial resources and assets to even dream of owning their own home.[15]

In sum, the United States had a much larger, easier to identify and geographically concentrated "target market" of ethnic minority households and other vulnerable consumers who have limited financial experience and literacy, are desperate to own a home for the first time, and have just enough income to be credible targets for predatory and fraudulent mortgage lending practices. As a consequence, the available data (which admittedly is incomplete) indicate that the much smaller number of higher risk subprime mortgages issued by Canadian financial institutions was for the most part provided to Canadian lower middle and middle income households located in regions experiencing significant gains in housing prices, especially in British Columbia and Alberta.

Another factor that helps to explain the Canadian "escape" from the American subprime crisis is that Canada may have developed over the last decade a greater appreciation of the needs and vulnerabilities of financial consumers to questionable

[15] For example, in Winnipeg, less than 15% of aboriginal households own their own home.

lending practices and other risks. This is associated with the regulatory initiatives, policy analysis, publications and related work on financial consumer issues, scams and frauds over the past decade and a half of the federal Ministry of Finance, the Office of Consumer Affairs in Industry Canada, the Canadian Competition Bureau, the Financial Consumers Agency of Canada established in 2001, the provincial and territorial governments through e.g. the Consumer Measures Committee (under the Agreement on Internal Trade), consumers associations and other NGOs.

Finally, subprime mortgages were introduced much later into the Canadian economy, had insufficient time to develop a strong presence and reach a dangerous "saturation and contagion point" within the Canadian mortgage market, and started to build momentum only when the American crisis started to emerge (see Figure II above). Timing and luck therefore play some role in explaining why the subprime market was a problem but not a crisis north of the border.

3.4 Expanding on the Interactions Between the Special Features of the Canadian Financial Market and Regulatory Landscape

As noted earlier, the regulated Canadian financial services sector is more concentrated, and is for the most part regulated by a more centralized and smaller group of government institutions.[16] "The great bulk of all lending in Canada takes place within the banking system itself, not through a largely unsupervised secondary market for bundles of loans and securities supposedly backed by other bundles of loans and securities -- the 'shadow banking system'" (Nivola and Courtney 2009).

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[16] For the purposes of this section, the *financial services sector* is defined as banks, trust and loan companies, credit unions and caisses populaires, life and health insurance companies, property and casualty insurance companies, securities dealers and exchanges, mutual fund companies and distributors, finance and leasing companies, as well as independent financial advisors, pension fund managers and independent insurance agents and brokers. This definition drawn from Department of Finance Canada, *The Canadian Financial Services Sector*, which is downloadable at: http://www.fin.gc.ca/toc/2002/fact-cfss_-eng.asp

In 2005, there were an estimated 8000 banks in the United States (Houpt 2005). In contrast, the Canadian banking sector in 2003 consisted of 18 domestic banks, 29 foreign bank subsidiaries, and 22 foreign bank branches for a total of 69 banks (Department of Finance Canada 2010a). Moreover, six banks account for more than 90% of total bank assets and for about 76% of the total assets of the deposit taking sector (Hogg 2008). Three of the ten largest mutual fund companies and all of the large securities dealers are bank owned, and banks also own insurance companies.

In Canada, pursuant to the *Constitution Act, 1867*, the federal and provincial governments share jurisdiction over the financial services sector, which by itself is not unlike the situation in the United States. Under the *Constitution Act, 1867*, the Canadian federal government has exclusive responsibility for the prudential and market conduct regulation of banks in Canada. The life and health insurance sector is largely regulated for financial soundness by the federal government; and over 90% of the insurance sector is federally incorporated under federal legislation since most operate in more than one province or are subsidiaries of foreign companies (Department of Finance Canada 2010a). Although the credit unions and caisse populaires are provincially regulated, there is no provincial equivalent to the state chartered banks common in the United States (Nivola and Courtney 2009).

Accordingly, except for the failure up to now to establish a national securities regulator, Canada compared with the United States has a relative concentration of regulatory capability at the federal level and a concomitant concentration of regulated actors. The major federal regulatory actors are the Bank of Canada, the Department of Finance, the Office of the Superintendent of Financial Institutions (OSFI), the Financial

Consumer Agency of Canada, the Competition Bureau, the Canadian Mortgage and Housing Corporation, and the Canadian Deposit Insurance Corporation.

Many of the Canadian regulators have applied a “prudent” approach to promoting competition and protecting the consumer that served Canada well as the subprime mortgage crisis unfolded in the United States. The Financial Consumers Agency of Canada, which was established by the federal government in 2001, has a legislative mandate to: promote consumer awareness and education and respond to general consumer enquiries in the financial sector; monitor financial institutions' compliance with voluntary codes of conduct and their own public commitments; and, ensure that federally regulated financial institutions comply with federal consumer protection laws and regulations.[17] The Department of Finance, OSFI, and the Competition Bureau in Canada have been decidedly more reluctant to entertain bank mergers compared with the United States, where “merger mania” among U.S. banks has been taking place under the approving eyes of U.S. regulatory authorities, with the result that the number of banks has fallen from 14,000 to 8,000 over the last several decades (Baillie 2005 and Houpt 2005).

The main function of the Canadian Mortgage and Housing Corporation (CMHC) is to provide mortgage insurance of residential mortgage loans to Canadian home buyers. This insurance protects mortgage lenders against mortgage defaults on mortgages of less than

[17] Department of Finance Canada (2010a) and the Financial Consumer Agency of Canada website http://www.fcac-acfc.gc.ca/eng/about/default.asp

20% down.[18] Commentators have commented favourably on its role on the subprime issue.

> "The CMHC exerts a prudential influence over mortgage underwriting. Banks rely extensively on it for default insurance, which is conditioned on comparatively strict criteria for creditworthiness. (Private insurers operate as well, but they, too, are held to relatively exacting standards since they benefit from a partial government guarantee.) Subprime mortgages are not unheard of in Canada, but the stiffer standards for lending have kept them to a minimum" (Nivola and Courtney 2009).

Some commentators have warned of a possible imminent CMHC-induced housing bubble in Canada. They argue that Canadian banks have a reduced incentive to fully and properly test the credit-worthiness of home purchasers who put only 5% down on home purchasers, because the banks know that there is a CMHC 100% guarantee on the purchase (Francis 2009). As a result, financially precarious home purchases are being made while interest rates are low, and the mortgage payments may not be sustainable should interest rates increase precipitously in the near future.

Notwithstanding these concerns regarding the CMHC, the above description suggests that on the whole, a small group of Canadian federal agencies, working together, was better able to control a more concentrated group of financial service providers than their American counterparts, and thereby steer "the financial ship" away from many of the extremes of subprime mortgage lending experienced in the United States. The Canadian

[18] M. Kravis (2009) that: "In the U.S., Federal Housing Administration programs allowed mortgages with only a 3% down payment, while the Federal Home Loan Bank provided multiple subsidies to finance borrowing. In Canada, if a down payment is less than 20% of the value of a home, the mortgage holder must purchase mortgage insurance. Mortgage interest is not tax deductible."

financial market experience demonstrates that a more concentrated regulatory regime that is monitoring the conduct of an oligopoly market with comparatively few regulated companies can benefit from lower administration, coordination, information, compliance, and related transactions costs, from information sharing and shared learning and "mental models" between government and industry, lower risk of non-compliance and regulatory failure, and the establishment of a compliance culture that benefits both regulators and regulatees.

Other commentators have emphasized that there exists in Canada a culture less inclined towards risk-taking:

> "When it comes to comparing the track record of the U.S. and Canadian banking systems, it is worth noting that Canada's regulations did not prohibit the sale or purchase of asset-backed securities. Early in this decade, Canada's Toronto-Dominion bank was among the world's top 10 holders of securitized assets. The decision to exit these products four to five years ago, Toronto-Dominion's CEO Ed Clarke told me, was simple. "They became too complex. If I cannot hold them for my mother-in-law, I cannot hold them for my clients." No regulator can compete with this standard" (Kravis 2009).

While it is difficult to objectively substantiate the existence or non-existence of a pervasive culture against risk-taking, anecdotes of this type are consistent with such a perspective.

This section and the previous sections of this paper illustrate how regulatory design and enforcement, market structure, the compliance and related norms, conventions, conduct and strategies of regulatees, and the competition and compliance culture in the regulated industry can operate together to determine the probability, overall consequences and distribution effects of regulatory effectiveness and failure. This theme is further explored in the concluding section.

4.0 Speculating on "What Could Have Been"

The advantages of Canada's overall financial regulatory system, including its consumer protection and mortgage-related aspects, may have spared Canada from the worst of the U.S. subprime mortgage crisis. And yet, as we have seen, it did not prevent subprime mortgages from making inroads into the Canadian market from 2005 to 2008. This included an 18 month period when the perils of the American subprime mortgage crisis were becoming readily apparent. During this period, North American market integration and similarity in political and policy environments, discourse and rhetoric were more important than differences in market structure, corporate culture, and the financial rules, particularly when financial regulators are applying forebearance.[19]

Despite the more conservative nature and superior performance of Canada's banking system and financial regulatory regime, the reality is that some of the major players, and financial products, transactions and practices that were central to the American subprime crisis were starting to creep into Canada and acquire some momentum in 2006. These trends were stopped only by the American crisis and the belated recognition by Canadian governments, regulators and commercial banks 18 months later that Canada was not totally immune from the American subprime contagion.

If the American subprime meltdown had occurred three to five years later, it is at least plausible to speculate that the Canadian subprime mortgage market would have followed

[19] Harris (2010) and other critics of Canadian, American and global financial regulation would argue that forebearance is too soft a term, and instead use the term "regulatory shirking".

a lower but still somewhat similar growth trajectory driven by many of the same forces as in the United States. Based on the American experience and the available (albeit limited) evidence for Canada, this trajectory through to 2011-2013 may have encompassed:

(i) Continuing and perhaps accelerating increases in house prices in the three western provinces and southern Ontario, which would have exceeded the income gains and the ability to pay of many first-time and other home buyers in these regions.

(ii) Continuing pressure on the Canadian government and banks and other financial service providers to further relax the mortgage rules to allow lower and middle income families to purchase a new home or refinance their current residences.

(iii) Expanded entry of American mortgage service providers of various kinds into Canada in order to capitalize on the profit opportunities provided by this new and expanding subprime market.

(iv) Increasingly aggressive sales tactics by mortgage brokers, agents and issuers – including both entrants and incumbents -- that at times may approach fraudulent and predatory lending in order to increase market share in a rapidly expanding and increasingly competitive and profitable market.

(v) Issuing subprime mortgages of increasingly lower quality as the market became more saturated and house prices continued to rise in the Canadian provinces and regions noted above.

(vi) Targeting subprime mortgages on higher risk households in order to further expand the market share and profits of mortgage issuers and other "value chain" participants; these targeted households could have included certain immigrant groups with less financial market experience and lower household incomes, wealth and home ownership (see e.g. Gyimah and Walters 2005).

(vii) Issuing a growing number of subprime mortgages to lower middle and middle income households that in fact were eligible for conventional mortgages.

(viii) Forwarding the subprime mortgages to American intermediaries for bundling in order to reduce the issuer's risk.

(ix) And finally, increasing pressure on Canadian banks and other financial intermediaries to "dabble" a bit more in purchasing, creating/bundling and selling mortgage backed securities. Canadian commercial banks were purchasing some of the American mortgage backed securities, and may have been tempted to issue their own and thereby capture additional profits and rents from this "innovative market".

It is doubtful if subprime and other high risk mortgages would have achieved a 20% plus market share in Canada, because of Canada's late start and because this subprime activity would have been concentrated in only some of the country's provinces and urban regions. Nonetheless, even a doubling of market share from 5% to 10%[20] would have left the Canadian financial sector and economy much more vulnerable to the American subprime mortgage meltdown and subsequent global financial crisis.

This of course is only conjecture since ultimately the upward trajectory for the Canadian subprime market and the American spillover into Canada were stopped in their tracks by the meltdown of the American subprime market in 2007-2008. Like any conjectures and speculations regarding possible future events that will never take place because of external developments, this conjecture can be disputed. However, the 180

[20] This doubling from 5% to 10% by 20011 or so would have been consistent with the 2005 to 2008 trend.

degree shifts in the mortgage rules of the "new" Conservative government from 2006 to 2011 add some credibility to our conjecture.

As noted earlier, policy changes that were announced in the government's first budget in 2006 relaxed the mortgage rules and provided opportunities and incentives to allow American based insurance companies to enter the Canadian mortgage insurance market and provide competition to CMHC. More relaxed mortgage rules were partly in response to the rapid increases in housing prices in the three western provinces, Alberta, British Columbia and Saskatchewan, as well as the Toronto suburbs and other parts of southern Ontario. These four regions provided the foundation for the Conservative Party's electoral victory in 2006 and its hopes for a majority in the future.

These changes in mortgage policies and regulations were consistent with the new government's broader "neoliberal" policy stance to reduce government interference in the economy and to increase competition and innovation in Canadian mortgage and other financial and non-financial markets. As noted above, these more relaxed mortgage rules remained in place for 18 months after the American subprime market started to collapse.

The original changes in the mortgage rules were quite dramatic. In 2006-2007, the Government of Canada directed CMHC to: guarantee all Canadian mortgages, reduce the down payment requirement to zero percent, allow 95% "loan-to-value" refinancing, and extend the maximum amortization period from 25 years to 40 years. In addition, the government encouraged AIG to enter the Canadian mortgage insurance market in 2006. AIG entry was supported in part by government guarantees. While the Government of Canada provides a 100% guarantee to the mortgage insurance provided by CMHC, the government guarantee to AIG and a second privately owned mortgage insurance[21] provider is 90%.

The expectation as of 2007 was that other private insurers of mortgages and other American financial service providers would enter the Canadian market over the medium term because of the regulatory changes being made by the government and the continuing growth in the Canadian housing and subprime mortgage markets (see e.g. Le Goff 2007:9-10). Media and other reports indicate that the relaxation of the mortgage rules and other mortgage market "innovations" were opposed by the Governor of the Bank of Canada, David Dodge, as well as other senior financial advisers of the government (see e.g. Andrew Jackson 2011).

However, in response to criticisms that American subprime lending practices were creeping into Canada and a home grown subprime crisis was on the horizon, the Canadian government strengthened the mortgage rules in 2008, 2010 and 2011. The strengthening of the mortgage rules were in many ways just as dramatic as the earlier relaxation. First, in August 2008 after the collapse of the American subprime market and media reports of possible home grown subprime problems in Canada, the minimum down payment was raised to 5% and the amortization period was reduced to 35 years (Dobbin 2009 and Francis 2009 discussed in the previous section). Then, in April 2010 and early 2011, the Government of Canada:

(i) further reduced the maximum amortization period for government-insured mortgages to 30 years,

[21] The second provider is Genworth, which is a private corporation that entered the Canadian mortgage insurance market in 1995 as a division of General Electric (Le Goff 2007:9).

(ii) lowered the maximum amount homeowners can borrow against the value of their homes from 95% to 90% in 2010 and from 90% to 85% in 2011;

(iii) required that all borrowers meet the standards for a five-year fixed rate mortgage even if they purchase a mortgage with a lower interest rate and a shorter term; this requirement is designed to help Canadians prepare for higher interest rates in the future;

(iv) required a minimum down payment of 20 per cent for government-backed mortgage insurance on non-owner-occupied properties purchased for speculation; and

(v) withdrew its insurance on home-equity lines of credit.

These changes mean that Canada's mortgage rules in five short years have largely returned to the standards that prevailed before 2006 (see e.g. Department of Finance Canada 2010b, Hogue 2011 and Andrew Jackson 2011). Media and other comments suggest that these changes were motivated by continuing increases in household debt, the housing bubble in some regions in Canada which was exacerbated by the 2006-2008 relaxation of the mortgage rules, or some combination of the two. Moreover, some critics have suggested that the Canadian government has been less than transparent about why so many changes in mortgage rules have been made over such a short period of time.

In short, the government's subsequent responses to criticism from the media and advice from its senior financial advisers that a subprime crisis could happen in Canada are consistent with the two authors' conjecture described above. For these and other reasons discussed in this article, presuming that the American subprime crisis could not have happened in Canada, and that a similar consumer based financial crisis would never happen in this country, are questionable and perhaps even heroic presumptions.

5.0 Conclusions and Possible Lessons for Financial Regulation in Other Countries

Canada's stronger and more comprehensive financial regulatory regime is viewed therefore as only one of many factors that "saved Canada" from the subprime meltdown south of the border. Other factors are also important, leading to the first major lesson from our comparative analysis.

Canadian and American experience with subprime mortgages points out that the analysis of and judgements on the superiority of one country's regulatory regime in the financial or other sectors and markets should go beyond the investigation of the regulatory regime and the enforcement of its rules and regulations to include:

(i) the history, prevailing social norms, and the compliance and "self-regulation" culture and performance in the sector;

(ii) the characteristics and complexity of the products, product information, transactions and contracts;

(iii) market structure and how companies compete at each stage of the value chain;

(iv) the extent to which the regulations benefit the regulated company incumbents through reducing entry and exit, increasing corporate profits and providing opportunities for corporate expansion;

(v) whether incentives are properly aligned between managers/employees and their shareholders, customers, final consumers and other key stakeholders;

(vi) the extent of positive and negative externalities, network effects, systemic interdependence and "interconnectedness spillovers";

(vii) the risks of information asymmetries, bounded rationality, behavioral biases and mistakes, "irrational expectations and exuberance", and opportunistic behaviour;

(viii) how these risks affect the attitudes, conduct and decisions of suppliers, business customers, final consumers and other participants including government regulators at each stage of the value chain for the sector; and,

(ix) whether changes in the political economy context have a negative or positive effect on the enforcement activities of the regulator and the compliance efforts of regulatees (see e.g. Avgouleas 2009 and Ireland et al 2011).

The second major lesson is that Canadian and other governments should carefully assess and learn from the American subprime crisis and consider consumer based demand-side and related regulatory reforms to better protect their financial consumers from the next national financial market meltdown and global financial sector crisis. Space does not allow us to provide a detailed set of lessons and recommendations for re-regulating national and global financial systems and in particular their mortgage-related components in order to better protect national and global consumers and economies from a future national or global financial crisis precipitated largely by demand-side considerations. The demand-side perspective adopted for this article does however provide some regulatory insights, options and lessons for further consideration.

Financial sector regulatory reform should take full account of the information asymmetries, behavioral biases, and the agency, incentive and collective action problems and resulting sub-optimal decisions and outcomes of all participants in financial sector value chains, including financial consumers, business customers, and financial sector regulators who are "consumers" of advice from financial intermediaries and other "financial experts" whose mandates and incentives are markedly different from those of regulators (Stiglitz 2010).

Consumer protection proposals for mandatory information disclosure to financial consumers who are considering the purchase of a mortgage or other financial product should take account of recent advances in the information and behavioral economics literatures. These studies indicate that mandatory requirements, which force the disclosure of too much or overly complex information, or the disclosure of the wrong information that is not helpful to the consumer, can hurt rather than help the decisions and outcomes of consumers, business customers and other market and value chain participants. Recent research has stressed that default options and other insights from the behavioral economics literature could play an important role in the future in better protecting financial consumers from excessive risk and financial markets from excessive systemic risk (see e.g. Avgouleas 2009, Gerding 2009, Thaler and Sunstein 2008, Lacko and Pappalardo 2004, FTC 2004 and 2007, and Hirshleifer et al 2007).

New financial regulations should address overly complex and rigid products and contracts that involve significant information asymmetries, are difficult to understand, and are even more difficult to modify by all participants (Dodge 2008). Financial products that are too rigid and therefore very difficult to modify in response to falling prices, higher interest rates, recessions, and other external shocks should be given special attention in financial market reregulation.

Improved regulatory oversight is particularly needed for overly rigid and complex products and contracts at the higher stages of the value chain described in Figure I above, which generate information asymmetry, collective action and negative externality problems that make products and contracts at lower stages involving final consumers, smaller businesses, and other more vulnerable customers even more rigid and difficult to modify. Rigid products and contracts make loan defaults, foreclosures, and consumer, small business and other bankruptcies all but inevitable.

The above insights combined with the earlier analysis suggest that priority consideration for reregulation and possible modification or outright elimination from the market should be given to financial products, services and contracts that: (i) allocate too much risk to the final consumer, households and smaller businesses that are least able to accommodate the risk; (ii) ignore or explicitly exploit the information problems and behavioral biases of final consumers and other market participants in the value chain; (iii) are highly complex, non-transparent and difficult to understand, (iv) are very rigid and difficult to modify, (v) actually or potentially raise serious moral hazard, adverse selection and related information failure problems, and (vi) generate significant negative externalities and outcomes (Gerding 2009, Dodge 2008, Fell 2008 and 2009 and Stiglitz 2010).

The Government of Canada through the National Financial Literacy Task Force and other mechanisms, and the Government of the United States through the creation of the new Office of Financial Education, are making important efforts to increase the financial literacy skills, acumen and awareness of consumers and other market participants. These efforts are laudable, but should be used as complements to rather than as substitutes for improved demand-side regulations that better protect consumers, households and other purchasers of increasingly complex financial products (Waitzer 2010).

Our ability in the future to prevent future financial crises and collapses depends in large part on the quality of information available to governments, industry, the media and the academic and research communities. Our knowledge of the extent of the subprime mortgage problem in Canada is deficient in part because of the limited information that is collected and made publicly available by the major financial institutions and regulators, starting with CMHC.

This leads us to the third and final lesson from this Canada/U.S. comparative case study. Proposals for the reregulation of financial markets will need to recognize that any expanded or new national and global financial market regulatory regimes will face the same information, product complexity, computational, cognitive and behavioural bias problems that undermined financial deregulation, and caused the subprime mortgage and subsequent global financial crisis of 2008. In the view of the authors, reform proposals will need to be modest, carefully researched and designed, and even more carefully implemented often in a phased manner. Otherwise, the financial market failures of today could be replaced by the government and regulatory failures of the future, with similar negative consequences for financial consumers and markets and the global economy (Tasic 2010).

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