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Abstract

We are neither economists nor academic scholars; however we are students of the markets having experienced the credit crunch on the front lines as institutional investors from a country that is neither in Europe nor is the United States (i.e. Canada). The credit crunch and related “Great Recession” have instilled havoc on the global economy. The crisis has led to a large contraction of the real economy of approximately 1% of real GDP in 2009, which could have been considerably larger without massive government sponsored stimulus plans. In the aftermath of every crisis there are always lessons to be learned. The main takeaways from the most recent credit crunch centre on risk distortion, the flawed counterparty risk offset model, excessive leverage, inherent conflicts of interest and the legacy of creating “too big to fail” financial institutions. As financial markets appear to have stepped back from the brink of destruction, we believe that there are three major consequences that we are currently facing. First the global financial system will likely be irrevocably changed by new regulations. Second, on the economic front, we are facing a post-recession period of relatively low global growth. Third, developing countries’ governments are facing massive budget deficits and their debt/GDP levels are likely unsustainable and therefore requiring severe fiscal austerity programs.

Keywords

Credit Crisis, Solutions, Securitization, CDS.

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■ 1. Introduction

We are neither economists nor academic scholars; however we are students of the markets having experienced the credit crunch on the front lines as institutional investors from a country that is neither in Europe nor is the United States (i.e. Canada). The credit crunch and related “Great Recession” have instilled havoc on the global economy. The crisis has led to a large contraction of the real economy of approximately 1% of real GDP in 2009, which could have been considerably larger without massive government sponsored stimulus plans. Peak-to-trough output in Organization for Economic Co-operation and Development (OECD) economies has fallen approximately 4%. Monetary policy has been loosened dramatically and direct support for the financial system has totaled approximately a quarter of global GDP. Writedowns in the banking sector through the first half of 2009 amounted to US\$1.3 trillion and will likely total US\$2.8 trillion by the end of the crisis according to the International Monetary Fund (IMF). In the aftermath of every crisis there are always lessons to be learned. The main takeaways from the most recent credit crunch centre on risk distortion, the flawed counterparty risk offset model, excessive leverage, inherent conflicts of interest and the legacy of creating “too big to fail” financial institutions. We will expand on each of the causes over the next several pages, detail some of the consequences and then provide our preferred “solution” in the conclusion.

Before we discuss the more immediate triggers of the credit crunch that we outline below, it is also important to focus for a moment on what is in our opinion the root cause of the Great Recession: an excessive easy monetary policy that began in the United States in the mid 1990’s. Following the collapse of Long Term Capital Management in 1998 and again following the Tech Wreck in the early 2000’s, the U.S. Federal Reserve aggressively lowered interest rates and maintained this accommodative stance for a long period of time. This policy was allowed to be pursued due to a monetary policy model based on a linkage between the printing of money and inflation. This stance was motivated by concerns from Chairman Alan Greenspan and the Federal Reserve that the U.S. faced the risk of deflation. The basis of this belief was set out in a Federal Reserve paper issued in June 2002, “Preventing Deflation: Lessons from Japan’s Experience in the 1990’s.” The report concludes that deflation can be very difficult to predict in advance. In consequence, as interest rates and inflation rates move closer to zero, monetary policy perhaps should respond not only to baseline forecasts of future activity and prices, but also to the special downside risks, in particular, the possibility of deflation. This fear led to a deviation from the regular way of conducting monetary policy and consequently the relatively low interest rates led first to the commodity price bubble and then to the housing bubble.

In a bit of revisionist history, Alan Greenspan has recently stated that central banks were innocent and impotent bystanders in a global macroeconomic shift. The rise in desired global saving relative to desired investment caused a global decline in long-term rates which became de-linked from the short-term rates that central bankers control. Greenspan further stated that it was long-term interest rates that galvanized home asset prices, not the overnight rates of central banks. This is difficult in some ways to grasp as long-term rates are related to short-term rates; the yield curve is in essence a projection of a stream of short-term rates. Greenspan's view ties in with current Federal Reserve Chairman Ben Bernanke's theory of a "global saving glut". Bernanke has stated that since the mid 1990's a combination of diverse forces created a significant increase in the global supply of saving which helps to explain both the increase in the U.S. current account deficit and the relatively low level of long-term interest rates. The ample supply of foreign savings combined with a low U.S. personal saving rate, large U.S. government deficits and high productivity gains combined to produce a huge current account deficit. These vast quantities of money in the system resulting from this large current account deficit was seeking investment projects and found a home in the housing, stock and commodities markets.

Contrary to Bernanke's view that excessive foreign savings led to low interest rates, our opinion is that the money creation inflation linkage was outmoded due to a switch from a closed economy (where it was effective) to an open global economy. This led to excessive money printing which in turn led to asset price inflation, a phenomena that occurred in spite of core CPI levels at around 2%. Under Greenspan, the U.S. Federal Reserve chose to focus almost solely on core inflation (excluding the volatile sectors of food and energy). The reasoning behind a focus on the narrower core inflation rate is that most changes in food and energy prices are temporary and reversible, and therefore can be ignored as threats to inflation. However, one caveat applies: if higher energy prices or higher food prices persist, eventually, they are likely to spill through into the core inflation rate because fuel surcharges and higher transportation costs boost prices to suppliers, who then pass through the elevated costs to final consumers in an effort to maintain profit margins. Core inflation was distorted by excessive low cost production from the Far East. China and India supplied low-cost goods and services to the United States and in return demanded non-core goods (raw inputs such as oil, natural gas and metals as well as food) in return. As a result core inflation has persistently underpredicted headline inflation which has been running ahead of the Fed's comfort zone for most of the 2000's.

All financial bubbles require a substitute of money to their equivalent store of value, this played out in the 1990's with the dot com tech wreck, with commodities in the mid 2000's and with real estate in the later 2000's. The focus on the fear of deflation led to the linkage and perpetuation of a dislocation between financial assets and in-

flation. In other words as long as CPI was controlled, a bubble could not be recognized. The eventual extremes that the excessive creation of money alternatives created are detailed in the following pages.

■ 2. Securitization

The advent of the originate to distribute model of securitization led not only to a massive growth of the market but also provided financial institutions with an effective way to move risk off their balance sheets while collecting fees for doing so. It also led to a misalignment of incentives in the process. In the United States, from the early 1990s through 2008, agency mortgage backed securities surged by 670% to total US\$3.55 trillion, outstanding assets backed securities (ABS) ballooned from US\$75 billion to US\$2.7 trillion and outstanding Asset Backed Commercial Paper (ABCP) increased by 69% to US\$1 trillion. At the peak of the housing market large financial institutions securitized between 40-60% of family residential loans.

Securitization is the process of turning cash flows from a pool of non-tradeable assets such as residential mortgages, credit card borrowings, car loans and leases, and equipment trade receivables, into tradeable debt instruments. It was an effective way for financial institutions to move liabilities off their balance sheets. Under the originate to distribute model there is a reduced incentive for the banks to develop a rigorous screening process of potential borrowers since the banks become separated from the consequences of the end borrower's default. In the end, no party was found to have a stake in the long-run performance of the underlying loan. What also made it an attractive model was that fees were collected in every aspect of the process from the mortgage originator to the home appraisal agent to the banker/dealer who sliced and diced the mortgages into structured products to the rating agencies who rated them. It seems everyone was a winner except possibly the unsuspecting buyer who ended up with a mortgage that he/she could not afford when housing prices declined. It was a big win for the financial institutions that saw an increase in Return on Equity (ROE) and a reduction in the risk-weighted assets as they moved liabilities off their balance sheets.

With financial innovation and engineering the underlying assets of securitizations became more opaque and complex (including collateralized loan obligations, collateralized debt obligations, leveraged super senior tranches of investment grade corporate credit default swaps (CDS), uninsured residential mortgages, commercial mortgage backed securities etc.) and also involved a large degree of leverage. Most often it also involved a monoline insurer who guaranteed the CDO structure to ensure they achieved an AAA rating. As the complexity of the transactions increased there was also a corresponding decrease in the amount of information received on the under-

lying assets. Under SEC rules a special purpose entity (the structure for securitizations) that issues fixed income is not an investment company and therefore exempt from registration under the 1940 Investment Companies Act. As an unregistered entity, they are prospectus exempt and do not have to file quarterly and annual financial statements. Information available to investors was therefore asymmetric. They became what Gary Gorton, Professor at the Yale School of Management, termed “informationally insensitive debt securities.” Issuers did not always disclose material information both at issue and on an ongoing basis. For the most part, the investor was reliant solely on lagging reports from rating agencies to assess the creditworthiness of a deal on an ongoing basis. The fact that it took a team of lawyers, accountants and investment experts in Canada more than a year to untangle the complicated and intertwined web of non-bank sponsored Asset Backed Commercial Paper demonstrates the complexity and opacity of the structures that were created.

The main point is that an increasingly long chain of short-term lending or financial layering was supporting speculative positions in long-term assets with increasing leverage. The system would have been extremely fragile and subject to collapse even if the mortgage assets had been perfectly sound, which they were not. The securitization model was dependent on the “sophisticated” investors who acquired the structured securities. These investors ranged from institutional investors (asset managers, pension funds, endowments funds etc.) to financial institutions who used the highly rated securities as collateral for repo and derivatives trading. Under Basel II regulations these financial institutions had to post only minimal collateral against AAA rated securities holdings. It was also curious as to why investors were demanding so little compensation (in terms of yield) for risk. The securitization market collapsed in August 2007, as concern over the concentration of U.S. subprime mortgages in securitized products led to a buyers’ strike. New issue securitization dried up and the ABCP market crashed. Financial institutions were forced to manage previously securitized assets on their own balance sheets, support some of the structured investment vehicles (appropriately short-formed to SIVs) and faced losses and writedowns on their own portfolio of structured products holdings.

■ 3. Counterparty Offset Model

Similar to the securitization market, the over-the-counter (OTC) derivatives market exploded over the past decade growing by approximately 665% to total US\$614.7 trillion notional outstanding at year-end 2009, according to the Bank of International Settlements. The majority of the contracts are related to interest rates (65%) with foreign exchange (9%) and credit default swaps contracts (9.5%) being the next largest categories. Derivatives trading in the over-the-counter market is neither registered nor

systematically reported to the market. There is also no regulatory responsibility for the market and therefore no enforcement of market abuse. Transparency is also significantly lacking in the market as trading of OTC derivatives is bilateral, so no one participant knows the identity of traders or clients, the size or price of orders or the size of the market in aggregate.

The real problem in the derivatives market was the concentration of counterparties. According to the Depository Trust and Clearing Corporation data, banks and dealers are the dominant counterparties to most credit derivatives contracts and account for approximately 90% of the notional outstandings. The counterparty risk in the derivatives market turned into systemic risk because the standard bilateral arrangement of this contract did not take into account the exposure of other buyers to the swaps and a lack of transparency masked the exposure to expected credit defaults of counterparties. The financial engineering that was believed to hedge risks would have worked effectively if investors had faced shocks that were uncorrelated with those of their counterparties. Declines in asset and house prices affected all investors in a similar fashion inflicting actual and expected credit losses across the system. For the OTC market to work effectively there is the underlying assumption that the counterparty must make good and that was what broke down during the credit crisis. Financial institutions ceased to trust their counterparties as they were unaware of what their counterparties' risks were. Concerns about the ability of companies to meet their obligations on derivatives contracts and the lack of transparency about the risks associated with the underlying securities caused credit markets to freeze. The interconnectedness and lack of transparency exacerbated the crisis. Liquidity in the inter-bank market lending market dried up as banks declined to lend to each other, even for an overnight period. Thereby a position that was deemed to be hedged all of sudden became unhedged and exposed to market risk.

The opacity of the market also created havoc as the original party that an entity may have entered into a contract with most likely sold that position to another party, so it was difficult to discern who the end counterparty actually was and what exactly the total counterparty exposure one entity had to another. Employees of major financial institutions spent the entire weekend that Lehman Brothers defaulted trying to figure what their exact exposure to Lehman really was.

The flaws in the counterparty offset model are highlighted by the ill fated fight by Brooksley Born to attempt to regulate the derivatives market. As head of the Commodity Futures Trading Commission, Born proposed the regulation of the over-the-counter derivatives market in 1998. She was strenuously opposed by the "Committee to Save the World" (then Secretary of the Treasury Robert Rubin, former Assistant Secretary of the Treasury, Lawrence Summers and former U.S. Federal Reserve Chairman Alan Greenspan). At one point during the battle, Summers apparently called Born and

said that he had 13 bankers in his office who believed that regulation was going to cause the worst financial crisis since the end of World War II. Clearly, those 13 bankers knew how complex the derivatives market was and were afraid of any attempt to impose clarity on the opaque risks not to mention threatening a huge profit centre.

We are currently seeing a repeat of the credit crisis playing out in the sovereign debt crisis. European financial institutions have significant loan and derivatives exposure to the problem countries of Europe (Greece, Ireland, Italy, Portugal and Spain). As concern over those countries' ability to manage their debts increase, once again liquidity in the inter-bank lending market has become scarce. A country or a financial institution may not be too big to fail but its derivatives obligations are too widely spread to fail without serious global consequences.

■ 4. Inherent conflicts interest

The credit crisis also brought to light significant conflicts of interest within the financial industry which likely led to a misalignment of decision making principles. The conflicts were most noticeable in terms of political/regulatory appointments of people who had close ties to the financial industry, remuneration policies of large financial institutions and the credit rating process.

In terms of compensation for financial institution employees, reward was decoupled from risk. During the past twenty years, remuneration for the financial industry increased significantly and seemed out of line versus the rest of the corporate world. The real U.S. median household income has declined by approximately 4% between 2000 and 2008 whereas compensation at major Wall Street firms increased by approximately 340% over the same time period.

The prospect of high compensation gave managers incentives to be shortsighted and undertake excessive risk rather than act prudently. As remuneration was doled out for the most part annually and in some cases quarterly, the focus was on driving short-term profits and returns at the expense of focusing on whether in the long-term the risk assumed was adequate. What became apparent was that risk management could not be left to the banks themselves. For the most part their risk systems were directed at their own competitive advantage and they were not motivated nor in a position to adequately monitor the system as a whole. Risk management programs for the most part assumed financial institution counterparties would make good and were modeling for a rain shower type of event not a hurricane. Financial institutions relied too heavily on Value at Risk (VAR) benchmarks which measure the amount an institution stands to lose on its portfolio given an abnormal movement in market prices. These

models grossly underestimated what the truly abnormal was and were too reliant on short runs of data; especially given we had experienced a fairly long stable period of continuous growth, low inflation and growing employment.

The ties between the political and central bank leaders that were in charge of implementing policy solutions for the credit crisis had very close to ties to the very financial institutions that they were endeavouring to on the one hand save and on the other hand to punish for putting the global financial system at risk. The most glaring of all collusions occur with the links to Goldman Sachs. The list of Goldman Sachs alumni include:

- Henry Paulson, former Secretary of the Treasury;
- Neel Kashkari, who was in charge of the Troubled Asset Relief Program;
- Mark Carney, the Governor of the Bank of Canada;
- Mario Draghi, the Governor of the Bank of Italy;
- William Dudley, the President of the Federal Reserve Bank of New York;
- Gary Gensler, Commodity Futures Trading Commission Chairman;
- Gene Sperling, the Top Aide the current Secretary of the Treasury;
- Adam Storch, Chief Operating Officer of the Securities and Exchange Commission Enforcement Division; and
- Jon Corzine, the former Governor of New Jersey.

Additionally, the Director of the White House's National Economic Council, Lawrence Summers worked for a hedge fund before rejoining the political world. While all the one hand it can be argued that individuals with financial institutions backgrounds can bring real world capital markets experience to their political assignments, on the other hand it raises questions that they are possibly too biased in favour of Wall Street and too predisposed not to cause too much pain to their former employers. Additionally, a number of former political and central bank officials have found employment in the financial world after their time in public service including:

- Former Secretary of the Treasury during the Clinton Administration Robert Rubin became a Director and briefly Chairman of the Board of CitiGroup;
- Senator Phil Gramm who helped push through the Commodity Futures Modernization Act Congress served as Vice Chairman of the Swiss Bank UBS;
- Alan Greenspan, former Federal Reserve Chairman, currently acts as an advisor to bond giant PIMCO and the hedge fund Paulson and Company; and
- Former SEC Chairman Arthur Levitt is now a Goldman Sachs advisor.

Perhaps dreams of future employment in the financial industry tempers decisions made while in power. There likely needs to be a blackout or timeout period between when people can move between public service and finance and vice versa.

Two blatant conflict of interest occurred during the credit crisis. JP Morgan CEO Jamie Dimon also sat on the Board of the New York Federal Reserve during the time that the NY Fed was negotiating the terms of JP Morgan's purchase of Bear Stearns. As part of that deal the NY Fed provided a US\$29 billion cushion for losses in the Bear Stearn's portfolio of toxic assets. In 2008, Stephen Friedman was Chairman of the NY Fed and on the Board of Directors of Goldman Sachs. During his tenure at the NY Fed, the Board negotiated a bailout of AIG which saw major CDS counterparties to AIG including Goldman Sachs made whole on their contracts.

The credit crisis also brought to light the flaw in the rating agency model for securitizations. The rating agency analysts were not as independent and unbiased as they were expected to be. They were intricately involved with the investment bankers in designing and creating the several of tranches mortgage backed securities and collateralized debt obligations. The incentives for the rating agencies to do so were strong as the fees the rating agencies received from rating a structured product were a multiple of the fees they would receive from rating a traditional bond. Internal rating agency emails that were disclosed in a recent Congressional hearing demonstrates the pressure the analysts were under to win securitization business. One of the apparent flaws in the analysis of the housing market in the U.S. was revealed that not enough historical data was used in simulating possible default scenarios, the models appeared to be built on the assumption the housing prices never declined.

The rating agencies should have played the role of questioning the data series employed rather than help in designating a data series that would yield a triple A rating. These AAA ratings created a false sense of security for investors. According the highest rating possible to high risk Residential Mortgage Backed Securities (RMBS) containing subprime mortgage risk and levered CDOs which turned out not to be safe investments was misleading. Data presented by a U.S. Senate Committee investigating the credit rating agencies show that 91% of the AAA subprime RMBS securities issued in 2007, and 93% of those issued in 2006, have since been downgraded to below investment grade status. Additionally, 97% of the Option Adjustable Rate mortgage securities issued in 2006 and 2007 have been downgraded to below investment grade. The problem for the rating agencies is that they are paid by the issuer to provide the rating as well as by the investor to subscribe to their rating services. The fees provided by the issuer are far greater than the fees provided by the investor subscriber so although the rating agencies strive to be independent, their compensation structure could create pressure for bias towards the issuer.

The advent of credit default swaps also led to misalignment of interests between various holders during a solvency crisis. Traditionally, when a corporation was facing a debt crisis and spiraling towards bankruptcy, the bondholders' interests were for the most part aligned with those of management in terms of a desire to restructure the corporation and keep it a going concern. Under that scenario there is a better opportunity for the bondholder to recoup some of their investment. Contrarily, the holders of CDS have an interest in forcing the company into bankruptcy as that would trigger the payment of their protection contract. The amount of CDS outstanding on a corporate entity far exceeded the underlying bonds outstanding.

■ 5. Too Big to Fail

The deregulation trend of the 1990s permitted banks to expand beyond their traditional business of deposit taking and lending to become financial supermarkets acquiring investment dealers, insurance companies, and wealth managers. During this period the new financial institution became involved in riskier activities (derivatives trading), used significant amounts of leverage to enhance returns, and became hugely profitable all the while becoming more and more opaque. The deregulation trend also led to a concentration of the banking system. According to data from the Federal Reserve Bank of St. Louis as the crisis commenced in the fall of 2007, 20 firms in the U.S. accounted for approximately 80% of financial sector assets in the U.S., approximately 1/3 of this was in bank holding companies and 2/3 were in non-bank financials such as Fannie Mae and Freddie Mac, investment banks, insurance companies and thrifts. Therefore a large portion of financial assets were not in the bank regulatory system and not under the regulatory authority of the U.S. Federal Reserve. In Canada, the banking system and the investment dealer network is concentrated in the hands of six major financial institutions.

This deregulation trend has created institutions that are deemed to be “too big to fail.” They could also be deemed “too interconnected to fail” or as University of Missouri Professor William Black termed them “systemically dangerous institutions.” They are likely also too big for their sovereign countries to save. If a money-centered bank is assumed to be too big to fail and consequently receives government support there are many repercussions. The most serious of which is that the resulting distortion in the flow of capital. Depositors will naturally move funds towards the “rescued” bank because of the implied continued government support, resulting in a loss of profit in the non-supported institution. This non-level playing field if allowed to persist will distort the concentration of assets towards the supported institutions. On the flip side, this sense of too big to fail also impacts the actions of the large financial institutions as the full or partial insurance of bank creditors by the use of liquidity/bail out programs offered by governments and central banks allows the banks to play an unfair game with the government’s money.

When they take big bets and win they keep all the proceeds and when they take big bets and lose, the costs are at least partially passed on to the government. It in effect distorts a rational examination of risk management for the financial institution. The large size of the financial institutions also contributes to contagion and systemic risk of counterparty failure that we discussed above. The high degree of leverage meant that during the credit crisis initial liquidity concerns gave quickly way to solvency concerns.

Arguably the banks were so complex that their own management teams could not understand their own risks. In testifying before Congress, former CitiGroup CEO Chuck Prince in speaking about the bank's exposure to CDOs, stated that the company's chief risk officer didn't understand the risks, nor did Citigroup's senior traders and bankers. Former CitiGroup Chairman Robert Rubin said that he hadn't even heard of CDOs until the fall of 2007. If the management and Board of Directors of the financial institutions can't understand their risks it is hard to expect regulators, creditors and investors to understand.

The question is who decides which institutions are supported and which are not. As detailed in the book "Thirteen Bankers," on Friday, March 27, 2009, thirteen CEOs of the country's largest financial institutions were summoned to Washington to meet with President Obama. The banks required massive intervention from the government and the U.S. Federal Reserve in terms of direct investment, government guarantees, unlimited emergency lending and historically low interest rates to prevent bankruptcy or forced merger. The U.S. government needed the 13 bankers because deregulation had allowed the banks to grow so large and so opaque that their potential failure threatened the security of the entire financial system. While these 13 benefitted from rescue efforts, there have been 238 U.S. banks, savings banks and thrifts that have failed and been seized by the U.S. Federal Deposit Insurance Corporation since 2008.

■ 6. Consequences

As financial markets appear to have stepped back from the brink of destruction, we believe that there are three major consequences that we are currently facing. First the global financial system will likely be irrevocably changed by new regulations. Second, on the economic front, we are facing a post-recession period of relatively low global growth. Third, developing countries' governments are facing massive budget deficits and their debt/GDP levels are likely unsustainable and therefore requiring severe fiscal austerity programs.

A myriad of financial reforms are being proposed. The U.S. Senate has just passed a comprehensive financial reform bill that is expected to be signed into law by the end of the summer once it is reconciled with the broadly similar House of Representatives bill.

Among other things, the bill contains the “Volcker Rule” which prohibits bank holding companies from proprietary trading. Julie Dickson, head of the Canadian financial regulator is advocating that banks raise contingent capital. The International Monetary Fund (IMF) with support of some members of the G-20, spearheaded by Germany and France, are proposing a global bank tax as well as a “FAT” tax for excessive bank salaries and/or bonuses. The IMF is also leading the push for a central counterparty clearing-house for derivatives trading. Basel III is working on stricter capital restrictions and liquidity requirements for global financial institutions. The crisis has shown that common equity is the only form of capital that absorbs losses and therefore left many financial institutions thinly capitalized and vulnerable to failure. Whatever form the final regulations and reforms eventually take, financial institutions are most likely going to have to delever, carry higher capital ratios, restrict some activities such as proprietary trading and derivatives use, and in some cases return the monies that were injected into them by sovereigns during the credit crisis.

In a recent report on debt and deleveraging, the consultant McKinsey Global Institute demonstrates that historic deleveraging episodes have been quite painful, on average lasting six to seven years and reducing the ratio of debt to GDP by 25%. Empirically deleveraging has followed nearly every major financial crisis in the past half century. The consultant identified 45 episodes of deleveraging since the Great Depression in which the ratio of debt relative to GDP declined and 32 of them followed a financial crisis. Deleveraging in these cases sometimes occurred in the public sector, sometimes in the private sector and sometimes in both. Across 32 episodes of post-financial crisis deleveraging studied by McKinsey, the most common path following the crisis was a prolonged period of financial austerity. While there was some growth in credit, the pace was far below the pre-crisis rate of growth and was slower than nominal GDP growth. Similarly, the savings rate increased as borrowers slowly reduced their debt. The report found that the deleveraging process typically begins about two years after the start of the financial crisis and economic recession. In the first two to three years of the deleveraging process, real GDP declines by approximately 0.6% under the austerity scenario and averages approximately positive 4.8% in the following 4-5 years while the deleveraging process continues.

Total debt relative to GDP in the ten mature countries used in the McKinsey study (Japan, United Kingdom, Spain, South Korea, France, Italy, Switzerland, United States, Germany and Canada) have increased from approximately 200% of GDP in 1995 to over 300% by 2008. McKinsey points out that the majority of debt growth has come not from the financial sector but from the household, business and government sectors. Total debt increased by approximately US\$40 trillion from 2000 to 2008 in the mature markets studied and of that amount, financial institutions accounted for only approximately US\$11 trillion, or approximately 28%. We note that

McKinsey's methodology does not include financial institution leverage and debt associated with derivatives and other off balance sheet instruments.

Several features of the crisis today, including its global nature and the large projected increases in government debt could delay the start of deleveraging process and result in a longer period of debt reduction than in the past. In past episodes, increasing net exports was effective in supporting GDP growth during deleveraging. That is an unlikely outcome currently given the global nature of the deleveraging required. It is unlikely that all major economies can simultaneously increase their net exports. Additionally, current projections of government debt in countries such as the United Kingdom, the United States and Spain could offset reductions in private sector debt. McKinsey identifies the risk that the mature economies may remain highly leveraged for a prolonged period creating a fragile and potentially unstable economic outlook over the next five to ten years.

The McKinsey report coincides quite nicely with a recent report by economic professors Carmen Reinhart and Kenneth Rogoff entitled "Growth in a Time of Debt." In this report, the authors study the relationship between debt/GDP levels and GDP growth. They conclude that the relationship between government debt and real GDP growth is weak for debt/GDP ratios below a threshold of 90% of GDP, however above 90%, median growth rates fall by 1% and average growth falls considerably more. When gross external debt reaches 60% of GDP, annual growth declines by approximately 2%. Additionally there is no apparent contemporaneous link between inflation and public debt levels for the advanced countries as a group. The main conclusion is that seldom do countries grow their way out of deep debt burdens.

From data gleaned from the past two centuries, debt in excess of 90% has typically been associated with mean growth of 1.7% versus 3.7% when debt is low (under 30% of GDP) and compared with growth rates of 3% for when debt is between 30% and 90% of GDP. For the Canadian experience, the authors examined a data series for the time period 1925-2009 and identified the following growth parameters:

- Debt to GDP below 30%: 2.0% Annual Real GDP Growth.
- Debt to GDP between 30% and 60%: 4.5% Annual Real GDP Growth.
- Debt to GDP between 60% and 90%: 3.0% Annual Real GDP Growth.
- Debt to GDP over 90%: 2.2% Annual Real GDP Growth.

Canada's public sector debt/GDP stood at 47% at year-end 2009.

Using a benchmark of 14 earlier severe post-World War II financial crises, central government debt rises, on average, by approximately 86% within three years after the crisis. This is consistent with conclusions from the McKinsey report. Additionally, private

debt, in contrast to public debt, tends to shrink sharply for an extended period after a financial crisis. Periods of sharp deleveraging tend to be associated with much lower growth and higher unemployment. Private sector deleveraging will likely also dampen growth in the medium term.

■ 7. Recommendation

The main responses to the credit crunch have been to try and improve liquidity and capital cushions for major financial institutions. Those supporting these reforms believe that the fundamental problem is believed to have been the collapse in asset prices created by the disappearance of market liquidity, rather than any inherent problem with the assets themselves. If the assets are insolvent as are the institutions that hold them this approach does not provide for the recovery of the system. As long as the policy is to provide sufficient liquidity in the hope that asset prices will return to levels that allow banks to remain solvent with minimum capital injections, there can and will be no meaningful reform or regulation of the financial system. The U.S. reforms in their current form fall short of any initiative designed to pre-emptively break up any big banks or impose a tax on size in hopes of averting a future disaster, instead, the bills focus on mitigating the disaster once it happens.

What we would desire to see is a break-up of the big global financial institutions that are too big to fail. This becomes especially relevant as the sovereign crisis is bringing to light that the banks are too big for the sovereigns to save without jeopardizing their own solvency. On October 20, 2009, Bank of England Governor Mervyn King gave a speech to Scottish business organizations where he advocated the “utilitization” of the banks. Mr. King believes that banks incentives to manage risk and to increase leverage were distorted by the implicit support or guarantee provided by government to creditors of banks that were seen as too important to fail. Encouraging banks to take risks that benefit the shareholders and employees when things go well and burdens the taxpayers when they do not distorts the allocation of resources and the management of risk.

The Governor paraphrased Sir Winston Churchill that “never in the field of financial endeavour has so much money been owed by so few to so many and so far with so little real reform.” He believes that the difficulty with the capital cushion and contingent capital reforms is that it is difficult to calculate how much will be required. He believes that it is delusionary to think that appropriate regulation can ensure that speculative activities do not result in a failure as the sheer creative imagination of the financial sector to think up new ways of taking risk will in the end force us to confront the too important to fail question. Mr. King built on the proposal first presented by Paul Volcker to the G-30 to separate proprietary trading from retail banking. In other

words to separate the functions of the bank that are “utility” in nature and need to be regulated from those that can safely be left to the discipline of the market.

Governor King hits on a very interesting point that we have ourselves debated on our fixed income desk. Why do we have utility regulation? The Fair Return Standard, the backbone of pipeline and utility regulation in Canada, basically takes a two-pronged approach in its efforts to protect the ratepayer and to keep the regulated entity on sound financial footing. Take for example, a gas distribution utility or an electric power distributor that makes a strategic decision to actively engage in speculative energy trading to improve its Return on Equity (ROE). In the beginning it all goes well and their derivative traders achieve significant returns for the company. Everyone is happy – the shareholders, the ratepayers and management. Suppose then the 1 in 100 year storm or 8th standard deviation event occurs and the majority of the company’s energy trades blow up and the company incurs severe losses. The company passes these losses onto the ratepayers in terms of higher electricity costs or heating costs. The customer is forced to accept the higher rates, as the alternative is to freeze in the dark. The effects spill over to the economy as in the face of higher costs, consumers curtail spending and commercial/industrial customers curtail their business activities. Why you may ask is this fair? Why should the consumer pay for the greediness and errors in risk assessment made by the company? They shouldn’t and hence there are national and provincial regulators to protect the ratepayers. The regulator approves the regulated entity’s capital structure, sets its ROE, deems what investments/assets are appropriate to be included in the company’s rate base, approves its capital expenditure budget and reviews its annual operating expenses. In performance based ratemaking mechanisms, the regulator ensures that the ratepayer and the company share in any cost savings.

That is not to say that pipelines or utility companies do not engage in other activities such as energy trading. They do, but it is outside the regulated entity and any gains / losses affect the shareholder, not the ratepayer. In the early 2000’s, TransCanada Corporation, the holding company for TransCanada PipeLines (regulated pipelines) and NOVA Gas Transmission (regulated pipelines) in an effort to become the “Enron of Canada” entered into a number of unregulated businesses (energy trading, merchant power generation, electricity retailing etc.) that did not work out as well as the company expected. The company had to divest a number of businesses and ultimately cut its dividend, which negatively impacted the share price. The shippers on the companies’ regulated pipelines were not forced to pay significant increases in their tolls to cover the company’s non-regulated miscues. Translating this to the banking system, it means that the “bricks and mortars” essential type service of borrowing and lending of the banking system has to be freed up. In order to effect this there likely has to be a separation of the opaque and excessively risky derivatives and proprietary trading businesses as well as capital markets, wealth management and insurance type busi-

nesses from the deposit and lending business upon which the traditional economy relies. This model would put risk where it belongs and insulate the depositor from missteps in other areas of the bank. In essence what we, the fixed income desk, are proposing is the reassembling of the pillars in Canada (i.e. breaking up investment dealers, asset managers and deposit taking banks into separate and independent entities) and in the U.S. re-creating a modified Glass Steagall Act which prohibited bank holding companies from owning other financial companies.

Many economists and historians have pointed out, particularly Rogoff and Reinhart in “This Time is Different” that financial crises, recessions and defaults occur throughout history. Their work confirms that crises frequently emanate from the financial centres with transmission through interest rate shocks and commodity price collapses and thus, the recent credit crisis is hardly unique. That is not to say that we cannot learn from the previous crisis. If the large financial institutions are not broken up, they will then carry a form of government insurance which is going to encourage them to continue to assume risk and practically guarantees the next “too big to fail” banking crisis.

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