

The UK Crisis of 2008: What is real and what is behavioural?

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Abstract

This paper is about the crisis of 2008 in the UK. I first discuss the triggers of the crisis in the UK, then go over the immediate reactions to it in the form of short term policies and conclude with a discussion of long term policies. The crisis of 2008 has its roots in the sub-prime crisis of the US. UK imported it due to its well developed and international financial sector. Some of the triggers of the crisis of 2008 are real and some are behavioural. Systemic nature of high leverage in all sectors including financial, corporate and household, international nature of financial sector, and opacity of balance sheets are the real triggers. The underestimation of risks by almost all agents in the economy is behavioural. I argue that some of the conditions that led to the Crisis of 2008 will not change and should be regulated. Behavioural factors should now be considered carefully in designing the new regulation

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1. What has triggered the crisis?

The triggers for the Crisis of 2008 worldwide can be classified into four. The first is the globalization process we have been going through over the past three decades. The crisis has started as a sub-prime crisis in the US and moved on to UK and Europe and the rest of the world due to the high integration of world markets and the international structure of the financial services sector. This is real. The second is the high leverage not only of the household sector through sub-prime mortgages but also the corporate sector and thus the financial system as a whole. This is also real. The third is the underestimation of risks. Risks were underestimated not only in newly issued assets but also in corporate sector leverage ratios. This is behavioural[†]. The fourth is the insufficiency of the accounting systems we use in presenting assets and newly designed liabilities and thus the opacity of the balance sheets. This was a trigger for financial institutions, but it is also important in inducing fragility into the corporate sector. It requires new regulation that takes into account both the real issues and human behaviour in financial decision making. The Crisis of 2008 is different in many ways from the various systemic banking crisis of the past (Laeven and Valencia, 2008) that were also damaging and contagious. I will take the triggers of the crisis of 2008 one by one below.

1.1. The international nature of the Finance Industry

The Crisis of 2008 has started in the US. It was then passed on to the rest of the world hitting countries at a speed and impact commensurate with their linkages with the US.

[†] See DeBondt, Muradoglu, Shefrin and Staikouras (2009) for a survey of directions in Behavioural Finance.

UK had the first impact due to its close economic relations with the US, followed by the rest of Europe and the emerging markets in that order. This wave, I expect to come back following the same route back to US before we can say the global crisis is over. We are still in a stage where the sub-prime crisis has evolved into a financial crisis with repercussions for the real economy now becoming observable.

UK has well developed financial markets and institutions that are international in nature. UK has the largest derivatives and commodities markets in the world. The financial sector produces about 7% of GDP. The first trigger of the Crisis of 2008 for the UK is the connectedness between its financial institutions and markets and those across the Atlantic. Northern Rock, a very successful mortgage provider in July 2007, was the first one to initiate a bank run for more than a century. In the first half of 2007 Northern Rock revealed it had sold mortgages worth a record £10.7bn, up 47% from a year ago which was equivalent to 19% of all new mortgage policies sold in the UK making it the market leader. What happened over the next 3 months? Northern Rock was borrowing from the short term money markets in the US and lending for long term mortgages in the UK. When faced with a liquidity run in the US money markets Northern rock had no where else to turn to but the UK government to provide the liquidity. The international nature of financial sector accompanied by maturity mismatches of assets and liabilities imported the crisis to the UK. Finally it was nationalized "...as a temporary measure ... until the market conditions improved..."[‡]. At the time it was not envisaged that others would follow.

[‡] From Alistair Darling, UK Chancellor, the BBC website <http://news.bbc.co.uk/1/hi/business/7249575.stm>

1.2. Increases in Leverage:

Increase in Financial institutions' leverage ratios and excessive risk taking is discussed as one of the major triggers of the 2008 crisis (Davidoff and Zaring, 2008). Financial institutions were financing their portfolios with less and less capital, not only in the US but also in the UK thus increasing the rate of return on that capital. Meanwhile the leverage in household sector is discussed as the reason for the sub-prime crisis in the US (Goetzman, Peng and Yen, 2009). Leverage through mortgages, sub-prime or not, increased in the household sector mainly due to increasing real estate values. According to Nationwide, in the UK house prices increased from an index level of 100 in 2000 to an index level of 240 in 2008[§]. In the UK leverage ratios in the corporate sector increased from about 15% to 32% in the past three decades^{**}. Increase in leverage was systemic and thus introduced fragility into the economy that was unnoticed for a long time. It made not only the financial system itself but also the household and corporate sectors fragile and amplifies the fragility of the financial system. This is real. How this phenomenon was so unnoticed for so long is behavioural. Leverage ratios of all three sectors are public information. Work, academic or practitioner oriented, on the fragilities imposed by high leverage ratios, is almost non existent.

What are the reasons behind increasing leverage? Of course optimism, and the underestimations of the fragilities imposed is one behavioural explanation. On the real side, declines in interest rates is an important reason stemming from the real side of the economy. In the UK interest rates declined from about 15% to 5% over the past 3

[§] See <http://www.houseprices.uk.net> for house prices in the UK

^{**} Author's calculation from data used at Sivaprasad and Muradoglu, 2007.

decades.^{††} The availability of funds at lower rates created the illusion that one can de-lever at the same speed he levers. Benign economic conditions accompanied by optimism created another illusion, that, neither interest rates will increase again nor liquidity will be unavailable, in the foreseeable future.

Leverage in all sectors, financial, corporate and household, induces fragility. If, for any reason, the value of the assets became lower or more uncertain, then the higher the leverage, the higher the probability that capital would be at risk and the institution or the household will be bankrupt. During the Crisis of 2008 crisis asset values declined for various reasons I will describe below. In corporate sector, by May of 2008, 850 UK companies went into administration a rise of 54% from a year ago. In the household sector, despite several efforts to keep home ownerships intact repossessions increased in October 2008, the number of house repossessions had increased more than 70% to more than eleven thousand in a year. The Bank of England estimated 500,000 UK homeowners are in negative equity predicting that this number could rise to 1.2 million if house prices fall by another 15%.

The loss of asset values led to mass nationalizations. Following massive asset write downs and estimations that further write downs will follow, In September, Lloyds took over HBOS the largest mortgage lender with about 20% market share for £ 12 billion with a deal engineered by government. But still Bradford and Bingley was nationalized in September and UK government got control of £50 billion of mortgages and loans while selling the savings side to Santander. In October the UK government had another round of nationalizations of RBS, Lloyds and HBOS.

^{††} Author's calculation from data used at Sivaprasad and Muradoglu, 2007.

1.3. Underestimation of risks:

Economic conditions were benign, asset prices were rising, and there was a feeling of optimism. Although Szego (2008) discusses the large number of fraudulent and criminal mortgages^{‡‡} and their late discovery in 2007 as one of the triggers of the sub-prime crises, mostly availability of mortgages for low income or volatile income households was perceived as a social motive. TV programmes were made to show how one could buy a house redecorate and sell and make a handsome profit. Mortgage companies were reporting high profits. Banks were reporting high profits. Stock prices for corporations were rising. The mood was optimistic. When the news arrived about Northern Rock with pictures of people queuing in front of the bank, and the first bank run in about a century was so visible things changed. Boz (2008) puts very elegantly that if preceded by a sequence of positive signals, even a small, negative noise shock can trigger a sharp downward adjustment in investors' beliefs and the magnitude of the adjustment increases with the level of optimism prior to the negative signal. Optimism was high prior to the sub-prime crisis in the US and the Northern Rock in the UK. The first negative signal was yet to be accompanied by more and more.

1.4. Opacity of balance sheets:

The accounting systems we use today are from 1950s and do not accommodate the need to reflect the complex financial instruments we use today. Securitizations have become popular over the past two decades. This process led to complex assets that are hard to value and reflect on the balance sheets. In mid-2008, more than 60% of all U.S. mortgages were securitized. In the UK, HBOS had securitized £55 billion worth of mortgages rated AAA in 2008. Of the two other nationalized institutions, RBS had £36

^{‡‡} See, Szego, (2008) FBI Mortgage Fraud Report, 2007 for details.

and Lloyds had £23 billion of securitized mortgages. The opacity of balance sheets to reflect these and other complex assets that embed contingent liabilities is one major reason for the Crisis of 2008. Ryan (2008) discusses the implications of the subprime crisis for accounting profession in detail.

Securitization is a major improvement in risk allocation. Shocks can be absorbed by a large group of investors rather than just one. However the complexity in the design of instruments and the lack of capacity in our current accounting systems to represent them fully led to opacity. Different tranches were combined into one security, derivative securities were constructed from derived tranches of mortgages and the original mortgage was translated into a security that was very hard to value due to the large uncertainties of the values of the derived securities. These difficulties in valuation were not in any way represented by the traditional accounting practices we know of that are limited with historical costs and market values at the time of valuation. The contingencies embedded in those instruments were not reflected in any form on the balance sheets. At the time of the first round of bank nationalizations in the UK, these difficult to see on balance sheet and difficult to value toxic assets were estimated to be up to £200 billion for the economy. Later in 2009, estimates for one bank, the RBS were £300 billion.

When faced with shortage of liquidity, as it happened during the Crisis of 2008 institutions have to sell assets. Asset values decline. But when the assets are opaque and thus difficult to value, the increase in uncertainty was much higher leading to a huger risk of solvency, and thus further bank runs. Deleveraging by reducing the size of their assets is no longer an option. Thus the one option remains is to cut their credit lines to

borrowers and a sharp decline in maturity of loans. With the fear that this might lead to a catastrophe on the corporate and household sectors the UK government ensured the return to mortgage and small business lending in every intervention including nationalizations.

2. Immediate reactions to the Crisis of 2008: Short run policies

The lessons from the Crisis of 1929 shaped the immediate reactions of the governments including the UK government and were used effectively in designing the short-run policies. The fear that we are facing another Great Depression, led to a dramatic falls in confidence in the UK as it did worldwide and thus falls in the stock market and cuts in consumption. Short run policies were geared towards restoring confidence and limiting the runs.

Under those circumstances, the first action was to provide liquidity. The first notable effort of the UK government to restore confidence was to facilitate interbank lending when overnight rates jumped from 3% to a record high 6.5% in October 2008. A cash injection of £40 billion was made and Gordon Brown recommended that that the Group of Seven should guarantee all interbank lending. Banks were reluctant to lend to each other overnight at 6.5% while they were lending to the Bank of England at 4%. This was successful in restoring confidence. But of course monetary base expanded. M4 increased by about one third from about £1500b to £2000b in two years ending December 2008. I will discuss this later when I consider the long run policies.

The second action was for government to restore balance sheets. This can be done in two ways; either by leaving the assets on the balance sheets of the institutions and providing a floor to their values or by the government overtaking the assets of the balance sheet altogether. Of course pricing is a problem. The UK government opted for buying the assets of the banks in exchange for their shares. This method gives ownership of the banks to the tax payers and if asset prices increase returns will be transferred to tax payers. Mass nationalizations became inevitable and Northern Rock, Lloyds, RBS and HBOS are now state owned. This was successful in restoring the bank balance sheets. However ownership structures changed in financial sector. Further blanket guarantees are now being discussed for example for RBS toxic assets estimated to be about £300 billion now and more might be necessary in the future. I will discuss this in detail when I discuss long term policies.

The third action was for government to restore consumer demand and output. The immediate reaction of the Bank of England to provide liquidity and restore confidence was to reduce interest rates. This was helpful in limiting house repossessions at the household sector and providing credit lines to the corporate sector. Interest rates fell from 5.5% to 1% in less than two years to provide relief. However this limits the scope of using traditional monetary policy any longer. Thus focus was shifted to fiscal policy. Stamp duty exemption was reduced from £175,000 to £125,000 and VAT was reduced from 17.5% to 15%. Both measures were successful in restoring confidence and thus preventing sharper declines in consumer demand and thus output. However monetary

policy cannot be effectively used any longer at such low interest rates and long term repercussions will be discussed later.

3. What next: Long term policies

Long term effects of short term policy will be slowly absorbed. Historically, we know that recessions associated with credit crunches and house price bursts tend to be deeper and longer than other recessions (Claessens, Kose and Terrones, 2009). The current crisis is one of them, may be the biggest after the crisis of 1929. Firms are now credit constrained. Financially constrained firms cut on all sorts of spending starting with R&D, employment and capital spending, and sell assets while unconstrained firms are reluctant to use their lines of credit to reserve their reputation in financial markets (Campello, Graham, Harvey, 2009). The blanket guarantees provided for toxic assets in the range of £300 billion for RBS were necessary to restore confidence and prevent deposit withdrawals while we were going through the crisis. But they create moral hazard, they come with fiscal costs and foreign liabilities of banks are irresponsible to such guarantees (Laeven and Valencia, 2008). Over the next decade we will be dealing with those problems.

Some of the conditions that led to the Crisis of 2008 will not change. Some should be regulated. Behavioural factors should now be considered carefully in designing the new regulation (Daniel, K., Hirshleifer, D. Theoh, S.H, 2002). The regulation we use today has its roots in the U.S. regulatory frameworks which was designed more than 70 years ago

in reaction to the crisis of 1929. Today the conditions that led to the Crisis of 2008 are different. So, new regulation should provide protection not only to small investors but also to financial institutions in the UK and worldwide. The intellectual foundations of finance has been inspired by rational expectations in economics and efficiency of financial markets (DeBondt, Muradoglu, Shefrin, Staikouras, 2009). Thus regulation itself was perceived a regression and efforts for de-regulation prevented the legal frameworks we use today lag so behind the new financial instruments and markets. There is need for better regulation that takes into consideration biases in human behaviour so that it can be implemented effectively.

The first trigger of the Crisis of 2008, internationalization of financial markets will not change. It provides a much better allocation of risk and boosts economic growth rates. UK has a mature economy thus with relatively low growth rates and the financial sector is international in its nature. International nature of the financial sector is important for the world economies as it provides poverty reduction in the long term. If anything, the nature of financial markets and institutions will become more global in the future. The second trigger of the crisis, higher leverage increases investments and boosts rates of return in both household and corporate sectors. Neither securitization, nor the complex derivative securities, will disappear. They allow for a much better allocation of risk. The challenge we face today is to provide better information flow to prevent further internationalization and complex instruments to make financial statements opaque. The opacity of financial statements should change. Leverage can and probably will be decreased. They are all in the perimeter of regulation. New regulation however should

take into account the people making the several financial decisions in the households, corporations and financial institutions. Human nature will not change but behavioural factors that led to the crisis can be integrated into regulation to make it effective.

G20 and G7 meetings were conducted at the onset of the crisis as well as in the aftermath to coordinate efforts internationally. International organizations such as the IMF and the World Bank have assumed active roles especially with emerging markets. Coordinated efforts of the US Federal Reserve, the Bank of England and the European Central Bank, providing liquidity to their respective markets, helped to restore confidence world wide. Changes in regulation should be similarly coordinated with leading economies and international organizations.

Leverage in banking industry was under scrutiny through several Basel Accords. The main problem in the banking sector was the opacity of financial statements that the risks of newly designed complex assets were not represented. We now need a framework for the regulation of mortgage originators and subsequent producers of structured products. This is not enough. We must go beyond the financial system and consider leverage for the economy as a whole. Highly levered corporations and households are highly exposed to small fluctuations in their asset values. The Crisis of 2008 started as a sub-prime crisis in the US and initiated from the household sector. Attention is diverted to leverage in the household sector. Leverage in corporate sector is largely ignored. Leverage has increased over time and investors were paying a premium for low leverage firms (Muradoglu and Sivaprasad, 2008). We know from emerging markets that both borrowers and lenders

benefit from debt relief (Arslanalp and Henry, 2005). There is need for reducing the indebtedness of the corporate sector.

Mortgage companies reacted quickly to the sub-prime crisis by adjusting down payments upward up to 40% of equity. Mortgages of more than 100% were available before the crisis. Tax rules in the UK favour leverage in buy to let properties as interest payments are tax deductible. In other countries like Sweden tax deductability applies to homes one lives in. We have to revisit tax rules in this sector. In the UK, interest rates on mortgages are not linked to the leverage of the household. The mortgage products are priced according to time maturity of the product but not according to the leverage/income ratio or wealth/debt ratio of the households. Regulation is needed to impose better pricing of mortgage products in relation to the financial fragility of households.

In the corporate sector tax rules favor leverage; debt is tax deductible. Harvey and Roper (1999) argue that corporate managers “bet” their companies by increased leverage. Tax deductability of interest needs revisiting. In market oriented systems like the US, bond pricing is made by markets and rating agencies, good or bad, rate corporate bonds and financial fragility is integrated into interest rates. In bank oriented systems availability of funds may diminish due to financial fragility but leverage of the corporation is not a major consideration in determining interest rates commensurate with the financial fragility of the corporations. Regulation is needed to impose better pricing of bank products.

New and complex derivative instruments were largely unregulated before the Crisis of 2008. For the US, there are recommendations to establish separate regulatory function for market risk and market stability oversight (Arewa, 2009). Regulation always lags financial innovation. This lag lead relation between the introduction of new securities and their regulation leads to a misperception that there is no need for regulation. During benign economic conditions risks will be underestimated and thus underpriced as a result of unfounded optimism. The FSA and the Bank of England should follow increases in systemic risk in the economy. The increase in leverage both in household and corporate sectors was completely unnoticed prior to the crisis of 2008.

This is not an easy task. It requires collection of a different set of information and even a different accounting system to collect some of it. Some information is simply not available today. We do not yet know the extent of sometimes unbounded contingent liabilities in the UK yet. New accounting procedures are needed for representing the risks involved in complex assets. They are now called toxic because we cannot observe them in traditional balance sheets and we cannot assess their risks or values using the existing accounting practices we know. There is need for a new system of accounting that enables us to present those complex asset structures and the contingency of their values, sometimes imposing unlimited losses. Other measures of systemic risk must be constructed taking into account leverage ratios both at the household and corporate sectors.

Information at the UK level is no longer sufficient to assess risks. Due to the international nature of financial services sector information is needed at the international level. One needs information for example on the distribution of the complex derivatives on securitized assets world wide. There is need for co-operation between exchanges and moving trading to exchanges from over the counter. UK can assume a world leading role in this as it has the largest organized exchanges in futures transactions already.

The Crisis of 2008 is perceived as a result of excessive risk taking by managers who were enriching themselves via short-term bonuses, while destroying the long-term value of their companies (Zingales, 2008). Greed is in human nature. It has to be regulated. The mismatch of the timing of profits and thus the bonuses to management and the timing of loss realizations of contingent liabilities is an important issue. Today 70% of ownership is institutional compared to less than 10% in the 1930s following the crisis of 1929 (Zingales, 2008). Financial markets are used extensively by pension funds. Unsophisticated investors no longer need direct protection as they did before 1929 but they need indirect protection through regulating the securitization process and corporate accountability. New regulation needs to restrict practices that exploit biases in human nature.

Goetzmann (2009) argues that econometric analysis of housing prices systematically generated forecasts for long-term price growth and low estimated probabilities of extreme price decline. Such optimism, is fueled by the extrapolation of past trends into the future. Why was the fundamentals not recognized? Optimism is in human nature and cannot be

avoided. Greed is in human nature and cannot be avoided. Therefore they must be regulated. Thaler and Sustain (2008) and Shiller (2009) have come up with several details of how one can integrate human nature into regulation. From the design of mortgage products to the sales of them, from the presentation of complex instruments in bank balance sheets to corporate governance, human nature should be taken into account in new regulation.

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