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Regulation and subprime turmoil

Arvind K. Jain
Department of Finance, Concordia University, Montreal, Canada

Abstract

Purpose – The global economy has entered what appears to be a very serious financial crisis for reasons other than *force majeure*. While the current focus has to be on preventing a repeat of the Great Depression, efforts must also be made to understand why the crisis came about in the first place. The objective of this paper is to demonstrate that the regulators should have known what the risks were and that these risks were large and systemic, and should have concluded that actions were required to prevent a serious global crisis.

Design/methodology/approach – The article analyzes the developments in the US mortgage market to assess whether the chances of a crisis in the period before the crisis could have been assessed to be too remote to warrant concern.

Findings – The evidence seems quite clear that, given the assessments of potential consequences of previous episodes in which concerted actions had to be taken to prevent the collapse of the global financial system, the regulators of the US economy should have taken steps long before the onslaught of chains of collapse of financial institutions that began in the summer of 2007.

Originality/value – It is hoped that analysis such as this will lead to improvement of regulations of financial markets, reducing chances of future crises of such proportions.

Keywords Recession, Regulation, Financial markets, Derivative markets, Securities markets, United States of America

Paper type Viewpoint

Introduction

At the height of the current financial crisis, Christopher Cox, Chairman of the Securities and Exchange Commission issued a statement that began: "The last six months have made it abundantly clear that voluntary regulation does not work"[1]. Four weeks later, Alan Greenspan admitted to the US Congress that "I made a mistake in presuming that the self-interest of organizations, specifically banks and others, was such that they were best capable of protecting their own shareholders" (Beattie and Politi, 2008). What is surprising about these statements is not that they were made by people who had played a leading role in pushing the idea of "self-regulation" but that they should have expected the self-regulation to work in the first place. While the usual suspects for the crisis – greedy mortgage lenders, heartless and overpaid bankers, MBA culture, financial derivatives, loose monetary policy in the USA as well as consumers in Asia who saved too much – have been rounded up, not many seem to have the courage to point a finger at the real culprits. For some time before the crisis reached its apex in the fall of 2008, the US financial markets and the economy had being drifting toward a precipice with poorly priced risks and unsustainable domestic and international balances. The regulators who should have recognized systemic and widespread risks within the economy and should have taken steps to prevent an explosion of these risks seemed to have been too greedy themselves. To be fair, their greed was not financial – they perhaps wanted to be seen as having presided over one of the longest runs of unbroken assets growth.

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More than anything else, the subprime crisis is a story of hubris. It is a story of hubris at the highest levels of the economy, where those with an ability to take action chose to stay on the sidelines because of their belief that "the cost of slowdown today is much higher than the cost of a crisis in the future". That has proven not to be the case.

The origin of the 2008 global financial crisis lies in the housing market. Mortgages that could not have been repaid except under the most optimistic of assumptions were being issued without any controls. Those who issued the mortgages passed on the risks to others – mostly quite sophisticated investors – in the form of mortgage-backed securities without an independent assessment of risks by the buyers. These investors were responsible for their actions. Under normal circumstances, self-regulation should have worked. Buyers of these mortgages would suffer losses when the mortgages defaulted and the market system would have done its job. Unfortunately, in this case, there were two problems. First, some of these investors were financial institutions. Their individual losses create systemic risks for other participants in the financial markets. Second, the potential size of the defaults was becoming so large that the investors could not have been expected to pay fully for the losses. Their entire equity capital would have been less than the size of losses in the mortgage market under states of nature that would have been considered highly probable. They would leave a significant share of the losses for others to pick up. This is where regulators are supposed to come in – to prevent behavior that has negative externalities that create systemic risks. This is specially true when the externalities are large and when we have sufficient past experience that tells us that such eventualities are not merely figments of the imagination of those who stick to their beliefs in the superiority of socialist regimes.

This paper traces the developments that led to the financial crisis and then evaluates the validity of charges against the "usual culprits", The objective of this paper is to demonstrate that the regulators should have known what the risks were and that these risks were large and systemic, and should have concluded that actions were required to prevent a serious global crisis. Their hubris is the main cause of the crisis, which could have been avoided.

Regulation of financial markets

An appropriate level of regulation is key to the functioning of a market system. Regulation is needed to fulfill an essential requirement for the market system to work: establishment of property rights and prevention of fraud. It is now common knowledge that economic systems that protect entrepreneurs as well as minority shareholders and creditors reach higher levels of development than those that fail to provide protection for all property holders. Such protection requires balancing too little regulation against too much of it. Too little regulation discourages entrepreneurs (they do not reap their due rewards under corrupt systems) and too much regulation acts as barriers to investments. Too little regulation exposes small investors to expropriation of their wealth by managers and majority shareholders, and too much regulation discourages them from investing in the productive assets of the economy.

Balanced regulation is even more important for the financial sector of the economy. Financial institutions in a modern economy are far more intertwined with each other and with investors than non-financial firms. Given the ease and speed of communication as well as the choice of financial instruments available, financial

firms are able to fine-tune sources and uses of their funds to an extent that a small disruption in their plans can create ripples throughout the financial system. Activities of each financial institution entangle hundreds of other institutions and one bad decision will require settlements between many institutions across legal and national boundaries. When Long Term Capital Management (LTCM) faced bankruptcy in September 1998 arising from its bad investment decisions, Federal Reserve officials intervened to develop a private sector rescue package not out of their concern for LTCM investors but because of their concern for potential consequences of the failure of LTCM on the financial markets (Dowd, 1999). Financial sector regulation is needed because activities of individual institutions can create negative externalities that give rise to systemic risks. Individual institutions may have to bear a major share of the consequences of their poor decisions, but poor investments in financial markets risk bringing down innocent bystanders. Central banks offer deposit insurance because banks cannot handle the consequences of too many depositors acting in the same fashion – howsoever rational from their own perspectives – in view of bad news. Financial regulators impose capital adequacy requirements to ensure that losses arising from poor decisions will be borne fully by the banks that make bad decisions.

Self-regulation, whether of financial markets or ordinary human behavior, does not work when risks and rewards associated with one's behavior are distributed asymmetrically. Regulations becomes necessary when those who benefit from risky behavior either do not bear the full costs of that risky behavior or have a subjective discount rate for the distant costs that is higher than that of the society which may have to bear those costs. This is why societies discourage smoking. We regulate speeding on highways because benefits are instantaneous; costs are underestimated due to "disaster myopia". In financial markets, educated investors who make their own investment choices do not need regulation because they bear the consequences of their decisions – good or bad as long as they have adequate capital. Regulations becomes necessary only if some of the consequences of bad decisions are externalized to third parties and lead to the creation of systemic risks for the financial markets and other participants.

The subprime crisis is an outgrowth of asymmetric distribution of risks and rewards. It is not clear why voluntary regulation was expected to work in this situation. Those who benefited from issuing poor quality mortgages – the originators of the mortgages – were not expected to lose if the borrowers defaulted. They had completely externalized the consequences of their decisions by selling these mortgages without recourse. They would have paid the price for issuing risky mortgages if those risks had been incorporated in prices of mortgage-backed securities. For reasons still not understood, rating agencies were classifying these securities as high quality paper even when they contained large shares of sub-prime mortgages[2]. There was no need for self-regulation on the part of mortgage issuers. In fact, self-regulation would have been irrational. The risk of these mortgages was being transferred to investors who seemed oblivious to the risks associated with the mortgages. The risk, however, had not disappeared. Regulators had to understand that buyers were taking on risks that they did not understand, assess possible consequences, including systemic risks under unfavorable states of nature, and take steps to protect the system.

Regulators deluded themselves that markets were efficient in pricing risk even when given a free lunch. The economists' joke that "there cannot be a dollar bill lying on the road because someone would have picked it up" works only on the lecture

circuit. Regulators suffered from the investors' curse of "overconfidence in their abilities" and ignored everything that the past crises have taught us about how individuals and markets behave. The subprime crisis of 2007-2008 is not a crisis of greed or excessive financial innovations, it is a crisis of hubris.

Rise and fall of NINJAs

The origin of the present crisis lies in the deterioration of the lending standards for house mortgages in the USA. Market innovations and deregulation have changed the nature of this market dramatically over the past two decades. In the past, commercial banks used to issue mortgages and if the mortgage met the strict credit requirement of organizations like Fannie Mae they could sell the mortgage to these government-sponsored enterprises (GSEs) and receive funds to issue more mortgages. This process increased the pool of funds available for issuing mortgages to homeowners. The key was the quality of the mortgages. Two changes in this market lead to the growth of subprime mortgages. First, investors began to invest in mortgaged-backed securities issued by the government-sponsored enterprises like Fannie Mae and Freddie Mac. Second, banks themselves began to package the mortgages into collateralized debt obligations (CDOs) and sell them directly to investors.

Two other developments coincided with the arrival of new investors and the issuers of mortgages. First, the trend in the house price appreciation accelerated towards the end of 1990s. Second, low interest rates following the short recession in 2002 had made investors search for high returns even if it meant higher risks. With rising house prices and investors' appetite for risk, the stage was set for the rise of what became known as subprime mortgages. Rising house prices made it attractive to invest in houses, and banks that had entered the mortgage financing business began lending to borrowers who would normally not be considered credit-worthy. The quality of mortgages went down, banks created captive institutions called structured investment vehicles (SIV), and began to issue ever-increasing amounts of mortgage-backed securities. Once what had now become a high-risk mortgage lending business had been moved off the balance sheets through SIVs, banks were content to let mortgages be issued, combined to form CDOs and be sold to investors in three tranches depending upon their risks:

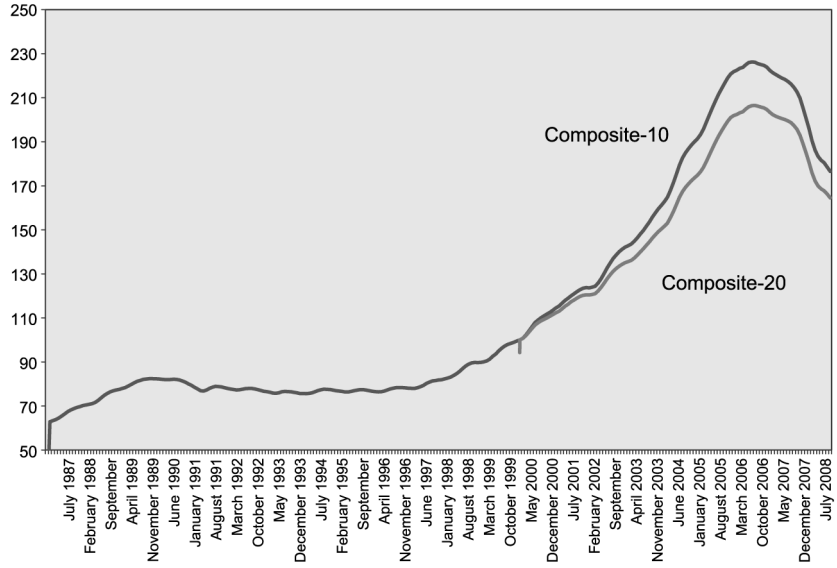
(1) prime (very low risk tranche);

(2) Alt-A; and

(3) subprime (the highest risk tranche).

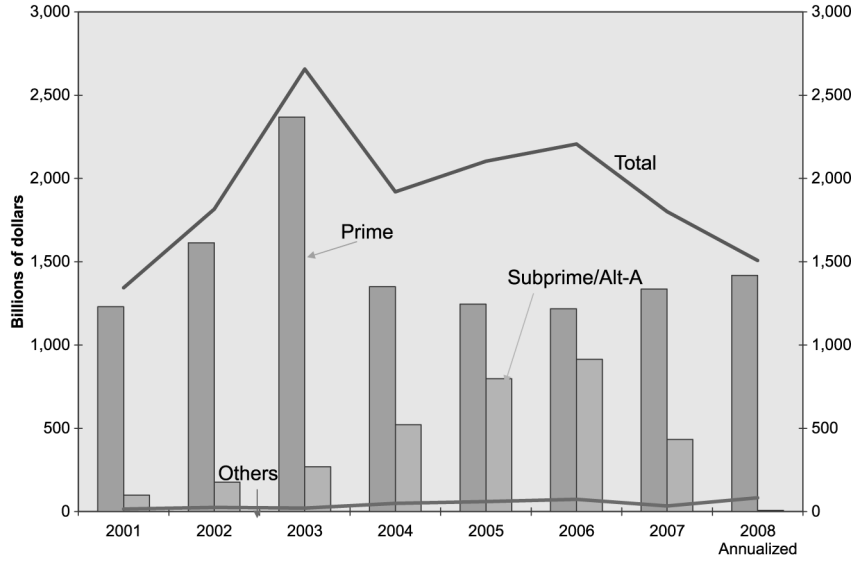
The subprime mortgages were often given to borrowers who had no means to repay the mortgages – the premise was that appreciation of house prices would provide the lenders sufficient cushion to recover their investments[3].

Figure 1 shows the movement of house prices in the USA as measured by the Case-Shiller home price index for ten or 20 urban areas. The 20-city index more than doubled between early 2000 and July 2006 – when it reached its peak. Figure 2 shows the growth of the mortgage market. Prime mortgages, which had accounted for almost 90 percent of the market in 2003, constituted less than 60 percent of the market in 2006. The mortgage market, which itself is a very large part of the financial markets, was by 2006 dominated by subprime and Alt-A mortgages. At least the subprime part of these mortgages was unserviceable except under the most favorable conditions and would cause mortgage holders to lose money unless house prices continued to appreciate.



Source: www.homeprice.standardandpoors.com

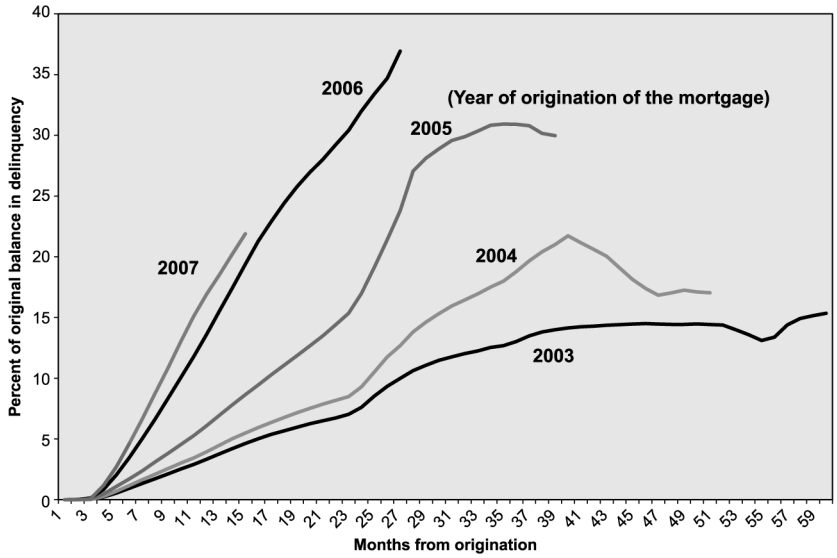
Figure 1.
House price movements in the USA



Source: IMF (2008, Box 1.4)

Figure 2.
Mortgage market in the USA

This is indeed what began to happen more frequently in 2006. Figure 3 compares the subprime mortgages that were in delinquencies since their origination in various years. The vintage year was 2003. Mortgage delinquencies were at their lowest for the first decade of the new century (delinquency rates for the missing years of 2000-2002 are



Source: IMF (2008, Figure 1.8)

Figure 3.
Delinquency rates of subprime mortgages

between the rates for 2003 and 2005). Delinquency rates rose consistently from 2004 to 2007. By the fall of 2008, 37 percent of mortgages issued in 2006 with a life of 27 months were delinquent. More than 20 percent of mortgages issued in 2007 were delinquent within 15 months.

The delinquency rates could not be blamed completely on the state of the economy. The prime mortgages, although following somewhat similar patterns as the subprime mortgages, had maintained their delinquency rates to mostly under 2 percent. Table I compares selected delinquency rates for the three sectors of the mortgage market.

Mortgages account for about one-quarter of the fixed income market in the USA. By 2006, the subprime and Alt-A segment accounted for about $914 billion, or 41 percent of the mortgage market. By the end of that year it was also clear that house prices were taking at least a temporary breather (Figure 1). It would be rational to assume that if the appreciation of house prices did not resume, default rates on a market segment that

Year of issue	Months since origination	Original balance in delinquency (%) Prime	Alt-A	Subprime
2003	60	0.4	1.7	15
2005	12	0.1	1.0	6.1
2005	30	0.9	7.8	29
2006	27	2.1	16	37
2007	12	1.1	7.9	17

Source: IMF (2008, data for Figure 1.8)

Table I.
Selected delinquency rates

accounted for about one-tenth of the fixed income market of the entire economy would rise even further.

Why were the buyers of these mortgage-backed securities not concerned about the risks? This remains a mystery. Formally, these securities were being rated by credit agencies and were given very high credit ratings. That, however, does not absolve institutional investors – manager of funds and of banks that were acquiring these securities – from the responsibility of assessing the risks themselves. No one has yet offered an explanation for why the rating agencies were providing the ratings that they did, or why the buyers themselves were willing to trust the rating agencies so completely.

The situation during the period from the middle of 2006 to the middle of 2007 can be summarized as follows. A very significant portion of markets' funds were being lent to subprime borrowers. The most derogatory term to describe these loans has been "ninja loans" – "no income, job or assets". The only justification for lending was the expectation that house prices would continue to appreciate and the lenders would recover their funds from the appreciation of the prices when borrowers default. The borrowers really did not matter in these loans. The loans made sense under the assumption of continuous increase in house prices. The risks of these loans were not being borne by the issuers of the loans, but were fully transferred to independent and unrelated investors in the financial markets. There was considerable evidence, including Alan Greenspan's own statement that the investors were not fully aware of the risks they were taking. A significant proportion of these loans was held by banks. By 2006, or at least by 2007, it was clear that house prices were not going to continue to rise. Default rates on these mortgages had begun to rise. Should the default rates exceed certain critical levels, banks would suffer large losses. Could those losses have been estimated to be large enough to create systemic risks for the country's or international financial system? The answer to this was provided by the failure of several hedge funds owned by banks in the middle of 2007.

Greedy bankers and derivatives

The three most common explanations for the subprime crisis seem to be the greedy bankers who paid themselves high salaries and bonuses with scant regard for the interests of the shareholders, innovations in the area of financial derivatives which allowed risks to be taken without full understanding of what was involved, and low interest rates after the 2002 recession which changed the risk-appetite of investors. While there may be a kernel of truth in the assertion that these factors made a bad situation worse, it is hardly justified to shoot the messenger for being the bearer of the bad news.

Bankers did not become greedy in 2003; they have always been greedy. What changed about the greed of bankers that surprised us and caught us unprepared? Greed is the driving principle of a market economy. Where is the surprise in this?

Financial derivatives have been around for decades. There have been numerous crises involving individual financial institution and rogue traders or managers that exposed the vulnerabilities of institutions (and the system, as in the case of LTCM) to uncontrolled or unsupervised use of these instruments. The use of now infamous credit default swaps by financial institutions to protect themselves from risks of mortgage-backed CDOs, risks that they did not understand, was merely a sideshow

to the subprime mortgages that were being given out. The crisis did not originate in these swaps – it originated in bad loans. The existence of swaps has made the situation difficult to untangle – something that had to be taken into account when the assets that were giving rise to the risks were being left unsupervised. The existence of these swaps and other derivatives is precisely the reason the regulatory authorities have to assess the systemic risks that arise from what may appear to be isolated losses. In a simple financial system, a mortgage-issuing financial institution would suffer loss of a bad mortgage, and provided it has sufficient capital, no one would be any wiser. In a modern and very complex financial system as ours, the mortgage-issuing financial institution take steps to protect itself against the potential loss from that mortgage, and thus involves a host of other financial institutions in the risks associated with individual assets on its balance sheet. These are the externalities and the systemic risks that the regulators have to take into account.

Finally, did the low interest rates lead to the crisis? Only in so far as the low interest rate made the mortgage rates look very attractive! Low interest rates were the requirements of the economy at that time. Low interest rates on safe deposits are not a justification for buying high-return assets without assessing the risks associated with those returns and without ensuring that risks are being properly priced.

The usual culprits are the easy targets.

Concluding remarks

Were the regulators of the economy, starting from the Federal Reserve and including the Office of the Controller of the Currency, Securities and Exchange Commission, Federal Deposit Insurance Corporation, Commodity Futures Trading Commission and Federal Housing Finance Agency, along with various state level banking regulators, sleeping at the wheel as the US economy was heading for a disaster and threatening to drag the rest of world with it? Behavioral economists now have very descriptive terms to explain actions of investors that challenge the traditional assumption of rationality on the part of economic agents. Two that come to mind in this crisis are "investor overconfidence" and "disaster myopia". Investors – and in the case the regulators who believed in the omnipotence of markets – seem to think that their assumptions about the future do not have to conform to reality. House prices can go on rising forever. They know what the market does not – and hence normal economic rules do not apply to them. Investors and regulators also tend to believe that if a disaster has not happened for a while, it may never happen again. One's subjective probability of an undesirable event falls below its objective probability as the most recent occurrence of that event recedes into the past. Never mind that banks had lent up to 70 percent of their capital to individual emerging countries just 20 years back under the assumption that "countries do not go bankrupt" and then spent a decade restoring their balance sheets when the countries did go bankrupt – that was the old system. Never mind the S&L crisis in the USA – we had solved that problem.

From the time the subprime mortgages were being issued, it was clear that the only justification for these loans was the assumption that house prices would continue to rise at their recent rates well into the future. These loans were becoming a very significant part of the US financial market by 2005. The impact of defaults would not be confined to individual investors. There would be systemic consequences. The risks of these loans were not being borne by those who benefited from the issuance of these

mortgages. A flaw in the system – unchecked rating agencies – allowed sophisticated investors to fool themselves into underestimating the risks of their investments. It is not clear how the regulators could put these developments together and still believe that self-regulation is all that was needed. Mortgages issuers could not care about systemic risks, investors believed that they would get out of the markets if things began to look bad, and regulators were too afraid to take the punch-bowl away when the party was in full swing.

Behavioral scientists need to come up with a term for drivers sleeping at the wheel.

Notes

1. "Chairman Cox Announces End of Consolidated Supervised Entities Program", available at: www.sec.gov/news/press/2008/2008-230.htm (accessed 26 September 2008).
2. In what may be the greatest irony concerning this crisis, some managers of leading hedge funds, whose *raison d'être* is understanding risk and arbitraging minor imperfections in risk assessments by the market, blamed the "financial system" and accused rating agencies of having "facilitated the sale of 'sows' ears [...] as silk purses' through 'fanciful' ratings of mortgage-backed securities', completely setting aside their responsibility for assessment of risks associated with assets they were acquiring (Kirchgaessner and Sender, 2008).
3. Academic research demonstrates that these loans were being pushed. Dell'Ariccia *et al.* (2008) find that increase in number of mortgages (a sign of pushing) is directly related to the rate of defaults.

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About the author

Arvind K. Jain is Associate Professor in the Department of Finance, Concordia University, Montreal, Canada. His current research focuses on corruption and poverty. His papers on corruption, debt crisis, capital flight, international lending decisions of banks, commodity futures markets and other topics have appeared in *Journal of International Business Studies*, *Journal of Money, Credit and Banking*, *Economics Letters*, *Journal of Economic Psychology*, *Journal of Economic Surveys*, and other academic journals. He has written two books, *Commodity Futures Markets and the Law of One Price* (1981) and *International Financial Markets and Institutions* (1994), and has edited two volumes: *Economics of Corruption* (1998) and *The Political Economy of Corruption* (2001). Arvind K. Jain can be contacted at: arvjain@alcor.concordia.ca or profjain@hotmail.com