

# The World Financial Crisis

## New economy, globalisation and old-fashioned philosophy

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Economists and financial analysts of the postwar generation have a much attenuated experience of economic ups and downs. We learned that business cycles would occur every three to seven years, though not regularly; that they would result in temporary unemployment as high as 8% to 10%; and that they could be greatly moderated by fiscal and monetary policy. The experience of the Great Depression was well in the past. Indeed, economy-wide financial crises were largely ‘history’ in the advanced countries. There have been no systemic worldwide financial crises in the post-Second World War years, although there have been a number of regional or sectoral problems, such as the East Asian financial crisis, the savings and loan crisis and the Long-Term Management hedge fund problem, which were handled with vigorous, focused policy intervention. The fact that the Federal Reserve was created to backstop the banking system against repeated liquidity crises in the United States was seldom discussed in *Economics 101*, in favour of the Fed’s role in macroeconomic stabilisation.

So it came as a surprise that, after almost 75 years of calm, we again face a major financial and economic collapse in the US, one that appears to have spread to the entire world. Financial markets have been in panic, and markets for basic commodities, including petroleum, have fallen sharply. The real economy appears to be collapsing in developed and developing countries alike. Paradoxically, we thought we had learned to avoid the excesses that lead to crisis, only to find that the very developments that represent the ‘new economy’ and globalisation are a source of the problem, particularly when deregulation and reducing government

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intervention were considered critical policy ingredients of a vigorous and innovative economy.

While financial difficulties in the US housing market were apparent as early as 2005 and the subprime mortgage problem emerged in 2006, the pivotal event in the financial crisis was undoubtedly the collapse of the investment bank Lehman Brothers on 15 September 2008. This failure shattered the unspoken commitment of the US authorities that major financial institutions were 'too big to fail'. It was followed by a sharp drop in stock prices, a freezing of financial markets such as commercial paper, and an upsurge in the differential between the London Interbank Offered Rate and the Federal funds interest rates, a measure of financial market distress. Banks simply would not lend to each other. Lenders sought to put their cash into treasuries rather than into commercial paper. The business system threatened to come to a standstill. The crisis quickly spread to other countries all over the world. Only after heroic efforts to pump liquidity into the system by the US Treasury, the Federal Reserve and central banks all over the world, did the pressure appear to abate, although even four months later the banking system remains shaky and reluctant to lend. Even at this time (February 2009), it would be too much to say that confidence was restored. And the current data on expectations and real economic variables – consumer sentiment and spending, quarterly gross domestic product statistics, investment plans, the ISM survey – suggest that a severe recession has begun.

How did all this happen? A strong argument can be made that the world financial crisis of 2008 is a consequence of new financial technologies, new accounting methods, new international linkages. These developments have come at a time when governments had returned to an old-fashioned free market philosophy, one that did not want to recognise the speculative bubble and impose regulatory controls.

## **The 'new' financial economy**

The crisis was not just an issue of 'greed', as some politicians would have us think. In important respects, explanations for the crisis lie in the 'new economy' and in globalisation. For financial markets, this has been a period of innovation, a 'new economy' indeed. Much of the difficulty can be traced to technological progress, the development of highly technical

new financial derivatives, new approaches to accounting and risk evaluation, and to the speed and distance of electronic markets.

Hedge funds are a 'new economy' development that has been around for some time. The expansion of hedge funds in recent years has been phenomenal, both domestically and in international markets to 10,000 funds with assets of US\$1.7 trillion.<sup>1</sup> A difficulty for hedge funds is that as market anomalies are exploited they are competed away. Hedge funds frequently rely on sophisticated mathematical algorithms, but the experience of Long Term Capital Management, which failed in 1998, demonstrates that even Nobel Prize-winning experts do not always get it right. In the present situation, withdrawals of funds, usually at the end of the quarter, threaten the operations of a number of important funds, causing them to withdraw liquidity from the market.

Securitisation has changed the allocation and measurement of risk among participants in financial markets. Derivatives, structured investment vehicles (SIVs) (also called collateralised debt obligations, CDOs) based on mortgages, are a good example. Not so many years ago, when your local mortgage or savings and loan bank had written a mortgage on a piece of property, it held that mortgage among its assets for many years. The bank had a strong interest in selecting borrowers with good credit records and income flows, who would continue to make their payments on a regular basis. Since its outstanding mortgage loans were likely to be concentrated in the surrounding area, it sought to maintain the value of houses in the home community and to prevent foreclosures. Today, in the US, the typical mortgage is issued by a national bank or mortgage firm, often with no intention of holding on to it. It is wholesaled to be pooled with many other mortgages and used as backing for mortgage-backed derivative securities that are sold on financial markets. The mortgage pool and the securities issued on it may be sliced into so-called *tranches* that represent different combinations of risk and return, from the lowest risk (*senior*) to higher (*mezzanine*) and highest (*equity*). This allows risk to be 'dissected, rebundled, and then reallocated within the financial system' (Haldane 2008).

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<sup>1</sup> According to Hedge Fund Research as reported in FT.com, 'Darwinian rules threaten hedge funds' (4 November 2008). The figures on hedge funds are, however, extremely uncertain since most funds do not report publicly.

The service activities connected with mortgages – collection of payments, transfer of funds to the mortgage holder and foreclosure, if necessary – are carried out by mortgage service companies that have little connection with the borrower or the ultimate lender. Their compensation on a fee basis often led them to maximise the number of mortgages issued, with little regard for borrowers' ability to repay. Moreover, since the service organisations were not typically the holders of the mortgage and the mortgages included in the pool were geographically dispersed, the service organisations were not concerned with maintaining the underlying value of the housing stock. They need only to do their job expeditiously, a task for which modern computer facilities and programs are ideally suited.

The securitised pool of mortgages (and each tranche) may contain some good mortgages and some bad ones, thus offering a degree of diversification, seemingly reducing risk. Some purchasers of mortgage-based securities do not know or care about the underlying mortgages, basing their purchase instead on the rating provided by a rating agency such as Moody's or Standard & Poor's. Some economists (e.g. Gramlich 2007) have noted the steady deterioration of mortgage quality in recent years, the prevalence of 'no income proof required' and subprime mortgages. Some derivatives were even based on packages of other derivatives,<sup>2</sup> lengthening the distance and potential for informational gaps and misaligned incentives between borrower and lender still further.

The benefits of such mortgages, in terms of improved availability of housing to poor credit score borrowers, must be set against their increased risks. What was often forgotten was that the risk is not just that there might be a few 'bad apples' in the mortgage pool on which the derivatives are based. The risk could be system-wide, not just an occasional delinquency or even foreclosure, but instead price decline or failure on a widespread basis as confidence in financial derivatives based on such mortgages evaporated. Such dangers should have been all the more a concern when mortgage-based securities were being purchased by foreign banks with little acquaintance with the strengths and weaknesses of the US mortgage market.

This is where a new financial instrument – the credit default swap (CDS) – became relevant. CDSs are a spectacular example of the new

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<sup>2</sup> These are sometimes referred to as CDOs.

financial technologies. In the late 1990s, it occurred to some insurance companies, such as American International Group (AIG), that it might be possible to provide insurance against default. CDSs take a variety of forms. In essence, they serve as a form of insurance against default or, even, price decline. An institution buying derivatives, perhaps of a quality that was uncertain or more risky than usual, would make a contract with another organisation to insure against risk of default. If the covered security defaulted or fell significantly in price, the CDS issuer would reimburse the security holder. The risks of default were assumed to be small, and the reserve backing held by an insurer, if any, was a small percentage of the outstanding value, allowing an almost infinite degree of leverage. An isolated default could be covered, but if all borrowers were to default at the same time or if the market for derivatives were to collapse, insurers would be unable to meet their obligations.<sup>3</sup> Synthetic default swap based instruments (synthetic CDOs) were developed as an outgrowth of cash instruments. In synthetic CDOs no legal transfer of the pool of bonds or mortgages takes place. To facilitate the originating process,<sup>4</sup> the underlying pool of assets remains in the hands of the originator. The CDO relates to the performance of a specified pool of assets (or a tranche of that pool) or gains exposure to credit risk by selling protection to others through a credit default swap. While in the 1990s most derivatives were issued on a cash basis, eventually the largest proportion were synthetics (*Credit Magazine* 2004; Nomura Fixed Income Research 2004). Many such credit default swaps were purchased and traded as speculative instruments, not directly linked to purchasers' holdings of securities. They represented simply a bet that certain outstanding securities would default (or decline in price) – a form of highly leveraged short sale without investing any capital. Credit default swaps fell into an unregulated limbo, subject neither to regulation by insurance commissioners nor to the US Commodities Future Trading Corporation (CFTC) or the US Securities Exchange Commission (SEC). As a result there was not even a requirement to hold reserves behind outstanding CDS securities.

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<sup>3</sup> The considerable dangers of some tranches of these instruments, including business cycle risk, especially of the synthetic variety, are discussed in Gibson (2004).

<sup>4</sup> Not transferring ownership of the underlying assets avoids the need to secure permission from the original borrower, and avoids transfer fees.

In 2007–08 the volume of outstanding CDS-based securities ballooned, reaching many trillions of US dollars, far in excess of the outstanding volume of mortgage debt. The decision by the debt rating agency Fitch to downgrade AIG's securities from its AA rating to AA– was enough to undermine the safety of the entire system. Banks that thought they had their bets hedged with AIG default credit swaps would suddenly have unbalanced books. The failure of AIG, the largest issuer of such derivative instruments, would have brought down many banks. Their failure could in turn lead to other failures 'or, in plain terms, a financial death spiral in which firms suck one another into the abyss' (*Time*, 29 September 2008, p. 39). That is why the US government could not allow AIG to fail. Similarly, the arranged purchase of Merrill Lynch by Bank of America became necessary because Merrill Lynch had overextended itself by issuing huge volumes of synthetic CDOs (*New York Times*, 9 November 2008).

These experiences also point to another critical financial development: the rating agencies and the process of establishing ratings for debt securities. As noted, banks must be very conscious of the quality of their assets. An important way to establish the safety or riskiness of financial paper is by way of the ratings supplied by the major rating agencies, such as Fitch, Standard & Poor's, and Moody's. Their ratings for bonds reflect market experience with various types of securities and their issuers, as well as arcane risk calculation formulas. When new forms of securities such as CDSs were introduced, a record of credit experience was lacking and ratings were based on risk appraisals of the underlying mortgages but not on the systemic risk of the mortgage-based securities.<sup>5</sup> Apparently these ratings did not reflect the reality of the risk involved, something that became clearly apparent when credit default swaps with investment grade ratings were downgraded.

## Computerisation

Computerisation and developments in communications have facilitated and accelerated the new financial developments. The sheer volume and complexity of the transactions, and the speed required to carry them out,

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<sup>5</sup> Rajan (2005) and Haldane (2008) argue, moreover, that the approximations used do not adequately account for the 'tail risk', the possibility that the probability distributions of potential loss have 'fat tails', and that the non-linearities in the risk–return profile may not be taken into account. Gibson (2004) also notes business cycle risk.

depend on the automated systems that were made possible by computers and sophisticated programming. Advanced communications links lie behind the participation of financial institutions all over the world in the new financial markets. It is hard to visualise how pooling mortgages and issuing derivatives could be handled manually. Moreover, there is no longer a need for a trading floor since transactions are carried out electronically. Conveniently, as we will consider below, the Commodities Futures Modernization Act of 2000 exempted electronic exchanges from regulatory supervision.

## **Globalisation**

The globalisation of financial markets is another element in the story. Computerisation has facilitated globalisation. Transactions across international boundaries are instantaneous. Many banking institutions have extended their operations far beyond their home territory.

The period from 2000 was a time when excess saving in the rest of the world economy surged into the US market. The US was running substantial current account deficits. To a large extent, these were funded by foreign central banks – for example, the Bank of China. Sovereign wealth funds from Singapore and from the Middle Eastern countries also participated actively in capital markets. This is a form of globalisation that had not been anticipated. In earlier periods, capital had gone from developed to developing countries, and here was a case where excess capital in the developing world was finding a haven in an advanced country, the US – not altogether a safe haven, it appears. Many organisations purchased US Treasury securities, but increasingly they began to diversify into derivatives that promised a slightly higher rate of return, although, obviously, at greater risk.

The international dimension of financial markets has been a source of difficulty since risk information does not always fully cross international boundaries. Investment vehicles based on subprime mortgages were sold to foreign banks that were delighted to receive a slightly higher interest rate and that failed to recognise the risks involved. Many of them took literally the AAA or AA rating provided by the rating companies. European bank failures have been attributed to American subprime mortgage derivatives. Similarly, Icelandic banks operating in the United Kingdom were

investing deposits in risky securities. It is not clear that British authorities, who did not regulate foreign banks, fully appreciated the risks involved. The lack of an international regulatory agency and of common accounting and reserve standards creates problems that may offset the advantages of an increasingly globalised financial sector.

Carry trade was another dimension of financial globalisation that back-fired badly. In principle the idea looked good: to borrow where savings are abundant and money is cheap and to invest where capital is in short supply. In practice, this meant borrowing at low interest rates, in Japan, for example, and lending in markets where interest rates were still high. Drastic swings in the exchange rate – a 25% appreciation in the yen against the euro in the past six months – wiped out the carry trade and its investors.

## **Advanced accounting methods**

Modern accounting methods may have been another contributor to the crisis. Over the course of recent years, financial institutions turned to what is known as ‘mark-to-market’ accounting.<sup>6</sup> The idea is to keep the accounting statements on a current basis. Instead of recording a financial asset at its book value, fair value of financial assets is to be established on a current basis, if possible in relation to their actual current market price. In the absence of an active market, as for many derivatives, valuation may be based on other information. This approach seems to be a realistic and up-to-date way to evaluate the financial position of enterprise. It is of little consequence when asset prices are relatively stable, but it becomes a controversial, and perhaps dangerous, matter when asset prices swing wildly as a consequence of financial unrest. Some economists have argued that mark-to-market accounting conveys an unrealistically volatile view of financial enterprises and may be a source of financial crisis (Taub 2007). At a time of financial panic, market values of securities may be way below their long-run intrinsic value. When security prices drop sharply, the current numbers in a company’s balance sheet may undercut confidence. Creditors may fear for a firm’s solvency. Even a firm that is sound from a long-run perspective may be called on to provide additional margin against

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<sup>6</sup> Financial Accounting Standards Board (FASB) statement 157 made such mark-to-market accounting obligatory after November 2007 for most US banks and security firms.

its short positions, or it may need to increase its capital base in order to meet ownership requirements. Such developments may, in turn, lead to further market decline, potentially a vicious circle. ‘The feedback loop between weakening asset prices and marking-to-market of balance sheets helps explain the correlation between liquidity and solvency problems in the period since March 2008’ (Haldane 2008) We note, incidentally, that mark-to-market accounting depends on computerisation; it would not have been possible if accounting were still done the old-fashioned way, with pencil and paper.

Off-balance-sheet items were another esoteric accounting feature that had a run in recent years – a very dangerous one, as the failure of Enron in 2002 demonstrated. In order to keep large debt obligations off the main company’s balance sheet, firms would create Special-Purpose Entities (SPEs), whose primary objective was to hold, or rather to hide, debts. SPEs, which required only a small percentage of outside ownership to be effective, would serve as a place where large debt obligations could be parked. Enron would create SPEs as required and transfer debt to these entities before it filed its financial reports. After the off-balance-sheet item transaction took place, the debt was no longer reported as a liability; indeed, a profit was often reported on the transaction. Such blatant financial manipulation is no longer permitted in the US under the Sarbanes-Oxley Act, which makes it mandatory for companies to report the effect of SPEs on their financial situation. Moreover, the need to bring some of the troublesome assets parked in SPEs back into the company’s main balance sheet has caused serious difficulties for many banks.

## **Free market philosophy**

Finally, and perhaps most important, is the issue of philosophy of free markets and regulation. Most economists have supported the ‘old-fashioned’ ideas of deregulation and free trade. Few have recognised the potential dangers of the new financial products. Instead ‘The standard view in economics in recent years has been that financial innovation can help diversify risk because it can allocate it efficiently to agents who are better suited to bear it’ (United Nations Conference on Trade and Development 2008). Most have supported reductions in international trade and capital

flow barriers without recognising the potential risks of some, but certainly not all, international interactions.

We begin with the philosophy of free markets. A frequent underlying assumption is that markets operate according to objective principles, even rational expectations, and that, as a result, markets will naturally tend towards equilibrium. In his Congressional testimony (Committee on Oversight and Government Reform 2008), former Fed Chairman Alan Greenspan acknowledged that he had made a ‘mistake’. He admitted that he might have been influenced by his philosophy about the operation of markets, believing that banks, in their own self-interest, would do what was necessary to protect their shareholders and institutions. He expressed his ‘shocked disbelief’ at the current situation. This represents a monumental admission, considering that Greenspan, 82, supported unregulated free markets ever since he began his career as a supporter of Ayn Rand, a philosopher of unfettered free market capitalism. In fact, markets do not always tend smoothly towards equilibrium, There are important gaps and asymmetries in information, bandwagon effects and imperfections in market operations. These cannot be ignored. The evidence of financial crises and cycles suggests that markets swing more widely and, often, more broadly than would be consistent with rational expectations. ‘Overshooting’ is a widely observed phenomenon. Importantly, missteps by one firm or in connection with one security market may have spillover effects to the entire financial system, effectively a negative externality. Over-extended real estate markets, financial panics or credit crunches, like the ones we have seen recently, are examples. It is curious that Greenspan, who used the term ‘irrational exuberance’ in the 1990s (Federal Reserve Board 1996), did not take these possibilities sufficiently into account in his policy proposals of the 2000s.

Traditional financial policy uses regulatory oversight to ensure that firms are not over-extended or over-leveraged, to reduce the risk of financial sector failure.<sup>7</sup> The Federal Reserve sets minimum reserve and ownership requirements applying to banks. Insurance companies are closely regulated to ensure that reserves are sufficient to cover potential losses. Mortgage lending regulations used to call for minimum down payments,

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<sup>7</sup> Monetary policy is used to prevent inflation and to influence aggregate economic activity. Timely raising of interest rates would have been one way to discourage the over-expansion of real estate markets.

fixed interest rates and specific repayment periods. The SEC supervises stock issues and the CFTC supervises the futures market.

The 1980s and 1990s saw a turn towards a free market mentality, effectively a return to an older non-interventionist perspective – a viewpoint of various US administrations, Democratic as well as Republican. This was the age of deregulation and (in Europe) privatisation. The underlying philosophy was that the economy should be allowed to operate freely with only minimum government intervention. Performance and innovation would be maximised and markets would naturally and, presumably smoothly, reach equilibrium. There was a marked loosening of regulatory standards and enforcement. Markets for new types of securities, such as credit default swaps and derivatives, were left unregulated. In regard to the new financial instruments, in the US, the Commodities Futures Modernization Act of 2000 was a critical consideration. This law, passed at the very end of the Clinton administration, legalised ‘single stock futures contracts’ and exempted trading on electronic platforms from regulation – what has since been called the ‘Enron loophole’. At the time, this appeared to be simply another step in the deregulation of business and markets that had been occurring for some years. It had widespread support both on the Democratic and Republican side of the aisle. As we look back, the Act created a glaring gap between the jurisdiction of the SEC and the CFTC.

The 1999 repeal of the Glass-Steagall Act represented another step in the effort to deregulate markets. Enacted in the depth of the Depression (1933), Glass-Steagall erected a firewall between deposit-taking banks and investment banks and other financial institutions. Its repeal made possible the combination type of banking supermarket, encompassing deposit banks, investment banks, insurance companies and stock brokerage, represented by Citicorp. As this case – which is now being disentangled – demonstrates, the risks incurred in the non-traditional banking operations endangered the deposit bank’s solvency and limited its ability to carry on lending operations.

The philosophy of non-intervention and free markets was also a factor with respect to macroeconomic policy, i.e. the stimulative policies of the Fed during the past few years, and its failure to recognise and deal with the housing bubble. With rising house values, to many times their historical level with respect to income, ‘Americans began to consider their

dwelling units the equivalent of automated teller machines' (Gottesman 2008). Through resales and refinancing, homeowners realised increases in real estate valuations and used the funds obtained to support current consumption. Having become aware of the more rapid gains in productivity growth associated with the 'new economy' since the mid-1990s, US monetary authorities were pleased with the economy's improved growth performance and were reluctant to impose monetary restraint to slow the economic expansion. On the contrary, seeing home ownership as a virtue in its own right, the government-sponsored home mortgage banks, Fannie Mae and Freddie Mac, were encouraged to increase their loan acquisitions and to reduce their credit score requirements.

It is not useful to ask whether blame should be put on the financial institutions that engaged in unsafe practices or whether to blame the regulators. However, paradoxically, the very theories of non-intervention in free markets that were meant to encourage dynamic financial markets may have made possible the speculative excesses that lie behind the financial crisis.

### **Can we put the genie back in the bottle?**

As indicated, the crisis in housing and mortgage markets turned in 2008 into a worldwide financial crisis. Economic indicators show that the financial crisis is being followed by a rapid decline of the real economy, one that may be of substantial magnitude. The housing market is depressed, car sales are down, prospects for investment and consumption are deteriorating rapidly. The GDP growth statistics have turned negative in all major advanced countries and, with dependence on primary commodity markets and trade globalisation, there is fear of even greater shocks in the developing world. The issue is not whether there will be a recession, but how serious it will be, how widely it will spread and how long it will last. Economists are debating whether the movement of the economy will be V-shaped, with a steep drop and a rapid recovery, or whether, as now appears more likely, it will be L-shaped, with a sharp drop and then a long period of stagnation.

The challenges for economic policymakers in the new US administration and of the European Union will not only be the traditional counter-cyclical objectives of monetary and fiscal policy. The financial crunch that

has blocked lending in private financial markets represents not simply a lack of liquidity, but, more fundamentally, a lack of ‘trust’. As monetary authorities deal with the symptoms of financial crisis – the Troubled Assets Recovery Program (TARP) for example – they are finding that banks are unwilling to lend because they do not trust the borrowers. Once the genie is out of the bottle ... the difficulty is how to re-establish confidence.

After that, a new approach to regulatory policy in a ‘new economy’ setting will be required, one that recognises the limitations of a philosophy of non-intervention, that encourages technical progress and that coordinates rules across global financial markets. This may turn out to be a monumental challenge. Can we reconcile the need for regulatory constraints with the dynamics of an innovative and competitive global economy?

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