Lessons from the 2008 Financial Crisis

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Introduction

1. Fundamentally, this is a story of how two basic human motivators, fear and greed, conspired in an environment of permissive macroeconomic conditions, economic policies, and regulatory framework, to break down both confidence and trust, producing financial and economic crisis.
2. To draw lessons, it is necessary to understand the principal mechanisms. And this is not easy, because this crisis was systemic, with multiple causes that interacted.[2]

Macroeconomic backdrop

3. Over the preceding decade or more, OECD economies had had – or had perceived themselves as having – difficulty in maintaining aggregate demand. Weak private sector investment was one contributing factor.
4. While Asian economies could export their way out of the problem, that option was not open to the world's largest economic entities. Hence in the US, partly for these reasons, although also for political reasons, policy acted to support domestic demand.
5. The US cut taxes, in 2001 and again in 2003,[3] at the same time as electing to fight a major war. In most other countries, however, and in particular in the Euro area, the fiscal stance was conservative.
6. Monetary authorities also acted to support domestic demand. Policy interest rates fell towards recent historical lows, and central banks erred on the side of caution in policy normalisation. A simple Taylor Rule calculation suggests that in aggregate, official rates of the OECD economy as a whole were around 180bp "super-loose" in 2003, and by about 270bp in 2004: only in 2007 did they return to "normal".
   6.1. These effects were transmitted to other countries via fixed, quasi-fixed, or artificially-depressed exchange rates, thereby amplifying the overall effect.

Imbalances

7. The US general government deficit was of the order of 5% of GDP between 2002 and 2008.[4] This compares with a US average of under 0.5% of GDP in the five previous years, and an average from 2001 of just over 2% of GDP for the Euro area.
8. The rise in US property prices, like the dot.com boom before it, led US households to judge that they were meeting their wealth targets, and so consumption surged,

consumers spending around 4 cents out of every $1 increase in their paper wealth – including importantly their 401Ks.

9. Household debt ratios, which had been rising since World War II, took off.

10. In aggregate, from 2001 the US economy absorbed considerably more resources than it produced, running a current account deficit that averaged a little over 5% of GDP.

    10.1. In the Euro area, by contrast, the current account had been close to balance.

11. It would not be right however to pretend that the US action was unwelcome: had the US not sustained its growth of domestic demand, economic growth everywhere else in the world would have been weaker.

Potential consequences

12. So novel were these circumstances that there was no way of knowing for certain what would happen, or when. But there were some pointers:

    12.1. ***Reductio ad absurdum.*** No entity – be it individual, household, company, or country – can indefinitely consume more than it produces. There comes a point, even for the world's largest economy, where lenders start to become circumspect, in one way or another, about advancing further credit.

    12.2. **The experience of developing economies**. At Lehman Brothers we had a tool, *called Damocles**,** for predicting financial crises in developing countries.*[5] *A Damocles* reading above 75 implied a one-in-three chance of a financial crisis over the coming 12 months, and a reading above 100 implied a 50-50 chance.

13. Almost as a joke, at first, we also ran the US through the model. Basically, while we recognised that G10 economies can "get away with" poorer scores, and for longer, than can emerging market economies:

    13.1. Nevertheless, the US score had been high for quite a while – fairly systematically between 75 and 100 over the preceding 10 years;[6]

    13.2. Moreover, the US ranked second: between Iceland (worst) and Romania (third);

    13.3. The main negative signals were coming from, the current account, external debt, and private credit.

14. Models such as *Damocles* have their place; but it can be prudent to cross-check them against rules of thumb, such as the Qvigstad rule, which posits that trouble lies ahead for any OECD economy if any of its key macro indicators – the public sector deficit (as a proportion of GDP); the current account deficit (as a proportion of GDP); and the inflation rate – exceeds a value of 4.

15. On that basis, the US had been in trouble:

    15.1. Every year since 2002 in respect of its current account deficit;

    15.2. Since 2003 in respect of its average public sector deficit; and

    15.3. In 2008 in respect of its inflation rate also.

16. However one looks at it, the global, and particularly the US, macroeconomic configuration was almost certainly unsustainable. And as the American economist Herb

Stein famously observed, "Things that can't go on forever, don't."[7] And of course they didn't.

17. Accordingly, it is appropriate to consider the ways in which the underlying forces – greed, fear, macroeconomic policy and imbalances, interreacted with one another in the context of a (light) regulatory framework.

The passage to crisis

18. Behaviour progressively evolved:

    18.1. **Savers, seeking yield**, were relaxed about moving into assets that historically had been risky, in part because inflation was quiescent and bond yields were historically low. (Indeed, at the beginning of the decade, <u>deflation</u> was considered the greater threat.)

    18.2. **US investment banks borrowed extensively** on the wholesale money market, lending massively to households through mortgages and loans, further fuelling the property boom.

    18.3. **Mortgage mis-selling** aided the process, particularly in the US, salesmen being paid per sale, while bearing no responsibility for the consequences.

    18.4. **Investment banks, responding to the search for yield, invented complex, highly geared investment vehicles**, many of which they funded on the wholesale money market and then sold on to other parties (the so-called 'originate and distribute' model) so that they did not appear on the banks' balance sheets.

    18.5. ***The* 'shadow banking' world of hedge funds, private equity firms, and other unregulated financial companies –** the demand side of the trade in collateralised debt obligations (CDOs), mortgage-backed securities, credit default swaps (CDSs), and the like – contributed to the explosion of leverage.

    18.6. **Other countries participated in parts of this story**. Australia, the UK, Ireland, and Spain in particular replicated the housing boom; and investors in many countries bought substantial amounts of the new American products that investment banks had manufactured in industrial quantities.

19. Then suddenly, asset values turned; confidence and trust collapsed; and leverage, which until that moment had been everybody's friend, turned into a savage enemy. And everyone knows how events then unfolded.

Why did so few people realise what was happening, and stop it?

20. Many explanations have been suggested over the years, and there is an element of truth in most. Here are some of the main ones, starting from the bottom and moving upwards:

21. **One-sided incentive structures**, it is alleged, encouraged traders to make unwarrantedly risky bets. If they succeeded, they got paid, and handsomely; yet if they failed, it was someone else's money that they lost, and they simply moved on. Maybe. But traders have individual risk limits: ultimate responsibility therefore rests with the banks' managements (often ex traders themselves) who set those limits.

22. **Poor corporate risk analysis**. This had various dimensions:

22.1. Within the investment banks, many chief economists – though fewer in the US – warned repeatedly about the unsustainability of the global, and particularly the US, macroeconomic configuration. (Economists are good at identifying disequilibria; but not good at predicting when they will unwind.)

22.2. Some risk managers were insufficiently concerned that the mathematical risk models being used did not adequately take underlying macroeconomic risks into account;

22.3. Many senior risk managers were reluctant to admit that they did not really understand their banks' risk models;[8] and

22.4. Most managements did not appreciate that, whether for contractual or for reputational reasons, sponsors would not be able to avoid responsibility for their supposedly off-balance-sheet products.[9]

23. **Undue reliance on Value at Risk (VAR) analysis.** Risk management had become increasingly model- and statistics-based, with VAR analysis at the centre.[10] But this technique had two serious limitations:

23.1. **Few tail observations**. While there were many observations around the median of a distribution, information about the extremities – which is where the catastrophic risk lies – was sparse, particularly after 15 years of exceptionally low macro volatility. In practice, the probabilities of extreme events were obtained almost wholly by assumption.[11]

23.2. **Framework conditions evolve**, and accommodating this required a structural framework, which a statistical distribution alone could not provide. In the limit – it was hoped only occasionally – the model simply might not describe reality at all.

24. **Unwillingness of corporate management to act**. Senior bank executives did not feel able to 'leave money on the table'. Chuck Prince, then-Chairman and Chief Executive of Citigroup, implicitly spoke for all when in July 2007 he said, 'When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you've got to get up and dance. We're still dancing.'[12]

25. **Poor corporate governance**. Boards of Directors proved too weak, or too ill informed, to challenge 'successful' CEOs. Managements appeared increasingly to be running companies for themselves, and shareholders proved unwilling, or unable, to rein management back.

26. **'Grade inflation' by the credit rating agencies (CRAs)** implied, for example, that a mortgage vehicle rated as 'triple A' (the highest rating that the CRAs could give) carried the same risk as similarly-dubbed major-country government bonds.

27. **Credit rating agencies (CRAs) became conflicted**, accepting fees for certifying that the new vehicles were high-grade. At root, the CRAs' business model contained – and still contain – an unresolvable conflict: the people who pay for their services are not those who use them.[13]

28. **Regulatory Authorities did a poor job**. They:

    28.1. Relied too heavily on companies 'doing the right thing', while having too few ways to check whether they actually were; and

    28.2. Failed to achieve a basic alignment of risk with reward, and of financial regulation with financial activity.

29. **Capital ratios proved to be inadequate,** given the leverage that had been permitted by the Securities and Exchange Commission (SEC). When asset values collapsed, not only did the shareholders lose all, but the investment banks were revealed as having reached systemic importance.[14] The total amount the financial sector had written off by 2009 – well over $1 trillion – was <u>over 100 times</u> its collective VAR assessment of 18 months previously.[15]

30. **The pro-cyclical impact of 'mark-to-market' valuation techniques** exacerbated the capital inadequacy of banks. When crashing 'fire-sale' values are used by auditors to value a bank's assets, they induce fire sales to spread, thereby making matters worse.

31. **A deficient understanding of corporate self-interest** led regulators, from Chairman Greenspan down, to believe that managements would always have their company's survival as their primary objective, and so would avoid actions that would unduly jeopardise survival. This faith however underestimated three important forces:

    31.1. Management's personal short-term objectives;

    31.2. The unawareness of many CEOs of the scale of the risks of macroeconomic origin to which they were exposed; and

    31.3. The degree to which competitive pressures obliged each to do broadly what all the others were doing.

32. **The international organisations failed to press the point.** The Bank for International Settlements, and in particular the former head of its Monetary and Economics Department, William White, really sounded warning bells: but, like Cassandra, he was ignored. The IMF and the ECB also made noises. But in the policy world as a whole, much as in the investment banks, no one really wanted to hear.

The 'ideal' policy response

33. It became evident more or less immediately that the crisis warranted a full package of measures, consisting of most, and probably all, of the following:

    33.1. **Coordinated and dramatic interest rate cuts** by all major world economies.

    33.2. **Discretionary fiscal stimulus**, to supplement the operation of the automatic stabilisers.

    33.3. **Guaranteeing of all bank deposits**, at least for individuals, but quite possibly for all depositors, for a significant period.

    33.4. **Guaranteeing that no major bank would be allowed to fail f**or at least the next several years – whether by the authorities recapitalizing any failing bank, or at least providing liquidity in the event of a run.

33.5. **Removing compromised assets** from the balance sheets of private financial institutions by government sponsored and financed mechanisms.

33.6. **Provision of support to any important financial market** that ceased to function, be it the commercial paper market, inter-bank lending, or whatever.

33.7. **Making short-term loans directly to corporations** – essentially buying commercial paper, and perhaps higher grade corporate debt, for cash.

33.8. **Easing the repayment terms on existing mortgage holders**, to reduce the flood of defaults and foreclosures that would otherwise occur.

33.9. **Perhaps going to even more unusual lengths**. In particular, if the long end of the bond curve remained reluctant to decline, central banks should engage in extended open-market operations.

34. Even if all this were to be done, the most that could be hoped for was that the policy package would prevent recession from going as deep, and lasting as long, as it would if left unaddressed.

34.1. Furthermore, the fundamental macroeconomic conditions that gave rise to this situation would not have been addressed.

35. The one encouraging feature was that policymakers seemed determined to avoid the traps of protectionism, bilateralism, debt default, and competitive devaluation that swept the globe in the 1930s, and which deepened and prolonged the Great Depression.

35.1. (Note: in the 2009 paper we also opined that "It is devoutly to be wished that that remains the case, in the face of the populist political onslaught that is almost certainly bound to follow.")

The policy response in practice

36. In the event, some of the needed policy responses – regulatory and macroeconomic – were enacted; but others were not – and still have not been.

Regulatory policy

37. **Require the Regulatory Authorities, or some "macroprudential" body, to report on the potential financial sector implications of macroeconomic imbalances**. This would be a new remit.

There has been significant progress in this area via central bank financial stability reports etc.

38. **Establish *ex ante* the conditions whereby it is appropriate to take over a distressed bank**. Ideally, a failing bank should be taken over when its net worth is still positive, so that it can continue as a going concern, while changing management (and shareholders).

Progress has been made here, *inter alia* by provision of 'living wills'

39. **Raise capital adequacy ratios,** at least for any bank that operates with its deposits guaranteed.

This has been done across the board, in the context of the G20, but latterly the US has begun to reverse course

40. **Require banks to operate a pro-cyclical liquidity policy**,

    This too has been done across the board, in the context of the G20

41. **Oblige the Credit Rating Agencies to recover from their conflicted failure**. There may be a case for two types of credit rating agency, the first to carry out legislated supervisory responsibilities (perhaps under a new Basel III accord), the second undertaken for business for profit but with no role in supervision.

    Little has been done here

42. **Strongly discourage off-balance-sheet activities**. Be continually on the lookout for financial innovations that take banks' risk off balance sheet; and put the onus on to the proposer to explain why doing so is in the public interest.

    While the so-called 'shadow banking' system has shrunk, areas of concern remain, and financial regulation continues to leave regulators trailing

43. **Start planning the exit conditions from policy settings** that, though necessary to avoid the worst outcomes, could not be sustainable in the longer term.

    Only now is this beginning; and hesitantly

Macroeconomic policy

44. **Pay greater attention to imbalances.** Policymaking, not least in the US, should attach proper policy weight to paying an 'up front' cost to avoid a major imbalance, rather than pay the, often greater, cost of recovering from its consequences.

    Manifestly in 2018, this has not been done – on the contrary.

45. **Direct policy at any major macroeconomic variable that departs significantly from any historical relationship –** even if this is analytically difficult to do in 'real time'.

    Again, it is difficult to find much evidence of this lesson having been learned

46. **Agree a better method of identifying bubbles**. Mr. Greenspan was reluctant to call a bubble, arguing that asset prices were an important signalling device, and that their appropriate values were unknowable. There are other approaches, however. Minsky, for example, identified bubbles by the behaviour of people, taking as a sign of a bubble any occasion when large numbers start trading markets they do not understand.[16]

    Today in 2018 this debate remains unresolved

47. **Achieve better policy symmetry between fiscal and monetary policy.**

    Ten years on, the world remains unduly dependent upon monetary policy (often unorthodox) for macroeconomic stabilisation

Three conclusions

i. **Regulatory policy.** Considerable progress has been made on the regulatory front, in nearly all the areas of major importance. That said, it should not be forgotten that the next crisis, whenever and whatever form it takes, will almost inevitably be different from the recent one.

ii. **Macroeconomic policy.** This area by contrast remains fundamentally flawed. The lessons of 2008 do not seem to have been learned.

iii. **Important role for OECD**. There is self-evidently an important, central role here for the OECD. The world needs a credible organisation fearlessly to call attention, repeatedly, to the macroeconomic issues, and not least the imbalances, that risk providing the breeding ground for the next financial crisis – in whatever form it may take.■

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[1] This paper is excerpted from a paper that my colleague Russell Jones and I wrote in January 2009, more or less immediately after the Great Financial Crisis. I presented the paper to a meeting of HM Treasury economists on 8 January 2009, and both Jones and I presented it to clients in a number of countries.

That paper was ultimately published by the Society of Business Economists – see Llewellyn, J, 2010. Lessons from the Financial Crisis. *The Business Economist*, Vol 41 No 1 p. 35.

This version of the paper has been shortened and slightly updated. Mainly, the opportunity has been taken, in the final section, to compare the reforms that we saw then as necessary with what has actually happened.

[2] Similarly, it is almost certainly pointless to look for a single trigger, or a tipping point. When a system is near to collapse, almost anything can trigger it. And it should be remembered that a tipping point is a place, or a moment, not a *cause*.

[3] Taxes were cut in 2001 by the Economic Growth and Tax Reduction Reconciliation Act, and in 2003 by the Jobs and Growth Tax Reduction and Reconciliation Act.

[4] Source: OECD *Economic Outlook* November 2018.

[5] A full description of *Damocles* is available on request.

[6] I once presented the result to the Lehman Brothers Risk Committee in New York, but it got a dusty reception, and I did not try doing so in that committee again. I did however keep plugging away with the thought in other Lehman Brothers' fora.

[7] Quoted by Paul Krugman, *International Herald Tribune*, 5 November 2003. Others remember Stein slightly differently, but the point is the same. See for example Greenspan on Stein at http://www.nabe.com/am2000/grnspnvid.htm

[8] Ricardo Rebonato makes this point, based on inter alia his experience as Head of Market Risk at the Royal Bank of Scotland, in his recent book Plight of the Fortune Tellers (Princeton University Press, 2007). I reviewed this book: see http://www.llewellyn.co.nz/Newspaper.pdf

[9] The main "Originate and Distribute" business model, as our colleague Nugée has note, was designed to overcome some of the drawbacks of its predecessor, the 'Originate and Hold' model, whereby banks making loans kept them on their books. Securitisation appeared to overcome both of these drawbacks, by making loans and hence risk more tradable, and thereby freeing up banks' balance sheets for further business. But it

also encouraged short-termism and opportunistic lending (including to those who could never afford to repay), and it relied heavily on markets remaining liquid and on instruments remaining tradable. Accordingly, when markets froze, the securitisation model failed. See Nugée, J., *Failure and Reconstruction: The Financial Sector in 2008 and 2009*.

[10] A significant part of the pressure to make VAR a lynchpin of modern risk analysis came, interestingly, from the Regulators.

[11] This point is made strongly by Rebonato, *op cit*.

[12] *Financial Times*, 10 July 2007. Cited by John Gapper http://blogs.ft.com/gapperblog/2007/11/wall-streets-brhtml/

[13] The main people who use the ratings are investors: it is they who want to know the strength of the asset they are buying, and many investors use the CRAs' ratings to provide rules for their portfolios, so that for example they will not buy an asset unless it is rated AAA. But in today's world of mass information, the CRAs could find no way to charge the investors for this rating. When everyone knows something, no-one will pay for it.

[14] For example, in Q4 2007 Merrill Lynch's VAR, with 99% confidence, was $69 million: yet that quarter they announced a write-down of $10 billion. Source: Merrill Lynch's own figures, as cited by Nugée, *op. cit*..

[15] Source: Nugée op cit..

[16]Thus when people are giving up their jobs in droves to become day-traders in the stock market, or city workers are piling into the buy-to-let property market, there is an *a priori* presumption that an asset price bubble is imminent. For an interesting discussion on financial crises in general, and Minsky in particular, see Kindleberger, C. P., *Manias, Panics, and Crashes*, 4th edition, pp. 13-18 (2000, John Wiley & Sons).