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MONETARY RESEARCH
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IIMR Conference Papers Series

What should central banks do in a great financial crisis?

November 2020

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This is the text of the two lectures given by Professor Forrest Capie via webinar in the **IIMR Money Lecture Series** on '**The Evolution of Central Banks and their roles in great financial crises**' (September – October 2020). Professor Forrest Capie is a member of the IIMR Academic Advisory Council. We are very grateful for his contribution to the series.

I. Lecture I: On financial crises and the roles played by the Bank of England in the 18th and 19th c. crises

1. Introduction

In attempting to answer this question, as an economic historian, I will naturally turn to history. How did a central bank come to deal with large financial crises? And if they proved successful does that mean we now know what to do?
I have always been a bit uneasy about the lessons of history. I am often impressed and sometimes alarmed by the speed with which some people can spot a lesson. And yet if there are no lessons what is the point of history? There are answers. One is the study of history should breed caution. It is a course in scepticism. But there are surely no easy lessons. And the wrong lesson might be learned.

Nevertheless, on the question of financial crises I happen to believe there are lessons to be found in the Bank of England's experience and in particular in relation to financial crises in the nineteenth century. Very briefly, through a series of crises, some outside pressure, and some new personnel, the Bank learned how to deal with and even prevent crises: the banking system must be well behaved and banks allowed to fail if not behaved, and the Bank of England should accept the role of lender of last resort (though we still don't have complete agreement on how that should be carried out). In addition, all of this previous experience took place in the nineteenth century when deregulation was taking place. And there is a need to reconsider the functioning of the regulatory system.

2. Financial crises

First of all, what is a financial crisis? There have been many approaches to the question. For example, Richard Grossman gauges it in one of three ways: first if a high proportion of banks fail; second if there is the failure of a very large bank; and thirdly if either of these two is prevented by state assistance. Reinhart and Rogoff (2009) on the other hand say it is a bank run leading to state takeover or the closure of important financial institutions. To Charles Calomiris

(2010) it is where the aggregate net worth of failed banks is greater than 1% of GDP. And to John Turner (2014) it is the failure of commercial banks but particularly captured in the failure rate, the number of fails/no of banks and in the capital of failed/total bank capital. And these can be supplemented with the collapse of relative bank share price.

There are different kinds of problems in all of these that lead me to prefer the approach of Anna Schwartz who defined a real financial crisis as opposed to a pseudo crisis as something that was a threat to the payments system. It is essentially a banking crisis: "*A financial crisis is fuelled by fears that the means of payment will be unavailable at any price and, in a fractional reserve banking system leads to a scramble for high-powered money*." (Schwartz, 1986, p.11). Note the fractional reserve banking system. In the earliest banks, say those of the pre-eighteenth century, there was little if any fractional reserve use. And in what was essentially a 'cloak room' there can't be a crisis. Indeed a fractional reserve system needs a largish bank multiplier before the risks really arise. In England in the eighteenth century that multiplier was around 1.2 to 1.3. In the nineteenth century it was between 3 and 4. So financial crises began to appear in the very late eighteenth but mostly in the nineteenth century. The main crises were those of 1825, 1836-9, 1847, 1857, and 1866.

Charles Kindleberger (1996) set out some time ago the pattern of events that generally led to such a crisis. And the crises were all remarkably similar. To begin with there was some "displacement", that is some new opportunity that opened up, a new market perhaps, or a process (some technological breakthrough perhaps) or something of the kind. Investment was then made and before long enthusiasm developed and more funds became available. There followed switching to invest and a boom develops. That is followed by borrowing to invest. At this point the banking system gets involved and more borrowing takes place. Euphoria gathers pace and others join in. But at some point insiders begin to get nervous and some pull out with their profits. Fears then spread and lead to others leaving and then on to panic. But bank loans can't be repaid from the sale of collapsed assets and the banking system is at risk. There is a rush for liquidity, the ultimate source for which is the central bank. So, the essence in each was remarkably similar: easy money, asset price boom, monetary tightening, panic and crash.

3. Central banks

What is a central bank? There are many views and certainly several possible acceptable definitions. But key is its role in a financial crisis. As one of the Bank of England's former historians Richard Sayers said, the essence of central banking was lender of last resort. Because of the central bank's position as banker to the banks at the centre of the financial system it is in the unique position of producing and supplying liquidity to the markets, in other words to act as lender of last resort.

How can the ideal operation of lender of last resort be achieved? There continues to be disagreement on the question but I believe the following is the best interpretation of the leading contributors to the debate. The lender of last resort supplies funds to the market in times of need; it does not supply individual institutions. In its proper form it should not engage in bailing out firms of any kind, be they banks or non-banks. Therefore, if the operation could be carried out where the identity of those seeking funds was not known to the Bank that would be ideal. Banks holding good-quality assets will have no difficulty in getting hold of the funds they need. Banks with poor-quality assets are likely to suffer. In times of panic the interest rate would rise.

By something of a happy accident this was in effect the system that developed in England. At the beginning of the nineteenth century the Bank of England's joint-stock monopoly offended the rest of the banks. Such was the antipathy that when the new joint stock banks were formed after 1825 (the others were restricted to being small partnerships) they preferred to keep their distance from the Bank of England. Discount brokers emerged who conveniently transacted business between the commercial banks and the Bank of England. These discount brokers gradually acquired the capital base to finance their own portfolios and developed their later form of the discount house.

When the commercial banks were under pressure in a liquidity squeeze their first line of defense was to call in their loans to the discount houses; this in turn sent the discount houses off to the Bank of England to cash in some of their assets. In this way the central bank never needed to know from whence the great bulk of the demand was coming. The precise source of the demand is largely an irrelevance. Good bills get discounted. The Bank has learned to trust the quality of the Discount houses' bills.

4. What should the central bank do in a crisis?

Having said out what constitutes a financial crisis, and said what a central bank is and does, it is a straightforward matter to say what they should do in such a crisis and that is they should resolve it. It falls to them. They have the responsibility, the ability, and the wherewithal to do that. That said of course it is seldom if ever quite that straightforward.

Bernanke was Chairman of the US Federal Reserve in 2007/08. He was a student of the financial crises in the Great Depression of the 1930s and had absorbed the great lesson of Friedman and Schwartz (1965) on the role of the Fed. As a governor of the Fed in 2002 at a conference in Chicago, Bernanke said to Milton Friedman, who was in the audience, '*You're right, we* (the Fed) *did it*. (That is brought about the crisis and depression of the 1930s.) *We're sorry … But thanks to you, we won't do it again*.'

But the book by Bernanke, Geithner, and Paulson (2019) reveals a different story. Bernanke was Chairman of the Fed, Geithner was New York Federal Reserve President and later Secretary of the Treasury under President Obama, and Paulson was Secretary of the Treasury under President Bush. Their jointly-authored book on the 2007-9 crisis, *Firefighting. The financial crisis and its lessons* make clear just how difficult it was at the time to discern what the nature of the problem was and therefore how it might be tackled. What exactly was going on? What were the toxic assets? Where were they? How big a problem was it? What was the best way of tackling it? What exactly needed to be done and when? Restoring confidence became key but how was that to be done? They took certain actions with that ambition only to find they had the opposite effect to that intended.

I happened to have just finished reading the Ukrainian Sergheii Plokhy's book *Chernobyl* before I read Bernanke et al. (2019) and what struck me were the strong similarities there were between the handling of the two crises. In *Chernobyl* what was the nature of the problem? There was a fire, but where exactly? It couldn't be the reactor they said because that was Soviet built. But with the dawning realisation and acceptance that it was the reactor, how could it be put out? And if not put out how could it be contained? Water was the worst thing that could be introduced. And so it went on. Meanwhile the risk remained of something bigger happening and an explosion that would blow half of Europe away remained a possibility. The question is what kind of information does the policymaker have?

Indeed this year's Covid-19 pandemic has many of the same kind of similarities. What is the nature of the virus? How is it transmitted? How lethal is it? What needs to be done? What can be done? Can it be contained? But at what cost? And we might add, do epidemiologists have even more differences of view than economists?

5. The crises in the 19th c.

I shall say something briefly about the crises of the nineteenth century to bring out how the Bank of England responded and gradually found its way to an understanding of what it had to do first to resolve the crisis but then ideally to prevent the crisis.

1825

In 1825 there was the first great financial crisis of capitalism. It had all the features of what would become a typical crisis. Its origins lay in new opportunities, monetary expansion, a boom, followed by fear and panic. In the lead up to 1825 there had been easy money, abundant credit, lending on a grand scale both domestically and internationally - to new republics in South America -, a stock-market boom, and so on. Then there was some hesitation in the summer of 1825 and it all came to a halt at the end of 1825 with bank failures and widespread distress.

At the end of the eighteenth century and the beginning of the nineteenth there were many contributors to a developing literature on the changing financial and monetary environment. And many of these addressed the question of the central institution in the system and the role of a lender of last resort. Francis Baring was probably the first to use the phrase and describe what was meant. But Henry Thornton gave a fuller, even comprehensive, treatment. He described how the Bank should behave in normal times letting the money supply '*vibrate only within certain limits*' (Thornton, 1802), but that in times of liquidity squeeze the Bank should relieve the pressure. However, '*It is by no means intended to imply, that it would become the Bank of England to relieve every distress which the rashness of the country banks may bring upon them: the Bank by doing this might encourage their improvidence*' (to add page number). In other words, there was the risk of moral hazard. Others such as Thomas Joplin (1828) contributed too, exhorting the Bank how to behave in the middle of the crisis of 1825. The Bank, he said, should increase its note issue to offset the loss of circulation. Bagehot, writing in the 1840s, brought greater clarity following the crisis of 1847:

> *It is a great defect of a purely metallic circulation that the quantity of it cannot be readily suited to any sudden demand; . . . as paper money can be supplied in unlimited quantities, however sudden the demand may be, it does not appear to us that there is any objection in principle of sudden issues of paper money to meet the sudden and large extensions of demand*. (Bagehot, 1848, p. 267)

But the Bank of England learned its role as lender of last resort slowly. It resisted for a long time the advocacy of the theorists and commentators. The lender of last resort is the ultimate source of cash in the system and is therefore usually the central bank. The lender should provide liquidity to the market as a whole, and not bail out individual firms (banks). It can provide liquidity without limit, but should do so at an increasing price. It is the knowledge in the markets that the supply cannot run out that serves to assure the market and allay the panic. In an ideal form it should do this anonymously. There should be no commercial rivalry that might deflect the Bank from its task, or involve a conflict of interest. If it is known in advance that this is how the bank will behave (pre-commitment) then the picture is pretty much complete.

Any commercial bank may, from time to time, extend loans to customers who are illiquid or even insolvent. They may do so even when the present expected return from the new loan itself is zero or negative if the wider effects on their own reputation for commitment, or the knock-on effects of the failure of the first customer on others warrant it. By the same token, a nascent central bank—an institution still some way short of maturity as a central bank—may 'rescue' some client or correspondent bank, just as the commercial bank may support its business customer. But we would not want to describe such ad hoc exercises as involving a conscious assumption of a systematic lender of last resort function. Nor would we want to see a mature central bank endeavouring to rescue individual banks. There is simply too much moral hazard involved.

No central bank would want to pre-commit itself to giving special support to *any* individual bank that was running into liquidity problems. A bank liquidity problem that is not caused by some technical problem is likely itself to be a reflection of some deeper suspicions about solvency. Consequently, an unqualified pre-commitment to provide assistance to an individual firm would involve too much moral hazard.

It is worth considering what could reasonably be meant by 'bail out'. Central banks in general do not have the capital resources to salvage single-handedly an institution of any significant size—significant in the sense that it could have damaging consequences for the rest of the system. If the central bank discounted at face value the inferior assets of an individual institution in difficulty, then if these assets were subsequently marked to market, their values would appear much lower on the bank's balance sheet. Thus the central bank would be seen to be damaging its own balance sheet since it has parted with cash and exchanged that for lower-value assets. If this in turn required government assistance in raising more capital, the central bank would in effect have taken a fiscal decision. Thus, in the case of an individual institution, all the central bank can really do is oversee or organize a rescue operation, perhaps putting pressure on others to subscribe new capital.

Other nineteenth century crises

But back in 1825 the Bank was still some way short of this position. It did lend heavily on a range of assets and finally quelled the panic. It had taken its first steps. Over the next several decades after 1825 there were regular financial crises of precisely this kind. In the 1830s the Bank of England had received especially large deposits from the East India Company and went out of its way to find employment for the funds. An increasingly adventurous spirit was abroad and as a pamphlet of the time put it there was a loss of sight of caution and common rules. In the 1840s it was similar. Liquidity was plentiful. The Bank had cut its discount rate to 2.5% and railway investment turned into railway mania. The boom came to an abrupt end at the end of 1847 with all the usual troubles of bank failures and their consequences. In the 1850s the feverish speculation had its origins in gold discoveries. The Bank followed market rates down and when bad news began to filter through from the American west Bank Rate went up and panic followed. But when banks were seen to be in trouble the Bank was slowly appreciating the centrality of its role and the tools it had in order to combat crises and once again lent more freely than it normally did.

1866

And then in 1866 came the biggest crisis since 1825 and the crisis that has since taken the name of the institution that was at the centre of it, Overend Gurney and Coy. Overend was a huge financial institution – possibly the largest in the world – and had come to rival the Bank of England itself. But it had moved from being a partnership in the early 1860s, taken advantage of the newly allowed limited liability It had then expanded its activities greatly and in the course of the Victorian boom that was underway was lending on enterprises it had previously stayed well away from. It got into difficulties and appealed to the Bank for help. Because of its recent behaviour none was forthcoming. It failed in May 1866. The ensuing panic was the worst since 1825.

It is worth pausing here to consider the 'too-big-to-fail doctrine' as it might have applied to Overend Gurney. Overend had become banker to the London and country banks and on the day it failed *The Times* said it '*could rightly claim to be the greatest instrument of credit in the Kingdom*' (*The Times,* 11 September 1866). Its balance sheet was roughly ten times the size of the Midland Bank and the Westminster Bank—two of the biggest banks in the country, and while they operated with capital/asset ratios of about 9 to 11 per cent, Overend's was 2 per cent. (Discount houses do have lower ratios, but Overend was conducting banking business.) Overend's appeal to the Bank for help was refused since: '*The Governor took the view that the Bank could not assist one concern unless it was prepared to assist the many others which were known to be in a similar* *plight*' (King, 1936, p. 242). Neither did it have the capital resources to recapitalise such an institution. In any case, there was considerable animosity between the two institutions. Nevertheless, the refusal to help Overend can clearly be seen as a further step on the road by which the Bank came to see its function as coming to the aid of the market as a whole rather than bailing out imprudent and insolvent institutions.

The panic of 1866 was huge. But in spite of Overend's size and apparent centrality to the system, the Bank once again, if a little too slowly for Bagehot's liking, lent extensively in the market. Many banks were affected by Overend's failure through little fault of their own and the Bank responded, as it had learned how, by supplying liquidity to the market in sufficient quantity to allay the panic. The panic passed and the banking system went on to become strong and stable. The Bank's refusal to aid Overend, then, can be regarded as a signal that even the largest of institutions would fail in the absence of prudent behavior. Well-behaved banks would be able to obtain the liquidity they required when panic appeared. This was an important step on the road towards a sound policy towards financial crises in the Schwartz sense of the term (see section I. 1. above).

After 1866 there was over 100 years of financial stability, no financial crises, in England. Banks still failed but any threat to the payments system was avoided by a combination of good behaviour on the part of the banks and the readiness of the Bank of England to act as lender of last resort and the knowledge in the markets that it would so behave, lending to the market as a whole and not bailing-out individual firms.

There were some other episodes that are sometimes described as crises but are better otherwise described: in 1878, 1890, 1914, and 1931. In the first two, important individual institutions failed – the City of Glasgow Bank and Barings respectively; in 1914 there were the unusual circumstances of war; and in 1931 there was an exchange rate crisis. Apart from 1914 in none of them was the payments system at risk. I shall say something about 1914 later.

6. Learning how to be the lender of last resort in times of financial crises

In the course of the nineteenth century the commercial banks learned prudence, the appropriate cash, liquidity, and capital ratios to hold and to whom to lend and on what terms. The central bank learned how to behave as a lender of last resort, and a discount market had evolved that helped to facilitate that operation. But there was another element in the story and that was the role of government and regulation. The striking thing about all this to a modern eye is that what has been described was all done in a period of laissez-faire, and banking followed that course. The preceding period that ran through the eighteenth century was that of mercantilism—the supremacy of the state. And in that century banking in England was severely circumscribed. But the reaction to the inefficiency and corruption in government that mercantilism produced, was to seek small government, free trade, and sound money. And so, in that new climate of laissez-faire from the 1820s onwards, after each financial crisis the authorities deregulated. (When regulation began to return in the twentieth century there was the opposite reaction – more regulation was imposed.)

In the nineteenth century the first stage in this process came with relaxation of the usury laws, at least for the Bank of England. The laws had been in force for centuries. In 1825 when the crisis blew up, the Bank did lend but it could not lend at a rate above 5 per cent which in the context of the times was hardly high enough. After the crisis the usury laws were relaxed and at the next crisis the Bank raised its rate above 5 per cent.

At the same time the restrictions on banks being limited to partnerships of no more than six was also abandoned and joint stock banks were allowed to form. Initially, they could only operate away from London—outside a radius of 65 miles. But a few years later in the 1830s they were also allowed to operate within London.

The gold standard had been more strictly defined in the 1844 Act but it proved too restrictive and when the 1847 crisis developed it was clear that the Bank could not hold to the law and at the same time do what was required for financial stability. The Chancellor then wrote to the Governor and relieved him temporarily of the need to stick to the requirements of the Act and so the limitless lending (at a high rate) could take place. There was a growing discussion on the merits and demerits of limited liability in the second quarter of the nineteenth century, and after the 1857 crisis the laws were relaxed and limited liability was available for those who chose to avail themselves. Not all did, but it was an option.

After that banking was extremely lightly regulated and everything was then in place that would allow the Bank to act as a lender of last resort. Generally speaking it did so, though on occasions it might have blurred the issue.

1914

In 1914 there was a major problem in the financial system on the outbreak of war. There were, though, none of the common features of the build-up to a crisis. There was no boom and no downturn. There were simply the seriously disruptive problems produced by the failure of remittance from continental Europe. The solution, however, was similar in many respects to that for normal crises. An injection of liquidity was required and was provided. But there were also some guarantees given to the accepting houses and the discount houses on their bills. The liquidity injection happened to coincide with the abandonment of the gold standard for reasons of war and thereafter there were failures in not retracting the liquidity. While 1914 is a good guide as to how to deal with imminent systemic collapse, it is not a useful illustration of a typical financial crisis.

That takes us to the end of the long nineteenth century. In next lecture I turn to the twentieth century and to the two biggest crises of their time, the crisis of 1929-32/3 and that of 2007-08. Others will get a mention but these two were truly global and on a huge scale.

II. Lecture II: On the roles played by the Bank of England and the US Federal Reserve in the 20th c. financial crises

1. Introduction

In Lecture 1, after a brief introduction on the elements present in a financial crisis and a discussion of what a central bank could do to avoid or contain or resolve such crises we considered some of the crises of the nineteenth century and how the Bank of England evolved into its role. In Lecture II I turn to the two great crises of the twentieth and early twenty-first centuries, that of the great depression period of 1929-32/3 where, in spite of the lessons/experience of the nineteenth century the central bank, in this case the US Federal Reserve, got it badly wrong; and secondly to that of the global financial crisis of 2007-08, where the major central banks largely got things right but with caveats. Both of these crises had a focus in the US. And to conclude by asking at what point have we arrived.

2. US financial crises, 1929-33

The years 1929-33 in the US witnessed several financial crises that were followed/accompanied by the greatest collapse of an economy that there had been until that point - the worst economic depression in America's history. The topic has been the most intensively researched in monetary and indeed economic history. What follows, of necessity, is the barest of bones of the outline.

The American economy enjoyed a strong boom across the 1920s (with a minor dip in 1926). This was the 'Jazz Age', the great migration from the south, urbanisation, the age of the automobile, radio, aviation etc … . The stock market soared and there was undoubtedly something of a bubble in at least some stocks by the end of the decade. Nothing it seemed could go wrong. And in 1929 before the economy peaked 1,000 economists signed a document to declare that the business cycle had been eradicated. The boom was fed in part by low interest rates in the mid-1920s. There was a huge property boom with commercial bank lending increasingly responsible. There were second mortgages with relaxed conditions and securitization and so on. (Commercial banks' real estate loans would turn out to be the best predictor of commercial bank failure.) In short, there were all the features of an emerging crisis that had been common in the nineteenth century.

Then in 1928 the Fed began to take fright, decided there was a problem in the stock market, that it should do something about, and tightened monetary conditions. This had the effect of attracting funds from abroad back to the US and further fuelled the stock-market boom. But the economy peaked in the middle of 1929. By which time banks were beginning to fail and given the nature of the banking system the numbers failing were large. There were something like 36,000 banks in the US in the late 1920s and in the crises of the next three years more than would 12,000 fail.

In October 1929 the stock market crashed. But it was not the stock-market crash that caused the depression. Nor was it the Smoot-Hawley tariff introduced in 1930. Neither of these of course helped matters; and both probably contributed, by different means, to the deteriorating climate.

Apart from having brought about the downturn by its abrupt intervention in 1928, what the Fed then failed to do was to prevent the downturn in the economy that derived from the contraction in the money supply from turning into the great depression. There were several points at which it could/should have acted. There was an ebb and flow of confidence but at the crucial points it failed to act.

The most noted contributors to this subject were Friedman and Schwartz (1965). They argued that the first banking crisis that came towards the end of 1930 and the collapse of banks that resulted, produced the decline in the stock of money that turned the recession into a severe depression. There were further banking crises in 1931 and in late 1932/early 1933 brought about by the failure of the Fed to respond to the earlier crisis in a way that it could have and should have done. There is disagreement about why the initial bank collapse took place but what matters for our purpose is that Fed failed to take action to avert the collapse. The Fed failed to do what central banks should do in these circumstances. And it turned out to be a colossal failure.

The Federal Reserve had the know-how and the necessary techniques and resources. It could have engaged in open market operations of the kind it had already used in its short life. It even had sufficient gold reserves not to need to suspend the gold standard that had been the British response in the nineteenth century. But it misread the signals. It judged the tightness of money by its own interest rate rather than by a measure of broad money. At some points it did provide increasing quantities of high-powered money but it was hopelessly inadequate. It failed badly in providing the required liquidity.

The size of the disaster can be read from the macro variables. Real output fell by 33%; prices fell by 25%; and unemployment rose to 25%, 13 million people. Over a third of all banks failed. The stock market (measured by Standard and Poor's composite index) collapsed from a peak in September 1929 of 254 to 162 on 29 October. It carried on falling to a low of 50 in 1933. That was a Great Depression.

Recovery began in 1933 and there was strong economic growth albeit from a low base, at 9 per cent p.a. from 1933 to 1937, and then even stronger at 10 per cent for 1938 to 1941, after the short recession of 1937/38. Again. it was not fiscal policy that did the trick. Most modern research regards the New Deal as at best neutral though much regards it as negative in its impact. Neither was it the tariff – more cause than cure (see for example Eggertson (2012), Fishback (2013), and Fleck (1999)).

The principal explanation for recovery was the stimulus given by monetary expansion – not brought about consciously by the Fed but rather by accident. The monetary base, and broad money with it, grew by 10 per cent p.a. between 1933 and 1937. The beginning of recovery coincided with the US leaving the gold standard. The aim of that was to raise the domestic price level through depreciation of the dollar that would raise commodity prices first. The expectation of inflation turned formerly high positive real interest rates into negative rates. This was accompanied by the restoration of confidence in the banking system that Roosevelt was in part able to inspire with his famous fireside chat, and the long bank holiday of March 1933 when insolvent banks were closed. (Deposit insurance followed in January 1934.)

3. The UK in the Great Depression years, 1929-33

Before leaving these years it is worth looking at UK experience. While much of the rest of the industrialised world and the developing economies reliant on them also experienced banking collapses and went into deep depression, there was no comparable experience in the United Kingdom. It is true that there were stock market shenanigans with the fraudster Clarence Hatry at the fore. The market fell from a peak of 129.6 in January 1929 to a trough of 109.4 in December 1932. But the banking system was sound. Some smaller banks had difficulties but the payments system was not threatened. The profits of all the main commercial banks were relatively unchanged through the period even if there was a little tampering with their presentation.

There was no great depression in Britain between the wars. Neither was the 1920s a depressed decade. There was a recession between 1929 and 1932 with a fall in output of 5.6 per cent. There was a rise in unemployment that is better explained by real wage movements. The financial system remained robust throughout the whole period and British growth in the 1930s was faster than it had ever been, the economy experienced the strongest upswing it ever had to that date – a growth of 4 per cent p.a. from 1932 to 1937. There were serious financial problems in most of the rest of the world and great depression too. But financial stability remained in Britain. What happened in 1931 was an exchange-rate crisis. The return to gold in 1925 had taken place at an over-valued rate, one that could not be held to, and was abandoned in mid 1931. Leaving the gold standard of course allowed the freedom to have expansionary monetary policy that followed in the 1930s. But there were few financial ramifications. The payments system was essentially undisturbed.
So, no money stock collapse and no financial crisis and no great depression.

4. The 1974 banking crisis in the UK

For another reason I want to say something about 1973/74 in the UK. The 'secondary banking crisis' that broke at the end of 1973 deserves some mention. There had not been such a crisis since 1866. It was not really a serious financial crisis (at least to most outside the Bank of England) but it is illustrative of several of the features of the financial crises already discussed. And it merits some discussion because of its part in the general trend of the twentieth century of the Bank of England increasingly intervening to play a part in its resolution. There were many diverse elements in the story of the crisis. One was the misbehaviour of the Crown Agents who deviated from their specific role and went into banking business for which they were untrained. And there was confusion over where responsibilities lay for different kinds of institutions, including the Crown Agents. But most of the problem derived from the increasingly reckless fringe bank behaviour and from monetary expansion.

The banking system had become more regulated in the Second World War and post-war years. Because of that a number of fringe institutions had grown up from the end of the 1960s to take advantage of opportunities denied the clearing banks. The fringe, as the name suggests, remained outside the regulated sector. They lent on property. They were then able to expand greatly with the expansionary fiscal and monetary policies of the Heath government of the early 1970s. That was given extra fillip with the relaxation of some construction restraints and a property boom got under way. We have then all the elements already encountered with more investment, bank borrowing, a property boom, euphoria followed by doubts, then fears and panic as some of the fringe banks found themselves in difficulty.

Some of the clearing banks had close relationships with the fringe banks and found themselves drawn into the crisis more than they would have wished. But the long and the short of the story is that the Bank of England launched a rescue operation – called 'the Lifeboat' – and successfully contained the danger. The Bank tried to do all that without itself lending anything but was in the end obliged to lend and lost some of its loans. The compliance of the press was also useful in preventing wild stories circulating that might have spread any panic more widely.

The Bank should get credit for organising the resolution of the crisis in what might be called 'crisis management'. But on the other hand, it should also be said that lessons from the nineteenth century seem to have been forgotten. Regulation had returned and intruded and lay behind the crisis developing. Furthermore, the Bank's great fear for the reputation of the City and its responsibility for that, played their part in it deserting its old role of lender of last resort – providing liquidity to the market to all those who had good assets – and

letting others fail. This undoubtedly contributed to the notion already taking hold that banks would not be allowed to fail.
There followed problems with some of the clearers at the beginning of the 1980s that were smoothed over.
There was the 'small banks' crisis at the beginning of the 1990s that once again the Bank covered over and sorted out behind the scenes. All of this contributed to the atmosphere of the later decades that encouraged banks to take ever-greater risks.

5. The Global Financial Crisis, 2007-09

These years saw what was undoubtedly the greatest financial crisis of all time. We are really still too close to the events for a proper historical assessment to be made. And that in spite of a vast literature on all aspects of the crisis, written by journalists, participants from the central banks, banks and other institutions, academics, PhD students, government officials and no doubt others. It doesn't really matter how many accounts we have from however many sources, the writing of history requires both primary sources and perspective. Some primary sources have been made available but not enough to make comparisons and to cross-check. Perspective generally means distance in time from the event. That is not a set period and will differ according to the nature of the events being studied, but more time will undoubtedly improve our understanding and the crises events are still comparatively recent.

That does not mean that we cannot say anything. There will be little disputing the basic facts, the timeline of important events that led to the crisis and those that shaped the crisis thereafter. But there will be disagreement over relative importance and even on some timing. Detailed analysis can wait. What we need to focus on are the broad problems and how the response was shaped. There were clearly emerging problems and central banks were on alert. There seemed to be boundless limits on the liquidity in the markets in 2006 and 2007. How could it disappear? By 2007, there were those who were expressing fears.

I will set out the main features of the crisis, features that are well known, in order to point to the kinds of similarities with other crises which I have been describing. I'll begin with the US before saying something about the UK and elsewhere.

The broadly agreed events in the US were as follows. What happened in 2007 was a 'classic financial panic' in Bernanke et al. (2019)'s words. They repeat this several times. The crisis began with problems in the sub-prime mortgage market as a major housing boom came to an end. Property is frequently at the centre of crises and in this case the boom was linked to government encouragement to all to buy residential property. The particular institutional arrangements in the US helped this along. A belief seemed to have taken hold that house prices never fell. If anyone contradicted this they were looked at in a way that suggested they had not been able to keep up with new developments. Interest rates were low and the banks were goaded into providing ever more credit. Much of this was going, without due care and attention, to people unlikely to be able to repay by any reasonable assessment. Although sub-prime was a relatively small part of the credit markets it provided the trigger for the crisis.

Much as in 1929, in the mid-2000s, economists and others felt that the economy was strong, and the financial system robust. Indeed some went so far as to say that financial crises were a thing of the past. But as has also been noted such complacency can blind to problems. What was clear was that when house prices fell many mortgages were unsustainable. Attention turned to the dependability of other financial assets and as uncertainty over the value of these spread the interbank lending market froze.

It was, in the words of Bernanke et al. (2019), '*a classic financial panic, a run on the financial system triggered by a crisis of confidence in mortgages. It was fuelled, as crises usually are, by a credit boom, in which many families as well as financial institutions became dangerously overleveraged, financing themselves almost entirely with debt*'. (p.3)

So, it was a classic financial crisis in the sense that it followed the pattern of all great crises of the past. A particular asset sees a persistent rise in price. Government encouragement was implicitly or explicitly provided. Borrowing takes place, followed by more investment and further borrowing. Euphoria takes hold underpinned by the belief that somehow the problem of risk has been solved. But mortgage related securities that were seen as sound in the boom become close to worthless when the bubble bursts.

Bernanke had learned the lessons of the Great Depression and had the Bagehot handbook by him. So when the first liquidity crunch appeared on the breaking of the BNP Paribas news of August 2007 and the ECB injected $130 billion into the frozen credit markets the Fed did so too with $62 billion in the well-rehearsed fashion of open market operations. Some calm followed. But at this point the operation of the lender of last resort comes into play. Bagehot's idea was that the central bank should supply enough liquidity to satisfy those who had a liquidity need. Banks with good quality assets could then get all the cash they needed. But a different reading of Bagehot suggested that the central bank should lend to solvent but illiquid banks, on a bank-by-bank basis. If this means that banks have to trot along to the central bank the danger is that it reveals their fragility to the market. The stigma of being seen going for help could trigger the very pressure from which they had been seeking to escape.

A liquidity problem can of course become a solvency problem if it is not addressed in time. Central banks, however, cannot deal with solvency problems. They are not in a position to supply capital to any institution of even modest size. They don't have the resources. And in any case it would be crossing into fiscal policy if it could bail out failed institutions. Therefore governments have to become involved. (I should remind you here that in no financial crisis of the nineteenth century in Britain was there ever any government support provided.)

In the US the crisis, again like 1929-32, took further turns. No longer had one problem been addressed and some calm restored than another problem emerged. So it was with the rescue of Bear Sterns in March 2008 on the grounds that it was too interconnected to allow it to fail. As Bernanke et al. (2019) wrote of Bear Sterns, '*The Fed crossed a Rubicon by intervening to prevent the implosion of a non-bank.*' (p. 47). But no way was found to save Lehman Brothers in September of that year. New and slightly different problems appeared. And the changing complexity of the sector meant not only that the Fed was drawn into territory it had not been in before, but of necessity government had to become involved as the scale of the problem in related financial institutions, not normally within the Fed's jurisdiction, unfolded.

As hinted at before, the Federal Reserve Board along with the New York Fed and the US Treasury co-operated closely as they struggled to keep pace with developments, trying to avert problems where they could be identified and contain them where they broke out. They speak of the, '*challenges of decision making in the fog of a financial war*'. (p. 9). And they point to legal barriers that prevented them taking certain actions.

The crisis was of course global and many other countries experienced the same or very similar problems in parallel with what was happening in the US. Many institutions around the world were holding the same or equivalent assets. In Britain the trigger for the crisis in late 2007 was Northern Rock, whose unusual business model of financing mortgages with wholesale deposits left it hopelessly exposed when the interbank market froze. The background to this was of a long steady boom in house prices, accompanied by credit expansion, and the similar kinds of beliefs that were held elsewhere on the soundness of property and ever-rising prices. But when one institution failed, fear spread rapidly to others and after the provision of liquidity on a grand scale was followed by the rescue of major banks that had tipped over into insolvency, the crisis was complete.

This was the first time in Britain that taxpayers' money had been used to bail out financial institutions.

Interestingly, a PhD thesis has already been written on the crisis from the point of view of HM Treasury (Hallam, 2019). The Treasury had never in the past played any part in the resolution of financial crises. Crises of this kind were left to the Bank of England to resolve. That was true throughout the nineteenth century and in the various smaller crises that reappeared in the later twentieth century, the crises of 1973/4, 1980/82, and 1990/92. These crises were in the main liquidity crises. When crises become in the main capital or solvency crises government, for both practical and political reasons, has then become involved. And the most recent financial crisis of 2007/08 was the biggest of all crises and several institutions certainly required capital injections. Interestingly, in the handling of the crisis in Britain, there are the same questions, doubts, and reactions as in the story told by Bernanke et al. (2019) for the US. The Treasury (and we assume the Bank) were at various points unsure of what was happening, or how to act, or whether actions would have the desired effect, and so on. A similar story could be told for several other countries at the same time.

The major central banks have generally congratulated themselves, with some justification, for taking the appropriate actions. In spite of the severe financial crisis there was no great depression. There was a partly unavoidable recession. Strong reservations have been expressed by some over the fact that no sooner had the necessary liquidity or capital injections been provided than tougher capital requirements were imposed, thus curtailing the ability of the banks to lend and so dampening the recovery that might have been.

6. Where are we as regards the central bank involvement in major financial crises?

It is easy to look back at a crisis and say, 'This is what happened, and this is what the central bank did, and the outcome was the following; and the lessons we learned were these.' But it is never quite like that at the time. More commonly, the question in the beginnings of the crisis and sometimes as it develops is, 'what is happening?'. Following the BNP Paris credit crunch in 2007 the ECB injected $150 billion into the credit markets through open market operations. The Bank of England Governor was critical of the actions because it was at that point far from clear what exactly was going on. Shortly afterwards he changed track and did something similar when there was a clearer threat of a bank run. But in the relatively recent past, that is in the early 2000s, before the crisis there had been too many hasty reactions to events in the economy and injections of liquidity, in the US in particular, in order to stave off possible falterings in the economy.

And while it may be easy to say, 'A shortage of liquidity is solved by the central bank injecting the necessary amount', if circumstances have changed, as is likely, or if mechanisms have changed it may be that the institutions that need liquidity, and seek it, are nevertheless reluctant for fear of a stigma attaching to it, to be seen to be in need of assistance.

There were many things wrong with the models economists were using but to the historian one of the things that seemed to jump out from nineteenth century monetary experience was that monetary stability could be threatened by and even punctured by, financial instability. Avoiding the latter helped to preserve the former. And yet the view that monetary stability delivered all that was required became prevalent in the late twentieth and early twenty-first centuries. Frederic Mishkin wrote recently, "*Another lesson learned from the financial crisis … is that monetary policy and financial stability policy are intrinsically linked to each other …*" (2011, p.102). He later wrote, '*Historians always saw financial stability as intimately bound up with monetary stability.*' So how did monetary economists and central banks lose sight of that or perhaps reject the relationship?

The Global Financial Crisis exposed a financial system that had many flaws. One was that the socialisation of risk had gradually crept in. This was a long process. In both the US and the UK it had been underway from the 1920s. Together with the too-big-to-fail doctrine it was responsible for us reaching the point where banks believed they would not be allowed to fail. If the price of risk falls more will be taken on. But the capitalist system demands failure. Failure must be a possibility. The possibility acts as a curb on behaviour. A bank failing can of course be tricky so resolution regimes must be designed to cope with the outcome. Some steps have now been taken in this direction.

The regulatory regime was also flawed, perhaps particularly so in Britain. An aspect of this was the role of the central bank in the banking system. The Bank of England had been a commercial bank and it continued to pursue commercial business into the twentieth century. And through the interbank market it continued to be close until late in the century. It had an intimate knowledge of the business of banking and hence a very good feel for dangers that might be appearing and of institutions that might be treading a risky path. But that closeness was fading in the late century and clearly brought to an end in 1997. In that year the Bank had its supervisory and regulatory roles removed. Yet the Bank had been given a mandate for financial stability without being able to be sure about the state of the banks and no authority to look closely at them. To some extent that has now been addressed but it might still be better if it engaged in more banking business.

The regulatory system had many flaws, some of the kind that often afflict large bureaucracies. Yet the answer to the crisis was to have more regulation. What was needed was better regulation. And it could be said that fundamentally, the basis of the regulatory system was at fault. Learning from history it could have been refocused on providing incentives rather than on choices. For example, it has been argued that regulatory reform should aim to replicate that of late nineteenth century US experience (and it applies to British experience). That would introduce a system where regulation would be focussed on incentives – an example of which was double liability, that resulted in far superior monitoring by shareholders (studies showed double liability regimes being much less risk-taking than single liability regimes – see for example E. White for the US and A. Turner for the UK). The approach is seen as being superior to that of regulation based on choice – a simple capital/asset ratio being an example of that (and that led to increased leverage and risk-taking and so on).

Central banks can behave in the desired way so long as the banks behave responsibly and where failure is possible and can be readily resolved. The focus should be on the payments system. And the regulatory environment should be suitably accommodating.

1st October 2020

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