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Abstract
This paper examines the financial crisis of 2007-9 in the UK in terms of the financial instability hypothesis (FIH), a theory of boom, bust and financial crises. It is shown that in a similar way to the crises of 1866 and 1987, the FIH provides an important insight into how the crisis came about. However, it does not recognize 1. the role of accounting information: how it may contribute to boom and bust, and how it may be used to mislead and 2. the likelihood of financial swindles, features of the 2007-9 crisis.

Keywords
Fraud, Crash, Mark to market, Big bath accounting, Financial crisis 2007-9, Financial Instability, Minsky, Informational asymmetry

Introduction

In Accounting History (Barnes, 2007), I discussed the UK financial crises of 1866 and 1987 in terms of Minsky’s financial instability hypothesis (FIH). The general conclusion was that Minsky’s microeconomic model of financial decision making provided an important insight into how these crises came about and the mania leading up to them. However, I argued that he (i) ignored the effect of accounting information, notably the discretion available to owners and managers in terms of accounting measurement and presentation and (ii) the motivations of owners, directors, and promoters of companies. Hence, whilst the FIH may be a good predictor of future crises (including that of 2007-9) they could not be fully understood without the inclusion of these factors.

Unfortunately, that paper was written and published just before the 2007-9 crisis occurred. It is the purpose of this Addendum to relate what was written there (both Minky’s analysis and my suggested extensions) to the crisis. The paper is arranged as follows. First I will briefly summarise the FIH; second, I will outline the main events of the 2007-2009 financial crisis so far (again very briefly, as this has been done many times elsewhere) primarily as they relate to the US (because it originates from there) and the UK (because my original paper concerned earlier crises there) in order to show the contagion and how the FIH explains what has happened. Finally, I will discuss those
aspects of the FIH that are missing, notably the effect of accounting information, the possibility of its manipulation and other financial swindles, features of the 2007-9 crisis.

**Minsky’s financial instability hypothesis (FIH)**

The FIH relates to a financially fuelled boom-and-bust economic cycle. According to Minsky, it takes the following form: boom fuelled by over-estimating expected returns – euphoria and band wagon effect – profit taking – panic (the irrational herding instinct) and the discrediting of the subject of the boom in the first place. In the case of a company, as its profits grow, optimism increases and beliefs change about its value, ability to borrow and risk. A ‘bubble’ is created in which share prices and company values significantly exceed what, hitherto they would be considered to be worth based on their ‘fundamentals’ (their asset values and a capitalization of their profit expectations). As a consequence, more share price rises occur and speculation increases. The last stage involves a rapid fall in prices to probably below their fundamentals. Only gradually do share prices rise to their original level before a new bubble eventually begins.

The FIH theory focuses on certain significant stages in the process, notably the development of what Minsky refers to as ‘financial fragility’ and the point at which the upturn turns to downturn - the ‘Minsky moment’. In the early stages when expectations were high and rising, financial structures, in particular liability structures, change causing the financial system to become increasingly fragile. In such an increasingly vulnerable situation, a ‘not unusual’ event, say the failure of a large company or a bank, is capable of ‘tipping the balance’ and initiating a financial crisis. In Minsky’s view, this event, whist
not particularly important in itself, would be sufficient to significantly change expectations, creating unwillingness by banks to finance investment, and raising the required rate of return to cover the increased perceived risk. As asset values and profits fall, this leads to bankruptcies, a further reluctance of banks to finance investment and a depression (Minsky, 1989). 

Underpinning the FIH is a microeconomic concept of individual firms’ financial fragility. Here, firms are viewed in terms of their financial management in the face of uncertainty. Firms are characterized as having one of three types of financial structure: (1) robust structures, which Minsky calls ‘hedge firms’; that is firms that can meet their financing obligations (and thus have positive net cash flows) even if their realized returns at times are disastrous; (2) fragile structures, which he calls ‘speculative firms’, whose expected net cash flows are positive but their realized net cash flows and expected cash flows in the short term may be negative; and (3) ‘Ponzi structures’, whose expected net cash flows are negative but whose investors are compensated by high returns in later years. Prior to the ‘Minsky moment’ when optimism abounds, banks may be prepared to lend on speculative projects and balance sheets. However, when optimism is suddenly replaced by pessimism, these banks are no longer prepared to do so and attempt to ‘reign in’ their lending. This will put pressure on speculative and Ponzi firms to rearrange their balance sheets and financial structure.

Standing alongside the FIH is Keynes’ ‘biggest fool theory’ a theory of investors’ behaviour [Minsky was an authority on Keynes, e.g. Minsky, 1975]. Here, Keynes argues
that investors do not base their decisions to their buy and sell a company’s shares by comparing their market price with its fundamentals but simply whether they expect the share price to rise or fall. This behaviour has the effect of helping a share price to move in the expected direction, reinforcing investors’ beliefs. The ‘biggest fool’ is either the last person to buy at the end of a price hike at the end of a price fall.

The 2007-2009 Financial Crisis

Following the recession of the early 1990s, the UK and most other countries in the developed world experienced a decade of low interest rates. Cheap and plentiful loans enabled and encouraged both individuals and firms to borrow freely. This was, particularly so with individuals’ mortgage loans and credit card borrowing as the limits determined by the value of borrowers’ property and income were considerably extended. The availability of money to be lent by financial institutions was also helped considerably by their ability to package and sell off their existing mortgages to others, known as ‘securitisation’. For many people in the US, the UK and elsewhere, in order to maximize, what they considered to be, their disposable income, it was a matter of maximizing their borrowing.

However, by early 2007 the ability of many individuals to borrow was overtaken by their inability to repay and service their loans. This brought about a fall in house prices, a fall in the volume of house sales, and the collapse of the ‘subprime’ (the riskiest category of consumer loans) mortgage market in the US. The situation was so severe that many large subprime lenders were forced to declare bankruptcy and by April 2007, commentators
were asking whether the ‘Minsky moment’ had arrived (for example, Wilson, 2007). During the summer of 2007 a full-scale crisis in the confidence of investors holding securitised mortgages and a collapse of the inter-bank lending market occurred. The crisis spread to other financial institutions in other countries. In the UK, the Northern Rock, a large bank that depended on interbank borrowing, found itself without funds. This led to a run on the bank in September 2007 and eventual nationalisation in February, 2008. In Iceland, all three of its major banks collapsed for similar reasons. Relative to the size of its economy, Iceland’s banking collapse was the largest suffered by any country in economic history. By 2008 the crisis was clearly spiralling out of control with a number of large US mortgage companies failing, precipitating a Government rescue of the largest, Fanny Mae and Freddie Mac in July 2008. Losses from securitised and other loans and credit default swaps caused the crisis to spread to other financial institutions. In the US, failures included such well known names as Bear Stearns, IndyMac, Lehman Brothers, Merrill Lynch and Wachovia, hitherto thought impregnable.

In both the US and UK, losses from mortgage-backed securities and other assets purchased from borrowed money were so great as to reduce the capital base of banks making many either insolvent or incapable of any further lending. There was a clear risk that if the crisis were to spread to retail banking, this would bring about the collapse of the entire financial system. Ultimately, US and UK Government intervention in the form of loans and guarantees and the nationalisation of some banks was able to avert the situation. Nevertheless, the inability and unwillingness of financial institutions to lend had a considerable effect on business, plunging the world economy into a severe
depression in which many other large businesses failed, notably in such industries as air transport, car manufacturing and retailing. An obvious consequence of all this was the collapse of stock markets. In the UK, the FTSE100 index fell 48% from over 6700 in July 2007 to 3500 in March 2009, representing a huge change in economic conditions, mood, and expectations - a depression far more severe than those following the 1866 and 1987 crashes.

An interesting feature of the immediate downturn period was the collapse of a number of very large Ponzi schemes. The largest were in the US: Madoff and Dreier (both in December, 2008), Nadel (January, 2009), and Stanford (February, 2009), the principal owners of which were charged with securities fraud by the SEC. Many smaller Ponzi schemes also collapsed in Canada and the UK as confidence in the financial markets and investment schemes fell, but in the US it was not their number that was so significant but their immense size. In the UK there was an increase in the number of collapses but the size of the funds was relatively small.

It is important to distinguish between what Minsky terms a Ponzi financial structure and what is now commonly referred to as a Ponzi scheme. The term derives from a famous Boston fraudster and refers to an investment scam that appears to pay particularly high returns but out of victims' own capital. In other words, it is a pyramid scheme. A typical Ponzi scheme is a quazi-banking operation that promises investors such a high rate of return that ‘it cannot be true’. Some funds began as reputable investment funds or banks only for their effective owners to decide at some stage to run them fraudulently and steal...
their funds. A simple calculation would show that its ability to earn the promised returns is not possible. And it is: the scam will only run for as long as its cash inflows are sufficient to cover its outflows. This may be many years as long as investors retain confidence in it and do not withdraw their funds. As soon as they do, the scheme will collapse. Certainly, a Ponzi scheme is entirely dependent on investor confidence and if something occurs to threaten this, e.g. a stock market crash, investors will attempt to withdraw their deposits. Only a few withdrawals may cause the entire scheme to collapse. In this sense Minsky’s concept of Ponzi finance is very similar to our own notion of a Ponzi scheme.

Did the 2007-9 financial crisis conform to the expectations and predictions of the FIH? Certainly, in the sense that the bubble was brought about by excessive borrowing which lead to fragility of the financial system in which speculative and Ponzi financial structures at both individual- and firm-level could not be sustained. In the 2007-9 financial crisis, the casualties were both lenders and borrowers whereas in the 1866 and 1987 crises casualties were limited to the latter as these crises was not so severe as to threaten the stability of the financial system. Also, whilst the 1866 and 1987 crashes were brought about by companies borrowing beyond their ability to service their loans, the 2007-9 crash primarily arose from a growth in personal borrowing although it resulted in similar problems. Nevertheless, an important thread in the three crises was the ability of the individuals to remove themselves from the debt in some way.
The financial consequences of the 2007-9 financial crisis were similar to those in 1866 and 1987 in other ways. With the loss of confidence in investments and their difficulty in continuing to provide high returns, investment schemes were put under pressure. Not surprisingly, there were many failures in investment banking as a result of their dependence on profits from the boom and Ponzi schemes were discovered and collapsed.\textsuperscript{x}

\section*{The effect of accounting information}

According to the FIH, market mechanics alone bring about a financial crisis and a depression. It is determined both by the decisions of bankers directly and the actions of entrepreneurs as they attempt to reorganise their firms’ finances in anticipation of bankers’ decisions and demands. There is, therefore, no role in Minsky’s model for accounting information. My point is that financial information and investors’ decisions also play an important part. Because Minsky assumes that the interests of the firms and their owners are the same, he does not recognize the significance and implications of the asymmetry of information when management attempts to influence, to the extent of misleading, investors and bankers; similarly, when promoters attempt to sell financial products to investors and borrowers.\textsuperscript{xi} Both are able to influence investors’ expectations about business’ future returns and their decisions - particularly when expectations are high but are becoming difficult to achieve.

In addition to providing discretion to top management and owners in the way data are measured and estimated, ‘good accounting practice’ actually has an exaggerating effect at
times of boom, crisis and depression. This is because of the way assets are valued under ‘mark-to-market’ accounting and provisions made for bad and doubtful debts. ‘Mark(ing)-to-market’ or ‘fair value’ accounting refers to the practice of assigning a value to a financial instrument based on the market price of it or similar instruments. Fair value accounting has been a part of both US and UK GAAP since the late 1980s and its use has steadily increased since then in response to demands for relevant and timely financial statements.

When the financial crisis began in 2007, regulators and auditors required banks and other financial institutions to reduce the book value of these assets to a ‘fair value’ below book value, even in cases where repayments were being made on time. As there was no market for subprime securities and other ‘delinquent’ assets, they were required to write them down in some way, either down to the value of a similarly impaired asset or by an arbitrary, but significant, amount. Thus, under mark-to-market accounting, even the values of non-delinquent assets were being written down, seriously affecting these institutions’ capital and their capital adequacy. It has been estimated that of the $700 billion that financial institutions have written off in the US, almost all has been in the form of provisions and write-downs as opposed to actual losses (Forbes, 2009). The effect is that, during a boom, mark to market accounting artificially boosts banks' and financial institutions’ capital, encouraging them to invest and lend. In a downturn, it has a similar effect but in reverse, causing them to cut off the supply of new loans and claw back existing ones, encouraging a depression.
Provisions for bad and doubtful debts have the same effect. In a period of boom and optimism, bankers and other lenders are prepared to lend and are confident they will be repaid. Even if they are not, the property offered as security for a mortgage or business loan, will usually be sufficient to cover the debt. This is not true at a time of crisis or depression when lenders are pessimistic, especially when market values have started to fall. Lenders will then focus on the probability of default and the extent to which their exposure is not covered. Hence, even for the same loan, lenders will look at it differently; during a boom, with confidence that it will be repaid, requiring, therefore no provision; during a depression, more rigorously and skeptically, actually anticipating default and conscious of the need for a provision. The effect is similar: during a period of boom and optimism, financial statements may under-state provisions, thereby over-stating income; in a period of depression, provisions will be over-stated resulting in income being under-stated.

< Figures 1 & 2 about here >

Of course, what have been described here are the appropriate actions of the prudent accountant. But it is quite possible that it is to these that a company and its directors will turn to in an effort to find a solution to their problems. Whilst there is much in the academic literature relating to ‘earnings management’ in the form of ‘income smoothing’ (Buckmaster, 2001) primarily achieved through provisions and accruals, the pressures from outside the firm will be in the opposite direction. See Figure 1 which shows that at any point in the trade cycle the ‘best’ estimate of future profits and their growth is determined by a linear extrapolation of the angle at that point. When income expectations
(mainly generated by analysts) are high and perhaps unreasonable or impossible to fulfill, these may be satisfied by ‘aggressive accounting’ (the manipulation of accounting data within the law) and even fraudulent accounting (manipulation outside the law). However, during a depression, there are no pressures on the company to perform (assuming, of course, that it is not fighting off, or has succumbed to, bankruptcy) as analysts and others are not expecting it to do so well. Here, it may be in the interests of the company and its directors to write down asset values and over-provide for losses in order that these may be released later to boost improved earnings figures. This is known as ‘big bath’ accounting which is expected to occur when managers are unable to meet their targets (Healey, 1985).\textsuperscript{xiv} The result is, not the smoothing of profits but the opposite. As Buckmaster (2001, p.104) in an authoritative review of the empirical literature, says income smoothing and big bath accounting are both likely to occur: when income is below a certain level, managers will ‘take a big bath’ and when it is above (which is more common and probably extends over a longer period), they will attempt to smooth income by releasing some of the previously written off values. See Figure 2. Here, income smoothing occurs between A and B when profit expectations are high, firstly when rising and later when falling. However, when the company’s performance is particularly poor (between B and C) ‘big bath’ accounting may occur. The period between C and A is a period of growth but expectations are reasonable requiring no earnings management.

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The likelihood of fraud and financial swindles

In my 2007 paper, I argued that an important aspect of a financial crisis Minsky ignored was the willingness of directors and owner-managers to allow their companies to
collapse, possibly exploiting their limited liability and the opportunity for ‘bankruptcy for profit’. Although this is largely ignored by Minsky, in their authoritative history of financial manias, panics, and crashes, Kindleberger and Aliber (2005) remark, ‘the implosion of an asset bubble always leads to the discovery of fraud and swindles’ (p.143). The nature and type of a fraud or swindle will depend on the stage in the trade cycle when it is perpetrated. See Figure 3. As Kindleberger and Aliber (2005, p. 145) also note, an investment swindle is likely to occur when investors are keen to invest, when they are optimistic about the future and do not scrutinise investment proposals so thoroughly. Financial statement fraud is expected to occur at a different stage in the cycle because it occurs for different reasons: when the company is unable to meet investor’s expectations. There is also likely to be a time lag between the perpetration of a fraud and its discovery. Many frauds only come to light when the company finally fails. Similarly, an investment swindle may not always be immediately apparent and only come to light when the promoters or their vehicles are unable to keep up their pretence. It may also take some time before implications of a new accounting technique are recognized and it may not be widely known until years later that an accounting policy is misleading e.g. merger accounting in the UK.

It is too early to quantify the number of accounting scandals arising out of the 2007-9 financial crisis. Nevertheless, there have been a significant number associated with the failing Ponzi schemes. The SEC has charged Madoff’s auditors, Freihling and Horowitz with fraud claiming that they had not audited the investment company’s accounts. At the time of writing, the SEC are still attempting to locate the owners of Stanford’s auditors,
CAS Hewlett & Co, a small local firm of auditors in Antigua accountancy firm. It appears that Nadel’s funds had no auditor. The fraud came to light when his partner insisted on an audit! It is also too early to calculate the number and monetary value of frauds perpetrated as a result of the 2007-9 financial crisis but the FBI has stated that it was investigating 26 large companies in the financial services industry including AIG, Lehman Brothers, Fanny Mae, Freddie Mac and Indymac involving securitisation, accounting fraud, insider trading, and non-disclose of the value of mortgage-related securities and other investments (*Accountancy Age*, 24 September, 2008).

**Conclusion**

Since I wrote the 2007 paper there has not only been a huge financial crisis but Minsky, previously a highly respected but relatively unknown economist, has risen in public fame (unfortunately, after his death in 1996) for providing an accurate analysis of it and the period leading up to the crisis - to such an extent that the term ‘Minsky moment’ has been used by commentators to identify the point at which the boom ceased and the depression began. I have argued that whilst the features of the crisis largely comply with Minsky’s predictions, the FIH is not without criticism. The purpose of this paper has been to show that in the 2007-9 crisis as well as the crashes of 1866 and 1987 an important aspect of both a boom and bust is the role of accounting information and the way by which management may use it to mislead, an aspect that Minsky largely ignored. It was also shown that prudent provisions for bad and doubtful debts and what is known as ‘mark to market’ or ‘fair value’ accounting may both have the effect of understating profits and asset values during a crisis and a subsequent depression leading to what is called ‘big
bath’ accounting. The effect of this is to artificially increase/decrease capital during a boom/depression which increases/decreases their ability to lend.

The 2007-9 crisis should, of course, have been expected - by bankers, regulators and individuals - as the natural consequence of cheap money. In my 2007 paper, I argued that previous financial crises demonstrate how we do not learn fully from history and earlier mistakes and, as a result, reoccur. There was little new about corporate leverage in the 1980s other than its greater availability. There was certainly nothing new in 2007 in the UK about personal leverage (other than its greater availability) or even ‘negative equity’. It is shown here that, again, not only are the lessons of history have been ignored but a theory of financial instability that identifies the role of information (or to be more precise, asymmetric information) is crucial. Because the theory is incomplete, so are our understanding and predictions.
References
Minsky, H.P. (1975) John Maynard Keynes, New York, Columbia University Press,
Wilson, S. ‘Have we reached a “Minsky moment?”’, Money Week, 5 April, 2007.
Actual profitability across a business cycle showing expected trends at particular points in the cycle as extrapolations of linear growth at those points in time.
Figure 2

Reported profitability (hard line) and actual profitability (broken line) across a business cycle.
Figure 3

The timing of the occurrence of fraud

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ENDNOTES

i I will refer to the economic downturn and recession as a ‘depression’, not in order to make a distinction between the two in terms of their severity but to reflect the mood of pessimism during the period, an important factor in the Minsky analysis. The difference between the two is simply in magnitude, depression being the more severe, in terms of the effect on GDP although there is no generally agreed measure to be used as a criterion.

ii Nowadays, the term ‘irrational exuberance’ is also used to describe the phenomenon. However, this does not represent a new or alternative theory or offer new insights into the reasons for its occurrence. The term was first used on 5 December 1996 by Alan Greenspan, chairman of the US Federal Reserve Board to describe the behaviour of investors in the US and the mood behind the rise in stock market prices between 1994 and 1999. Immediately following his speech, the Nikkei index dropped 3.2 per cent, the Dow Jones Industrial Index dropped 2.3 per cent and the FTSE 100 index fell 4 per cent.

iii Banks in the US and UK even went as far as offering ‘Self Cert Mortgages’ in which borrowers could provide a ‘self assessment’ of their income.

iv Some of the largest included Ameriquest, Ownit Mortgage Solutions, Mortgage Lenders Network USA, New Century Financial, and Countrywide Financial.

v In the sense that banks were not willing to lend to one another because of the increased risk. Hitherto, this had been considered to be negligible.

vi At that time Fannie Mae had total debts of about $800bn (£400bn) and Freddie Mac about $740bn, more than 50% of the US mortgage market (The Guardian, 14 July 2008).

vii In the case of AIG, credit default swaps. These are instruments by which the buyer makes periodic payments to the seller and in return receives a payoff if the underlying financial instrument fails to pay. These were bought from AIG by other financial institutions to provide a form of insurance against mortgage default risk.

viii Well-known names include MFI and Woolworths in the UK.

ix It was stated by Mr Richard Alderman, director of the Serious Fraud Office that in the UK during early 2009 there were undoubtedly some huge investment frauds and described them as ‘mini-Madoffs’, the ‘ripple effect of the credit crunch’. The Independent 5 March 2009.

x A similar situation occurred as a result of the UK stock market collapse of 1987 crash. Two of the largest failures were Barlow Clowes and BCCI, both later to be discovered to be Ponzi schemes (Kindleberger and Aliber, 2005; McIlroy, 2006).

xi The term promoter is used to refer to all sellers of financial products ranging from the promoters of new companies, including ‘boiler room’ operations through to the sellers of mortgages and other loans, including ‘loan sharks’.


xiii It has been argued that if mark-to-market accounting had been practiced during the US banking troubles of the early 1990s, almost every major commercial bank in the U.S. would have collapsed because of shaky Latin American and commercial real estate loans, bringing about a second Great Depression (Forbes, 2009).
xiv Healey developed this theory was by reference to management bonus plans and stated that when pre-accrual income was below a certain band, managers would take a ‘financial bath’.

xv ‘Bankruptcy for profit’ occurs when the owners of a company siphon off its funds and thereby deliberately bankrupting it in order to profit from its limited liability (Akerlof, and Romer 1993).

xvi Until his death in 2003, Kindleberger was the sole author of this classic which uses the FIH as the principal theory to underpin the analysis.

xvii Perhaps not only by bankers corporate management and individuals but also finance professors who continued to argue the merits of leverage in long term financing without recognising the difficulty of quickly rearranging it when financial circumstances change.