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The American subprime crisis compared with the Norwegian banking crisis 1987-92

Sverre Knutsen

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Why do banking crises occur?
The American subprime crisis compared with the Norwegian banking crisis 1987-92

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Abstract

This paper analyses the causes of banking crises by the way of a historical comparative case-study. Moreover, the analysis draws on theories elaborated by the economist Hyman Minsky. The evidence presented suggests that the fundamental causes of the compared crises are found in the macroeconomic boom-bust fluctuation and the building up of asset market bubble(s) preceding the breakdown and the crisis. We also find boom-bust cycles as depicted in a basic Minsky-cycle, where financial instability and the outbreak of crisis is a consequence of an unbalanced mix of hedge, speculative and Ponzi financial positions. In both cases we have observed a pattern where stabilizing or thwarting institutions, as Minsky denoted them, were eroded over time. Each case demonstrates that structural economic shifts were interacting with major institutional changes and created processes that effectively removed institutional stabilizers. Hence, systemic risk was allowed to fill up the financial system. These processes were essential for building up financial imbalances of such a magnitude that the particular booms ended in systemic banking crises.

JEL-codes: E32, E51, G01, G18, N10, N12, N14

Keywords: Financial Crises, business cycles, Institutional Stabilizers, Structural Economic Change, Liberalization

Introduction

The deep global financial and economic crisis triggered by the US subprime crisis in 2007-2008 has given renewed interest in research on financial crises, both their causes and their effects. This paper will focus on systemic banking crises. Depending on definition, more than 120 systemic banking crises and about 50 minor, non-systemic crises, have been identified over the period from 1980 to 2007.[1] This is in contrast with the period 1945 to 1980 over which the number of reported crises is few. Even the financial crises of the inter-war years and the recurring financial crises of the 19th century capitalism contrast the stability characterizing the period from the 1940s to the mid-1970s. This might indicate that financial instability and crises is an inherent feature of capitalist economies, whereas the frequency of crises varies with forms of capitalist economies. The large number of systemic crises after 1980 also points to deep structural changes in the global economy during this period.

It has been argued that for economic historians, the most policy relevant implication of the recent crisis is the extent to which it has affected earlier wisdoms regarding what ought to be done to deal with major crises. Given the huge sovereign debt crisis in Europe, this topic should be of great interest for research. In order to learn, however, how to handle financial crises, it is necessary to deepen our understanding of the causes of financial crises. When doing this, it is also important to realise and emphasise the fact that there is no scholarly consensus upon the causation of financial crises. Neither is there consensus on how a crisis should be handled when it unfolds, and particularly there is no consensus of what should be done during the aftermath of a crisis. Furthermore, there is no consensus on how to define a financial crisis.

Hence, it is essential to clarify initially what we mean by the term financial crisis. A financial crisis occurs as a result of financial assets and thus the value of financial institutions is reduced significantly in a relatively short period of time, and the drop in asset prices is typically considerably worse than an ordinary correction. The systemic risk is so large that the failure of a single financial intermediary can ramify through the financial system in such a way that negative market psychology makes the financial markets work irrational by not allocating credit in a normal way.[2] There are many types of incidents that relate to this process. Firstly, we have different manifestations of banking crises. Secondly, we have other types of events that may be

[1] Laeven og Valencia (2008: 3 ff)
[2] Eichengreen and Portes (1987)

categorized as financial crises, such as currency crises, sovereign debt crises, and crashes in asset markets. Often, these different manifestations of financial crises, link up in sequences where one crisis causes another.

Among all these manifestations of financial instability, banking crises are the most serious type of crisis in the financial system. This is because banks are key players in the payment system, and if this is adversely affected by a banking crisis, the consequences can be disastrous for the real economy. Furthermore, a systemic banking crisis might block the credit lines to both non financial businesses as well as to other financial institutions to such an extent that investments plummet - at worst, dramatically and consequently pushes the economy into depression by the way of a credit crunch.

A systemic banking crisis can be defined as financial disturbances to the whole banking system leading to significant loss of banking capital, caused by loan losses, nonperforming loans and other financial assets' loss of value. A system-wide banking crisis may also manifest itself as a depositor-run on banks and result in a bank panic. The fundamental problem, however, is loan losses. If borrowers do not have problems with paying back their loans, the probability of a banking crisis is certainly very small.

The purpose of this paper is to describe and analyse the causes of banking crises. Hence, the basic research question is: Which causal factors can be identified as crucial for building up of financial imbalances to such an extent that they trigger a banking crisis? The remainder of this paper is organised as follows. Section I provides a theoretical and conceptual framework, whilst section II discusses the recent American crisis. Section III explores the Norwegian banking crisis 1987-1992, and section IV compares the two banking crises. Section V concludes.

I. Analytical framework

The paper compares two historical cases comprising the recent American subprime- and credit crisis, and the massive Norwegian banking crisis 1987-1992. This comparative case study strategy chosen allows us to control for variation in context. Moreover, the comparative strategy applied here is to pick cases that are quite different – the "most different systems" approach as it is denoted in the case-study literature - originally called "the method of agreement" by John Stuart Mill. The logic is that you select two (or more) cases that have the same *dependent variable* in common – here systemic financial crises. The cases differ, however, on a range of

variables. But if you find common critical variables in both – or all – the cases, they can be regarded as *independent variables*. If we find common patterns across such strongly differing cases, this may strengthen the idea that we are dealing with general relationships.

The recent U.S. credit crisis and the Norwegian banking crisis of the late 1980s-early 1990s are good cases to conduct such a comparison. USA and Norway are both capitalist economies, but differs substantially in how their economies are institutionalized, are organized and work. Norway is a small country with a very open economy. Export and import makes up for a very large portion of GDP. Total foreign trade's share of GDP was about 75 percent during the 1980s and 1990s, varying with oil prices. The USA, in contrast, is the world largest national economy. However foreign trade’s share of the U.S. GDP is about 30 percent and thus less than half of Norway’s. Both are among the richest countries in the world measured as GDP *per capita*, but income inequality is far larger in the U.S. than in Norway. The business systems also differ substantially, being more competitive oriented in the US. and more co-ordinated in Norway, featuring a combination of free market activity and government intervention, including a widespread government ownership in key areas and the largest companies. This business system differences are even reflected in employer-labour relations system. Norway is, in contrast to the US case, characterized by strong collaborative aspects. This is demonstrated by the fact that 52 percent of the Norwegian workforce is organized in trade-unions, whilst this applies to less than 8 percent of the American work force. An extensive system of welfare capitalism characterizes the Norwegian society, whilst the U.S. welfare is to a much larger extent built on insurance and far more adhere to the principle “you are your own fortune.” The business structure also varies considerably. Although both are democracies, both political institutions as well as the economic institutions of capitalism also vary largely. Although there has been a convergence on some of these differing societal traits over time, most of them still exist.

Minsky’s Financial Instability Hypothesis

Theoretically, this paper is based on Hyman Minsky’s "Financial instability hypothesis" and C.P. Kindleberger’s interpretation of his theory and application on historical material.[3] Some economists have made objections to Minsky’s framework arguing that his approach “cannot be

[3] Minsky (1975; 1986; 1992)

modelled"; his analysis "is not rigorous enough" etc. On this point I will simply adhere to Charles Goodhart's comment:

> "One of the problems that we have had in macro is that a bad but rigorous model tends to beat a correct but literary exposition in peer esteem in economics. What I would regard as a correct but literary exposition in economics is the work of Hyman Minsky."[4]

Or in other words: I prefer an analytical framework which is almost correct instead of an alternative one that is precisely wrong.

According to Minsky, capitalism and especially the financial system is fundamentally unstable. Instability is intrinsic to a dynamic capitalist system because a capitalist economy is profit-seeking and driven by innovation – incremental as well as radical ones, hence the necessity to transgress the conventional idea that "free markets" promote stability. He developed his argument on this point over a long period of time until his ideas was published in more or less finished form in 1986 in his book *Stabilizing an Unstable Economy.*[5] This view of capitalist market economies is antithetical to mainstream economic theory's raison d'être, which is stability: stable process, stable employment and financial stability.

Moreover, Minsky held the view that feasible theory is institution-specific and that the institutions of capitalism have to be brought into the analysis at the outset. Minsky also argues that capitalism comes in many forms and states that "...Nowhere is this dynamism more evident than in its financial structure..." [6] Minsky explicitly "endogenized" the forces that trigger the sequence of a boom-bust cycle. In brief Minsky's thesis is that every business cycle in a capitalist economy is running through a development with growing optimism about the possibility to realise profit opportunities. This is conducive to instability-enhancing a type of behaviour over the course of the cycle that leads to the development of speculative euphoria and accumulation of debt, leading to increased fragility. In line with Minsky, I argue that the two crises compared in the paper were not primarily a result of some external shock to the economy, but rather brought about by forces internal to the capitalist economy.

Minsky's theory is not explicitly historical even though it is based on an analysis of American capitalism spanning from the Great Depression up until 2000. Minsky's theory may shed light, however, on the driving forces that are common in the development of financial crises

[4] Goodhart (2010: 55)
[5] Minsky, H.P. (1986)
[6] Minsky and Whalen (1996:2)

over time and space. Charles Kindleberger drew on Minsky's theory of financial instability, when he elaborated his sequential stage model in *Manias, Panics and Crashes*.[7] However, he historicised Minsky's theory and analysed speculative bubbles and financial crises as well as the link between these phenomena, as they has been expressed throughout the history of capitalism.

By the way of scrutinising historical material Kindleberger depicted a basic pattern of these speculative bubbles which can be synthesised in a sequence of displacement, credit expansion, speculative mania, distress, crash/panic and crisis. Displacement sparks the development of the boom-bust sequence that inflates bubbles in asset markets and eventually triggers a financial crisis. For Kindleberger displacement can be generated by a technical innovation, a new product, the creation of a new market, but even the outbreak of a war, steeply falling interest rates etc., which creates new profit-opportunities in at least one sector of the economy. Idle money flows towards this sector (s). The banks finances a growing number of new projects and businesses, and the credit expansion inflates a bubble, continuously reinforced by asset price inflation. However, Kindleberger's notion of displacement might also be seen more as a description of a novel offering which points to what is actually happing at the outset of a boom-bust sequence or the formation of a bubble. Kindleberger's concept of displacement can be very fruitful when we analyze historical financial crises, particularly those who followed in the turbulent aftermath of great wars like for instance WW I. Minsky, fully endorsed Kindleberger's description and analysis of "disequilibrium processes" like boom-bust sequences in history.[8]

Minsky cycles

In Minsky's financial analysis, the unit of observation – the behavioural entity – is the firm. Minsky argued that three distinct income-debt relations for economic units can be identified. Over the business cycle, these financial positions typically develop from "hedge" to "speculative" and finally to "Ponzi"-finance.[9] Hedge finance is characterized by borrowers who can fulfil all of their contractual payment obligations by their cash flow. During the thriving period of a boom, however, expectations of future returns become increasingly optimistic. Businesses in profitable sectors of the economy want to raise profits further and make increasing

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[7] Kindleberger (1978/1989)
[8] Minsky (1992)
[9] Minsky (1992: 6 ff)

investments financed by boosting their level of debt.[10] Speculative finance units are borrowers who can meet their interest payments, but they cannot repay the original loan out of their cash flow. Instead, they need to "roll over" their debt in order to re-finance matured debt; hence such units are dependent on well-functioning financial markets. Typical speculative units are governments with floating debts, businesses with loans that need to be re-financed at maturity and banks. Ponzi-finance signifies units that are not able to fulfil the payment of the loan, nor meet interest due on outstanding debt.

The transition from hedge and a stable situation to a speculative and fragile situation can, as abovementioned, be explained endogenously because of the profit-seeking nature of a capitalist economy. Actually, economic stability encourages increased risk-taking as well as swelling leverage, which in turn produces increasing financial instability and enlarged and deeper recessions. Thus, Minsky emphasizes that the financial instability hypothesis is a model of a capitalist economy "...which does not rely upon exogenous shocks to generate business cycles of varying severity."[11]

During the business cycle and the transition from robust to fragile financial relations, financial bubbles are inflated by supply of ever-increasing bank credit or various forms of credit-creating instruments. Minsky has linked institutional innovation to profit opportunities, showing how innovation allows business activity to expand even in the absence of expansionary monetary policy.[12] Minsky also demonstrated that institutional innovations often encourage banks to seek new ways of providing finance. However, such innovations amplify the possibility for financial instability because "...every institutional innovation which results in both new ways to finance business and new substitutes for cash assets decreases the liquidity of the economy".[13] The key mechanism that pushes the economy toward a financial crisis is thus *the accumulation of debt*, which increases financial fragility in the business sector. On the other hand this piling up of debt becomes unmanageable for banks and other financial intermediaries since the downturn of the business cycle increases the risk for default on loans in the non-financial sector. Let us therefore also turn to Charles Kindleberger and his stage model of financial crises, a pattern he elaborated

[10] Minsky (1992:7)
[11] Ibid.
[12] Minsky (1957)
[13] (Ibid., p. 184)

from the diachronically comparative study of past crises.[14] His financial fragility approach regards financial crises as an essential component of the turning point of the business cycle.[15] The crisis occurs as a consequence of the 'speculative excesses' of the previous boom, characterized by indebtedness because of reckless lending and excessive borrowing during the boom. This boosts financial fragility. Hence a crisis can be triggered when the bubble bursts, primarily as a result of the downswing of the business cycle.[16]

At the outset the events leading up to a crisis start with a novel offering which brings about an altered economic outlook "by changing profit opportunities in at least one important sector of the economy."[17] As a result, both business firms and individuals with savings or credit pick up the opportunity, hence investments and production rise. This stimulates an increased demand for finance. A boom is developed, fed by an expansion of credit. The extension of bank credit increases the money supply and self-exciting euphoria develops. The real value of debt decreases, which in turn encourages further borrowing. An increasing number of firms and households are tempted into speculative finance. When the number of firms and households indulging in these practices grow large, speculation for profit leads away from normal, rational behaviour and manias and subsequently irrational bubbles result. The term mania emphasizes the irrationality (mob psychology, herd behaviour) and the term bubble foreshadows the bursting.[18]

Like Irving Fisher, representatives of the Business-Cycle school attach great importance to the role of debt in causing financial difficulties. This argument rests on presumptions that discriminating between good and bad credit risks is more difficult when the economy is expanding rapidly "because many borrowers are at least temporarily very profitable and liquid."[19] Increased financial fragility is also a result of "debt contracted to leverage the acquisition of speculative assets for subsequent resale."[20] In this connection, financial innovation and the creation of new instruments are of importance according to Minsky:

"Like all entrepreneurs in a capitalist economy, bankers are aware that innovation assures profit. Thus, bankers (using the term generically for all intermediaries in finance), whether they

[14] See, for example Kindleberger (1989/ 1978)
[15] Also see Fisher (1933)
[16] Kindleberger (1989/ 1978)
[17] Ibid, p.18.
[18] Kindleberger (1989/ 1978: 20)
[19] Goldstein and Turner (1996:12)
[20] Kindleberger (1989/ 1978: 17), cf. Minsky (1992)

be brokers or dealers, are merchants of debt who strive to innovate in the assets they acquire and the liabilities they market."[21]

Markets can fail for reasons other than a lack of information. Information can be available and transparent, but in every expansion, as Keynes explained, there is the tendency for investors to become overconfident and overlook the warning signs. The reason for this is that financial markets - as already has been indicated - are driven by market psychology like greed, fear and herd behaviour rather than rational expectations. Over periods characterized by long-lasting prosperity and over-optimism about future prospects, not only non-financial but even financial institutions are affected by euphoria. Consequently, they invest more in increasingly riskier assets and boost their leverage, seeking expected higher return. Creditors are eager to provide them with funds, since their expectations have improved as well. As a result "… leverage increases, risk premia go down and bank portfolios consist of relative riskier projects."[22]

Only a small incident is needed to transform the mania into panic, which then instigates the crisis and inflicts widespread damage. The problem ramifies throughout the financial system, creating financial instability and debt deflation. Sharp swings in assets markets like real estate, equity prices and even in commodity markets, intensifies the crisis because of high loan concentration. Moreover, the asset price declines and depresses the market value of collateral. Further difficulties arise when individuals, firms and banks have insufficient cash flow to service their liabilities, and debtors, unable to pay debts when due, may be forced by creditors to liquidate their assets. This leads to a situation with a decline in price level and demand. Subsequently, the number of bankruptcies increases reinforcing the downturn further. Real interest rates rise with deflation and falling prices worsening the situation further. This process of debt-deflation, as Fisher termed it, continues until bankruptcies and bank losses have eliminated indebtedness.

According to Minsky the business cycles in history are "...compounded out of (i) the internal dynamics of capitalist economies, and (ii) the systems of interventions and regulations that are designed to keep the economy operating within reasonable bounds."[23] The financial imbalances, however, do not reach a high and destabilizing level in each cycle, therefore each boom do not necessary lead to a financial crisis. Whether the built up financial imbalances are

[21] Minsky (1992)
[22] Behattacharya et al. (2010)
[23] Minsky (1992), op.cit.

large enough to trigger a financial crisis is dependent on the mixture of the abovementioned financial positions. Minsky argues that if hedge financing dominates, then the economy may well be an equilibrium seeking and containing system. In contrast, the greater the weight of speculative and Ponzi finance, the greater the likelihood “that the economy is a deviation amplifying system.”[24] Minsky emphasized particularly that “...over a protracted period of good times, capitalist economies tend to move from a financial structure dominated by hedge finance units to a structure in which there is large weight to units engaged in speculative and Ponzi finance.”[25]

Super-cycles

In a paper from 1991, written in collaboration with P. Ferri, Minsky introduced the notion of a "super cycle" that spans multiple business cycles.[26] During such a “super cycle” there is a relatively long period characterized by stability. The stability of such periods is maintained by so-called thwarting institutions and the economy is dominated by a sizeable body of hedge units. This explains why not every up-swing necessarily leads to a financial crisis. However, when these "blocking" or stabilizing institutions are eroded, financial imbalances that lead the financial system into crisis are being built up, and an increasing body of speculative and Ponzi finance units evolve. Ponzi-finance units without sufficient cash flows are forced to sell assets, and such “fire sales” contribute to the collapse of asset prices. The most fundamental underpinning forces that erode stabilizing institutions are structural economic changes. The considerable rise of Chinese industrial production for international export after 2000 signifies such a structural transformation.

Financial capitalism came out from the WW II with an array of new thwarting institutions that contained and stabilized the economy and secured profits. Minsky pointed to “Big government”, the employer of last resort and “Big bank”, the lender of last resort as examples of important stabilizers. Agencies for financial supervision like the FDIC and other agencies of government as well as legislation like Glass-Steagal Act, should be added to the list of thwarting mechanisms. Together with policy interventions, such thwarting mechanisms affect the behaviour of the economy. Minsky emphasized, however, that “the seeds of future failures are

[24] Minsky (1992)
[25] Minsky (1992), op.cit.
[26] Minsky (1991)

ripening as structural relations, conventions, and institutions change. There is no automatic pilot for the economy. "[27] Minsky pointed out, that especially after Reagan and Thatcher, regulations were dismantled piece by piece at an accelerating speed, which promoted an increasingly fragile financial system featuring more riskier assets and more debt relative to income flows.

The financial fragility approach of Minsky and Kindleberger provides a helpful framework for analyzing both past and actual crises, and the following analysis will primarily draw on this framework. However, I want also to emphasize their coupling of boom-bust sequences to the business cycle and even the super-cycle. When the Western industrialized countries were unable to adapt to global structural changes and their industrial base thus shrunk after 1980, the growing financial instability made these countries ever more crisis prone.

II. The recent US financial crisis

The U.S. subprime crisis started to develop during winter 2007 sparked by the bankruptcy of the mortgage bank Mortgage Lender Network in February. In April of that year the nation's largest subprime mortgage lender, New Century Financial, filed for bankruptcy to obtain protection against the creditors. During the summer of 2007 the crisis escalated in earnest in the wake of grave problems in the investment bank Bear Stearns. A number of banks had to write off massive losses on subprime loans. In mid-August the nation's largest mortgage bank - Countrywide Financial – just barely avoided a bankruptcy by getting a loan of 11 billion dollars from a bank consortium. At the end of August Ameriquest which was the largest remaining lender of subprime loans, had to shut its doors in bankruptcy. During the autumn the crisis also spread to European banks as they experienced heavy losses, both on lending and on U.S. credit derivatives. Already at the beginning of August the interbank market in the U.S. and Europe encountered huge problems, and both the Federal Reserve, the European Central Bank and Bank of Japan found it necessary to inject liquidity into the interbank market, respectively, 43 billion dollars and amounts in Euro and Yen corresponding respectively 215 and 8 billion USD.

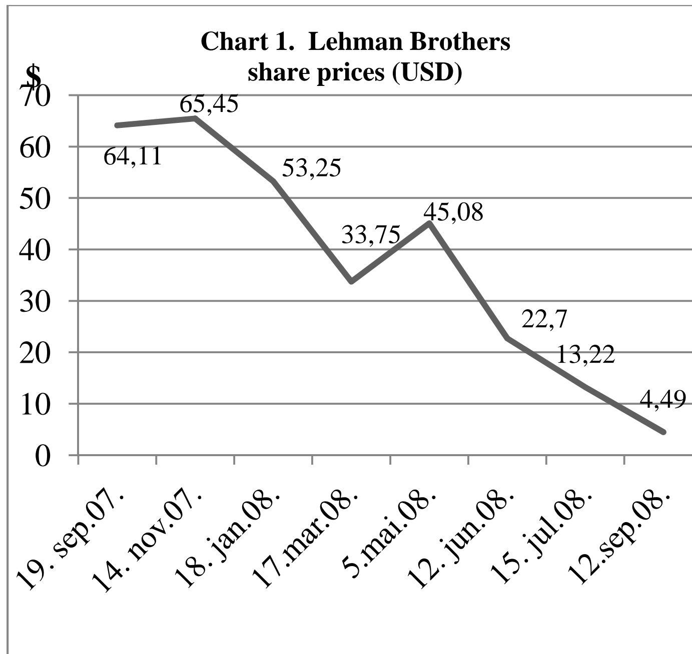
The turmoil continued during 2008 and in March, the investment bank Bear Stearns collapsed and was taken over by JP Morgan Chase, financed by a 29 billion dollars loan from the Federal Reserve. The price was $ 2 per share, which priced the bank to one tenth of the market

[27] Ferri and Minsky (1991)

value a month earlier. But JP Morgan was forced to raise the bid a few days later to 10 USD per share, while the FED provided a guarantee to the buyer for losses up to 30 billion USD. The crisis rolled forward with new losses and in July the Department of the Treasury in cooperation with the FED, had to rescue to Fanny Mae and Freddie Mac by issuing a guaranty for their debt. In early September, however, losses had become so large in these institutions that the U.S. government found it necessary to bail them out by the way of an injection of capital amounting to 100 billion USD. Thus the government got a 70 percent stake.

On 14 September the investment bank Lehman Brothers filed for bankruptcy and was taken into bankruptcy proceedings the next day. At the same time the authorities refused to bail out the bank. The authorities' lack of willingness to initiate a rescue operation was based on the consideration that this had now become politically impossible to implement with the support of Congress. Lehman's CEO, Dick Fuld for example, did receive $ 0.6 million in salary and $ 73, 1 million in bonuses in 2007. With this he was paid 554 times more per hour than the U.S. average industrial wage which was 15 dollars an hour at this time. Investment banks' greed and arrogance made it probably impossible for President Bush and Secretary Paulson to achieve the necessary political support to save the bank.

Chart 1 depicts the development of the share price of Lehman Brothers. From a peak in November 2007 the bank's share price plummeted almost continuously, only with the exception of a short period from 17 March to 5 May 2008. This collapse of Lehman's share price was linked up with the ongoing steep decrease in housing prices and the accelerating default on subprime loans. The investors gradually understood that Lehman Brothers had a significant loss potential because of the bank's large exposure against securitized subprime mortgages. When JP Morgan Chase acquired the collapsed Bear Stearns, FED simultaneously established the so-called Primary Dealer Credit Facility, PDCF, where not only ordinary deposit banks but even investment banks got the opportunity to establish credit lines with the central bank.



Source: La Republicca 15 sept 2008

The US financial crisis 2007 -2009 manifested itself as a credit crisis where banks and other financial institutions had to write off huge losses on non-performing subprime loans, as well as losses on defaulting credit derivatives like Collateralized Debt Obligations (CDOs) and Credit Default Swaps (CDSs). From January 2007 until September 2008 American banks' write-offs amounted to 658 billion dollars. Adding the losses experienced by banks outside the USA, the total losses amounted to 800 billion dollars. Moreover, Fannie Mae and Freddie Mac had at the same time to write off $112 billion, whilst American insurance companies lost a similar amount. According to FDIC statistics, 210 US banks had gone bankrupt during the subprime crisis up until the 17th of March 2010.[28]

As already emphasized the crisis was characterized by large losses on non-performing loans and default on credit derivates and other securities. The financial crisis was not manifested as a depositor run on banks. So, why did this huge crisis occur? All the large Wall-Street investment banks experienced troubles and losses, and most of them went bankrupt like Lehman Brothers. However, these investment banks were not mortgage banks – how could non-performing subprime loans create so big difficulties to them?

[28] http://www.fdic.gov/bank/individual/failed/banklist.html .

What caused the American credit crisis?

Defaults on subprime loans did not fundamentally cause the recent US financial crisis, but the subprime troubles definitely triggered it. The US financial crisis followed a nearly classical boom-bust pattern and unfolded through the phases described by the Kindleberger-Minsky approach. One of the basic mechanisms in this model is that speculation and credit expansion cause asset-price inflation in the asset markets – i.e. the markets for property and securities. If profit expectations are large enough, the result can be the inflation of price bubbles in these markets. Such financial bubbles increase the financial institutions' credit risk substantially. Hence, bubbles in the asset markets constitute a major driver in building up financial imbalances that might trigger a financial crisis. A large body of research have established a link between asset market bubbles and the occurrence of financial crises. It is important, however, to have in mind how Keynes commented this in his *General Theory*:

> "Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes a whirlpool of speculation."[29]

Following Keynes, it is necessary to address not only the proximate causes, but also the more profound underlying causes. The recent U.S. financial crisis was caused by interplay between the long-term erosion of major stabilizing institutions and structural changes in the national as well as global economy during the decades leading up to 2007-2008. The institutional changes were characterised by liberalization bolstered by laissez-faire ideology enhancing financial innovation, whilst the macroeconomic structural change of the economy was featured by increasing inequality. This entailed a development where wage earners' share of income decreased; hence they had to reduce their savings and increase their indebtedness in order to maintain their level of consumption and even find ways to consume more.

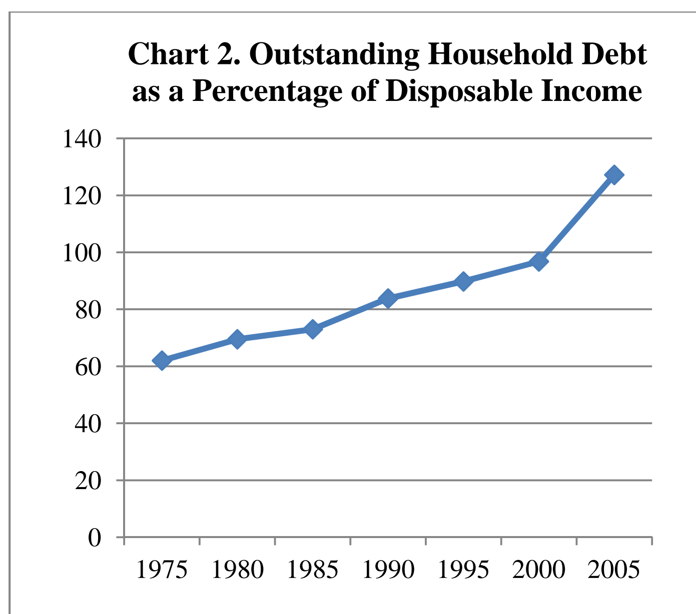
Concomitant with this development the US. economic elite expanded their shares of income and wealth substantially. Because of steeply increased profit opportunities in the financial sector this money flowed into finance where profits soared, reinforcing the influx of additional wealth. The escalating influx of money into the financial sector was also driven by shrinking investment opportunities in the production sector of the economy. Even Allan Greenspan became aware of this lack of investment opportunities when he wrote in his *The Age of Turbulence* that "...intended investment in the United States has been lagging in recent

[29] Keynes (1936: 159)

years...presumably for lack of new investment opportunities."[30] Moreover, this development was fundamentally caused by huge foreign funds flowing into the US helping fuel credit expansion. All this liquidity found its way to the financial sector to be invested in financial assets.

Subprime loans and the real estate bubble

US housing prises started to rise from the late 1990s and eventually a growing house price bubble developed. This bubble was inflated by an increased and accelerating access to mortgage loans. Total domestic credit market debt of nonfinancial sectors as a share of GDP increased 46 per cent from 1997(4Q) until 2008 (4Q).[31] The households' credit market debt as a percentage of GDP swelled 50 per cent during the same period. The same picture appears if we look at the households' debt as a percentage of disposable income. In 1975 this share amounted to 62 percent, while in 2005 had increased to 127 percent (cf. chart 2). If we see the development of debt relative to GDP over the period 1975 to 2005, two extensive waves of debt can be identified. The first occurred during the period 1981-88 and the other during the period 1997-2005. The debt growth in both periods is related to the outburst of serious financial crises.



Source: http://www.federalreserve.gov/releases/Z1/Current/z1.pdf; cf. Foster and Magdoff(2009:29)

[30] Greenspan (2007: 387)
[31] Calculated on data from Economagic Time Series: http://www.economagic.com

From the mid-1990s and particularly over the years 2002-2006 did American financial institutions provide a massive amount of mortgage loans to house buyers. A large and fast rising share of the growing amount of home loans was subprime mortgage loans. Before the mid-1990s, subprime lending was rather infrequent. It has been well-known that subprime loans in the housing market are a financial term for high-risk mortgage loans advanced to low-income borrowers. These borrowers were considered to represent a too large credit risk to get a first class or prime class mortgage loan. The interest rate for such loans was high since risks were high, but the loans were often offered with teaser interest rates. Although the interest rates were low at the time of sale, they were increased substantially at a later date. However, house prices rose sharply from the end of the 1997 – almost exponential after 2000 as demonstrated in chart 3. Real U.S. home prices increased 85 percent between 1997 and the peak in January 2006. [32]

This booming prices filled banks with optimism and expectation of huge profit opportunities, whilst they increasingly neglected the high risks. At the time when Lehman went bankrupt total outstanding mortgage loans amounted to approximately 10 000 billion dollars, of which 85 percent was securitized.[33] Subprime loans constituted a large share of this debt, and by mid-2007 such loans comprised 20 percent of total outstanding U.S. house loans.[34] The huge amount of credit advanced to mortgage lending and the vast investments in newly evolved credit derivates was financed not only by ordinary banks, but by "shadow banking", or non-bank lending institutions that were not federally regulated and controlled. It is estimated that lending through the shadow banking system by 2008 slightly exceeded lending via the traditional banking system.[35]

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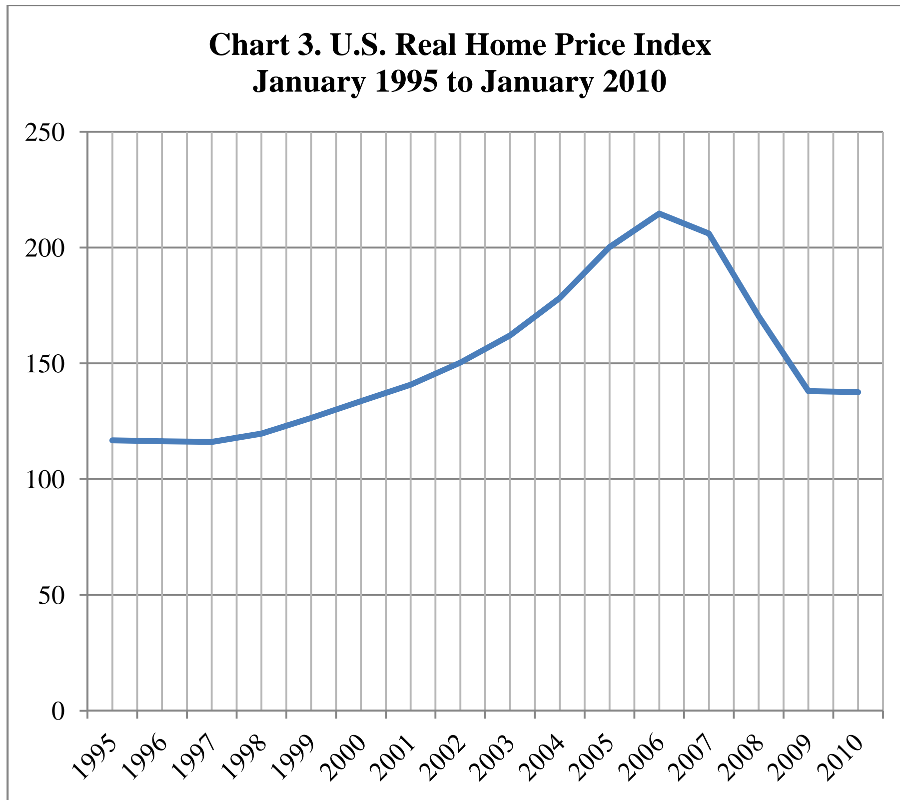
[32] For the movement in the home prices see, S&P/Case-Shiller US. National Home Price Index; cf. Shiller (2008: pp 34-38)
[33] Lybeck (2009: 75)
[34] Østrup (2008: 127)
[35] T. Geithner, President and CEO of the NY Federal Reserve Bank: Speech June 9, 2008: "Reducing Systemic Risk in a Dynamic Financial System ", cf. http://www.newyorkfed.org/newsevents/speeches/2008/tfg080609.html



Source: S&P/Case-Shiller US. National Home Price Index; cf. Shiller (2008: pp 34-38)

During the years 1995-2005 there was a sharp increase in the American homeownership rate, and the number of owner-occupied homes increased 11, 5 percent over that period.[36] The expansion was largest in the West, for those under the age of 35, for those with below-median incomes, and for Hispanics and blacks.[37] This gives an indication why more than 7 million borrowers bought houses financed by subprime mortgage loans over the period 1998 to 2006. As of December 2007, one million of these homeowners had already defaulted on their loans.

Late autumn 2006, however, the bubble in house prices bust, sparking off a sharp decrease in prices. The crash caused an accelerating amount of non-performing mortgage loans, most of whom were subprime loans. An escalating wave of foreclosures developed, and in 2007 foreclosures filed by homeowners reached 2, 2 million, up 75 pct from 2006.[38] This collapse of housing prices triggered the most devastating financial crisis since the early 1930s.

[36] Shiller (2008: 5)
[37] Ibid.
[38] Forbes.com.: http://www.forbes.com/feeds/afx/2008/01/29/afx4584956.html

Securitization

Banks searched for a method to meet the ever-increasing demand for mortgages and ascertained great profit opportunities in the real estate market. This prompted the innovation and design of new financial instruments and organisations, such as securitized mortgage loans – so called MBSs or mortgage backed securities, CDOs (collateralized Debt Obligations) or CDSs (Credit Default Swaps).[39] In fact, the design of for instance MBSs started already in the 1970 when Ginnie Mae started to sell such securities. The large semi-government mortgage banks like Fannie Mae and Freddie Mac followed swiftly and created a second-hand market for mortgages. Originally, these institutions were only allowed to guarantee or buy MBSs which solely contained prime quality mortgages. From 1995, however, the rules were softened up as a consequence of pressure from the Clinton-administration's efforts to increase the possibilities for low income groups to be able to buy their own homes. Even the Bush-administration made efforts to have an increased number of cheap houses on the market in order to boost up the homeownership rate, in particular from 2004 on. Bush's goal was to create an "ownership society". Further pressure was put on Fannie Mae and Freddie Mac either to guarantee or buy MBSs with underlying subprime or Alt-A loans. It ought to be emphasized though, that non-performing loans did not only occur among subprime loans. Actually, bad or none check of credit worthiness, advance of loans with teaser-rates etc. applied to almost 50 pct. of all mortgage loans provided in USA over the period 2005-2007.

From being almost a non-existing business area in the 1970s mortgage and asset backed securities amounted to 8000 billion dollars by the end of 2008.[40] However, American banks and investment banks developed these innovations one step further by introducing and issuing new securities based on MBSs and other securitized loans – so called CDOs. Large banking conglomerates like Citigroup as well as the Wall-Street investments banks made packages of securitized mortgage loans and other financial assets and sold them to domestic investors as well as investors globally. Many Structured Investment Vehicles (SIVs), which issued such structured products, were financed by short term Certificates etc., whilst they at the same time had a portfolio of CDOs with longer maturities. Thus they were exposed to a substantial maturity risk.

[39] Cf. for example (Knutsen 2008: p 49 ff)
[40] Knutsen (2008: 44)

All the SIVs that operated this way were bankrupt as of October 2008, with debts amounting to USD 400 billion.[41]

Dynamics behind the development of the Housing Bubble

Many factors contributed to the development of the housing bubble, hence to increased and unmanageable credit risk in the financial institutions' assets. Among the most important factors do we find interest rates, the huge influx of liquidity from foreign capital sources, credit expansion, speculation driven by optimism and market psychology (animal spirit). Formal and informal institutional changes in the shape of changed rules of the game, change in institutional structure and the introduction of new instruments have to be taken into consideration in this context. This financial liberalization gave rise to destabilization of the financial sector and was highly conducive to speculation in asset markets.

When the dot.com. bubble in the stock market collapsed in 2000, FED cut its key rate from 6,5 % in 2000 to 3,5 % in August 2001 and to only 1% midway in 2003. The discount rate hadn't been that low in 40 years, which contributed to fuel and escalate the housing boom. The inflation adjusted discount rate was actually negative during 31 months, from October 2002 until April 2005. Care for Wall Street and the wish to stimulate the stock market was a main priority for Governor Greenspan and the FED, and had been the case since he took office in 1987. Moreover, Greenspan and the FED were worried that the low growth in prices could lead to deflation and bring the economy into a stalemate like in Japan.

The money stock (M2) fell over the period 1990-1995, but thereafter money supply grew at an annual rate of around 10 percent during the following decade. What were the sources of liquidity that made the huge credit expansion possible, which eventually inflated a housing bubble? USA developed large and mounting trade deficits, and even built up a huge public debt. Under Bush the government deficit rose tremendously, mainly because of tax-cuts to high-income groups and astronomical costs incurred by the Iraqi war. These deficits were financed by issuing sovereign debt nationally and internationally.

Consequently, both private and public debt piled up. Global money poured into the USA from countries like China, India as well as the oil exporting countries, who bought public and private debt. China experienced an immense growth in its export of goods to the Western

[41] Lybeck (2009: 73)

countries, particularly the USA. This export growth accelerated mainly after China became a WTO member in 2001. Cheap Chinese goods helped push commodity prices down. This development helped to inflate asset prices, whilst American production of manufactured goods was further crowded out. A major reason for the extremely low prices on Chinese manufactured goods for global export was the very low wages made possible by the existence of a huge reserve workforce of immigrant workers from the rural areas. Furthermore, costs could be kept low because of bad working conditions, no real freedom to organize and free access for manufacturers to pass huge environmental costs to society.[42] Thus, part of the surplus accumulated in China, could be used to buy U.S. public and private debt.

Moreover, the U.S. savings rate dropped almost continuously over the decades before 2008. Personal savings as a share of disposable income was on average 10, 4 pct. over the five-year period 1980-84 and fell to 7.7 pct. in 1985-89, to 6, 5 pct in 1990-94, to 3, 8 pct. in 1995-98, to 2,1 pct. in 2000-04; and became negative in 2005 and 2006 for the first time since 1930s.[43] In a country without domestic saving, such a massive credit expansion that took place after 2000 was a result of credit creation made possible by the combination of domestic creation of bank money, expansive monetary policy and influx of money from foreign lenders and investors, particularly Chinese.

Rising inequality and consumption on credit

Much of the U.S. consumption growth since the end of the 1990s had actually been based on borrowing. The rapid rising housing prices provided opportunities to take up new loans that could be used to financing consumption and acquiring new consumer goods. The increase in interest expenses during 2006 caused home prices to plummet. Hence the possibilities to finance consumption by borrowing disappeared. This had a significant impact on the standard of living of low-income groups as well as for a large part of median-income groups. Actually, wage income as share of GDP has fallen sharply since the 1970s for most employees which the trend-line in chart 4 reveals.

From the peak in 1970, the wage share has fallen by nearly 10 percentage points. This development must be viewed in the context of more long-term, structural changes and shifts of

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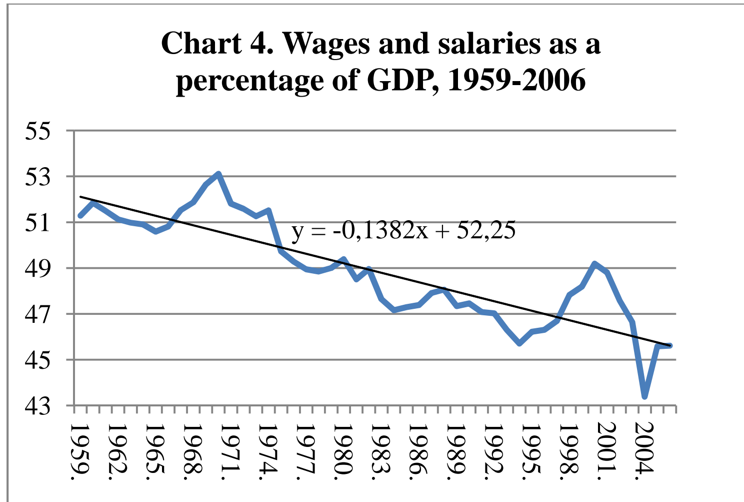
[42] Kristoffersen, H. (2010: 145 ff), cfr. for example International Herald Tribune October 13, 2007 and ibid., October 28.

[43] Wisman and Baker (2010: 8)

power. In 1955, for example, more than a third of U.S. workers in the private sector were trade union members, whilst the share had fallen below 8 percent in 2006.[44] This process started in earnest in the middle of the 1970s, when Carter was president, and entailed a significant erosion of workers' bargaining power with respect to achieving higher wages and social benefits.



Source: Economic Report of the president, 2008, GDP 1959-2007, table B-1 and B-29

Moreover, the development was also linked with technological changes. The structure in advanced industrial economies experienced a shift from stable mass production to service industries based on modern ICT. This shift affected the composition of employee groups in a way that weakened the basis for collective agreements and union influence.

The combination of technological change and the low Chinese export-prices weakened the bargaining power for employees, whilst extensive liberalization of the financial system strengthened finance. Financial industry's share of U.S. GDP doubled from 1980 to 2006. If we look at the profit development, the image that appears is even more remarkable. In 1985 the financial sector's share of total domestic profits in the U.S. economy was about 18 pct, whilst in 2005; it had grown to as much as 40 percent.[45] Thus, financial capital got a strengthened position from around 1980, and developed a considerable pressure from this position in order to further liberalize the financial sector and expand revenue accrued from financial services.

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[44] Reich (2007: 80)
[45] Economic Report of the President, 2008, table B-91: *Corporate Profits by Industry*

Liberalization and financial innovations

Macroeconomic boom-bust fluctuation obviously must play a central role when we are going to explain the causes of the subprime crisis. Not every boom and/or economic downturn, however, is leading to financial crisis. Thus, a central question to answer is what factors that are fundamental and underlying for the making of financial imbalances of such magnitude that it results in a financial system crisis, and particularly a crisis on such a massive scale like the recent U.S. credit crisis. Several studies have made evident that financial liberalization has a separate, negative impact on financial stability.[46] Liberalization should, however, be seen as a part of a larger process involving changes in financial institutional structure. In this connection it is also important to distinguish between short-and longer-term institutional changes and to realize that institutions can be both formal and informal, hence liberalization can occur both de jure de and facto. According to Minsky, financial innovation is a part of the liberalization process, and this applies to both the creation of new instruments as well as invention of new organizational forms.

There are several sources to institutional change like structural economic change, shifts in relative prices, shifts in income shares, technological changes and ideological influences. Such transformations manifest themselves in conflicts of interest, often mediated through political processes. Not seldom do different forces of change express themselves in conflicting institutions, were for instance old institutions can contribute to reinforce the effect of deregulatory measures. Already at the beginning of the 1980s did the U.S. financial lobby initiative to liberalize the financial sector and to have the Glass-Steagall Act abolished. In 1980, President Carter signed a law that started the process of liberalization - Depository Institutions Deregulation and Monetary Control Act. Together with the Depository Institutions Act of 1982 (Garn-St. Germain), signed by President Reagan, these laws contributed to break down the boundaries between different types of financial institutions with regard to what kind of products they were allowed to offer. The 1982-law also played a role in loosening up the ban on interstate banking, which finally was lifted in 1994.[47] It is interesting to note that Reagan's first Secretary of the Treasury, Donald T. Regan, was former C.E.O. of the investment bank Merill Lynch & Co. He was chairman of the Depository Institutions Deregulation Committee and a driving force

[46] Larsson and Sjögren (1995); Knutsen and Nordvik (1998: pp 373 ff and idem.); Demirgüc-Kunt and Detragiache (1998); Knutsen (2007); Jonung (2008); Knutsen and Sjögren (2009)

[47] Riegle-Neal Interstate Banking and Branching Effiency Act of 1994

for the 1982 Act, which among other things made it possible for the Savings & Loans institutions to take on more risky businesses.

A further series of liberalization measures followed swift throughout the 1980s and 1990s, until President Clinton signed the Gramm-Leach-Bliley Act in 1999, also called the Financial Services Modernization Act. This law did away with Glass-Steagall and removed the boundaries between banking, insurance and the securities business. The law was a result of an agreement between the Republicans and the Democrats in Congress, and opened for integrated financial groups. Citibank and Travellers Group merged into Citigroup already before the law was enacted – and thus in conflict with Glass-Steagall, but with the expectation that the law was about to be removed. Only in 1997-98 had the financial lobby spent 300 million U.S. dollars to promote the interests of the financial industries and the removal of existing regulations. More than 250 million was contributions to Democrats and Republicans as well as campaign contributions to candidates from both parties.

However, this new legislation created a significant regulatory gap by "…failing to give to the SEC or any agency the authority to regulate large investment bank holding companies…"[48] This applied to companies like Goldman Sachs, Morgan Stanley, Merill Lynch, Lehman Brothers, and Bear Stearns. Since the SEC thus lacked explicit statutory authority to require these investment bank holding companies to report their capital, maintain liquidity, or submit to leverage requirements, the Commission in 2004 created a voluntary program in order to fill this gap. On September 26th, 2008, a fortnight after the collapse of Lehman Brothers, the SEC Chairman announced that "the last six months have made it abundantly clear that voluntary regulation does not work" and he stated that the program "was fundamentally flawed from the beginning."[49]

The extensive financial liberalization caused changes in the institutional structure that opened a window of opportunity for the money managers to design new products and to seize a whole range of new profit opportunities. From the late 1990s, the sale of subprime mortgage loans accelerated, and in 2000 the rating agency Standard & Poor published a statement which stated that so-called "piggyback" loans were a positive and sensible product. This home

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[48] Announcement by Securities and Exchange Commission Chairman Christopher Cox, Sept. 26, 2008: http://www.sec.gov/news/press/2008/2008-230.htm (accessed 11/22/10)

[49] Ibid.

financing option could typically be a package of two mortgage loans of which for example one was within 80 pct. of estimated market value, whilst the other cover the remaining 20 pct., secured by a mortgage with a different lender, and the homebuyer has zero down payment. The need for accumulated equity was thus exceeded, and made it possible to finance up to 100 pct. of the purchase of real estate by taking up loans. The usually imposes a higher interest rate on the second mortgage since the first mortgage gets paid off before the second. There was also offered subprime loans with Zero repayments as well as subprime mortgages with adjustable interest rate. Such ARMs often offered a low or even zero "teaser rate" at the outset, which after a while was adjusted upwards.

As already has been pointed out previously an important part of liberalization prior to the outbreak of the financial crises, has been the invention of new instruments and new organizational forms – i.e. financial innovations. Securitization as described earlier in the paper and the design of credit derivatives like CDOs are examples of this. However, it is very important to realize that the value of such instruments depends fundamentally on price movements and cash flow in different and underlying financial assets. The liberalization of the formal institutions already mentioned led to a veritable growth climate for financial novelties which besides the aforementioned instruments also included organizations such as hedge funds, SPVs (Special Purpose Vehicles), SIVs (Special Investment Vehicles) and so-called CDSs (Credit Default Swaps). A CDS move credit risk and is thus a contract between two parties where one assures the other at a premium and guarantees the insured party that he / she is paid in the event of a financial institution goes bankrupt or a financial instrument becomes worthless. In reality, this is insurance in line with standard casualty insurance. If a credit damage occurs because of bankruptcy or otherwise during the period of insurance, then the insurance company collect the total insurance premium. The huge insurance company AIG lost a vast amount of money on speculative business in CDSs. When the company assessed the risk in the CDSs they traded, they amazingly did not correlate these securities risk with the risk of default of the underlying subprime mortgages. Counterparty risk seemed to be completely forgotten. Only during 2008 AIG lost incredible USD 100 billion, the largest loss suffered by any financial institution.[50]

[50] Lybeck (2009: 44)

The Real estate bubble made a major contribution to the development of large financial imbalances in the U.S. financial sector and when the housing market collapsed, the financial crisis was set off. An argument which has been advanced to explain the house price bubble has been rising construction costs. This argument can easily be falsified because U.S. construction costs had fallen continuously relative to consumer goods prices since 1980.[51] Low interest rate policy, however, contributed to inflate the housing bubble, but was only a part of the cause. Actually, the house prices grew already 10 per cent annually in 2000. Many informed observers were already in spring 2000 aware that it built up to a crash in the stock market, and many insiders moved their investments into the housing market. The new objects of speculation were now securities linked to the real estate market. Thus, the sharp rise in house prizes was triggered *before* FED started their interest rate cuts.[52] The resulting housing boom reinforced the pervasive belief that home prices could only go higher. The result was a substantial weakening of lending standards. Mortgage lenders seem to have believed that home buyers would not default, because rising prices would make keeping up with their payments very attractive.

Securitization and new instruments also contributed considerably to increased credit supply and rising home prices. These financial innovations made it possible to move mortgage loans out of the balance sheets of the Mortgage banks by the way of securitization, an operation that created the basis for further lending. It is also of importance to note that an extensive network of mortgage brokers have an important role in the U.S. system of house financing. They operate outside formal financial regulations. Since their income is based on commission of sales, they have had a strong incentive to sell mortgages, and they have not had any duty to carry out thoroughly credit rating. At the same time this accelerating securitization process created on its side the basis for a mortgage bond business involving Wall Street, other U.S. financial firms, as well as European banks. A large and increasing part of this business was leveraged. Minsky argued that during a boom, businesses in profitable areas of the economy are generously rewarded for boosting their level of debt. The more one borrows the more profit one appears to make, and with increased debt comes increased financial fragility.

[51] Shiller (2008: 33)
[52] R.J. Shiller (2008): *Bubble Trouble*, http://www.project-syndicate.org/print_commentary/shiller53/English (consulted 01.28.08); cf. Knutsen (2008: 43)

Another important institutional factor that also helped to boost up investments in residential property was the Tax Reform Act of 1986, which eliminated interest deductions on consumer and auto loans while allowing interest deductions on mortgage debt, thus making the latter a more attractive source of financing. On the demand side had facilities for subprime mortgages given strong incentives to buy the freehold properties. There were thus strong speculative tendencies underpinning the development of wide-ranging financial imbalances in the U.S. economy.

Speculation rooted in market psychological forces like herding and over-optimism about future prices was thus central to blow up the credit driven U.S. housing bubble. The reckless lending and corresponding piling up of debt as well as the fragmentation of risk built up the imbalances that finally triggered the financial crisis, which in turn caused the economic downswing to develop into a major recession. Keynes pointed out in the *General Theory* that expectations of future returns on investments were necessarily associated with great uncertainty, and thus withheld from rational calculation. Thus a wide scope opened up making it possible that expectations are influenced by emotions and mood waves. Liberalization opened a window of opportunity for mortgage banks, which seized the opportunity to sell subprime loans indiscriminately, using mortgage brokers. Investment banks on Wall Street took as eagerly the opportunity that opened with securitization to increase their profits significantly by facilitating and sell credit derivatives. The money managers convinced house buyers that they could safely absorb subprime mortgage loans, because house prices would continue to rise and interest rates would remain low. It seems that they believed in such visions themselves, and it appeared they all overlooked the big risk of default which such loans involved. The investment banks didn't limit themselves to act as underwriters, but did also own large holdings of CDOs, CDSs and other mortgage backed and asset backed securities. These holdings were funded by debt and increased gearing.

Contagion and irrational optimism

The boom's transition to a phase of Kindlebergerian mania is a period characterized by widespread irrational optimism, and herd mentality is now widely spread. An increasing number of non-professional investors follow the professional ones into the asset markets powered by unrealistic expectations about getting rich quickly. Mass media are often a driving force to build

up euphoric prospects about prices and profits by the way of launching new-era narratives, as they likewise are front-runners in spreading pessimism and visions of disaster when bubbles burst. An idea that often spreads during a real estate bubble is the idea of avoiding to be left on the platform when the train leaves. In particular young people often think this way: If I don't invest in the housing market now, I cannot afford to buy a house when prices rise further.

Among many American homebuyers, even those with low incomes, the high price expectations and willingness to take on high debt in the form of expensive subprime mortgage loans were rooted in adaptive expectations about prices. Since prices had risen for a long time they would continue to rise. In a survey among San Francisco home buyers, conducted by Shiller and Case in 2005, when the market was booming, they found that the median expected price increase over the next ten years was 9 pct. a year and the mean expected price increase was 14 pct. a year. About a third of the respondents "reported truly extravagant expectations – occasionally over 50 pct. a year."[53] The home buyers had observed substantial upwards price movements and heard other peoples' interpretations of these price increases, and not least the story that those price movements was sustainable in the long-run. Thus we can observe the contagion of unrealistic ideas about housing prices, mediated by a mouth-to-mouth feedback mechanism.

Another central aspect of the development of the recent US housing bubble was *trust*, also being an aspect of animal spirits. President Bush hardly mentioned the housing boom; in stead he boasted that mortgage rates were low. The then FED Governor, Alan Greenspan writes in his book published in 2007 that he didn't expect any bubble, but on the contrary "…lots of small local bubbles that never grew to a scale that could threaten the health of the overall economy."[54] Little more than a year later – after the bubble had collapsed and midst in a credit crisis – he admitted in an article in Financial Times that there had been both euphoria and "speculative fever." However, he claimed, the main problem is that our risk models and econometric models - no matter how complex they have become – still are "…too simple to capture the full array of governing variables that drive global economic reality."[55] According to Greenspan it was only the limitations in the models' ability to manage complexity that prevented (mainstream) economists from understanding what actually happened during the housing bubble,

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[53] Shiller (2008: 45)
[54] Greenspan (2007: 231)
[55] Greenspan, Financial Times, 17. mars 2008

whilst he saw no problem when it came to theory and analytical approach. He also totally neglected research approaches from other disciplines like psychology, sociology, anthropology and history, just to name a few.

The then chairman of the Presidents Council of Economic Advisers, Ben Bernanke, pointed in a 2005-report out that house prices had risen 25 percent over the previous two years. He stated that although this reflected speculation in "certain areas", it reflected on the national level "…strong economic fundamentals, including robust growth in jobs and incomes, low mortgage rates, steady rates of household formation, and factors that limit the expansion of housing supply in some areas."[56] House buyers relied on assurances from prominent monetary policy actors and renowned economists that the price movements in the housing market was sustainable and lasting and that risk by taking out high-risk mortgage loans was small. Money managers also believed that house prices would rise almost indefinitely and that the risk to invest and trade in new instruments linked to the mortgage market implied low risk. The financial liberalization created a range of new profit opportunities, hence a powerful expansion of the financial industry. Huge bonuses and large sales commissions constituted strong incentives to take huge risk among the money managers.

In fact, the new model of finance that emerged during the neoliberal era, beginning in the mid-70s, contributed greatly to increased intrinsic instability of the financial system throughout the advanced economies. The so called New Classical Economics (NEC) of Robert Lucas, later on supplied by the model of "real business cycle", had in common the strong belief in "self-regulating markets".

Leading proponents of NEC failed to realise that a bubble were building up in the housing market, even after 2002. Many also denied the possibility for price bubbles to develop at all. In mainstream economic models bubbles neither develop nor burst. This view is wholly in line with the dominant NEC stance, for instance as it was expressed by Robert E. Lucas in his 2003 presidential address to the American Economic Association where he asserted that:

"My thesis in this lecture is that macroeconomics in this original sense has succeeded: Its central problem of depression-prevention has been solved, for all practical purposes, and has in fact been solved for many decades."[57]

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[56] Quoted in Shiller (2008: 40)
[57] Robert E. Lucas, *Macroeconomic Priorities*, 2003 presidential address to the American Economic Association, January 10, 2003.

Assertions by Ben Bernanke, addressing the Eastern Economic Association late February 2004, were an echo of Lucas's ideas. In his speech entitled "The Great Moderation" he argued that a substantial decline in macroeconomic volatility had occurred over the last 20 years. According to Bernanke, then a Federal Reserve Board Governor, this was a permanent shift mainly a result of "improved monetary policy."[58] Due to this alleged sophisticated monetary policy, he claimed that recessions had "become less frequent and less severe." In this world of neoclassical hubris, housing bubbles belonged to history. The problems that Japan experienced, following the financial crash that erupted at the beginning of the 1990s, were thus caused by "wrong monetary policies". In line with the monetarist view, Japan's troubles for Bernanke simply pointed to the fact that some central banks managed money better than others.

Within this market fundamentalist paradigm, the idea of the benefits of unfettered markets was deeply rooted. Even in the Central bank's own press-releases it was time and again claimed that the risk of recession had largely vanished, hence in the financial world one came to believe it was safe to search for yield despite a galloping housing bubble. Accordingly, there was a lack of reaction to asset-price inflation, and the will to prick bubbles was non-existent. The lax supervisory control tolerated excessive leverage ratios, the emergence of large and unregulated derivatives markets, and the development of an abnormal shadow banking system was likewise related to NEC and market fundamentalism.

III. The Norwegian banking crisis 1987-1992

It is well known that all the largest Nordic countries (Denmark, Finland, Sweden and Norway) experienced serious financial turmoil over the period 1987 to 1994. Whilst Finland, Norway and Sweden all were hit by systemic banking crises, the financial problems in Denmark turned out less dramatic and the country avoided a fully fledged systemic crisis of the kind which the three other countries encountered. The aggregated losses on the banks' lending in Finland, Norway and Sweden are demonstrated in table 1, which comprises loan losses in both commercial- and savings banks, weighted according to their respective shares of total lending. The path of the crises also shows different timing. The crisis erupted in Norway in 1987, when Denmark also experienced financial problems. The Norwegian banking crisis peaked in 1991. Finland

[58] http://www.federalreserve.gov/BOARDDOCS/SPEECHES/2004/20040220/default.htm

experienced a tough crisis in 1990-92, and thus over a shorter period of time than Norway. For Sweden's part the crisis peaked in 1991 and extended over the period 1990-93.

Table 1. Banks' expensed loan losses as percentage of outstanding loans, 1986-93

Loan losses	Norway	Sweden	Finland
1986	0,55	0,72	0,6
1987	1,08	0,50	0,8
1988	1,97	0,38	0,8
1989	2,30	1,28	0,6
1990	2,67	3,95	1,7
1991	4,70	6,36	5,6
1992	2,69	5,62	5,2
1993	1,59	2,04	-
1994	0,60	1,30	-
1995	-0,16	0,28	-

Source: Rapport fra Stortingets granskningskommisjon for bankkrisen, dok. 17 (1997-98: 75 et passim.); Lybeck (2009); Østrup (2008)

Loan losses of Norwegian banks exceeded 1 percent of loans in 1987 and then accelerated until 1991. That year the three largest commercial banks lost all their equity (Christiania Bank and Fokus bank), or almost all capital (DnC). In 1987-88 several savings banks, as well as DnC and Sunnmørsbanken came in bad trouble because of heavy loan losses. DnC also suffered heavy losses in the wake of the stock market crash in late October 1987 because of extensive involvement and speculation in the fast growing stock market.

Liberalization, growth and breakdown

After WW II, credit markets were heavily regulated. Interest rates were set administratively in order to keep the interest rate level low, thus giving incentives to investments. Quantitative credit restrictions were used to stabilize the financial markets, while at the same time credit flows were targeted to political prioritized sectors and projects. Regional policy was above all favored.

Norway carried out, however, a wide-ranging liberalization of the financial sector from the end of the 1970s and especially from about 1980, motivated by the neoliberal wave of "new laissez faire" and the experiences with an increasingly dysfunctional financial system. Lending regulations were dismantled in January 1984, and currency regulation was gradually softened up from 1978. Until November 1978 it had been a ceiling both for the Banks' deposits of foreign currency as well as their loans denominated in foreign currencies. The banks had to hold zero net

positions in the spot currency market. According to the new rule each individual bank should keep approximate balance in their total foreign currency position, and the banks were allowed to include forward term contracts in the netting calculation. The reform gave the banks a new opportunity to fund themselves by borrowing abroad and thus finance a substantial part of their domestic lending growth through capital inflows from abroad. The banks' net foreign claims were significantly reduced as banks used this regulatory change to fund their steep credit growth.

Interest rate ceilings were gradually softened from the spring 1978 and the bond market, which was regulated by strong emission control and administratively pegged interest rates since 1955, was liberalized during the first half of the 1980s. Thus, the low-interest-rate policy, which had been a cornerstone in postwar social democratic economic policy, was terminated in its original form. The quantitative regulation of bank lending was lifted from January 1984.

Norwegian economy experienced profound structural change from the late 1970s when offshore industry expanded considerably and the country became a major producer and exporter of oil. Norwegian economic growth was weak at the beginning of the 1980s, partly as a result of OPEC-II crisis in 1979. Over the period 1982-85, however, a strong real growth in GDP occurred. Private consumption increased considerable from 1981 to 1985. That year the growth in consumption was incredible 10 pct (these macro-economic fluctuations are depicted in chart A-1). But in December 1985 – winter 1986 oil-prices plummeted dramatically. Then the international business cycle turned in 1987/88 and subsequently the Norwegian economy went into a recession in 1988 and unemployment increased substantially over the period 1987 to 1991. The cyclical downturn during 1988-89 was unexpectedly strong, particularly when compared with what was expected among mainstream economists and most politicians. As late as the autumn of 1989 Minister of Finance Gunnar Berge (1986-89) believed that the banking crisis was about to pass off, an assessment which reflected the view of the economists of the Ministry that banks probably had better times ahead in near future.

At the end of the 1970s there were introduced tax regulations that provided strong incentives for investment in the stock market, which stimulated strong expansion. As revealed in chart A-3, the stock market prices were over 400 pct. higher in September 1987 compared to December 1980. Furthermore, the housing market was liberalized by Prime Minister Willoch's center-right government in 1983. Thus, there had been given strong incentives for investment in

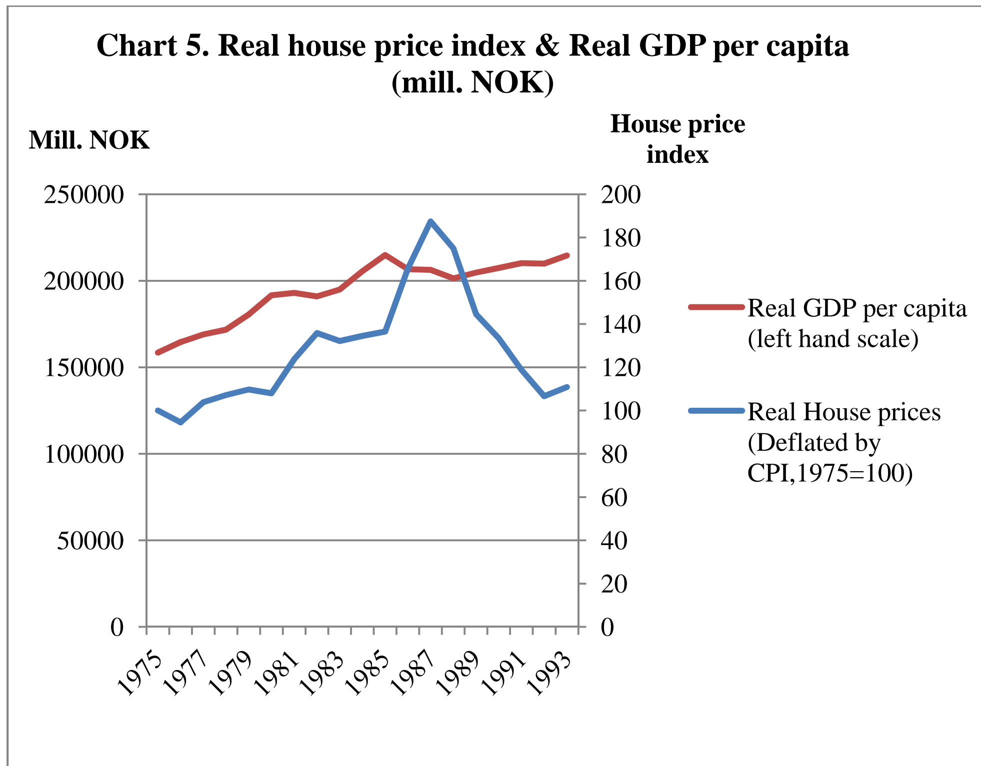
all asset markets. .[59] The liberalization process and the timing and sequence of de-regulatory measures led to a sharp increase in lending from Norwegian banks and even from other financial intermediaries. Over the period 1981 to 1988 the banks' outstanding loans increased 181 percent. The sharp annual growth in bank lending during the run up to the crisis is further illustrated in chart A-2 in the Appendix.

Liberalization had an impact on both the demand- and the supply side of the economy, and contributed greatly to a strong expansion impulse in the economy, boosting the loan-funded investments in asset markets as well as the aforementioned growth in consumption. Norwegian households spent more than their income, and the huge consumption growth was largely financed with borrowed money. Another institutional factor that gave a strong incentive to accelerate credit growth during the early 1980s was the tax system that gave a strong incentive to borrow because it led to a negative real interest rate, particularly for the high-income groups. Norway's fixed exchange rate regime was under pressure over the period 1977-84, and lost credibility because of several devaluations. Financial markets speculated heavily against the NOK, but Norges Bank protected the currency. However, the government wanted a steady nominal interest rate to maintain a stable currency in order to support the traditional Norwegian export industries. Hence, the central bank sterilized the sales of foreign exchange. This was done by increased lending to banks from zero to a level between 10 and 15% of the banks' funding.[60] This increased the banks' funding with cheap money, and stimulated further the steep growth in bank lending.

When Norway experienced the sharp boom from 1983, the liberalization of the financial markets, linked with a pro cyclical expansive fiscal policy, brought about a speculative climate. Easy credit and new rules of the game in the asset markets caused a sharp rise of real estate prices both regarding house prices as well as commercial properties. The real estate boom was clearly speculative as people were anticipating prices still going up, and the increased prices made room for further borrowing used for further investment in real estate as well as durable consumer goods. From 1984 a speculative, credit-driven price bubble built up in the real estate market, with a real rise in prices of well over 20 percent per year. Chart 5 depicts the development of housing prices as well as change in GDP over the same period. Whilst real GDP

[59] The liberalization process is discussed in detail in Knutsen et al. (1998: 391 ff) and Knutsen (2007: 498 ff)
[60] Gerderup (2003)

decreased from 1985 to 1988, housing prices increased sharply over the same period. Furthermore, real housing prices increased 41, 9 % over the period 1983-87, while real GDP in comparison only grew 5, 8 %. The chart thus reveals a considerable housing market bubble.



Source: Historical Monetary Statistics for Norway 1819-2003. Norges Bank Occasional Papers No. 35

The immediate triggering cause of the Norwegian financial crisis was the aforementioned sharp drop in the international oil prices during the winter 1985-86. From a price level around 35 – 40 USD a barrel since 1979, oil prices started to plummet dramatically from December 1985. In 1986 the price of crude oil fell below 9 US-dollars a barrel. The stock-market crash on Wall-street combined with the dramatically reduced oil prices 1985/86 punctuated the stock market bubble that developed from 1983 to October 1987. But on October 20th 1987 stock prices at Oslo Stock Exchange fell by incredible 20 per cent.The oil price slump sparked the banking crisis in 1987, exacerbated the ongoing cyclical downswing and punctured the real estate bubble in mid 1988. However, the real interest rate after taxes rose sharply as early as 1987, from about 1 percent in 1986 to nearly 6 percent at the beginning of the 1990s.[61] Nominal house prices fell 20

[61] Knutsen (2006: 28)

percent from the turning point in 1988 to 1992, real prices fell as much as 43 percent.[62] This development demonstrates the considerable structural shift in Norwegian economy characterized by the crowding out of increasing parts of traditional industry and a significant new role for the oil-industry. This development had made the Norwegian economy increasingly dependent on the oil sector and more and more vulnerable to volatile oil prices.

Both the crash of the stock market and the collapse of the real estate market had significant implications for banks, other financial intermediaries and their clients. Banks had to write off significant losses on loans to real estate investments, particularly commercial property. Moreover, the credit-driven boom and the expansionary fiscal policy had led to an increasing number of non-sustainable investments in the private services, retail trade, restaurants, etc.., which collapsed in the wake of the banking crisis. Both banks as well as Financial companies – often owned by insurance companies or banks – had to write off loans to such businesses. They also lost money on loans to finance consumers. The substantial growth in lending, price inflation in asset markets and the creation of businesses based on nonstop consumption growth and speculative investments increased financial institutions' credit risk dramatically. At the same time the debt, hence the financial vulnerability of businesses and households enlarged significantly.

When the business cycle turned to a downswing in spring 1987 and the financial bubbles were punctuated, this quickly led to a sharply swelling number of bankruptcies from 1987 as demonstrated in chart 6. An increasing number of businesses were unable to fulfill their obligations toward the financial institutions. As already mentioned unemployment doubled from the peak of the business cycle spring 1987 to the fall of 1988. The investments in the offshore oil industry were halved from 1987 to 1988.[63] In general, investments dropped substantially and decreased continuously over the period 1986-89.When the banking crisis erupted in 1987, even consumption fell considerable again as demonstrated in exhibit A-1.

The huge losses (table 1) and extensive defaults on loans and guarantees set off a major banking crisis in which the state had to rescue the largest banks.

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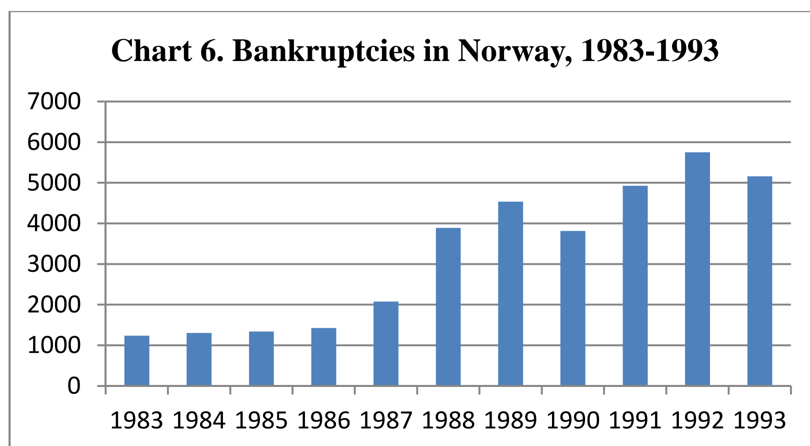
[62] Angset og Berge (2009: 41)
[63] Central Bureau of Statistics: http://www.ssb.no/ssp/utg/200705/15/



Source: Central Bureau of Statistics, Historical Statistics 1994

Norwegian Minsky cycles

Why did so large financial imbalances build up that the downswing of the business cycle resulted in a financial crisis, which in turn contributed to a prolonged and deep recession? The development from 1983 clearly shows a basic Minsky cycle. Our analysis has revealed a macroeconomic boom-bust cycle that ended in a systemic banking crisis. We have also identified a long run erosion of thwarting institutions occurring from the late 1970s up until 1990. During the 1970s, Norwegian businesses increasingly went international. At the same time consumers wanted to have the opportunity to invest in better houses and durable consumer goods. Seemingly paradoxically, the consumers showed an increasing demand for credit along with increasing income levels. The financial system with its regulations dating back to the interwar years and developed and reinforced during the post-war era became gradually more dysfunctional and couldn't meet the demands from the non-financial sector. This strengthened finance and their money makers' demands for liberalization and created a growing pressure against the regulatory regime.

The major social democratic politicians gradually turned in favour of deregulation, which enhanced the liberal shift in the economy considerably and brought about the liberalization of the financial sector.[64] One of the driving forces behind liberalization of financial markets was a coalition between financial capital's money managers and a growing number of neoliberal economists. Later on central politicians, also among the social democrats, joined in. Important

[64] For further details, cf. Knutsen (2007: 79 ff; Ch. 11)

bankers representing the largest banks took the lead to have the low-interest-rate policy lifted in order to let the markets set the interest rates. Norges Bank (the Norwegian Central Bank; hereafter NB) worked systematically from the middle of the 1970s to reach this goal. From about 1980 the dam broke up and deregulation took place on a broad front.

Economist Erling Steigum asserts that the main reason why the Norwegian economy was so unstable in 1980s - and the beginning of the 1990s was "... the combination of a fixed exchange rate and financial deregulation." He emphasizes further that the main cause of the banking crisis was pro-cyclical monetary policy, both during the boom and the ensuing downturn.[65] There are, however, better explanations. Monetary policy was hardly the crucial reason for the boom and the subsequent asset price bubbles; neither could monetary policy have prevented the considerable rise in bank lending. In that case, prohibitive high interest rates would have been necessary. The then existing taxation system with full deduction for interest payments, not only in business but even for households, sterilized effectively the potential of monetary policy to cool the boom. When it comes to the liberalization of financial markets, it is provided solid evidence for the fact that these institutional changes were the most important proximate factor in bringing forth the unstable macroeconomic environment facilitating the emergence of huge imbalances, hence instability in the financial sector and correspondingly increased financial fragility in the non-financial sector.[66] An article summing up a large research project carried out by the Central Bureau of Statistics on development of the business cycle during the period 1973 to 1993 concludes that “The deregulation that was carried out in many areas in the Norwegian economy from the middle of the 1980s is probably the single factor that made the strongest impact on the business cycle.”[67] All these developments took place in a period characterized by a major structural shift in the Norwegian economy. The off-shore sector expanded, whilst traditional industries were crowded out. Beside the substantial influx of investments to the oil sector, the inland economy experienced considerable credit financed investments in durable consumption goods, services and in residential as well as non-residential real estate.

Liberalization and expansionary fiscal policy causing speculation and overconfidence about continuous rising prices in the asset markets were thus the main proximate causes of the banking crisis. But this process was facilitated by the longrun erosion of institutional stabilizers

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[65] Steigum (2004)
[66] Cf. Johansen and Eika (2000)
[67] Johansen and Eika, op.cit. (My translation from Norwegian.)

that had taken place since the late 1970s, being the banking crisis's major *causa remota.* The overall macroeconomic climate that made room for the building up of financial imbalances to such a degree that it caused a systemic banking crisis was characterised by considerable economic- and regulatory structural shifts.

Management failure in banks that were hit by crisis ought also to be taken into consideration. Liberalization created a new situation as well as new rules of the game for bankers. The way they were used to run a bank was not compatible with increasingly competitive markets. Virtually unfettered competition in financial market unleashed a race among banks for market shares. In order to increase profit without reducing staff, which most bank managers considered difficult, their strategy was to increase lending. This was facilitated by the increased demand for credit. Thus the new strategy implemented by a majority of banks contributed to boost the credit volume significantly. The bank managements were not, however, aware of the rapidly increasing risk in their portfolios. Their old systems for assessing credit risk didn't work anymore under new and liberalized conditions and the result was loss of control.

When we compare the staggering 10 percent increase in private consumption during 1985 to the fact that the saving rate plummeted from 6 percent per year in 1984 to - 4 percent in 1987 and that the growth rate of households' real disposable income fell from 3, 6 percent in 1984 to – 0,6 percent in 1988, we understand that the growth in consumption mainly was financed by increased indebtedness.[68]

IV. Concluding comparison

The comparison of the analysis of the two cases are summed up in table A-1 in the Appendix. The two cases compared represent variations of modern capitalist economies, with distinguished business systems. First of all, the cases differ diachronically, since the Norwegian crisis occurred twenty years before the recent US credit crisis. Furthermore, Norway is a small country with a very open economy, whilst the U.S. economy is the world's largest economy, with a much lower foreign trade to GDP ratio. Income distribution was substantial more egalitarian in Norway twenty years ago (and even today) than in contemporary USA. Although the US social safety net is improved over the 20th century and thus contrasts the situation during the "Great Depression",

[68] National Account statistics: http://www.ssb.no/emner/09/01/nos_nasjonal/nos_d425/nos_d425.pdf, table 4.

it is quite different in a Nordic country like Norway featuring a system of extensive welfare capitalism. The labour markets and the role of trade unions are also quite different.

Moreover, the financial systems show important differences. Whilst Norway historically has a bank-based system, the US-system has traditionally been more market oriented. Norway's banking system at the outset of the great financial crisis of the late 1980s was a system of Universal banks, combining retail banking, corporate finance and securities market business. By 1980, the banking system was dominated by three large commercial banks engaged in nationwide branch banking. However, there were still a large number of local and regional based savings banks left. There were even a number of local and regional commercial banks in operation, which consolidated to a fourth, relatively large banking group established in 1987 (Fokus Bank). The U.S. banking system is in contrast relatively more fragmented, and has not been built up according to the "Scottish model" with nation-wide branch banking. After 1980, however, the U.S. system changed substantially towards a system featuring universal, inter-state branch banking.

The context in which the two crises presented in this paper developed is both similar and different. They both occurred and unfolded in a phase of capitalist development characterized by deregulation of the financial system. Both crises also occurred in different societal situations than for example the social environment of the interwar financial crises. This of course gives each one of them unique traits, both regarding causes as well as consequences. Another important feature is the globalization process in addition to the tremendous deepening of financial markets over the last couple of decades. The recent American and subsequent global financial crisis have been taking place within an era of capitalist development characterised by a neo liberal and strongly market oriented order and accompanied by an ideology that can be labelled "market fundamentalism". In contrast, the Norwegian crisis of the late 1980s-early 1990s evolved during a period of transition to a similar type of capitalist order, away from a more interventionist and regulated capitalist order. It also necessary to emphasize that both crises developed within an increasingly financialized economy. Another very important development is the rise of China, particularly after 2000 to a much more prominent position in the global economy. Similar importance accrues to other Asian countries. In this context it should be emphasized that the USA in the inter-war years and during large parts of the post-war period was the world's largest capital exporter, whilst today it is the world's largest capital importer! Last, but not least, the

digital revolution which has evolved since the 1980s has made a huge impact on society and economy, even with implications for financial stability.

Nevertheless the differences, our analysis of the two historical cases has also revealed a common pattern. One common feature of the two crises is that they occurred in periods of financialization – which means a condition where the financial sector to an increasingly extent dominates the production life of an economy. Capital mobility increased noticeably and Norway experienced a substantial inflow of capital from around 1980, of which a sizeable share was investments in the growing off-shore sector. Stock exchanges surged in most of the industrialised world, in Norway particularly after 1983. In the Norwegian case, the securities markets' weight in the financial sector grew considerable over the years 1983-87. Financial organisations like Financial Companies increased their assets 7,5 times between 1979 and 1987, whilst their lending swelled 7 times from 1979 to a peek in 1988.[69] These companies were less regulated than the banks and developed as some sort of "shadow banks" in the Norwegian system. 95 per cent of their loans were advanced to businesses, including car-financing. Likewise, the U.S. securities market grew tremendously, especially financial innovations like MBS and ABS and concurrently a sizeable shadow banking system grew outside the regulatory system.

The analysis has demonstrated that large financial bubbles build up in both cases. Asset price inflation was a prominent trait during the run-up to the Norwegian banking crisis 1987-92. Similarly a boom-bust sequence even preceded the recent U.S. subprime and credit crisis. A commonality of both cases is that punctuation of asset market bubbles, which sparked dramatically falling asset prices, also preceded both crises.

In both cases the observed speculative upsurges and asset price inflations was fuelled by easy credit. The liquidity in the banking system increased considerably, among other things because of huge inflows of capital from abroad. Common for both the cases is an immense growth of the amount of outstanding loans and increased indebtedness in the non-financial sector. Both cases also demonstrate an expansion of the banking system. Both newly established banks as well as several foreign banks entered the Norwegian credit market during the first half of the 1980s and the U.S. experienced the massive expansion of an unregulated shadow banking system.

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[69] Historical Statistics 1994, table 24.12.

In the U.S.-case, a strong incentive on the demand side for increased borrowing developed. The FED cut its key rate with 5,5 percentage points from 2000-2003, and the inflation adjusted key rate was negative for 31 months, which stimulated steep price increases in the housing market and investments financed by borrowed money. However, there existed a widespread herd mentality with regard to investment strategy and which securities investments should be targeted towards. A similar market psychology was the basis for banks' credit decisions, underpinning speculation and overconfidence in lasting increasing asset prices.

The U.S. subprime and credit crisis was preceded by declining share of wages and salaries as percentage of GDP. Growing inequality made financial markets prone to instability. Households and individuals had to struggle hard to find ways to maintain consumption and even consume more, which forced them into indebtedness. Even in the Norwegian case, savings turned negative and consumption was maintained and increased by accumulation of debt.

Another commonality of both cases is lax or non-existing regulations. New financial regulation was enacted during the aftermath of the devastating Norwegian banking crisis of the 1920s and a new supervisory authority for commercial banks was established. This laid down the foundation for a new, extensive regulatory regime after the WW2. The Glass-Steagal Act and a body of other financial regulations likewise followed in the aftermath of the U.S. banking crisis of the early 1930s. These were institutions that helped stabilize the capitalist economy together with international institutions like the Bretton Woods agreement. In the Norwegian case, a substantial de-regulation and liberalization process took place over the decade 1977 to 1987. This opened up for a considerable expansion of the financial system, including a growth of the securities market. Concomitantly, facing deregulated credit markets and subsequently excess competition in the banking sector, banks responded with a rush for increased market shares. Bank lending to business investors and real estate investors boosted and debt mounted to unmanageable levels. A driving force underpinning this development was market psychology, and the result was speculation, ascending systemic risk and increased financial fragility. The ability to judge risk was distorted.

The American case shows a similar pattern. The evidence and analysis offered so far indicates that even the U.S. crisis was made possible of interplay between long-run structural changes in the real economy, particularly a descending share of wages as a percentage of GDP, and long-run changes in the institutional framework. Since the business cycle turned to an

upswing late in 2001 until the current recession started in December 2007, in the wake of an evolving financial crisis, the development of the financial sector had been following a typical basic Minsky cycle. The financial system evolved from a relatively robust to a fragile structure. Financial positions developed from "hedge" to "speculative" and "Ponzi", featuring more and more optimistic expectations about future returns. The thwarting institutions that had been stabilizing the financial sector through the consecutive business cycles since the Great Depression of the interwar years, had been gradually eroded, however, because of continuous liberalization since about 1980. Moreover, the New-Deal legislation primarily was constructed to regulate commercial banks, not investment banks. Consequently, a system of unregulated shadow-banking was allowed to expand unhampered. This long-run institutional change was increasingly conducive to instability. Within this framework, a housing bubble developed. Dwindling investment opportunities in production of manufactured goods, to a great extent because of price competition from low-cost countries combined with sharply rising energy costs, channelled a growing flow of investments to the asset markets, particularly to the real estate market. The mortgage lenders identified the new profit opportunities by offering an increasing amount of subprime mortgage loans. The growing demand for houses increased the house prices, a price movement that was reinforced by further supply of subprime loans. This set off a housing boom which later on developed into a real estate bubble fed by easy credit, irrational optimism and overconfidence about future prices and future profits.

The bubble developed – like in the Norwegian case –within an increasingly financialized economy and generated excess demand for new financing instruments. Financial institutions searched for a technique to meet the high demand of mortgages by the way of securitization, and they started to buy up mortgages and credit card debt and then packed them and issued bonds and other securities based on these packages. Those who invested in those CDOs had only a vague understanding that the value of these securities was dependent on the monthly payment of mortgage borrowers and credit card holders, and it should also be kept in mind that unregulated financial entities played a major role in this business. Although securitization was not an option in the Norwegian case, new financial instruments and organizations even played a role in liberated markets during the 1980s.

The U.S. housing bubble was fuelled by credit from the banks, provided to borrowers that wanted to buy houses. Moreover, credit flowed to investment bankers which borrowed to

leverage investments in portfolios of CDOs and other credit derivates as well as CDSs. The rising housing prices made it possible for the home owners to refinance and take up new loans; which could be used to sustain or even increase consumption in spite of falling real income. Consequently, debt as well as the banks' credit risk became more and more unmanageable.

The evidence presented by the analysis of the cases suggests that the fundamental causes of both crises are found in the boom and the asset market bubble(s) preceding the breakdown and the crisis. In both cases we can observe boom-bust cycles as depicted in a basic Minsky-cycle, where financial instability and the outbreak of crisis is a consequence of an unbalanced mix of hedge, speculative and Ponzi financial positions. In both cases we have observed a pattern where stabilising or thwarting institutions, as Minsky denoted them, were eroded. Hence, systemic risk was allowed to fill up the financial system, whilst the stabilizers were effectively removed. Each case demonstrates that structural processes interacting with major institutional changes effectively removed institutional stabilizers that were essential for building up financial imbalances of such a magnitude that the particular booms ended in systemic banking crises.

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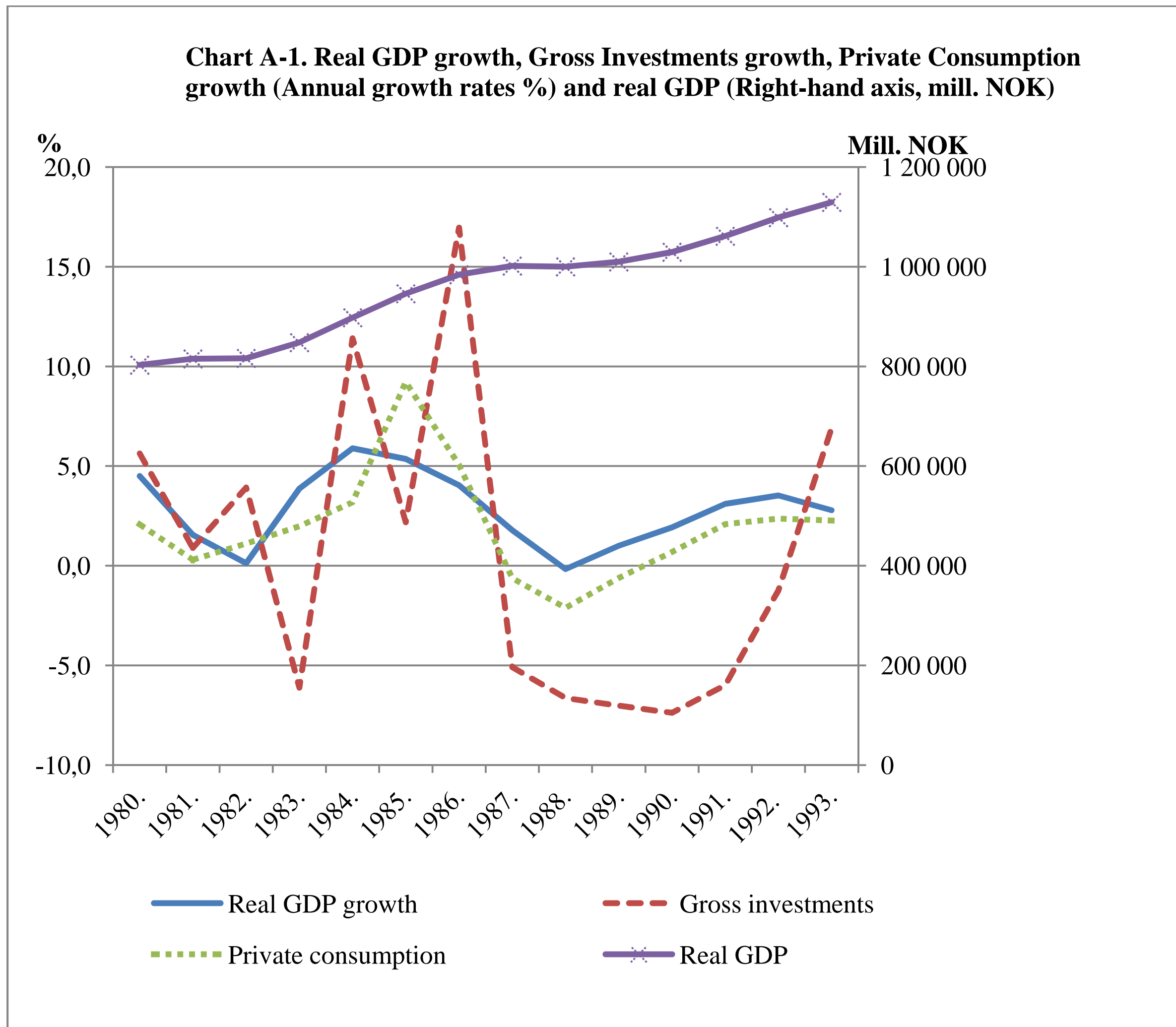
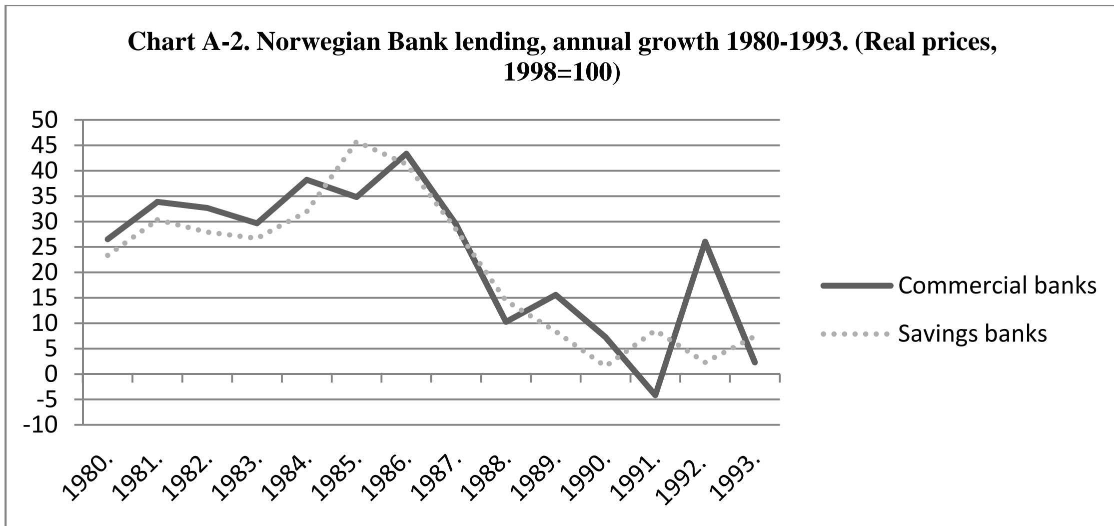
Appendix



Source: Norges Bank



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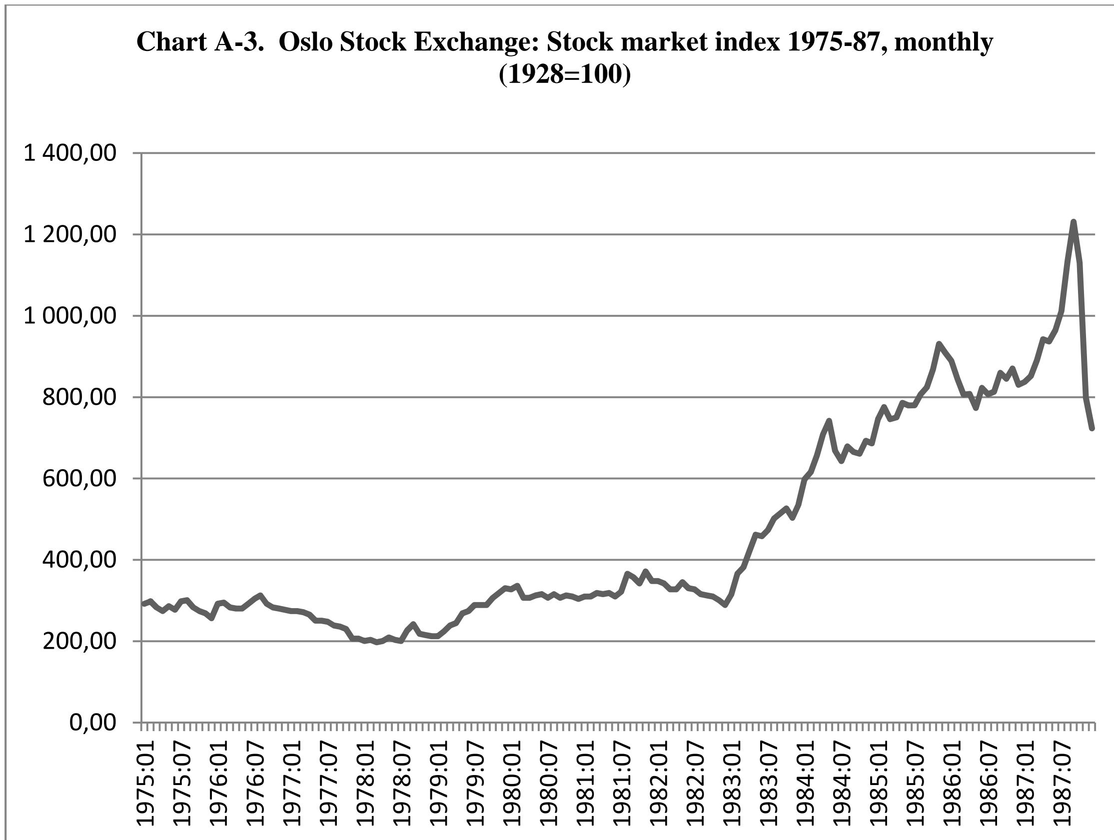

Source: Central Bureau of Statistics

Table A-1. Comparisons

(Fonts in *italic* signify similarities between the cases, otherwise= substantial differences)

	NORWAY	USA
Systemic financial crisis	***Y (1987-92)***	***Y (2007 -09)***
Economy	Small,open *High GDP per head* Income spread: egalitarian	World's largest *High GDP per head* Income spread: non-egalitarian
Political system	Parliamentary	Presidential
Supervisory system	In transition from fragmented to integrated (from 1986)	Fragmented
Banking structure	Universal banks, Nationswide branch-banking from late 1960s	Specialized Fragmented, Radical change after 1980
Financial system characteristics	Bank based	Market based

Table A-1, continued

	NO	USA
Financialization	*Y*	*Y*
Safety-net	*Y*	*Y*
Regulations (legislation)	Tight *Liberalization after 1975, Extensive de-reg. 1983-87*	More lax *Liberalization after 1980 Extensive de-reg. From late 1990s*
Financial innovations	*Y*	*Y*
Funding characteristics during run-up to crisis	*Increased share of short-term debt*	*Increased share of short-term debt*
Steep increase in corporate and household debt	*Y*	*Y*
Asset price inflation	*Y (stock market and housing/real estate bubbles)*	*Y (housing bubble)*
Substantial capital inflow	*Y*	*Y*
Wages/salaries to GDP	*Preceded by decreasing w/GDP ratios* *Consumption maintained by increased debt*	*Preceded by decreasing w/GDP ratios* *Consumption maintained by increased debt*
Savings rate	*Decreasing to negative during the run-up to crisis*	*Decreasing to negative during the run-up to crisis*
Interest rate level	*Low, shifting to steep increase shortly before the crash*	*Low, shifting to steep increase shortly before the crash*
Gearing ratio	*Steeply increasing*	*Steeply increasing*
Extensive economic structural changes	*Y*	*Y*