

A Discussion of Financial Regulations' Impact on the Subprime Crisis: Implications for Financial Markets

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ABSTRACT

The financial crisis sparked by the US subprime is now posing a serious threat to global financial markets, with its severity intensifying as widening losses and a liquidity crunch push some financial institutions to the brink of failure. The US and the Western Europe seem to be falling victim to a debt spiral, in which market turmoil is aggravating deterioration in the real economy. The crisis, which has its roots in the closing years of the 20th century, became apparent in 2007 and has exposed pervasive weaknesses in financial industry regulation and the global financial system. The subprime mortgage crisis is resulting in a sea of litigation presenting novel and significant legal problems. These issues will affect a universe of potential defendants including traditional lenders, investment banks, and investors. This article seeks to provide a practical understanding of how modifications to the legal and accounting regulations governing the banking value chain encouraged fragmentation and outsourcing connected with the process of mortgage securitization. Our study will help to assess legal ramifications and litigation trends associated with the fallout with characteristics of emerging mortgage markets. We observe that in the instance of subprime mortgage woes, there is no single entity or individual to be pointed out, instead, this mess is a collective creation of the world's central banks, homeowners, lenders, credit rating agencies, legal and accounting regulations, underwriters, hedge funds, investment behavior.

JEL Classification: G01, G15, G18, O31, O38, E44

Keywords: Banking sector; Accounting regulations; Housing industry; Securitization

I. INTRODUCTION

The subprime mortgage crisis triggered by a dramatic rise in mortgage delinquencies and foreclosures in the US with major adverse consequences for banks and financial markets around the globe. The crisis, which has its roots in the closing years of the 20th century, became apparent in 2007 and has exposed pervasive weaknesses in financial industry regulation and the global financial system. The subprime mortgage crisis is an ongoing economic problem manifesting itself through liquidity issues, which accelerated in the United States in late 2006 and triggered a global financial crisis during 2007 and 2008. Global economic growth is decelerating due largely to a sharp slowdown by the subprime crisis. These effects of the subprime crisis have been noticeable chiefly in the US and Europe to date, while it seems that other countries are relatively less affected. This is the third US crisis in the past twenty years, after the Savings & Loan crisis of 1989 and the Enron/World.Com crisis in 2002. The U.S. banking system is on the verge of disaster, as banks have recorded over \$100 billion in losses, with hundreds of billions more forecasted. The losses are not confined to banks alone. One of the world's largest insurance companies, American International Group, recently reported losses from the mortgage crisis of up to \$5 billion-up from a previous estimate of \$2 billion. This may be a sign of coming reassessments by others as the crisis intensifies.

Financial innovation has paved ways for new modern investment methods and techniques in global market. Assets Backed Securities (ABS) has been one of these instruments. The process allows bundling up different assets and selling them as securities in the market to potential investors. The idea is to diversify the risk and make the maximum from the surplus money in the market. Since 2001, the U.S housing market has seen considerable transformation as well. The market has grown at a significant rate up until 2006. The reason for growth is the securitization mechanism as well as development of non-traditional mortgage product at the lower end of the market. Edelberg (2006) finds that the excessive use of risk-based pricing spurred a considerable share of the increase in debt levels seen over the past decade, and Gerardi, Rosen, and Willen (2006) are of the view that the lending innovation has boosted the capacity of young households to acquire homes that are more in line with their expected higher incomes in the future." In 2001, sub-primes accounted for 8.6% (\$190 billion) of mortgage originations; this rose to 20% (\$625 billion) in 2005. And in 2001, securitized sub-primes amounted to just \$95 billion, growing to \$507 billion by 2005 as the Fed slept at the wheel" (JEC 2007, p.18).

We have structured this article in three sections. In the first section of this article, we review the literature on financialization as it applies to the development of the US economy. The literature on financialization explores the tension between financial and productive locks governing the management of the economy, social settlements and governance. Our second section reviews how modifications to the legal and accounting regulations governing the banking value chain encouraged fragmentation and outpouring connected with tile process of mortgage securitization. Our final section focuses on implications of managing a financially banking sector. Where, the scale of financial assets under management combines with mark to market accounting to amplify instability especially when US bunks oblate with a fragile financial operating architecture. Net income and shareholder equity offer a limited cushion against mark to

market write downs and this fragility calls into question the viability and suitability of the US banking business model.

Table 1
The structure of the US mortgage market

Loan Types (share of all serviced loans, %)	ARM	FRM	Other	Total
Prime	13.9 %	53.5 %	9.2 %	76.6 %
Sub-prime	6.6 %	4.9 %	2.2 %	13.7 %
Other (VA, FHA)				9.7 %
Total	20.5 %	58.4 %	11.4 %	100 %

Source: MBA (Econwin data for Q4 2006. Note: ARM: Adjustable rate mortgages, FRM: Fixed rate mortgages, VA: Veterans Administration mortgages, FHA: Federal Housing Administration mortgages: Prime and subprime are private agencies.

Mortgage backed securitization provided us banks with a way to extend their lending capacity whilst also contains balance sheet risk assaulted with this process. Banking executive paid substance substantial financial incentives to grow the product market with new product such as variable rate “pick and pay” mortgages all of which served to extend the Value of balance sheet securitized mortgages. US household were actively encouraged to finance current expenditure from mortgage equity withdrawal (MEW). Economist differentiate between wealth and income whereby house price inflation is simply accumulated wealth on paper. Yet mortgage equity withdrawal is about leveraging additional cash from the deference between the current market value of real estate and current mortgage debt outstanding. In turn, this additional source on household income finds its way into current income and expenditure circuits that make up annual gross domestic product.

The value of mortgages outstanding at the end of 2007 was roughly was 11 trillion and it only needed a relatively small increase in the default for this to have a significant negative impact on that banking sector net income and condition of balance sheets. Mortgage charge offs are no longer restricted to subprime mortgages and Jamie Dimon’s quote is significant because the problem of mortgage charge off and delinquency has spread beyond sub-prime and into so-called Alt A rated loans.

In 2007, estimates suggested that \$2 trillion out of the \$11 trillion of outstanding mortgages were sub-prime in 2007. The exact definition of “subprime” itself is not clear, with various sources estimating that the total subprime portfolio of US is between \$1.5 trillion to \$3 trillion.

For the year end 2008 we estimated delinquency rates on loans secured by real estate could increase to 5 per cent compared to 1.5% in mid 2006 and charge offs of real estate loans, that is loans written off, estimated to increase to approximately 2 per cent of all real estate loans. If we assume that mortgages currently delinquent were also to be subsequently charged off this would result in a cumulative write down approaching \$700 - \$800bn and equivalent to writing off all shareholder equity in main US banks.

We employ the descriptor financialization as a way of making sense out of what is going on around us (Martin, 2002). The term financialization has been employed to reveal, how: managerial behavior and culture, corporate governance. Stakeholder interests firm performance, structural economic adjustment, national economic competitiveness and the distribution of income and wealth that are modified by the demands of finance capital (Deeg et al 2006; Fligstein 2004; Froud et al., 2006; Krippner, 2005, Rossman et al, 2006; Stockhammer, 2004). Financialization describes a process of economic change in which the structure of advanced economies has shifted increasingly towards the provision of financial services and where the value of financial assets exceeds that of tangible assets.

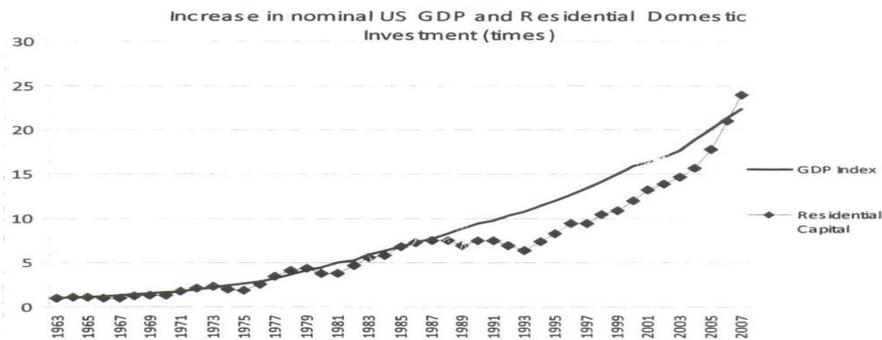
Foster (2007) notes that "Although orthodox economists have long assumed that productive investment and financial investment are tied together-working on the simplistic assumption that the saver purchases a financial claim to real assets from the entrepreneur who then uses the money thus acquired to expand production-this has long been known to be false. There is no necessary direct connection between productive investment and the amassing of financial assets. It is thus possible for the two to be decoupled" to a considerable degree"

Foster provides a way of thinking about the process of financialization as one in which there is a decoupling of financial from productive tangible asset investment. Our supplementary argument is that financialization is not simply a process of decoupling wealth accumulation from current income circuits as described by Foster. It is also concerned with how the gains (and losses) from wealth accumulation (capital stock) interfere with current income circuits (flows) within national economies and the consequences of this for economic development and financial stability of firms.

Gross fixed capital formation (GFCF) generally follows the trend of GDP in the US and specifically the stock of residential domestic real estate formation followed the general trend of GDP growth 1963 to 2007 (see Figure 1). For the period 1963 - 2005, the value of new residential housing GFCF tracked GDP apart from a step reduction in the early 1990s.

The index of real estate GFCF reveals how fixed asset capital formation tracks GDP but this is not the same thing as financing the purchase of real estate and specifically the growth in household mortgages outstanding.

Figure 1



In contrast, the pattern of outstanding mortgages held by US households follows a different trajectory over the period 1963 to 2007. For the first twenty years (1963-1983) the nominal value of outstanding household mortgages and GDP move in line with each at a compound average growth rate (CAGR) of 9 %. Thereafter the two trajectories diverge. The value of the stock of outstanding real estate mortgages continues at its earlier CAGR of 9% but nominal GDP growth slows to a CAGR of 5.3% 1983 to 2007.

Cifuentes, Ferrucci, and Shin (2005) show that “when prices are allowed to change endogenously, the impact of an initial shock may be considerable.” U.S housing market is a perfect example as to date. The current scenario is thought provoking in terms of modern day financing and credit risk management. The crisis relates to the U.S residential mortgages and the securitization of such assets in the financial market.

This concern resulted in establishment of ‘Freddie Mac’ (Federal Home Loan Mortgage Corporation), now known as ‘Fannie Mae’ (Federal National Mortgage Association). Fannie Mae bought mortgages from S&L’s and combined them in to securities that could be sold to the investors. According to Frédéric Lordon (2007, p.31),” The major advantage of this process, known as securitization, lay in the fact that these securities could be sold in bundles to enthusiastic (institutional) investors, and risky loans could be wiped off the balance sheets of the issuing banks.” The securitized mortgages guaranteed repayment of interest and principal making them more attractive to the investors. During the past decade, residential property mortgage was cheap and attractive- especially those with the teaser rates that many funding institutions offered.

The decoupling of the value of mortgages outstanding from GDP growth is explained by the compounding effect of house price inflation coupled with the growth in the physical stock of residential houses in the US from 60 million in 1963 to 120 million in 2007. To which it is also necessary to add home equity release mortgages" which had increased to \$1.1 trillion as at the end of 2007 or 9% of the value of outstanding mortgages in 2007 (see Table 2).

Table 2
US GDP and household mortgages outstanding in 2007 (\$ trillion)

	2007 \$ trillion
US GDP	13.8
Outstanding home mortgage	12.0
Of which equity mortgage	1.1

Source: www.federalreserve.gov

Many US households have been actively leveraging their borrowing from what are termed become equity lines of credit" and this has further increased the value of outstanding mortgage debt, The Federal Reserve Board provides the following advice.

The following example demonstrates the financial calculations involved.

Table 3
Equity lines of credit

Appraised value of home	\$100,000
Percentage	75%
Percentage of appraised value	\$75,000
Less balance owed on mortgage	\$40,000
Potential line of credit	\$35,000

Source: www.federalreserve.gov

Table 4
US home and equity release mortgages outstanding 1990 to 2007

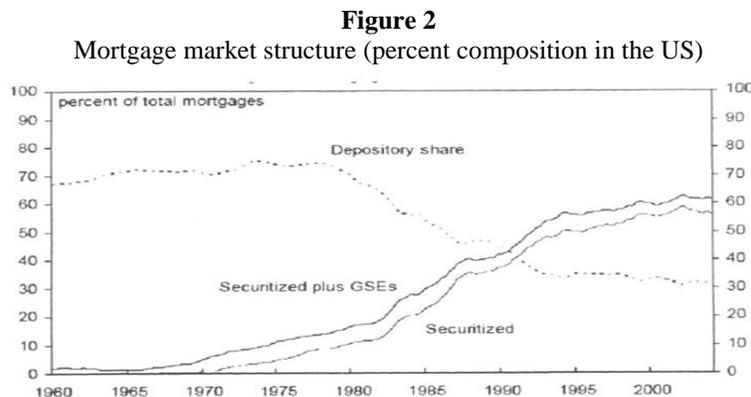
	Home Mortgages \$ Billion	Equity Mortgages \$ Billion	Equity Share in Total %
1990	2,911.6	214.7	7.4
1991	3,075.1	222.0	7.2
1992	3,227.7	217.1	6.7
1993	3,384.0	210.4	6.2
1994	3,562.6	221.8	6.2
1995	3,736.1	237.5	6.4
1996	3,972.3	262.6	6.6
1997	4,218.9	297.0	7.0
1998	4,609.3	309.9	6.7
1999	5,076.5	334.3	6.6
2000	5,533.7	407.9	7.4
2001	6,127.4	438.9	7.2
2002	6,924.6	500.7	7.2
2003	7,795.4	592.8	7.6
2004	8,891.3	773.3	8.7
2005	10,067.1	911.6	9.1
2006	11,192.9	1,060.8	9.5
2007	11,995.5	1,125.0	9.4

Source: www.federalreserve.gov

The value of potential line of credit is three-quarters of the appraised value of a home minus the value of mortgages owed and US households have been actively leveraging their borrowing exploiting (home equity lines of credited. At the end of 2007 the value of accumulated equity release secured against real estate had increased to 10 per cent of outstanding mortgage debt in 2007 or \$1.1 trillion (see Table 3 & Table 4).

The growth in outstanding household mortgages, relative to GDP growth, in the US reflects the combined effects of increased demand for housing, compound price inflation and equity release mortgages. The value of US household mortgages outstanding has, since the early 1980s, run ahead of GDP growth. From a position where outstanding home mortgages were equivalent to one-third (in 1963) the one-half (in 1990) of GDP they are now roughly equivalent to US annual GDP. The break between GDP and value of mortgages outstanding coincides with changes in banking regulation and accounting practices in the mid 1980. The composition of the mortgage

market changed from a system based on deposits to one of secularized assets. Until the early 1980's, the majority of the US mortgage market was structured by deposits (70%) but by 2005 this picture had reversed with securitized assets accounting for 60% of the market (see Figure 2).



Source: Schnure, 2005.

The Savings and Loan crisis in the 1980 changed the system for US housing finance from local and regional balance sheet lending by depositories to a national market based system of securities mortgage finance (Schnure, 2005). Securitization of assets involves repackaging and selling off balance sheet assets such as mortgages into a secondary market. Mortgage backed sensitization allowed banks to modify their balance sheet risk exposure (and cost of capital) and significantly raise additional cash resources for lending to households. Securitization provided banks with the financial capability to increase the supply of mortgage funds to an increasing number of home owning households paying more for their properties. Figure 2 reveals the changing financial structure of the mortgage market. Initially bank deposits accounted for approximately 70 per cent of the total mortgage market but by the mid to late 1980 securitized mortgages take an increased share of total mortgage finance reaching 65 % by 2005.

The sharp rise in US home prices also coincides with a competitive pressure on lenders to develop non-traditional loan products. Such as Adjustable-Rate Mortgages (ARM), and the Pick a Payment loan where non-agency mortgage underwriters took an increasing share of US housing finance and especially that for sub-prime borrowers. Another development in the mortgage market was the emergence of intermediary brokers and use of technology for rapid decisions, for example, automated underwriting systems with credit history scoring for pricing of mortgages and default risks. The system of US mortgage finance is thus an outcome of regulatory reform and market based responses that fragment the financial value chain into specialist roles, each with its own business interest and objectives, which complicates responsibility and solutions (FRB, 2007; Frankel, 2006; Krinsman, 2007).

Changes in the mortgage product market and investment in non-agency securities now involves banks in exposure to both prepayment and default risk (as a

result of credit risk exposure) in addition to the more traditional risk associated with changes in interest rates. These new risks initially obscured by inflated house prices, have now become ' increasingly apparent now that prices are falling. The earlier growth and demand for subprime asset backed securities, often repacked into Collateral Debt Obligations (CDO) have faded away as liquidity dried up. (Frankel, 2006 and Krinsman, 2007)

The availability of finance was, in these circumstances, no longer subject to monetary policy restrictions, rather prices and liquidity in national and international bond markets mattered. Mortgage backed securities were sold on to investors that had varying appetites for risk where sub-prime mortgage debt was blended with AAA rated mortgages and “wrapped” up for investors. Bundling and blending products with varying types of credit risk met with general “technical” approval because the process of diversification between high and low rates credit risk wrapped up into portfolios would both spread and limit risk. Banking executives were products for investors to value financial incentives focused encouraged to pass on ever more complex collateralizing skim, improve attention on the banking returns and their own construction of financial bonuses products that rating, risk, and financial return to the banks at the expense of liquidity.

Liquidity depends on the continued repayment of interest and principal sums by households on their mortgages. The increase in household mortgage charge offs and loan delinquency rates doubly exposes the financial sector because leveraged funding of mortgages coupled with mark to market accounting amplifies adjustments. Asset write-downs (holding losses) have severely damaged reported net income, market values and shareholder equity and now call into question the viability of the US banking sector business model. The complexity of the web of financial transactions surrounding the process of asset securitization makes it difficult to assess risk exposure from household payment default and counterparts risk with the result that banks are holding on to cash balances to protect liquidity.

II. MORTGAGE SECULARIZATION: DISINTERMEDIATION, OUTSOURCING AND INSTITUTIONAL RISK

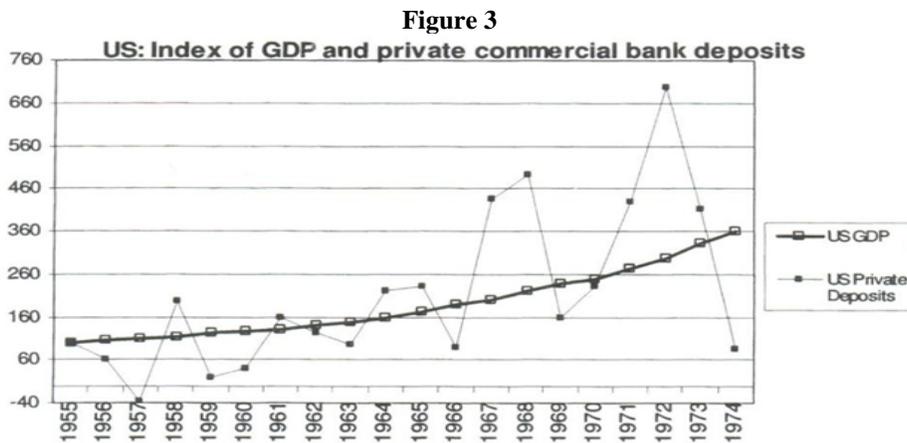
We have noted how GDP growth and the value of mortgages outstanding for US households diverged during the period 1980 to 2007. This decoupling is on the one hand a reflection of inflated house prices combined with a growth in the outstanding stock of residential housing stock increasing household demand for mortgages. This break also coincided, as we have noted, with a change in US banking regulations and market demand. The US banking sector operated under a “retain and hold” policy up to the 1980s where customer deposits and their matching assets held on balance sheet. Growth in mortgage lending generally tracked the increase in investor deposits and thrift funds. The 1980s marked a break with the past because regulations now permitted banks to “repackage and sell on” assets held on balance sheet into a secondary market. This change in regulatory framework promoted substantial growth in mortgage-backed securities, that is, bonds whose cash flows are backed-up by household mortgage repayments.

Altunbas et al. (2007: 6) reveal that asset securitization both increased bank liquidity and served to transfer credit risk off balance sheet into the wider financial

market. First asset securitization increases banks' liquidity while reducing banks' funding needs in the event of monetary tightening. Second, securitization allows banks to swiftly transfer part of their credit risk to the markets (including institutional investors such as hedge funds, insurance companies and pension funds) thereby reducing their regulatory requirements on capital.

In US, from the post-war period up until the late 1970s investor deposits and diverted thrift savings had been the main source of funding for mortgage loans. The funding available for mortgages drifted upwards in line with the growth in national income and savings. However financing mortgages from checkable deposits and thrift savings was problematic because of the short-term volatility connected with this type of funding. Using short-term deposits to finance long-term debt involved not only reconciling timing differences but there was the added uncertainty relating to the inflow of deposits against which new additional mortgages could be raised (see Figure 3). A secondary market would permit banks to sell mortgages, they had originated to other investors to raise additional cash funding upon which they could increase the volume of mortgage lending.

The advantage of asset securitization is that it shifts the banking system from the principle of “retain and hold” to one of “repackage and sell on” to lever funds for lending. However, the process of securitization can contribute to the greater retention by banks of “toxic waste” that is “assets that are particularly illiquid and vulnerable to changes in macroeconomic performance” (Duffe, 2007).



Now that US banks could sell on loans to investors this transformed the role of financial intermediaries in the mortgage market from “buying and holding” to “buying and selling” (Keys et al., 2008). Although securitization is concerned with transferring financial risk out from the banking system, banks were among the most active buyers of structured products and as such credit risk remained in the banking system (Duffe, 2007). The increased distance between loan originators and the ultimate bearers of risk

potentially reduced lenders incentives to carefully screen and monitor borrowers (Petersen et al., 2002). The increased complexity of financial products and markets also reduces investor's ability to value them correctly. This is especially valid for structured products where the value depends on the correlation structure of default events.

The whole aspect of asset securitization and collateralization was favored by banks. It first allowed banks to remove from their balance sheets more of the credit they themselves originated thereby earning income without tying up significant amounts of regulatory capital. Secondly banks could obtain a relatively cheap wholesale funding by packaging up their mortgages and selling these off, while simultaneously raising further funds in the capital markets through issuing asset-backed securities where the assets that are physically backing the securities issued are the “packaged “mortgages themselves.

Throughout the 1990's there was a steady growth in the rate of asset securitization and specifically mortgage backed securitization in the US. For the period 1996 to 2007 mortgage backed securities account for three-quarters of the annual US securitization market. At its peak (2003) the share of US outstanding mortgages being securitized on an annual basis reached roughly 40 % before dropping off to levels below 20 % (see Table 5).

Table 5
US securitization trends total and mortgage backed

	Trends in Securitization Issuance (\$ billion)	Annual Mortgage Backed (\$ billion)	Total US Household Mortgages (\$ billion)	Securitized Mortgages as a % of Total Household Mortgages
1990		377.6	2,911.6	13.0
1991		510.4	3,075.1	16.6
1992		850.6	3,227.7	26.4
1993		994.8	3,384.0	29.4
1994		571.5	3,562.6	16.0
1995		348.2	3,736.1	9.3
1996	661.0	507.8	3,972.3	12.8
1997	827.5	639.7	4,218.9	15.2
1998	1,430.5	1166.3	4,609.3	25.3
1999	1,312.5	1046.2	5,076.5	20.6
2000	1,021.4	708.5	5,533.7	12.8
2001	2,054.6	1672.1	6,127.4	27.3
2002	2,718.4	2,228.3	6,924.6	32.2
2003	3,671.3	3071.0	7,795.4	39.4
2004	2,648.8	1,762.6	8,891.3	19.8
2005	3,138.8	1,966.4	10,067.1	19.5
2006	3,240.9	1,934.0	11,192.9	17.3
2007	2,892.3	2,027.0	11,995.5	16.9

Source: www.federalreserve.gov

The complexity of these financial products and payments structure(s) conceals risk and reduce liquidity across the value chain. In circumstances where household mortgage default rates increase securitized product that have blended varying types of credit risk in a complex transactions network become “contaminated”. Contaminated spreads across the banking sector, the wholesale market, retail market, insurance companies, the asset management industry, and into household. The situation further deteriorates when holders of securities have trouble finding other investors to buy these as secondary mortgage market run short of liquidity. Those holding these asset backed securities, and who took out financing to do so, may have margin calls that force them trade, at a discount, what are illiquid underlying investments. Liquidity is further restricted because financially distressed banks will hold on to cash as an insurance against further charge off s of irrecoverable loans (net of recoveries).

Following SFAS 157 “Fair value measurement” and more specifically SFAS 144 “Accounting by creditors of impairment of Loan” and SFAS 133 “ Accounting for Derivative Instrument and Hedging Activities” charge off s of irrecoverable loans and discounted asset backed securities should made with reference to the loans carrying value and “estimated fair value” of collateral securing loan. Banks holding balances of securities assets are required to re-value these assets to reflect their current market value in discussed market. Holding losses charged off against net income have the potential to significantly reduce reported earnings per share, destabilize market valuations and undermine capital adequacy ratios as share holder equity held in the balance sheet is written down.

Base (1993) argues that banking business model is fragile because the credit standard (in a liberal and competitive market) does not protect bank’s loan portfolio from risk of default. In the non-uniform competitive conditions under which the financial sector operates, it is not always possible in all circumstances for bankers or lenders to introduce a uniform credit standard in order to protect their entire loan capital portfolios (Basu, 2003: 242).

A credit standard is required according to Basu, to ensure that banks are able to recoup funds from the “sale of collateral” if borrowers default. In turn this may act to put a brake on the “contagion” effect where the possibility of a run is on highly exposed banks. A “credit standard” might help to limit financial damage to the banking sector. However, the argument developed in this next section is that fair value reporting and modest increases in mortgage default rates can undermine the financial stability of bank. Spaventa (2008: 5) observes that mark-to market accounting “inflates banks profits and the returns of the asset management industry, to the advantage of share prices and managers remuneration”.

In the recent credit crunch accounting adjustments around fair value feed into a loss-making spiral where the mismatch between off-balance sheet maturity structures combines with valuation difficulties raising concern over counterparts risks and run-offs. Fair value accounting amplifies financial fluctuations and restructuring response (s) over and above traditional historical cost accounting. The reason for this behavior is that mark-to-market accounting induces endogenous volatility into market transactions and thus reported profitability (Platin et al., 2008; Bernard et al., 1995) where the “fair value” portrays a situation remote from long-term fundamentals and contributes to illiquidity through its effects on bank’s balance sheets (Spaventa, 2008).

Fair value accounting has implications for governance and management of the economy especially in the banking sector where asset valuations and provisions for loan losses are booked at market value. Fair value adjustments are volatile and can quickly undermine net income, market valuation and the equity cushion in bank balance sheets. A relatively small increase in household mortgage default rates has seriously weakened banking operating financials and their balance sheet structure. Table 6 reveals the value of residential mortgages charged off against net income and the balance sheet in the US banking and thrift sector. Residential estate loans charged-off are loans (adjusted for recoveries) that have been removed off the books and charged against loss reserves. At the start of the 1990's 0.21 per cent of residential loans were charged-off and after falling off the proportion of loans charged-off at the end of the decade and during the recession was still 0.17%. During 2007, the charge-off rate increased and by Q3 2008 had 1.45%. Estimates suggest the charge-off rate could reach 2% in Q4 2008 (see Table 6) as market conditions continue to deteriorate and interest rates for adjustable rate mortgages (ARM's) increase putting more households into financial difficulty.

Although the charge off rate is small in percentage terms a one-percentage point increases translates into a significant charge off against banking net income. We estimate that actual charge-offs against US banking sector net income will have increased from approximately \$16 billion as at the first quarter 2007 to roughly \$250 billion by the third quarter 2008.

Table 6
Estimate of US residential mortgages charged off against banking net income

	Residential Estate Loans Charged off (%)	Delinquency Rate on Real Estate Loans (%)	US Household Outstanding Mortgages (\$ billion)	Estimate of Charged off Loans (\$ billion)
1991	0.21	7.40	2,790	6
1995	0.13	3.09	3,461	4
2000	0.13	1.84	5,129	7
2005	0.08	1.34	9,379	8
2006	0.08	1.36	10,452	8
2007 Q1	0.14	1.77	10,652	16
2007 Q2	0.19	2.02	10,862	21
2007 Q3	0.28	2.39	11,016	31
2007 Q4	0.45	2.88	11,158	50
2008 Q1	0.82	3.52	11,226	98
2008 Q2	1.13	4.33	11,300	136
2008 Q3	1.45	5.00	11,000	220

Source: www.federalreserve.gov

Notes: Charge-offs is the value of loans and leases removed from the books and charged against loss reserves. Charge-off rates are annualized net of recoveries. 2008 Q3 (estimated). Delinquent loans and leases are those past due thirty days or more and still accruing interest as well as those in nonaccrual status. Data for residential estate loans charged off and delinquent is for the first quarter of each year.

Table 7
FDIC member loan net charge-offs by type

Year end	June-08 \$ billion	June-07 \$ billion	June-06 \$ billion	June-05 \$ billion	June-04 \$ billion
Net charge offs	46.0	17.1	11.5	13.9	16.6
Real estate loans	22.5	2.9	1.1	1.0	1.2
Credit cards	10.3	7.4	6.1	8.4	8.9
Commercial and industry	5.7	2.5	1.4	1.4	2.8
Other	7.5	4.3	2.9	3.1	3.7

Source: www.fdic.gov

The US Federal Deposit Insurance Corporation (FDIC) insures checkable deposits for member banks and saving/thrift institutions and publishes information on loan charge offs (after recoveries) which are split into varying categories including: real estate loans, commercial and industrial loans and credit cards. In table 7 we summarize the position on net charge offs, from the FDIC, for the period year ending June 2004 to year ending June 2008 (see Table 7).

Between June 2007 and June 2008 there is a substantial jump in the value of aggregate residential estate loan charge offs against FDIC member banks and savings institutions net income. Two-thirds of the increase in charge offs during this period resulted from the increase in irrecoverable real estate loans. Out of the total increase of \$29 billion, seventy percent of this was dues to real estate loans and the remainder \$9 billion losses on credit cards and commercial and industry loans and \$3 billion other loans losses.

Table 8
DIC member tenancies 2007 - 2008 half year figures

Income data \$ million	First Half 2008	First Half 2007
Net interest income	191,143	174,631
Provision of loan and leases losses	-87,352	-20,546
Total non-interest incomes	121,307	130,467
Total non-interest expenses	-188,238	-178,407
Securities gain (losses)	-1,054	2,155
Income tax	-11,088	-35,013
Extraordinary gains	-496	-912
Net income	24,222	72,375
Cash dividends	31,688	67,014
Retained income	-7,466	5,362
Return on assets %	0.37	1.20
Return on equity %	3.58	11.45

Source: www.fdic.gov

Note: Return on sets ad equity are annualized force year ended June 2008 and June 2007 ne increase in residential loan charge offs lies significantly undermined reported net income of FDIC members a: they make increased provision for loan losses.

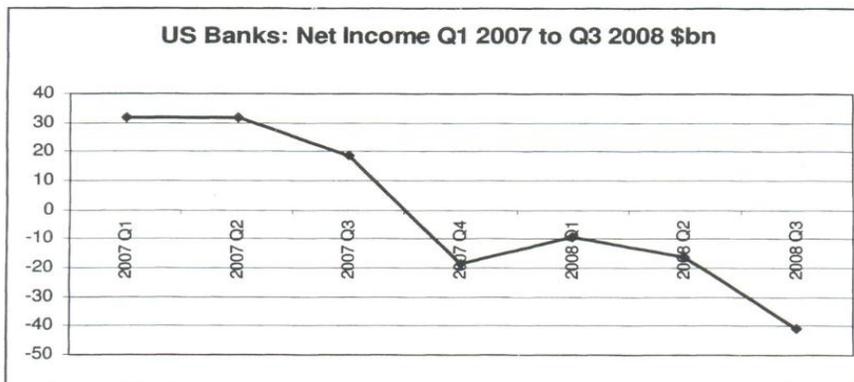
The continued downturn in the credit cycle, combined with lingering weakness in financial markets and falling asset values, had a pronounced negative effect on banking industry performance in the second quarter. Insured commercial banks and savings institutions reported net income of \$5.0 billion for the second quarter of 2008. This is the second-lowest quarterly total since 1991 and is \$31.8 billion (86.5 %) less than the industry earned in the second quarter of 2007.

In the first half of 2008 FDIC members charged \$87 billion against profit compared to \$20 billion in the first half of 2007 reducing net income from \$72 billion to \$24 billion a drop of two-thirds (see Table 8).

Figure 4 reveals the net income reported by a sample US banks with \$10 trillion of assets under management. In Q1 2007, this group of banks reported a positive net income of \$30 billion and in Q3 2008 a net loss of £40bn driven by asset write down and goodwill impairments. For the same period, the market value of this group of bank's fell from \$1.3 trillion to £690bn a loss of 47%.

Figure 4

Net income (losses) reported by US banks 2007 to 2008



Source: Edgar dataset (www.sec.gov)

Wachovia Corporation is the 4th largest bank holding company in the US with balance sheet assets totaling £800bn but exposure to mortgage charge off s and provisions for credit losses has undermined reported net income, market valuation and balance sheet equity.

For the period, Q3 2007 to Q3 2008, Wachovia reported increased provisions for credit loss rising from 0.09% to 1.37% of total loans and roughly in line with US banking sector averages. Although this is a small percentage of loans under management (1.37% of \$482 bn) this translates into a \$6.6 bn provision which is large when net revenues were just \$6bn in Q3 2008. Overall, this forced Wachovia into a net loss of \$7.6 bn in Q3 2008 after covering all non-interest expenses (see Table 9).

Table 9
Wachovia's loans, credit losses and net income Q3 2007 to Q3 2008

Year end	Loans net \$ billion	Provision for credit loss \$ billion	Provision as % of net loans	US average %	Net income before goodwill impairment
2007 Q3	449.2	0.4	0.09	0.23	2.6
2007 Q4	461.9	1.5	0.32	0.42	0.1
2008 Q1	480.4	2.8	0.58	0.69	-0.7
2008 Q2	488.2	5.7	1.17	1.01	-4.8
2008 Q3	482.3	6.6	1.37	1.50	-7.6

Source: Edgar dataset

Significantly, a large proportion of actual and anticipated credit losses originated out of the Golden West Financial Corporation of Oakland, California which had been acquired by Wachovia for \$25.5bn in 2006. Specifically Golden West specialized in "pick a Payment" loans accounting for \$119 bn out of \$482 bn of mortgages issued on Wachovia's balance sheet as at September 2008. "Pick a Payment" loans allowed the borrower to choose from four payment options: a minimum payment, interest only, a fully amortizing 15-year payment and a fully amortizing 30-year payment term. Of those taking out "pick a payment" loans 85% had applied using the "quick qualifier" program where as a result, loans in the quick Qualifier program may have varying levels of income and asset verification" (Wachovia IOQ, Oct 2008).

"Substantially all of the Golden West mortgage portfolio has consisted of a product, referred to as "option ARM's" or adjustable rate mortgages with monthly payment option. The credit quality of this portfolio has deteriorated significantly in the current mortgage crisis" (Well Fargo S-4: 37)

At the end of September 2008 two-thirds of Wachovia's "pick a Payment" loans were in the form of minimum monthly payment' and so those taking out these loans were building up negative amortization' because the total amount owing to increased as the outstanding loan included the unpaid interest on top of the original loan. Deferred interest on these loans amounted to \$4.1bn at the end of QA 2008. During the period, Q3 2007 to Q3 2008, Wachovia increased provisions for credit losses from its pick a Payment" set class. In a recent presentation (September 2008), Wachovia managers revealed that out of the \$119bn of outstanding pick a payment mortgages they expected that a further \$23bn or 22% of this class of mortgages would need to be charged off against income.

Wachovia's problems were concentrated in a mortgage asset class underwritten by thin documentation on the lenders finances and offered two thirds of these borrowers a minimum payment "credit card" style mortgage repayment plan. On the downside, this class of mortgages resulted in a substantial write down in Wachovia's net income and reported net income per share.

As net earnings per share (EPS) collapsed this also triggered a reduction in the price of Wachovia's share price and aggregate market value which dropped from \$95bn to \$14bn (a loss of 85%) for the five quarters ended Q3 2008 (see Table 10). This drop

in market value triggered by the deteriorating performance of Golden West triggered a goodwill write down of \$18.8bn. Goodwill impairment testing: (1) As of September 30, 2008, resulted in \$18.8 billion pre-tax impairment; and (2) \$18.7 billion after-tax as only a small percentage of goodwill is tax deductible.

Drivers of impairment were declining market valuation and terms of the merger with Wells Fargo, Goodwill impairments totaling \$24.9bn accelerate the deterioration in Wachovia's operating financials. Shareholder equity already thinned down by a programme of \$20.5bn of share buy-backs (1990 to 2007) further eroded by the goodwill impairment charge lodged in the accounts in Q3 2008.

Table 10
Wachovia's market value Q3 2007 to Q3 2008

Period	Market value \$ billion	Index
2007 Q3	95.3	100
2007 Q4	75.3	79
2008 Q1	53.8	56.4
2008 Q2	33.5	35.2
2008 Q3	14.1	14.7

Source: www.wachovia.com

At the end of the period covered in Table 11 the collapse of Wachovia's financials and reduction of market value coincided with disclosures by the banks management revealing that liquidity was strained and the banks had limited unencumbered assets upon which it could raise further capital. Without a rescue deal, it would go into liquidation and holders of common stock "would likely receive no material value".

Table 11
Wachovia's net loss after goodwill impairment

	Income \$ billion	Net Income pre goodwill impairment \$ billion	Goodwill Impairment \$billion	Net Income/ Loss \$billion	Total Equity \$ billion
2007 Q3	7.5	2.6		2.6	70.1
2007 Q4	7.4	0.1		0.1	76.9
2008 Q1	7.6	-0.7		-0.7	78.0
2008 Q2	7.5	-4.8	6.1	-10.8	75.1
2008 Q3	5.8	-7.6	18.8	-26.4	50.0

Source: www.wachovia.com

III. CONCLUSION AND IMPLICATIONS

Financial history contains many examples of the cycle characteristic of the subprime market discovery of profitability, expansion of credit activity, weakening of credit standards as competitive pressures to maintain volumes increase, followed by subsequent collapse. The subprime cycle is unique mainly in the lack of clarity regarding the distribution of mortgage default risks, especially in the failure to recognize that even the mortgage trusts might suffer enough write offs that their own securities could be partially or wholly defaulted. The principal lesson from each of these cycles is that risk control needs to be tougher during the upswing of the cycle, just when everyone believes it to be unnecessary. If the industry cannot control risks on its own – regardless of how confusing the allocation of the risks might be – then regulators must ensure they do so. Sadly, in the many cycles where the foregoing effects have been observed, regulatory corrective action is usually too little and too late to offset some painful losses.

Goodwill impairment is often a significant lumpy" charge against net income. Goodwill held on US bank balance sheets was equivalent to 5 years worth of net income and 45% of shareholder equity as at the end of the financial year 2007. Credit losses and goodwill impairment could reduce shareholder equity to the point where many banks are no longer a "going concern". FDIC financial datasets on insured commercial banks reveal the cushion of shareholder equity to be just 10% of total assets employed.

A number of drivers have contributed to the growth in household mortgages outstanding in the US. It was inevitable that as economic conditions deteriorated US households, aggravated by the lending practices of US banks, would default on loans. It is also clear that the financial architecture structuring the foundations of the US banking sector business model cannot sensibly resist negative financial momentum arising from charge offs and goodwill impairment because the net income and equity to asset coverage ratios are thin and fragile. Accounting regulations are socially constructed often reflecting the variable claims of different stakeholders the dominance of which changes over time. In the recent years the US Finance Accounting Standards Board (FASB) has been concerned to reflect the interest of shareholder-investors in accounting standards with the result that the US banking and non-financial corporate sector has been required to mark to market. Mark to market accounting reflects the market value of corporate-capital market transactions in the balance sheet on behalf of shareholders. In a world where capital markets are inflating holdings gains can be exacted from assets held on balance sheet and recycled into income and back into wealth accumulation. However, we also know that, if the future is like the past product and capital markets will not continue to grow all of the time. There are thus profound consequences for economic stability, financial risk assessment and asset valuation when the gains and losses from wealth accumulation are blended into current income when markets do turn down. It is now time to re-think the way in which we regulate the banking sector and this agenda should include how we "account for" transactions to limit the risk to society that arises from blending wealth accumulation and current income and re-align stakeholder interests.

Finally, the tightening of credit conditions in the US housing market and beyond may have real economic effects that depress corporate profits. The pace of takeovers

using borrowed money may slow down a bit. The world has been very dependent on US consumer spending. If that diminishes as the housing market and stock markets dive, then companies are in a pickle, the world over.

ENDNOTES

1. In the wake of breakdown of the Bretton Woods in the early 1970s, businesses have become more global so too have investors who have sought the benefits of international diversification. Later, the terms “globalization”, “financial integration”, “liberalization”, “financial innovation”, deregulation” and “short-term capital flow so called hot money” have come on the countries’ agenda. The 1980s witnessed the development of information technologies. Later, deregulation and destructive competition in the financial sector had the effect of increasing both the range and quality of financial products offered (see for a broad discussion Aktan and Icoz, 2009).

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