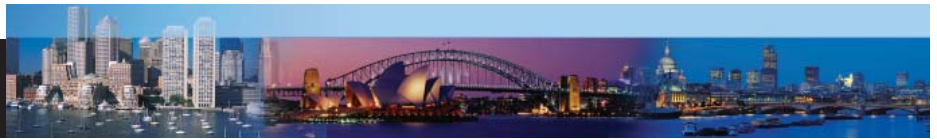


January 2008



## Our Financial House of Cards

Ben Inker



As investors continue to grapple with the fallout of the credit crisis that began last summer, it is beginning to become clear that the scope of the questions we do not have answers to is impressive, even by the standards of normal stock market imponderables. Articles have been written and rewritten looking at the question of how big the write-downs will be on subprime and other residential mortgage debts, as well as the even more vexing question of who exactly are the ultimate holders of the assets that will need writing down. These questions are hugely important from an investment standpoint, since both the level of write-downs and their distribution will have a profound impact on the underlying value of financial firms and their creditworthiness.

We believe, however, that the crisis brings up other even more difficult questions about financial firms. While I will not be able to answer all of these questions in this paper, I think it is important to step back and ask some broader questions about our financial system: what it does; how big it should be; and what its sustainable level of profitability might be once we get beyond the current crisis. The upshot is that we believe that the uncertainties around the ultimate value of much of the US financial system are so large that it may very well be advisable to substantially underweight or avoid financial stocks – not because we know the stocks to be overvalued, but because the magnitude of the unknowns is such that we mere mortal analysts cannot hope to know what the true values of the companies are.

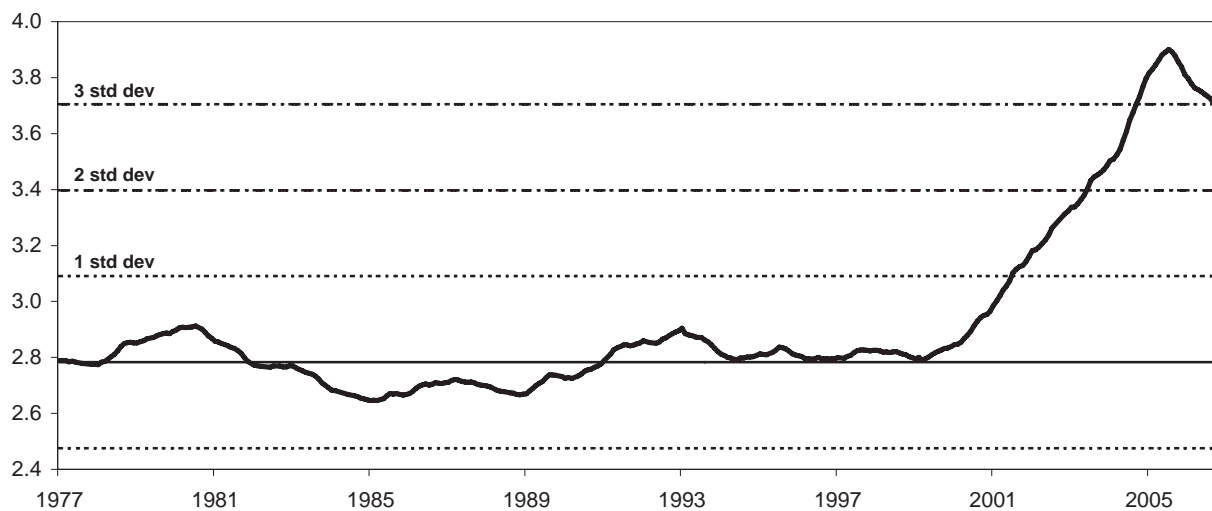
First, I will recap the problem that is getting the bulk of the press. The US housing bubble and the lending boom that enabled it to occur have turned into a bust, with increasing numbers of homeowners unable to pay the monthly cost of their mortgages and lacking sufficient equity in their

homes to pay off the mortgages by selling the properties. The plan presented by Treasury Secretary Paulson may succeed in the goal of keeping some residents from losing their homes, but does not obviously do much for the holders of the mortgages, who are trading off the costs of foreclosure against lower interest payments by mortgagees who are allowed to freeze their loans at artificially low rates. The ultimate cost of the mess to the holders of the mortgages has been estimated between \$300 billion and \$500 billion by various analysts. To put these figures in perspective, they are between two and four percent of US GDP, at least double the size of the Savings & Loan losses, and between a quarter and a third of the aggregate equity capital of the entire US banking system. Since a crucial part of the determination of the eventual losses depends on how much home prices fall – falling prices reduce and remove the equity cushion for recent homebuyers, making them more likely to default – we believe that the numbers are likely to be at the higher end of estimates. Exhibit 1 shows a measure of the valuation of US homes.

While home prices have now fallen almost 7% versus incomes over the past 18 months, they would need to fall a further 24% to reach the pre-bubble average. The longer the adjustment takes, the smaller the fall needs to be in nominal house prices, because family income grows over time due to both inflation and real income growth. But with the large overhang of unsold homes on the market today and more being forced on by rising foreclosures, it does not seem prudent to assume that the process will take more than 3 or 4 years from here, which means the number of homeowners with negative equity in their homes will rise significantly.

Much handwringing has occurred over who exactly bears the risk of these losses. It is a crucial question, and much

## Exhibit 1 Median Home Price/Median Family Income



Source: National Association of Realtors, US Census Bureau, GMO As of 10/31/07

more difficult to answer than in previous housing busts because of the rise of mortgage securitization. In the comparatively ancient days of the 1970s, the originators of mortgages could be relied upon to also be the holders. Banks lent money to borrowers from assets gathered from depositors. They earned a spread on this business by lending at higher rates than they gave to depositors and took the losses when loans went bad.

This led the banking system to seem inherently somewhat fragile. Banks had a limited equity cushion and tended to have significant concentrations of risk – to real estate in a particular area of the country, for example – so regulators and investors fretted about the risk of bank failures stemming from lack of diversification.

The asset-backed securities market, starting with mortgages in the 1980s, gradually changed this picture. A bank could gather together a group of mortgages and package them together, selling off chunks to investors. Over time it became particularly prevalent to sell off tranches of these asset-backed securities that had different rights to streams of income of the underlying assets – classically, investors could invest in an interest-only tranche of a mortgage-backed security that only had rights to the interest paid by borrowers or a principal-only tranche, which only had rights to the principal repayments of the borrowers. These securities helped turn fixed income trading desks from rather sleepy areas to major profit centers for investment banks, because some of these securities had very odd properties

compared to traditional bonds. An interest only mortgage-backed security, for example, generally has a negative duration – that is, its value decreases when interest rates fall, because the falling rates encourage more borrowers to refinance their mortgages, which reduces the size and therefore the interest payments on the original pool.

The complexity of the current securitized debt market has left such comparatively simple securities well behind, with instruments of extraordinary variety and complexity arising from what used to be simple loans. In theory, this is a step forward, because the menagerie of instruments available allows investors to take only the risks they are interested in. It also allows entities beyond traditional banks to play a much larger role in lending, as insurance companies, hedge funds, pension funds, and mutual fund managers can all effectively loan money to a whole variety of entities without actually having to be a bank. This was hailed as a great advance by many, including central bankers, since it widened the pool of capital available for lending and enabled banks to take less concentrated risks.

It had unintended consequences, however, as such advances often do. Most of these come under the headings of ‘agency risk’ and ‘complexity risk.’ Some agency risks are inevitable in securitized lending. The original lenders – ‘originators’ – of a loan have much less incentive to worry about the creditworthiness of the borrower if they are confident that they can swiftly sell the loan off to someone else. Those buyers, in turn, are

forced to rely on relatively limited quantitative measures of creditworthiness, since it is more or less impossible for them to do adequate due diligence on the quality of the collateral, the income and job security of the borrowers, or anything else that might have been of interest to an old-fashioned loan officer. To a large extent, the buyers relied on the opinions of the credit rating agencies, who built complex models to try to understand the behavior of the securities in different environments.

The rating agencies had agency problems of their own. They are paid by the creators of the securities they are rating, and earned huge sums of money from rating the increasingly bewildering array of asset-backed securities. Since many of these securities depended entirely on achieving a particular credit rating for various pieces of the whole, the relationship between the raters and the rated became unhealthily incestuous, with rating agencies more or less telling firms how they came up with their ratings and allowing them to push to the absolute limit of what the agency would let them get away with for a given rating. And whether willfully or not, the rating agencies made a fairly profound error in their modeling. They failed to recognize that the very existence of the new securitization markets and the lending practices they fostered meant that models based on historical performances were no longer relevant.

The complexity risk came from the fact that many buyers of the securities and the derivatives based on them did not fully understand their true characteristics, and therefore were not aware of all of the risks they were taking. Many buyers of securities like 'CDO-squareds,' which are collateralized debt obligations whose underlying assets are pieces of other collateralized debt obligations, had no idea that securities they held, while notionally AAA rated, could, with astonishing rapidity not only fall to junk status, but actually lose all their value if correlations among securities proved higher than expected.

Much of this has come to light in the past several months, with financial firms taking large write-downs of mortgage assets, only to admit shortly after that they still did not really know what, if anything, those assets were worth. The difficulties for a would-be investor in the financials are therefore pretty extreme. Not only do we not have full transparency as to what securities are held by a company, we also do not necessarily know what 'off-balance sheet' liabilities they may have through SIVs and other entities, nor what contingent liabilities there might be due to

warranties given on mortgages they originated, nor how effective whatever derivative hedges they may have on will be in protecting them.

In short, even if we could say with certainty that the losses on subprime mortgage-backed securities will total \$400 billion, we do not know what entities are on the hook for what piece of that bill.

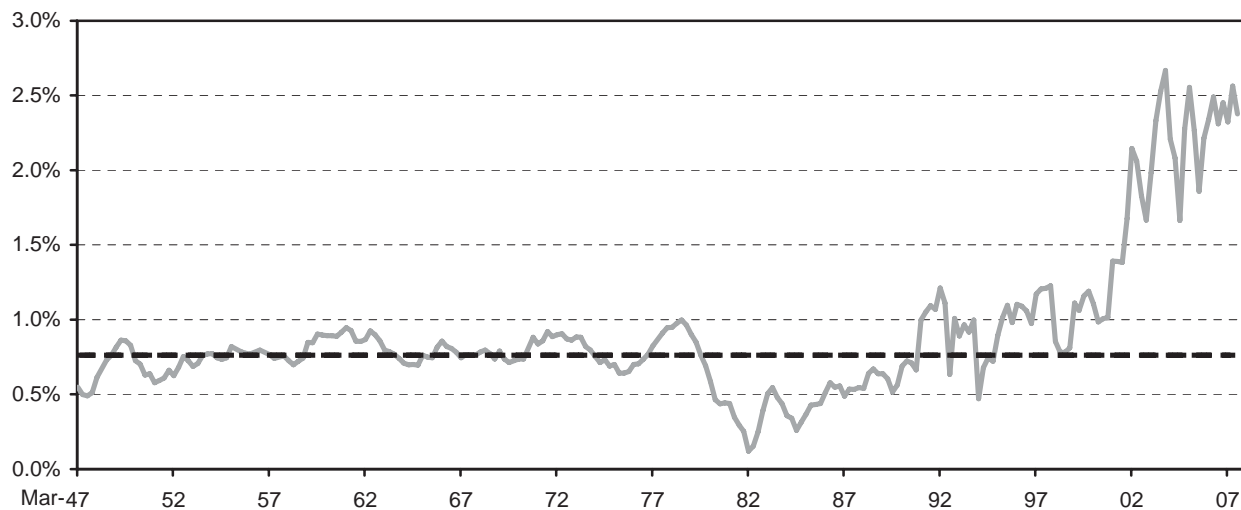
And this unfortunately only scratches the surface of the uncertainties facing investors. The residential mortgage market was not the only market that changed beyond all recognition with the advent of securitization. Commercial mortgages, consumer debt, bank loans, and so-called 'leveraged loans' – loans extended to entities that are already highly indebted – all were affected in a similar way to residential mortgages, with towering complex structures built out of simple pieces. It is our belief that the agency and complexity problems that have come to light in residential mortgage-backed securities may very well become apparent in these markets as well, but given that corporate profits have until recently been very good, it is extremely difficult to even guess at how big the losses will be, let alone who will be left holding the bag.

But as daunting a prospect as it is to try to determine the magnitude of this cycle's losses and where they will ultimately reside, there is an even larger question about the financials, which we will have to struggle with once this cycle's excesses are behind us. Exhibit 2 shows US financial profits as a percent of GDP from 1947 to 2007.

This is a truly striking chart. It is easy to conclude that financial profits were reasonably stable around 0.75% of GDP for the period 1947-1997, but then the profit share of financials tripled in the space of less than a decade. It is not a coincidence that this period coincides with the securitization boom, the private equity boom, and the hedge fund boom, all of which have contributed mightily to the profits of financial firms. And if \$300-500 billion of mortgage losses are to come, then the profits that look like they have been 2.25% of GDP in the past several years have 'actually' been more like 1.75%, if we smooth the losses over the last 3 years and into next year as rough justice.

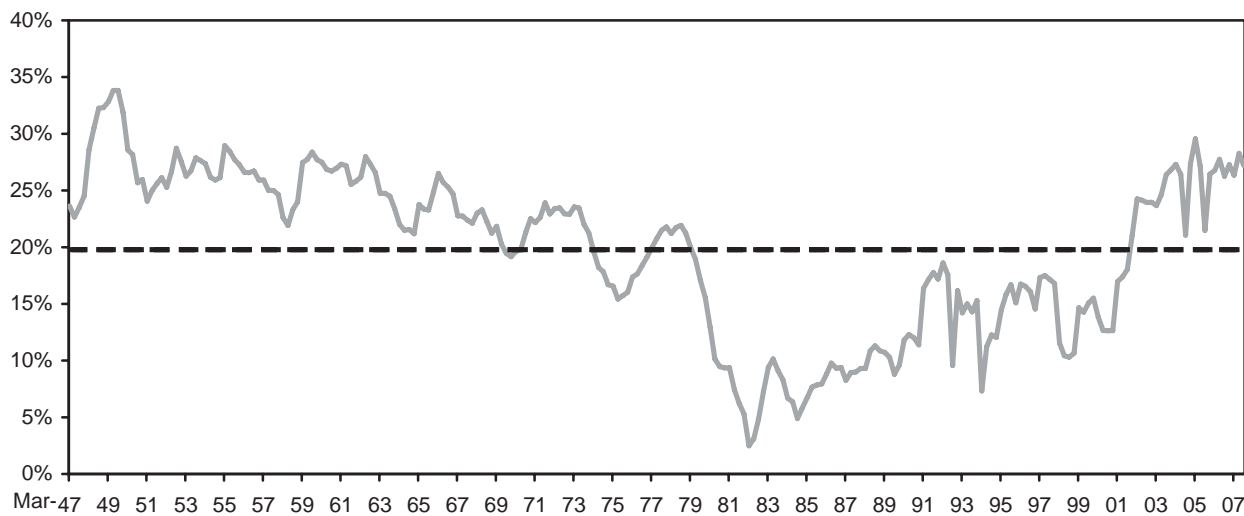
But is this 1.75% of GDP figure an 'equilibrium' level? What is a normal level for financial profits? This is an exceptionally difficult question to answer. Exhibit 3 shows one way to try to answer the 'normal' question, looking at financial profits as a percent of the value added of the

**Exhibit 2**  
**U.S. Financial Profits as Percentage of GDP**



Source: Bureau of Economic Analysis As of 9/30/07

**Exhibit 3**  
**Financial Profits as Percent of Financial Value Added**



Source: Bureau of Economic Analysis As of 9/30/07

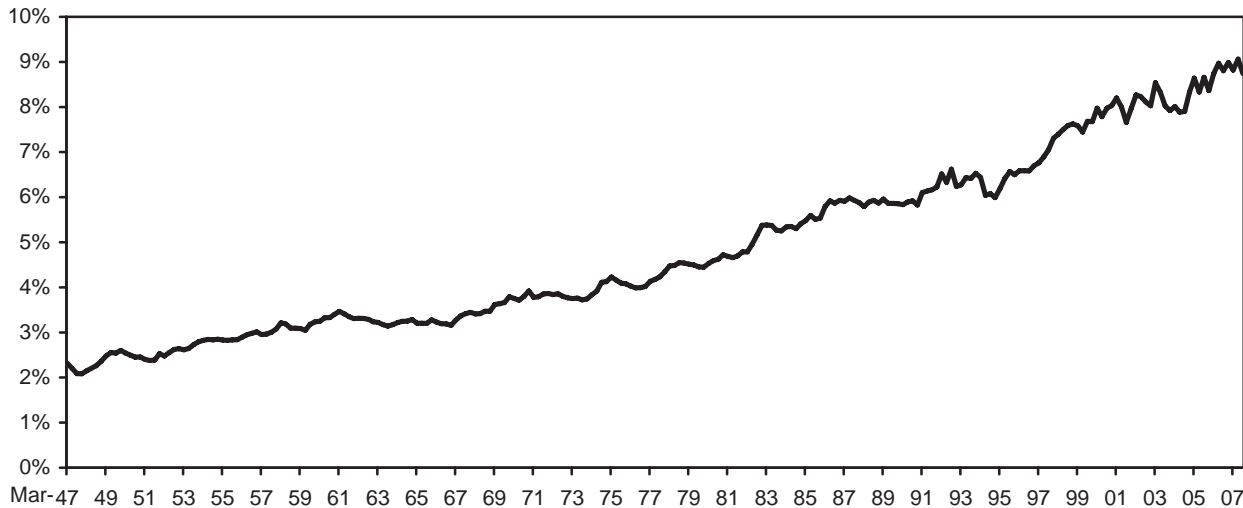
financial industry. The activities of financial firms count as part of GDP, and the profit margin on these activities might be stable over time.

On this basis, the profits of financials seem fairly 'normal.' Current profits are 137% of the average since 1947, which would equate to a 'normal' profit level of 1.6% of GDP at this point, but the anomaly on the chart seems much more to be the low level of profitability in the 1980-2001 period than the current level, which is just about the average of the years before and since that time.

And if the current level of financial profit margins is normal, then something fairly extraordinary must have happened to the overall level of financial value added. This is indeed the case, as we see in Exhibit 4.

To all appearances, there seems to have been a steady progression through time, with financial services moving from 2% to 9% of GDP over 60 years. If we take this chart and the one before at face value, financial profits may not have far to fall to reach 'normal,' and the financial stocks in aggregate may be pretty cheap. After all, this has

**Exhibit 4**  
**Financial Value Added as Percentage of GDP**



Source: Bureau of Economic Analysis As of 9/30/07

been a growth industry over a long period of time whose profitability seems to have been stable. Current valuations of many financial firms might well be too pessimistic.

But let's stop and ask just how one calculates 'financial value added.' It is fairly easy to estimate the income side of the equation. Financial value added is the sum of the profits of financial firms, their labor costs, and their rent, depreciation, and other operating expenses. There is no question that employment in the financial services sector has grown significantly over the years, and the industry itself – from credit cards to car loans to mortgages to the implicit use of financial services through our collective direct and indirect holdings of private equity and hedge funds – has grown strongly as well. But is all of this activity truly adding value?

The case of the investment industry is an instructive one. For simplicity's sake, let us assume that investors pay an average of 1% per year to the investment firms that actively manage stocks on their behalf. The 'value added' of the industry is fairly straightforward to measure – 1% of the value of the assets every year goes into the pockets of the investment firms, and perhaps another 0.5% goes to the brokerages who handle the transactions involved. If the assets of investment firms were approximately the same size as GDP, we would have 1.5% of GDP of added value created by the activity. This money actually comes out of the asset holdings of the investors, so we have rather miraculously turned assets into income. But let us envision that suddenly the investment firms woke up and

realized that their frantic trading activity was not doing their clients any good (which in aggregate, we know to be the case) and they simultaneously cut their trading in half and halved their management fees, in recognition of the fact that the 'service' they provide is of dubious benefit. The end investors would wind up 0.75% of GDP richer every year than before due to capturing more of their rightful capital gains, but the investment management and brokerage industry would show a fall of the same amount in their 'value added.' It is very hard to see how investors are anything but helped in this process, but the value added of the financial services industry would unquestionably drop significantly in the official figures.

While few other parts of the economy are quite as dispensable as investment managers and the brokers we use, it seems fair to ask if our increasing consumption of financial services is truly 'value added' in any normal sense. We think it is reasonable to suggest that a fair portion of it is not. In the end, the country would probably be no worse off if consumers were to cut their borrowing from current levels, if hedge funds ceased trading so frantically (and better yet shrank in size), and the financial services industry shrank in both people and capital employed. If the increment of financial value added that has occurred in the last decade were to be reversed, and financial services made up 6% of GDP, with a profit share of 20%, 'normal' financial profits would be 1.2% or about half their recent levels. If this is where we are going, not only do financial profits have far to fall, but we almost certainly have far

too many financial firms. Widespread bankruptcies and job losses would be expected.

This may very well be too dire a scenario. As our economy has become ever more service-oriented, measurement of GDP and questions of whether various bits should ‘count’ from a societal benefit standpoint become difficult. Various commentators have claimed that the large share of GDP going to legal and medical services in this country, without obvious benefits in fairness, safety, or health relative to other developed countries that spend less, are signs of inefficiency rather than increased output. Whether our financial system is inefficient may, in the end, be beside the point. If the incentives in the economy, for whatever reason, cause unnecessarily large consumption of financial services, the aggregate profits of the sector may stay relatively high, not because the return on capital is particularly high in the sector, but simply because we persist with too much capital (and labor) dedicated to the area.

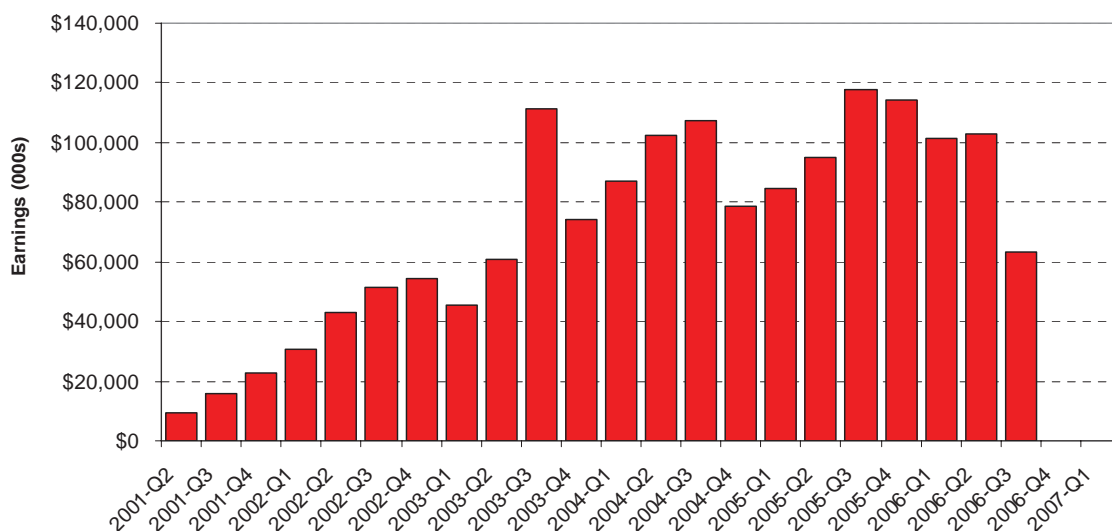
This, in the end, depends on the behavior of the consumers of financial services. The households, corporations, and institutional investors will collectively decide how much they are interested in spending on financial services. But if we were to assume that the securitized lending industry has gone ‘too far’ in this cycle, and there will be a generally less distant relationship between lenders and borrowers in the future, we should expect both a reduction in the overall amount of lending (lenders who pay attention to

the creditworthiness of borrowers are apt to lend less than those who do not) and the fee income of the structurers of the formerly towering structures of debt securities. This would not undo all of the last decade’s increase in financial output, but would certainly take a chunk out of it.

But even assuming that we knew what the ultimate losses would be on subprime and other excesses of this cycle, and we knew what the ultimate size and accounting profitability of the financial sector would be, that still would not tell us quite everything we need to know to properly value financial companies. There seems to be an additional problem that the notion of earnings for financials seems to be a somewhat more fragile one than for industrial companies.

All corporate earnings figures involve a degree of prediction and assumption. Technology firms were caught unaware in the downturn of 2001 that the value of the inventory they had would collapse along with demand for the goods as investment rates fell. Depreciation is always a guess, at least from an economic standpoint, depending as it does on the uncertain future rates of technology progress and wage gains. But there is something particularly guess-like about the profit estimates of financial firms. And while in most cases one can argue that the guesses even out in the end, this does not necessarily follow for financial firms, as the example of New Century Financial, self-described ‘as a new kind of blue chip financial firm’ demonstrates. Exhibit 5 shows the singular flight path of its earnings figures.

**Exhibit 5**  
**Quarterly Net Earnings of New Century Financial**



Source: Edgar Online As of 9/30/07

New Century Financial was, until early in 2007, a mortgage lender specializing in subprime loans. It was the second largest originator of such loans in 2006, and since it securitized and sold off the loans as quickly as it made them, it seemed to be something of a money machine. The machine shuddered to a halt in the very early days of 2007, when New Century announced that it would have to delay filing of its Q4 earnings figures, and collapsed altogether in April, when the company declared bankruptcy. The fact that it declared bankruptcy is nothing particularly noteworthy. It was far from the first company to do so, and certainly will not be the last. But what makes it reasonably unique in the annals of company history was the fact that it managed to go bankrupt without ever declaring a loss. While there is an ongoing investigation as to whether there was anything illegal about New Century's accounting practices, it is far from certain that they will be found to have been committing accounting fraud. And even if they are found guilty, it is perhaps slightly beside the point. No one is ever likely to go back and revise the earnings figures for the company, and while the shareholders certainly know that the stated earnings did not in the end spare them from the loss of their investment, neither the government nor aggregate corporate earnings figures will register the implicit loss of the \$2 billion in book value that occurred with the company's implosion.

While few financial firms disappear with quite the puff of smoke that New Century did, the potential for a firm that appeared consistently profitable one moment, at least as far as the accountants were concerned, to the implicit wiping out of years of declared profit the next moment is hugely higher for financial firms than non-financials. This fact argues for using a somewhat higher discount rate on the expected future earnings of financials, to make up for the fact that the earnings, even once declared, may prove to have been illusory.

Even years after the fact, it can be hard to pinpoint exactly what the costs are of a banking crisis. The 2,100 or so

institutions that failed in the Savings & Loan crisis of the late 1980s and early 1990s cost approximately \$160 billion to 'clean up' according to the FDIC. This figure is almost three quarters of the total profits of the banking sector for the years 1948-1986. But there was only one year that the 'official' profits for banks and S&Ls taken together went negative. In 1987, they declared an aggregate loss of \$2 billion, against \$20 billion in profits in 1986 and 1988. The \$160 billion cost is also certainly an underestimate of the true losses in the crisis, since it ignores the loss of equity capital in the institutions before they went bust. Most of the burden of the \$160 billion in losses wound up with tax-payers, since the deposit insurance the institutions had paid was far from sufficient to cover everything. Should those losses be counted against the earnings of the financial system? Arguably not, since they were paid not by the financials themselves, but the government. But is that guaranteed to happen again? After all, if the financial system is better capitalized this time, more of the losses will hit shareholders, since there is more capital to eat through than there was last time. But if losses turn out to be concentrated within particular institutions, this would simultaneously mean more bankruptcies and also more government bailouts, which would be a net benefit to the aggregate owners of the financial system.

The combination of massive uncertainty as to the amount and distribution of near-term write-offs, another huge uncertainty as to the likely level of industry profits in the aftermath, and disturbing questions as to the quality of reported earnings in the sector suggest at the very least taking a deep breath before putting significant amounts of capital in the financial services sector. Almost all investments we make involve taking on significant risks, but few investments seem to contain the level of unknowns that the US financial sector currently embodies. Buying them today may turn out to be a very profitable speculation, but it seems harder to consider it a true investment.

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