Bellwether CONSULTING

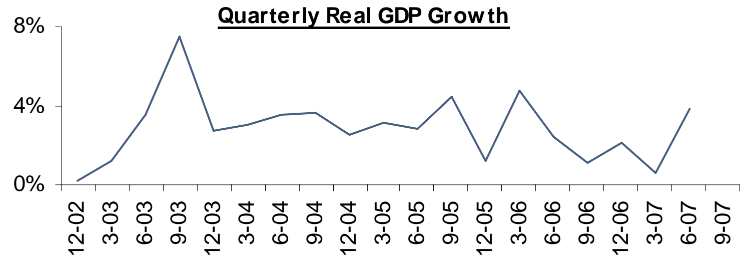
Your Quarterly Update on the Financial Markets
September 30, 2007

3rd Quarter

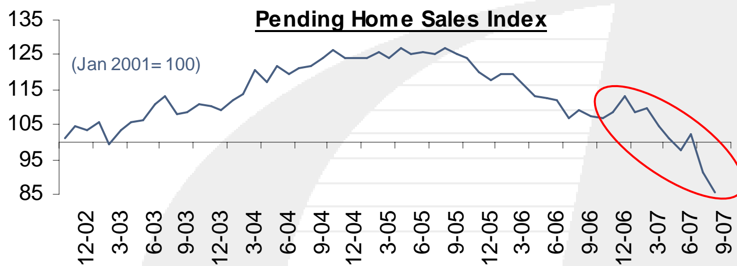
MARKET Recap

The Economy: *"Slowly Approaching a Slowdown"*

The pace of U.S. economic growth rebounded in the second quarter from a slow Q1, driven once again by personal consumption expenditures. Although real PCE increased 1.4% for the quarter, the rate of spending growth slowed from the 3.7% realized in the first quarter. Residential fixed investment again detracted from GDP growth.

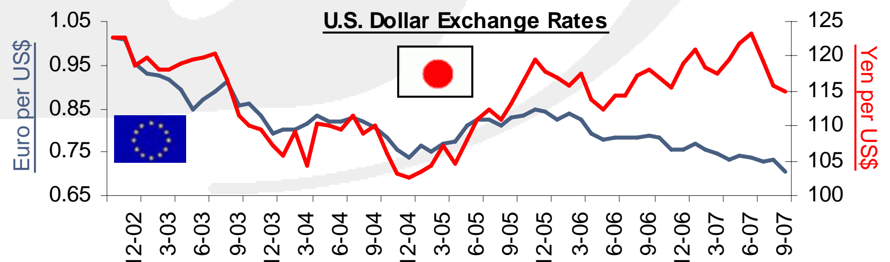


The Pending Home Sales Index published by the National Association of Realtors fell to 85.5 in August, the lowest level since the inception of this statistic in 2001. As a leading indicator of actual home sales, it suggests that the correction in residential real estate continues to widen and deepen, with no end in sight. The median sales price for a new home fell to $225,700 in August, the lowest level since November 2004. Mortgage defaults continue to ripple through collateralized debt structures, sending alarming waves through U.S. and international debt markets and driving the Fed to cut rates sharply in September. The decline in the U.S. dollar accelerated against most other currencies, particularly the euro, prompting some on Wall Street to call the greenback "the new peso." Declining currency in a predominantly import-oriented economy will require consumers to spend more in order to maintain their current standard of living; but as we've discussed many times before, debt-financed consumer spending simply cannot continue indefinitely.



So why do we continue to see strong, albeit volatile, economic growth? Why did the September jobs report show growth of 110,000 jobs for the month, and reverse original estimates of job losses in August to show a gain of nearly 90,000 jobs? Why do personal consumption expenditures continue to increase? The reason, we believe, is that the impact of a housing correction and reduced availability of consumer credit is naturally slow to materialize in the economy; only on the margin are some consumers forced to tighten their belts as they burn through prior rounds of financing. However, the effects are cumulative; as more consumers face a cash crunch, we believe economic conditions will gradually worsen.

That isn't to say there won't be bits of good news along the way; but increasingly, Wall Street will find itself rejoicing over lagging indicators like GDP and unemployment rather than leading indicators.



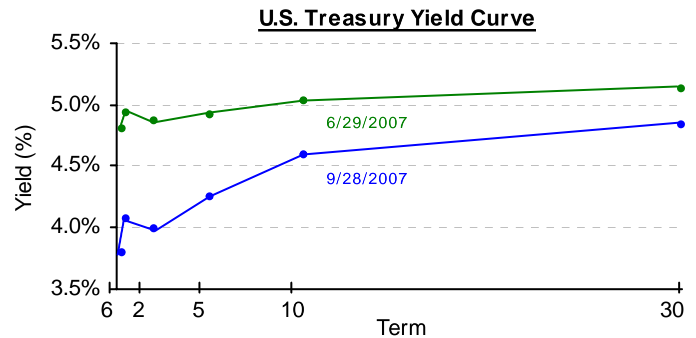
The U.S. Bond Market

At their June 27-28 meeting, the Federal Open Market Committee (FOMC) had noted a "rebound" in economic output but that "sharp increases in energy prices drove up overall inflation." The federal funds rate remained at 5.25%. By August 7, the FOMC noted "downside risks to growth," but, although falling energy prices now limited rather than stoked inflation, it remained their "predominant policy concern." Again the fed funds rate stayed at 5.25%. After the August "credit crunch," the FOMC on September 18 reacted to a very different environment by cutting the fed funds rate by 50 basis points to

Bond Indices - 3Q Total Return	
Lehman Aggregate	2.84%
Lehman Interm. Gov't	3.36%
Lehman Long Gov't	4.87%
Lehman Interm. Credit	2.05%
Lehman Long Credit	2.15%
Lehman High Yield	0.33%

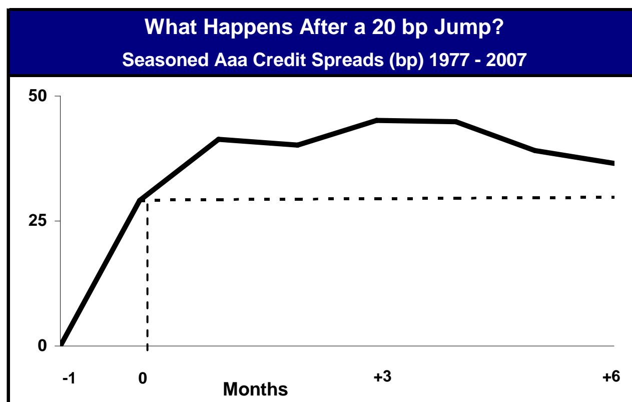
avoid "adverse effects on the broader economy." While noting "that inflation risks remain," the FOMC's main message was one of "uncertainty," and it promised to "continue to assess the effects of these and other developments."

The Treasury yield curve shifted down an average 60 basis points during the third quarter. Rates trended downward steadily, although the dramatic events of August did incite a "flight to quality" to some extent. The slope of the yield curve increased significantly, as measured by the difference between 2-year and 30-year yields, from 25 to 86 basis points. Increases in the slope can indicate optimism about the economy, but we believe rather that this move actually reflects the high degree of uncertainty and investors' preference for short-term assets.



The most notable event of the quarter was the "credit crunch" of early August. On August 9, BNP Paribas announced that it could "no longer value" three investment funds with large sub-prime mortgage-backed security holdings. Interbank rates spiked by 44 basis points. The Federal Reserve, European Central Bank, and other central banks were forced to inject liquidity through open-market operations in amounts not seen since September 12, 2001.

Not surprisingly, credit spreads increased significantly as the market "repriced" risk, especially in mortgages and asset-backed securities. The Lehman Aggregate bond index returned 2.84% over the quarter, but government securities returned significantly more than riskier credits. Longer-duration indices benefited from falling rates, while the High Yield index returned a mere 33 basis points, due to much lower demand for non-investment grade securities.

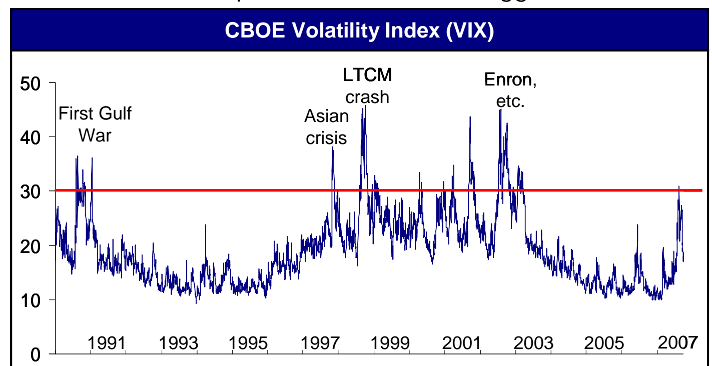


A spike in credit spreads such as August's (24 bps) is rare. Historically a wide range of outcomes has followed such spikes, but on average these repricings of risk have been sustained.[1] Liquidity has already started to return: decline in the commercial paper market (even for asset-backed paper) has been arrested, although high interbank rates indicate that sangfroid has not yet returned. Credit changes, however, will likely persist much longer.

Looking forward, some bond mutual fund managers expect the collapse of the housing bubble to continue slowing the economy and encourage the Fed to cut short-term rates further. The steep slope of the yield curve, suggesting the possibility of rising interest rates, indicates that the effect of the housing slump may continue to be in tension with inflationary concerns.

The U.S. Stock Market

U.S. equity markets had mixed performance in the third quarter of 2007, to say the least. While total returns for the quarter varied by sector, volatility for the quarter was the headline news. U.S. stock prices showed their biggest fluctuations since the first quarter of 2003 based on the volatility index of the Chicago Board Options Exchange (VIX), which measures expected changes in stock prices. Generally, index values greater than 30 are considered indicative of a large amount of volatility associated with investor fear or uncertainty; values below 20 are considered to correspond to less stressful market conditions. The Dow had 24 days of triple digit fluctuations (12 up *and* 12 down).



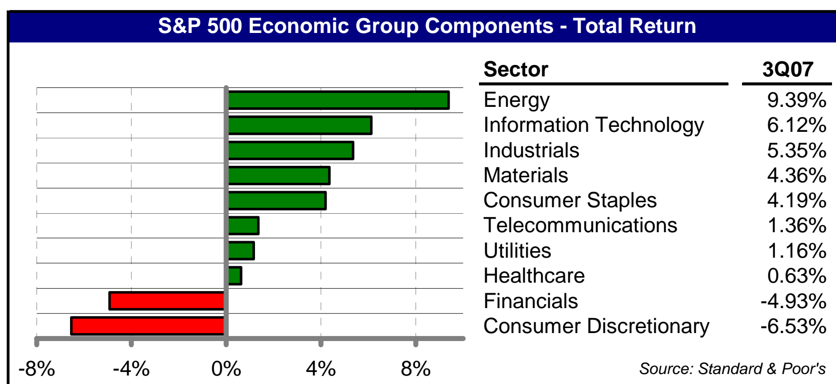
In a repeat from the second quarter, growth issues outperformed their value peers across all capitalization sectors. Large-cap issues outperformed mid- and small-caps with

[1] Historical analysis of 314 monthly observations, including 9 increases of more than 20 basis points in 1 month. All deviations plotted are statistically significant at >95% confidence interval.

Stock Indices - 3Q Total Return			
Largecap Stocks		**Midcap Stocks**	
S&P 500	2.03%	S&P Midcap 400	-0.87%
Russell 1000	1.98%	Russell Midcap	-0.39%
Growth	4.21%	Growth	2.15%
Value	-0.24%	Value	-3.55%
Broad Markets		**Smallcap Stocks**	
NASDAQ Comp.	3.98%	S&P Smallcap 600	-1.83%
DJ Wilshire 5000	1.42%	Russell 2000	-3.09%
		Growth	0.02%
		Value	-6.26%

investors seeking a safe haven during the volatility-driven period of uncertainty. Energy issues were once again star performers driven by high oil prices. Technology issues rose on strong demand for software, tech services and PC's (as aging systems and software are replaced and tech companies continue to expand globally), benefiting companies like Oracle and Intel. In addition, software and service companies as well as chipmakers have historically been among some of the best-performing issuers following a rate cut by the Federal Reserve. The consumer discretionary sector, the worst-performing sector for the quarter, was largely dragged down by homebuilders and specialty retailers, both victims of the credit crisis. Not surprisingly, homebuilders are continuing to experience marked slow-downs due to the contracting real estate market. Specialty retailers (like Sharper Image and Restoration Hardware) also had a difficult third quarter on anticipation that consumers will take a wait-and-see approach to truly discretionary purchases. The financial sector also had another rough quarter due to sub-prime exposure. See this quarter's Focus article for more coverage of causes and fallout of the sub-prime crisis.

In an interesting and unusual turn of events, a number of quantitative long/short equity hedge funds experienced large losses in the first week of August that, in hindsight, appear to have been caused by the rapid liquidation of one or more sizable quantitatively-managed global market-neutral portfolios. The actions appeared to be a combination of voluntary de-levering and forced liquidation to meet margin calls and withdrawal requests. The size of this unwinding caused many of the affected stocks to experience highly unusual volumes and dramatic price movements on virtually no "news." This had a significant impact over a very short time-frame on quantitatively-managed portfolios that react to these factors. Managers that stuck to their models experienced a partial recovery on August 10th. A study of the unusual phenomena by Amir Khandaniy and Andrew Loz (both of MIT) concluded that the fact that the disruption in long/short equity portfolios seemed to lie in a completely unrelated set of markets and instruments suggests that systemic risk in the hedge-fund industry may have increased in recent years.



Overseas Markets

Global markets continued to perform well during the quarter even in the face of increasing volatility. Once again, Asian and Latin American emerging markets rose to the top of the performance heap, outperforming developed markets by a wide margin.

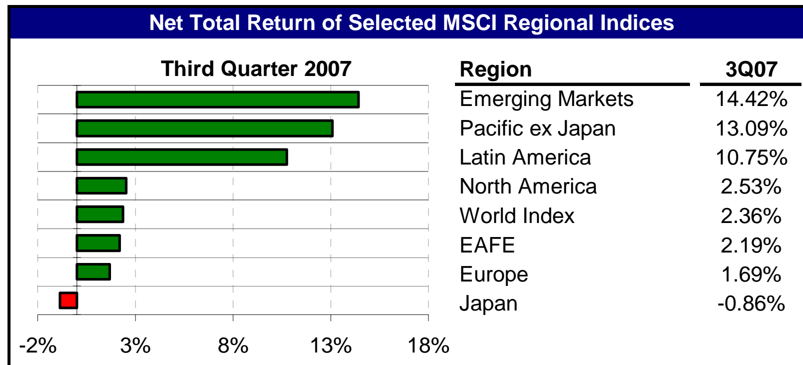
In the Eurozone, with the mid-quarter liquidity crisis nearly forgotten, inflation continues to be the main focus of the European Central Bank (ECB). Early in the quarter the ECB kept its key interest rate at 4%, after a quarter-point hike in June, but the central bank hinted of future rate hikes in response to continued growth in Germany, Italy and other European countries. Eurozone producer price inflation (ex-energy) rate was up 0.2% in August and 2.4% over three-months (ending 8/31). Of concern is the year-over-year pace of the PPI which, at 2.9%, is well above the ECB's inflation target guideline of 2% per year. While it appears that inflation is slowing, it remains a concern; economic weakness combined with concerns about the impact of additional fallout from the sub-prime market may keep the ECB from hiking rates at its next meeting. In early August, in response to the liquidity crunch from the sub-prime credit crisis, the ECB injected over US $80 billion into financial markets to maintain liquidity.

Another concern among EMU members is the fast-appreciating euro which strengthened during the quarter versus the dollar. A devalued dollar has the potential to crimp exports from Eurozone members. In Germany, the largest EMU economy, GDP fell from 0.5% in the first quarter to 0.3% in the second as the rising Euro caused some deceleration in manufacturing. In France, industrial production jumped by 1.3% in July boosted by the formerly weak auto sector. However, consumer spending remains erratic as the output of consumer goods fell in July and rose by just 0.1% in June.

In Japan, the economy contracted at the fastest pace in more than four years during the second quarter. The economy shrank 1.2% from April-June, revised downward from a preliminary estimate that had put expected growth at 0.5%.

Capital spending by Japanese businesses contracted 1.2% from the previous quarter and public investment fell 2.6%, slightly more than earlier estimates for a 2.1% contraction. Personal spending, which accounts for a little more than half of the economy, expanded 0.3%, revised down from an earlier expected 0.4% rise. Add to this the political turmoil which accompanied the resignation of Prime Minister Shinzo Abe, and there does not appear to be a great deal of confidence in a continued turnaround of Japanese markets.

In China, the central bank once again took steps to try to cool down an overheating economy as they announced another 0.27% increase in interest rates after GDP data showed the economy on track for its fastest annual growth rate in the last 10 years. This marks the fifth time that the central bank has increased the rate since April of 2006. China's economy expanded a greater than expected 11.9% in the second quarter, up from 11.1% in the prior quarter. Data show consumer prices increased nearly 4.5% in June, an indication that inflation remains pervasive. The MSCI China Index was up an incredible 41.89% for the quarter.



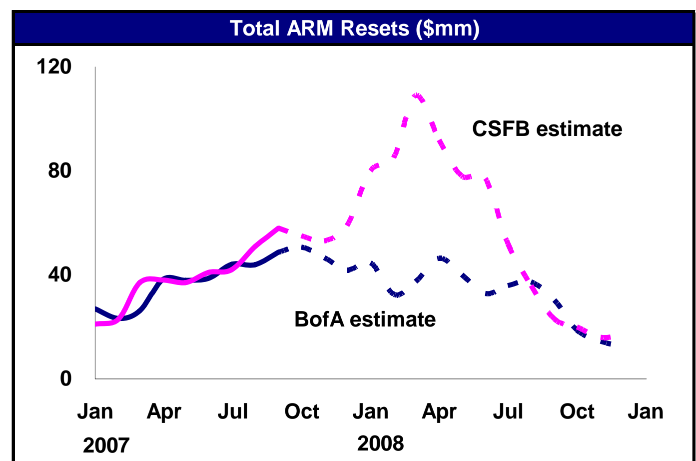
Region	3Q07
Emerging Markets	14.42%
Pacific ex Japan	13.09%
Latin America	10.75%
North America	2.53%
World Index	2.36%
EAFE	2.19%
Europe	1.69%
Japan	-0.86%

Latin American markets continue to perform well. In Brazil, the central bank raised its inflation forecasts for 2007 and 2008 as rising prices spread across many sectors of the economy, increasing expectations that the central bank will cease a period of successful economic stimulation after two years of rate cuts. The bank raised its 2007 inflation forecast by a half-point to 4% and is targeting inflation of 4.5% through 2009. According to the central bank's economic policy director, Mario Mesquita, "(inflationary) pressures are now turning out to be more distributed throughout the economy, giving companies more power to readjust their prices." The MSCI Brazil Index was up 20.70% for the quarter. In Argentina, economic growth is expected to slow to an expansion of 4% in 2008, about half the rate seen in the first quarter of 2007. Annual inflation is expected to fall to 7.7% next year from a reported 8.7% rate in August with a projected government budget surplus (excluding interest payments) of 3.15%. The MSCI Argentina Index was up 3.11%.

Focus On: *Sub-prime's Root Causes and Aftermath*

When we look at the sub-prime crisis, it has the typical characteristics of a "gathering storm." There were warning signs noted all along, but their full import is clear only in retrospect. Moreover, while a crisis was not unpredicted, its extent came as a universal surprise. Hopefully it is not premature to claim that sub-prime lending's immediate consequences are becoming fairly clear. We have yet to see the broader fallout in the housing market and find out how much the link between housing and the broader economy has or has not changed since the last business cycle.

Many have discussed the parallels to the savings and loan crisis of the 1980s, the central questions of the exercise being what mechanisms lead to these crises, what policy responses work, and what prediction can be made about the effect on the economy. Of course markets have changed significantly in the last twenty years, and this is not the S&L crisis all over again. However, there are a surprising number of parallels: we see similar behavior demonstrated and similar issues arise, albeit by a very different set of actors.



The story of both of these crises can reasonably start with the unintended consequence of monetary policy. In 1979, the Fed dramatically raised interest rates to [very successfully] fight inflation. However, this produced massive losses for S&Ls, as it greatly increased the rates they had to offer to attract deposits, while their income-producing assets – mostly fixed-rate mortgages – offered no greater income. By 1982, S&Ls were down to tangible capital of 0.5% of assets, from 5.3% in 1980, and many "gambled for salvation" by moving from fixed-rate residential mortgages to much riskier commercial real-estate lending. Similarly, the contemporary Fed started to raise rates gradually in 2004, but this unintentionally encouraged lenders, no longer benefiting sufficiently from low rates, to take greater credit risks through high Loan-To-Value, low documentation loans. Thus we see the most interesting phenomenon of both crises: "moral hazard."

Moral Hazards in Lending

Generically, moral hazard is the incentive an actor has, when someone else absorbs part of any losses, to engage in risky behavior. A particular form of moral hazard relevant to these crises is "asset substitution," the incentive of a generic equity-holder to select riskier assets than the debt-holders would prefer. Equity-holders have this incentive, because debt-holders get paid first; safe investments may repay the debt-holders but pay the equity-holders minimally. Risky investments offer equity-holders a better expectation but no incremental value to debt-holders. Risky investments, in other words, allow equity-holders to "get over the hump" of paying off the debt-holders and make decent returns.

Unfortunately, the government-guaranteed Federal Savings and Loan Insurance Corporation (FSLIC) insured S&L deposits, so the debt-holder was effectively the taxpayer. Troubled S&Ls therefore lent recklessly without complaints from their insured depositors and without interference, for a long time, from easily manipulated and lethargic politicians. The equity-holder in a sub-prime mortgage-backed security is frequently the "special servicer" responsible for resolving delinquent loans, so the servicer enjoys the first fruits of its labor in collecting whatever it can on those loans. However, the "equity" piece of an MBS is usually less than 3% of the total capital, which is even less than S&L capital ratios. Special servicers therefore have similar incentives to take the risk of giving troubled loans more time before foreclosing, which is not necessarily in the interest of investors in the more senior debt tranches.

One answer is risk-based pricing, so, for example, S&Ls that engaged in riskier behavior would have had to pay higher premiums for their deposit insurance – an idea discussed but not implemented in time. The analog for MBS is that senior debt tranches in deals where the servicer holds the "first-loss" position are more expensive, because the incentives are better aligned. Risk-based premiums have also been proposed for FHA mortgage insurance, which would allow the FHA to help more sub-prime borrowers in an economically viable way.

Another important factor is what we might generically call asymmetric information problems in the loan origination process, which came in both crises in two forms: an "originate-to-distribute" model and outright fraud. The sub-prime originate-to-distribute model of course consists of mortgage brokers who originate loans and immediately sell them to issuers to be packaged into MBS. Brokers have weak incentives to lend based on accurate evaluations of borrowers' credit and in fact have frequently received fees based purely on excess mortgage interest rates, actually decreasing credit quality. The S&L equivalents of mortgage brokers were commercial loan brokers, who connected developers in need of financing with S&Ls looking for high-yield lending opportunities. These loan brokers were incented to close deals whatever it took, or, as it has been put more colorfully:

> "Apparently, the people who ran the U.S. League [the S&L trade association] … would rather have their institutions at risk for bad loans made by overly grateful loan officers than face the possibility of paying for their own golf games."[2]

Outright dishonesty and fraud played a part. By 2006, "low-doc" mortgages comprised 42% of all sub-prime lending. In retrospect, this straightforward invitation for borrowers to lie seems a clear indication of the top of a bubble. S&Ls engaged in "appraisal lending," in which commercial real estate loans were made purely on the basis of a cursory third-party appraisal – as compared with the deep due diligence and lender involvement which have characterized most traditional and contemporary commercial real-estate lending.

The Government Sponsored Entities (GSEs), "Fannie Mae" and "Freddie Mac," are an important part of the picture then and now. The GSEs have played an important role in developing the securitized mortgage market, but they enjoy a low cost of funds from their implicit federal government backing: analysis indicates they enjoy a persistent spread of about 25 basis points not passed on to consumers, as a result of their special status. In the 1980s, the GSEs' rise eroded the S&L business model by providing lower-cost mortgages – there is some debate about whether mortgage securitization destroyed S&Ls, or if the demise of most S&Ls spurred the rise of securitization to replace vanished portfolio lending.

Today, the GSEs are seeking authority from Congress to respond to the sub-prime crisis by buying "jumbo" mortgages (above their current $417,000 limit) and by expanding the size of their portfolios. GSE critics favor using the Federal Housing Administration, which has a stronger focus on low-income borrowers, an explicit (unambiguous) government guarantee, and a lower probability of displacing private mortgage lending.

Lasting Impact on the Economy

There is a massive debate underway on whether sub-prime will tip the U.S. economy into recession. One widely considered indicator is the trajectory of sub-prime ARM resets [to higher rates] in 2008. Although estimates of resets' extent differ widely, that impact will likely end in late 2008. Federal Reserve economic models consider four effects of housing

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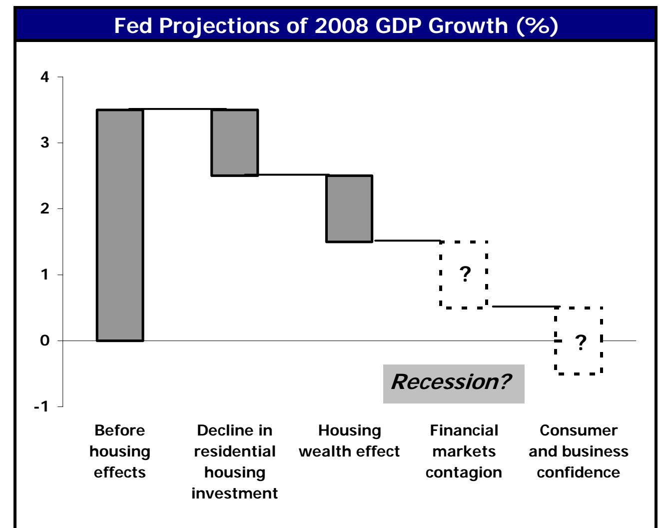
[2] Lowy, Martin. *Inside the Savings and Loan Debacle*. New York: Praeger, 1991.

on GDP: the direct effect of residential housing investment, the "wealth effect" of house prices on consumer spending, the "contagion effect" of mortgage / MBS market problems to the broader financial markets, and the psychological damage to consumer and business confidence.

Figure 2 shows Fed / CBO projections of these impacts in 2008, without attempting to capture the extreme imprecision in these forecasts: it is certainly more useful as a conceptual framework than as an exact prediction.



- **Residential housing investment**: while housing investment declines have contributed to most past recessions, residential investment has historically been less volatile than commercial real estate investment, which, as a part of the S&L crisis, contributed to the 1990-91 recession. The Fed and CBO estimate[3] that the decline in housing investment is responsible for reducing GDP growth about 1%.
- **Housing wealth effect**: we cannot do better than quote Fed governor Mishkin on this effect: "Overall, the empirical evidence on the possibly differential effects of housing and financial wealth on consumer spending is all over the map." Moreover, "we [the Fed] do not have a firm understanding of what determines house prices and how they respond to changes in interest rates. Furthermore, we are not even sure if observed house prices are consistent with underlying fundamentals." There is a great deal of debate as to whether more efficient home equity markets allow homeowners to smooth consumption over time by borrowing against their homes or make homeowners more sensitive to their perceived financial well-being by making their home equity more liquid. Nonetheless, the middle of the Fed / CBO range of estimates for this effect is a 1% reduction in growth.
- **Contagion and confidence effects**: unfortunately no one seems to have any quantitative methods to estimate these factors, which constitute a large but imponderable "error term." Clearly these psychological effects will determine whether the economy slips into recession in 2008.

Recent research suggests a shift from bank-based lending to more securitized lending has dispersed risk and improved pricing efficiency: in theory, an economy with a market-based lending system should be more resilient than an economy depending primarily on bank lending. We take two lessons from recent experience: first, that risk-taking financial intermediaries (e.g., banks) are hard to do away with, though greater financial sophistication allows us to recast them in a very wide array of forms. The persistence of banks means that the economy is still vulnerable to periodic credit shocks. Second, securitization can sometimes act as an enabler of greater volatility and price inefficiency, reinforcing rather than mitigating a market's collective psychological errors. This will unfortunately continue to lead to significant errors in investment allocation in the real economy – i.e. more booms and busts.

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[3] Orszag, Peter R. "Turbulence in Mortgage Markets: Implications for the Economy and Policy Options." CBO Testimony before the Joint Economic Committee, U.S. Congress. 19 Sept. 2007.

Bellwether Consulting LLC
P.O. Box 140, Montclair, NJ 07042
www.bellwetherconsulting.net
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