

Credit Troubles and the Reinsurance Market

October 15, 2008

HOLBORN

Credit Troubles and the Reinsurance Market

The last month has been astounding. AIG, largest insurer in the world by 2007 market value, is now operating under government control. The worldwide market has recognized well over \$800Bn in credit-related losses at financial firms. The five largest U.S. investment banks merged, failed or converted their charters. Overall stock indexes have fallen by as much as 25% from repeated shocks to market liquidity and confidence. The FDIC, Federal Reserve and Treasury have already extended over \$300Bn of credit and liquidity support. Through the intently-watched “TARP” bailout legislation the Treasury has authority to buy a further \$350Bn in distressed assets, with \$350Bn more available, subject to Congress’s veto. European governments have similar programs.

A number of reinsurers have taken credit charges, and we summarize these companies’ results (in Appendix A). This edition of Holborn Perspectives also looks to measure the overall amount of U.S. mortgage losses, and other causes of actual and reported losses to the credit markets. We offer our opinions on what to expect in the 2009 reinsurance market.

We estimate that the amount of credit losses booked to date are greater than the amount of mortgage defaults, even under a pessimistic view. The greater danger is that the economy will continue to decline into a general recession. We also believe that the amount of losses booked to reinsurers’ bond portfolios is at least as much as the losses they assumed from Hurricane Katrina.

What Just Happened?

There are several key causes. While these issues are individually significant, the speed and size of the decline depended on the combination of each factor:

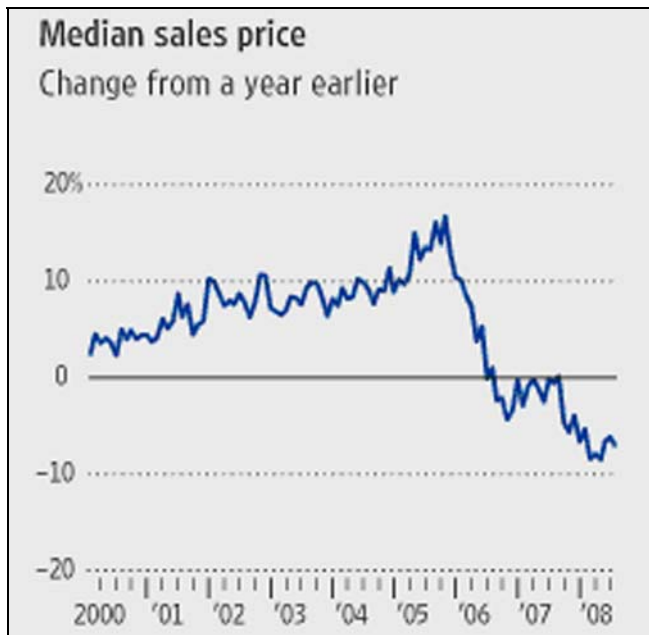
- Most home prices in the U.S., and many other developed countries rose rapidly from 2002 through the middle of 2006, in what is now seen as a classic “bubble.”
- There was an increase in speculative home building and buying with a short-term exit window, particularly in a few, limited areas of the U.S.
- Lenders more frequently offered back-ended payment terms, or “teaser rates.”
- Mortgage underwriting was relaxed, allowing lower credit scores (subprime), less disclosure (“liar loans”), higher loan-to-value ratios (“Alt A” mortgages), unreasonably optimistic valuations, and more second and subordinated loans, most prominently in 2005 and 2006. There was also some fraud.

- Loans were increasingly originated by brokers, not banks, and compensated on volume, not profitability.
- Increasing use of, and more complex forms of, mortgage securitization spread the risk through the market in more tradable forms (notably, Collateralized Debt Obligations or CDOs). This spread risk widely around the financial markets, but also insulated the original lenders from the loans' risks. Lenders, too, were now paid on volume, not profitability.
- Rating agencies assigned the highest credit ratings to pools of mortgage debt, even pools of pools, based on simulation models, by extrapolating from experience under prior (and tighter) mortgage terms and lending practices.
- Modern technology allows firms to instantly trade mortgage payment, interest rate and counterparty credit risks. News moves across oceans at the speed of e-mail 24/7/365, and prices react immediately.
- Recent trends in solvency regulation, financial reporting and rating agencies caused instability, where falling prices on a few limited trades immediately reduced reported asset values across the market, leading to losses and downgrades, triggering contractual obligations for increasing amounts of collateral, causing additional stress and in turn, further downgrades.
- Financial institutions sell credit enhancement products on each other, similar to Surety bonds, called Credit Default Swaps. These contracts transfer credit exposure around the market, with many firms' solvency now reliant on others'. AIG Financial Products was the largest seller of this product.

These credit losses reached the insurance market in several ways, in a series of rapid stages, mostly over the last few months. After home prices topped out in 2006, speculators and some buyers who had over-stretched found it impossible to either sell at a profit or refinance.

Low initial teaser rates stepped up, often after 12 to 36 months, and when the Federal Reserve increased interest rates from July, 2004 through 2007, adjustable mortgage rates increased and many borrowers fell behind, beginning heavily in 2007 and continuing today. This caused claims under Mortgage Insurance coverages, including at AIG.

U.S. Home Prices Peaked in 2006



Source: National Association of Realtors, as reported by the Wall Street Journal, September 23.

Next, CDO pools rapidly lost value in the layers most exposed to loss. While the debt initially kept investment-grade ratings, it traded at far less than face values. Under mark-to-market accounting, many financial institutions must immediately reflect the lower values. Swiss Re was one of the first reinsurers to report these losses. Many of the CDO pools' bonds were backed by Financial Guaranty insurers, who took large insurance losses as prices fell. Others were backed by Credit Default Swaps.

CDO pools had not been recorded on the balance sheets of many of the sponsoring banks, as they claimed that the credit risk had been passed to others. However, the banks often retained a liquidity commitment, and when these commitments were drawn down, the banks were required to consolidate the CDO's issuing entities (Special Investment Vehicles, similar to the SPVs for Cat bonds) onto their balance sheets. This increased their balance sheet assets and reported financial leverage, and further stressed their capital levels. Higher reported leverage contributed to a fatal bank run at Bear Stearns on March 17.

FNMA (Fannie Mae) and FHLMC (Freddie Mac) are (or were) large for-profit firms chartered by Congress to deepen the market in residential mortgages. They also acted as hedge funds with large positions in CDOs, whose declines have now wiped out their capital bases. Both firms were put under Federal conservatorship on September 7. Their stock is now nearly worthless and their bonds are down, as well. Many insurers, worldwide, held significant positions in these firms, now with large capital losses.

By the third quarter, credit problems were seen as affecting all major commercial and investment banks, and many insurers. The exposure to both CDOs and other institutions' debt is both large and obscure. No bank trusts another's balance sheet, and so bank loans and investments became increasingly expensive, scarce or impossible. This made it impossible to survive other bank runs and caused the failure or forced sales of Lehman Brothers (September 15), Washington Mutual (September 26), Fortis (September 28), Wachovia (September 29) and many others. These failures cost commercial paper investors large losses, and dried up that market, and the money market funds sector which invested heavily in it.

Insurers have large exposure to Lehman and Fannie Mae in particular, but also to other failed firms. Even the surviving banks' debt trades at a deep discount, causing realized and unrealized capital losses for insurers' bond portfolios. Falling stock prices also cause capital losses.

At the same time, Lehman's and others' failures, and lower prices on even some of the highest-rated tranches of CDOs caused large losses on most or all Credit Default Swaps (AIG reportedly lost \$20Bn on coverage provided to Goldman Sachs alone). The losses and collateral calls impaired AIG's capital, and left them little time or flexibility to raise more.

How Big is the Problem?

The financial distress so far has all come out of house prices: mortgage lenders, mortgage insurers, guarantors of mortgage bonds, owners of mortgage bonds and credit swaps on the players impaired by these asset classes. Dean Glenn Hubbard and Prof. Chris Mayer of Columbia Business School estimated that the total amount of negative equity on U.S. homes is currently \$593Bn (WSJ on Oct 2nd, and see Holborn's analysis in a following section). We estimate that write-offs, financial failures, tax credits and public funding on guarantees in the U.S. markets alone have now exceeded one trillion dollars (\$1Tn) (see Appendix B). Indirect effects from the reduced availability of credit and the dislocations of failed firms and their employees may add a second wave of problems. Although outside of the housing and financial sectors, the economy has actually been doing fairly well, so far. The U.S. has not yet had two down quarters in a row, which would define a recession. Regulators have done a good job in preventing a disastrous "contagion" to healthier industries, so far.

Mark-to-market accounting had accelerated the recognition of the pain. Further, contractual terms that require increasing collateral when firms are downgraded add more instability to the financial system. The current trouble is at least as much about **market confidence** as it is **credit markets**.

Here's some context on the size of a \$1Tn loss in the U.S. economy:

- \$1Tn is the total worldwide annual P&C insurance premium, or the worldwide reinsurance industry's total assets; clearly, that is a big number.
- But, \$1Tn is only about a month's after-tax income per U.S. worker. A loss of this size is equivalent to each worker delaying retirement by a month or two.
- The S&L crisis in 1990 cost over \$150Bn, and represented then a bit under 3% of our GDP at the time. On our current \$14Tn economy, \$1Tn is relatively bigger, at about 7%. A \$600Bn problem in mortgages alone would be a bit over 4%. 1990 was following hard on the 1987 crash, the Latin debt problems of the 80's, and two oil shocks. In many ways we are better prepared now than we were then.

Where's the Bottom?

The costs that the U.S. markets and Treasury have recognized are already greater than foreseeable U.S. mortgage foreclosures. Financial theory tells us that the final cost of a loss doesn't change when it is transferred from one firm to another (or even to a third or fourth firm). So, the bottom is now in sight, at least for the first wave of direct losses from the housing and mortgage markets. We believe that the reasons why the booked losses are greater than the fall in the value of mortgaged homes include (in increasing importance):

- Banks' costs of foreclosure and the maintenance of mortgage properties is in addition to the current market position of the properties;
- Costs have been booked in the wrong places. Some firms have over-reported their eventual mortgage losses, and others have not yet fully recognized the costs;
- Other types of debt, such as car loans, credit card receivables and commercial paper have been affected, as well;
- Critically, the insolvencies, forced sales, reduced liquidity and general climate of fear have caused damage to other non-mortgage businesses. The greater concern is systemic damage to the overall economy, caused by reduced credit availability restricting construction and auto sales, and by other changes in purchasing and supplier relationships, as non-financial firms, too, are forced to deal with tighter credit.

However, we believe that a large part of the current problem, perhaps, the dominant share of the problem, has been caused by the new emphasis on mark-to-market accounting. Since international financial institutions now trade across boundaries, and the amount of outstanding trades can be

multiples of firms' current capital, their results are closely linked. Now, in a time of distress, when few mortgage-based products can be sold, price information is limited. As a result, when a firm sells an underperforming asset, that single data point has an immediate effect on others' statements. In the case of derivative products, that fall in prices can be magnified many times over. This is true, even though a rational buyer might look through to the underlying mortgages, or even homes, and see a higher long-term value. We believe that the same losses have actually been reported over again, as mortgage insurance claims, CDO write-down, guarantees of CDOs, falls in the price of bonds, preferred stock and debt, and credit default swaps and bankruptcies.

Can U.S. Mortgage Losses Be Worse Than \$1Tn?

House prices can get worse (and probably will), but to get over \$1Tn in losses, the troubled part of the housing market has to include more than 40% of the country's homes, or the average loan had to start with negative equity, or house prices have to fall further, perhaps as much 30% below the average peak prices. Here is a simplified illustration why.

There are about 100 million owner-occupied residences in the U.S., and the average home sale price at the peak in 2006 was about \$250,000, so the value of all U.S. owned homes was about \$25Tn at that time. Not all homes are mortgaged, and many that are, were mortgaged a long while ago and since been paid down. The total amount of mortgage debt after amortization is less than \$15Tn (assuming 75% are mortgaged, 90% or less original loan to value, as required by the FHA, and that loans are refinanced on average every seven years.) A typical year's new loan origination is about \$2.5Tn.

A borrower with equity in a house who defaults doesn't cost the lender anything. So, we need to consider how much of that roughly \$15Tn has negative equity. On a countrywide basis, house prices have fallen by nearly 15% from their peak. But late 2008 prices are still higher than prices for almost all houses sold in 2004 or earlier, and even for many in 2005. The following table shows the amount of market price reductions before mortgages would go underwater, based on loan-to-value and year issued:

Earliest Year with Negative Equity

Original Ratio of Loan-to-Value					
Fall in Market Prices from Peak	80%	85%	90%	95%	100%
Peak-10%	None	None	None	2006	2005
Peak-15%	None	None	2006	2005	2005
Peak-20%	None	2006	2005	2005	2004
Peak-25%	2006	2005	2005	2004	2004
Peak-30%	2005	2004	2004	2004	2003
Peak-35%	2004	2004	2003	2003	2002
Peak-40%	2004	2003	2002	2002	2002

Note: Assumes 6% rate and payments are current.

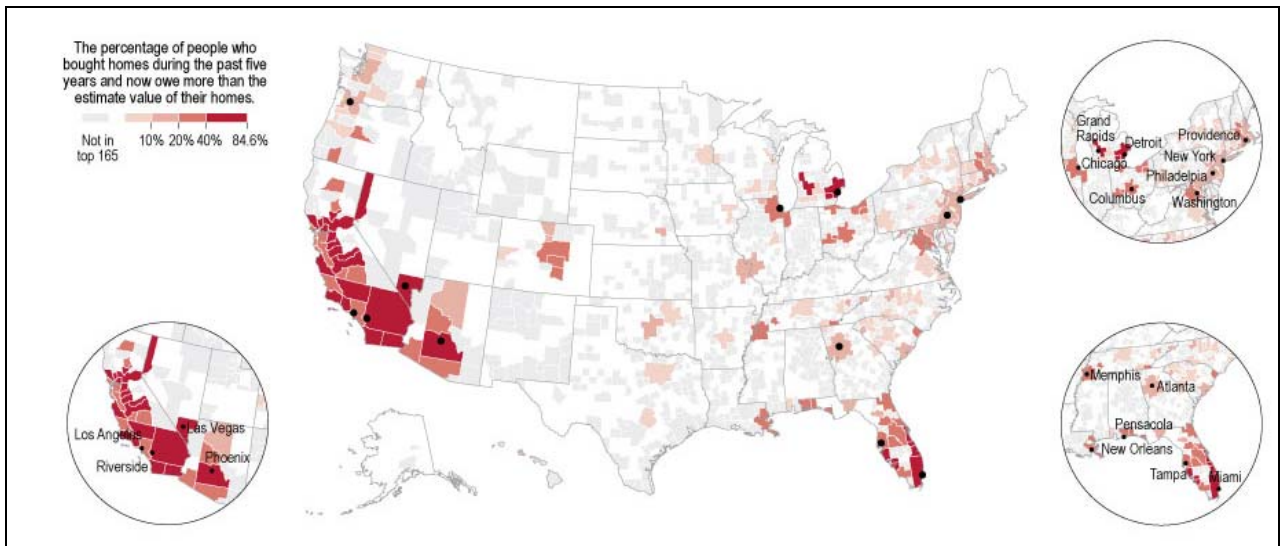
Mortgage products became much more aggressive in 2005, and then tightened by mid-year 2007. Low “teaser” initial rates and high loan-to-value ratios had been common. Problem mortgages are largely from that two-and-a-half year span, with the worst losses coming on loans issued in 2006. 2006 had the highest home prices, loosest mortgage terms and less time for amortization than from earlier years. These years also had the highest origination volumes, so they may be more than half of the outstanding mortgage amounts, but still likely well less than \$10Tn. The following table shows adjusted loan-to-value ratios for 2006 mortgages, based on current market prices and original terms:

Current Ratio to Value, for Loans Made in 2006

Original Ratio of Loan-to-Value					
Fall in Market Prices from Peak	80%	85%	90%	95%	100%
Peak-10%	85.4%	90.7%	96.0%	101.4%	106.7%
Peak-15%	90.4%	96.0%	101.7%	107.3%	113.0%
Peak-20%	96.0%	102.0%	108.0%	114.0%	120.0%
Peak-25%	102.4%	108.8%	115.2%	121.6%	128.0%
Peak-30%	109.8%	116.6%	123.5%	130.3%	137.2%
Peak-35%	118.2%	125.6%	133.0%	140.4%	147.7%
Peak-40%	128.0%	136.1%	144.1%	152.1%	160.1%

Looking at national averages, with average initial loans of 90% or more of values, and the current 15% decline in house prices, the average 2006 loan is not far underwater. But the problem is localized and there is a correlation between previously overpriced homes and aggressive mortgage structures. The latter helped drive the former. Foreclosures are far worse than average in the inland valleys of California, and in Arizona, Nevada and Florida. (There are also high defaults in Michigan, driven by auto industry issues, and we should expect them in the New York City area from bank and investment firm cutbacks.)

Homeowners “Underwater”: Concentrated Problem Zones



Source: “Housing Pain Gauge,” Wall Street Journal, October 8.

A more realistic view is that house prices are currently down 30% in about 25% of the market, and 10% in other regions. (Moody’s estimates that only 1/6 of home loans are currently underwater). That puts the current loss now at a bit less than 25% of loan values, in 25% of the market, on \$10Tn (or less) of loans in the troubled block of 2005 to mid-2007 originations, or \$588Bn to date (quite close to Columbia’s Hubbard and Meyer’s \$593Bn). Not every borrower with negative equity will default. Many don’t want to damage their credit rating or simply don’t want to move. Others aren’t aware that they have negative equity. On a practical basis, habit and rising incomes make it easier to continue to pay. We expect less than \$500Bn in eventual U.S. mortgage defaults at current prices.

	National Average Price Decline	Peak Zone Price Decline	Original Loan to Value Ratios	Current Loan to Value Ratios	Peak Zone Pct. of Total	Total Negative Equity (\$Bns)
Current Levels	15%	30%	90%	123.5%	25%	\$587.5
Stress Test Cases						
25% Average Fall in Values	25%	40%	90%	144.1%	25%	\$1,102.5
100% Original Loan to Value	15%	30%	100%	137.2%	25%	\$930.0
40% of Homes in Peak Zone	15%	30%	90%	123.5%	40%	\$940.0

Note: Assumes all loans’ price declines are from 2006 peak levels; negative equity on 2005 and 2007 loans is less

Reinsurance Market Observations

By 2007, reinsurers had adjusted to new increased capital requirements, and the worldwide reinsurance market was operating at a relatively low premium-to-surplus leverage, perhaps the lowest ratio ever. Low leverage led to falling prices, especially for classes of reinsurance that are particularly capital-intensive, such as Property Catastrophe and Casualty Clash. Falling prices for stocks and bonds have since reduced reinsurers' capital, especially in Europe. Under international financial reporting standards (IFRS), European companies mark their entire bond portfolios to market. We believe that caused a reduction in reinsurers' capital comparable to Katrina.

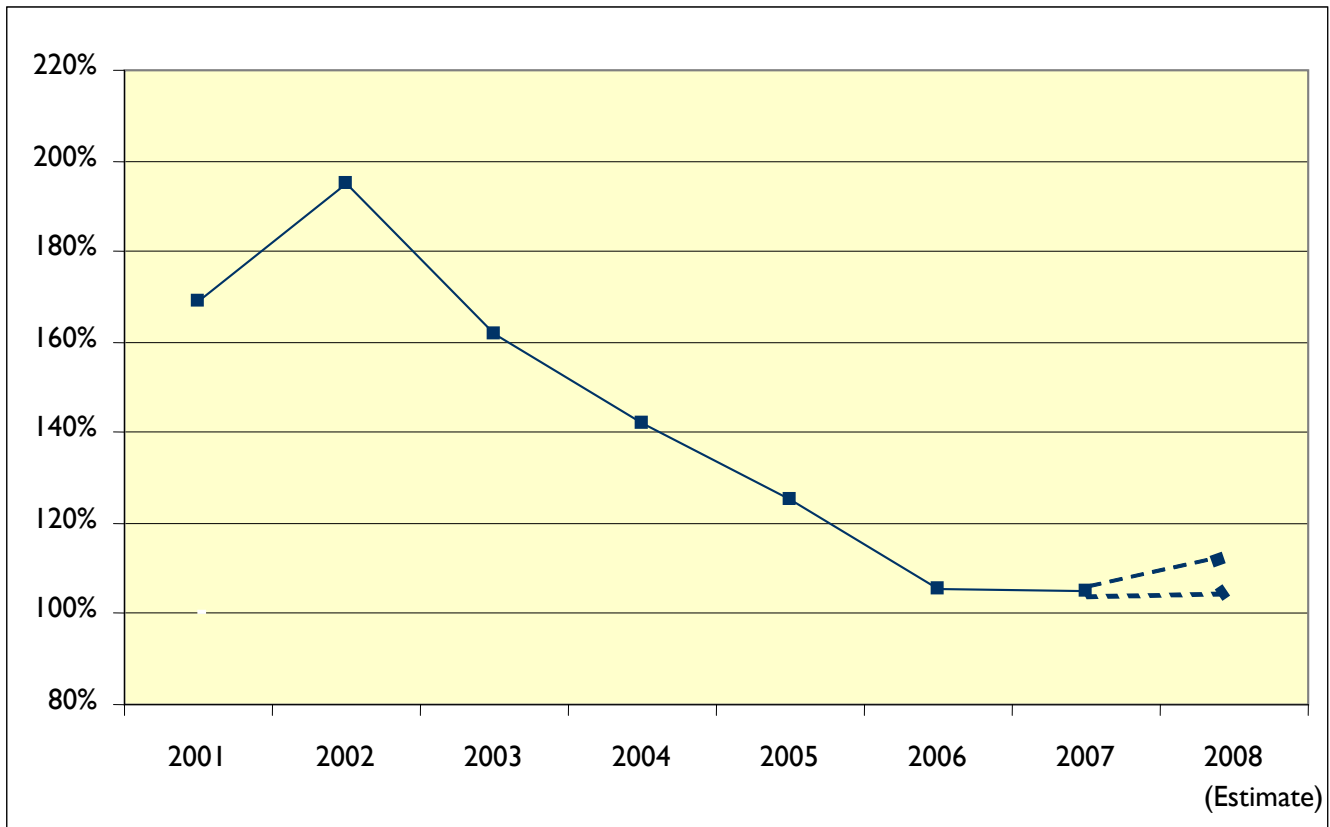
Reinsurers' Asset Exposures are Large Relative to Capital

	Total Assets	Net Worth	Financial Leverage
U.S. Reinsurers	\$50.36	\$21.01	2.4x
Offshore U.S. GAAP Reporters	\$244.84	\$65.39	3.7x
IFRS Reporters	\$688.28	\$78.81	8.5x
Lloyd's Syndicates, not included above	\$107.06	\$28.70	3.7x
Worldwide Market	\$1,070.54	\$193.91	5.5x

Notes: \$Bn. U.S. reinsurers are RAA members, and not members of a foreign reinsurer group in the study. Other groups are included if they, like Lloyds, predominantly provide reinsurance and other excess placements. Excludes Berkshire Hathaway and Equitas.

We do not expect lower asset values, insurance losses directly related to credit markets (through mortgage, guarantee and professional lines) or the heavy level of worldwide Property losses in 2008 to bring leverage ratios back to 2006's hard-market levels. However, we expect many reinsurers to have reduced capital levels at this year-end, and as a result, some will lower their per-program capacity.

Reinsurance Market Gross Premiums to Capital



Source: *Holborn Study*

Reinsurers and ceding companies will keenly notice the increased volatility in their asset prices and earnings. This may adjust risk appetites, and cause some changes in pricing and capacity. If so, this would be a market movement that is driven by earnings, rather than leverage, which has not been a typical pattern.

We also expect to see some uncertainty and congestion in the January 1 renewal market. AIG is a substantial buyer of reinsurance, and their programs often set the mood for year-end renewals. We expect some AIG programs to move, either due to the sale of operations, or from staff and MGA's finding another platform. In addition, some reinsurers may take a "wait and see" attitude and look for a better view of the overall market before committing. Some January 1 quotes were issued in September, but a few reinsurers are still waiting until later in October to finalize their 2009 plans.

Letters of credit will be more expensive and scarcer, reducing some offshore reinsurers' appetites, even for their support of on-shore affiliates.

As recent downgrades of issues exposed to Lehman show, Cat bonds as structured today depend on the stability of LIBOR rates and available swap and LOC counterparties. While other structures are possible, Cat bonds have now become more costly.

Regulatory Changes

Following the Treasury and Fed's commitment of now over \$120Bn to AIG, the administration, many legislators and some trade groups have called for an increased Federal role in the regulation of insurance, notably an option for Federal charters. Regardless of any new Federal role, we expect increased regulation and oversight at all levels of government. Holborn recently published another whitepaper on Federal involvement in insurance, which details many of the current proposals that will be reconsidered by the next Congress.

New York has issued new regulations, re-classifying Credit Default Swaps as insurance, reducing the allowable amount of leverage, and simplifying the structure of CDOs that insurers may cover. This latter change eliminates coverage on CDOs that themselves include CDOs, which had created a condition like the London market "spiral" of excess coverage on excess coverage.

While having collateral from your trading partners is good, getting extra collateral after an event adds instability to the entire system. This is required in the EU for banks under the Basel rules and for insurers under the new Solvency II directive (see Appendix C), and it is also included in the NAIC reinsurance security proposal. This unintended hazard will likely be discussed again by policymakers.

Comments on Insurers' Risk Management

A common observation is that financial institutions today are moving toward a "supermarket" approach in order to survive. Bear Stearns, Lehman and Merrill Lynch didn't have both commercial and investment banking operations, while Citigroup did and survived; Bank of America was the rescuer of Merrill; and Goldman Sachs and Morgan Stanley reorganized as commercial banks.

Diversification is a strength in times of stress, but another lesson is that commercial banks and insurers are more tightly regulated than investment banks. They were restricted from some risky operations and had more conservative asset valuations. The insurers who had losses (AIG, Swiss Re and XL) sustained them in financial products and derivative operations they had seen as diversifications. Their core businesses kept strength and value. As insurers think about their ERM practices, they may want to consider some simple conclusions from others' mis-steps:

- **"Stick to your knitting."** Insurers that ventured into businesses they didn't understand had the biggest problems. Even the two areas of the insurance market that had widespread problems: mortgage insurers and bond guarantors; both failed when they tried to use their proven skills on new products that they didn't understand as well. While successful

diversification reduces an insurers' risk by reducing correlation, it is hard to know what areas are correlated when. In times of great market stress, new patterns of correlation appear.

- **“Manage your leverage.”** The banks that failed tended to have higher leverage ratios, and thus had less flexibility than the ones who found merger partners. While banks have much higher financial leverage than insurers (as high as 30 or 40 to 1, measured as assets to equity), leverage still matters to insurers. AIG was over 13 to 1 in January. 5 to 1 is a more typical ratio for P&C insurers.

Besides their financial leverage, insurers also take a leveraged position based on the amount of coverage they provide. Insurers have always limited the amounts that they will insure. Line limits and aggregate accumulations are two ways to look at this issue. Investment banks took CDO positions that were multiples of their capital. AIG did the same with credit swaps (\$450Bn in limits on \$70Bn of capital, over 6x). Leverage (in assets or premiums) can quickly turn from a financial advantage to a survival threat, even if it has been built up gradually.

- **“Risk models and financial ratings are just opinions.”** Rating agencies and modelers are diligent and objective, but they are also susceptible to market fads and bubbles. CDO bonds were highly rated before their collapse. Ratings and models are an important relative measure of strength, but they are not promises. They evolve as their authors learn from events, so they do not mean the same things at different dates. Understanding market players' behavioral economics is as important as relative metrics. Beware when others appear to report strong returns based on risk models that do not consider the chance of sudden market distortions.
- **“You only get what you pay for.”** Lenders and mortgage brokers were only paid to produce loans, not profitable loans. Consider the incentives of market trading partners, such as MGAs and TPAs.
- **“Cash is king.”** Complex and illiquid assets cause problems in challenging times. Buying long-term assets with short-term funding is unstable and dangerous, and can lead to selling into a distressed market.
- **“Listen to your examiner.”** Fair and informed solvency regulation brings an important degree of objectivity to management's internal views. Regulated banks and insurers have fared better than their unregulated holding companies. The new Basel and Solvency II standards for international solvency management rely too much on firms' internal assessments.
- **“Small premiums can bring big risks.”** Insurers need to see and understand the potential downside on all of the risks that they take, even in small operations, or with low premiums. AIG never had as much as 1% of its revenue from Credit Swaps, yet that cost them control of their company.

Appendices

- A Reinsurer Results and Ratings
- B. Market Charge-offs through October 10th
- C Accounting Standards for Financial Institutions
- D. For More Information

A. Reinsurer Results and Ratings

American International Group

AIG is predominantly a direct insurer, but does assume some reinsurance, as well. AIG, Inc., the parent company of the group, has large reported, and some as yet still-unreported, losses from mortgage insurance, credit swaps and CDOs, although the P&C insurance operations remain profitable. Without raising capital, AIG would have been downgraded, and could not provide collateral required under the swap agreements. The collateral calls threatened the parent company with bankruptcy, although not the insurance operating companies.

Prior to the Federal loans, NY Governor Patterson and the Insurance Department had authorized the insurance operations to loan \$20Bn in high-quality assets to the holding company. That loan would have moved credit exposure risks into the insurance operations. AIG has announced asset sale plans to redeem its Federal loan. They plan to retain most of the P&C operating companies.

On September 15th, A.M. Best lowered the financial strength rating to “A” from “A+,” as “the lack of liquidity at the holding company level and management’s need to secure funding options are not representative of financial stability.” At the same time, Standard & Poor’s lowered the financial strength rating to “A+” from “AA+” on most subsidiaries. The Standard & Poor’s ratings remain on CreditWatch with negative implications.

Market Value (October 10)	Total Assets (July 1)	Book Value (July 1)	Financial Leverage
\$6.43Bn	\$1,049.88Bn	\$78.08Bn	13.4x

GMAC Re (Motors Insurance Company)

Motors Insurance was founded by General Motors to sell credit and warranty insurance on GM vehicles, and insurance for GM dealers. It also has reinsurance operations that trade as GMAC Re. General Motors Acceptance Corporation (GMAC) is the finance arm of GM and the parent of Motors Insurance. In addition to financing and insuring cars, GMAC entered the mortgage business through an operation known as ResCap. ResCap originated home loans and issued CDOs, and its bonds are now rated in the “B” range by Standard & Poor’s. As both ResCap, and the ultimate parent GM, faced troubles, GM sold a 51% interest in GMAC to Cerberus, a hedge fund, in November, 2006.

As ResCap’s troubles mounted, and GMAC’s ratings fell, GM and Cerberus took action to protect the claims-paying ratings of Motors Insurance. In July, GMAC divided the common stock of Motors Insurance Company into two separate interests. The voting control interest was distributed up to GM and Cerberus. The profit participation interest remains with GMAC. The transaction was approved by the Michigan Insurance Department, Motors’ domicile, subject to additional restrictions on dividend payments. The intent is that if GMAC should ever be liquidated, creditors would not have any control over Motors Insurance Company, and would not be able to withdraw dividends or other assets. This plan has not been legally tested before.

GMAC Re has agreed to provide certain reinsurance clients with collateralized trusts to secure premiums and losses, including IBNR. These trusts are distinct from the types of collateral that are provided by off-shore reinsurers, and are not designed to protect statutory credit on Schedule F. A.M. Best has confirmed to Holborn that collateralized reinsurance has a smaller charge in the BCAR formulas than a receivable from an “A++” reinsurer would have.

On July 25th, Best’s affirmed Motors’ “A-” rating with negative outlook, as “the previous financial pressures... have been alleviated.” S&P does not rate Motors Insurance.

Lehman Re

On September 16, A.M. Best lowered the financial strength rating to “B” from “A-,” and on September 30, down to “F,” as Lehman Re is now in liquidation. Lehman Re a wholly-owned subsidiary of Lehman Brothers Holding Inc., and the decision of Lehman Brothers to petition for Chapter 11 protection led to the liquidation of Lehman Re under Bermuda law. Standard & Poor’s had not rated Lehman Re.

Partner Re and Renaissance Re

Under a contentious reinsurance contract with MBIA, Partner Re and Renaissance Re had interests in a Financial Guaranty reinsurer, known as Channel Re (Partner: 20%, Renaissance: 33%). Channel had assumed business from MBIA. During 2007, as bonds issued by CDOs began to fail, this business proved unprofitable. Both Partner Re and Renaissance Re wrote down their stakes in

Channel during January. The size of the loss was small relative to either companies' revenue or capital.

Both firms are rated "A+" by Best's and "AA-" by S&P.

	Market Value (October 10)	Total Assets (July 1)	Book Value (July 1)	Financial Leverage
Partner Re	\$2.62Bn	\$17.20Bn	\$4.41Bn	3.9x
Renaissance Re	\$2.26Bn	\$8.55Bn	\$3.37Bn	2.5x

Swiss Re

Swiss Re took over \$2Bn in write-downs on two CDOs earlier in the year, and a further \$254Mn in charges in the third quarter. The A.M. Best rating remains unchanged at "A+." On September 25, Standard & Poor's affirmed the "AA-" rating with stable outlook.

Market Value (October 10)	Total Assets (July 1)	Book Value (July 1)	Financial Leverage
\$11.26Bn	\$240.8Bn	\$22.8Bn	10.6x

(Converted Swiss Francs)

Transatlantic Re (TRC)

Transatlantic Re is 59% owned by AIG, but will likely be sold very soon. As only a partly-owned subsidiary, Transatlantic was not under Governor Patterson's asset loan proposal. Transatlantic is relatively well capitalized with over \$3Bn of surplus supporting less than \$4Bn of premium. TRC has advised Holborn about their relationship with AIG:

- TRC's assets are managed by AIG. However, Transatlantic has significant influence on the final investments. This was a third-party relationship, and AIG had to compete for the business. TRC has exposure to CDOs in their securities lending operation. However, there are only six issues that they have written down.
- Transatlantic does not write or reinsure any of AIG's financial products. Only 8% of Transatlantic's premium is sourced from AIG. They do not currently lead any AIG treaties.

- TRC has a limited exposure to AIG as a reinsurer, largely on business that TRC had fronted for AIG. They are relying on offsets and collateralization, and feel that they have no significant credit exposure there.

On September 15, A.M. Best lowered TRC's financial strength rating to "A" from "A+". Standard & Poor's made no recent change to the rating: it remains at "AA-," but with negative outlook.

Market Value (October 10)	Total Assets (July 1)	Book Value (July 1)	Financial Leverage
\$3.12Bn	\$12.06Bn	\$3.41Bn	3.5x

XL Capital

On August 7th, XL commuted its liabilities with a distressed bond insurer called SCA, which had been a 100% XL subsidiary until 2005 (known as XL Security Capital). SCA has \$155Bn in outstanding guarantee exposures, some of which are to mortgage-backed investment funds. The commutation was a complex transaction, and involved approvals from the NY Insurance Department (as SCA's regulator), the Bermuda Monetary Authority (as both XL and SCA's regulator), and various creditors, notably Merrill Lynch. The main pieces of the transaction were:

- XL paid \$1.775Bn in cash to SCA;
- XL issued eight million new shares of its common stock to SCA;
- XL relinquished its remaining 46% ownership interest in SCA;
- XL was released from its pre-IPO guarantee of SCA's liabilities, and its obligations under reinsurances of SCA, except for certain European infrastructure bond guarantees, which have a face amount of \$1.1Bn. SCA agreed to make "commercial best efforts" to commute these guarantees.

Contractually, this extinguishes all obligations from XL to SCA, other than the European guarantees. Of course, XL cannot be certain that bondholders will not pursue XL under non-contractual theories of liability.

At the same time, XL issued \$2.8Bn in new capital. The net effect of the commutations and novations was only a \$1.5Bn charge, since XL had already taken some non-cash charges against their exposure. The combined effect of the charges and capital raising is an equity **increase** of roughly \$1Bn during the third quarter at the corporate level. XL reports that they are now operating "comfortably within their risk management approach." The charges and capital were at the holding

company, however, and do not affect the reinsurance company, where the capital was essentially unchanged at approximately \$8Bn.

The four rating agencies reacted as XL expected, generally “affirmed with negative outlook.” XL was in constant negotiation with the agencies throughout this process. On August 25, A.M. Best affirmed XL’s “A” rating and assigned a stable outlook. Standard & Poor’s affirmed the rating on core operating subsidiaries and removed XL from CreditWatch with negative implications. The rating remains “A+,” but with negative outlook. XL’s stock price has fallen sharply in the last two weeks and it has pre-announced that its third quarter results will include at least \$1Bn in capital losses.

Market Value (October 10)	Total Assets (July 1)	Book Value (July 1)	Financial Leverage
\$4.34Bn	\$52.08Bn	\$8.77Bn	5.9x

B. Market Charge-Offs through October 10th

The economy has already recognized a very large amount of pain:

- AIG had a book value of \$95.8Bn on December 31, and is now valued well below \$10Bn. The market has written off nearly \$90Bn of value.
- When they were sold, Bear Stearns, Countrywide and Wachovia shareholders only received \$20Bn, erasing nearly \$90Bn of book value this year (based on Wells Fargo’s higher bid for Wachovia).
- Citigroup and Morgan Stanley are not in quite as bad shape, but their combined market values are now 40% below their beginning-of-year book values, over a \$65Bn reduction.
- Who knows what value Fannie’s and Freddie’s equity will finally have, if any. But unless they rebound significantly, the market recognized another \$65Bn of losses this year.
- The shareholders of Lehman, IndyMac Bancorp and Washington Mutual were wiped out, taking out over \$45Bn of book value.
- The six publicly-traded monoline bond guarantors had book values close to \$50Bn in 2006, and are now valued at less than \$6Bn.
- JP Morgan/Chase, CIT, GMAC and Bank of America have all taken multi-billion dollar charges, totaling over \$17Bn.

All in, that's over \$420Bn of reported GAAP book value that the market recognizes no longer exists. These companies (except perhaps GMAC) paid taxes and can report the losses against their prior gains. New IRS rules clarify that banks can also deduct prior loan losses against an acquirer's future income. In most cases, companies' charges were reported after tax benefits, which we estimate are worth over \$225Bn.

In addition, the U.S. public sector has extended over \$360Bn in financial support to firms facing losses from mortgages and other credit instruments, even before the TARP bailout plan enacted on October 3rd.

Public Funds Already Committed

Fannie Mae	\$100Bn
Freddie Mac	\$100Bn
AIG loan commitments	\$122.7Bn
Bear Stearns assets guaranteed to JP Morgan	\$29Bn
FDIC losses paid, January through September	\$10Bn (est.)
Total public support through October 10th	\$361.7Bn

Also, now essentially owning 80% of AIG, and 100% of Fannie Mae and Freddie Mac and having sold off most of Lehman, the Federal Reserve and Treasury have received over \$2Tn in non-mortgage assets, as well as on-going businesses that generated over \$50Bn in pre-tax operating earnings (EBITDA) in 2007. Their future profits are now available to fund any further mortgage losses at these four firms.

In total, there have been charges and other funding in the U.S. far exceeding \$1Tn, even before the October 3rd TARP bailout legislation.

Other countries have their own mortgage problems, but so far to a lesser degree, and many of them have taken on a relatively larger share of our losses. There have been charges of \$1Bn or more at Barclay's, CIBC, CS, DB, HSBC, IKB Industriebank and UBS, and in the reinsurance market, at Swiss Re now for over \$3Bn (after tax), and XL for \$2.5Bn (with no tax credit), totaling over \$40Bn. The worldwide equity markets have already reflected well over \$800Bn of pre-tax losses, at just the 36 firms we listed. There are many other entities that don't disclose losses, including government funds and pension plans. Fortis, Northern Rock, Bradford and Bigley, Dexia, Hypo RE, most of the banks in Iceland, and many others were at least partly nationalized, costing their shareholders most or all of their book values, and costing European taxpayers several hundred billion dollars more.

C. Accounting Standards for Financial Institutions

Mark-to-Market Accounting

Most companies report the values of their financial assets at current market values. Banks and insurers customarily reported the value of their bond portfolios at the amortized value of the purchase price, which provides a stable and consistent yield to maturity. (Stock investments are reported at market values).

U.S. standards have changed, and under FAS 157 and NAIC accounting principles, insurers now separate their fixed-income investments into three categories: held-to-maturity, available-for-sale, and trading. Held-to-maturity bonds are still amortized. Trading securities are reported at fair values with unrealized gains and losses including in earnings. Available-for-sale bonds are marked to market each quarter, with unrealized gains and losses excluded from earnings and reported in a separate component of shareholders' equity.

The SEC has authority to over-ride FASB standards for the financial reports of publicly-traded companies. The TARP legislation directs the SEC to re-evaluate the use of mark-to-market standards.

International Financial Reporting Standards

U.S. GAAP standards are used by all firms that issue stocks or bonds in the United States, including most Bermuda reinsurers. For many years, accountants, regulators and major multi-national firms, especially in Europe, have tried to develop a comprehensive, worldwide set of accounting standards as an alternative to U.S. GAAP. These IFRS standards are based on guiding principles, rather than detailed rules, as is the case in most local country statutory and GAAP standards today. There are many complex and uncertain issues involving accounting for the assets and liabilities of financial institutions, and in particular insurance companies. However, IFRS rules require that **all assets** be marked to market. This introduces a new degree of responsiveness and instability in the accounts of insurers who report under IFRS, at least in comparison to reporting under U.S. GAAP.

For a variety of reasons, including their long tenure, and exposure to pre-1987 liabilities, several prominent European reinsurers have much higher ratios of assets to premiums, and assets to capital, than do most U.S. and Bermudian reinsurers. The IFRS mark-to-market charges on their balance sheets this year are large and apparent. These companies' reduction in capital during 2008 from bond market price movements has often been far larger than their reinsured losses from Hurricane Katrina. For the reinsurance industry, we expect over \$35Bn of pre-tax mark-to-market adjustments in the third quarter.

This summer, the SEC announced plans to move towards IFRS reporting for all U.S. companies, initially as an option, but with GAAP figures to disappear from the U.S. financial markets by 2012. That change will be re-considered now, as directed by TARP.

Basel II and Solvency II

Basel II is the second of the Basel accords, which are international recommendations on banking regulations. It was published in 2004 to create an international standard for the capital that banks need. It attempts to accomplish this by setting up rigorous risk and capital management requirements designed to ensure that banks hold capital reserves appropriate to the risks of their lending and investment practices. Generally speaking, the greater risk to which the bank is exposed, the greater the capital the bank needs to hold. The intents are:

1. Ensuring that capital allocation is risk sensitive;
2. Separating operational risk from credit risk, and quantifying both through firms' internal models; and
3. Attempting to align economic and regulatory capital more closely to reduce regulatory arbitrage.

Solvency II is an updated set of requirements for insurance firms currently under final review by the European Parliament. The EU plan encourages the development of a single market in insurance, while securing consumer protection. There is currently a patchwork of national requirements. Solvency II will also be a risk-based system, as risk will now be measured on consistent principles, and capital requirements will depend directly on this. While Solvency I was aimed at revising and updating the existing EU Solvency regime, Solvency II has a much wider scope:

- To reduce the risk that an insurer would be unable to meet claims;
- To reduce policyholder losses in the event an insurer is unable to meet all claims fully;
- To provide regulators early warning so that they can intervene promptly; and
- To promote confidence in the stability of the insurance market.

Solvency II introduces a comprehensive framework for defining required capital levels and to implement procedures to identify, measure, and manage risk levels. Solvency II is somewhat similar to the banking regulations of Basel II. For example, Solvency II also has three main pillars:

- I. Quantitative requirements (for example, the amount of capital an insurer should hold);

2. Requirements for the governance and risk management of insurers, as well as for the effective supervision of insurers; and
3. Disclosure and transparency requirements.

Like Basel II, Solvency II is principles based, not rules based, and relies on insurers' internal risk modeling.

D. For More Information

Holborn Contacts

- John DiGregoria, EVP, COO and CFO
- David Harding, Reinsurance Security Specialist
- Paul Kneuer, SVP, Chief Reinsurance Strategist
- Frank Pierson, SVP, Chief Technical Officer
- Will Schwarz, Reinsurance Analyst

Holborn recently published another whitepaper on Federal Involvement in Insurance. Please contact Holborn at (212) 797-2285 or visit our website at www.holborn.com for more information or for reprints on these or previous Holborn Perspectives whitepapers.

About Holborn

Holborn is an independent reinsurance brokerage firm, offering advanced analytic tools, global market access and responsive account services to clients across the United States. The company was formed in 1920, making us one of the most experienced reinsurance brokers in the world. We are owned exclusively by our employees. This contributes to Holborn's stable client base and noteworthy ability to attract and retain talent.

© Copyright, 2008, Holborn Corporation
Permission to reproduce granted subject to attribution.