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# US MORTGAGE CRISIS: GLOBAL IMPACTS

### Dear Members:

The economist Paul Romer once said, "A crisis is a terrible thing to waste." Throughout U.S. history, adaptability has been a laudable attribute. Over the course of the 19th century, the country remade itself from an agricultural power into an industrial one. After the Great Depression, the US again exposed a new way of producing, working, and ultimately, living, creating a new era of prosperity.

Currently, we face a crisis cascade. Despite the vital role cities and real estate play in our economy, many of the world's cities were inefficiently developed and overly speculated at the expense of jobs and capital flow. Lack of transparency and standards in the industry was a major culprit. Manhattist was created with the goal of improving market knowledge and industry practices in the wake of the housing and financial crisis of 2006.

With the rise of multinationals, individuals are becoming more mobile between countries; globalization has finally flattened the world of real estate. We believe that in no other era than now is a critical examination of practices that affect diplomatic and global relations more vital. Innovation, after all, is what keeps cities vital and relevant.

Sincerely,



W. Danny Sedjati  
Chief Executive Officer

The following Manhattist team made a significant contribution to this report:  
Jason Risorto | Alan Li | Ashley Wilson | Chia-Hsin Chen | Cindy Chen

## INTRODUCTION

The financial crisis in the past year has caused issues on a global scale and in particular, the real estate market in the US has been hit hard. To gain a deeper understanding of the mortgage crisis, Manhattist conducted and produced this comprehensive report explaining the causes and impact of the housing bubble bust. The report explores the reasons of the crisis, including the history of the real estate market in the US and the policies that have been implemented throughout the years. It also includes the global impacts, how each region was affected and the measures the government have taken to prevent a future crisis.

## EXECUTIVE SUMMARY

Over one year out of the financial crisis caused by the bust of the US housing crisis, it is clear that the impact has shifted global economies and capital markets. Only by understanding the roots, causes and aftereffects of the crash in the US, can better policies and practices be implemented. Through this report, Manhattist seeks to comprehensively explain the forces responsible for the economic crash in the US, and how the financial downturn has reverberated internationally. As the world moves forward with recovery efforts, relationships built upon transparency and comprehension will be the ones that succeed.

The housing boom began in 2000, when stock prices began to decline and investors turned to the real estate market. House prices sharply increased all over the country, and by 2004, homeownership increased to a record high of 69.2%.<sup>i</sup> According to Robert Shiller, an

Economics Professor at Yale, a spike of this magnitude was the first in modern US history (since at least 1890).<sup>ii</sup> Many factors contributed to this peak. At the beginning of the decade, high consumption and low saving rates in the U.S. contributed to large amounts of foreign money flowing into the country.<sup>iii</sup> The inflow, combined with low interest rates, resulted in easy credit conditions, and multiple types of loans were easy to obtain, fueling a large growth in both housing and credit. This culture of homeownership was also pushed by the Bush administration. Lawrence Lindsey, Bush's chief economic advisor said, "No one wanted to stop that bubble. It would have conflicted with the president's own policies."<sup>iv</sup> Because the bubble had such a destabilizing effect in international economies, Manhattist explains its causes, why predictions were not made by those in the industry and what can be expected of a reform.

## US REAL ESTATE : HISTORIC ROOTS

*“After the warm and fuzzy glow of “flexible underwriting standards” has worn off, we may discover that they are nothing more than standards that led to bad loans. Certainly, a careful investigation of these underwriting standards is in order. If the “traditional” bank lending processes were rational, we are likely to find, with the adoption of flexible underwriting standards, that we are merely encouraging banks to make unsound loans. If this is the case, current policy will not have helped its intended beneficiaries if in future years they are dispossessed from their homes due to an inability to make their mortgage payments. It will be ironic and unfortunate if minority applicants wind up paying a very heavy price for a misguided policy based on badly mangled data.” – Stan Liebowitz*

Homeownership and mortgage reform have been political fodder for many decades. All politicians at all times seem to be in favor of homeownership; it has been highly associated with American values, and indeed, there can be many positive lifestyle effects. For years, Government Sponsored Entities such as Fannie Mae and Freddie Mac acted as stringent leaders in the mortgage and housing industry, setting the standards and tone. By 2002, however,

investment banks were also acting as mortgage lenders, and the Bush administration was pushing heavily for increased minority and low-income homeownership. By examining the historical forces at play in the US political and economic system, Manhattist sets the context for understanding the 2006 downturn and evaluation for current reforms.

## INTRODUCTION OF GOVERNMENT INTERVENTION

Before the enormous wealth increase of the twentieth century, homeownership in the U.S., according to the Census Bureau, stood at 47 percent (compared to 66 percent in 2000), and there were limited government leadership or management.<sup>vi</sup> The government first became involved when mortgage process froze during the Great Depression as there was a significant rise in foreclosures and banks were unwilling to lend money to jobless individuals. Interest rates went as high as 50% and mortgages were due in as short as 2 years. Lenders were nervous about collecting balances and often requested balances paid in full when the mortgage came due instead of offering a refinance.

The 1932 presidential election brought change into the process with the introduction of stimulus

efforts to revitalize the lending process. Roosevelt's office brought in a philosophy of a more consumer centered economy. They set out to rekindle the financial markets by simplifying the home buying process and introducing a number of other institutions to increase employment. Under these new laws, there was an influx of significant supervision in the securities and banking industries. This revolutionized the way mortgage loans were structured and were made available to American investors. Although homeownership in the 1930's steadily declined until World War II, Roosevelt's office made a considerable impact on decreasing foreclosures.

## FEDERAL HOUSING ADMINISTRATION AND FANNIE MAE

Further legislation was passed in 1934 where the Federal Housing Administration (FHA) was established to insure mortgage lenders from default losses. According to the U.S. Department of Housing and Urban Development, the lenders

held less risk because the FHA offered to pay a claim to the lender in the event of a homeowner's default.<sup>vii</sup> With the backing of these loans, stricter standards in lending were enforced to prevent widespread defaults. Loans had to meet certain standards determined by

the FHA to qualify for this insurance. Once the risk had been taken away and with added regulation, lenders were more willing to give people mortgages. Drifting away from previous standards, the FHA wanted to increase the amount of home ownership and worked to develop the 30 year fixed rate loan program which provided lower payments and more stability in the housing markets. These FHA mortgages were typically aimed towards lower income buyers because of limitations on loan size built into the program.

**T**he changes in the mortgage lending process were significant but not sufficient enough to provide adequate lending that the market demanded. Many banks did not have enough free capital on deposit to lend out to the glut of hopeful property owners, and local lending practices and interest rates made the lending process complicated. In 1938, the government stepped in once again and established the

Federal National Mortgage Association or Fannie Mae. This institution's mission was to purchase FHA insured loans and to sell them as securities to the financial markets.<sup>viii</sup> Essentially, this created a secondary mortgage market by pooling mortgage lending funds together. What these government backed institutions were able to accomplish was the flattening of lending standards across the country, providing balanced lending practices, underwriting guidelines, and a centralized source for money, interest rates, and loan terms. This new source of funds came with more restrictions in particular, regarding banks selling their loans on the open markets. These institutions were under the close supervision of the government and were designed to prevent a failure of the housing market and financial system as a whole. Despite stricter lending standards, there was still a significant boom in housing as veterans returned from war.

### INTRODUCTION OF “FREDDIE MAC”

**W**ith their return, the Veterans Administration was introduced in 1944 to address the needs of those looking to obtain funding who had returned home from combat. Previously a larger down payment was needed and stricter lending standards, but this was the beginning of the no money down mortgage which is questionable in terms of stability in lending standards. During this period, many women stayed in the workforce after the war and began contributing to a two income family which increased the demand for larger homes and mortgages.

**I**n order to address the continual increase in home ownership and mortgages, the Federal Home Loan Mortgage Corporation or Freddie Mac was chartered in 1970. According to

Freddie Mac, their “mission is to provide liquidity, stability and affordability to the housing market.”<sup>ix</sup> These were three major concerns in the housing market at the time which needed to be addressed. In order to provide stability, Freddie Mac would retain a portfolio which was aimed to play an important role in stabilizing the supply of money for lenders, making the home loans new homebuyers were demanding available. Another area that was addressed was affordability by financing low and moderate income families. The goal was to increase the amount of home ownership in America. To address liquidity, they provided a stable supply of money to lenders across the country to make loans.

## GOVERNMENT SPONSORED ENTITIES

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**1992:** Federal Housing Enterprises Financial Safety and Soundness Act mandated that the GSEs increase their acquisition of primary-market loans made to lower income borrowers shift from FHA-insured mortgage loans to subprime mortgage loans among low income households in the US and the widespread issuance of subprime mortgage backed-securities by investment banks during the first-half of the decade

**October 31<sup>st</sup>, 2000:** The US secretary of Housing and Urban Development issued affordable housing regulations for Fannie Mae and Freddie Mac during the years 2000 – 2004 that included increased goals for purchasing residential mortgage loans to low income households

**2001:** To meet the goals, Fannie Mae & Freddie Mac increased purchases of privately issued AAA-rated tranches of sub-prime mortgage-backed securities.

As a response to demand, mortgage banks amplified their extension of subprime mortgage loans, and investment banks placed these loans into subprime mortgage-backed securities

**2006:** Together, these government sponsored entities issued 40 percent of the mortgage backed securities on the market. In addition to buying and selling securitized loans on the secondary market, Fannie Mae and Freddie Mac purchase conforming mortgages.

## THE BEGINNING OF SECURITIZATION

Government involvement in the mortgage underwriting process began during the 1970's due to accusations of discrimination in the lending process. In 1975, Congress passed the Home Mortgage Disclosure Act to analyze information about mortgage applications by mandating the release of detailed information on lending applicants in order to monitor equality. Further efforts were taken under the Community Reinvestment Act of 1977; financial institutions were required to conduct business which according to the Federal Financial Institutions Examination Council will "help meet the credit needs of the communities in which they operate." These policies helped to prevent banks from targeting certain races and with the incorporation of compliance scores, banks aimed at providing fair lending practices.



## DEVELOPMENT OF SECURITIZATION

Over the course of the next few years, investment banks also realized that by creating an investment vehicle was developed which would pool together mortgages depending on variables such as credit risk, location, and interest rates which were transferred to cash flows to investors, they could profit off of increased mortgages. This method became known as securitization and has since been backed by a myriad of other asset classes as well besides mortgages. Previous to securitization, banks would issue loans to worthy borrowers and collect the cash flows of the loan until maturity. Recently there has been a large shift in the amount of mortgages lenders hold on their books. Over the course of the last 30 years there has been a significant influx of reselling mortgages to a third party such as government sponsored entities or private financial sector institutions. Now it has become typical to have the third party package mortgages with other similar ones and sell them to investors for a premium. The institutions which provided the funding of the loans are typically many steps removed from the originators in today's markets.

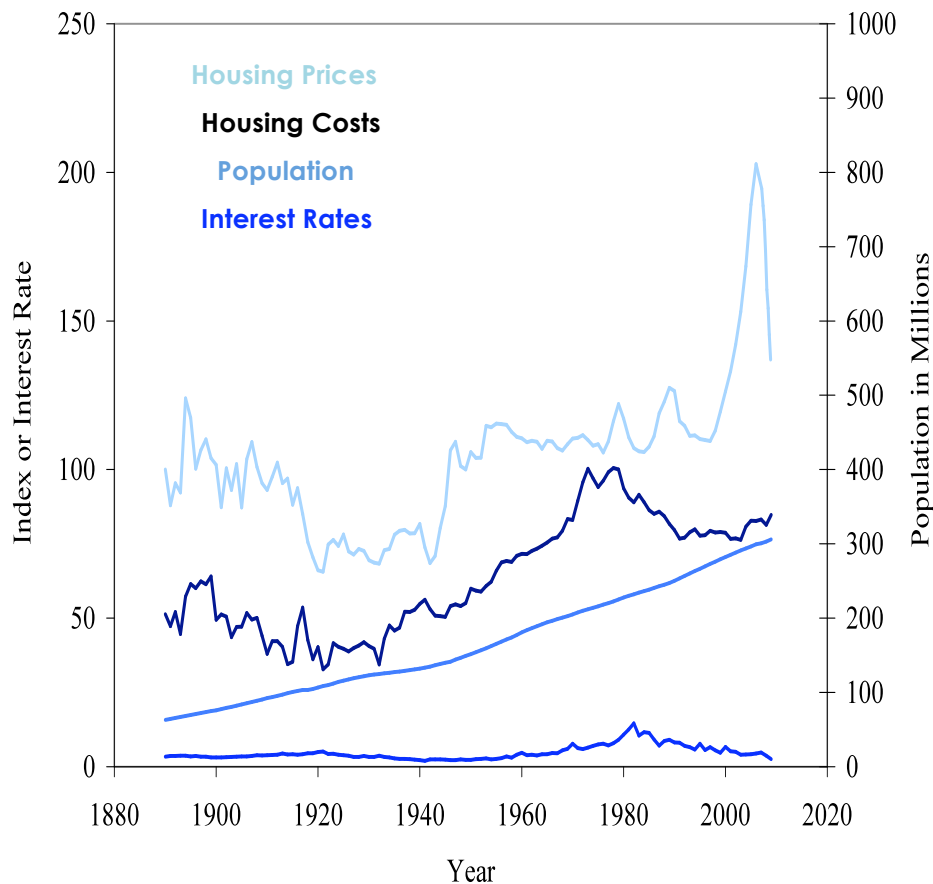
**S**ecuritized mortgage backed securities were composed of mortgage loans that were grouped as a bond and whose payments are based on the collection of monthly mortgage payments from the individual mortgages. Previous to the recent financial turmoil, some of the major companies of the private mortgage backed security market included Lehman Brothers, Countrywide Financial, and Wells Fargo. These three were among the top issuers of mortgage backed securities in 2006.

**T**he process has become increasingly complicated with the incorporation of derivatives and it addressed Banks desires to issue more loans and keep up levels of capital although investors added leverage and with it risk. The process allowed individual investors and institutions to purchase portions of these loans on the open markets. This method of securitization includes the origination of the loan which is then pooled with other similar loans and later issued as an Asset Backed Security. Instead of paying investors fixed coupons and principal, it pays out the cash flows from the pool of mortgages which are set up to be sufficient to cover interest payments due on the bonds along with fees from bond servicers and financial institutions. The securitized bonds were separated into three categories or ratings that would differentiate the quality of the loans which include prime, subprime, and Alt-A loans. Prime loans were the highest quality of loans and were supposed to be the safest ones to invest in while subprime involves loans made to individuals with more questionable credit histories and

increased risk. Alt-A loans had higher risk because of the uncertainty involved with the borrower's history and they have been increasing in the amount issued adding instability to the mortgage backed security market.

**I**n the United States, most mortgage backed securities had principal and interest payments guaranteed by government sponsored enterprises, Fannie Mae, Freddie Mac, or Ginnie Mae. The GSE's were sponsored by the US Treasury which intended to provide stability in the markets. While Ginnie Mae was created by Congress, according to Reuters, Fannie Mae and Freddie Mac also have agreements with Congress to support the housing market, but are owned by shareholders.<sup>x</sup> These secondary market lenders were highly regulated and would later suffer significant losses as a result of a downturn in the real estate market.

**T**his structure of obtaining funding allows investors to be the ones who will eventually fund the loan to the homeowner's. In 1993 the amount of mortgages outstanding that were converted into private mortgage backed securities made up 50 percent of the loans outstanding. In 2006, this percentage increased the share of private mortgage backed securities compared to total mortgage debt outstanding to 56 percent.<sup>xi</sup> Ginnie Mae guaranteed the repayment of principal and interest on 4 percent of the total amount of mortgage backed securities issued in 2006.



## THE CRISIS : FROM REAL ESTATE BUBBLE TO BURST

Between 1997 and 2006, the average price increase of the typical American house was 124%.<sup>xiii</sup> From 1981 to 2001, the national median home price ranged from 2.9 to 3.1 times the median household income. This ratio rose to 4.0 in 2004 and 4.6 in 2006.<sup>xiv</sup> In the second quarter of 2006, the housing market began to collapse. According to the Heritage Foundation, “The

collapse of the subprime mortgage market in late 2006 set in motion a chain reaction of economic and financial adversity that has spread to global financial markets, created depression-like conditions in the housing market, and pushed the U.S. economy to the brink of recession.”<sup>xv</sup>

## NEW INVESTMENT VEHICLES

By the end of 2006, the housing market was a far different scene from that in the beginning of 2006. Before the housing fall, homeowners and real estate agents were not the only ones that realized the potential profitability of the subprime mortgage market. Commercial and investment banks entered the market and formed the new

alternative banking industry, which was booming by 2006. As Freddie Mac and Fannie Mae started to extend their loans to lower-income households, investment banks started packaging these loans into structured debt securities, such as mortgage-backed securities, collateralized

debt obligations (CDOs), and collateralized mortgage obligations (CMOs).

These new inventions can be partially attributed to President Bush who urged corporate America to “work to make America a compassionate place,” and they responded with too-good-to-be-true teaser rates and interest-only loans that were sold to investors.<sup>xvi</sup> Additionally, many believe the repeal of the Glass-Steagall Act

fueled the invention of the collateralized debt obligations and the mortgage-backed securities. The original act established the Federal Deposit Insurance Corporation and included banking reforms, which were designed to control speculation. The repeal of the act allowed commercial lenders to begin trading investment vehicles, such as Collateral Debt Obligations and Mortgage-Backed-Securities.

### VALUED AT RISK MODEL

These new investment vehicles led to growth based on excessive risk, in part due to the rise of Value at Risk model, which became widely used as a measure of the risk of loss on a specific portfolio of financial assets. At this time, the Securities and Exchange Commission was worried about the risk that derivatives posed to the financial stability of the economy. Thus, the SEC mandated that financial firms disclose their risk to potential investors. The VaR was the model firms used to relay the risk of their investments. If the VaR number increased from year to year in a company’s annual report, it meant that the firm was taking more risk.

The SEC believed the disclosure of risk in the absence of any limitation on the growth of derivatives was sufficient.<sup>xvii</sup> VaR models, however, are limited in their “lack of sufficient historical data to draw statistically valid conclusions about (a) the credit performance of new products, and (b) institutional liquidity under rare episodes of financial stress.”<sup>xviii</sup> Because of their reliance on these models, financial institutions underestimated their risk exposure, leading to excessive risk taking and lending.

Excessive risk-taking was also caused by misaligned incentives for originators of residential loans. Because residential loans were either sold off or placed into mortgaged-backed securities, originators of these loans were not required to retain an equity interest. Compensation, in some situations, was based purely on volume. Therefore, originators had no reason to scrutinize mortgage applications during the underwriting process. During this time period, investment bankers were given “up-front” incentive compensation packages which lacked incentives for long-term profitability. The credit rating agencies, responsible for rating the risk of default on structured credit products, had an “issuer pays” business model. With only a few investment banks structuring credit products, the rating agencies, which include Moody’s, Standard & Poor’s, and Fitch Ratings, were financially linked to the investment banks. In efforts to increase market share, these agencies consistently gave high ratings. The credit rating agencies evaluation of credit products used flawed methodologies. They did not account for the possible correlation of default rates for comparable loans, leases and receivables comprising structured credit products. This led to higher ratings of structured credit products.

### DEFLATION OF THE HOUSING BUBBLE

This excessive risk taking made matters much worse when the real estate bubble burst in the second quarter of 2006. A May 2006 Fortune magazine report on the US housing bubble stated, “The great housing bubble has finally started to deflate ... In many once-sizzling markets around the country, accounts of dropping list prices have replaced tales of waiting lists for unbuilt condos and bidding wars over humdrum three-bedroom colonials.”<sup>xix</sup> Market data of 2006 revealed lower sales, rising inventories, falling median house prices, and increased foreclosure rates. In March 2007, national home sales and prices dramatically

fell in the steepest plunge since 1989. According to NAR data, sales were down 13% to 482,000 from the peak of 554,000 in March 2006, and the national median price fell nearly 6% to \$217,000 from a peak of \$230,200 in July 2006.

The drastic decline of house prices and the increase of foreclosures were soon followed by the liquidity crisis of 2007, which led the US into a deep economic recession. Although the problem originated when the housing bubble burst, the practices in the financial market and banks' connection to the housing market greatly exacerbated the problem. Trading of credit derivatives increased 100-fold the past decade as hedge funds, banks, insurance companies and other investors used the contracts to protect against losses or speculate on debt they did not own. The market for these securities was very opaque and exposed institutions to more liabilities. This growth was driven partly by collateralized debt obligations, securities that parcel bonds, loans, and credit-default swaps, slicing them into varying layers of risk. Many of these CDOs including slices of subprime mortgage loans. As defaults on payments of loans from the lower-income households increased, these risky CDO's lost a lot of value.

*“Everyone was pinning their hopes on house prices continuing to rise,” said Kai Gilkes of, who spent 10 years working at ratings agencies. “When they stopped rising, pretty much everyone was caught on the wrong side, because the sensitivity to house prices was huge. Why didn't rating agencies build in some cushion for this sensitivity to a house-price-depreciation scenario? Because if they had, they would have never rated a single mortgage-backed CDO.”<sup>1</sup>*

**B**anks worldwide have taken \$693 billion in write-down's and losses on loans, CDOs and other investments since the start of 2007. Insurers including AIG, MBIA and Ambac typically sold protection on the highest ranking slices of such deals, meaning they'd be required to make good on payments only after a substantial part of the underlying debt defaults.xx Thus, more players became involved in this risky game. As a result the institutions that fell were those that were the most exposed, such as Bear Sterns, AIG, Merrill Lynch, and Lehman Brothers.

**T**he subprime crisis very quickly became a larger economic crisis on August 9, 2007. The situation was made worse by accounting practices instituted in 2002, which exaggerated the losses of the investment banks and other financial institutions. The accounting method requires financial institutions to use econometric models to estimate the market value of illiquid financial assets based on price inputs. When a distressed institution sells one of these level three assets in a downturn market, this price establishes a fair value for similar assets. Financial institutions have made much larger write-downs of the subprime RMBS and CMOs on their balance sheets than the actual losses if they were to hold to maturity or sell them under normal market conditions. This created a vicious cycle, in which financial institutions could not unload their securities because there were no buyers of their seemingly worthless securities.

By the end of September, despite aggressive measures by Federal Reserve to relieve stress, including enhancements to its existing liquidity facilities and cutting of the federal funds rate, financial firms hoarded their liquidity and searched for more. The stock market fell as shares dropped worldwide. The country was in the midst of a liquidity crisis, which went beyond the financial institutions. Overnight borrowing costs for major corporations increased, and overnight rates for loans between banks jumped. The Federal Funds rate rose to 6% (usually at 2%). There was a general flight to treasury debt securities, which pushed the short-term treasury yield rates to fall to 50 year lows.<sup>xxi</sup>

The first bank to fall was Bear Sterns, which was heavily invested in mortgage-backed securities. One the weekend of September 13<sup>th</sup>-14<sup>th</sup>, the Federal Reserve and Treasury officials determined that Lehman Brothers was most likely insolvent. Barclays and Bank of America broke of negotiations to acquire the bank when the Reserve and the Treasury officials made it clear that the Federal Government would not assist purchasers. On September 15<sup>th</sup>, Lehman Brothers filed for Chapter 11 bankruptcy. The New York Times called the institution “wildly overleveraged.” By its end, it had \$25 billion in toxic residential mortgages, and its CEO, Mr. Walsh had made billions in equity investments and loans that ultimately proved questionable.<sup>xxii</sup> The following day, September 16<sup>th</sup>, Barclays bought Lehman's. On September 22<sup>nd</sup>, Noruma Holdings, Japan's largest investment bank agreed to buy the Asian operation of Lehman Brothers for \$225 million. Bank of America soon began negotiations to acquire Merrill Lynch. Overall, the banking industry was left with less players and more government intervention.

Another casualty in the credit collapse was Fannie Mae and Freddie Mac. In July 2008, Secretary Paulson asked Morgan Stanley to conduct an independent review of the financial condition of Fannie and Freddie. Morgan Stanley found each would need a capital infusion of at least \$50 billion over the next 18 months in order to continue their operations. To fund the GSEs, the Treasury purchased 1 billion of senior preferred stock of each entity and 2 warrants to buy up to 79.9% of the common shares in each at a nominal price. Furthermore, the Treasury committed to invest up to \$100 billion in each GSE.<sup>xxiii</sup>

By the end of 2008, the US housing crisis had revealed serious industry moral and regulation hazards that had arisen since the 1980's. Over investments in subprime mortgages and the rise of an unregulated secondary banking industry lead to

## INDUSTRY RISK MISMANAGEMENT

### Repeal of Glass-Steagall Act 1999:

In 1999, the Congress repealed the Banking Act of 1933 (commonly referred to as the Glass-Steagall Act) that separated bank types according to their business (commercial and investment banking). Hearings during the 1930's had revealed conflicts of interest and fraud in some banking, and was the motivation for separating the banking industry.

During September 2008, the five largest firms either went bankrupt, were bought out by other banks or changed to commercial bank holding companies.

### Reliance on Inaccurate Credit and Risk Models:

The NRSRO agencies responsible for reporting the credit worthiness had opaque methods and were later found to have inadequate infrastructure to evaluate the securitized products.

The Value at Risk model became the industry standard measure of risk. Corporate chiefs like Stanley O'Neal at Merrill Lynch and Charles Prince at Citigroup pushed their divisions to take more risk because they were behind in profits.

However, VaR does not gauge the kind of extreme events that destroy capital and create a liquidity crisis. Additionally, it failed to accurately measure the risk in securitized lending because it generally relied on a two-year data history. It failed to distinguish between leverage that came from long-term, fixed-rate debt.

### Misaligned Incentives:

Additionally, VaR incentivized unsound risk management. To motivate managers, the banks began to compensate them for making profits with low VaR numbers. Managers began to load up on products or contracts that, in general, generated small gains, but with the probability of huge losses that stood without the margin of the model's probability calculation. These positions made a manager's VaR number small because the model ignored the likelihood of the large losses.

Banks then began investing in instruments such as Credit-Default-Swaps, which had tremendous risk due to the opaque industry, but produced steady short-term gains.

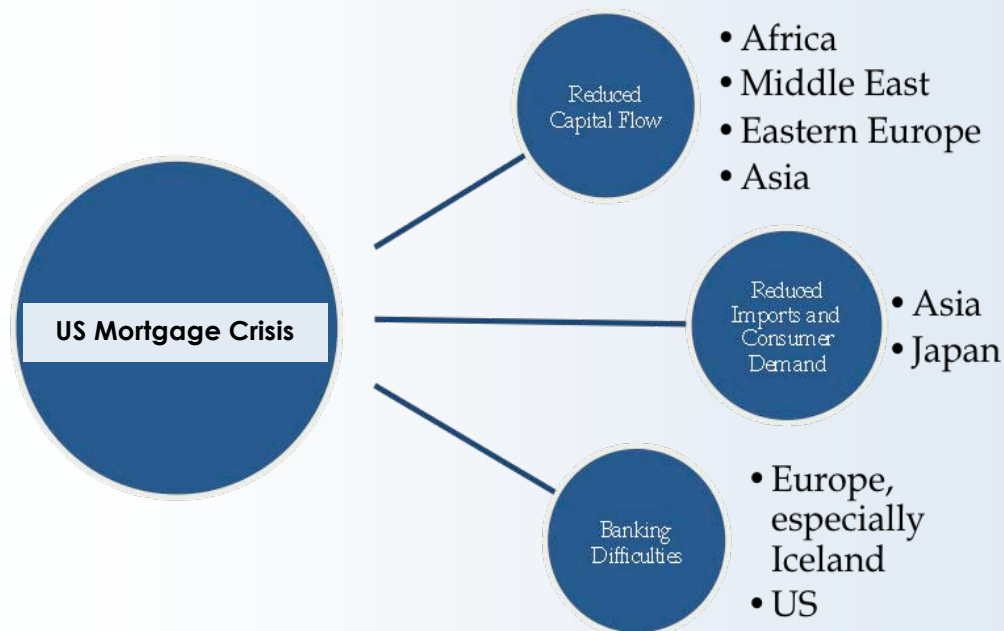
At the height of the bubble, there was so much money to be made that any firm that pulled back because it was nervous about risk would forsake huge short-term gains and lose out to less cautious rivals. The optimism spread to the practice of overleveraging, among the largest US investment banks Mortgage-backed securities.

The SEC has since banned the use of VaR ratings.

increased risks in the real estate industry. Credit rating industries were not accurate in documenting these risks, leading to overly optimistic ratings of mortgage-backed securities. Excessive investments into these instruments as well as others which faulty documented risks associated with the housing industry lead to billions of dollars being lost.

### GLOBAL IMPACT

Economies around the world have been seriously affected by the financial crisis and slump in activity. The advanced economies experienced an unprecedented 7½ percent decline in real GDP during the fourth quarter of 2008, and output continued to fall almost as fast during the first quarter of 2009. Although the U.S. economy may have suffered most from intensified financial strains and the continued fall in the housing sector, each continent felt its share of problems due to the interdependent trade and banking systems. Stress was transmitted both through financial and trade channels, particularly to East Asian countries that rely heavily on manufacturing exports and the European and Middle Eastern economies that have depended on strong capital inflows to fuel growth. The crisis underscored the dangers of the kind of unhealthy financial deepening that can result from asset and credit bubbles.



### EUROPE

Although the crisis started in the United States, it followed multiyear borrowing expansions in many other countries as well. The United States and Europe accounted for most of the growth in credit from 2000 through 2008. Europe had begun to contract independently of the US housing crisis and subsequent 2008 financial meltdown, owing mainly to rising oil prices.

Nonetheless, the initial perception was that advanced European economies would escape a full-blown recession, while the emerging economies would continue to grow at a lower but still healthy pace. Healthier household balance sheets in most major economies and different housing and financial market structures were considered protective factors. European

banks caused wholesale markets to freeze in September 2008, with a number of failing banks requiring state intervention. Initially, problems were concentrated in a few banks, and their causes different. The problems quickly caused broad repercussions because of the close linkages between Europe's major financial institutions and their high leverage and those in the US. With funding markets frozen, the financial crisis rapidly transformed into a crisis for the economy at the end of 2008. Remedial financial policies were then put in place quickly.



**A**s a result, most European economies suffered sharp contractions since mid-2008. The recession has been particularly severe in Ireland, as its construction boom has been reversed. The downturn has also been exceptionally deep in Iceland, where the financial sector and political

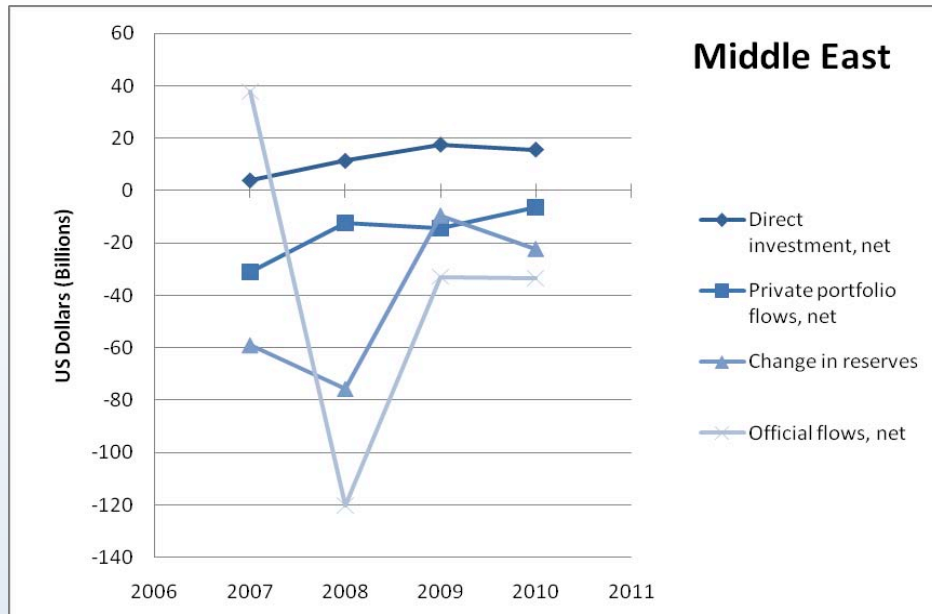
system have undergone major changes large investments in mortgage-backed securities. The United Kingdom was also hit by the end of the boom in real estate and financial activity.

Economic activity has taken a particularly sharp turn for the worse in many eastern European economies because of their heavy reliance on all kinds of capital inflows—notably funding from Western banks to sustain local credit booms. Inflation in 2010—the relevant horizon for European policymakers' today—is expected according to the IMF to be between  $\frac{1}{2}$  and  $1\frac{1}{2}$  percent in most advanced economies. This is down from 3–4 percent rates in 2008. Accordingly, monetary policy has been eased. The Bank of England moved early, cutting policy rates in successive steps from 5.75 percent in 2007 to 0.5 percent in 2009, and is now moving to less conventional credit-easing measures. Consistent with the flight from risk, exchange rates have already depreciated sharply in emerging economies with floating currencies. The key risk for Europe is a disorderly deleveraging of large intra-European cross-border bank exposures.

### MIDDLE EAST

**T**he global crisis has not spared the Middle East's financial system. The earlier fall in the price of oil, deterioration in external financing conditions and reversal of capital have been taking a toll: local property and equity markets have come under intense pressure across the region, domestic liquidity conditions have deteriorated, credit spreads have soared for some firms, financial system strains have emerged in a number of countries, and sovereign wealth funds have suffered losses from investments. Among the oil-producing countries, the sharpest slow down has been in the United Arab Emirates (UAE), where the exit of external funds (which had entered the country on speculation of a currency revaluation and real estate) has contributed to a large contraction in liquidity, a sizable fall in property and equity prices, and substantial pressure in the banking system. As a major financial center, UAE has suffered from the contraction in global finance and merger and acquisition activity.





Data Source: International Monetary Fund

The current account balance of the region has swung to a deficit. With dwindling surpluses in oil-producing countries, fiscal balances have deteriorated substantially, as revenues decline and governments use the buffers accumulated during the recent boom to sustain domestic demand by maintaining ongoing investment projects. Central banks across the region have reacted by providing liquidity, cutting reserve requirements, and lowering interest rates. In this respect, countries with pegged exchange rates (Bahrain, Saudi Arabia, Kuwait, Libya, Oman, Qatar, Syrian Arab Republic, UAE) have

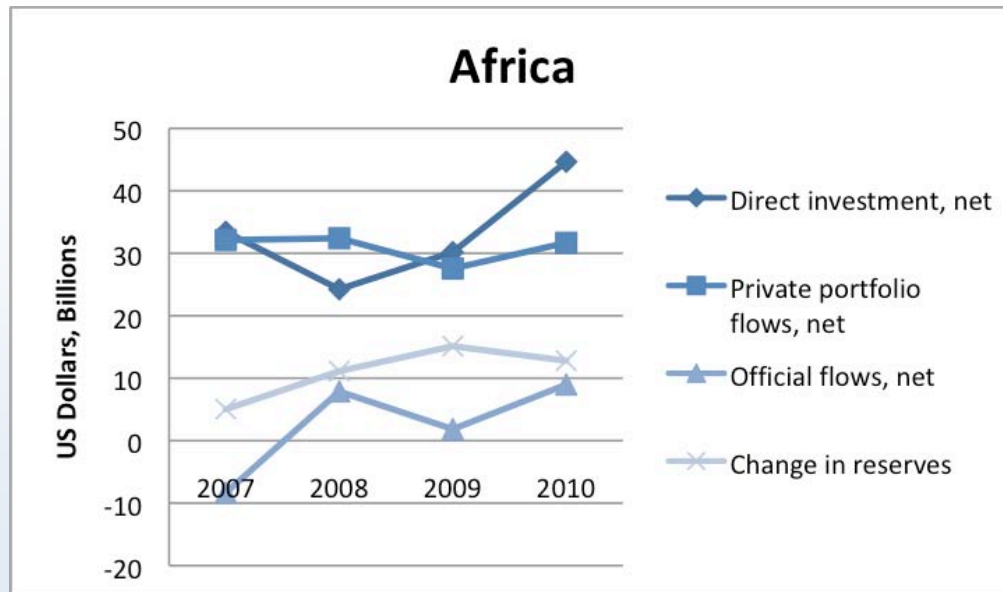
benefited from the continued monetary easing in the United States. In countries that have been most affected so far, policy responses have been relatively swift, with authorities implementing a myriad of measures to shore up confidence and prevent a systemic banking crisis. These have included introducing blanket deposit insurance, providing liquidity, and injecting capital into banks. At the other end of the spectrum is Qatar, which is projected to grow by 18% in 2010, since its production of natural gas is expected to double this year.

## AFRICA

Africa's lack of integration in world markets shielded it from the primary impact of the subprime crisis. However, the tightening of global credit conditions has reduced financial direct investments and reversing portfolio flows, especially to emerging and frontier markets such as Ghana, Kenya, Nigeria, South Africa, and Tunisia. These external shocks are causing a severe slowdown in economic activity.<sup>xxiv</sup> The past year has upturned expectations of continued investment growth. The Washington-based Institute of International Finance forecast in



January that net private sector capital flows to emerging markets will fall to about 165 billion dollars in 2009 from the 466 billion dollars recorded in 2008, and warned that capital flows to emerging markets are in danger of collapse as the financial crisis in developed economies chokes off the supply of credit to developing economies.



Data Source: IMF

The downturn is most pronounced in oil-exporting countries such as Angola, and Equatorial Guinea, as well as in key emerging and frontier markets such as Botswana, Mauritius, and South Africa), which have suffered from all three shocks that are hitting the continent. The most pressing needs facing Africa since the crisis are promotion of exports and crisis from the goods producing countries and the creation of sustainable relationships in countries that rely upon foreign investments.

## ASIA

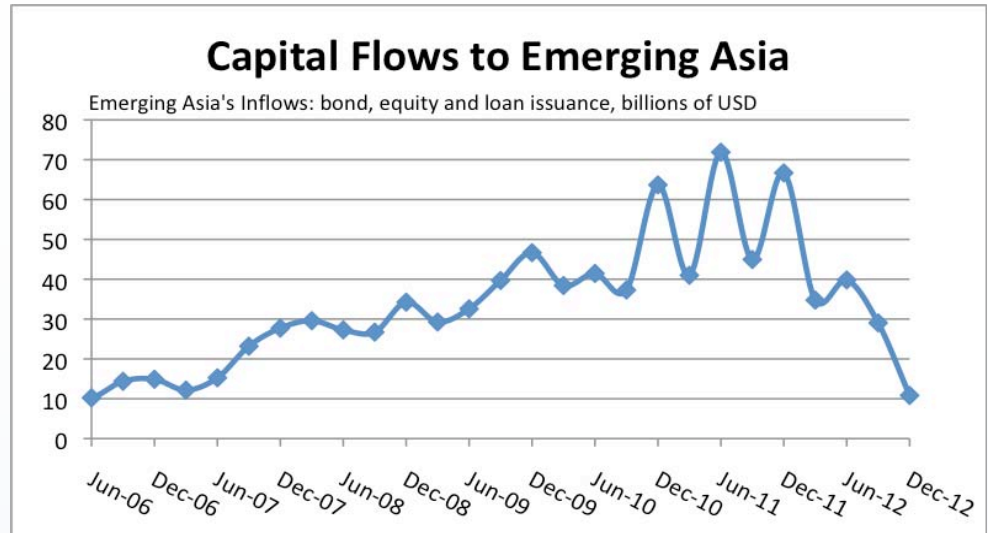
After Lehman's collapse last September, the large amount of foreign capital inflow that Asia experienced during the boom years was suddenly withdrawn. Investors dramatically reduced exposure to Asia, resulting in declines in the equity market. Markets became volatile as seen in IMF's GARCH model, and further repercussions on top of the initial transmission of stress were expected because a decrease in financing could result in lower production and later bankruptcies.

The initial capital insertion into the region can be explained by hedge funds from the US and UK, which had increased activity in equity markets in the region by 700% during the years 2001 – 2007. Indeed, after falling to \$100 billion at the beginning

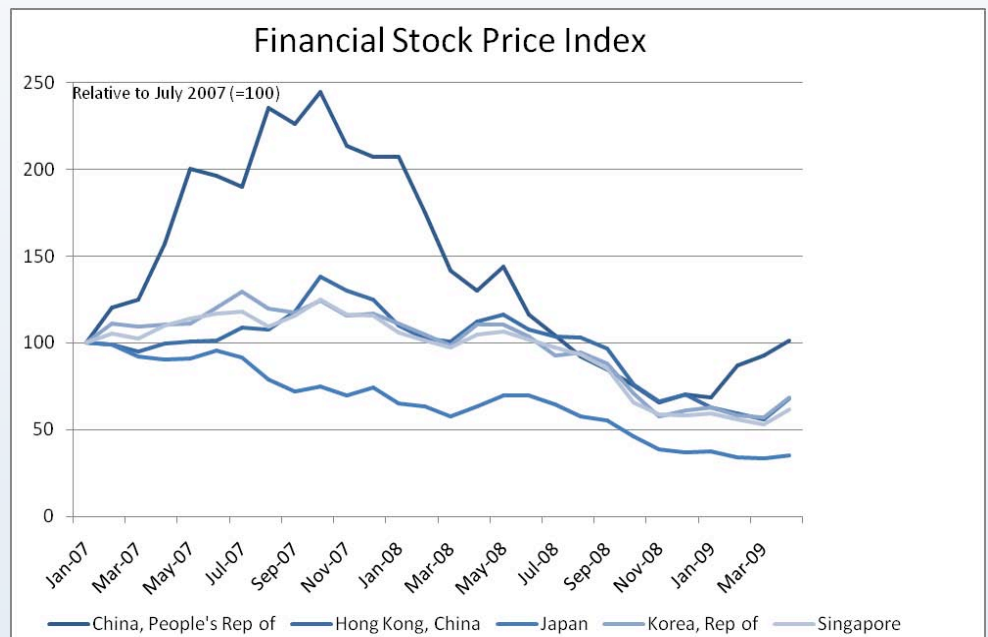


of the millennium, private flows of capital picked up in developing Asian countries rapidly, reaching an estimated level of \$620 billion in 2007. Investors were attracted to three things: trade profits due to large interest rate differentials with industrial countries, prospective currency appreciation and large current account surpluses.<sup>xxv</sup> However, during the months of August and November of 2008 alone, over \$12 billion were liquidated in India, Indonesia, Korea, Philippines, Taipei, and Thailand<sup>xxvi</sup>. Also, only around 5 billion USD of loans have been issued in Asia outside of Japan in the first month of 2009. This pales in comparison with in the first quarter of 2008 when the region experienced a monthly average of over 18 billion<sup>xxvii</sup>.

**D**uring the mid to late 2008, Indonesian and Thailand's equity indexes fell by almost 50%, followed by NIEs at about 40%. Investors were averse to local Indonesian assets due to the weak rupiah, for a weak currency might stoke more inflationary pressure. Thailand's main index plummeted due to expectations that its unstable political crisis would delay the implementation of policies in aid of the financial crisis. In Singapore, and Hong Kong, stock indexes fell

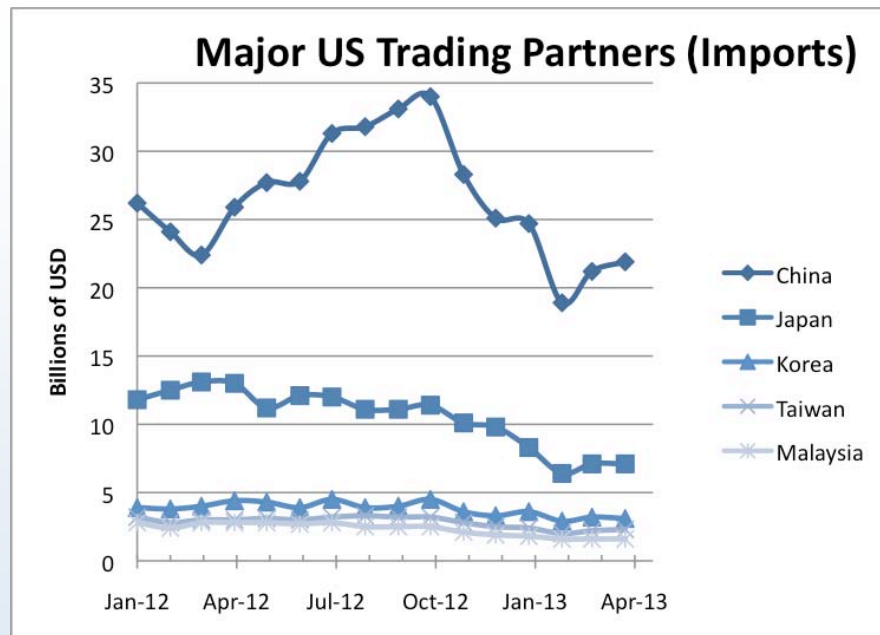


Sources: Datastream; IMF, International Financial Statistics; and IMF staff calculations. Emerging Asia: China, India, Indonesia, Korea, Malaysia, Pakistan, Philippines, Sri Lanka, and Thailand. De-meaned volatility of monthly stock returns estimated using a GARCH (1,1) model. Sources: Datastream; IMF, International Financial Statistics; and IMF staff calculations.



Data Source: Asia Regional Integration Center: Economic and Financial Indicator Database

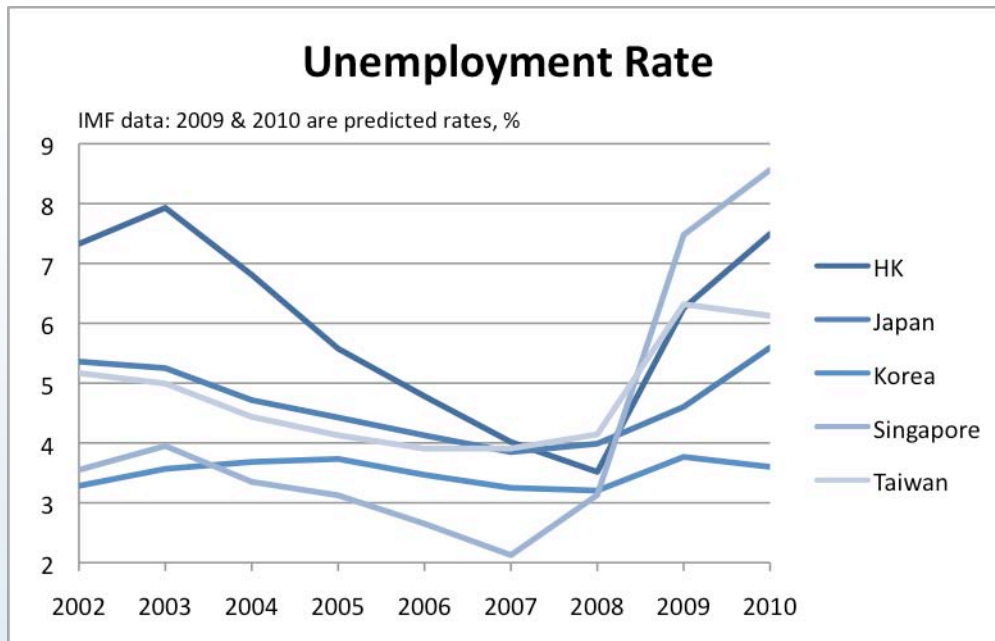
as a result of the global tightening of capital flows, worsening economic prospects and reduced domestic spending. In Korea and Taipei, stock markets also fell by 35-40% as demand for advanced manufactured goods dropped globally and investments overseas incurred losses. In the People's Republic of China, the Shanghai composite index fell 30% from the start of July to the end of November despite the government's attempts at stimulating growth and restore investor confidence. Within the same four months, stock prices in Malaysia, Philippines and Vietnam also fell by 18-26%<sup>xxviii</sup>.



Sources: Bureau of Economic Analysis

**W**estern based trade play a significant role in Asian economies both as a direct consumer and as a stimulus to intraregional trade. According to the IMF April 2008 Regional Economic Outlook, the majority of Asian exports are ultimately consumed outside of Asia, and over the last ten years this was more so the case than ever. In fact, the correlation between U.S. import growth and Asian intraregional export growth has strengthened.<sup>xxix</sup>

**T**he region specializes in technology and manufacturing goods – sectors that have been particularly hard hit by the global recession. The highly integrated production process and supply chain in the region, meant that the entire region as affected quickly. The May 2009 IMF Regional Outlook for Asia reported that between September 2008 and February 2009, exports in the merchandise fell about 70 percent in emerging Asia.



Sources: Datastream; IMF, International Financial Statistics; and IMF staff calculations

**A**sian corporations reacted to slump in global demand by cutting production and reducing inventories and employment. China and Japan's role as the assembly hub for final product meant that it was particularly affected. However, Asian corporations entered the global recession with exceptionally strong standing, which is why it is expected to remain resilient. The debt structure had also improved, with short-term debt falling as a share of total debt. Profitability increased as interest rates declined across the globe. During the boom period, firms built up their liquidity, which proved helpful for firms were able to service a year's worth of obligations simply by using their liquid assets.<sup>xxx</sup> Although major banks in the region were relatively insulated initially, a notable decline in financial equity performance shows real recovery in Asian equity markets should take longer, since the credit crunch and capital inflow need to ease first. However, the Shanghai Composite index has risen almost 35% this year as of July 2009, and the equity index of Taiwan and South Korea has been the next best performing. Although the worst is over after a 53% plunge in MSCI for Asia, steady recovery has only just began<sup>xxxi</sup>. Finally, governments have also already been proactive with stimulus measures; therefore, the outlook for Asia in the upcoming year is positive.

**G**oing forward, emerging markets stand to gain the most from financial deepening. Many emerging market economies rely on banking systems that mainly fund large corporations. If these companies could raise funding in debt markets, as they do in mature markets, banks would focus more on lending to the small and mid-sized businesses that fuel economic growth. Similarly households, many of which lack access to formal banking services, much less consumer credit or long-term borrowing, hoard their savings, restraining economic growth in their own countries while exacerbating financial imbalances in the global economy. Indeed, as leaders seek to foster healthy financial systems, countering imbalances and promoting domestic consumption and transparent markets through sustainable partnerships will be key.

## POST-CRISIS REAL ESTATE REFORM MEASURES

After studying the causes in damages of the crisis, it is clear that demand based on speculation and short-term gains is ultimately destructive and unsustainable for all parties involved. Regarding the home prices in historical and economic context, it is important that prices return to demand levels proportional to the population without causing disruption to the economic system. Given the number of properties that enter foreclosure and the time and resources involved in the foreclosure process, both Congress and the Obama administration have taken action. Congress set

aside \$3.92 billion through the Housing and Economic Recovery Act of 2008 to assist state and local governments with REO purchases and related efforts. On March 2009, the Obama administration began the most ambitious effort since the 1930s to help troubled homeowners, offering lenders and borrowers big incentives and subsidies to try to stem the wave of foreclosures. Further, actions have been taken by the SEC and the presidential administration to increase transparency in the mortgage and structured debt market.



## NEW GOVERNMENT MEASURE

Under the Obama administration's plan, The Homeowner Stability Initiative, the government, lenders, servicers and borrowers come together to reduce the amount homeowners owe per month to sustainable levels, preventing undue foreclosures. The plan is more expansive than any of the Bush administration's programs, which were based almost entirely on motivating lenders to voluntarily modify loans. The lender will have to first reduce interest rates on mortgages so that the borrower's monthly mortgage payment is no greater than 38% of his or her income). The initiative will match further reductions in interest payments dollar-for-dollar with the lender, down to a 31% debt-to-income ratio for the borrower.

To ensure long-term affordability, lenders will keep the modified payments in place for five years. Servicers will receive an up-front fee of \$1,000 for each eligible modification meeting guidelines established under this initiative. Servicers are also awarded monthly of a fee of up to \$1,000 as long as the borrower stays current on the loan each year for three years. The plan will include an incentive payment of \$1,500 to mortgage holders and \$500 for servicers for modifications made while a borrower at risk of imminent default is still current. To provide an extra incentive for borrowers to keep paying on time under the modified loan, the initiative will provide a monthly balance reduction payment that goes straight towards reducing the principal

balance on the mortgage loan. As long as the borrower stays current on his or her payments, he or she can get up to \$1,000 each year for five years.

**T**o encourage lenders to modify more mortgages and enable more families to keep their homes, the Administration and the FDIC has developed an insurance fund of \$10 billion. It is designed to discourage lenders from opting to foreclose on mortgages that could be viable now out of fear that home prices will fall even further later on. This partial guarantee initiative provides lenders with the security to undertake more mortgage modifications by assuring that if home price declines are worse than expected, they have reserves to fall back on. Holders of mortgages modified under the program would be provided with an additional insurance payment on each modified loan, linked to declines in the home price index. Under the plan, the Department of Housing and Urban Development will also make available funding for non-profit counseling agencies to improve outreach and communications, especially to disadvantaged communities and those hardest-hit by foreclosures and vacancies.

**T**o protect taxpayers, if the total expected cost of a modification for a lender taking into account the government payments is expected to be higher than the direct costs of putting the homeowner through foreclosure, that borrower will not be eligible. For those borrowers unable to maintain homeownership, even under the affordable terms offered, the plan will provide incentives to encourage families and lenders to avoid the costly foreclosure process and minimize the damage that foreclosure imposes on lenders, borrowers and communities alike. Moreover, Treasury will not provide subsidies to reduce interest rates on modified loans to levels below 2%. The Administration has thus developed guidelines for sustainable mortgage modifications for all federal agencies and the private sector, and will work with regulators and other federal and state agencies to implement these guidelines across the entire mortgage mark.

### REGULATORY STEP

**A**dditionally, regulatory steps have been taken in the three major culprits of the financial crisis – lax lending standards, the lack of reliable data, and the short-term view of risks and profits involved in the housing industry. First, given the large role the Fannie Mae and Freddie Mac played in lax lending standards in mortgage borrowing the United States, in September, the FHFA assumed effective control of both GSEs and removed the Boards of Directors and CEOs. Freddie and Fannie were both allowed to continue to securitize and guarantee RMBS and to replace its existing portfolio of retained mortgages, RMBS and tranches of CMOs. The FHFA did suspend dividends on existing common and preferred shares for both entities. As of December 31, 2009, Freddie Mae and Fannie Mac must limit each of its portfolios of retained mortgages, RMBS, and tranches of CMOs to \$850 billion. Thereafter, each must reduce its portfolio by 10% a year until its portfolio is less than \$250 billion. Finally, Secretary Paulson announced the creation of a government-sponsored enterprise credit facility that would remain in operation until

December 31, 2009. The facility provided Fannie Mae, Freddie Mac, and the Federal Home Loan Board Banks with the opportunity to borrow from the treasury through the GSECF based on collateral consisting of GSE-issued RMBS or FHLB advances.<sup>xxxiii</sup> Essentially, Fannie Mae and Freddie Mac are allowed to borrow from the government, and in return, the government now exercises much more oversight over the entities.

**G**oing forward, Fannie Mae and Freddie Mac will be responsible, subject to Treasury's oversight and the Federal Housing Finance Agency's conservatorship, for monitoring compliance by servicers with the program. Every servicer participating in the program will be required to report standardized loan-level data on modifications, borrower and property characteristics, and outcomes. The data will be pooled so the government and private sector can measure success and make changes where needed. Treasury will meet quarterly with the FDIC, the Federal Reserve, the Department of Housing and Urban Development and the

Federal Housing Finance Agency to ensure that the program is on track to meeting its goals.

**M**ost importantly, the SEC has also made rule amendments to regulations of credit rating agencies. In response to questionable financial linkages and methodologies that credit ratings agencies used in determining the investment quality of mortgage-backed-securities and other structured debt products, the SEC requires that an NRSRO must provide enhanced disclosure of performance measurements, statistics and the procedures and methodologies used in determining the credit ratings, and the findings must be made publicly available. Further, strict prohibition against financial ties between the institutions being rated and those rating have been outlined, and each NRSRO is to furnish the SEC Commission with an additional annual report.

Reform against practices that misconstrue the risks and profits involved in investments in the mortgage and housing industry are partially

underway. The SEC has ended the use of Value-at-Risk models, and is in discussion about whether they will allow short-selling of stocks. Securities that are loaned are often used by short-sellers, who make profits by betting on a stock's decline. Short-selling has been blamed by some lawmakers and corporate executives for part of last year's sharp drop in stock prices. The SEC will determine if they will ban short-selling by the end of the year. However, going forward, genuine reform will require accurately understanding probability, historical data, and modeling risk. Measures have been taken in the US to reform the transparency and integrity of information in the financial markets, as well as providing guidance and support to mitigate the economic impact of foreclosures. However, due diligence on predicting risk and profit is still the responsibility of the investor, which is why in light of the past two years, clients should work with firms that reveal their methodology clearly.

## CONCLUSION

**T**he financial fallout in the US and Europe was caused by investments in structured debt products (MBS and CDO) that were based on an era of lax underwriting standards and improper risk assessment and disclosure. In the first decade of 2000, it became a system that invited the applicant to lie about income and avoid providing solid evidence about their financial condition. Measures have been taken to restore transparency and underwriting standards in the industry. The foreclosures, poor investments banking have shifted capital markets.

**A** sustained international recovery will only be possible with economic foresight and mutual understanding. President Obama announced September 25th that the Group of 7 will be permanently replaced as a global forum for economic policy by the much broader Group of

20 that includes China, Brazil, India and other developing countries. An era of global economic and diplomatic inclusion has emerged.

**A**s the US makes reforms both abroad and domestically to respond to challenges brought on by the mortgage and financial crisis, cities, countries, and institutions are emerging with resiliency. Statistically, Manhattan remains at the forefront of the US real estate market. In the past 6 months in Manhattan, 42 properties have been sold with a volume of \$1842.3 million. Comparatively, in DC, 15 properties have been sold, with a volume of \$435.3 million, and in Boston, 26 properties have been sold with a volume of \$947 million. LA is the closest with a volume of \$1449.9 million.<sup>xxxiii</sup>

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