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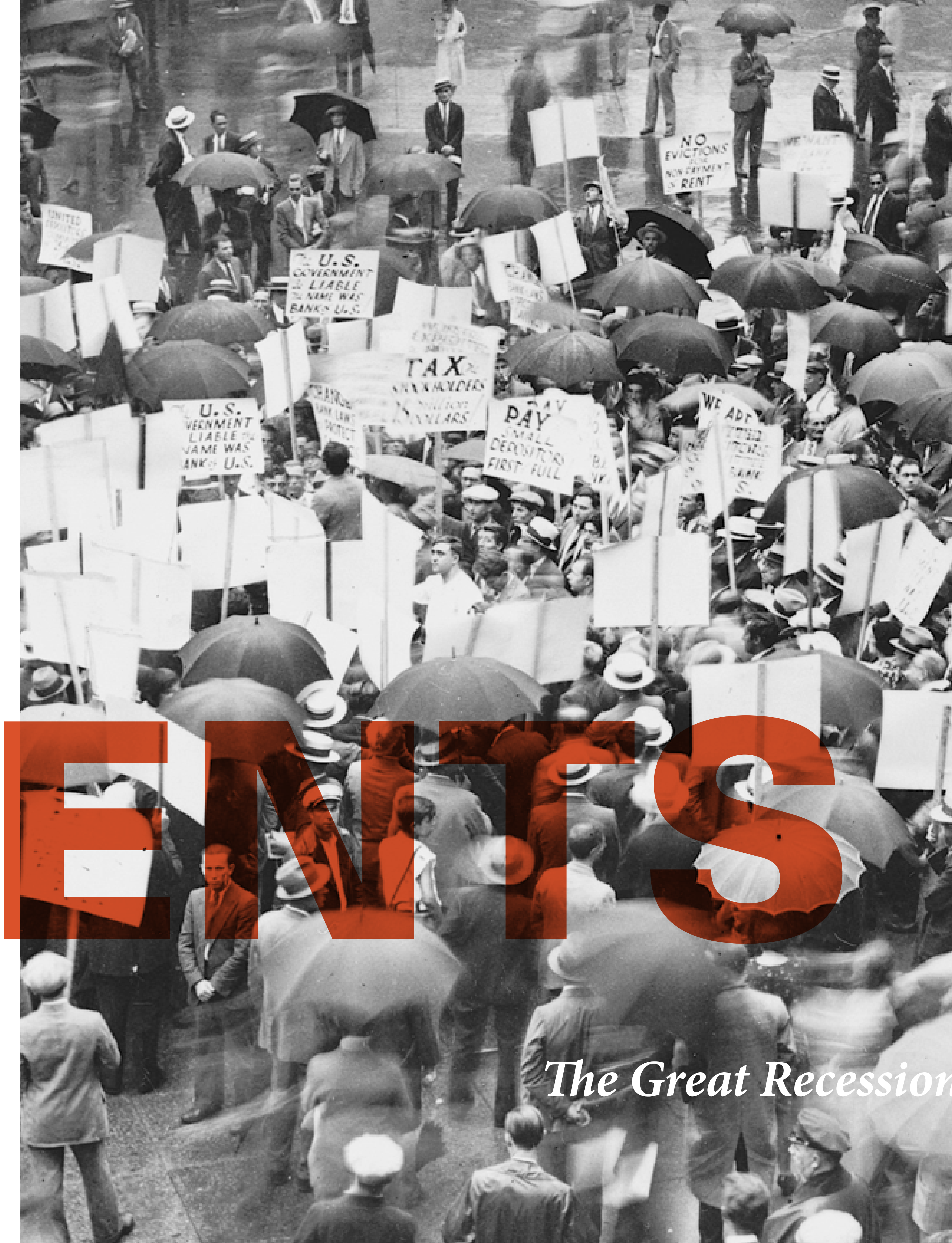
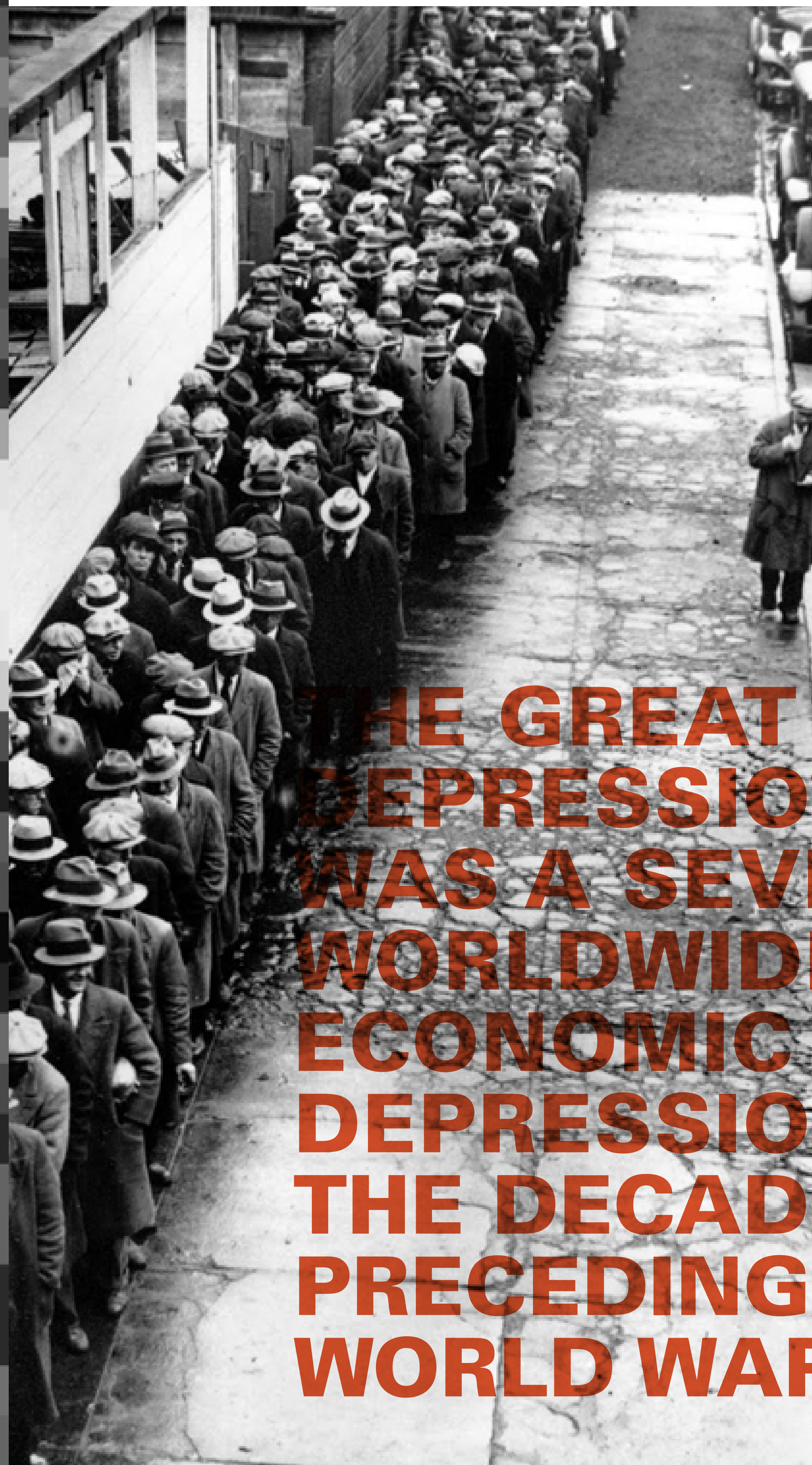


The Great Recession

RECESSIONS GENERALLY OCCUR WHEN THERE IS A WIDESPREAD DROP IN SPENDING, OFTEN FOLLOWING AN ADVERSE SUPPLY SHOCK OR THE BURSTING OF AN ECONOMIC BUBBLE



THE GREAT DEPRESSION WAS A SEVERE WORLDWIDE ECONOMIC DEPRESSION IN THE DECADE PRECEDING WORLD WAR 2

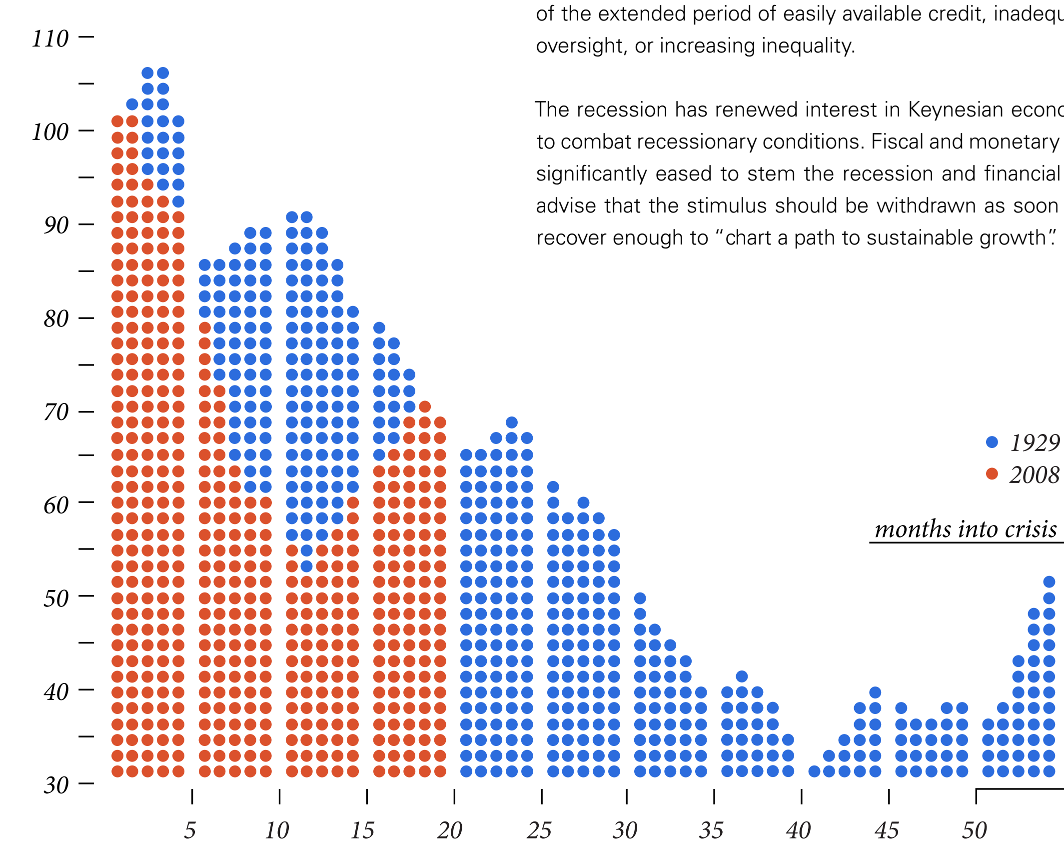
According to the U.S. National Bureau of Economic Research (the official arbiter of U.S. recessions) the recession began in December 2007. The financial crisis is linked to reckless lending practices by financial institutions and the growing trend of securitization of real estate mortgages in the United States. The US mortgage-backed securities, which had risks that were hard to assess, were marketed around the world. A more broad based credit boom fed a global speculative bubble in real estate and equities, which served to reinforce the risky lending practices. The precarious financial situation was made more difficult by a sharp increase in oil and food prices. The emergence of Sub-prime loan losses in 2007 began the crisis and exposed other risky loans and over-inflated asset prices. With loan losses mounting and the fall of Lehman Brothers on September 15, 2008, a major panic broke out on the inter-bank loan market. As share and housing prices declined, many large and well established investment and commercial banks in the United States and Europe suffered huge losses and even faced bankruptcy, resulting in massive public financial assistance.

The National Bureau of Economic Research (NBER) is an American private nonprofit research organization "committed to undertaking and disseminating unbiased economic research among public policymakers, business professionals, and the academic community." The NBER is well known for providing start and end dates for recessions in the United States.

A global recession has resulted in a sharp drop in international trade, rising unemployment and slumping commodity prices. In December 2008, the National Bureau of Economic Research (NBER) declared that the United States had been in recession since December 2007. Several economists have predicted that recovery may not appear until 2011 and that the recession will be the worst since the Great Depression of the 1930s. Paul Krugman, who won the Nobel Memorial Prize in Economics, once commented on this as seemingly the beginning of "a second Great Depression." The conditions leading up to the crisis, characterized by an exorbitant rise in asset prices and associated boom in economic demand, are considered a result of the extended period of easily available credit, inadequate regulation and oversight, or increasing inequality.

Whereas a national recession is identified by two quarters of decline, defining a global recession is more difficult, because developing nations are expected to have a higher GDP growth than developed nations. According to IMF, the real GDP growth of the emerging and developing countries is on an uptrend and that of advanced economies is on a downtrend since late 1980s.

The recession has renewed interest in Keynesian economic ideas on how to combat recessionary conditions. Fiscal and monetary policies have been significantly eased to stem the recession and financial risks. Economists advise that the stimulus should be withdrawn as soon as the economies recover enough to "chart a path to sustainable growth".



A FOCUS CAN BE MADE ON THE FOLLOWING:

The onset of the economic crisis took most people by surprise. A 2009 paper identifies twelve economists and commentators who, between 2000 and 2006, predicted a recession based on the collapse of the then-booming housing market in the U.S: Dean Baker, Wynne Godley, Fred Harrison, Michael Hudson, Eric Janszen, Steve Keen, Jakob Brøchner Madsen & Jens Kjaer Sørensen, Kurt Richebächer, Nouriel Roubini, Peter Schiff and Robert Shiller.

Among the various imbalances in which the U.S. monetary policy contributed by excessive money creation, leading to negative household savings and a huge U.S. trade deficit, dollar volatility and public deficits.

Housing Bubble

By 2007, real estate bubbles were still under way in many parts of the world, especially in the United States, United Kingdom, United Arab Emirates, Italy, Australia, New Zealand, Ireland, Spain, France, Poland, South Africa, Israel, Greece, Bulgaria, Croatia, Norway, Singapore, South Korea, Sweden, Finland, Argentina, Baltic states, India, Romania, Russia, Ukraine and China. U.S. Federal Reserve Chairman Alan Greenspan said in mid-2005 that "at a minimum, there's a little 'froth' (in the U.S. housing market)… it's hard not to see that there are a lot of local bubbles". The Economist magazine, writing at the same time, went further, saying "the worldwide rise in house prices is the biggest bubble in history". Real estate bubbles are (by definition of the word "bubble") followed by a price decrease (also known as a housing price crash) that can result in many owners holding negative equity (a mortgage debt higher than the current value of the property).

By July 2008 year-to-date prices had declined in 24 of 25 U.S. metropolitan areas, with California and the southwest experiencing the greatest price falls. According to the reports, only Milwaukee had seen an increase in house prices after July 2007.

Commodity Boom

The decade of the 2000s saw a global explosion in prices, focused especially in commodities and housing, marking an end to the commodities recession of 1980–2000. In 2008, the prices of many commodities, notably oil and food, rose so high as to cause genuine economic damage, threatening stagflation and a reversal of globalization.

In January 2008, oil prices surpassed $100 a barrel for the first time, the first of many price milestones to be passed in the course of the year. In July 2008, oil peaked at $147.30 a barrel and a gallon of gasoline was more than $4 across most of the U.S.A. The economic contraction in the fourth quarter of 2008 caused a dramatic drop in demand and prices fell below $35 a barrel at the end of the year. The high of 2008 may have been part of broader pattern of spiking instability in the price of oil over the preceding decade. This pattern of spiking instability in oil price may be a product of Peak Oil. There is concern that if the economy was to improve, oil prices might return to pre-recession levels.

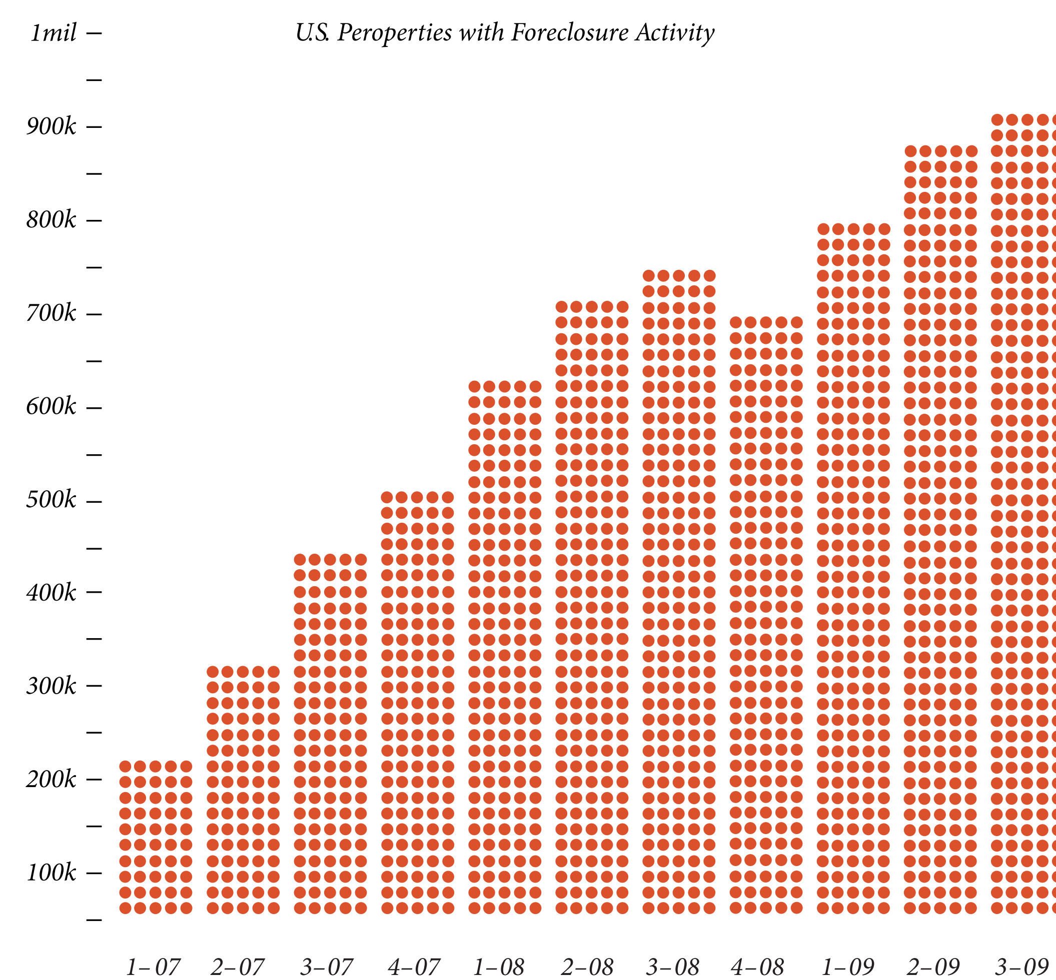
The food and fuel crises were both discussed at the 34th G8 summit in July 2008. Sulphuric acid (an important chemical commodity used in processes such as steel processing, copper production and bioethanol production) increased in price 3.5-fold in less than 1 year while producers of sodium hydroxide have declared force majeure due to flooding, precipitating similarly steep price increases. In the second half of 2008, the prices of most commodities fell dramatically on expectations of diminished demand in a world recession.

Inflation

In February 2008, Reuters reported that global inflation was at historic levels, and that domestic inflation was at 10–20 year highs for many nations. "Excess money supply around the globe, monetary easing by the Fed to tame financial crisis, growth surge supported by easy monetary policy in Asia, speculation in commodities, agricultural failure, rising cost of imports from China and rising demand of food and commodities in the fast growing emerging markets," have been named as possible reasons for the inflation.

In mid-2007, International Monetary Fund (IMF) data indicated that inflation was highest in the oil-exporting countries, largely due to the unsterilized growth of foreign exchange reserves, the term "unsterilized" referring to a lack of monetary policy operations that could offset such a foreign exchange intervention in order to maintain a country's monetary policy target. However, inflation was also growing in countries classified by the IMF as "non-oil-exporting LDCs" (Least Developed Countries) and "Developing Asia", on account of the rise in oil and food prices. Inflation was also increasing in the developed countries, but remained low compared to the developing world.

Inflation is a rise in the general level of prices of goods and services in an economy over a period of time. When the general price level rises, each unit of currency buys fewer goods and services. Consequently, inflation also reflects an erosion in the purchasing power of money – a loss of real value in the internal medium of exchange and unit of account in the economy.



THE CURRENT FINANCIAL CRISIS IS CONSIDERED BY MANY ECONOMISTS TO BE THE WORST SINCE THE GREAT DEPRESSION OF THE 1930's

The financial crisis resulted in the collapse of large financial institutions, the bailout of banks by national governments, and downturns in stock markets around the world. In many areas, the housing market had also suffered, resulting in numerous evictions, foreclosures and prolonged vacancies. It contributed to the failure of key businesses, declines in consumer wealth estimated in the trillions of U.S. dollars, and a significant decline in economic activity, leading to a severe global economic recession in 2008.

The financial crisis was triggered by a complex interplay of valuation and liquidity problems in the United States banking system in 2008. The collapse of the U.S. housing bubble, which peaked in 2007, caused the values of securities tied to U.S. real estate pricing to plummet, damaging financial institutions globally. Questions regarding bank solvency, declines in credit availability and damaged investor confidence had an impact on global stock markets, where securities suffered large losses during 2008 and early 2009. Economies worldwide slowed during this period, as credit tightened and international trade declined. Governments and central banks responded with unprecedented fiscal stimulus, monetary policy expansion and institutional bailouts. Although there have been aftershocks, the financial crisis itself ended sometime between late-2008 and mid-2009.

In economics, a bailout is an act of loaning or giving capital to an entity (a company, a country, or an individual) that is in danger of failing, in an attempt to save it from bankruptcy, insolvency, or total liquidation and ruin; or to allow a failing entity to fail gracefully without spreading contagion.

While many causes for the financial crisis have been suggested, with varying weight assigned by experts, the United States Senate issuing the Levin–Coburn Report found that "the crisis was not a natural disaster, but the result of high risk, complex financial products; undisclosed conflicts of interest; and the failure of regulators, the credit rating agencies, and the market itself to rein in the excesses of Wall Street."

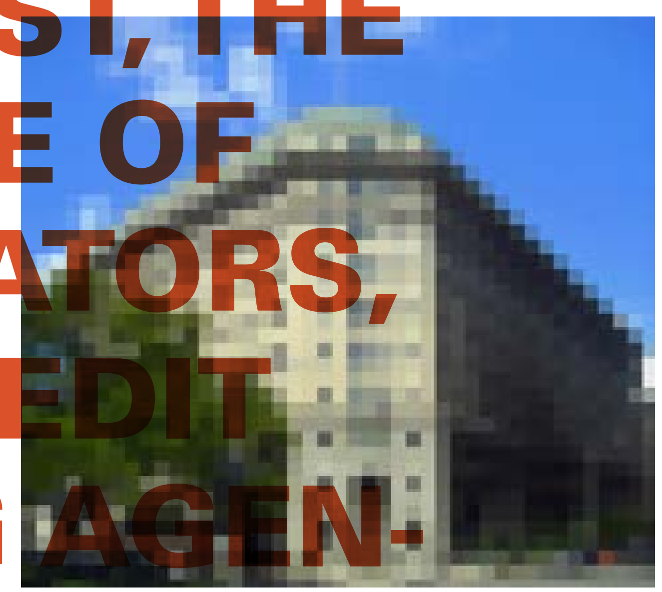
Critics argued that credit rating agencies and investors failed to accurately price the risk involved with mortgage-related financial products, and that governments did not adjust their regulatory practices to address 21st-century financial markets.The 1999 repeal of the Glass–Steagall Act of 1933 effectively removed the separation that previously existed between Wall Street investment banks and depository banks.In response to the financial crisis, both market-based and regulatory solutions have been implemented or are under consideration.

The immediate cause or trigger of the crisis was the bursting of the United States housing bubble which peaked in approximately 2005–2006. Already-rising default rates on "subprime" and adjustable rate mortgages (ARM) began to increase quickly thereafter. As banks began to give out more loans to potential home owners, housing prices began to rise.

In the optimistic terms, banks would encourage home owners to take on considerably high loans in the belief they would be able to pay them back more quickly overlooking the interest rates. Once the interest rates began to rise in mid 2007, housing prices dropped significantly. In many states, like California, refinancing became increasingly difficult. As a result, the number of foreclosed homes also began to rise.

Steadily decreasing interest rates backed by the U.S Federal Reserve from 1982 onward and large inflows of foreign funds created easy credit conditions for a number of years prior to the crisis, fueling a housing construction boom and encouraging debt-financed consumption. The combination of easy credit and money inflow contributed to the United States housing bubble. Loans of various types (e.g., mortgage, credit card, and auto) were easy to obtain and consumers assumed an unprecedented debt load.

THE RESULT OF HIGH RISK, COMPLEX FINANCIAL PRODUCTS, UNDISCLOSED CONFLICTS OF INTEREST, THE FAILURE OF REGULATORS, THE CREDIT RATING AGENCIES, AND EXCESSES OF WALL STREET



As part of the housing and credit booms, the number of financial agreements called mortgage-backed securities (MBS) and collateralized debt obligations (CDO), which derived their value from mortgage payments and housing prices, greatly increased. Such financial innovation enabled institutions and investors around the world to invest in the U.S. housing market. As housing prices declined, major global financial institutions that had borrowed and invested heavily in subprime MBS reported significant losses.

Falling prices also resulted in homes worth less than the mortgage loan, providing a financial incentive to enter foreclosure. The ongoing foreclosure epidemic that began in late 2006 in the U.S. continues to drain wealth from consumers and erodes the financial strength of banking institutions. Defaults and losses on other loan types also increased significantly as the crisis expanded from the housing market to other parts of the economy. Total losses are estimated in the trillions of U.S. dollars globally.

While the housing and credit bubbles built, a series of factors caused the financial system to both expand and become increasingly fragile, a process called financialization. U.S. Government policy from the 1970s onward has emphasized deregulation to encourage business, which resulted in less oversight of activities and less disclosure of information about new activities undertaken by banks and other evolving financial institutions. Thus, policy makers did not immediately recognize the increasingly important role played by financial institutions such as investment banks and hedge funds, also known as the shadow banking system. Some experts believe these institutions had become as important as commercial (depository) banks in providing credit to the U.S. economy, but they were not subject to the same regulations.

Financialization is a term sometimes used in discussions of financial capitalism which developed over several decades leading up to the 2007-2010 financial crisis.

These institutions, as well as certain regulated banks, had also assumed significant debt burdens while providing the loans described above and did not have a financial cushion sufficient to absorb large loan defaults or MBS losses. These losses impacted the ability of financial institutions to lend, slowing economic activity. Concerns regarding the stability of key financial institutions drove central banks to provide funds to encourage lending and restore faith in the commercial paper markets, which are integral to funding business operations. Governments also bailed out key financial institutions and implemented economic stimulus programs, assuming significant additional financial commitments.

The U.S. Financial Crisis Inquiry Commission reported its findings in January 2011. It concluded that "the crisis was avoidable and was caused by: Widespread failures in financial regulation, including the Federal Reserve's failure to stem the tide of toxic mortgages; Dramatic breakdowns in corporate governance including too many financial firms acting recklessly and taking on too much risk; An explosive mix of excessive borrowing and risk by households and Wall Street that put the financial system on a collision course with crisis; Key policy makers ill prepared for the crisis, lacking a full understanding of the financial system they oversaw; and systemic breaches in accountability and ethics at all levels."

WIDESPREAD FAILURES IN FINANCIAL REGULATION, INCLUDING THE FEDERAL RESERVE'S FAILURE TO STEM THE TIDE OF TOXIC MORTGAGES

The U.S. Housing Bubble and Foreclosures

Between 1997 and 2006, the price of the typical American house increased by 124%. During the two decades ending in 2001, the national median home price ranged from 2.9 to 3.1 times median household income. This ratio rose to 4.0 in 2004, and 4.6 in 2006. This housing bubble resulted in quite a few homeowners refinancing their homes at lower interest rates, or financing consumer spending by taking out second mortgages secured by the price appreciation.

By September 2008, average U.S. housing prices had declined by over 20% from their mid-2006 peak. Easy credit, and a belief that house prices would continue to appreciate, had encouraged many subprime borrowers to obtain adjustable-rate mortgages. These mortgages enticed borrowers with a below market interest rate for some predetermined period, followed by market interest rates for the remainder of the mortgage's term. Borrowers who could not make the higher payments once the initial grace period ended would try to refinance their mortgages. Refinancing became more difficult, once house prices began to decline in many parts of the USA. Borrowers who found themselves unable to escape higher monthly payments by refinancing began to default. During 2007, lenders had begun foreclosure proceedings on nearly 1.3 million properties, a 79% increase over 2006. This increased to 2.3 million in 2008, an 81% increase vs. 2007. As of August 2008, 9.2% of all mortgages outstanding were either delinquent or in foreclosure.

A variable-rate mortgage or adjustable-rate mortgage (ARM) is a mortgage loan with the interest rate on the note periodically adjusted based on an index which reflects the cost to the lender of borrowing on the credit markets.

The Economist described the issue this way: "No part of the financial crisis has received so much attention, with so little to show for it, as the tidal wave of home foreclosures sweeping over America. Government programmes have been ineffectual, and private efforts not much better." Up to 9 million homes may enter foreclosure over the 2009-2011 period, versus one million in a typical year. At roughly U.S. $50,000 per foreclosure according to a 2006 study by the Chicago Federal Reserve Bank, 9 million foreclosures represents $450 billion in losses.

Sub-Prime Lending

In addition to easy credit conditions, there is evidence that both government and competitive pressures contributed to an increase in the amount of subprime lending during the years preceding the crisis. Major U.S. investment banks and government sponsored enterprises like Fannie Mae played an important role in the expansion of higher-risk lending.

The term subprime refers to the credit quality of particular borrowers, who have weakened credit histories and a greater risk of loan default than prime borrowers. The value of U.S. subprime mortgages was estimated at $1.3 trillion as of March 2007, with over 7.5 million first-lien subprime mortgages outstanding.

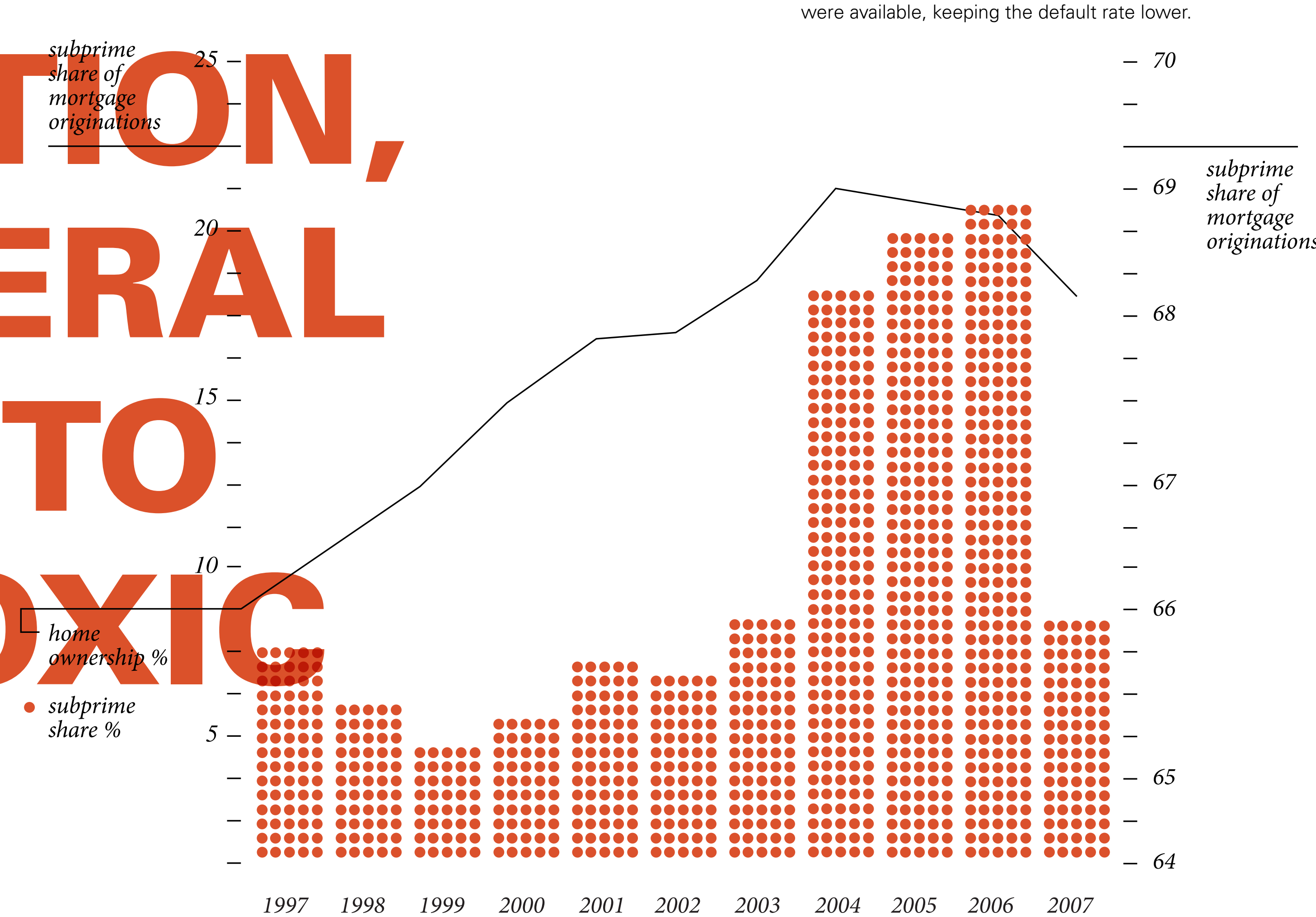
Subprime mortgages remained below 10% of all mortgage originations until 2004, when they spiked to nearly 20% and remained there through the 2005-2006 peak of the United States housing bubble. A proximate event to this increase was the April 2004 decision by the U.S. Securities and Exchange Commission (SEC) to relax the net capital rule, which encouraged the largest five investment banks to dramatically increase their financial leverage and aggressively expand their issuance of mortgage-backed securities. Subprime mortgage payment delinquency rates remained in the 10-15% range from 1998 to 2006, then began to increase rapidly, rising to 25% by early 2008.

Mortgage Underwriting

In addition to considering higher-risk borrowers, lenders offered increasingly risky loan options and borrowing incentives. Mortgage underwriting standards declined gradually during the boom period, particularly form 2004 to 2007. The use of automated loan approvals allowed loans to be made without appropriate review and documentation. In 2007, 40% of all subprime loans resulted from automated underwriting. The chairman of the Mortgage Bankers Association claimed that mortgage brokers, while profiting from the home loan boom, did not do enough to examine whether borrowers could repay. Mortgage fraud by lenders and borrowers increased enormously.

A study by analysts at the Federal Reserve Bank of Cleveland found that the average difference between subprime and prime mortgage interest rates (the "subprime markup") declined significantly between 2001 and 2007. The quality of loans originated also worsened gradually during that period. The combination of declining risk premia and credit standards is common to boom and bust credit cycles. The authors also concluded that the decline in underwriting standards did not directly trigger the crisis, because the gradual changes in standards did not statistically account for the large difference in default rates for subprime mortgages issued between 2001-2005 (which had a 10% default rate within one year of origination) and 2006-2007 (which had a 20% rate). In other words, standards gradually declined but defaults suddenly jumped. Further, the authors argued that the trend in worsening loan quality was harder to detect with rising housing prices, as more refinancing options were available, keeping the default rate lower.

The credit cycle is the expansion and contraction of access to credit over the course of the business cycle. Some economists, including Barry Eichengreen, Hyman Minsky, and other Post-Keynesian economists, and some members of the Austrian school, regard credit cycles as the fundamental process driving the business cycle.



Down Payments and Negative Equity

A down payment refers to the cash paid to the lender for the home and represents the initial homeowners equity or financial interest in the home. A low down payment means that a home represents a highly leveraged investment for the homeowner, with little equity relative to debt. In such circumstances, only small declines in the value of the home result in negative equity, a situation in which the value of the home is less than the mortgage amount owed. In 2005, the median down payment for first-time home buyers was 2%, with 43% of those buyers making no down payment whatsoever. By comparison, China has down payment requirements that exceed 20%, with higher amounts for non-primary residences.

Economist Nouriel Roubini wrote in Forbes in July 2009: "Home prices have already fallen from their peak by about 30%. Based on my analysis, they are going to fall by at least 40% from their peak, and more likely 45%, before they bottom out. They are still falling at an annualized rate of over 18%. That fall of at least 40%-45% percent of home prices from their peak is going to imply that about half of all households that have a mortgage — about 25 million of the 51 million that have mortgages — are going to be underwater with negative equity and will have a significant incentive to walk away from their homes."

Economist Stan Leibowitz argued in the Wall Street Journal that the extent of equity in the home was the key factor in foreclosure, rather than the type of loan, credit worthiness of the borrower, or ability to pay. Although only 12% of homes had negative equity (meaning the property was worth less than the mortgage obligation), they comprised 47% of foreclosures during the second half of 2008. Homeowners with negative equity have less financial incentive to stay in the home.

The L.A. Times reported the results of a study that found homeowners with high credit scores at the time of entering the mortgage are 50% more likely to "strategically default"– abruptly and intentionally pull the plug and abandon the mortgage — compared with lower-scoring borrowers. Such strategic defaults were heavily concentrated in markets with the highest price declines. An estimated 588,000 strategic defaults occurred nationwide during 2008, more than double the total in 2007. They represented 18% of all serious delinquencies that extended for more than 60 days in the fourth quarter of 2008.

Predatory Lending

Predatory lending refers to the practice of unscrupulous lenders, to enter into "unsafe" or "unsound" secured loans for inappropriate purposes. A classic bait-and-switch method was used by Countrywide, advertising low interest rates for home refinancing. Such loans were written into mind-numbingly detailed contracts, and swapped for more expensive loan products on the day of closing. Whereas the advertisement might state that 1% or 1.5% interest would be charged, the consumer would be put into an adjustable rate mortgage (ARM) in which the interest charged would be greater than the amount of interest paid. This created negative amortization, which the credit consumer might not notice until long after the loan transaction had been consummated.

In finance, negative amortization, also known as NegAm, deferred interest or graduated payment mortgage, occurs whenever the loan payment for any period is less than the interest charged over that period so that the outstanding balance of the loan increases.

Countrywide, sued by California Attorney General Jerry Brown for "Unfair Business Practices" and "False Advertising" was making high cost mortgages "to homeowners with weak credit, adjustable rate mortgages (ARMs) that allowed homeowners to make interest-only payments." When housing prices decreased, homeowners in ARMs then had little incentive to pay their monthly payments, since their home equity had disappeared. This caused Countrywide's financial condition to deteriorate, ultimately resulting in a decision by the Office of Thrift Supervision to seize the lender.

Countrywide, according to Republican Lawmakers, had involved itself in making low-cost loans to politicians, for purposes of gaining political favors. Former employees from Ameriquest, which was United States's leading wholesale lender,[46] described a system in which they were pushed to falsify mortgage documents and then sell the mortgages to Wall Street banks eager to make fast profits. There is growing evidence that such mortgage frauds may be a cause of the crisis.

IN 2004, THE FBI WARNED OF AN EPIDEMIC IN MORTGAGE FRAUD

CULTURE OF IRRESPONSIBILITY

In a June 2009 speech, President Barack Obama argued that a "culture of irresponsibility" was an important cause of the crisis. He criticized executive compensation that "rewarded recklessness rather than responsibility" and Americans who bought homes "without accepting the responsibilities." He continued that there "was far too much debt and not nearly enough capital in the system. And a growing economy bred complacency."

A key theme of the crisis is that many large financial institutions did not have a sufficient financial cushion to absorb the losses they sustained or to support the commitments made to others. Using technical terms, these firms were highly leveraged (i.e., they maintained a high ratio of debt to equity) or had insufficient capital to post as collateral for their borrowing. A key to a stable financial system is that firms have the financial capacity to support their commitments. Michael Lewis and David Einhorn argued: "The most critical role for regulation is to make sure that the sellers of risk have the capital to support their bets."

Consumer and Household Borrowing

U.S. households and financial institutions became increasingly indebted or overleveraged during the years preceding the crisis. This increased their vulnerability to the collapse of the housing bubble and worsened the ensuing economic downturn.

USA household debt as a percentage of annual disposable personal income was 127% at the end of 2007, versus 77% in 1990.

U.S. home mortgage debt relative to gross domestic product (GDP) increased from an average of 46% during the 1990s to 73% during 2008, reaching $10.5 trillion.

In 1981, U.S. private debt was 123% of GDP; by the third quarter of 2008, it was 290%.

Home Equity Extraction

This refers to homeowners borrowing and spending against the value of their homes, typically via a home equity loan or when selling the home. Free cash used by consumers from home equity extraction doubled from $627 billion in 2001 to $1,428 billion in 2005 as the housing bubble built, a total of nearly $5 trillion dollars over the period, contributing to economic growth worldwide.[54][55][56] U.S. home mortgage debt relative to GDP increased from an average of 46% during the 1990s to 73% during 2008, reaching $10.5 trillion.

Housing speculation

Speculative borrowing in residential real estate has been cited as a contributing factor to the subprime mortgage crisis. During 2006, 22% of homes purchased (1.65 million units) were for investment purposes, with an additional 14% (1.07 million units) purchased as vacation homes. During 2005, these figures were 28% and 12%, respectively. In other words, a record level of nearly 40% of homes purchases were not intended as primary residences. David Lereah, NAR's chief economist at the time, stated that the 2006 decline in investment buying was expected: "Speculators left the market in 2006, which caused investment sales to fall much faster than the primary market."

Housing prices nearly doubled between 2000 and 2006, a vastly different trend from the historical appreciation at roughly the rate of inflation. While homes had not traditionally been treated as investments subject to speculation, this behavior changed during the housing boom. Media widely reported condominiums being purchased while under construction, then being "flipped" (sold) for a profit without the seller ever having lived in them. Some mortgage companies identified risks inherent in this activity as early as 2005, after identifying investors assuming highly leveraged positions in multiple properties.

The Manhattan Institute for Policy Research is a conservative, market-oriented think tank established in New York City in 1978 by Antony Fisher and William J. Casey.

Nicole Gelinas of the Manhattan Institute described the negative consequences of not adjusting tax and mortgage policies to the shifting treatment of a home from conservative inflation hedge to speculative investment. Economist Robert Shiller argued that speculative bubbles are fueled by "contagious optimism, seemingly impervious to facts, that often takes hold when prices are rising. Bubbles are primarily social phenomena; until we understand and address the psychology that fuels them, they're going to keep forming."

Pro-Cyclical Human Nature

Keynesian economist Hyman Minsky described how speculative borrowing contributed to rising debt and an eventual collapse of asset values.[63] Economist Paul McCulley described how Minsky's hypothesis translates to the current crisis, using Minsky's words: "...from time to time, capitalist economies exhibit inflations and debt deflations which seem to have the potential to spin out of control. In such processes, the economic system's reactions to a movement of the economy amplify the movement–inflation feeds upon inflation and debt-deflation feeds upon debt deflation." In other words, people are momentum investors by nature, not value investors. People naturally take actions that expand the apex and nadir of cycles. One implication for policymakers and regulators is the implementation of counter-cyclical policies, such as contingent capital requirements for banks that increase during boom periods and are reduced during busts.

Corporate Risk-Taking and Leverage

The former CEO of Citigroup Charles O. Prince said in November 2007: "As long as the music is playing, you've got to get up and dance." This metaphor summarized how financial institutions took advantage of easy credit conditions, by borrowing and investing large sums of money, a practice called leveraged lending. Debt taken on by financial institutions increased from 63.8% of U.S. gross domestic product in 1997 to 113.8% in 2007.

A 2004 SEC decision related to the net capital rule allowed USA investment banks to issue substantially more debt, which was then used to help fund the housing bubble through purchases of mortgage-backed securities. From 2004-07, the top five U.S. investment banks each significantly increased their financial leverage (see diagram), which increased their vulnerability to a financial shock. These five institutions reported over $4.1 trillion in debt for fiscal year 2007, about 30% of USA nominal GDP for 2007. Lehman Brothers was liquidated, Bear Stearns and Merrill Lynch were sold at fire-sale prices, and Goldman Sachs and Morgan Stanley became commercial banks, subjecting themselves to more stringent regulation. With the exception of Lehman, these companies required or received government support.

Fannie Mae and Freddie Mac, two U.S. Government sponsored enterprises, owned or guaranteed nearly $5 trillion in mortgage obligations at the time they were placed into conservatorship by the U.S. government in September 2008.

These seven entities were highly leveraged and had $9 trillion in debt or guarantee obligations, an enormous concentration of risk, yet were not subject to the same regulation as depository banks.

In a May 2008 speech, Ben Bernanke quoted Walter Bagehot: "A good banker will have accumulated in ordinary times the reserve he is to make use of in extraordinary times." However, this advice was not heeded by these institutions, which had used the boom times to increase their leverage ratio instead.

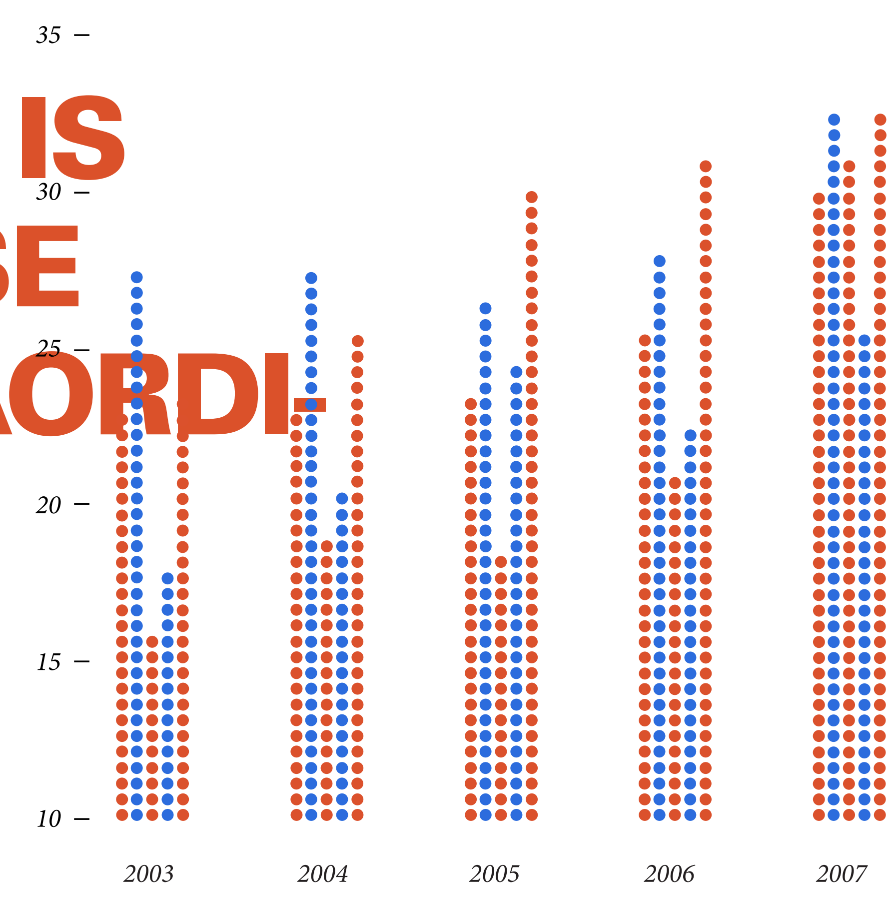
In laissez-faire capitalism, financial institutions would be risk-averse because failure would result in liquidation. But the Federal Reserve's 1984 rescue of Continental Illinois and the 1998 rescue of the Long-Term Capital Management hedge fund, among others, showed that institutions which failed to exercise due diligence could reasonably expect to be protected from the consequences of their mistakes. The belief that they could not be allowed to fail created a moral hazard, which was a contributing factor to the late-2000s recession.

A GOOD BANKER WILL HAVE ACCUMULATED IN ORDINARY TIMES THE RESERVE HE IS TO MAKE USE OF IN EXTRAORDINARY TIMES

Walter Bagehot

In its "Declaration of the Summit on Financial Markets and the World Ec
Group of 20 cited the following causes related to features of the modern fi

Leverage Ratios For Major Investment Banks



Left to right:
Morgan Stanley
Goldman Sachs
Merril Lynch
Bear Stearns
Lehman Brothers

omy," dated 15 November 2008, leaders of the ncial markets:

> *During a period of strong global growth, growing capital flows, and prolonged stability earlier this decade, market participants sought higher yields without an adequate appreciation of the risks and failed to exercise proper due diligence. At the same time, weak underwriting standards, unsound risk management practices, increasingly complex and opaque financial products, and consequent excessive leverage combined to create vulnerabilities in the system. Policy-makers, regulators and supervisors, in some advanced countries, did not adequately appreciate and address the risks building up in financial markets, keep pace with financial innovation, or take into account the systemic ramifications of domestic regulatory actions.*

Declaration of G20

AIG IS NOTABLE FOR HAVING RECEIVED $170 BILLION IN TAXPAYER BAILOUTS, THE GREATEST EVER FOR ANY CORPORATION

A protester on Wall Street in the wake of the AIG bonus payments controversy is interviewed by news media

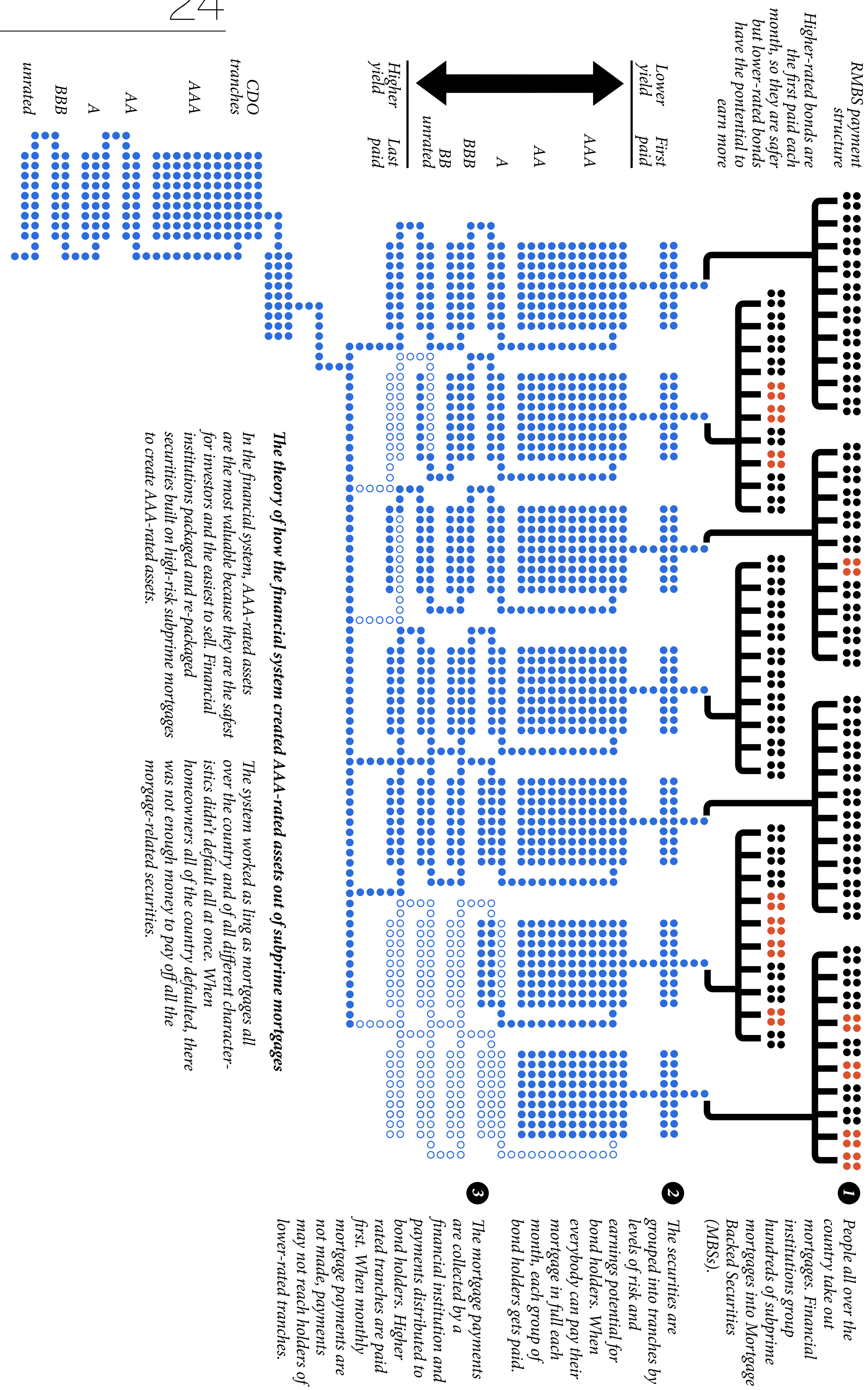
Financial Product Innovation

The term financial innovation refers to the ongoing development of financial products designed to achieve particular client objectives, such as offsetting a particular risk exposure (such as the default of a borrower) or to assist with obtaining financing. Examples pertinent to this crisis included: the adjustable-rate mortgage; the bundling of subprime mortgages into mortgage-backed securities (MBS) or collateralized debt obligations (CDO) for sale to investors, a type of securitization; and a form of credit insurance called credit default swaps(CDS). The usage of these products expanded dramatically in the years leading up to the crisis. These products vary in complexity and the ease with which they can be valued on the books of financial institutions.

The CDO in particular enabled financial institutions to obtain investor funds to finance subprime and other lending, extending or increasing the housing bubble and generating large fees. Approximately $1.6 trillion in CDO's were originated between 2003-2007. A CDO essentially places cash payments from multiple mortgages or other debt obligations into a single pool, from which the cash is allocated to specific securities in a priority sequence. Those securities obtaining cash first received investment-grade ratings from rating agencies. Lower priority securities received cash thereafter, with lower credit ratings but theoretically a higher rate of return on the amount invested.[75][76] A sample of 735 CDO deals originated between 1999 and 2007 showed that subprime and other less-than-prime mortgages represented an increasing percentage of CDO assets, rising from 5% in 2000 to 36% in 2007.

For a variety of reasons, market participants did not accurately measure the risk inherent with this innovation or understand its impact on the overall stability of the financial system. For example, the pricing model for CDOs clearly did not reflect the level of risk they introduced into the system. The average recovery rate for "high quality" CDOs has been approximately 32 cents on the dollar, while the recovery rate for mezzanine CDO's has been approximately five cents for every dollar. These massive, practically unthinkable, losses have dramatically impacted the balance sheets of banks across the globe, leaving them with very little capital to continue operations.

Others have pointed out that there were not enough of these loans made to cause a crisis of this magnitude. In an article in Portfolio Magazine, Michael Lewis spoke with one trader who noted that "There weren't enough Americans with [bad] credit taking out [bad loans] to satisfy investors' appetite for the end product." Essentially, investment banks and hedge funds used financial innovation to synthesize more loans using derivatives. "They were creating [loans] out of whole cloth. One hundred times over! That's why the losses are so much greater than the loans."



MAGNETAR CAPITAL ENCOURAGED INVESTORS TO PURCHASE CDO'S WHILE SIMULTANEOUSLY BETTING AGAINST THEM

Princeton professor Harold James wrote that one of the by products of this innovation was that MBS and other financial assets were "repackaged so thoroughly and resold so often that it became impossible to clearly connect the thing being traded to its underlying value." He called this a "...profound flaw at the core of the U.S. financial system..."

Another example relates to AIG, which insured obligations of various financial institutions through the usage of credit default swaps. The basic CDS transaction involved AIG receiving a premium in exchange for a promise to pay money to party A in the event party B defaulted. However, AIG did not have the financial strength to support its many CDS commitments as the crisis progressed and was taken over by the government in September 2008. U.S. taxpayers provided over $180 billion in government support to AIG during 2008 and early 2009, through which the money flowed to various counterparties to CDS transactions, including many large global financial institutions.

Author Michael Lewis wrote that CDS enabled speculators to stack bets on the same mortgage bonds and CDO's. This is analogous to allowing many persons to buy insurance on the same house. Speculators that bought CDS insurance were betting that significant defaults would occur, while the sellers (such as AIG) bet they would not. In addition, Chicago Public Radio and the Huffington Post reported in April 2010 that market participants, including a hedge fund called Magnetar Capital, encouraged the creation of CDO's containing low quality mortgages, so they could bet against them using CDS. NPR reported that Magnetar encouraged investors to purchase CDO's while simultaneously betting against them, without disclosing the latter bet.

Inaccurate Credit Ratings

Credit rating agencies are now under scrutiny for having given investment-grade ratings to MBSs based on risky subprime mortgage loans. These high ratings enabled these MBS to be sold to investors, thereby financing the housing boom. These ratings were believed justified because of risk reducing practices, such as credit default insurance and equity investors willing to bear the first losses.[dubious – discuss] However, there are also indications that some involved in rating subprime-related securities knew at the time that the rating process was faulty.

An estimated $3.2 trillion in loans were made to homeowners with bad credit and undocumented incomes (e.g., subprime or Alt-A mortgages) between 2002 and 2007. Economist Joseph Stiglitz stated: "I view the rating agencies as one of the key culprits...They were the party that performed the alchemy that converted the securities from F-rated to A-rated. The banks could not have done what they did without the complicity of the rating agencies." Without the AAA ratings, demand for these securities would have been considerably less. Bank writedowns and losses on these investments totaled $523 billion as of September 2008.

The ratings of these securities was a lucrative business for the rating agencies, accounting for just under half of Moody's total ratings revenue in 2007. Through 2007, ratings companies enjoyed record revenue, profits and share prices. The rating companies earned as much as three times more for grading these complex products than corporate bonds, their traditional business. Rating agencies also competed with each other to rate particular MBS and CDO securities issued by investment banks, which critics argued contributed to lower rating standards. Interviews with rating agency senior managers indicate the competitive pressure to rate the CDO's favorably was strong within the firms. This rating business was their "golden goose" (which laid the proverbial golden egg or wealth) in the words of one manager. Author Upton Sinclair (1878–1968) famously stated: "It is difficult to get a man to understand something when his job depends on not understanding it." From 2000-2006, structured finance (which includes CDO's) accounted for 40% of the revenues of the credit rating agencies. During that time, one major rating agency had its stock increase six-fold and its earnings grew by 900%

Critics allege that the rating agencies suffered from conflicts of interest, as they were paid by investment banks and other firms that organize and sell structured securities to investors. On 11 June 2008, the SEC proposed rules designed to mitigate perceived conflicts of interest between rating agencies and issuers of structured securities. On 3 December 2008, the SEC approved measures to strengthen oversight of credit rating agencies, following a ten-month investigation that found "significant weaknesses in ratings practices," including conflicts of interest.

Between Q3 2007 and Q2 2008, rating agencies lowered the credit ratings on $1.9 trillion in mortgage backed securities. Financial institutions felt they had to lower the value of their MBS and acquire additional capital so as to maintain capital ratios. If this involved the sale of new shares of stock, the value of the existing shares was reduced. Thus ratings downgrades lowered the stock prices of many financial firms.

Lack of Transparency and Independence in Financial Modeling

The limitations of many, widely-used financial models also were not properly understood. Li's Gaussian copula formula assumed that the price of CDS was correlated with and could predict the correct price of mortgage backed securities. Because it was highly tractable, it rapidly came to be used by a huge percentage of CDO and CDS investors, issuers, and rating agencies. According to one wired.com article: "Then the model fell apart. Cracks started appearing early on, when financial markets began behaving in ways that users of Li's formula hadn't expected. The cracks became full-fledged canyons in 2008—when ruptures in the financial system's foundation swallowed up trillions of dollars and put the survival of the global banking system in serious peril... Li's Gaussian copula formula will go down in history as instrumental in causing the unfathomable losses that brought the world financial system to its knees."

As financial assets became more complex, less transparent, and harder and harder to value, investors were reassured by the fact that both the international bond rating agencies and bank regulators, who came to rely on them, accepted as valid some complex mathematical models which theoretically showed the risks were much smaller than they actually proved to be in practice. George Soros commented that "The super-boom got out of hand when the new products became so complicated that the authorities could no longer calculate the risks and started relying on the risk management methods of the banks themselves. Similarly, the rating agencies relied on the information provided by the originators of synthetic products. It was a shocking abdication of responsibility."

$50 BILLION WAS MOVED OFF BALANCE SHEET IN A QUESTIONABLE MANNER BY LEHMAN BROTHERS MANAGEMENT DURING 2008

Off-balance sheet financing

Complex financing structures called structured investment vehicles (SIV) or conduits enabled banks to move significant amounts of assets and liabilities, including unsold CDO's, off their books. This had the effect of helping the banks maintain regulatory minimum capital ratios. They were then able to lend anew, earning additional fees. Author Robin Blackburn explained how they worked:

> *Institutional investors could be persuaded to buy the SIV's supposedly high-quality, short-term commercial paper, allowing the vehicles to acquire longer-term, lower quality assets, and generating a profit on the spread between the two. The latter included larger amounts of mortgages, credit-card debt, student loans and other receivables...For about five years those dealing in SIV's and conduits did very well by exploiting the spread...but this disappeared in August 2007, and the banks were left holding a very distressed baby.*

Off balance sheet financing also made firms look less leveraged and enabled them to borrow at cheaper rates. Banks had established automatic lines of credit to these SIV and conduits. When the cash flow into the SIV's began to decline as subprime defaults mounted, banks were contractually obligated to provide cash to these structures and their investors. This "conduit-related balance sheet pressure" placed strain on the banks' ability to lend, both raising interbank lending rates and reducing the availability of funds.

In the years leading up to the crisis, the top four U.S. depository banks moved an estimated $5.2 trillion in assets and liabilities off-balance sheet into these SIV's and conduits. This enabled them to essentially bypass existing regulations regarding minimum capital ratios, thereby increasing leverage and profits during the boom but increasing losses during the crisis. Accounting guidance was changed in 2009 that will require them to put some of these assets back onto their books, which will significantly reduce their capital ratios. One news agency estimated this amount to be between $500 billion and $1 trillion. This effect was considered as part of the stress tests performed by the government during 2009.

Some companies may have significant amounts of off-balance sheet assets and liabilities. For example, financial institutions often offer asset management or brokerage services to their clients. The assets in question (often securities) usually belong to the individual clients directly or in trust, while the company may provide management, depository or other services to the client.

During March 2010, the bankruptcy court examiner released a report on Lehman Brothers, which had failed spectacularly in September 2008. The report indicated that up to $50 billion was moved off-balance sheet in a questionable manner by management during 2008, with the effect of making its debt level (leverage ratio) appear smaller. vAnalysis by the Federal Reserve Bank of New York indicated big banks mask their risk levels just prior to reporting data quarterly to the public.

Regulatory Avoidance

Certain financial innovation may also have the effect of circumventing regulations, such as off-balance sheet financing that affects the leverage or capital cushion reported by major banks. For example, Martin Wolf wrote in June 2009: "...an enormous part of what banks did in the early part of this decade – the off-balance-sheet vehicles, the derivatives and the 'shadow banking system' itself – was to find a way round regulation."

Financial Sector Concentration

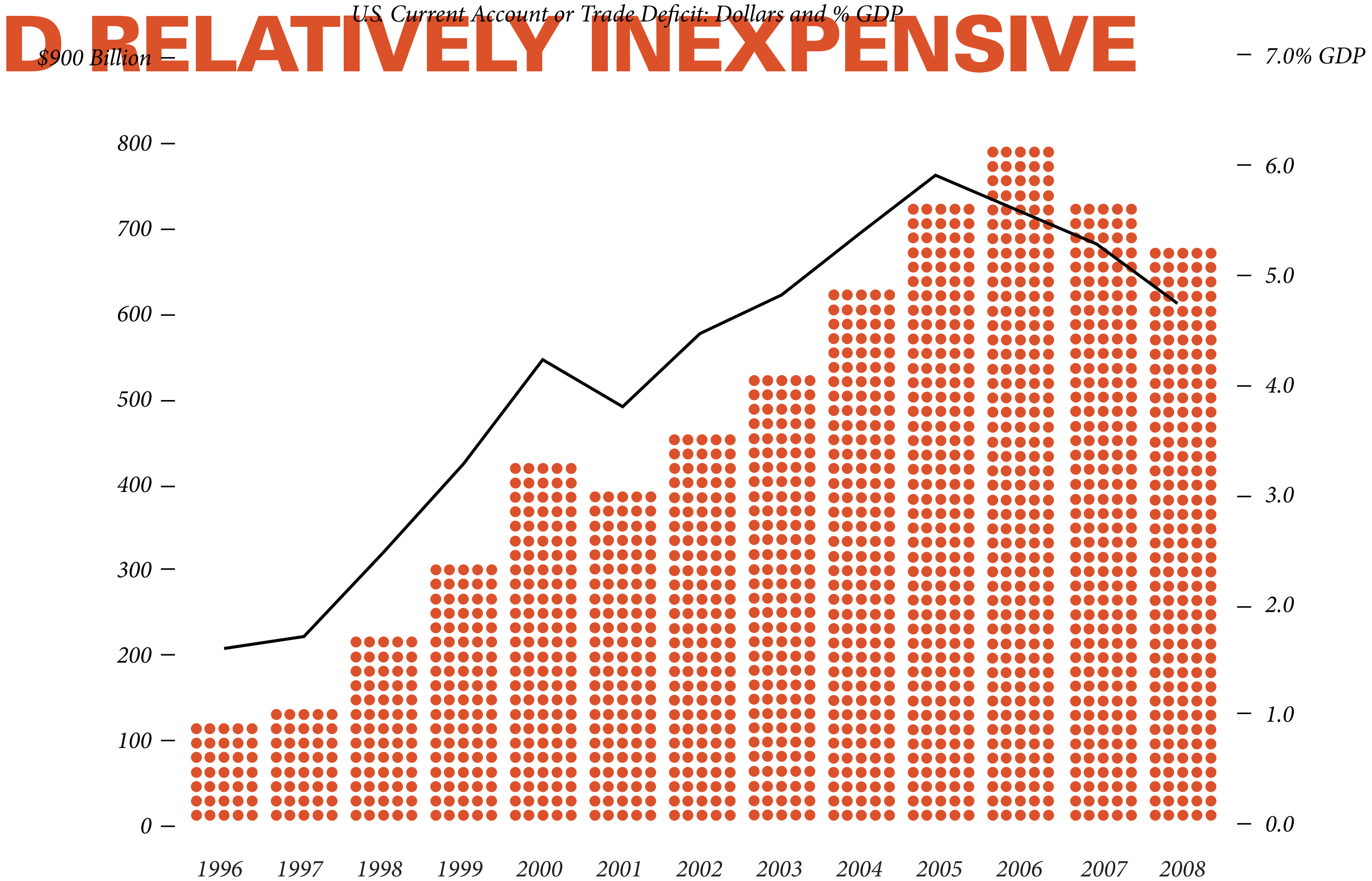
Niall Ferguson wrote that the financial sector became increasingly concentrated in the years leading up to the crisis, which made the stability of the financial system more reliant on just a few firms, which were also highly leveraged:

> *Between 1990 and 2008, according to Wall Street veteran Henry Kaufman, the share of financial assets held by the 10 largest U.S. financial institutions rose from 10 percent to 50 percent, even as the number of banks fell from more than 15,000 to about 8,000. By the end of 2007, 15 institutions with combined shareholder equity of $857 billion had total assets of $13.6 trillion and off-balance-sheet commitments of $5.8 trillion—a total leverage ratio of 23 to 1. They also had underwritten derivatives with a gross notional value of $216 trillion. These firms had once been Wall Street's "bulge bracket," the companies that led underwriting syndicates. Now they did more than bulge. These institutions had become so big that the failure of just one of them would pose a systemic risk.*

By contrast, some scholars have argued that fragmentation in the mortgage securitization market led to increased risk taking and a deterioration in underwriting standards.

LOW INTEREST RATES MADE BANK LENDING MORE PROFITABLE, WHILE TRADE DEFICITS RESULTED IN LARGE CAPITAL INFLOWS TO THE U.S. BOTH MADE FUNDS FOR BORROWING PLENTIFUL AND RELATIVELY INEXPENSIVE

U.S. Current Account or Trade Deficit: Dollars and % GDP



Interest Rates

From 2000 to 2003, the Federal Reserve lowered the federal funds rate target from 6.5% to 1.0%. This was done to soften the effects of the collapse of the dot-com bubble and of the September 2001 terrorist attacks, and to combat the perceived risk of deflation. The Fed then raised the Fed funds rate significantly between July 2004 and July 2006. This contributed to an increase in 1-year and 5-year adjustable-rate mortgage (ARM) rates, making ARM interest rate resets more expensive for homeowners. This may have also contributed to the deflating of the housing bubble, as asset prices generally move inversely to interest rates and it became riskier to speculate in housing.

Globalization and Trade Deficits

Globalization and trade imbalances contributed to enormous inflows of money into the U.S. from high savings countries, fueling debt-driven consumption and the housing bubble. The ratio of household debt to disposable income rose from 77% in 1990 to 127% by 2007.[110] The steady entry into the world economy of new export-oriented economies began with Japan and the Asian tigers in the 1980s and peaked with China in the early 2000s, representing more than two billion newly employable workers. The integration of these high-savings, lower wage economies into the global economy, combined with dramatic productivity gains made possible by new information technologies and the globalization of corporate supply chains, decisively shifted the balance of global supply and demand. By 2000, the world economy was beset by excess supplies of labor, capital, and productive capacity relative to global demand. But the collapse of the consumer credit and housing price bubbles brought an end to this pattern of debt-financed economic growth and left the U.S. with the massive debt overhang.

This globalization can be measured in growing trade deficits in developed countries such as the U.S. and Europe. In 2005, Ben Bernanke addressed the implications of the USA's high and rising current account deficit, resulting from USA imports exceeding its exports. Between 1996 and 2004, the USA current account deficit increased by $650 billion, from 1.5% to 5.8% of GDP. Financing these deficits required the USA to borrow large sums from abroad, much of it from countries running trade surpluses, mainly the emerging economies in Asia and oil-exporting nations. The balance of payments identity requires that a country (such as the USA) running a current account deficit also have a capital account (investment) surplus of the same amount. Hence large and growing amounts of foreign funds (capital) flowed into the USA to finance its imports. This created demand for various types of financial assets, raising the prices of those assets while lowering interest rates. Foreign investors had these funds to lend, either because they had very high personal savings rates (as high as 40% in China), or because of high oil prices. Bernanke referred to this as a "saving glut." A "flood" of funds (capital or liquidity) reached the USA financial markets. Foreign governments supplied funds by purchasing USA Treasury bonds and thus avoided much of the direct impact of the crisis. USA households, on the other hand, used funds borrowed from foreigners to finance consumption or to bid up the prices of housing and financial assets. Financial institutions invested foreign funds in mortgage-backed securities. USA housing and financial assets dramatically declined in value after the housing bubble burst.

The term saving glut describes a situation in which there are worldwide too many savings with respect to investment opportunities.

Chinese Mercantilism

Martin Wolf has argued that "inordinately mercantilist currency policies" were a significant cause of the U.S. trade deficit, indirectly driving a flood of money into the U.S. as described above. In his view, China maintained an artificially weak currency to make Chinese goods relatively cheaper for foreign countries to purchase, thereby keeping its vast workforce occupied and encouraging exports to the U.S. One byproduct was a large accumulation of U.S. dollars by the Chinese government, which were then invested in U.S. government securities and those of Fannie Mae and Freddie Mac, providing additional funds for lending that contributed to the housing bubble.

Economist Paul Krugman also wrote similar comments during October 2009, further arguing that China's currency should have appreciated relative to the U.S. dollar beginning around 2001. Various U.S. officials have also indicated concerns with Chinese exchange rate policies, which have not allowed its currency to appreciate significantly relative to the dollar despite large trade surpluses. In January 2009, Timothy Geithner wrote: "Obama–backed by the conclusions of a broad range of economists–believes that China is manipulating its currency… the question is how and when to broach the subject in order to do more good than harm."

CHINA HAS VIOLATED ALL ESTABLISHED CURRENCY MANIPULATION STANDARDS

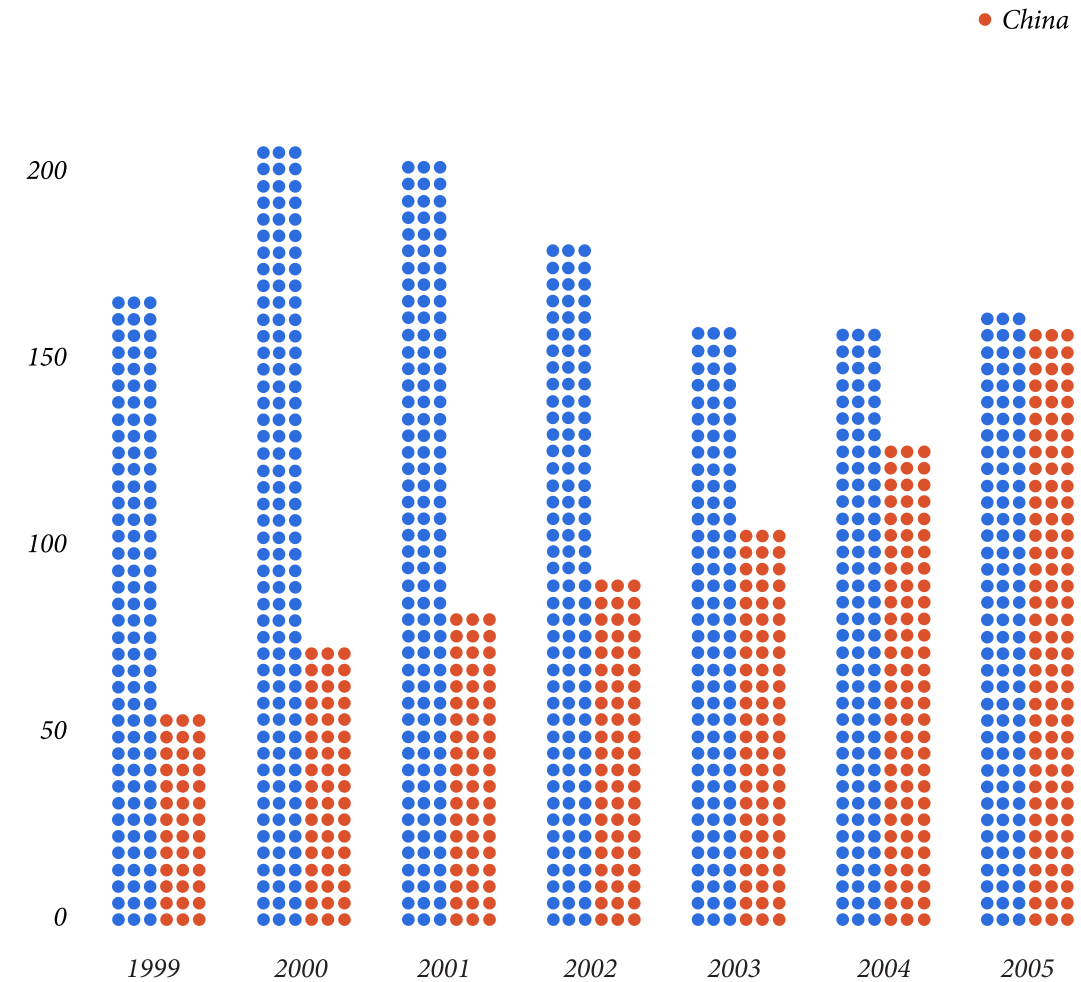
End of a Long Wave

The cause of the crisis can be seen also in principles of technological development and in long economic waves based on technological revolutions. Daniel Šmihula believes that this crisis and stagnation are a result of the end of the long economic cycle originally initiated by the Information and telecommunications technological revolution in 1985–2000. The market has been already saturated by new "technical wonders" (e.g. everybody has his own mobile phone) and–what is more important–in the developed countries the economy reached limits of productivity in conditions of existing technologies. A new economic revival can come only with a new technological revolution (a hypothetical Post-informational technological revolution). Šmihula expects that it will happen in about 2014–15.

Private Capital and the Search For Yield

In a Peabody Award winning program, NPR correspondents argued that a "Giant Pool of Money" (represented by $70 trillion in worldwide fixed income investments) sought higher yields than those offered by U.S. Treasury bonds early in the decade, which were low due to low interest rates and trade deficits discussed above. Further, this pool of money had roughly doubled in size from 2000 to 2007, yet the supply of relatively safe, income generating investments had not grown as fast. Investment banks on Wall Street answered this demand with the mortgage-backed security (MBS) and collateralized debt obligation (CDO), which were assigned safe ratings by the credit rating agencies. In effect, Wall Street connected this pool of money to the mortgage market in the U.S., with enormous fees accruing to those throughout the mortgage supply chain, from the mortgage broker selling the loans, to small banks that funded the brokers, to the giant investment banks behind them. By approximately 2003, the supply of mortgages originated at traditional lending standards had been exhausted. However, continued strong demand for MBS and CDO began to drive down lending standards, as long as mortgages could still be sold along the supply chain. Eventually, this speculative bubble proved unsustainable.

Figure A. Exports to the EU-25, 1999–2005



Significance of the Parallel Banking System

In a June 2008 speech, U.S. Treasury Secretary Timothy Geithner, then President and CEO of the NY Federal Reserve Bank, placed significant blame for the freezing of credit markets on a "run" on the entities in the "parallel" banking system, also called the shadow banking system. These entities became critical to the credit markets underpinning the financial system, but were not subject to the same regulatory controls. Further, these entities were vulnerable because they borrowed short-term in liquid markets to purchase long-term, illiquid and risky assets. This meant that disruptions in credit markets would make them subject to rapid deleveraging, selling their long-term assets at depressed prices. He described the significance of these entities: "In early 2007, asset-backed commercial paper conduits, in structured investment vehicles, in auction-rate preferred securities, tender option bonds and variable rate demand notes, had a combined asset size of roughly $2.2 trillion. Assets financed overnight in triparty repo grew to $2.5 trillion. Assets held in hedge funds grew to roughly $1.8 trillion. The combined balance sheets of the then five major investment banks totaled $4 trillion. In comparison, the total assets of the top five bank holding companies in the United States at that point were just over $6 trillion, and total assets of the entire banking system were about $10 trillion." He stated that the "combined effect of these factors was a financial system vulnerable to self-reinforcing asset price and credit cycles."

The shadow banking system is the infrastructure and practices which support financial transactions that occur beyond the reach of existing state sanctioned monitoring and regulation.

Run on the Shadow Banking System

Nobel laureate and liberal political columnist Paul Krugman described the run on the shadow banking system as the "core of what happened" to cause the crisis. "As the shadow banking system expanded to rival or even surpass conventional banking in importance, politicians and government officials should have realized that they were re-creating the kind of financial vulnerability that made the Great Depression possible—and they should have responded by extending regulations and the financial safety net to cover these new institutions. Influential figures should have proclaimed a simple rule: anything that does what a bank does, anything that has to be rescued in crises the way banks are, should be regulated like a bank." He referred to this lack of controls as "malign neglect." Some researchers have suggested that competition between GSEs and the shadow banking system led to a deterioration in underwriting standards.

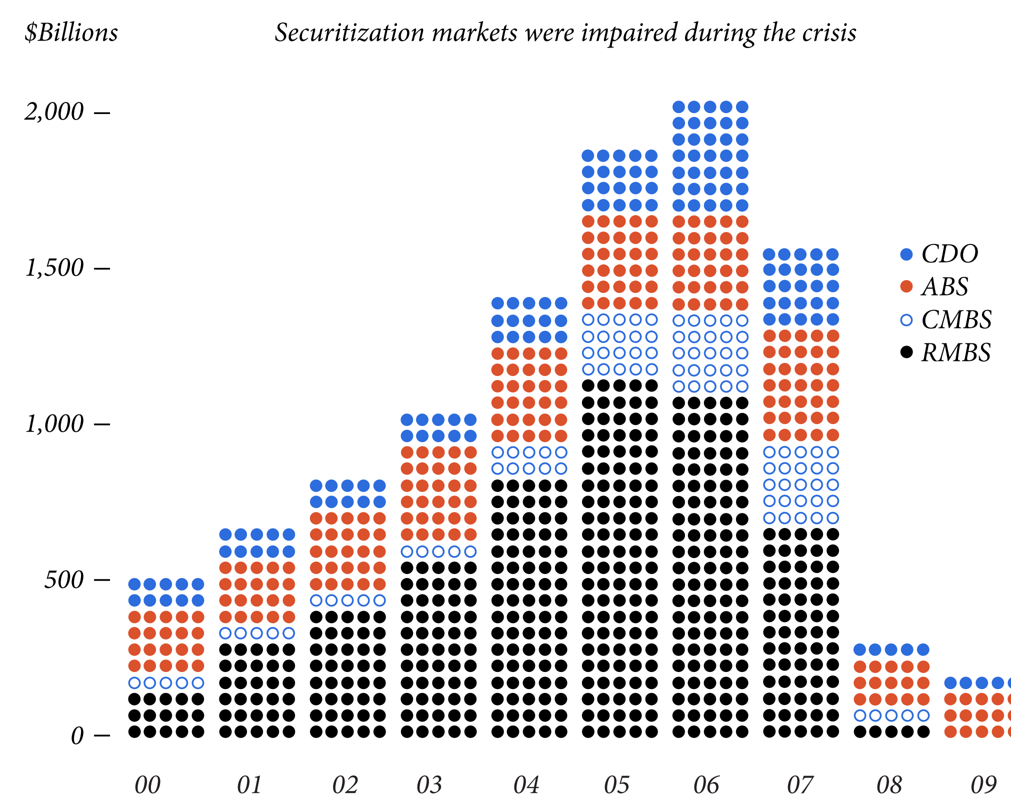
For example, investment bank Bear Stearns was required to replenish much of its funding in overnight markets, making the firm vulnerable to credit market disruptions. When concerns arose regarding its financial strength, its ability to secure funds in these short-term markets was compromised, leading to the equivalent of a bank run. Over four days, its available cash declined from $18 billion to $3 billion as investors pulled funding from the firm. It collapsed and was sold at a fire-sale price to bank JP Morgan Chase March 16, 2008.

SHADOW INSTITUTIONS ARE NOT SUBJECT TO THE SAME PRUDENTIAL REGULATIONS AS DEPOSITORY BANKS, SO THAT THEY DO NOT HAVE TO KEEP AS HIGH FINANCIAL RESERVES RELATIVE TO THEIR EXPOSURE

American homeowners, consumers, and corporations owed roughly $25 trillion during 2008. American banks retained about $8 trillion of that total directly as traditional mortgage loans. Bondholders and other traditional lenders provided another $7 trillion. The remaining $10 trillion came from the securitization markets, meaning the parallel banking system. The securitization markets started to close down in the spring of 2007 and nearly shut-down in the fall of 2008. More than a third of the private credit markets thus became unavailable as a source of funds. In February 2009, Ben Bernanke stated that securitization markets remained effectively shut, with the exception of conforming mortgages, which could be sold to Fannie Mae and Freddie Mac.

The Economist reported in March 2010: "Bear Stearns and Lehman Brothers were non-banks that were crippled by a silent run among panicky overnight "repo" lenders, many of them money market funds uncertain about the quality of securitized collateral they were holding. Mass redemptions from these funds after Lehman's failure froze short-term funding for big firms."

Securitization markets were impaired during the crisis



Mortgage compensation model, executive pay and bonuses

During the boom period, enormous fees were paid to those throughout the mortgage supply chain, from the mortgage broker selling the loans, to small banks that funded the brokers, to the giant investment banks behind them. Those originating loans were paid fees for selling them, regardless of how the loans performed. Default or credit risk was passed from mortgage originators to investors using various types of financial innovation. This became known as the "originate to distribute" model, as opposed to the traditional model where the bank originating the mortgage retained the credit risk. In effect, the mortgage originators were left with nothing which was at risk, giving rise to moral hazard in which behavior and consequence were separated.

There are several interpretations of the phrase financial innovation. In general, it refers to the creating and marketing of new types of securities.

Economist Mark Zandi described moral hazard as a root cause of the subprime mortgage crisis. He wrote: "...the risks inherent in mortgage lending became so widely dispersed that no one was forced to worry about the quality of any single loan. As shaky mortgages were combined, diluting any problems into a larger pool, the incentive for responsibility was undermined." He also wrote: "Finance companies weren't subject to the same regulatory oversight as banks. Taxpayers weren't on the hook if they went belly up [pre-crisis], only their shareholders and other creditors were. Finance companies thus had little to discourage them from growing as aggressively as possible, even if that meant lowering or winking at traditional lending standards." The New York State Comptroller's Office has said that in 2006, Wall Street executives took home bonuses totaling $23.9 billion. "Wall Street traders were thinking of the bonus at the end of the year, not the long-term health of their firm. The whole system—from mortgage brokers to Wall Street risk managers—seemed tilted toward taking short-term risks while ignoring long-term obligations. The most damning evidence is that most of the people at the top of the banks didn't really understand how those [investments] worked."

Moral hazard is a situation in which a party insulated from risk behaves differently from how it would behave if it were fully exposed to the risk.

Investment banker incentive compensation was focused on fees generated from assembling financial products, rather than the performance of those products and profits generated over time. Their bonuses were heavily skewed towards cash rather than stock and not subject to "claw-back" (recovery of the bonus from the employee by the firm) in the event the MBS or CDO created did not perform. In addition, the increased risk (in the form of financial leverage) taken by the major investment banks was not adequately factored into the compensation of senior executives.

Bank CEO Jamie Dimon argued: "Rewards have to track real, sustained, risk-adjusted performance. Golden parachutes, special contracts, and unreasonable perks must disappear. There must be a relentless focus on risk management that starts at the top of the organization and permeates down to the entire firm. This should be business-as-usual, but at too many places, it wasn't."

THE RISKS INHERENT IN MORTGAGE LENDING BECAME SO WIDELY DISPERSED THAT NO ONE WAS FORCED TO WORRY ABOUT THE QUALITY OF ANY SINGLE LOAN

Critics have argued that the regulatory framework did not keep pace with financial innovation, such as the increasing importance of the shadow banking system, derivatives and off-balance sheet financing. In other cases, laws were changed or enforcement weakened in parts of the financial system. Several critics have argued that the most critical role for regulation is to make sure that financial institutions have the ability or capital to deliver on their commitments. Critics have also noted de facto deregulation through a shift in market share toward the least regulated portions of the mortgage market.

KEY EXAMPLES OF REGULATORY FAILURES INCLUDE:

In 1999, the U.S. Congress passed the Gramm-Leach-Bliley Act, which repealed part of the Glass–Steagall Act of 1933. This repeal has been criticized for reducing the separation between commercial banks (which traditionally had a conservative culture) and investment banks (which had a more risk-taking culture).

In 2004, the Securities and Exchange Commission relaxed the net capital rule, which enabled investment banks to substantially increase the level of debt they were taking on, fueling the growth in mortgage-backed securities supporting subprime mortgages. The SEC has conceded that self-regulation of investment banks contributed to the crisis.

Financial institutions in the shadow banking system are not subject to the same regulation as depository banks, allowing them to assume additional debt obligations relative to their financial cushion or capital base. This was the case despite the Long-Term Capital Management debacle in 1998, where a highly-leveraged shadow institution failed with systemic implications.

Regulators and accounting standard-setters allowed depository banks such as Citigroup to move significant amounts of assets and liabilities off-balance sheet into complex legal entities called structured investment vehicles, masking the weakness of the capital base of the firm or degree of leverage or risk taken. One news agency estimated that the top four U.S. banks will have to return between $500 billion and $1 trillion to their balance sheets during 2009. This increased uncertainty during the crisis regarding the financial position of the major banks. Off-balance sheet entities were also used by Enron as part of the scandal that brought down that company in 2001.

The U.S. Congress allowed the self-regulation of the derivatives market when it passed the Commodity Futures Modernization Act of 2000. Derivatives such as credit default swaps (CDS) can be used to hedge or speculate against particular credit risks. The volume of CDS outstanding increased 100-fold from 1998 to 2008, with estimates of the debt covered by CDS contracts, as of November 2008, ranging from US$33 to $47 trillion. Total over-the-counter (OTC) derivative notional value rose to $683 trillion by June 2008. Warren Buffett famously referred to derivatives as "financial weapons of mass destruction" in early 2003.

Author Roger Lowenstein summarized some of the regulatory problems that caused the crisis in November 2009: "1) Mortgage regulation was too lax and in some cases nonexistent; 2) Capital requirements for banks were too low; 3) Trading in derivatives such as credit default swaps posed giant, unseen risks; 4) Credit ratings on structured securities such as collateralized-debt obligations were deeply flawed; 5) Bankers were moved to take on risk by excessive pay packages; 6) The government's response to the crash also created, or exacerbated, moral hazard. Markets now expect that big banks won't be allowed to fail, weakening the incentives of investors to discipline big banks and keep them from piling up too many risky assets again."

BANKS IN THE U.S. LOBBY POLITICIANS EXTENSIVELY. A NOVEMBER 2009 REPORT FROM ECONOMISTS OF THE INTERNATIONAL MONETARY FUND (IMF) WRITING INDEPENDENTLY OF THAT ORGANIZATION INDICATED THAT:

Firms that lobby aggressively are more likely to engage in risky securitization of their loan books, have faster-growing mortgage loan portfolios as well as poorer share performance and larger loan defaults.

Thirty-three legislative proposals that would have increased regulatory scrutiny over banks were the targets of intense and successful lobbying.

US business spends $4.2 billion over the four-year election cycle on "targeted political activity", with finance, insurance and real estate ("FIRE") firms accounting for 15% of that total ($479,500 per firm) in 2006.

The "lobbying intensity" of the FIRE sector also "increased at a much faster pace relative to the average lobbying intensity over 1999-2006."

The study concluded that: "the prevention of future crises might require weakening political influence of the financial industry or closer monitoring of lobbying activities to understand better the incentives behind it."[149][150] The Boston Globe reported during that during January–June 2009, the largest four U.S. banks spent these amounts ($ millions) on lobbying, despite receiving taxpayer bailouts: Citigroup $3.1; JP Morgan Chase $3.1; Bank of America $1.5; and Wells Fargo $1.4.

The New York Times reported in April 2010: "An analysis by Public Citizen found that at least 70 former members of Congress were lobbying for Wall Street and the financial services sector last year, including two former Senate majority leaders (Trent Lott and Bob Dole), two former House majority leaders (Richard A. Gephardt and Dick Armey) and a former House speaker (J. Dennis Hastert). In addition to the lawmakers, data from the Center for Responsive Politics counted 56 former Congressional aides on the Senate or House banking committees who went on to use their expertise to lobby for the financial sector."

The Financial Crisis Inquiry Commission reported in January 2011 that "... from 1998 to 2008, the financial sector expended $2.7 billion in reported federal lobbying expenses; individuals and political action committees in the sector made more than $1 billion in campaign contributions."

A VARIETY OF CONFLICTS OF INTEREST HAVE BEEN ARGUED AS CONTRIBUTING TO THIS CRISIS:

Credit rating agencies are compensated for rating debt securities by those issuing the securities who have an interest in having the most positive ratings applied. Further, changing the debt rating on a company that insures multiple debt securities, such as AIG or MBIA, requires the re-rating of many other securities, creating significant costs. Despite taking on significantly more risk, AIG and MBIA retained the highest credit ratings until well into the crisis.

There is a "revolving door" between major financial institutions, the Treasury Department, and Treasury bailout programs. For example, the former CEO of Goldman Sachs was Henry Paulson, who became President George W. Bush's Treasury Secretary. Although three of Goldman's key competitors either failed or were allowed to fail, it received $10 billion in Troubled Asset Relief Program (TARP) funds (which it has since paid back) and $12.9 billion in payments via AIG, while remaining highly profitable and paying enormous bonuses. The first two officials in charge of the TARP bailout program were also from Goldman.

There is a "revolving door" between major financial institutions and the Securities and Exchange Commission (SEC), which is supposed to monitor them. For example, as of January 2009, the SEC's two most recent Directors of Enforcement had taken positions at powerful banks directly after leaving the role. The route into lucrative positions with banks places a financial incentive on regulators to maintain good relationships with those they monitor. This is sometimes referred to as regulatory capture.

CORPORATE AMERICA WENT ASTRAY LARGELY BECAUSE THE POWER OF MANAGERS WENT VIRTUALLY UNCHECKED BY OUR GATEKEEPERS FOR FAR TOO LONG

Commodity Price Volatility

A commodity price bubble was created following the collapse in the housing bubble. The price of oil nearly tripled from $50 to $140 from early 2007 to 2008, before plunging as the financial crisis began to take hold in late 2008. Experts debate the causes, which include the flow of money from housing and other investments into commodities to speculation and monetary policy. An increase in oil prices tends to divert a larger share of consumer spending into gasoline, which creates downward pressure on economic growth in oil importing countries, as wealth flows to oil-producing states. Spiking instability in the price of oil over the decade leading up to the price high of 2008 has also been proposed as a causal factor in the financial crisis.

Inaccurate Economic Forecasting

A cover story in BusinessWeek magazine claims that economists mostly failed to predict the worst international economic crisis since the Great Depression of 1930s. The Wharton School of the University of Pennsylvania online business journal examines why economists failed to predict a major global financial crisis. An article in the New York Times informs that economist Nouriel Roubini warned of such crisis as early as September 2006, and the article goes on to state that the profession of economics is bad at predicting recessions. According to The Guardian, Roubini was ridiculed for predicting a collapse of the housing market and worldwide recession, while The New York Times labelled him "Dr. Doom". However, there are examples of other experts who gave indications of a financial crisis.

An empirical study by John B. Taylor concluded that the crisis was: (1) caused by excess monetary expansion; (2) prolonged by an inability to evaluate counter-party risk due to opaque financial statements; and (3) worsened by the unpredictable nature of government's response to the crisis.

Mark-to-Market Accounting

The appropriate valuation of complex and illiquid securities such as MBS and CDO held as assets on the books of financial institutions has been an ongoing debate during the crisis. The debate arises because accounting rules require companies to adjust the value of such securities to market value, as opposed to the original price paid. Many large financial institutions recognized significant losses during 2007 and 2008, as a result of marking-down MBS asset prices to market value. For some institutions, this also triggered a margin call, where lenders that had provided the funds using the MBS as collateral had contractual rights to get their money back. The combination of losses and margin calls resulted in further forced sales of MBS and emergency efforts to obtain cash (liquidity). Markdowns may also reduce the value of bank regulatory capital, requiring additional capital raising and creating uncertainty regarding the health of the bank. In other words, writing down the assets presented both liquidity and solvency challenges. Advocates argued that the rule enabled the most accurate estimate of the financial health of the banks.

Systemic Crisis

Another analysis, different from the mainstream explanation, is that the financial crisis is merely a symptom of another, deeper crisis, which is a systemic crisis of capitalism itself. According to Samir Amin, an Egyptian economist, the constant decrease in GDP growth rates in Western countries since the early 1970s created a growing surplus of capital which did not have sufficient profitable investment outlets in the real economy. The alternative was to place this surplus into the financial market, which became more profitable than productive capital investment, especially with subsequent deregulation.According to Samir Amin, this phenomenon has led to recurrent financial bubbles (such as the internet bubble) and is the deep cause of the financial crisis of 2007-2009.

Market saturation is a term used to describe a situation in which a product has become diffused (distributed) within a market[1]; the actual level of saturation can depend on consumer purchasing power; as well as competition, prices, and technology.

John Bellamy Foster, a political economy analyst and editor of the Monthly Review, believes that the decrease in GDP growth rates since the early 1970s is due to increasing market saturation.

John C. Bogle wrote during 2005 that a series of unresolved challenges face capitalism that have contributed to past financial crises and have not been sufficiently addressed: "Corporate America went astray largely because the power of managers went virtually unchecked by our gatekeepers for far too long...They failed to 'keep an eye on these geniuses' to whom they had entrusted the responsibility of the management of America's great corporations." He cites particular issues, including:They failed to 'keep an eye on these geniuses' to whom they had entrusted the responsibility of the management of America's great corporations." He cites particular issues, including:

"Manager's capitalism" which he argues has replaced "owner's capitalism," meaning management runs the firm for its benefit rather than for the shareholders, a variation on the principal-agent problem.

Burgeoning executive compensation.

Managed earnings, mainly a focus on share price rather than the creation of genuine value.

The failure of gatekeepers, including auditors, boards of directors, Wall Street analysts, and career politicians.

QUESTIONABLE ASSUMPTIONS UNDERLYING THE FINANCIAL SYSTEM

Various experts have summarized the causes as a series of questionable assumptions underlying the U.S. financial and economic system.

Housing prices would not fall dramatically. Warren Buffett testified to the Financial Crisis Inquiry Commission: "There was the greatest bubble I've ever seen in my life...The entire American public eventually was caught up in a belief that housing prices could not fall dramatically." Housing prices declined on average by approximately 20% from their 2006 peak to 2009 bottom, with much larger declines in certain markets.

Former Fed Chair Paul Volcker summarized several other assumptions:

Free and open financial markets supported by sophisticated financial engineering would most effectively support market efficiency and stability, directing funds to the most profitable and productive uses. He questioned whether the capture of 35-40% of U.S. corporate profits by financial firms at the peak of the bubble was beneficial to society.

Concepts embedded in mathematics and physics could be directly adapted to markets, in the form of various financial models used to evaluate credit risk. While repetitive patterns and normal distribution curves are part of the physical sciences, financial markets are heavily influenced by herd behavior, emotional swings, political intervention and uncertainty.

Economic imbalances, such as large trade deficits and budget deficits indicative of over-consumption, were sustainable. Private debt relative to GDP tripled over 30 years. Trade deficits increased the flow of capital into the U.S. and put downward pressure on interest rates, making the housing bubble worse.

Regulation of the shadow banking industry was not needed. Investment banks, hedge funds, and other components of the shadow banking system were not subject to the regulations of traditional depository banks and were allowed to become "too big to fail," creating a significant moral hazard. Further, derivatives such as credit default swaps (a $60 trillion market far larger than the underlying credits) were not regulated.

THE FCIC CONCLUSION

The Financial Crisis Inquiry Commission (FCIC) is a ten-member commission appointed by the United States government with the goal of investigating the causes of the financial crisis of 2007–2010. The Commission has been nicknamed the Angelides Commission after the chairman, Phil Angelides. The Commission has been compared to the Pecora Commission, which investigated the causes of the Great Depression in the 1930s, and has been nicknamed the New Pecora Commission. Analogies have also been made to the 9/11 Commission, which examined the September 11 terrorist attacks. The Commission does have the ability to subpoena documents and witnesses for testimony, a power that the Pecora Commission had but the 9/11 Commission did not. The first public hearing of the Commission was held on January 13, 2010, with the presentation of testimony from various banking officials. Hearings continued during 2010 with "hundreds" of other persons in business, academia, and government testifying.

The Commission reported its findings in January 2011. It concluded that "the crisis was avoidable and was caused by: Widespread failures in financial regulation, including the Federal Reserve's failure to stem the tide of toxic mortgages; Dramatic breakdowns in corporate governance including too many financial firms acting recklessly and taking on too much risk; An explosive mix of excessive borrowing and risk by households and Wall Street that put the financial system on a collision course with crisis; Key policy makers ill prepared for the crisis, lacking a full understanding of the financial system they oversaw; and systemic breaches in accountability and ethics at all levels."

ACCORDING TO THE NATIONAL BUREAU OF ECONOMIC RESEARCH THE GREAT RESSESION BEGAN IN DECEMBER 2007 AND ENDED JUNE 2009

FEBRUARY

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The Federal Home Loan Mortgage Corporation (Freddie Mac) announces that it will no longer buy the most risky subprime mortgages and mortgage-related securities.

The growth of private-label securitization and lack of regulation in this part of the market resulted in the oversupply of underpriced housing finance[20] that led, in 2006, to an increasing number of borrowers, often with poor credit, who were unable to pay their mortgages - particularly with adjustable rate mortgages (ARM), caused a precipitous increase in home foreclosures. As a result, home prices declined as increasing foreclosures added to the already large inventory of homes and stricter lending standards made it more and more difficult for borrowers to get mortgages.

APRIL

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New Century Financial Corporation, a leading subprime mortgage lender, files for Chapter 11 bankruptcy protection.

As of January 1, 2007, New Century was the second-biggest subprime mortgage lender in the United States, and was headed by Brad Morrice, President and CEO. Frederic J. Forster, a lead independent director, served as a non-executive Chairman of the Board. Subprime mortgage loans are riskier loans in that they are made to borrowers unable to qualify under traditional, more stringent criteria due to a limited or blemished credit history. Subprime borrowers are generally defined as individuals with limited income or having FICO credit scores between 500 and 620 on a scale that ranges from 300 to 850. Subprime mortgage loans have a much higher rate of default than prime mortgage loans and are priced based on the risk assumed by the lender.

THIS IS A VERY, VERY DIFFICULT TIME. THIS IS NOT HAPPY NEWS

Freddie Mac's chairman and CEO, Richard Syron

2007