

These regulatory changes were accompanied by a shift in corporate culture: executives began running companies more for the benefit of management than for shareholders, paying themselves spectacular bonuses and putting increasing emphasis on boosting share prices rather than dividends. Auditors, boards of directors, and Wall Street analysts encouraged these trends, convinced that soaring share prices and other financial returns justified them.⁴

America's distribution of income, which had been reasonably equitable during the post-WWII era, began to return to the disparity seen in the 1920s in the lead-up to the Great Depression. This was partly due to changes in tax law, begun during the Reagan administration, which reduced taxes on the wealthiest Americans. In 1970 the top 100 CEOs earned about \$45 for every dollar earned by the average worker; by 2008 the ratio was over 1,000 to one.

In the 1990s, as the surplus of financial capital continued to grow, investment banks began inventing a slew of new securities with high yields (and high risk). In assessing these new products, ratings agencies used mathematical models that, in retrospect, seriously underestimated their levels of risk. Decades earlier, bond credit ratings agencies had been paid for their work by investors who wanted impartial information on the credit worthiness of securities issuers and their offerings. Starting in the early 1970s, the "Big Three" ratings agencies (Standard & Poor's, Moody's, and Fitch) began to be paid instead by securities issuers. This eventually led to ratings agencies actively encouraging the issuance of high-risk collateralized debt obligations (CDOs).

Also in the 1990s, the Clinton administration adopted "affordable housing" as one of its explicit goals (this didn't mean lowering house prices; it meant helping Americans get into debt), and over the next decade the percentage of Americans owning their homes increased 7.8 percent. This initiated a persistent upward trend in real estate prices.

The Internet as we know it today opened for business in the mid-1990s, and within a few years investors had bid up Internet-related stocks, creating a speculative bubble. The dot-com bubble burst in 2000 (as with all bubbles, it was only a matter of "when," not "if"), and a year later the terrifying crimes of September 11, 2001 resulted in a four-day closure

of US stock exchanges and history's largest one-day decline in the Dow Jones Industrial Average. These events together triggered a significant recession. Seeking to counter the resulting deflationary trend, the Federal Reserve sought to bring interest rates down so as to make borrowing more affordable.

Downward pressure on interest rates was also coming from the nation's high and rising trade deficit. Every nation's balance of payments must sum to zero, so if a nation is running a current account deficit it must balance that amount with funds earned from foreign investments, or by running down reserves, or by obtaining loans from other countries. In other words, a country that imports more than it exports must borrow to pay for those imports. Hence American imports had to be offset by large and growing amounts of foreign investment capital flowing into the US. Higher bond yields attract more investment capital, but there is an inevitable inverse relationship between bond prices and interest rates, so trade deficits tend to force interest rates down.

Foreign investors had plenty of funds to lend, either because they had very high personal savings rates (in China, up to 40 percent of income is saved), or because of high oil prices (a windfall for oil-producing nations). A torrent of funds—a "Giant Pool of Money" doubling in size between 2000 and 2007—was flowing into US financial markets.⁵ While foreign governments were purchasing risk-free US Treasury bonds, thus avoiding much of the impact of the eventual crash, other overseas investors, including pension funds, were gorging on the higher yielding mortgage-backed securities (MBSs) and CDOs. The indirect consequences were that US households were in effect using funds borrowed from foreigners to finance consumption or to bid up house prices, while sales of mortgage-backed securities also amounted to sales of accumulated wealth to foreign investors.

Shadow Banks and the Housing Bubble

By this time a largely unregulated "shadow banking system," made up of hedge funds, money market funds, investment banks, pension funds, and other lightly-regulated entities, had become critical to the credit markets and was underpinning the financial system as a whole. But the shadow "banks" tended to borrow short-term in liquid markets to purchase

Bundled into MBSs, sold to pension funds and investment banks, and hedged with derivatives contracts, mortgage debt became the very fabric of the US financial system, and, increasingly, the economies of many other nations as well. By 2005 mortgage-related activities were making up 62 percent of commercial banks' earnings, up from 33 percent in 1987.

As a result, what would have been a \$300 billion sub-prime mortgage crisis when the bubble inevitably burst, turned into a multi-trillion dollar catastrophe engulfing the financial systems of the US and many other countries as well.

Between July 2004 and July 2006, the Fed began to pursue policies designed to raise interest rates on bank loans. This contributed to an increase in 1-year and 5-year adjustable mortgage rates, pushing up mortgage payments for many homeowners. Since asset prices generally move inversely to interest rates, it suddenly became riskier to speculate in housing. The bubble began deflating.

What Goes Up...

In early 2007 home foreclosure rates nosed upward and the US sub-prime mortgage industry simply collapsed, with more than 25 lenders declaring bankruptcy, announcing significant losses, or putting themselves up for sale.

The whole scheme had worked fine as long as the underlying collateral (homes) appreciated in value year after year. But as soon as house prices peaked, the upside-down pyramid of property, debt, CDOs, and derivatives wobbled and began crashing down.

For a brief time between 2006 and mid-2008 investors worldwide fled toward futures contracts in oil, metals, and food, driving up commodity prices. Food riots erupted in many poor nations, where the cost of wheat and rice doubled or tripled. In part, the boom was based on a fundamental economic trend: demand for commodities was growing—due in part to the expansion of economies in China, India, and Brazil—while supply growth was lagging. But speculation forced prices higher and faster than physical shortage could account for. For Western economies, soaring oil prices had a sharp recessionary impact, with already cash-strapped new homeowners now having to spend eighty to a hundred dollars every time

long-term, illiquid, and risky assets, profiting on the difference between lower short-term rates and higher long-term rates. This meant that any disruption in credit markets would result in rapid deleveraging, forcing these entities to sell long-term assets (such as mortgage-backed securities) at depressed prices.

Between 1997 and 2006, the price of the typical American house increased by 124 percent. House prices were rising much faster than income was growing. During the two decades ending in 2001, the national median home price ranged between 2.9 and 3.1 times median household income. This ratio rose to 4.0 in 2004, and 4.6 in 2006. This meant that, in increasing numbers of cases, people could not actually afford the homes they were buying. Meanwhile, with interest rates low, many homeowners were refinancing their homes, or taking out second mortgages secured by price appreciation, in order to pay for new cars or home remodeling. Many of the mortgages had initially negligible—but adjustable—interest rates, which meant that borrowers would soon face a nasty surprise.

Wall Street had connected the "Giant Pool of Money" to the US mortgage market, with enormous fees accruing throughout the financial supply chain, from the mortgage brokers selling the loans, to small banks funding the brokers, to giant investment banks that would ultimately securitize, bundle, and sell the loans to investors the world over. This capital flow also provided jobs for millions of people in the home construction and real estate industries.

Wall Street brokers began thinking of themselves as each deserving many millions of dollars a year in compensation, simply because they were smart enough to figure out how to send the debt system into overdrive and skim off a tidy percentage for themselves. Bad behavior was being handsomely rewarded, so nearly everyone on Wall Street decided to behave badly.

By around 2003, the supply of mortgages originating under traditional lending standards had largely been exhausted. But demand for MBSs continued, and this helped drive down lending standards—to the point that some adjustable-rate mortgage (ARM) loans were being offered at no initial interest, or with no down payment, or to borrowers with no evidence of ability to pay, or all of the above.

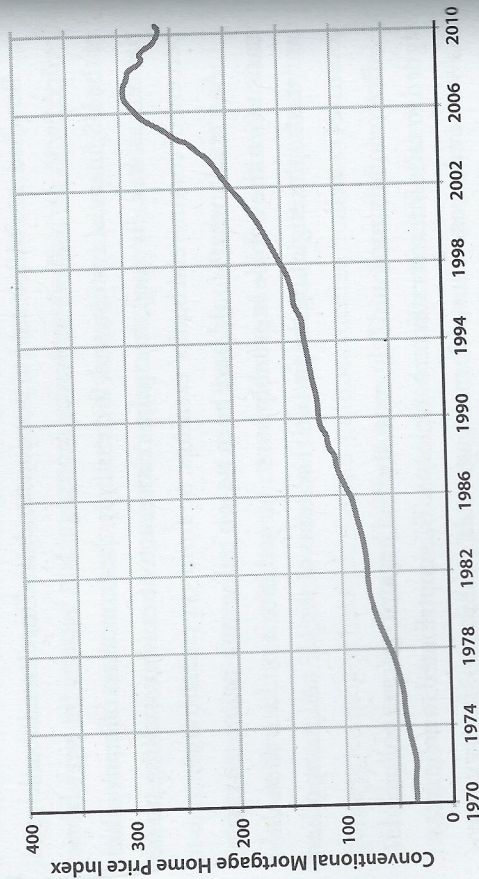


FIGURE 14. US Home Prices. Conventional Mortgage Home Price Index since 1970. Home prices rose consistently from 1970 until their peak in 2007, with the steepest rise occurring after 2000. Source: Freddie Mac.

they filled the tank in their SUV. The auto, airline, shipping, and trucking industries were suddenly reeling.

Between mid-2006 and September 2008, average US house prices declined by over 20 percent. As prices dove, many recent borrowers found themselves “underwater” — that is, with houses worth less than the amount of their loan; for those with adjustable-rate mortgages, this meant they could not qualify to refinance to avoid higher payments as interest rates on their loans reset. Default rates on home mortgages exploded. From 2006 to 2007, foreclosure proceedings increased 79 percent (affecting nearly 1.3 million properties). The trend worsened in 2008, with an 81 percent increase over the previous year and 2.3 million properties foreclosed. By August 2008, 9.2 percent of all US mortgages outstanding were either delinquent or in foreclosure; in September the following year, the figure had jumped to a whopping 14.4 percent.

Once property prices began to plummet and the subprime industry went bust, dominos throughout the financial world began toppling.

On September 15th, 2008, the entire financial system came within 48 hours of collapse. The giant investment house of Lehman Brothers went bankrupt, sending shock waves through global financial markets.⁶ The

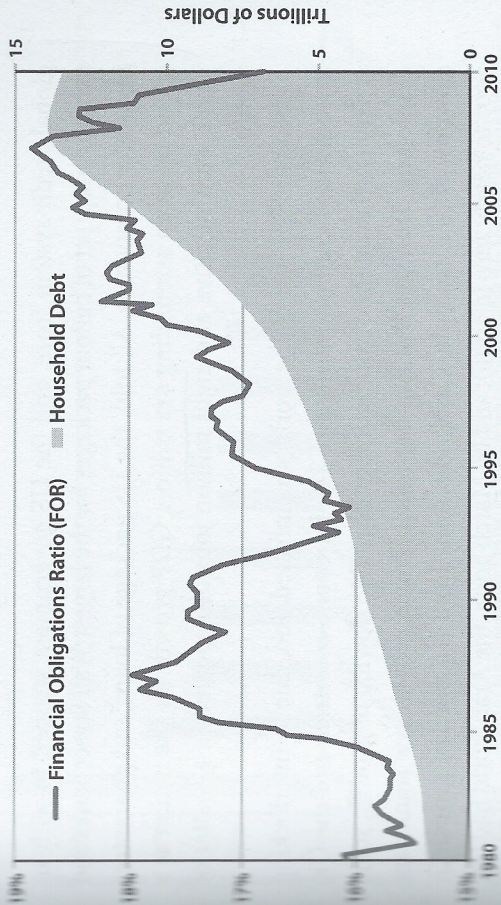


FIGURE 15. US Household Debt. Financial obligations ratio and total outstanding nominal debt of US households. A household's financial obligations ratio (FOR) is the ratio of its financial obligations (mortgage, consumer debt, automobile lease payments, rental payments on tenant-occupied property, homeowner's insurance, and property tax payments) to its disposable income. Just before the financial crisis, households were spending almost 19 percent of their disposable income on servicing their debt. Total outstanding household debt also peaked in 2008 just before the financial crisis at almost \$14 trillion. To put this amount in perspective, the entire US economy was worth \$14.3 trillion that same year. Source: The Federal Reserve.

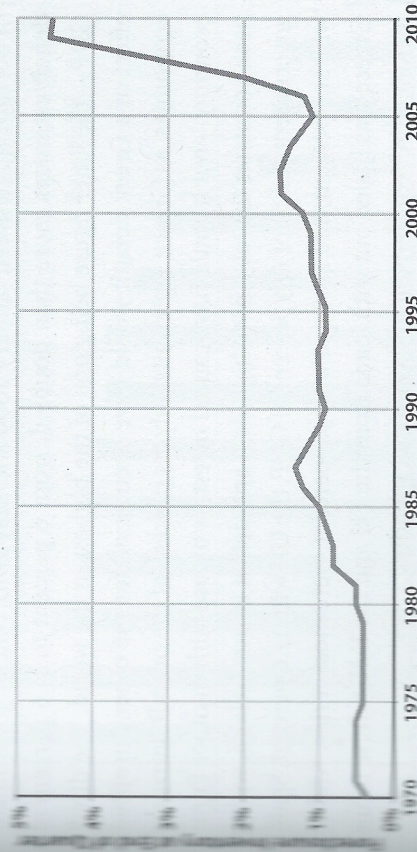


FIGURE 16. US Foreclosure Rate, 1970–2010. US foreclosure inventory at the end of each quarter. From 1970–2001, yearly averages are shown; from 2002–2010 quarterly data is shown. The foreclosure rate jumped dramatically during the financial crisis from 1.28 percent at the start of 2007 to 4.63 percent at the start of 2010, the highest level in the last forty years. Source: Mortgage Bankers Association, National Delinquency Survey, Foreclosure Inventory at End of Quarter.

global credit system froze, and the US government stepped in with an extraordinary set of bailout packages for the largest Wall Street banks and insurance companies. All told, the US package of loans and guarantees added up to an astounding \$12 trillion. GDP growth for the nation as a whole went negative and eight million jobs disappeared in a matter of months.⁷

Much of the rest of the world was infected, too, due to interlocking investments based on mortgages. The Eurozone countries and the UK experienced economic contraction or dramatic slowing of growth; some developing countries that had been seeing rapid growth saw significant slowdowns (for example, Cambodia went from ten percent growth in 2007 to nearly zero in 2009); and by March 2009, the Arab world had lost an estimated \$3 trillion due to the crisis — partly from a crash in oil prices.

Then in 2010, Greece faced a government debt crisis that threatened the economic integrity of the European Union. Successive Greek governments had run up large deficits to finance public sector jobs, pensions, and other social benefits; in early 2010, it was discovered that the nation's government had paid Goldman Sachs and other banks hundreds of millions of dollars in fees since 2001 to arrange transactions that hid the actual level of borrowing. Between January 2009 and May 2010, official government deficit estimates more than doubled, from 6 percent to 13.6 percent of GDP — the latter figure being one of the highest in the world. The direct effect of a Greek default would have been small for the other European economies, as Greece represents only 2.5 percent of the overall Eurozone economy — but it could have caused investors to lose faith in other European countries that also have high debt and deficit issues: Ireland, with a government deficit of 14.3 percent of GDP, the UK with 12.6 percent, Spain with 11.2 percent, and Portugal with 9.4 percent, were most at risk. And so Greece was bailed out with loans from the EU and the IMF, whose terms included the requirement to slash social spending.

By late November of 2010, it was clear that Ireland needed a bailout, too — and it got one, along with its own painful austerity package and loads of political upheaval. But this raised the inevitable questions: Who would be next? Could the IMF and the EU afford to bail out Spain if necessary? What would happen if the enormous UK economy needed rescue?

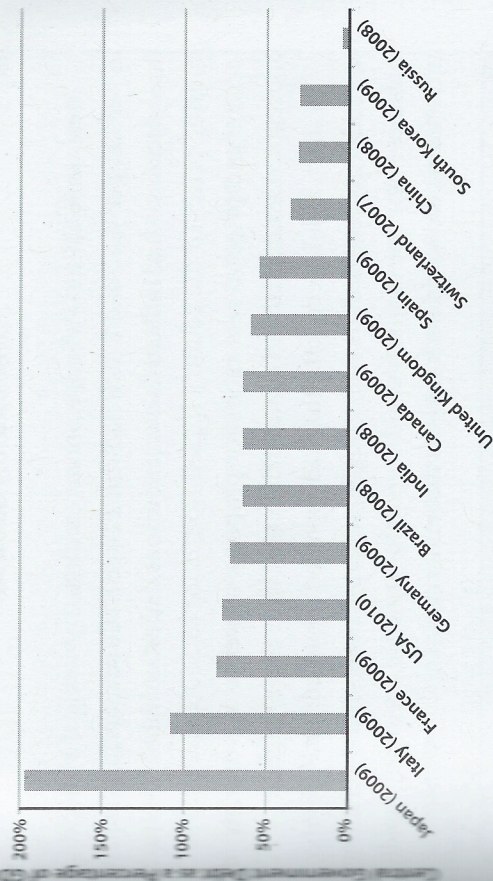


FIGURE 17A. Central Government Debt as a Percentage of GDP for Various Countries. High levels of government debt burden countries around the world, not just the US. For example, the debt of the Japanese government amounts to almost 200% of its GDP. Sources: McKinsey Global Institute, "Debt and deleveraging: The global credit bubble and its economic consequences," January 2010; The Federal Reserve.

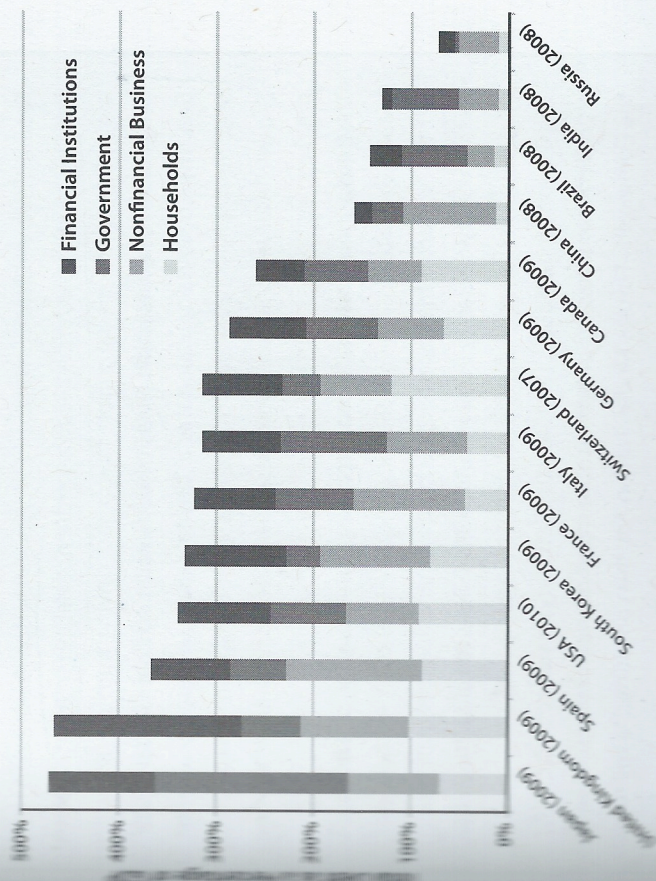


FIGURE 17B. Total Debt by Sector as a Percentage of GDP for Various Countries. Again we can see that the US is not alone when it comes to high levels of debt. The total debt of Japan and the UK amounts to around 450 percent of their respective GDP. Sources: McKinsey Global Institute, "Debt and deleveraging: The global credit bubble and its economic consequences,"

Meanwhile China — whose economy continued growing at a scorching 10 percent per year, and which had run a large trade surplus for the past three decades — had inflated its own enormous real estate bubble. Average housing prices in the country tripled from 2005 to 2009; and price-to-income and price-to-rent ratios for property, as well as the number of unoccupied residential and commercial units, were all sky-high.

In short, a global economy that had appeared robust and stable in 2007 was suddenly revealed to be very fragile, suffering from several persistent maladies — any one of which could erupt into virulence, spreading rapidly and sending the world back into the throes of crisis.

BOX 2.1 Plenty of Blame to Go Around

The bipartisan Financial Crisis Inquiry Commission (established by Congress as part of the Fraud Enforcement and Recovery Act of 2009) released its report in January 2011. The many causal factors it highlighted include:

- Federal Reserve Chairman (1987–2006) Alan Greenspan's refusal to perform his regulatory duties because he did not believe in them. Green span allowed the credit bubble to expand, driving housing prices to dangerously unsustainable levels while advocating financial deregulation. The Commission called this a "pivotal failure to stem the flow of toxic mortgages" and "the prime example" of government negligence.
- Federal Reserve Chairman (2006-present) Ben Bernanke's failure to foresee the crisis.
- The Bush administration's "inconsistent response" in saving one financial giant — Bear Stearns — while allowing another — Lehman Brothers — to fail; this "added to the uncertainty and panic in the financial markets."
- Bush Treasury Secretary Henry Paulson Jr.'s failure to understand the magnitude of the problem with subprime mortgages.
- The Clinton White House's (and Treasury Secretary Lawrence Summers's) crucial error in shielding over-the-counter derivatives from regulation in the Commodity Futures Modernization Act; this constituted "a key turning point in the march toward the financial crisis."

- Then NY Fed President, now Treasury Secretary Timothy F. Geithner's failure to "clamp down on excesses by Citigroup in the lead-up to the crisis."
 - The Fed's maintenance of low interest rates long after the 2001 recession, which "created increased risks."
 - The financial sector's spending of \$2.7 billion on lobbying from 1999 to 2008, with members of Congress affiliated with the industry raking in more than \$1 billion in campaign contributions.
 - The credit-rating agencies' stamping of "their seal of approval" on securities that proved to be far more risky than advertised (because they were backed by mortgages provided to borrowers who were unable to make payments on their loans).
 - The Securities and Exchange Commission's permitting of the five biggest banks to ramp up their leverage, hold insufficient capital, and engage in risky practices.
 - The nation's five largest investment banks' buildup of wildly excessive leverage: They kept only \$1 in capital to cover losses for about every \$40 in assets.
 - The Office of the Comptroller of the Currency's (along with the Office of Thrift Supervision's) blocking of state regulators from reining in lending abuses.
 - "Questionable practices by mortgage lenders and careless betting by banks."
 - The "bumbling incompetence among corporate chieftains" as to the risk and operations of their own firms. Among corporate heads at the large financial firms (including Citigroup, AIG, and Merrill Lynch), the panel says its examination found "stunning instances of governance breakdowns and irresponsibility."
- Commission members disagreed on the significance of the roles of Freddie Mac and Fannie Mae in the crisis.
- The Commission has indicated that it will make criminal referrals.⁸

The Mother of All Manias

The US real estate bubble of the early 2000s was the largest in history (in terms of the amount of capital involved).⁹ And its crash carried an eerie echo of the 1930s: some economists have argued that it wasn't just the stock market crash that drove the Great Depression, but also cascading farm failures, which made it impossible for farmers to make mortgage payments — along with housing bubbles in Florida, New York, and Chicago.¹⁰

Real estate bubbles are essentially credit bubbles, because property owners generally use borrowed money to purchase property (this is in contrast to currency bubbles, in which nations inflate their currency to pay off government debt). The amount of outstanding debt soars as buyers flood the market, bidding property prices up to unrealistic levels and taking out loans they cannot repay. Too many houses and offices are built, and materials and labor are wasted in building them. Real estate bubbles also lead to an excess of homebuilders, who must retrain and retool when the bubble bursts. These kinds of bubbles lead to systemic crises affecting the economic integrity of nations.¹¹

Indeed, the housing bubble of the early 2000s had become the oxygen of the US economy — the source of jobs, the foundation for Wall Street's recovery from the dot-com bust, the bait for foreign capital, and the basis for household wealth accumulation and spending. Its bursting changed everything.

And there is reason to think it has not yet fully deflated: commercial real estate may be waiting to exhale next. Over the next five years, about \$1.4 trillion in US commercial real estate loans will reach the end of their terms and require new financing. Commercial property values have fallen more than 40 percent nationally since their 2007 peak, so nearly half the loans are underwater. Vacancy rates are up and rents are down.

The impact of the real estate crisis on banks is profound, and goes far beyond defaults upon outstanding mortgage contracts: systemic dependence on MBSs, CDOs, and derivatives means many of the banks, including the largest, are effectively insolvent and unable to take on more risk (we'll see why in more detail in the next section).

Demographics do not favor a recovery of the housing market anytime soon. The oldest of the Baby Boomers are 65 and entering retirement

Few have substantial savings; many had hoped to fund their golden years with house equity — and to realize that, they must sell. This will add more houses to an already glutted market, driving prices down even further.

In short, real estate was the main source of growth in the US during the past decade. With the bubble gone, leaving a gaping hole in the economy, where will new jobs and further growth come from? Can the problem be solved with yet another bubble?

BOX 2.2 How to Create a Financial Crisis

In their IMF Working Paper, "Inequality, Leverage and Crises," Michael Kumhof and Romain Rancière construct a simple model for financial crises with the following narrative: (a) growing inequality produces less money for the middle class and more money for the wealthy; (b) the rich loan much of this money back to the middle class so they can continue to improve their living standards even with stagnant incomes; (c) the financial sector expands to mediate all this; and (d) this eventually results in a credit crisis. Kumhof and Rancière write, in summary:

"This paper has presented stylized facts and a theoretical framework that explore the nexus between increases in the income advantage enjoyed by high income households, higher debt leverage among poor and middle income households, and vulnerability to financial crises. This nexus was prominent prior to both the Great Depression and the recent crisis. In our model it arises as a result of increases in the bargaining power of high income households. The key mechanism, reflected in a rapid growth in the size of the financial sector, is the recycling of part of the additional income gained by high income households back to the rest of the population by way of loans, thereby allowing the latter to sustain consumption levels, at least for a while. But without the prospect of a recovery in the incomes of poor and middle income households over a reasonable time horizon, the inevitable result is that loans keep growing, and therefore so does leverage and the probability of a major crisis that, in the real world, typically also has severe implications for the real economy."¹²

This dynamic is also occurring between rich nations and poor nations.

Limits to Debt

Let's step back a moment and look at our situation from a slightly different angle. Take a careful look at Figure 18, the total amount of debt extant each year in the US since 1979. The graph breaks the debt down into four categories — household, corporate, financial sector, and government. All have grown very substantially during these past 30+ years, with the largest percentage growth having taken place in the financial sector. Note the shape of the curve: it is not a straight line (which would indicate additive growth); instead, up until 2008, it more closely resembles the J-curve of compounded or exponential growth (as discussed in the Introduction).

Growth that proceeds this way, whether it's growth in US oil production from 1900 to 1970 or growth in the population of *Entamoeba histolytica* in the bloodstream of a patient with amoebic dysentery, always hits hard limits eventually.

With regard to debt, what are those limits likely to be and how close are we to hitting them?

A good place to start the search for an answer would be with an ex-

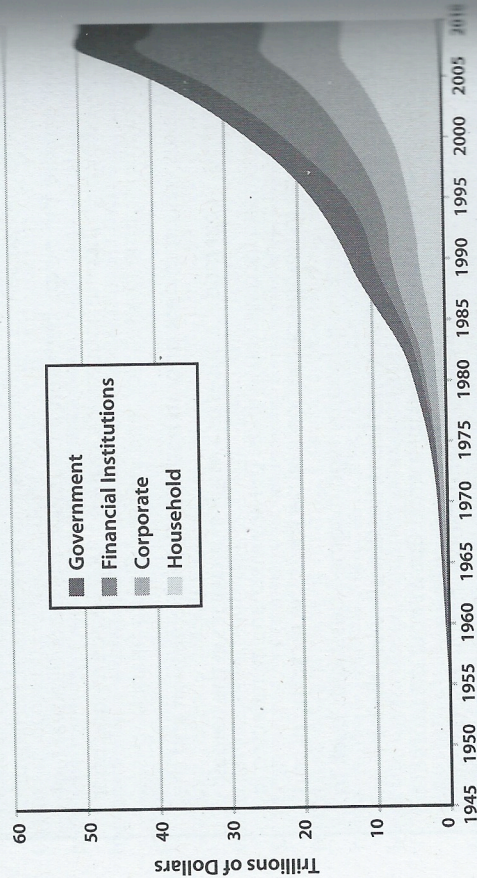


FIGURE 18. Total US Debt, 1945-2010. US debt by sector in nominal values (not inflation adjusted). We see the rapid expansion of both household and financial sector debt beginning in 2000, spurred by low interest rates and rising home values. Starting in 2008, household and financial debt contract, while government debt expands. Source: The Federal Reserve, Z.1 Flow of Funds Accounts of the United States.

ploration of how we have managed to grow our debt so far. It turns out that, in an economy that's based on money creation through fractional reserve banking, with ever more loans being taken out to finance ever more consumer purchases and capital projects, it is usually possible to repay earlier debts along with the interest attached to those debts. There is never enough money in the system at any one time to repay *all* outstanding debt with interest; but, as long as total debt (and therefore the money supply as well) is constantly growing, that doesn't pose a practical problem. The system as a whole does have some of the characteristics of a bubble or a Ponzi scheme, but it also has a certain internal logic and even the potential for (temporary) dynamic stability.

However, there are practical limits to debt within such a system, and those limits are likely to show up in somewhat different ways for each of the four categories of debt indicated in the graph.

Government Debt

With government debt, problems arise when required interest payments become a substantial fraction of tax revenues. Let's start with some basics:

- *Government debt* is the total of what the government owes.

- Payment of government debt can obviously be delayed, but controversy exists over how long payment can reasonably be delayed.
- Government debt results, of course, in *interest payments*. Every year federal *revenues* must be used to pay interest on the government debt (which was incurred in the past). There are usually disagreements on whether the interest was incurred for a good purpose, but everyone agrees that it is important to know exactly how much money is owed in interest when planning for the future.

- Both government debt and interest payments can increase. If the government spends more than it takes in during a specific year, a shortfall develops. That shortfall is referred to as the *deficit*. The government handles the deficit by borrowing more money (at interest). Thus the deficit is the shortfall for a specific year, and the government debt is the total of those shortfalls.

- A deficit not only adds to *government debt* (that IOU over there in the corner) but it adds to the *interest payments* (right here, not over there

in the corner) that must be made every year. Those interest payments are made with the *tax revenues* that the government collects every year, or with more borrowing.

Currently for the US, the total Federal budget amounts to about \$3.5 trillion, of which 12 percent (or \$414 billion) goes toward interest payments. But in 2009, tax revenues amounted to only \$2.1 trillion; thus interest payments currently consume almost 20 percent, or nearly one-fifth, of tax revenues. For various reasons (including the economic recession, the wars in Iraq and Afghanistan, the Bush tax cuts, and various stimulus programs) the Federal government is running a deficit of over a trillion dollars a year currently. That adds to the debt, and therefore to future interest payments. Government debt stands at over \$14 trillion now (it has increased by more than 50 percent since 2006).¹³ By the time the debt reaches \$20 trillion, probably only a few years from now, interest payments may constitute the largest Federal budget outlay category, eclipsing even military expenditures.¹⁴ If Federal revenues haven't increased by that time, government debt interest payments will be consuming 20 percent of them. Interest already eats up nearly half the government's income tax receipts, which are estimated at \$901 billion for fiscal year 2010.¹⁵

Clearly, once 100 percent of government revenues have to go toward interest payments and all government operations have to be funded with more borrowing — on which still more interest will have to be paid — the system will have arrived at a kind of financial singularity: a black hole of debt, if you will. But in all likelihood we would not have to get to that ultimate impasse before serious problems appear. Many economic commentators suggest that when government has to spend 30 percent of tax receipts on interest payments, the country is in a debt trap from which there is no easy escape. Given current trajectories of government borrowing and interest rates, that 30 percent mark could be hit in just a few years. Even before then, US credit worthiness will take a beating.

However, some argue that limits to government debt (due to snowballing interest payments) need not be a hard constraint — especially for a large nation, like the US, that controls its own currency.¹⁶ The United States government is constitutionally empowered to create money, including creating money to pay the interest on its debts. Or, the government

could in effect loan the money to itself via its central bank, which would then rebate interest payments back to the Treasury (this is in fact what the Treasury and Fed are doing with Quantitative Easing 2, discussed below).¹⁷

The most obvious complication that might arise is this: If at some point general confidence that external US government debt (i.e., money owed to private borrowers or other nations) will be repaid with debt of equal "value" were deeply and widely shaken, potential buyers of that debt might decide to keep their money under the metaphorical mattress (using it to buy factories or oilfields instead), even if doing so posed its own set of problems. Then the Fed would become virtually the only available buyer of government debt, which might undermine confidence in the US dollar, possibly igniting a rapid spiral of refusal that would end only when the currency failed. There are plenty of historic examples of currency failures, so this would not be a unique occurrence.¹⁸

Some who come to understand that government deficit spending is unsustainable immediately conclude that the sky is falling and doom is imminent. It is disquieting, after all, to realize for the first time that the world economic system is a kind of Ponzi scheme that is only kept going by the confidence of its participants. But as long as deficit spending doesn't exceed certain bounds, and as long as the economy resumes growth in the not-too-distant future, then the scheme can be sustained for quite some time. In fact, Ponzi schemes theoretically can continue forever — if the number of potential participants is infinite. The absolute size of government debt is not necessarily a critical factor, as long as future growth will be sufficient so that the proportion of debt relative to revenues remains the same. Even an increase in that proportion is not necessarily cause for alarm, as long as it is only temporary. This, at any rate, is the Keynesian argument. Keynesians would also point out that government debt is only one category of total debt, and that US government debt hasn't grown proportionally relative to other categories of debt to any alarming degree (until the current recession). Again, as long as growth returns, further borrowing can be justified (up to a point) — especially if the goal is to restart growth.¹⁹

The risks of increasing government debt can be summarized as: (a) rising interest costs, (b) loss of credit-worthiness, and (c) potential currency failure.

Household Debt

The limits to household debt are different, but somewhat analogous: consumers can't create money the way banks (and some governments) do, and can't take on more debt if no one will lend to them. Lenders usually require collateral, so higher net worth (often in the form of house equity) translates to greater ability to take on debt; likewise, lenders wish to see evidence of ability to make payments, so a higher salary also translates to a greater ability to take on increased levels of debt.

As we have seen, the actual inflation-adjusted income of American workers has not risen substantially since the 1970s, but home values did rise during the 2000–2006 period, giving many households a higher theoretical net worth. Many homeowners used their soaring house value as collateral for more debt—in many cases, substantially more. At the same time, lenders found ways of easing consumer credit standards and making credit generally more accessible—whether through “no-doc” mortgages or blizzards of credit card offers. The result: household debt increased from less than \$2 trillion in 1980 to \$13.5 trillion in 2008. This borrowing and spending on the part of US households was not only the major engine of domestic economic expansion during most of the last decade, but a major component of worldwide economic growth as well.

But with the crash in the US real estate market starting in 2007, household net worth also crashed (falling by a total of \$17.5 trillion or 25.5 percent from 2007 to 2009—equivalent to the loss of one year of GDP); and as unemployment rose from 4.6 percent in 2007 to almost ten percent (as officially measured) in 2010, average household income declined. At the same time, banks tightened their lending standards, with credit card companies slashing the number of offers and mortgage lenders requiring much higher qualifications from borrowers. Thus the ability of households to take on more debt has contracted substantially. Less debt means less spending (households usually borrow money so they can spend it—whether for a new car or a kitchen makeover). This is potentially a short-term problem; however, the only way the situation will change is if somehow the economy as a whole begins to grow again (leading to higher house prices, lower unemployment, and easier credit). Here's the catch

increased consumer demand is a big part of what would be needed to drive that shift back to growth.

So we just need to get households borrowing and spending again. Perhaps government could somehow put a bit of seed money in citizens' pockets (“Cash for Clunkers,” anyone?) to start the process. Even if that doesn't work, at some point consumers will have paid down (or defaulted on) their debts sufficiently so that they will want to borrow more. But, again, demographics suggest this would be a long wait: as mentioned earlier, Baby Boomers (the most numerous demographic cohort in the nation's history, encompassing 70 million Americans) are reaching retirement age, which means that their lifetime spending cycle has peaked. It's not that Boomers won't continue to buy things (everybody has to eat), but their aggregate spending is unlikely to increase, given that cohort members' savings are, on average, inadequate for retirement (one-third of them have no savings whatever). Out of necessity, Boomers will be saving more from now on, and spending less. And that won't help the economy grow. We may not have hit a hard, final, and axiomatic limit to household debt, but (in the US, at least) there is no realistic basis for a resumption of rates of growth in borrowing and spending seen in recent decades.

Corporate Debt

When demand for products declines, corporations aren't inclined to borrow to increase their productive capacity. Even corporate borrowing aimed at increasing financial leverage has limits. Too much corporate debt reduces resiliency during slow periods—and the future is looking slow for as far as the eye can see. Durable goods orders are down, housing starts and new home sales are down, savings are up. As a result, banks don't want to lend to companies, because the risk of default on such loans is now perceived as being higher than it was a few years ago; in addition, the banks are reluctant to take on more risk of any sort given the fact that many of the assets on their balance sheets consist of now-worthless derivatives and CDOs. Nevertheless, corporate debt levels hit all-time highs in 2010.

Meanwhile, ironically and perhaps surprisingly, US corporations are sitting on over a trillion dollars of ready cash because they cannot identify

profitable investment opportunities and because they want to hang onto whatever cash they have in anticipation of continued hard times.

If only we could get to the next upside business cycle, then more corporate debt would be justified for both lenders and corporate borrowers. But so far confidence in the future is still weak.

Financial Sector Debt

The category of financial sector debt—which, of the four categories, has grown the most—consists of debt and leverage within the financial system itself. This category can in principle be disregarded, as financial institutions are primarily acting as intermediaries for ultimate borrowers. However, in this case, standing on principle does not aid comprehension. We are not including within this category the notional value of derivatives contracts, which is roughly five times the amount of US government, household, corporate, and financial debt combined (roughly \$260 trillion in outstanding derivatives, versus \$55 trillion in debt). But while this category does not directly include the value of derivatives, the expansion of the financial sector has largely been based on derivatives trading. And derivatives have arguably helped create a situation that limits further growth in the financial system's ability to perform its only truly useful function within society—to provide investment capital for productive enterprise.

One of the main reforms enacted during the Great Depression, contained in the Glass Steagall Act of 1933, was a requirement that commercial banks refrain from acting as investment banks. In other words, they were prohibited from dealing in stocks, bonds, and derivatives. This prohibition was based on an implicit understanding that there should be some sort of firewall within the financial system separating productive investment from pure speculation, or gambling. This firewall was eliminated by the passage of the Gramm–Leach–Bliley Act of 1999 (for which the financial services industry lobbied tirelessly). As a result, all large US banks have for the past decade become deeply engaged in speculative investment, using both their own and their clients' money.

With derivatives, since there is no requirement to own the underlying asset, other than a small percentage of its notional value, and since there is often no requirement of evidence of ability to cover the bet, there is

no effective limit to the amount that can be wagered. It's true that many derivatives largely cancel each other out, and that their ostensible purpose is to reduce financial risk. Nevertheless, if a contract is settled, somebody has to pay—unless they can't.

Credit default swaps (CDSs, discussed in the last chapter) are usually traded “over the counter”—meaning without the knowledge of anyone other than the two counterparties; they are a sort of default insurance: a contract holder acts as “insurer” against default, bankruptcy, or other “credit event,” and collects regular “insurance” payments as premiums; this comes as “free money” to the “insurer.” But if default occurs, then a huge payment becomes due. Perversely, it is perfectly acceptable to take out a credit default swap on someone else's debt. Here's one example: In 2005, auto parts maker Delphi defaulted on \$5.2 billion in outstanding bonds and loans—but over \$20 billion in credit default derivative contracts had been written on those bonds and loans. The result: massive losses on the part of derivative holders, much more than for those who held the bonds or loans. This degree of leverage was not uncommon throughout corporate America, and the US financial system as a whole. Were derivatives really reducing risk, or merely spreading it throughout the economy?

An even more telling example relates to the insurance giant AIG, which insured the obligations of various financial institutions through CDSs. The transaction went like this: AIG received a periodic premium in exchange for a promise to pay party A if party B defaulted. As it turned out, AIG did not have the capital to back its CDS commitments when defaults began to spread throughout the US financial system in 2008, and a failure of AIG would have brought down many other companies in a kind of financial death-spiral. Therefore the Federal government stepped in to bail out AIG with tens of billions of dollars.

In the heady years of the 2000s, even the largest and most prestigious banks engaged in what can only be termed criminal behavior on a massive scale. As revealed in sworn Congressional testimony, firms including Goldman Sachs deliberately created flawed securities and sold tens of billions of dollars' worth of them to investors, then took out many more billions of dollars' worth of derivatives contracts essentially betting against the securities they themselves had designed and sold. They were quite

simply defrauding their customers, which included foreign and domestic pension funds. To date, no senior executive with any bank or financial services firm has been prosecuted for running these scams. Instead, most of the key figures are continuing to amass immense personal fortunes, confident no doubt that what they were doing — and in many cases continue to do — is merely a natural extension of the inherent logic of their industry.

The degree and concentration of exposure on the part of the biggest banks with regard to derivatives was and is remarkable: As of 2005, JP Morgan Chase, Bank of America, Citibank, Wachovia, and HSBC together accounted for 96 percent of the \$100 trillion of derivatives contracts held by 836 US banks.²⁰

Even though many derivatives were insurance against default, or wagers that a particular company would fail, to a large degree they constituted a giant hedged bet that the economy as a whole would continue to grow (and, more specifically, that the value of real estate would continue to climb). So when the economy stopped growing, and the real estate bubble began to deflate, this triggered a systemic unraveling that could be halted (and only temporarily) by massive government intervention.

Suddenly “assets” in the form of derivative contracts that had a stated value on banks’ ledgers were clearly worth much less. If these assets had to be sold, or if they were “marked to market” (valued on the books at the amount they could actually sell for), the banks would be shown to be insolvent. Government bailouts essentially enabled the banks to keep those assets hidden, so that banks could appear solvent and continue carrying on business.

Despite the proliferation of derivatives, the financial system still largely revolves around the timeworn practice of receiving deposits and making loans. Bank loans are the source of money in our modern economy. If the banks go away, so does the rest of the economy (at least temporarily, until the functions of the banks can be taken up by other institutions).

But as we have just seen, many banks are probably actually insolvent because of the many near-worthless derivative contracts and bad mortgage loans they count as assets on their balance sheets.

One might well ask: *If commercial banks have the power to create*

money, why can't they just write off these bad assets and carry on? Ellen Brown explains the point succinctly in her useful book *The Web of Debt*:

[U]nder the accountancy rules of commercial banks, all banks are obliged to balance their books, making their assets equal their liabilities. They can create all the money they can find borrowers for, but if the money isn't paid back, the banks have to record a loss; and when they cancel or write off debt, their assets fall. To balance their books... they have to take the money either from profits or from funds invested by the bank's owners [i.e., shareholders]; and if the loss is more than its owners can profitably sustain, the bank will have to close its doors.²¹

So, given their exposure via derivatives, bad real estate loans, and MBSs, the banks aren't making new loans because they can't take on more risk. The only way to reduce that risk is for government to guarantee the loans. Again, as long as the down-side of this business cycle is short, such a plan could work in principle.

But whether it actually will work in the current situation is problematic. As noted above, Ponzi schemes can theoretically go on forever, as long as the number of new investors is infinite. Yet in the real world the number of potential investors is always finite. There are limits. And when those limits are hit, Ponzi schemes can unravel very quickly.

All Loaned Up and Nowhere to Go

These are the four categories of debt. Over the short term, there is no room for growth of debt in the household or corporate sectors. Within the financial sector, there is little room for growth in productive lending. The shadow banks can still write more derivative contracts, but that doesn't do anything to help the real economy and just spreads risk throughout the system. That leaves government, which (if it controls its own currency and can fend off attacks from speculators) can continue to run large deficits, and the central banks, which can enable those deficits by purchasing government debt outright. But unless such efforts succeed in jump-starting growth in the other sectors, this is just a temporary end-game strategy.

A single statistic is revealing: in the US, the ratio of total debt to GDP has risen to more than 300 percent, exceeding the previous record of 290 percent achieved immediately prior to the stock market crash of 1929.²² If there is a theoretical or practical limit to debt, the US seems destined to reach it, and soon.

Remember: in a system in which money is created through bank loans, there is never enough money in existence to pay back all debts with interest. The system only continues to function as long as it is growing.²³

So, what happens to the existing mountain debt in the absence of economic growth? Answer: Some kind of debt crisis. And that is what we are seeing.

Debt crises have occurred throughout the history of civilizations, beginning long before the invention of fractional reserve banking and credit cards. Many societies learned to solve the problem with a “debt jubilee”: According to the Book of Leviticus in the Bible, every fiftieth year is a Jubilee Year, in which slaves and prisoners are to be freed and debts are to be forgiven. Evidence of similar traditions can be found in an ancient Hittite-Hurrian text entitled “The Song of Debt Release”; in the history of Ancient Athens, where Solon (638–558 BCE) instituted a set of laws called *seisachtheia*, canceling all current debts and retroactively canceling previous ones that had caused slavery and serfdom (thus freeing debt slaves and debt serfs); and in the Qur’an, which advises debt forgiveness for those who are genuinely unable to pay.

For householders facing unaffordable mortgage payments or a punishing level of credit card debt, a jubilee may sound like a splendid idea. But what would that actually mean today, if carried out on a massive scale — when debt has become the very fabric of the economy? Remember; we have created an economic machine that needs debt like a car needs gas.

Realistically, we are unlikely to see a general debt jubilee in coming years (though we’ll reconsider that possibility in more detail in Chapter 6); what we may see instead are defaults and bankruptcies that accomplish essentially the same thing — the destruction of debt. Which, in an economy like ours, effectively means a destruction of wealth and claims upon wealth. Debt would have to be written off in enormous amounts — by the trillions of dollars. Over the short term, government could attempt

to stanch this flood of debt-shedding in the household, corporate, and financial sectors by taking on more debt of its own — but eventually it might not be able to keep up, given the inherent limits on government borrowing discussed above. Central banks could also help keep banks’ toxic assets hidden, a strategy the Fed seems in fact to be pursuing, though it is one not likely to succeed indefinitely.

We began with the question, “How close are we to hitting the limits to debt?” The evident answer is: we have already probably hit realistic limits to household debt and corporate debt; the ratio of US total debt-to-GDP is probably near or past the danger mark; and limits to government debt may be within sight, though that conclusion is more controversial.

Stimulus Duds, Bailout Blanks

In response to the financial crisis, governments and central banks have undertaken a series of extraordinary, dramatic measures. In this section we will focus primarily on the US (the bailouts of banks, insurance and car companies, and Government Sponsored Enterprises — i.e., Fannie Mae and Freddie Mac; the stimulus packages of 2008 and 2009; and actions by, and new powers given to the Federal Reserve); later we will also briefly touch upon some actions by governments and central banks in other nations (principally China and the Eurozone).

For the US, actions undertaken by the Federal government and the Federal Reserve bank system have so far resulted in totals of \$3 trillion actually spent and \$11 trillion committed as guarantees. Some of these actions are discussed below; for a complete tally of the expenditures and commitments, see the online CNN Bailout Tracker.²⁴

Bailouts

Bailouts directly funded by the US Department of the Treasury were mostly bundled together under the Troubled Assets Relief Program (TARP), signed into law October 3, 2008, which allowed the Treasury to purchase or insure up to \$700 billion worth of “troubled assets.” These were defined as residential or commercial mortgages and “any securities, obligations, or other instruments that are based on or related to such mortgages,” issued on or before March 14, 2008. Essentially, TARP allowed

the Federal government to purchase illiquid, difficult-to-value assets (primarily CDOs) from banks and other financial institutions in order to prevent a wave of insolvency from sweeping the financial world. The list of companies receiving TARP funds included the largest, wealthiest, and most powerful firms on Wall Street—Citigroup, Bank of America, AIG, JPMorgan Chase, Wells Fargo, Goldman Sachs, and Morgan Stanley—as well as GMAC, General Motors, and Chrysler.

The program was controversial, with some calling it “lemon socialism” (privatization of profits and socialization of losses). Critics were especially outraged when it became known that executives in the bailed-out companies were continuing to reward themselves with enormous salaries and bonuses. Some instances of fraud were uncovered, as well as the use of substantial amounts of money by participating companies to lobby against financial reforms.

Nevertheless, some of the initial fears about good money being thrown after bad did not appear to be borne out. Much of the TARP outlay was quickly repaid (for example, as of mid-2010, over \$169 billion of the \$240 billion invested in US banks had been paid back, including \$13.7 billion in dividends, interest and other income). Some of the repayment efforts appeared to be motivated by the desire on the part of companies to get out from under onerous restrictions (including restrictions by the Obama administration on executive pay).

A bailout of Fannie Mae and Freddie Mac was announced in September 2008 in which the federal government, via the Federal Housing Finance Agency, placed the two firms into conservatorship, dismissed the firms’ chief executive officers and boards of directors, and made the Treasury 79.9 percent owners of each GSE. The authority of the US Treasury to continue paying to stabilize Fannie Mae and Freddie Mac is limited only by statutory constraints to Federal government debt. The Fannie Freddie bailout law increased the national debt ceiling \$800 billion, for a total of \$10.7 trillion, in anticipation of the potential need for government mortgage purchases.

The US market for mortgage-backed securities had collapsed from \$1.1 trillion in 2006 to just \$50 billion in 2008. Thus the upshot of the Freddie

Fannie bailout was that the Federal government became the US mortgage lender of first and last resort.

Altogether, the bailouts succeeded in preventing an immediate meltdown of the national (and potentially the global) financial system. But they did not significantly alter the culture of Wall Street (i.e., the paying of exorbitant bonuses for the acquisition of inappropriate risk via cutthroat competition that ignores long-term sustainability of companies or economies). And they did not relieve the underlying solvency crisis faced by the banks—they merely papered these problems over temporarily, until the remaining bulk of the “troubled” assets are eventually marked to market (listed on banks’ balance sheets at realistic values). Meanwhile, the US government has taken on the burden of guaranteeing most of the nation’s mortgages, in a market in which residential and commercial real estate values may be set to decline further.

Stimulus Packages

During 2008 and 2009, the US Federal government implemented two stimulus packages, spending a total of nearly \$1 trillion.

The first (the Economic Stimulus Act of 2008) consisted of direct tax rebates, mostly distributed at \$300 per taxpayer, or \$600 per couple filing jointly. The total cost of the bill was projected at \$152 billion.

The second, the American Recovery and Reinvestment Act of 2009, or ARRA, was comprised of an enormous array of projects, tax breaks, and programs—everything from \$100 million for free school lunch programs to \$6 billion for the cleanup of radioactive waste, mostly at nuclear weapon production sites. The total nominal worth of the spending package was \$787 billion. A partial list:

- Tax incentives for individuals (e.g., a new payroll tax credit of \$400 per worker and \$800 per couple in 2009 and 2010). Total: \$237 billion.
- Tax incentives for companies (e.g., to extend tax credits for renewable energy production). Total: \$51 billion.
- Healthcare (e.g., Medicaid). Total: \$155.1 billion.
- Education (primarily, aid to local school districts to prevent layoffs and cutbacks). Total: \$100 billion.

- Aid to low-income workers, unemployed, and retirees (including job training). Total: \$82.2 billion (\$40 billion of this went to provide extended unemployment benefits through Dec. 31, and to increase them).
- Infrastructure Investment. Total: \$105.3 billion.
- Transportation. Total: \$48.1 billion.
- Water, sewage, environment, and public lands. Total: \$18 billion.

In addition to these two programs, Congress also appropriated a total of \$3 billion for the temporary Car Allowance Rebate System (CARS) program, known colloquially as “Cash for Clunkers,” which provided cash incentives to US residents to trade in their older gas guzzlers for new, more fuel-efficient vehicles.

The New Deal had cost somewhere between \$450 and \$500 billion and had increased government’s share of the national economy from 4 percent to 10 percent. ARRA represented a much larger outlay that was spent over a much shorter period, and increased government’s share of the economy from 20 percent to 25 percent.

Given the scope and cost of the two stimulus programs, they were bound to have some effect — though the extent of the effect was debated mostly along political lines. The 2008 stimulus helped increase consumer spending (one study estimated that the stimulus checks increased spending by 3.5 percent).²⁵ And unemployment undoubtedly rose less in 2009 than it would have done without ARRA.

Whatever the degree of impact of these spending programs, it appeared to be temporary. For example, while “Cash for Clunkers” helped sell almost 700,000 cars and nudged GM and Chrysler out of bankruptcy once the program expired US car sales languished at their lowest level in 30 years.

At the end of 2010, President Obama and congressional leaders negotiated a compromise package of extended and new tax cuts that, in total would reduce potential government revenues by an estimated \$858 billion. This was, in effect, a third stimulus package.

Critics of the stimulus packages argued that transitory benefits to the economy had been purchased by raising government debt to frightening levels.²⁶ Proponents of the packages answered that, had government not

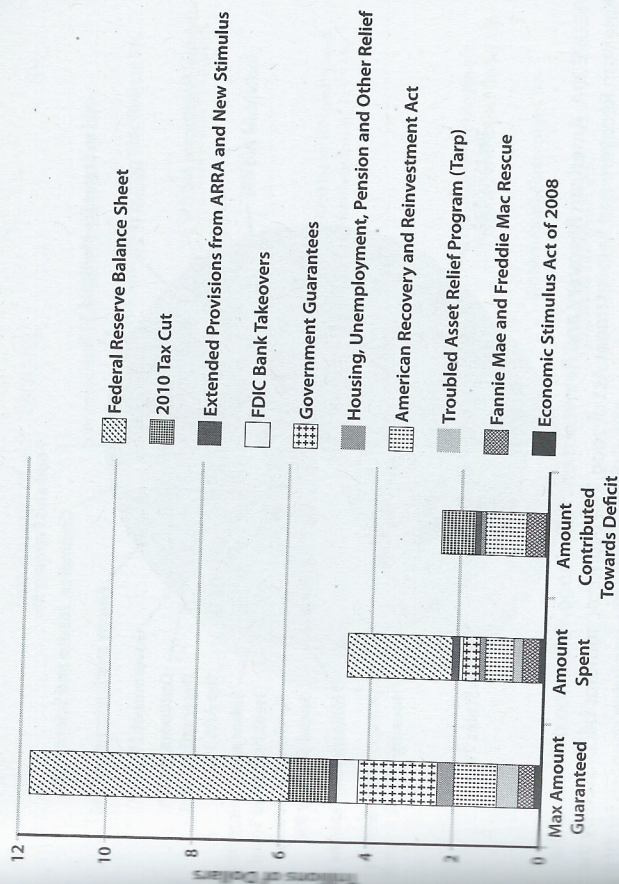


FIGURE 19A. Stimulus and Bailouts of 2008–2010. Since 2008, the Federal Government has allocated close to \$12 trillion for stimulus and bailout programs. However, all this money has not actually been spent. So far, \$4.6 trillion has been spent to stabilize the economy. The contribution of stimulus and bailout spending towards the deficit is still smaller, just over \$2 trillion; the reason being, in part, that the actions of the Federal Reserve (bank guarantees, loans, and asset purchases) are not considered a contribution towards the deficit. Also, most of the TARP money has since been repaid. Source: The Committee for a Responsible Federal Budget.

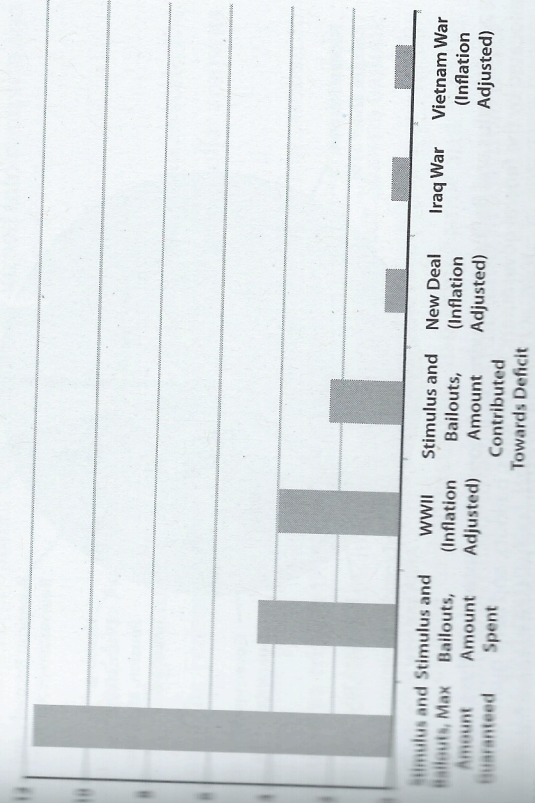


FIGURE 19B. 2008–2010 Stimulus and Bailouts Compared to Past Government Spending. The stimulus and bailouts of 2008–2010 dwarf most previous federal expenditures for a single purpose, exceeding even US spending for WWII. Source: The Committee for a Responsible Federal Budget.

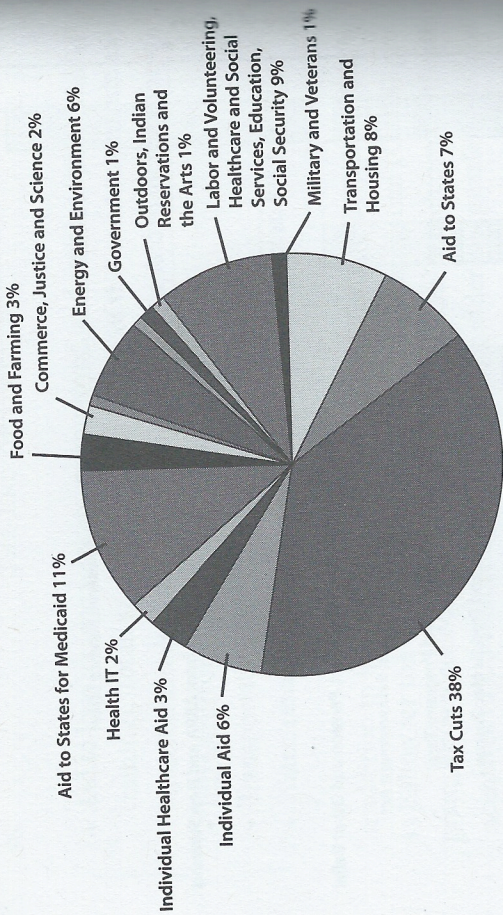


FIGURE 20A. American Recovery and Reinvestment Act of 2009. Allocation of funds of the American Recovery and Reinvestment Act of 2009. The economic stimulus bill passed by the Obama administration totaled around \$790 billion, of which \$665 has been spent so far. Of the \$790 billion, close to 40 percent came not in the form of government spending, but rather in the form of lost revenues as a result of tax cuts. The second largest expenditure of the stimulus was the \$90 billion allocated to states for Medicaid programs. Source: *The Wall Street Journal*, "Getting to \$787 Billion," February 17, 2009.

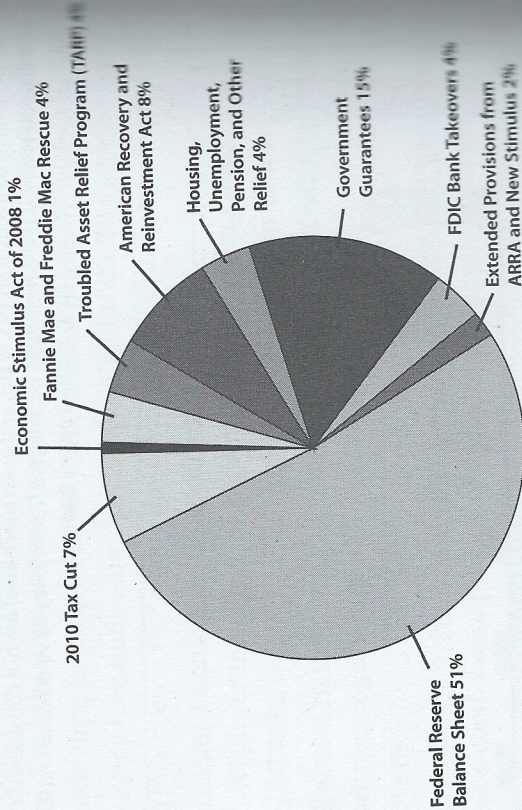


FIGURE 20B. Stimulus and Bailouts — Maximum Amount Guaranteed. Of the \$11.8 trillion in funds allocated by the federal government for stimulus, bailouts, and bank guarantees, almost three quarters of the money comes in the form of an expanded Federal Reserve Balance Sheet and government guarantees for banks and other financial institutions. As of February 2011, not all of this money has been spent—only \$4.6 trillion, of which \$2.5 trillion has been added to the deficit. The remainder is on tap, to be used at the discretion of the Federal Government.

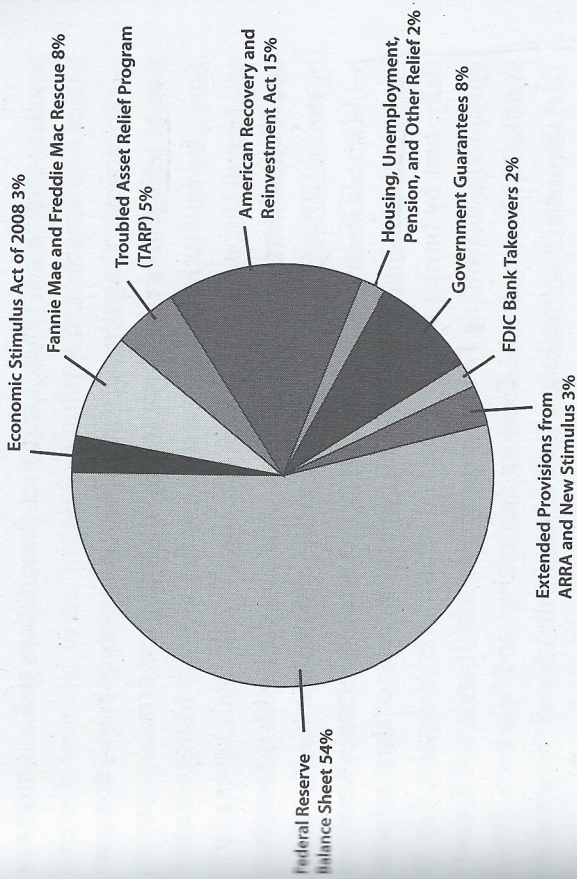


FIGURE 20C. Stimulus and Bailouts — Amount Spent. This chart shows a breakdown of the \$4.6 trillion spent so far by the Federal Government to rescue the economy from collapse. The Federal Reserve spent the majority of the funds in order to stabilize systemically critical institutions. These expenditures took the form of loans, asset purchases, and guarantees. Source: The Committee for a Responsible Federal Budget.

acted so boldly, an economic crisis might have turned into complete and utter ruin.

Actions By, and New Powers of, the Federal Reserve

While the US government stimulus packages were enormous in scale, the actions of the Federal Reserve dwarfed them in terms of dollar amounts committed.

During the past three years, the Fed's balance sheet has swollen to more than \$2 trillion through its buying of bank and government debt. Actual expenditures included \$29 billion for the Bear Stearns bailout; \$149.7 billion to buy debt from Fannie Mae and Freddie Mac; \$775.6 billion to buy mortgage-backed securities, also from Fannie and Freddie; and \$109.5 billion to buy hard-to-sell assets (including MBSs) from banks. However, the Fed committed itself to trillions more in insuring banks against losses, loaning to money market funds, and loaning to banks to

440 thrift holding companies and will regulate “systemically important” nonbank financial firms, including the biggest insurance companies, Warren Buffett’s Berkshire Hathaway Inc., and General Electric Capital Corp. It is also now required to administer “stress tests” at the biggest banks every year to determine whether they need to set aside more capital. The law prescribes that the largest banks write “living wills,” approved by the Fed, that will make it easier for the government to break them up and sell the pieces if they suffer a Lehman Brothers-style meltdown. The Fed also houses and funds a new federal consumer protection agency (headed on an interim basis, as of September 2010, by Elizabeth Warren), which operates independently.

All of this makes the Federal Reserve a far more powerful actor within the US economy. The justification put forward is that without the Fed’s bold actions the result would have been utter financial catastrophe, and that with its new powers and functions the institution will be better able to prevent future economic crises. Critics say that catastrophe has merely been delayed.²⁸

Actions by Other Nations and Their Central Banks

In November 2008, China announced a stimulus package totaling 4 trillion yuan (\$586 billion) as an attempt to minimize the impact of the global financial crisis on its domestic economy. In proportion to the size of China’s economy, this was a much larger stimulus package than that of the US. Public infrastructure development made up the largest portion, nearly 38 percent, followed by earthquake reconstruction, funding for social welfare plans, rural development, and technology advancement programs. The stimulus program was judged a success, as China’s economy (according to official estimates) continued to expand, though at first at a slower pace, even as many other nations saw their economies contract.

In December 2009, Japan’s government approved a stimulus package amounting to 7.2 trillion yen (\$82 billion), intended to stimulate employment, incentivize energy-efficient products, and support business owners. Europe also instituted stimulus packages: in November 2008, the European Commission proposed a plan for member nations amounting to 100 billion euros including incentives to investment, lower interest rates,

purchase commercial paper. Altogether, these outlays and commitments totaled a minimum of \$6.4 trillion.

Documents released by the Fed on December 1, 2010 showed that more than \$9 trillion in total had been supplied to Wall Street firms, commercial banks, foreign banks, and corporations, with Citigroup, Morgan Stanley, and Merrill Lynch borrowing sums that cumulatively totaled over \$6 trillion. The collateral for these loans was undisclosed but widely thought to be stocks, CDSs, CDOs, and other securities of dubious value.²⁷

In one of its most significant and controversial programs, known as “quantitative easing,” the Fed twice expanded its balance sheet substantially, first by buying mortgage-backed securities from banks, then by purchasing outstanding Federal government debt (bonds and Treasury certificates) to support the Treasury debt market and help keep interest rates down on consumer loans. The Fed essentially created money on the spot for this purpose (though no money was literally “printed”).

In addition, the Federal Reserve has created new sub-entities to pursue various new functions:

- *Term Auction Facility* (which injects cash into the banking system),
- *Term Securities Lending Facility* (which injects Treasury securities into the banking system),
- *Primary Dealer Credit Facility* (which enables the Fed to lend directly to “primary dealers,” such as Goldman Sachs and Citigroup, which was previously against Fed policy), and
- *Commercial Paper Funding Facility* (which makes the Fed a crucial source of credit for non-financial businesses in addition to commercial banks and investment firms).

Finally, while remaining the supervisor of 5,000 US bank holding companies and 830 state banks, the Fed has taken on substantial new regulatory powers. Under the Wall Street Reform and Consumer Protection Act known as the Dodd-Frank law (signed July 21, 2010), the central bank gains the authority to control the lending and risk taking of the largest most “systemically important” banks, including investment banks Goldman Sachs Group and Morgan Stanley, which became bank holding companies in September 2008. The Fed also gains authority over about

tax rebates (notably on green technology and eco-friendly cars), and social measures such as increased unemployment benefits. In addition, individual European nations implemented plans ranging in size from 0.6 percent of GDP (Italy) to 3.7 percent (Spain).

The European Central Bank's response to sovereign debt crises, primarily affecting Greece and Ireland but likely to spread to Spain and Portugal, has included a comprehensive rescue package (approved in May 2010) worth almost a trillion dollars. This was accompanied by requirements to cut deficits in the most heavily indebted countries; the resulting austerity programs led, as already noted, to widespread domestic discontent. Greece received a \$100 billion bailout, along with a punishing austerity package, in the spring of 2010, while Ireland got the same treatment in November.

A meeting of central bankers in Basel, Switzerland, in September 2010 resulted in an agreement to require banks in the OECD nations to progressively increase their capital reserves starting Jan. 1, 2013. In addition, banks will be required to keep an emergency reserve known as a "conservation buffer" of 2.5 percent. By the end of the decade each bank is expected to have rock-solid reserves amounting to 8.5 percent of its balance sheet. The new rules will strengthen banks against future financial crises, but in the process they will curb lending, making economic recovery more difficult.

After All the Arrows Have Flown

What's the bottom line on all these stimulus and bailout efforts? In the US, \$12 trillion of total household net worth disappeared in 2008, and there will likely be more losses ahead, largely as a result of the continued fall in real estate values, though increasingly as a result of job losses as well. The government's stimulus efforts, totaling less than \$1 trillion, cannot hope to make up for this historic evaporation of wealth. While indirect subsidies may temporarily keep home prices from falling dramatically, that just keeps houses less affordable to workers making less income. Meanwhile, the bailouts of banks and shadow banks have been characterized as government throwing money at financial problems it cannot solve, rewarding the very people who created them. Rather than being motivated by the suffering of American homeowners or governments in over their heads

the bailouts of Fannie Mae and Freddie Mac in the US, and Greece and Ireland in the EU, were (according to critics) essentially geared toward securing the investments of the banks and the wealthy bond holders.

These are perhaps facile criticisms. It is no doubt true that, without the extraordinary measures undertaken by governments and central banks, the crisis that gripped US financial institutions in the fall of 2008 would have deepened and spread, hurling the entire global economy into a depression surpassing that of the 1930s.

Facile or not, however, the critiques nevertheless contain more than a mote of truth.

The stimulus-bailout efforts of 2008-2009 — which in the US cut interest rates from five percent to zero, spent up the budget deficit to ten percent of GDP, and guaranteed trillions to shore up the financial system — arguably cannot be repeated. In principle, there are ways of conjuring more trillions into existence for such a purpose, as we will see in Chapter 6. However, in Washington the political headwinds against further government borrowing are now gale-force. Thus the realistic likelihood of another huge Congressionally allocated stimulus package is vanishingly small; if more trillions materialize, they are likely to appear in the form of Fed-funded bailouts or quantitative easings. The stimulus-bailout programs constituted quite simply the largest commitments of funds in world history, dwarfing the total amounts spent in all the wars of the 20th century in inflation-adjusted terms (for the US, the cost of World War II amounted to \$3.2 trillion). Not only the US, but Japan and the European nations as well may have exhausted their arsenals.

But more will be needed as countries, states, counties, and cities near bankruptcy due to declining tax revenues. Meanwhile, the US has lost 8.4 million jobs — and if loss of hours worked is considered that adds the equivalent of another 3 million; the nation will need to generate an extra 10,000 jobs each month for three years to get back to pre-crisis levels of employment. The only way these problems can be allayed (not fixed) is through more central bank money creation and government spending.

Austrian-School and post-Keynesian economists have contributed a basic insight to the discussion: Once a credit bubble has inflated, the eventual correction (which entails destruction of credit and assets) is of greater

magnitude than government's ability to spend. The cycle must sooner or later play itself out.

There may be a few more arrows in the quiver of economic policy makers: central bankers could try to drive down the value of domestic currencies to stimulate exports; the Fed could also engage in more quantitative easing. But these measures will sooner or later merely undermine currencies (we will return to this point in Chapter 6).

Further, the way the Fed at first employed quantitative easing in 2009 was minimally productive. In effect, QE1 (as it has been called) amounted to adding about a trillion dollars to banks' balance sheets, with the assumption that banks would then use this money as a basis for making loans.²⁹ The "multiplier effect" (in which banks make loans in amounts many times the size of deposits) should theoretically have resulted in the creation of roughly \$9 trillion within the economy. However, this did not happen: because there was reduced demand for loans (companies didn't want to expand in a recession and families didn't want to take on more debt), the banks just sat on this extra capital. Perhaps a better result could have been obtained if the Fed were somehow to have distributed the same amount of money directly to debtors, rather than to banks, because then at least the money would either have circulated to pay for necessities, or helped to reduce the general debt overhang. But this would require actions far removed from the Fed's mandate.

In November 2010, the Fed again resorted to quantitative easing ("QE2"). This time, instead of purchasing mortgage securities, thus inflating banks' balance sheets, the Fed set out to purchase Treasuries — \$600 billion worth, in monthly installments lasting through June 2011. While QE1 was essentially about saving the banks, QE2 was about funding Federal government debt interest-free. Because the Federal Reserve rebates its profits (after deducting expenses) to the Treasury, creating money to buy government debt obligations is an effective way of increasing that debt without increasing interest payments. Critics describe this as the government "printing money" and assert that it is highly inflationary; however, given the extremely deflationary context (trillions of dollars' worth of write-downs in collateral and credit), the Fed would have to "print" far more than it is doing to result in serious inflation. Nevertheless, as we will

see in Chapter 5 in a discussion of "currency wars," other nations view this strategy as a way to drive down the value of the dollar so as to decrease the value of foreign-held dollar-denominated debt — in effect forcing other nations to pay for America's financial folly.

In any case, the Federal Reserve has effectively become a different institution since the crisis began. It and certain other central banks have taken on most of the financial bailout burden (dealing in trillions rather than mere hundreds of billions of dollars) simply because they have the power to create money with which to guarantee banks against losses and buy government debt. Together, central banks and governments are barely keeping the wheels on the economy, but their actions come with severe long-term costs and risks. And what they can actually accomplish is most likely limited anyway. Perhaps the situation is best summed up in a comment from a participant at the central bankers' annual gathering in Jackson Hole, Wyoming in August 2010: "We can't create growth ourselves, all we can do is create the conditions that make growth possible."³⁰

BOX 2.3 Just a Little Sideshow

The big banks that were involved in securitizing mortgages and trading them in bundles during the past 15 years purposefully evaded local legal requirements for registering mortgages with a county recorder of deeds as they changed hands. Nor did the banks bother to transfer to the buyer a proper document of assignment evidencing the sale. Mortgages were bundled up into trusts for the purpose of securitizing them to investors, but the trusts were also never given proper legal evidence of the assignment of the mortgages.

Then, when the housing market crashed and banks began millions of foreclosure proceedings, they created the assignments after the fact, using "robo-signers" to submit legal documents to the courts (in one such case the signer had been dead for over five years) and falsified notarizations. In thousands of documented cases foreclosures were conducted even though the borrower was not notified in advance, or the borrower was told by the bank to withhold payments in order to qualify for a mortgage modification but then declared in default by the bank,

or the bank added thousands of dollars of "late fees" to the borrower's account, forcing the borrower into default.

In a landmark ruling in January 2011, the Massachusetts Supreme Court held that two banks foreclosed wrongly on two homeowners using suspect paperwork. Attorneys General in 50 states are investigating banks' foreclosure processes. Many observers are questioning whether the banks actually technically own hundreds of billions of dollars' worth of securitized mortgage assets on their balance sheets. If further court rulings go against the banks, the result could be fatal for several "too-big-to-fail" institutions.

Investors who bought MBSs are filing fraud claims against the banks, arguing that these securities were never properly collateralized. Their claims against the banks could amount to trillions of dollars.

The Federal government is implicated as well. Fannie Mae and Freddie Mac now face much higher losses on their portfolios of trillions of dollars' worth of home mortgages, and will therefore likely have to turn to the government for further capital infusions.

L. Randall Wray, a Professor of Economics at the University of Missouri, Kansas City, claims that most mortgage-backed securities are in reality not backed by anything, since the electronic securitization process that most banks used operated illegally. According to Wray, lenders may have the right to foreclose in some instances, but only if they have a clear record of each sale of the mortgage — but electronic securitization in most instances destroyed those records.³¹

The new Congress is likely to try to find a way for the banks to escape this mess, perhaps by simply writing a law declaring the mortgages in question to be valid even without proper documentation. But it is doubtful whether such a law would hold up to scrutiny by the courts. In the end, it may be up to the Supreme Court to decide on the validity of mortgage claims worth trillions.

Deflation or Inflation?

If the bailouts and stimulus packages are effectively just a way of buying time, then there is further trouble ahead — but trouble of what sort? Typically, financial crises play out as inflation or deflation. There is

considerable controversy among forecasters as to which will ensue. Let's examine the arguments.

The Inflation Argument

Many economic observers (especially the hard money advocates) point out that the amount of debt that many governments have taken on cannot realistically be repaid, and that the US government in particular will have great difficulty fulfilling its obligations to an aging citizenry via programs like Social Security, Medicare, and Medicaid. The only way out of the dilemma — and it is a time-tested if dangerous strategy — is to inflate the currency. The risk is that inflation undermines the value of the currency and wipes out savings.³²

There are many fairly recent historic examples, as well as ancient ones going back to the very earliest days of money. The Romans generated inflation by debasing their coinage — gradually reducing the precious-metal content until coins were almost entirely made of base metals. With the advent of paper money, currency inflation became much easier and more tempting: Germany famously inflated away its onerous World War I reparations burdens during the early 1920s. Between June and December 1922, Germans' cost of living increased approximately 1,600 percent, and citizens resorted to carrying bundles of banknotes in wheelbarrows merely to purchase daily necessities; some even used currency as wallpaper. In the United States, hyperinflation occurred during the Revolutionary War and the Civil War. Hungary inflated its currency at the end of World War II, as did Yugoslavia in the late 1980s just before breakup of the country. During the 2000s, Zimbabwe inflated its currency so dramatically that eventually banknotes were being circulated with a face value of 100 trillion Zimbabwe dollars. In each case the result has been the same: a complete gutting of savings and an eventual re-valuation of the currency — in effect, re-setting the value of money from scratch.

How does a nation inflate its currency? There are two primary routes: maintaining very low interest rates encourages borrowing (which, with fractional reserve banking, results in the creation of more money); or direct injection by government or central banks of new money into the economy. This in turn can happen via the central bank creating money with which to buy government debt, or by government creating money

and distributing it either to financial institutions (so they can make more loans) or directly to businesses and citizens.

Those who say we are heading toward hyperinflation argue either that existing bailouts and stimulus actions by governments and central banks are inherently inflationary; or that, if the economy relapses, the Federal Reserve will create fresh money not only to buy government debt, but to bail out financial institutions once again. The addition of all this new money, chasing after a limited pool of goods and services, will inevitably cause the currency to lose value.³³

The Deflation Argument

Others say the most likely course for the world economy is toward continued deleveraging by businesses and households, and this ongoing shedding of debt (mostly through defaults and bankruptcies) will exceed either the ability or willingness of governments and central banks to inflate the currency, at least over the near-term (the next few years). In this view, those who see government actions so far as inflationary fail to see that all that the expansion of public debt has accomplished is to replace a portion of the amount of private debt that has vanished through deleveraging: total debt has actually declined, even in the face of massive government borrowing.³⁴

If a bubble consists of lots of people simultaneously taking advantage of what looks like a once-in-a-lifetime opportunity to get rich quick, deflation is lots of people simultaneously doing what appears to be perfectly sensible (under a different set of circumstances) — saving, paying off debts, walking away from underwater homes, and pulling back on borrowing and spending. The net effect of deflation is the destruction of businesses, the layoff of millions of workers, a drop in consumption levels, and consequently further bankruptcies of businesses due to insufficient purchases of overabundant goods and services.

Deflation represents a disappearance of credit and money, so that whatever money remains has increased purchasing power. Once the bubble began to burst back in 2007–2008, say the deflationists, a process of contraction began that inevitably must continue to the point where debt service is manageable and prices for assets such as homes and stocks are compelling based on long-term historical trends.³⁵

Many deflationists tend to agree that the inflationists are probably right in the long run: At some point, perhaps several years from now, some future US administration will resort to truly extraordinary means to avoid defaulting on interest payments on its ballooning debt, as well as to avert social disintegration and restart economic activity.³⁶

The Bridge to Nowhere

In general, what we are actually seeing so far is neither dramatic deflation nor hyperinflation. Despite the evaporation of trillions of dollars in wealth during the past four years, and despite government and central bank interventions with a potential nameplate value also running in the trillions of dollars, prices (which most economists regard as the signal of inflation or deflation) have remained fairly stable. (While at the time of this writing food and oil prices are soaring, this is due not to monetary policy but to weather events on one hand, and political turmoil in petroleum exporting nations on the other.) That is not to say that the economy is doing well: the ongoing problems of unemployment, declining tax revenues, and business and bank failures are obvious to everyone (see Box I.1 in the Introduction, "But Isn't the US Economy Recovering?"). Rather, what seems to be happening is that the efforts of the US Federal government and the Federal Reserve have temporarily more or less succeeded in balancing out the otherwise massively deflationary impacts of defaults, bankruptcies, and falling property values. With its new functions, the Fed is acting as the commercial bank of last resort, transferring debt (mostly in the form of MBSs and Treasuries) from the private sector to the public sector. The Fed's zero-interest-rate policy has given a huge hidden subsidy to banks by allowing them to borrow Fed money for nothing and then lend it to the government at a 3 percent interest rate. But this is still not inflationary because the Federal Reserve is merely picking up the slack left by the collapse of credit in the private sector. In effect, the nation's government and its central bank are together becoming the lender of last resort and the borrower of last resort — and (via the military) increasingly also both the consumer of last resort and the employer of last resort.

How can the US continue to run up deficits at a sizeable proportion of GDP? If other nations did the same, the result would be currency devaluation and inflation. America can get away with it for now because the

dollar is the reserve currency of the world, and so if the dollar entirely failed most or all of the global economy would go down with it. Other nations are willing to continue holding dollar-denominated debt obligations simply because they see no better alternative. Meanwhile some currency devaluation actually works to America's advantage by making its exports more attractively priced.

Over the short to medium term, then, the US — and, by extension, most of the rest of the world — appears to have achieved a kind of tentative and painful balance. The means used will prove unsustainable, and in any case this period will be characterized by high unemployment, declining wages, and political unease. While leaders will make every effort to portray this as a gradual return to growth, in fact the economy will remain fragile, highly vulnerable to upsetting events that could take any of a hundred forms — including international conflict, popular unrest and dissent, terrorism, the bankruptcy of a large corporation or megabank, a sovereign debt event (such as a default by one of the European countries now lined up for bailouts), a food crisis, an energy shortage, an environmental disaster, a curtailment of government intervention based on the political shift in the makeup of Congress, or a currency war (again, more on that in Chapter 5).

What should be done to avert further deterioration of the global financial system? Once again, the public debate (such as it is) is dominated by the opposed viewpoints of the Keynesians and the Chicago Schoolers — which are approximately reflected in the positions of the US Democratic and Republican political parties.

The Keynesians still see the world through the lens of the Great Depression. During the 1930s, industrialized countries were in the early stages of their shift from an agrarian, coal-based, rural economy to an electrified, oil-based, urban economy — a shift that required enormous infrastructure investments (in new highways, airports, dams, and power lines) that would ultimately pay off handsomely for a nation on the verge of realizing a consumer utopia. All that was needed to initiate the building of that infrastructure was credit — grease for the wheels of commerce. Government got those wheels rolling by taking on debt, with private

companies increasingly taking the lead after World War II. The expansion that occurred from the 1950s through 2000, as that infrastructure was built and put to use, easily justified the government pump-priming that initiated the process. Future payments of interest on the government debt could be ensured through growth of the tax base.

Now is different. As we will see in the next two chapters, both the US and the world as a whole have passed a fundamental crossroads characterized by increasing scarcity of energy and crucial minerals. Because of this, strategies of growth that worked reliably in the mid-to-late 20th century — via various forms of business and technological development — have reached a point of diminishing returns.

Thus the Keynesian spending bridge today leads nowhere.

But stopping its construction now will result in a catastrophic weakening of the entire economy. The backstop provided by government spending and central bank debt acquisition is the only thing keeping the system from hurtling into a deflationary spiral. Fiscal conservatives who rail against bigger government and more government debt need to comprehend the alternative — a gaping, yawning economic void. For a mere glimpse of what major government spending cutbacks might look like in the US, consider the impacts on European nations that are being subjected to fiscal austerity measures as a corrective for too-rosy expectations of future growth. The picture is bleak: rising poverty, disappearing social services, and general strikes and protests.

Extreme social unrest could be an eventual result of the gross injustice of requiring a majority of the population to forego promised entitlements and economic relief following the bailout of a small super-wealthy minority on Wall Street. Political opportunists can be counted on to exacerbate that unrest and channel it in ways utterly at odds with society's long-term best interests. This is a toxic brew with disturbing precedents in recent European history.

If the Keynesian remedy doesn't cure the ailment but merely extends the suffering (while increasing government debt to truly toxic levels), the medicine of austerity may have such severe side effects that it could kill the patient outright. Both sides — left and right, the socialists and

free-marketers — assume and hope to the point of desperation that their prescription will result in a rapid return to continuous economic growth and low unemployment. But as we are about to see, that hope is futile.

There is no “silver bullet”; no magic solution that will turn back the clock to an era of abundant resources and easy growth. For now, all that governments can do is buy time through further deficit spending — ideally, using that time to build infrastructure that will continue to function in the coming era of reduced flows of energy and resources. Meanwhile, we must all find ways to come out from under a burden of debt that will otherwise crush us. The inherent contradiction within this prescription is obvious and unavoidable.

BOX 2.4 Credit: The Economic Magnifier

Credit has a history that goes back almost to the beginnings of civilization. For example, early banks (like the Bardi and Peruzzi banks of the tenth and thirteenth centuries) extended credit to monarchs so the latter could afford to go to war. But, during the past century, the extension of credit has become an overwhelmingly pervasive practice that reaches not just into every government and business, but nearly every household in the industrialized world.

Why this vast, recent expansion of credit? One word sums it up: Growth.

Credit gives us the ability to consume now and pay later. It is an expression of belief on the part of both borrower and lender that *later* the borrower will have a surplus with which to repay *today's* new debt, with interest, while still covering basic operating expenses. We will be better off in the future than we are today.

Modern economic theory treats debt as a neutral transfer between saver and consumer. In a world at the end of growth, it becomes anything other than neutral — as the savers' will never be able to obtain their deferred consumption.

In an economy of fixed size, where some enterprises are expanding while others are contracting, credit can play a useful but limited role. In a growing economy, credit finds and creates fabulous new opportuni-

ties. If credit expands to an unrealistic degree, or if a formerly growing economy enters a recession, the result can be a credit bubble or debt overhang, leading to widespread debt defaults and a dramatic contraction of credit.

In a serious recession, the economy can suffer a powerful, overwhelmingly debilitating one-two punch. The first comes from the interruption of growth; this in itself dashes hopes and leads to increased unemployment and declining earnings. The second, which is potentially far more damaging, comes from the contraction of credit. During the economic ascent, credit provided fuel and encouragement; on the way down, it steepens the fall and removes safety nets. The collapse of credit can turn an economic pothole into a pit of quicksand.

The end of growth is the ultimate credit event, as everyone gradually comes to realize there will be no surplus *later* with which to repay interest on debt that is accruing *now*.