**Testimony of Simon Johnson before the Senate Budget Committee, Hearing on *The Economic Outlook and Options for Stimulus*, November 19, 2008.**[1]

*Summary of Main Points*

1) *The US is in a serious recession and faces a difficult recovery and slow growth for at least 2-3 years, due to the lasting effects of a crisis of confidence in and around the global credit system. It is hard to know where, when and how we will see an end to the current process of falling supply and demand for lending around the world.*
2) *Some sensible counter-cyclical policies are now being implemented in the US. These may be helpful for the recovery, but they cannot prevent the recession. Problems in other parts of the world are still emerging and most economic forecasts continue to be marked down.*
3) *In this environment, a total fiscal stimulus of around $450 billion (or roughly 3% of GDP) would be appropriate, with about half front-loaded in the first three quarters of 2009, when there will likely be recession, and the rest following over the next 8-12 quarters, during which otherwise growth will be slow. This time profile for increased spending would allow the money to be well spent.*
4) *In this context, some tax cuts would both help consumer spending and allow consumers to rebuild their balance sheets. If the decline in GDP proves sharper than expected, tax cuts can allow more front-loading of the stimulus. Money that is used to pay down debts is not wasted from the point of view of macroeconomic recovery.*
5) *A well-designed fiscal stimulus of this size will help keep unemployment down. Low energy and raw materials prices mean that the "value for money" in job creation through infrastructure spending (maintenance and new building) will be particularly high.*
6) *Medium-term fiscal consolidation must remain on the agenda. It is vital to retain a high level of global confidence in the US official balance sheet. We should aim for tighter budgets in economic upswings, as a way to preserve financial firepower for the crises of the future. This may, in fact, be the only effective way to deal with future kinds of unsustainable "bubbles" in asset prices.*

Today, it is abundantly clear that not only the United States but much of the world is sliding rapidly into recession. While the Treasury Department, Federal Reserve, and Congress have taken multiple steps to ensure the stability of the financial system, the next question is how to protect the real economy from a severe, prolonged recession and construct a basis for long-term growth and prosperity in the future.

My testimony includes three main sections: first, the roots and evolution of the current global financial crisis; second, the current situation; and third, my recommendations for the stimulus package itself.

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## THE GLOBAL FINANCIAL CRISIS

### Roots of the crisis

For at least the last year and a half, as banks took successive writedowns related to deteriorating mortgage-backed securities, the conventional wisdom was that we were facing a crisis of bank solvency triggered by falling housing prices and magnified by leverage. However, falling housing prices and high leverage alone would not necessarily have created a serious recession. It was the translation of solvency concerns into short-term liquidity concerns that brought on a panic in the financial system, which in turn caused the credit crisis we are still experiencing today.

The problems in the U.S. housing market were not themselves big enough to generate the current financial crisis. America's housing stock, at its peak, was estimated to be worth $23 trillion. A 25% decline in the value of housing would generate a paper loss of $5.75 trillion. With an estimated 1-3% of housing wealth gains going into consumption, this could generate a $60-180 billion reduction in total consumption, or only 0.4-1.3% of US GDP.

Leverage did increase the riskiness of the system, but would not necessarily turn a housing downturn into a global financial crisis. Although leverage magnifies falls in asset values that might threaten the solvency of specific financial institutions, what we saw recently was a collapse in short-term confidence in the entire financial system. Excessive leverage can be resolved in one of two ways. The first is an orderly reduction in credit through decisions by institutions and individuals to reduce borrowing, cut lending, and raise underlying capital; this can occur gradually without much harm to the. The second is when creditors make abrupt decisions to withdraw funds, forcing borrowers to scramble to raise funds and leading to major, abrupt changes in liquidity and asset prices. These credit panics can be self-fulfilling; fears that assets will fall in value can lead directly to falls in their value.

### A crisis of confidence

We have seen a similar crisis at least once in recent times: the crisis that hit emerging markets in 1997 and 1998. For countries then, read banks (or markets) today. In both cases, a crisis of confidence among short-term creditors caused them to pull out their money, leaving institutions with illiquid long-term assets in the lurch.

This emerging market crisis started in June 1997 in Thailand, where a speculative attack on the currency caused a devaluation, creating fears that large foreign currency debt in the private sector would lead to bankruptcies and recession. Investors almost instantly withdrew funds and cut off credit to Malaysia, Indonesia and the Philippines under the assumption that they were guilty by proximity. All these countries lost access to foreign credit and saw runs on their reserves. Their currencies fell sharply and their creditors suffered major losses. From there, the contagion spread for no apparent reason to South Korea, then to Russia, and then to Brazil.

In each case, the next country affected had little exposure to previous countries. Nevertheless, creditors lost confidence that they could get their principal back and rushed to get out at the same time. In such an environment, any institution that borrows short and lends long is vulnerable to an attack of this kind: if credit is cut off it will be unable to maintain their existing activities. The decision of credit markets became self-fulfilling, and policy makers around the world seemed incapable of stopping these waves.

**The acute stage of the crisis**

The evolution of the current financial crisis is remarkably similar to the emerging markets crisis of a decade ago. America's crisis started with creditors fleeing from sub-prime debt in summer 2007. As default rates rose, investment-grade debt - often built out of sub-prime debt - faced large losses. The exodus of creditors caused mortgage finance, home building, and a few hedge funds to collapse.

The second stage began with the Bear Stearns crisis in March 2008 and extended through the bailout of Fannie Mae and Freddie Mac. As investment banks evolved into proprietary trading houses with large blocks of illiquid securities on their books, they became dependent on the ability to roll over their short-term loans. Given sufficient panic, it can become impossible to roll over those loans, as Bear Stearns learned. However, with Bear Stearns and latter with Fannie and Freddie, the Federal Reserve and Treasury made sure to protect creditors, encouraging them to continue lending to large financial institutions.

This changed on September 15 and 16 with the failure of Lehman and the "rescue" of AIG, which saw a dramatic and damaging reversal of policy. Lehman succumbed to a crisis in confidence that made it impossible to secure short-term funding. This time, however, the Fed let Lehman go bankrupt, largely wiping out creditors. AIG came under threat because of its exposure to mortgage-backed securities through credit default swaps. As with Lehman, the Fed chose not to protect creditors; because the $85 billion loan was senior to existing creditors, senior debt was left trading at a 40% loss.

Whatever the reasons for this change in policy, the implications for creditors and bond investors were clear: RUN from all entities that might fail, even if they appear solvent. As in the emerging markets crisis of a decade ago, anyone who needed access to the credit markets to survive might lose that access at any time. As a result, creditors and uninsured depositors at all risky institutions pulled their funds - shifting deposits to Treasuries, moving prime brokerage accounts to the safest institutions, and cashing out of securities arranged with any risky institutions. Washington Mutual and Wachovia vanished, and even Morgan Stanley and Goldman Sachs needed emergency capital. Banks stopped lending to each other or to their corporate clients and lent to the US government instead. The collapse of one money market fund and the pending collapse of more forced the government to insure money market funds.

The credit market shock waves spread quickly throughout the world. In Europe, interbank loan rates and EURIBOR rates shot up, and banks from Bradford & Bingley to Fortis

were nationalized. From late September, credit markets around the world were paralyzed by the fear that any leveraged financial institution might fail due to a lack of short-term credit. Self-fulfilling collapses can dominate credit markets during these periods of extreme lack of confidence.

**The response**

One way to end a crisis in confidence is to put a large balance sheet behind each entity that appears to be at risk, making it clear to creditors that they can once again safely lend to those counterparties without risk. This should restore confidence and limit the impact on the real economy. The major strength of the U.S. is its balance sheet: the unmatched degree of confidence it enjoys in the global economy.

However, governmental responses to the crisis were fitful, poorly planned, and abysmally presented to the public. The U.S., to its credit, was the first to act, while European countries boasted they would be little affected. But the rapid shift from insisting that the system was fundamentally sound to a panicked request for $700 billion was greeted coldly on Capitol Hill and spooked the public.

The initial Paulson Plan was designed to increase confidence in financial institutions by transferring their problematic mortgage-backed securities to the federal government's balance sheet. The plan had many problems, ranging from uncertainty over pricing to questions about whether it would be sufficient. On September 29, I recommended passing the plan and supplementing it with four additional measures, including unlimited deposit insurance and an equity injection program for financial institutions. (My views throughout the crisis were published at http://BaselineScenario.com and in various other media outlets.)

After the Paulson Plan was passed on October 3, it was quickly overtaken by events. The UK and then every major European country announced a bank recapitalization program. On October 14, the US followed suit with a bank recapitalization program, unlimited deposit insurance (for non-interest-bearing accounts), and guarantees of new senior debt. Only then was enough financial force applied for the interbank lending markets to begin to ease, with LIBOR finally falling and Treasury yields rising, although they are still a long way from historical levels.

**Global dimensions**

Although the US and Europe have grabbed most of the headlines, the current crisis has taken a toll worldwide, particularly in emerging markets. Compared to the U.S. and select other wealthy nations, most countries lack the resources to restore confidence in their financial systems, must issue debt in foreign currencies, and have little control over their exchange rates.

Highly leveraged countries, such as Iceland, are vulnerable to the flight of capital. Like Latin America in the 1980s, or emerging markets after 1997-98, the withdrawal of credit

after a boom can lead to steep recessions and major internal disruptions. Countries that got rich during the commodities boom are also highly vulnerable to a global recession. Extremely poor countries will suffer from reductions in foreign aid by wealthy countries. Even China is seeing a significant slowdown in growth as the global recession depresses its export markets.

The global recession reduces our ability to trade, limiting one potential source of growth. In addition, the flight to quality has driven up the value of the dollar, making it even harder for U.S. companies to export goods and services. In addition, economic distress overseas can create political instability in important countries such as Pakistan, which recently agreed on terms of an IMF bailout. However, the IMF lacks the capacity to protect the global economy as a whole.

## THE CURRENT SITUATION

### The financial sector

Today, the financial panic has eased, and the successive collapse of many large banks in the U.S. and Europe no longer appears imminent. However, it is too soon to declare that the crisis has passed, or that the bank bailout program has succeeded. As the recession deepens, the prospects for all kinds of debt - not just sub-prime mortgages, but prime mortgages, auto loans, credit cards, corporate loans, corporate bonds, etc. - are only getting worse. As a result, there is no end in sight to the write-downs that are taking their toll on banks' balance sheets. Credit default swap spreads on major U.S. financial institutions have risen significantly since the middle of October, indicating growing investor nervousness. There is a very real possibility that many of the banks who received capital injections from Treasury will need additional capital - most likely from the same source - in order to remain solvent. It is possible that Treasury will need to be more draconian about deciding who will receive capital and who will not; an attempt to protect every bank will likely increase confidence in no banks.

Although short-term interbank lending has partially resumed, lending to the real economy, either as bank loans or as corporate or municipal bonds, remains highly constricted. One reason is that banks that are worried about their own solvency are more likely to use new capital to strengthen their balance sheets than to increase lending. Another is that, in any correction like the one we are seeing, underwriting standards tend to tighten rapidly. A third is that banks have been given little incentive (or pressure) to lend, other than exhortations by policymakers.

In addition, the health of non-bank financial institutions remains an open question in the U.S. Insurance companies and quasi-financial companies such as GMAC and GE are attempting to qualify for capital from Treasury. Hedge funds, of course, remain largely invisible, yet forced selling by hedge funds is suspected of contributing to asset price volatility.

**The real economy in the U.S.**

The poor health of the financial system is one but not the only cause of the severe recession in the overall economy. Before the severe phase of the crisis began on September 15, the U.S. was already facing an economic slowdown. The fall in housing prices and the slow fall in stock markets reduced household wealth, constraining consumer spending. A month of continuous panic from the media and another month of unmitigated bad news have helped push consumer confidence to the lowest levels seen in decades and undoubtedly depressed economic activity significantly. Very real layoffs, beginning in the financial sector but spreading to virtually all parts of the economy, are obviously having a major effect as well. Companies with limited access to credit are paying down debt and reducing spending and investment plans. State and municipal governments are cutting spending drastically as their projected tax revenues evaporate. At present, many forecasters project the most severe recession in the U.S. since at least 1981-82, lasting through at least the first half of 2009.

One of the major stories in the U.S. economy is, of course, the plight of the auto manufacturers and of GM in particular. Analysts and GM management agree that the company is likely to be unable to pay its bills within the next few months, prompting widespread calls for a bailout. GM and its allies insist that the company will be unable to survive bankruptcy and that a government loan will be necessary to protect millions of jobs at GM, its suppliers, their suppliers, dealers, and so on.

Perhaps even more significantly, little progress has been made on slowing the fall in housing prices and rise in foreclosures that feed off each other in a vicious cycle. Various loan modification programs have been announced by Bank of America, JPMorgan, Citigroup, Fannie Mae/Freddie Mac, and the FDIC (for IndyMac), but these have had little effect so far, and most only target a small part of the overall problem. The new, overall plan proposed by the FDIC is promising, although some issues may need to be addressed (such as how it will handle the problem of securitized loan trusts). But at present, the pattern is one of increasing defaults, increasing foreclosure sales, and falling prices.

**Unexpected distress in Europe**

Unfortunately, there is little hope that we can export our way out of our problems. The most recent reports indicate a much sharper downturn in Europe than was expected even a few weeks ago, with the U.K. and some EU countries already in recession in the third quarter of this year. Even wealthy European countries and members of the Eurozone are threatened by two important developments, in addition to the acute credit crisis that has been with us since the middle of September.

First, many European countries' banking sectors have imported serious financial problems from emerging market countries. In recent years, much of the investment in Eastern Europe and Latin America has come from European banks, which are now seeing their asset values plummet.

Second, and potentially more dangerously, worries are mounting that even members of the Eurozone might default on their sovereign debts. By acting to guarantee the solvency of their domestic banks, European countries have implicitly taken the risk of default onto themselves. As the recession deepens, those banks may fall further and further into the red, requiring their government backers to provide more and more capital. Because, in some cases, domestic bank assets are significantly larger than GDP, there is risk that some governments may simply be unable to bail out their financial sectors. Investor nervousness over this prospect can be seen in the prices of credit default swaps on sovereign debt. The implied risk of default for countries such as Ireland, Italy and Greece is rising; Greece is considered more in danger of default even than in early October. If this continues for too long, one or more countries may decide to abandon the Euro, causing major damage to the European and by extension the global economy.

**Emerging markets getting worse and worse**

In just the last week, the outlook for emerging markets has gotten significantly worse. As the wealthiest nations protect their banking sectors, investors and lenders will be less likely to put their money in countries perceived as risky. The psychology of fear has already taken over as creditors try to guess which country will be next. Unless a country has a sufficient balance sheet and a very large amount of reserves, it may get drawn into a pattern of selective defaults and large devaluations.

So far, the IMF has stepped in with aid packages to Iceland, Ukraine, Hungary, and now Pakistan, and has also created a new short-term credit facility for "healthier" emerging markets such as South Korea and Mexico. In the process, however, the IMF has committed a majority of its available funds, which were only about $250 billion to begin with, and there are no obvious actors with the scale to protect a large portion of the global economy. Investors expect multiple countries across Eastern Europe to default, judging by the price of credit default swaps on those countries' debt. And while IMF assistance can reduce the risk of a government default, it cannot solve the severe problems in the real economy. In Ukraine, for example, industrial production in October was 20% lower than in October 2007.

Falling commodity prices due to the coming recession will also hurt many exporting countries. Even Russia, with its large foreign currency reserves (and vast oil and gas reserves) may have a significant mismatch problem between short term liabilities and longer term assets. This is complicated further by large private sector debt in foreign currency. Russia has already expended a significant portion of its foreign currency reserves in a losing battle to protect the ruble. In addition, its real economy appears extremely shaky. In one sign, Russia's second-largest coal producer reported that its Q4 sales will be only one-third its original plan, and its steelmaker customers are only paying 21% of the value of their shipments.

China, once thought to be largely insulated from the global financial crisis, is also feeling the pain. With some economists projecting that annualized growth could fall below 6% this quarter (from a rate of 11-12% in the past two years), the government stepped in with

a massive stimulus package ($586 billion over two years, although some of that may already have been planned). Given the major international linkages in the global economy, the recession is crippling growth everywhere.

**Summary of current situation**

In the United States, we have been aware of an impending economic slowdown for over a year. We will never know how pronounced the slowdown would have been in the absence of the acute credit crisis that began in mid-September. That crisis has triggered an ever-expanding series of impacts on the global economy that have plunged our economy into a serious recession. The constriction in the availability of credit, the widespread fear generated by recent events, and the recent waves of layoffs have all depressed economic activity. The financial crisis has triggered severe economic problems for our trading partners and in emerging markets throughout the world.

We are clearly in uncharted territory. So far, our most pedigreed economists and most experienced policy makers have failed to anticipate the serial effects that the crisis has had. This means that the economic crisis could become much worse than we currently expect. It also means that it could be less bad than we expect. One problem is simply that we only have data through September or October, which were two of the most unusual months in our nation's economic history. Business and consumer behavior in November - when we all know that the economy is suffering, but we are not constantly barraged by panic - could be a better indicator of how far we have to go to restore the economy to health. Another problem is that we still cannot see many of the potential pitfalls in the financial sector, hidden as they are in hedge funds or off-balance-sheet vehicles. In any case, however, we need to be prepared to act as necessary to stimulate the economy and cushion the impact of the recession on the American people.

## ECONOMIC STIMULUS

There are a number of steps that the US can take to address the many problems facing the global economy. These include continued action to recapitalize financial institutions under the Emergency Economic Stabilization Act, low interest rates, liquidity measures by the Federal Reserve, actions (coordinated with other G7 countries) to rein in the currency crisis, direct intervention in the housing market, and new forms of financial regulation, both domestic and international. The Federal Reserve must act decisively to forestall any risk of deflation (falling prices and wages). For today, however, the question is how best to stimulate the economy to cushion the impact of the recession and lay the foundation for future long-term growth.

**Stimulus objectives**

Before deciding these specific questions, however, we need to define the general objectives of the stimulus. The US economy is going through a massive de-leveraging process that is causing significant declines in asset values - first in real estate markets, now in securities markets - that will reduce the purchasing power of consumers for years

to come. Attempting to prop up those asset values simply by increasing purchasing power is likely to fail - the amount of money needed would be huge - and would likely only extend the de-leveraging process. While targeted tax rebates could play a role in the stimulus, simply asking the American consumer to spend his or her way out of this recession is unlikely to succeed.

So what are we trying to achieve? I think there are four main objectives:

1. Reduce the depth and severity of the recession. The constriction in lending and widespread pessimism among both consumers and businesses risk producing a sharp downturn that pushes asset values far below their sustainable levels. A classic economic stimulus, by encouraging economic activity, can counteract this pessimism and limit the damage. One condition of meeting this objective is that measures should be designed to flow into the economy quickly.
2. Help those people who will be hurt most by the recession. One can argue that this is not, strictly speaking, necessary to economic recovery, but I believe it remains an obligation of our government and society to limit the human misery that will be caused by a recession.
3. Invest in America's long-term growth and productivity. The stimulus plan should encourage behavior that will increase the long-term economic prospects for the country. A simplistic way of putting this is that given the choice, we would rather see investments in infrastructure than in consumption of flat-screen TVs. In this context, we should bear in mind is that this is likely to be a relatively long recession, where economic growth may not return to target levels for 24 months or longer. Therefore, stimulus measures that might not be considered for a shorter recession should be put on the table.
4. Ensure the long-term fiscal health of the government. Today, we are benefiting from the United States' unmatched ability to borrow money. However, it is possible that at some point in the future the size of our accumulated debt - and the size of the known future obligations in Social Security and Medicare - could make it more difficult to issue Treasury bonds at low rates. Now is not the time to worry about the size of the deficit in the short term, but we should make sure that the deficit can be reduced once the economy returns to sustainable growth.

So, with these considerations in mind, what should the stimulus package include?

I divide my recommended stimulus programs into two categories that, for want of a better term, I call short-term and long-term. Short-term programs are those intended to feed money into the economy quickly and in a form that will have a direct impact on economic activity; that is, they should encourage spending rather than saving. Long-term programs are those that may not boost economic growth within one or two quarters, but will help the economy grow out of the recession and will also help increase long-term productivity growth in the economy.

**Short-term programs**

Several of the programs I recommend are those favored by other economists and commentators and with which the Committee is already familiar, so I will not describe them in exhaustive detail.

1. Direct aid to state and local governments

This direct aid is desirable for two reasons. First, because it replaces money that state and local governments have been forced to cut from their budgets, it can have a very rapid effect, without the need to design new programs. Second, the money will go to programs that these governments have already decided are important and worth funding, minimizing the risk that the stimulus will be wasted on inappropriate ends. Not only did many states cut budgets for the current fiscal year with the anticipation of reduced tax revenues, but several states have enacted midyear budget cuts as their expectations have deteriorated. According to the Center on Budget and Policy Priorities, states closed $48 billion in shortfalls in enacting their current (fiscal year 2009) budgets, and so far another $12 billion in gaps have opened up since the year began (generally in July). The CBPP is also forecasting shortfalls in the $100 billion range for the following year.

2. Extended unemployment benefits

Congress already extended unemployment benefits by 13 weeks in July 2008, but that measure will currently expire in March 2009. This provision should be extended past March 2009, and other means of expanding unemployment coverage should be considered, such as further extensions based on state-by-state unemployment rates. Extending unemployment benefits has a high "bang for buck" ratio, because needy people are more likely to spend each incremental dollar. According to testimony by Mark Zandi of Moody's Economy.com before the House Committee on Small Business in July, each dollar in extended unemployment benefits translates into $1.64 in incremental GDP over the following twelve months. Finally, this program helps some of the people who will be most sorely affected by the economic downturn, in most cases through no fault of their own.

3. Expanded food stamp aid

Expanding food stamps has many of the same beneficial characteristics as extending unemployment benefits. Because food stamps cannot be put in the bank or used to pay down debt, they tend to contribute to economic activity quickly. According to Mark Zandi's testimony, each dollar in expanded food stamp aid contributes $1.73 to incremental GDP.

4. Loan modifications for distressed homeowners

To these ideas I would add money for relief to distressed homeowners in the form of government-sponsored loan modifications. This may not be in the fiscal stimulus package

per se, but it should not be far behind. The current FDIC proposal to partially guarantee modified loans as an incentive for lenders and servicers to make those modifications is promising. Like any guarantee, however, it raises the possibility - in this case, given the number of loans involved, the virtual certainty - that the government may lose money. This would be an appropriate usage of money as part of the stimulus package, as this program should help prevent housing prices from crashing far below their long-term values, and therefore prevent a further depletion of households' spending power.

Even with the best possible loan modification program in place, a significant number of restructured mortgages will end up in default. We probably also need a role for government in managing the flow of foreclosed properties onto the market.

5. Tax rebates or temporary tax cuts

Targeted tax rebates or temporary tax cuts could play a role in the short-term economic stimulus. The benefit of tax rebates is that they can be distributed quickly and enable households to expand consumption when other sources of discretionary income are not available. The downside of tax rebates is that they may be saved, reducing their impact on current GDP growth. There is debate among economists over the extent to which the tax rebates earlier this year were saved as opposed to spent. However, Mark Zandi's research has shown that each dollar in (refundable) tax rebates translates into $1.26 in economic activity, indicating that they remain a meaningful stimulus tool. In addition, using tax rebates to pay down debt improves household balance sheets and helps promote longer-term macroeconomic recovery. In any case, in order to increase the potential impact of tax rebates, they should be focused on the lower and middle classes and phased out at higher income levels.

In addition to or instead of simple rebate checks, a number of alternatives could similarly increase spending in the short term while potentially targeting other policy goals. Possibilities include tax credits for specific types of "desirable" spending (such as automobiles, or just fuel-efficient automobiles); increased direct aid for low-income people to pay for heating oil, natural gas, electricity, or other utilities; a temporary reduction in the payroll tax, either across the board or for specific income bands; or a temporary reduction in marginal tax rates.

**Long-term programs**

In addition, however, a number of other stimulus programs should be considered, for two reasons. First, given the depth of the expected recession, the programs listed above may to be too small to have the desired impact. Second, the expected length of the recession provides an unusual opportunity: an opportunity to invest in our economic future while also combating the recession.

For these reasons, the following initiatives should also be on the table:

1. Investment in basic infrastructure, such as highways and bridges. In order to accelerate the economic impact, money could initially be put into maintenance

projects, but new construction projects should not be ruled out. Right now, the depressed prices of energy and raw materials mean that the "value for money" of infrastructure spending will be particularly high.

2. Job retraining programs or grants. The recession will accelerate some of the long-term changes in the American economy; the proposed merger of GM and Chrysler is just one sign of this trend. Tens of thousands of people will need to develop new skills.
3. Expanded student loans. Even before the latest phase of the financial crisis, smaller lenders were exiting the student loan market, especially for community college students, and there is a risk that this trend could reduce the availability of college educations for lower-income students. Student loans will go directly toward paying for tuition and other costs, so they should have a direct impact on the economy.
4. Expanded small business loans. The credit crisis has not only seen a reduction in the availability of credit, but also an increase in the price of credit for small businesses. Government programs to guarantee small business loans or otherwise increase the availability of credit should have a nearly-direct impact on the economy. The programs could be designed to discourage companies from getting new loans to pay down existing loans.
5. Investment in alternative energy, through tax incentives, direct grants, or other means. Someday in the next couple years the price of oil will start increasing again; despite its recent fall, long-term projections of the amount of oil in the world have not changed. Moving our economy away off of oil and onto alternative energy sources will not only protect us from inflation in the future, but will give our companies a new avenue for long-term growth.

I am too far from being an expert on all of these topics to go into them in great detail. I know that several of them have been considered by members of Congress. My point is that given the amount of fiscal force that will need to be deployed, and the length of time over which it will need to be deployed, it is appropriate to consider measures that will both stimulate the economy and invest in our long-term future.

**Size of stimulus**

In his testimony to the House Budget Committee last month, Martin Baily proposed a stimulus of $200 to $300 billion. His recommendation was based on a range of forecasts about the severity of the recession. As this is not an exact science, I will follow a similar approach with slightly different results.

Baily used two forecasts: the Blue Chip consensus forecast and a more pessimistic scenario that he defined. The Blue Chip forecast included three quarters of contraction, with a trough of -1.1% GDP growth (annual rate) in Q4 2008, with a relatively rapid return to healthy growth (+2.2% in the first post-recession quarter). His pessimistic forecast was for five quarters of recession, with a trough of -4.0% GDP growth in Q4 2008 and Q1 2009.

There are three other forecasts I will mention to give a range of the expected outcomes:

- Goldman Sachs in early October forecast zero growth in Q3 2008, contraction in Q4 and Q1 (trough of -2.0%), and zero growth in Q2 2009.
- The October IMF forecast is for two quarters of recession, followed by one quarter of zero growth.
- JPMorgan forecast 3 quarters of contraction, with a trough of -1.6% and 12 quarters of slow growth.

However, the main issue with any macroeconomic forecast is that, in this environment, it risks being out of date the day after it is made. Every week seems to bring additional bad news in both the U.S. and global economies; the impending collapse of GM and perhaps the rest of the auto industry is only the latest doomsday scenario facing us. As a result, I believe there is a large likelihood that all of these forecasts will later be revised downward.

For planning purposes, then, we should think about a world in which the U.S. recession will last 4-5 quarters, with a trough at negative 2-3% GDP growth (annual rate), followed by 8-12 quarters of slow growth.

Baily's method assumes that $1 in spending will contribute $1.50 to GDP, with the $0.50 in follow-on effects spread over several quarters. Based on this assumption, since US GDP is approximately $3.5 trillion per quarter, $35 billion in spending in a given quarter will contribute 1.0% to GDP growth in that quarter, and small amounts thereafter. By matching expenditures on stimulus to the forecast GDP growth figures for each quarter, he concludes that $200-300 billion will be appropriate to cushion the recession and restore the economy to growth.

I would suggest two modifications to this approach. First, I think it is optimistic to expect $1 in immediate impact for every $1 in the stimulus program. There is evidence that a significant proportion of this spring's tax rebates did not end up contributing to spending, and while the measures outlined above are more likely than tax rebates to result in direct increases in economic activity, it would be a mistake to overestimate the effectiveness of any macroeconomic intervention. As a result, I believe it more conservative to plan on something like $0.90 in immediate impact and $0.50 in follow-on impact.

This implies that, for the 2-3 quarters of recession that remain to be affected (assuming there is nothing we can do about Q3 and Q4 this year), approximately $70 billion in stimulus expenditures per quarter may be called for, for a total of roughly $220 billion. The amount of stimulus should decline over the quarters due to follow-on effects, but a major issue is how to spend large sums early in 2009 while ensuring that the money is used well and has a high impact on GDP growth. If the recession is more severe than expected, then more of the stimulus should be front-loaded, which may require tax rebates or temporary tax cuts simply in order to get the money out fast enough.

Second, I would pay particular attention to the 8-12 quarters of prolonged slow growth. If we want to increase economic growth by an average of 0.5-1% (annual rate) in each of

these quarters, this would imply approximately $25 billion in stimulus per quarter, or roughly $250 billion over the entire period.

Added together, this yields a total stimulus package of around $450 billion, or about 3% of GDP, spread over about 3-4 years. It also implies a way to time the short-term and long-term programs described above. Short-term programs can be implemented immediately to inject spending into the economy quickly. Long-term programs, such as infrastructure grants or alternative energy programs, should be announced and implemented quickly, but can take a longer time to bear fruit.

**Fiscal consolidation**

Again, this is not the year to be worrying about the size of the budget deficit. Faced with the most severe recession in almost thirty years - and perhaps in seventy years - the overriding priority should be to restore the economy to sustainable growth. The financial crisis has taken so long to get under control - and is still not fully under control - in part because of reluctance by policymakers to use sufficient financial force early enough. We face a similar danger when it comes to the recession in the real economy. In addition, we currently have the luxury of being able to borrow money at reasonable prices.

However, there is no such thing as a free lunch. If the national debt as a percentage of GDP continues to grow at the rate of the last several months, at some point the rest of the world will become more reluctant to lend us money. This will show up as an increase in interest rates, which will increase the proportion of the budget that will have to be dedicated to debt servicing; in a worst case scenario, lenders might insist that we borrow money in other currencies (although the most likely candidate, the euro, has seen its share of problems recently). Credit default swap spreads on U.S. sovereign debt, while still low, have been rising in recent months as investors wonder what impact all of our new liabilities will have.

The solution, on a high level, is to have counter-cyclical fiscal policy. Just as we should be increasing spending or possibly reducing taxes right now to combat the recession, we should reduce spending or increase taxes once the economy returns to a reasonable growth rate. This will be necessary not only to reduce the national debt burden, but also to build up financial firepower - in the form of both cash on hand and additional borrowing capacity - to deal with the crises of the future. This is one reason why tax rebates or tax cuts should be explicitly temporary (although temporary tax cuts have a way of becoming permanent, this should be resisted). It is also why new spending programs, such as infrastructure spending, should be structured to be phased out over several years. It will be especially important to restore the government budget to a position of long-term sustainability - deficit in recessions, surplus during growth - before we have to face the additional obligations currently built into the Social Security and Medicare programs.