CBO PAPER

Options for Responding to Short-Term Economic Weakness

January 2008

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Preface

The economy has recently been buffeted by several interlinked shocks, and the risk of recession is significantly elevated compared with what it is during normal economic conditions.

In response to a request from the Chairmen of the House and Senate Budget Committees, the Congressional Budget Office (CBO) has examined the potential role of fiscal policy efforts to expand aggregate demand in the current economic situation and the efficacy of various policy options to do so. This paper also examines options for dealing with the crisis in the home mortgage market, which has contributed to the overall economic weakness. The paper updates and expands upon a January 2002 CBO analysis of various tax options for stimulating the economy (see *Economic Stimulus: Evaluating Proposed Changes in Tax Policy*).

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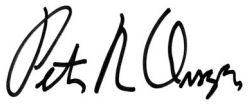

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Summary and Introduction

Strong indications suggest that economic growth is slowing and will remain sluggish for much of 2008. Most professional forecasters are continuing to project very slow growth, as opposed to an outright recession, this year.[1] The risk of recession is elevated, however, and some respected economists believe that the probability of a recession has now risen to 50 percent or greater.

Discretionary fiscal policy stimulus (that is, legislative action aimed at providing stimulus) may not be necessary to avoid an outright recession, if most current forecasts are correct. Nonetheless, policymakers may choose to proceed with a stimulus package to bolster a weak economy and as insurance against the elevated risk of a recession. Some economists advocating a stimulus also believe that a recession, if it occurs, could prove to be unexpectedly deep; a fiscal stimulus would help reduce the severity of a recession, should one occur.

Effective stimulus does not necessarily require addressing the source of economic weakness directly; instead, it requires strengthening aggregate demand. Although much of the current economic weakness can be traced to the housing and mortgage markets, other factors, such as the high price of oil, have played an important role. If policymakers choose to address problems in the housing and mortgage markets, possible actions should therefore be evaluated primarily with regard to their effectiveness in correcting identifiable failures in those markets—and not necessarily with regard to their value in counteracting economic weakness. Policy actions affecting the housing and financial markets may, however, help the economy by reducing the risks of a self-reinforcing spiral (of less lending, lower house prices, more foreclosures, even less lending, and so on) that could further impair economic activity and potentially turn a mild recession into a long and deep recession.

The paper first reviews the economic situation, including how the monetary and regulatory authorities have already responded. The next section assesses different fiscal approaches to giving a temporary boost to aggregate demand in the economy. A final section examines policy options geared specifically toward the housing and mortgage markets.

CBO finds the following:

- There is a strong possibility of at least a few quarters of very slow growth. Although the economy may avoid a recession in 2008, the risk of a recession has risen.
- The Federal Reserve has powerful tools to keep the economy growing, but there is no guarantee that it will be able to keep the economy from entering a recession.
- The system of automatic stabilizers built into the federal budget will act to stimulate the economy in a period of economic sluggishness, helping to mitigate any economic downturn.
- If additional fiscal stimulus is deemed necessary, it would be desirable to make sure that the actions take effect when stimulus is most likely needed and are

1. The National Bureau of Economic Research (NBER) is by convention responsible for dating the peaks and troughs of the business cycle. According to its Business Cycle Dating Committee, "A recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real [inflation-adjusted] GDP [gross domestic product], real income, employment, industrial production, and wholesale-retail sales." See www.nber.org/cycles/jan08bcdc_memo.html.

designed to increase economic activity as much as possible for a given budgetary cost. Such well-designed stimulus can help bolster an economy suffering from weak aggregate demand and thereby help reduce the risk and severity of a recession.

- The most effective types of fiscal stimulus (delivered either through tax cuts or increased spending on transfer payments) are those that direct money to people who are most likely to quickly spend the bulk of any additional funds provided to them.

- A variety of options are available for helping people who have been adversely affected by turmoil in the mortgage market. In evaluating the options, it is important to strike a balance between helping financially distressed families meet their basic needs, being fair to other families, and not rewarding imprudent behavior that might create additional costs in the future. In addition, further declines in housing prices are probably necessary to correct imbalances in the economy, and policies that attempt to prevent market prices from correcting could make the situation worse.

The Uncertain Outlook for the Economy

The combination of continued weakness in housing activity and prices, the ongoing problems in the mortgage and broader financial markets, and the persistently high price of energy have raised the risks of slow growth and perhaps even an outright recession in the coming year. The consensus forecast (an average of recent forecasts of about 50 private-sector economists) for real (inflation-adjusted) growth in 2008 has fallen from 2.9 percent in the forecast made in July 2007 to only 2.2 percent in the forecast made this month.[2] However, that recent forecast did not incorporate employment data released in early January 2008 that indicate a weaker outlook for the economy. The civilian unemployment rate of 5.0 percent for December was reported on January 4, after the forecasts were made, and was weaker than expected. Since December 2006, the three-month moving average of the civilian unemployment rate has risen 0.4 percentage points. Such an increase in the unemployment rate over a year has often coincided with the onset of past recessions (see Figure 1). In addition, a number of respected economists believe there is a strong probability that the economy will contract for at least part of this year.[3] Some of these economists fear that any such recession will prove to be prolonged and deep. In general, forecasts based on macroeconometric models tend to project slow growth instead of recession, whereas the economists suggesting a higher probability of recession tend to believe that the models are not accurately capturing key parts of current economic dynamics.

Economists' uncertainty about the outlook for the economy is a major challenge in evaluating the need for, and potential benefits of, discretionary fiscal policy stimulus. Economists' estimates of the magnitude of the spillovers from the problems in the housing and financial markets to other sectors of the economy vary widely. The economy could tip into recession if growing defaults on home mortgage loans and the subsequent financial losses for lenders lead to a severe economywide curtailment of lending, but many economists believe that these effects will be contained. Similarly, how far and fast housing prices will fall, how long energy prices will remain high, and the extent to which consumers will curtail spending because of reductions in their housing wealth or because of high energy costs are uncertain. The economy has been quite resilient to macroeconomic shocks over the past two decades, and the underlying flexibility of the economy, combined with the current strength of foreign demand for U.S.-produced goods and services, may keep the economy from going into recession this year.[4]

Automatic Fiscal Stabilizers

Automatic fiscal stabilizers also reduce the risk of recession. As the economy slows, slower growth of income, payrolls, profits, and production causes tax receipts to fall relative to spending—and causes outlays on programs such as unemployment compensation and Food Stamps to rise. That combination temporarily boosts demand for goods and services, thereby helping to offset some of the weakness in demand. The Congressional Budget

2. Aspen Publishers, Inc., *Blue Chip Economic Indicators*, January 10, 2008.

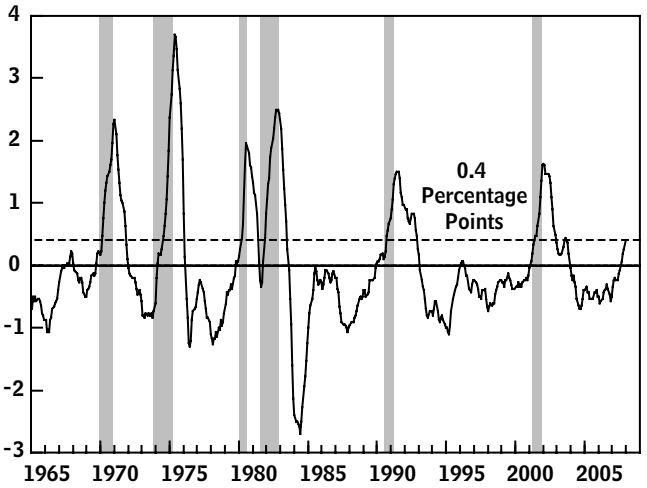
3. Economists Richard Berner (Morgan Stanley), Martin Feldstein (Harvard University), William Gross (PIMCO), Robert Shiller (Yale University), and Lawrence Summers (Harvard University) have all stated that the probability of a recession this year is greater than 50 percent.

4. Statement of Peter R. Orszag, Director, Congressional Budget Office, *The Current Economic Situation*, before the House Committee on the Budget (December 5, 2007).

Figure 1.

Changes in the Unemployment Rate

(Percentage points)



Sources: Congressional Budget Office; Department of Labor, Bureau of Labor Statistics.

Note: Changes are from the previous year in the three-month moving average of the civilian unemployment rate. Data are plotted through December 2007. The shaded vertical bars indicate periods of recession.

Office (CBO) estimates that, since 1968, automatic stabilizers have added between 1 percent and 2.5 percent of gross domestic product (GDP) to the deficit during recessions, which translates to about $140 billion to $350 billion in today's economy, and thereby helped mitigate past economic downturns. The automatic stabilizers already built into current law will partially offset any further weakening of the economy.

Actions by the Federal Reserve

In addition to the budget's automatic stabilizers, policy actions by the Federal Reserve in 2007 are helping to maintain liquidity in financial markets and keep the economy growing. On August 9, the Federal Reserve injected $24 billion in temporary reserves into the U.S. banking system, a larger-than-usual amount, by accepting greater-than-normal amounts of mortgage-backed securities as collateral. That and subsequent injections temporarily lowered the federal funds rate below the 5.25 percent target the Federal Reserve set on August 7. (The federal funds rate is the rate at which banks make overnight loans to one another. It is one of the Federal Reserve's main instruments for managing the economy.) On August 17, the Federal Reserve narrowed the spread of the discount rate (the rate at which depositories can borrow from the Federal Reserve) over the target federal funds rate from 100 to 50 basis points.

The Federal Reserve has continued to act since then. With money market conditions still under stress in the fall of 2007, the Federal Reserve reduced the target federal funds rate three times—in September, October, and December—to its current level of 4.25 percent. In December, the Federal Reserve also created a Term Auction Facility (TAF) to auction $40 billion of short-term financing to depository institutions that are eligible to borrow from the Federal Reserve's discount window.[5] The Federal Reserve has scheduled two additional auctions this month (January 2008), each of $30 billion in short-term credit. These actions, plus possible further reductions in the federal funds rate over the next few months, may stabilize financial institutions and markets enough to obviate the need for changes in discretionary fiscal policy.[6]

Coordinated actions between the Federal Reserve and foreign central banks have also helped stabilize short-term credit markets since the turmoil began in the summer of 2007. Reciprocal currency swap lines were established with the European Central Bank (ECB) and the Swiss National Bank to allow these central banks to provide funding in dollars to non-U.S. institutions that would normally obtain such funding in the interbank (or Libor) market.[7] To help alleviate funding pressures at the end of

5. The TAF accepts the same types of collateral as the Federal Reserve's discount window in exchange for funds. However, because the TAF lets bidding determine the interest rate, the TAF rate may be—and in bidding up to now, has been—lower than the discount rate. Of the $40 billion of credit extended in December 2007, $34 billion was auctioned through the Federal Reserve Bank of New York, suggesting that the biggest banks are taking advantage of the facility.

6. The Federal Home Loan Bank System has also played an important role in stabilizing mortgage markets. It made $184 billion in new loans to member institutions in the third quarter of 2007. Remarks by Henry Paulson Jr. on housing and capital markets before the New York Society of Securities Analysts (January 7, 2008), at www.treasury.gov/press/releases/hp757.htm.

7. A currency swap is an exchange of a given amount in one currency for the equivalent amount in another currency. A swap would be for a specified period of time, and the parties would then return the original amounts to each other. A reciprocal swap agreement between the Federal Reserve and a foreign central bank gives either central bank the right to initiate a currency swap. Libor refers to the London Interbank Offer Rate.

the year, the Federal Reserve also made greater liquidity available. The ECB has provided liquidity to European money markets, including a massive short-term funding of about $500 billion. The international interbank market and the domestic commercial paper (short-term business loans) market—the short-term markets most affected by the problems with subprime mortgages—have both recovered somewhat, although interest rate spreads relative to the federal funds rate are still above normal levels, reflecting a persistent lack of confidence among market participants.

The Federal Reserve will continue to provide the necessary liquidity to credit markets, but the amount of additional support it provides to economic activity will depend on the outlook for real growth and inflation. If the outlook for inflation worsens, the Federal Reserve may tend to be conservative about making further reductions in the federal funds rate. Most forecasts assume that inflation will be contained this year even though it spiked up late last year. For the fourth quarter of 2007, the consumer price index for all urban consumers (CPI-U) is estimated to have grown at about 4¼ percent, primarily sparked by a jump in motor fuel prices, but the consensus forecast calls for CPI-U inflation of 2.4 percent over the four quarters of 2008. Measures of inflation that exclude energy and food prices ("core" inflation) have been more stable, running about 2½ percent at the end of last year, and the slowing of economic growth is likely to undercut inflationary pressures. That 2.4 percent forecast for the CPI-U is at the high end of the Federal Reserve's apparent "comfort range" for inflation, which applies to a different measure of consumer price inflation.

However, if the information over the next few months indicates that inflation this year is likely to be significantly higher than currently expected, the Federal Reserve may decide not to lower its target for the federal funds rate much farther. The two major concerns about the inflation outlook stem from the increase in the prices of a wide variety of commodities over the past two years and the possible repercussions of the decline in the dollar on the prices of tradable goods. Inflation may well become a more serious problem this year than currently anticipated if commodity and import price increases set off a sustained increase in overall price growth. The consensus forecast assumes that those inflationary pressures will be attenuated by the overall weakness in the economy, but that assumption may not be borne out. Discretionary fiscal stimulus, it should be noted, would also put some upward pressure on the inflation rate relative to a scenario with no such stimulus, although the degree of such pressure depends on the size and structure of any stimulus package.

The bottom line is that the risk of recession is elevated, even though the economy may avoid a recession without any discretionary fiscal policy actions. Indeed, based on current macroeconometric forecasts, that is the most likely scenario. Given the elevated risk of a recession, however, targeted policies in mortgage markets or a well-designed and well-timed discretionary fiscal policy may have larger economic benefits than costs, whereas poorly designed or substantially delayed fiscal policy interventions may do more harm than good.

Fiscal Stimulus

Fiscal stimulus aims to boost economic activity by increasing short-term aggregate demand. The purpose is to generate sufficient demand to engage more of the economy's existing productive capacity. This approach is in contrast to policies designed to improve long-term economic growth: Such policies work by increasing the economy's capacity to produce. Because short-term stimulus is focused on demand, its efficacy depends on a different set of principles than those underlying long-term supply-based policies, and it is often in tension with those principles. Some of the most effective changes in tax law in terms of short-run stimulus provide little aid to and may even retard long-run economic growth if made permanent. At the same time, many options that promote long-term growth provide little short-term stimulus.

Fiscal stimulus may increase demand directly, as in the case of direct government spending on goods and services, or it may do so indirectly, by increasing household consumption or business investment. Consumption by households is generally stimulated when either after-tax income or expected lifetime wealth rises (which can occur because of a reduction in taxes or an increase in transfer payments from the government). Investment by businesses can be stimulated directly by boosting the after-tax return on capital (for example, through a reduction in taxes) sufficiently to make additional investment profitable. Also, any policy that succeeds in increasing the overall level of economic activity (even if it is directed at consumers) is likely to increase business investment (because it would raise the expected pretax return on capital).

Principles for an Effective Fiscal Stimulus

The most effective fiscal stimulus policies share two common features:

- They focus on the time period when stimulus is most likely to be needed, and
- They are designed to increase economic activity as much as possible for a given budgetary cost.

During a period of economic weakness, the key constraint on economic growth is demand for the goods and services that firms could produce with existing resources. In that context, additional spending (by households, businesses, or governments) created by a stimulus policy can engage some unemployed resources, and that new activity has further effects. In particular, households whose income increases as a result of the stimulus subsequently consume more, adding to demand. That process, by which an initial stimulus sets in motion further bouts of consumption, is referred to as a "multiplier" effect. Furthermore, some of the firms that supply goods to satisfy the additional demand are encouraged to invest to add to their capacity, further increasing demand.

The magnitude of the multiplier largely depends on how much of the additional increment to their income households spend. The higher that proportion, the more powerful the ultimate boost to demand. If the additional income put into consumers' wallets through stimulative policies is saved rather than spent, it will generate little extra demand and bring few resources into production. In a period of high uncertainty, when households may be seeking to retrench, fiscal stimulus may have a more modest effect because households are reluctant to spend. On the other hand, during such periods the impact of a fiscal stimulus package may be accentuated if the policy intervention boosts consumer confidence.

The degree of stimulus that a policy can provide to the economy also depends on how much of the resultant spending goes to purchase domestically produced goods. If the additional consumption (or investment) demand is satisfied by imported goods, the income of foreign producers will rise, and the stimulus essentially will be exported. In general, it is difficult to determine whether a particular policy is more or less likely to generate demand for domestic as opposed to foreign goods. But in an open economy, some of the stimulus typically will boost demand in economies abroad instead of in the domestic economy.

Estimates of the size of the multiplier differ considerably, so any estimates of the effects of fiscal stimulus will be quite uncertain. The multipliers estimated by econometric models depend on the type of stimulus and the response of the Federal Reserve, among other things. Those estimates suggest that a multiplier of one is roughly the right order of magnitude. That is, a spending increase or tax cut of a dollar, if it is well timed and directs the money to people who will spend it quickly, adds about a dollar to GDP in the short run in times of economic weakness.

Timing. The timing of fiscal stimulus is critical. If the policies do not generate additional spending when the economy is in a phase of very slow growth or a recession, they will provide little help to the economy when it is needed. (Over the long term, the key constraint to economic growth is the rate at which the capacity of firms to produce goods and services is expanded—not aggregate demand.) Poorly timed policies may do harm by aggravating inflationary pressures and needlessly increasing federal debt if they stimulate the economy after it has already started to recover.

For numerous reasons, discretionary fiscal stimulus may not be properly timed, and it has often been mistimed in the past. The failure to forecast a coming slowdown or contraction in economic activity is generally thought to be the most important reason for poor timing and is referred to as a "recognition lag." Additional problems can arise if the policy change that is adopted does not affect spending immediately or if there are lags in enacting or implementing policies.

The historical record on the effectiveness of efforts to provide discretionary fiscal stimulus is mixed.[8] Much of the research indicates that fiscal policy in the 1960s and 1970s was poorly timed and, in some instances, destabi-

8. See John Taylor, "Reassessing Discretionary Fiscal Policy," *Journal of Economic Perspectives*, vol. 14, no. 3 (Summer 2000), pp. 21–26; Alan J. Auerbach, "Fiscal Policy, Past and Present," *Brookings Papers on Economic Activity,* no. 1 (2003), pp. 75–122; and Alan J. Auerbach, "The Effectiveness of Fiscal Policy as Stabilization Policy" (paper presented at the Bank of Korea International Conference on the Effectiveness of Stabilization Policies, May 2005).

lizing. By contrast, the tax rebate in 2001 provided stimulus during the recession of that period.

The recognition lag is a major challenge in applying discretionary fiscal policy, but it may not be as critical as it was before the 1990s. One of the most severe recognition lags occurred in the 1974 recession, when economists generally did not perceive the economy to be in a recession until well after it had begun. This meant that the tax rebates ultimately adopted to spur the economy did not take effect until March 1975, after the economy had already started to recover. During the two most recent recessions (in 1990 and 2001), by contrast, economic weakness was recognized relatively quickly. Concerns about slow growth—a slowing that subsequently was dated as a recession that started in August 1990—were raised in September 1990. Similarly, the stock market crash that started early in 2000 alerted economists to the possibility of a recession, and by January 2001 economists generally expected very slow growth. The 2001 recession was subsequently dated to have begun after March of that year. One of the problems that made it difficult to recognize the poor state of the economy during the 1974 episode—a high rate of inflation that distorted the perception of the underlying weakness in real economic activity—has not been a problem in recent decades.

The experience of the past two recessions suggests that recognition lags need not always impede effective stimulus. If the policy is well designed, and if the lags in enacting and implementing it can be kept short, a moderate fiscal stimulus could well attenuate the depth of an incipient contraction or severe slowdown in economic activity. Economic data and economic forecasts can provide relatively reliable and timely indications of the likelihood of an extended period of very slow growth. Policymakers still have to be aware, however, that these measures may falsely indicate the need for stimulus. The economy may quickly bounce back without stimulus, and latent inflationary pressures may be greater than currently perceived.

Given the inherent uncertainty about the economic outlook and the lags in enacting fiscal policy, policymakers may want to develop a fiscal stimulus package before the need for such a policy is certain but include in the legislation a "trigger" to implement the stimulus. A trigger could take various forms, such as a decline in the level of employment over a three-month period or an increase of 0.4 percentage points over 12 months in the three-month moving average of the unemployment rate. The purpose of such a trigger would be to reduce the likelihood that the policy is implemented when it is not necessary. Specifically, it is not now known whether the weakness in the current economic data is foreshadowing a deep and prolonged recession or a transitory period of weakness as the economy adjusts to the housing and financial market shocks. Legislation that included a trigger would "preposition" a stimulus package, making it more timely if the trigger point was hit, but it would reduce the likelihood that additional demand was added to a recovering or strong economy. To concentrate stimulus when it was most needed, the policies would have to turn off when the economy had sufficiently recovered. (In some sense, such a pre-positioned stimulus package would represent a new automatic stabilizer.) However, economic data can send mixed signals around a recession, which raises uncertainty about choosing the appropriate indicators to turn the stimulus on and off. Moreover, a number of economists have argued that the economy has already weakened by enough to justify a modest and temporary stimulus and that an explicit legislative trigger is therefore not currently needed.

Cost-Effectiveness. In general, stimulus may be generated through policies that affect the spending of households, businesses, or government. The cost-effectiveness of stimulus varies within those categories of policies as well as across them. The same dollar amount of spending increases or tax reductions can have significantly different effects on overall demand, depending on how it is provided and to whom.

Households. In general, tax cuts or increases in transfer payments from the government to people (such as Food Stamps or unemployment insurance benefits) increase household demand by providing consumers with additional spending power. The bigger the chunk of that additional income that consumers are willing to spend instead of save, the more stimulus there will be from a particular tax reduction or increase in government transfer payments. But households do not predictably spend a fixed proportion of the extra income left in their hands when taxes are reduced or transfers are increased. Rather, a household's propensity to consume appears to vary with its income and depends on expectations of the household of what will happen to that income over the longer term. A household's consumption also varies for other reasons that are little understood.

Households are particularly likely to spend a greater share of a temporary reduction in taxes or additional transfer payments if they are credit constrained (that is, they have borrowed as much money as creditors will lend them). Given that these households would probably borrow additional money if given the opportunity, they are unlikely to save additional income. They are therefore likely to spend a greater proportion of a tax reduction or a transfer increase than other people who have access to credit. Lower-income households are more likely to be credit constrained and more likely to be among those with the highest propensity to spend. Therefore, policies aimed at lower-income households tend to have greater stimulative effects.

Two recent studies that evaluate household spending following the 2001 tax rebate offer historical evidence consistent with this view. In one study, the authors examine households categorized by income and liquid assets. Although the results are not definitive, low-income households and those with few liquid assets appear to have increased their consumption far more in response to the tax rebate than households with higher income or more liquid assets.[9] For example, low-income households were estimated to have increased spending on nondurable goods by more than the amount of the rebate in the three-month period during which it was received, while middle-income households increased the same type of spending by less than 20 percent of the rebate amount. Households with few liquid assets were also estimated to increase spending on nondurables by more than the rebate amount, while those with a medium or higher level of assets were estimated to have decreased such spending.

The other study, which looked at households' credit card usage, concluded that households with lower credit card limits, those with credit card balances near the limit, and those that used their cards intensively increased credit card spending much more than other households in the nine months after receiving their rebates.[10] For example, households with credit limits under $7,000 increased spending by more than $140 after receiving the rebates (which were typically between $300 and $600), while those with credit limits above $10,500 increased spending by only $40. Households with balances above 90 percent of their credit limit increased spending by more than $330, while those with balances between 1 percent and 50 percent of their credit limits increased spending by less than $20.

Businesses. The mechanism used to stimulate business demand is to reduce the costs associated with investment in new plant and equipment. Increasing the after-tax income of businesses typically does not create an incentive for them to spend more on labor or to produce more goods and services, because production depends on the ability to sell output.[11] But since taxing business income essentially lowers the return that firms earn from capital investment, reducing taxes on the income from new investment increases that return and, therefore, firms' willingness to acquire more capital—that is, to invest. Tax cuts can also stimulate investment less directly, by making more internally generated funds available to firms that might otherwise have difficulty obtaining outside financing for investment; this effect tends to be relatively more important for smaller firms than for larger firms, because smaller firms often have a harder time accessing outside financing. In general, however, the more a business tax cut is focused on the return to new investments rather than the return to existing capital, the more effective it will probably be in stimulating new investment.

Tax cuts for business investment may be more effective in boosting short-term demand if they are temporary than if they are permanent. Firms may view them as one-time opportunities for tax savings, which may induce firms to move up some of their future investment plans to the present. They might not take that step if they knew that the tax advantage would remain in place and be available to them later.

Government. A final type of stimulus involves government purchases of goods and services (such as infrastructure

9. David Johnson, Jonathan Parker, and Nicholas S. Souleles, "Household Expenditure and the Income Tax Rebates of 2001," *American Economic Review*, vol. 96, no. 5 (December 2006), pp. 1589–1610.

10. Sumit Agarwal, Chunlin Liu, and Nicholas S. Souleles, *The Reaction of Consumer Spending and Debt to Tax Rebates: Evidence from Consumer Credit Data*, NBER Working Paper 13694 (Cambridge, Mass.: National Bureau of Economic Research, December 2007).

11. Higher after-tax income for businesses should, in principle, lead to increased spending by households that own stock, either because stock prices go up or because the households get more income in the form of dividends. However, that increase in consumption is likely to be spread over a very long time and, thus, in any given period to be small relative to the federal tax cost of boosting business income.

spending). That type of government spending affects demand directly because the government is actually purchasing goods and services from the private sector. The effect of such government purchases on the economy is different from the effect of government spending on transfer payments to people, such as unemployment insurance benefits or Food Stamps. Transfer payments to people do not increase demand when the government provides income or benefits to people; instead, such payments increase demand only when the people receiving the payment increase their consumption by purchasing goods and services. For federal purchases, the primary issue in targeting the spending is that of timing. Some kinds of direct expenditure can be undertaken much more rapidly than others. For example, because many infrastructure projects may take years to complete, spending on those projects cannot easily be timed to provide stimulus during recessions, which are typically relatively short lived.

Federal grants to state and local governments are transfers between governments. The transfer itself does not increase demand for goods and services. However, the grant may affect the budgetary decisions of the government receiving the grant, which in turn could stimulate the economy. The federal subsidy would increase demand if it actually led to an increase (or prevented a decrease) in state and local spending or if it triggered a tax reduction (or avoided a tax increase) at the state and local levels. By contrast, if federal assistance merely provides fiscal relief by paying for spending that would have occurred anyway and does not affect state and local revenues in the short run, then it provides no economic stimulus.

Consistency with Long-Run Fiscal Objectives. Because fiscal stimulus boosts aggregate demand through increases in government spending or reductions in taxes, such policies raise budget deficits in the short term. That effect is desirable for short-term stimulus because it reflects the increased demand being delivered to the economy. Contemporaneous changes elsewhere in the budget—tax increases or cuts in spending—designed to offset these short-term deficit effects would serve to reduce or eliminate the stimulative effect.

These higher deficits, however, tend to slow economic growth in the long term if they are allowed to persist, because they tend to reduce capital accumulation and the growth in the economy's capacity to produce. Given the existing projected shortfall of revenues below outlays over the long term, any policy designed to provide short-term fiscal stimulus must reckon with the long-term consequences of making any such spending increase or tax decrease permanent.[12] The more temporary a stimulative policy, the more likely that it will not significantly exacerbate the nation's long-term fiscal imbalance. (Offsetting the cost of those policies with deficit reductions in later years may also be desirable.)

How Much Stimulus Is Appropriate?

The appropriate size of any fiscal stimulus would depend on the goals that policymakers wanted to pursue. One such goal might be to provide sufficient stimulus so that economic forecasts do not project a recession. However, only a few professional forecasters are sufficiently confident in the likelihood of a recession that they have made it their central forecast. If that goal were the test, it appears that no fiscal stimulus would be necessary at this point.

A second goal might be for policymakers to stimulate the economy by enough to reduce the chance of recession to an acceptable value. Most forecasters admit to considerable uncertainty about their projections. Forecasters' perceptions about the probability of recession are substantial. The January 2008 *Blue Chip* survey, for instance, puts that probability just below 40 percent. Recognizing that uncertainty, policymakers might seek to reduce the chance of recession to some acceptable value, say 20 percent. Given the level of uncertainty in the typical year-ahead forecast, the fiscal stimulus to achieve this objective would need to be large enough to add about three-quarters of a percentage point to growth in 2008.

The budgetary cost of such a fiscal stimulus depends on its details. Estimates using econometric models suggest that an assumption that a dollar's worth of stimulus at a time of economic weakness produces roughly a dollar's worth of additional economic activity is about the right order of magnitude. A multiplier of one would imply that to add three-quarters of a percentage point to the growth

12. See Congressional Budget Office, *The Long-Term Budget Outlook* (December 2007). Some evidence also suggests that policies that expand the nation's long-term fiscal imbalance could push up interest rates and thereby offset some of the incipient stimulus. See Douglas W. Elmendorf and David Reifschneider, "Short-Run Effects of Fiscal Policy with Forward-Looking Financial Markets," *National Tax Journal*, vol. 55, no. 3 (September 2002), pp. 357–386.

rate of GDP over a year, it might be necessary to increase the budget deficit for the year by close to three-quarters of 1 percent of GDP, or about $100 billion.[13] It may be possible to improve somewhat on that cost-effectiveness ratio by focusing the stimulus in ways that are most likely to increase consumer or business spending in the short run; it is also possible to spend a great deal more with less impact if the stimulus is poorly designed. The discussion in the following sections focuses in part on the criteria for designing cost-effective and timely stimulus.

A third objective might be to address the sharp drop in economic growth that began at the end of last year. Achieving that goal, however, would require policymakers to act almost immediately. Many forecasters expect that the economy will remain weak through the first half of 2008. The January 2008 *Blue Chip* consensus, for instance, puts growth at about 1.3 percent in the first quarter of 2008 and 1.9 percent in the second quarter (at annual rates). Adding a percentage point to the economic growth rate for the first half of the year would cost only half as much as adding a percentage point to growth for a whole year, but it would also be considerably more challenging to implement a stimulus program that would affect the economy so quickly.

Approaches to Reducing Personal Taxes

Proposals for reducing personal taxes can be classified into two broad categories: a lump-sum rebate of taxes paid or a reduction in taxes that would be realized in smaller amounts over a longer period of time, such as by lower withholding from paychecks. In addition, a decision might be made to alter tax increases that are currently scheduled to occur in the future.

Lump-Sum Rebate

A lump-sum rebate of taxes puts cash directly in consumers' wallets. As a matter of nomenclature, a true rebate is limited to what a household has already paid in taxes. In practice, however, rebates may be larger than the household's tax liability. In those cases, the "rebates" are actually transfers administered through the tax system.

Rebates can be designed and implemented in a variety of ways. For example, they may be the same for all recipients (or subject to a ceiling), or they may vary in amount according to the size of the tax liability. In addition, they may be based on income tax returns or on some other tax, such as payroll taxes.

Linking the size of the rebate to tax liability—such as returning a fixed proportion of taxes paid—substantially reduces the cost-effectiveness of the stimulus. It would place much of the government's revenue loss in the hands of households likely to save much of the rebate. Fixing the rebate's size or setting a relatively low maximum amount per household or person would concentrate more of the aggregate cut among lower-income households, who are more likely to be up against credit constraints and thus to spend any additional resources. Making the rebate refundable would further boost the cost-effectiveness of the stimulus.

To the extent that the rebate depends on incurring tax liability, the choice of tax base is significant as well. A rebate based on income tax liability would, for instance, reach fewer families likely to spend it than a rebate based on payroll tax liability. A large number of lower-income families incur no income tax, and many others pay more in payroll taxes than income taxes. As a result, their income tax liability alone may be insufficient to be eligible for the full rebate even though their payroll tax liability is. (Of more than 134 million returns filed in 2005, for example, 26 million were from households that paid more than $500 in payroll taxes but paid less than $500 in income tax liability.)

Rebates based on income tax information could be relatively straightforward to administer. Through the tax-filing process, the Internal Revenue Service (IRS) has readily accessible information on the income tax liability of each household that files a return. That information enables the IRS to calculate the size of a rebate and send it to addresses (or, frequently, deposit it directly into bank accounts) that have been recently updated. The rebates issued in 2001 were issued relatively quickly and with few hitches.

One way to provide more rebate money to low-income families would be to issue refundable income tax rebates. A rebate of a fixed size would be distributed to all households who filed returns, regardless of the size of the underlying tax liability. Such a rebate would still be based on data from income tax returns and would thereby avoid potential administrative problems with a rebate based on

13. These figures do not include any feedback effect from the change in GDP on revenues or spending.

the payroll tax. It could, without too much difficulty, be restricted to returns that reported some labor income, or to filers who cannot be declared a dependent on someone else's return. A refundable rebate would place money in the hands of a substantial number of households that otherwise would not have been eligible to receive the rebate (or to receive the entire potential rebate). The number of households added in this way would significantly outnumber those that are still missed because they do not file income tax returns. (To reach those households, it would be necessary to base the rebate on W-2s rather than returns, which is administratively a somewhat more complicated task.)

The timing of the delivery of the rebates to households would partly depend on the details. Because it is currently tax filing season and the IRS is currently processing returns, it may not be possible to issue tax rebates based on 2007 returns until toward the end of the second quarter of 2008 at the earliest. Basing the rebates on 2006 tax returns could speed the initiation of the process but would increase the number of recipients whose addresses and circumstances have changed. In addition, the process of sending checks out takes time. In 2001, it took about 10 weeks to issue all the rebates, and a similar delivery time should be expected now, although a larger proportion of them might be delivered more quickly via direct deposit.

Most studies of purely temporary, one-time changes in taxes have suggested that they have only a moderate effect on household consumption. Theory predicts that households not facing liquidity constraints will not alter consumption very much in response to a temporary change in income because it has a relatively small effect on lifetime wealth. For example, studies of the 1975 rebate (and earlier tax changes) suggested that only 12 percent to 24 percent of the rebate was consumed in the quarter that it was received.[14]

The experience of the 2001 tax rebate appears to differ from the findings of these earlier studies, although the 2001 rebates did not represent a one-time reduction in taxes, and therefore the experience with them may not be fully applicable to a truly temporary rebate. The 2001 rebate stemmed from provisions of the Economic Growth and Tax Relief Reconciliation Act (EGTRRA) of 2001, which reduced the lowest tax bracket from 15 percent to 10 percent, among other things. Although EGTRRA was signed into law in June 2001, the change in the lowest tax rate was applied retroactively to income that was earned from the beginning of 2001. (The rebate amount was based on each tax filer's 2000 return.) The rebate was essentially an advance credit for the reduction of taxes in 2001 and represented an early lump-sum payment of amounts that otherwise would have been accounted for through reduced withholding in 2001 or increased refunds in 2002. Under EGTRRA, the reduced tax bracket corresponding to the rebate was scheduled to remain at 10 percent through 2010, so although the rebate was a one-time payment, it did not represent a one-time reduction in taxes. Most households received rebate checks of either $300 or $600 over a 10-week period from late July 2001 to the end of September 2001. The economy was in recession during this period: the peak of the expansion was March 2001, and the trough, November 2001.

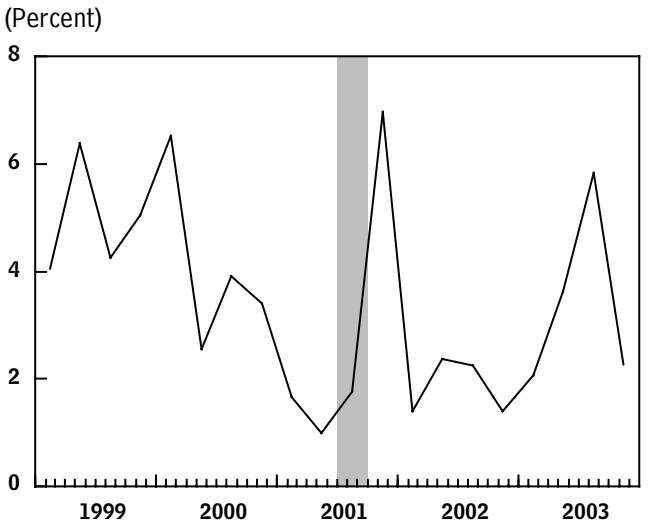
Most analysts agree that the 2001 rebate stimulated the economy, although there is some debate about the magnitude of the effect. Consumption did jump sharply in the following quarter (see Figure 2); however, because longer-lasting tax cuts were announced at the same time, it takes careful research to tease out the effect of the rebate. One widely cited study relied on quarterly data from the Consumer Expenditure Survey to provide estimates of the average propensity to consume the 2001 tax rebate.[15] The study's authors estimated that households spent between 20 percent and 40 percent of their rebate amount in the quarter in which the rebate was received and about two-thirds of the rebate cumulatively by the end of the subsequent quarter. According to the study,

14. Alan Blinder, "Temporary Income Taxes and Consumer Spending," *Journal of Political Economy*, vol. 89, no. 1 (February 1981), pp. 26–53; Franco Modigliani and Charles Steindel, "Is a Tax Rebate an Effective Tool for Stabilization Policy?" *Brookings Papers on Economic Activity*, no. 1 (1977), pp. 175–209; James Poterba, "Are Consumers Forward Looking? Evidence from Fiscal Experiments," *American Economic Review*, vol. 78, no. 2 (May 1988), pp. 413–418.

15. Johnson, Parker, and Souleles, "Household Expenditure and the Income Tax Rebates of 2001."

Figure 2.

Growth of Real Personal Consumption Expenditures



Sources: Congressional Budget Office; Department of Commerce, Bureau of Economic Analysis.

Note: Rates reflect quarter-to-quarter annualized growth. The shaded area indicates the months in which the 2001 tax rebates were distributed. Data are plotted through the fourth quarter of 2003.

the rebate increased total consumption by about 0.8 percent in the quarter that the rebates were received and by about 0.6 percent in the subsequent quarter. The authors also found strong evidence that households that were young, had low income, or held few liquid assets consumed a substantially larger fraction of the rebate than did households that were older, had high income, or had large holdings of liquid assets.

Researchers using credit card data to examine the effects of the 2001 rebate on consumption found a similar impact.[16] Households' credit card debt immediately dropped upon receipt of the 2001 rebate. However, subsequent credit card spending rose. The researchers have access to data on the primary credit card for only a subset of cardholders, but among those households, spending increased by $200, or about 40 percent of the rebate on average. The study also found that consumption rose the most for consumers who were likely to be credit constrained. By contrast, unconstrained consumers responded to the rebate by paying down their debt (which increases saving).

By contrast, another study based on a survey of households found that only about 22 percent of them felt that the rebate would lead them to "mostly increase spending," as opposed to mostly saving it or paying down debt.[17] However, because that study did not include quantitative estimates of the impact on consumption, it is difficult to compare it with the two studies mentioned above. On balance, it appears that the 2001 rebate may have had a greater effect on the economy than earlier, purely temporary rebates or surcharges.

Temporary Tax Reduction

A variety of approaches have been suggested for reducing tax rates. Those approaches include temporary across-the-board cuts in income tax rates and a "payroll tax holiday" that would cancel employee payroll tax withholding during a specific interval. One general advantage of such proposals is that they increase weekly take-home pay, which tends to be spent somewhat more readily than lump-sum rebates. But other considerations can make them less effective in other respects.

Across-the-board reductions in income tax rates have the disadvantage of placing much more of the tax reduction in the hands of upper-income taxpayers, who, although they have a much larger tax liability, are less likely to spend the additional money. A payroll tax holiday that applied to the employees' share of the tax would have the advantage of directing more of the reduction to households more likely to spend it, even reaching taxpayers who could not qualify for a rebate on the basis of income tax returns. A holiday for the employers' share of that tax would have a very different effect. Suspending the employers' portion of the tax for a short period of time is unlikely to alter wage rates by very much and so would not alter consumers' resources very much. Its effects would be somewhat like those of a temporary reduction in the corporate tax, discussed below.

Any rate reduction aimed at lowering tax withholding for a specific interval is likely to face greater administrative difficulties than changing withholding tables for the entire tax year. In general, tax withholding tables can be

16. Agarwal, Liu, and Souleles, *The Reaction of Consumer Spending and Debt to Tax Rebates.*

17. Matthew D. Shapiro and Joel Slemrod, "Consumer Response to Tax Rebates," *American Economic Review*, vol. 93, no. 1 (March 2003), pp. 381–396.

changed relatively easily, but any change in withholding takes time for employers—especially smaller ones—to implement. Turning withholding on and off introduces more opportunity for error, and significant penalties can attend the failure to remit the proper amount of payroll taxes. Consequently, payroll administrators may take greater time in ensuring that payroll tax changes are undertaken properly.

Another disadvantage of the holiday approach is that only workers employed at the time of the holiday would receive the benefit; even if they had been employed for the previous 11 months, they would receive nothing if they were unemployed for the month of the tax reduction. Workers who have already reached the taxable maximum for Social Security taxes would also be differentially affected, although that could help boost the cost-effectiveness of the policy. And the holiday option might encourage some firms to alter the timing of certain compensation in order to maximize the benefit for their workers. Modifications to the proposal to deal with some of these issues could delay its implementation.

Deferring or Eliminating Scheduled Tax Increases

A number of taxpayers are currently scheduled to pay higher taxes on their 2008 income because of the alternative minimum tax (AMT). Although temporary "patches" have been enacted over the past several years that provide higher exemption levels under the AMT and thereby postpone this increase, the most recent extension applies only to the 2007 tax year. In addition, provisions of the Economic Growth and Tax Relief Reconciliation Act of 2001 and the Jobs and Growth Tax Relief Reconciliation Act of 2003 are scheduled to expire at the end of 2010. If taxes are not to be reduced from their current levels to provide stimulus, it may be desirable during a period of economic weakness to avoid tax increases that tend to dampen demand.

Whatever the long-term effects on work incentives and investment, permanently extending EGTRRA or JGTRRA after 2010 is unlikely to provide much demand stimulus to the economy in 2008. Some taxpayers may be consuming less now in anticipation of the scheduled tax changes in 2011. If so, removing the expectation of future higher taxes could cause taxpayers to boost current spending. However, extending the current lower rates would probably not boost spending in the short run to any noticeable degree for various reasons. For example, to the extent that sophisticated taxpayers take prospective future tax rate changes in 2011 into account in their current spending habits, they may also be taking into account the imbalance between current tax rates and projected government spending. That notion suggests that extending the current rates may not significantly alter taxpayers' expectation of the possibility of higher taxes at some point in the future, thereby attenuating any effect on current spending.

Another effect of permanently extending the tax provisions enacted in 2001 and 2003 would be to keep lower tax rates in place for businesses that do not pay the corporate income tax. The income of businesses such as sole proprietorships, partnerships, corporations organized under subchapter S, or limited liability companies is not taxed at the entity level but rather passes through to the owners, partners, or shareholders, where it is taxed as individual income. These so called "pass-through" entities earned about half of net business income in 2004.[18] Even though the certainty of permanently extended lower tax rates could provide some added investment incentives to these pass-through business entities and increase the after-tax return on their investments, those incentives would probably not result in any significant short-term economic stimulus.[19]

Because the expiration of the AMT is closer at hand, there is greater likelihood that extending the patch will have near-term effects on demand than extension of EGTTRA or JGTRRA. Although the AMT is primarily aimed at higher-income taxpayers and such taxpayers receive the bulk of the benefit from AMT relief, the reach of the tax without the patch does extend lower into the income distribution and can be expected to adversely affect consumption demand at least somewhat. To the extent that taxpayers expect that the patch would not be extended again, fixing the AMT for another year could

18. See Department of the Treasury, Treasury Conference on Business Taxation and Global Competitiveness, Background Paper, July 23, 2007, Table 3.1, p. 13.

19. For example, permanently extending the 2001 and 2003 tax provisions would have little effect on short-term investments that disproportionately pay off before the lower rates expire after 2010. Many pass-through entities also qualify for special tax benefits for small businesses, such as the Section 179 expensing rules, which allow small businesses to write off (expense) up to $125,000 of the cost of qualified new investment each year. The higher expensing limits expire after 2010; permanently extending those limits might cause businesses to delay investment that they would have undertaken sooner.

boost consumer demand in 2008 as taxpayers avoid having to adjust withholding and estimated tax payments in calendar year 2008 to reduce what they will have to pay with their tax returns in 2009. More likely, though, any impact from a new patch would not be experienced until the beginning of 2009.

Approaches to Providing Incentives for Businesses

Tax cuts for businesses may also take two forms. They may be general, such as reducing the corporate tax rate, or they may apply only to new investment, such as the investment tax credit. That distinction materially influences the effectiveness of the proposed approaches. Although a general business tax cut may leave a corporation with higher cash flow, which can affect investment decisions in some cases, its stimulative effect comes principally from how much it increases the attractiveness of new investment. Because a general tax cut applies to income generated from a firm's productive assets regardless of when they are placed in service, only part of the cut affects a firm's decision to undertake new investment.

Even business tax reductions focused on new investment, however, may have only a limited effect on decisions to invest. For one thing, they may apply to investment that would have been undertaken anyway. In addition, like general business tax cuts, their stimulative effect depends on firms' having tax liability in the first place; without such liability, tax cuts generate no cost reductions for firms. The portion of investment by firms with no tax liability varies, but it is significant. By one measure, the share of investment among firms subject to the corporate income tax ranged over the past few years from a little less than 30 percent to more than 45 percent. Moreover, the efficacy of some types of investment stimulus (such as accelerated depreciation) may be muted by the corporate alternative minimum tax, which can effectively undo cuts in regular corporate taxes.

Policymakers have several options for countering these drawbacks. Making incentives incremental by limiting them to investment above a certain amount could help focus them more narrowly on additional investment. However, past attempts to design incremental tax incentives have not been especially successful, perhaps because of their complexity. More firms might respond to investment incentives if the incentives were refundable or if the period over which firms could carry back the value of the tax benefit and apply it against profits in earlier years was lengthened. (The current carryback period is two years; the current carryforward time is 20 years.) And the corporate AMT could be modified to make other incentives more effective.

Cut in Corporate Tax Rates

The most common form of a general cut in business taxes is a reduction in the corporate tax rate. This approach, however, is not a particularly cost-effective method of stimulating business spending: Increasing the after-tax income of businesses typically does not create an incentive for them to spend more on labor or to produce more, because production depends on the ability to sell output.

But because taxes on business income essentially lower the return that firms earn from capital investment, reducing such taxes can increase firms' willingness to acquire more capital—that is, to invest. As a result, the principal influence of taxes on a firm's decision about investing depends on the prospective profits from its new investments, not on current profits made from old investments. However, a substantial effect of reducing current corporate tax rates is to increase the returns from past investments rather than increase the attractiveness of new investments.

Secondary effects on investment demand may arise from the impact of taxes on a firm's cash flow. Some firms cannot readily borrow to make their investments; others may face relatively high interest rates in borrowing. Because taxes reduce cash flow, they limit the amount of investment that such firms might undertake. Reducing taxes can improve cash flow and thus boost investment. Some researchers have found that, within manufacturing, more than 90 percent of investment is done by firms facing only relatively mild financial constraints.[20] Even so, the constraints on those firms, according to one estimate, are important enough that each dollar of additional cash flow produces about 24 cents of additional investment. However, other authors have suggested that this estimate of the effect of cash flow is significantly overstated because of measurement error.[21] The effects of taxes on investment that stem from their impact on cash flow are generally believed to be weaker, dollar for dollar, than those

20. Stephen M. Fazzari, R. Glenn Hubbard, and Bruce C. Petersen, "Financing Constraints and Corporate Investment," *Brookings Papers on Economic Activity*, no. 1 (1988), pp. 141–206.

that stem from the direct effects of taxes on the cost of capital.

Consequently, a general cut in business tax rates will tend to generate significantly less investment demand for each dollar of revenue than a cut that applies only to new investment. A cut in corporate rates is also less effective because it does not apply to businesses that are not subject to the corporate tax (sole proprietorships, partnerships, and corporations organized under subchapter S). Business entities not subject to the corporate income tax earned about half of net business income in 2004. Thus, tax stimulus that applied only to corporations would be less broadly applicable than stimulus that applied to all businesses—for example, through accelerated depreciation, expensing, and investment tax credits. Finally, a *temporary* reduction in corporate tax rates could encourage some firms to delay investment, because the value of being able to depreciate investments is higher when corporate tax rates are higher.

Incentives for New Investment

Taxes on new investment can be reduced by means of accelerating depreciation or expensing new investment, or with an investment tax credit (ITC). The first two encourage investment by helping to postpone a business's tax liability when it invests in additional plant and equipment. Taxpayers benefit from any mechanism that defers tax liability, so deferral makes that investment more attractive. An investment tax credit permits a firm to reduce its tax liability in a given tax year by a percentage of the qualifying investment it places into service during that year. The effect on the attractiveness of new investment is much the same as in the other two options. Questions have also been raised about the ability of capital goods production to respond to additional demands in the short run, a shortcoming the ITC would share with other investment incentives.[22]

Depreciation and Expensing. Determining taxable income requires subtracting expenses, most of which are outlays made during the tax year, from receipts. But outlays for capital investment during the year are not a current expense; rather, the corresponding expense is the value of the capital that is used up, or depreciated, during that year. Actual economic depreciation and depreciation allowed for tax purposes may differ, however. When depreciation reported for tax purposes is faster than actual economic depreciation, it is said to be accelerated. Accelerated depreciation is an advantage to firms because it reduces their reported taxable income in the near term, pushing it below their actual economic income.

The extreme case of accelerating depreciation is allowing the entire cost of an investment to be deducted as an expense in the year it is made. Under current law, expensing is generally aimed at small businesses. Currently, businesses can expense up to $125,000 for the cost of equipment placed in service in that year. However, those deductions are reduced by the amount that the firm's total qualifying investment expenditures exceed $500,000.

In the early 2000s, policymakers expanded the depreciation rules to provide partial, but temporary, expensing of a number of capital assets, most of which had a depreciable life of 20 years or less. In 2002, the Jobs Creation and Workers Assistance Act allowed businesses to expense up to 30 percent of qualified investments purchased between September 10, 2001, and September 11, 2004 (and placed in service before January 1, 2005). The Jobs and Growth Tax Relief Reconciliation Act of 2003 increased the deduction to 50 percent of qualified investments purchased after May 5, 2003, and before January 1, 2005. The provisions for partial expensing expired on January 1, 2005.

When these laws were enacted, many analysts expected that the partial-expensing provisions would provide a large and effective stimulus. However, subsequent evidence suggests that their impact on investment has been

21. Timothy Erickson and Toni M. Whited, "Measurement Error and the Relationship Between Investment and *q*," *Journal of Political Economy*, vol. 108, no. 5 (2000); Steven N. Kaplan and Luigi Zingales, "Do Investment-Cash Flow Sensitivities Provide Useful Measures of Financing Constraints?" *Quarterly Journal of Economics*, vol. 112, no. 1 (1997), pp. 169–215.

22. Austan Goolsbee, "Investment Tax Incentives, Prices, and the Supply of Capital Goods," *Quarterly Journal of Economics*, vol. 113, no. 1 (February 1998), pp. 121–148.

relatively modest.[23] Researchers have used two features of the policy to estimate its effect on investment. First, certain types of assets qualified for partial expensing, but other types of assets did not. By comparing firms' investment decisions in the two classes of assets, researchers can identify the amount by which the tax subsidy increased investment. Second, the expectation that the policy would expire should have created incentives for firms to increase their investment before the expiration date but reduce it after that date. Examining the timing of investment decisions around the expiration date is another way that researchers can infer the impact of partial expensing.

Estimates suggest that the total effect of partial expensing on business activity has been modest. One study found that it increased output by only 0.1 percent to 0.2 percent and increased employment by only 100,000 to 200,000 jobs.[24] Another study also suggested very modest effects.[25] Although research on partial expensing suggests that it may have encouraged more investment in capital assets that qualified for the tax subsidy than in assets that did not qualify, finding solid evidence showing that it affected the timing of investment around the expiration date has been difficult, and the evidence on whether it disproportionately affected the type of investment most subsidized is mixed. The overall small effect may be due to expectations that the provisions would be extended or to circumstances that are largely unique to business conditions in the last contraction. It may also reflect the fact that some investment projects involve long planning lags, extending well beyond a year or more. In any case, the experience has made many analysts less sanguine about the efficacy of such business tax incentives.

23. See Darrel S. Cohen and Jason Cummins, "A Retrospective Evaluation of the Effects of Temporary Partial Expensing," Federal Reserve Board, Finance and Economics Discussion Series Working Paper No. 2006-19 (April 2006); Christopher House and Matthew Shapiro, *Temporary Investment Tax Incentives: Theory with Evidence from Bonus Depreciation,* NBER Working Paper 12514 (Cambridge, Mass.: National Bureau of Economic Research, September 2006); Matthew Knittel, "Taxpayer Response to Partial Expensing: Do Investment Incentives Work as Intended?" Department of Treasury Working Paper (2005); and Matthew Knittel, "Small Business Utilization of Accelerated Tax Depreciation: Section 179 Expensing and Bonus Depreciation." Department of Treasury Working Paper (2005).

24. House and Shapiro, *Temporary Investment Tax Incentives.*

25. Cohen and Cummins, "A Retrospective Evaluation of the Effects of Temporary Partial Expensing."

Investment Tax Credit. The ITC provides incentives that are similar to those of accelerated depreciation and expensing. Like them, it increases the after-tax return on investment by reducing the present value of taxes on the income the investment generates, and it increases the after-tax cash flow immediately realized by the firm that does the investing. There are several differences, however. First, an incremental ITC—one that applied only to investment above a specific base level—would generally be easier to design than incremental versions of the other investment incentives. Second, an ITC has a much greater differential effect on short- and long-lived investments; that is, a given credit would increase the after-tax return on short-lived investments much more than on longer-lived ones. Finally, in general, an ITC would have little or no effect on the revenues of state governments compared with accelerated depreciation or expensing.

The ITC was part of the tax code from 1962 through 1985. In general, firms were permitted to offset as much as 50 percent to 90 percent of their tax liability with the credit. Before the ITC was repealed in 1986, firms received credits at a rate of 10 percent on qualifying equipment purchases. The ITC was also complex, and not all investment qualified. Furthermore, the limitations placed on its scope created a variety of legal ambiguities regarding its application. Several analyses indicate that the ITC, as it was applied in the past, was not successful as a tool for stabilizing the economy.[26] This has partly been due to its timing. In addition, over much of its existence, the ITC was permanent; that is, it had no specific expiration date. Given the relative permanence of the ITC in its earlier incarnation, persuading businesses that it is temporary might be difficult, which in turn could undercut its effectiveness.

Incentives for new investment do not have to be general. Restricting the incentive to certain business segments is also possible; it can be done on the basis of the nature of the investment, such as by providing incentives to invest in ethanol production or other energy-related projects. It may also be done on the basis of the nature of the firm, by limiting incentives to small businesses, for example. As a general rule, however, these kinds of restrictions tend to reduce the effectiveness of the incentive. For example, incentives to invest in new energy production tend not to

26. See Alan J. Auerbach and Kevin A. Hassett, "Tax Policy and Business Fixed Investment," *Journal of Public Economics,* vol 47, no. 2 (1992), pp. 141–170.

generate much short-term demand. Most business investment has a long lead time. The main effect of investment incentives designed to boost demand, therefore, comes from accelerating investment that was already planned. As a general rule, the investments that can take advantage of the incentive are those on the shelf, not new projects.

Smaller businesses are currently eligible to expense qualifying investment up to an amount of $125,000. Under current law, this ceiling will fall to $25,000 in 2010. Proposals have been advanced in the past to raise the ceiling and make it permanent. Extending the current ceiling could, if anything, reduce incentives to invest in the nearer term, because it would mean that firms could wait to invest to take advantage of the incentive. A higher ceiling would increase the incentive somewhat, but the increase would affect demand only among smaller firms. Moreover, small firms are probably less aware of and responsive to tax incentives than larger firms that pay close attention to the tax consequences of their decisions.

Finally, investment incentives may be designed to be incremental. One of the biggest shortcomings of investment incentives is that although they may apply only to new investment, they still may accrue to new investment that would have been made anyway. Consequently, the cost-effectiveness of the stimulus is undercut because the tax reductions apply to all new investment, but the fiscal stimulus comes only from that which has been undertaken in response to the incentive.

Some proposals have been advanced to make the incentive apply only to investment above a certain baseline amount. Though conceptually appealing, this approach introduces an additional level of complexity. Moreover, it may not be very effective. The existing credit for research and experimentation is incremental. Problems with it have required changing the design. Some analysts conclude that incremental incentives are not practical.[27]

Operating Losses and Carryback Provisions

Whether in the presence of new investment incentives or just as a stand-alone policy, investment demand can also be influenced by provisions in the tax code regarding the use of net operating losses (NOLs) in other tax years. A firm that is losing money does not incur tax liability. Because more firms incur losses when the economy slows, they are therefore less able to reap the tax deductions associated with new investment. Depreciation—accelerated or otherwise—does not reduce tax liability until there are gross profits from which to deduct it. The lack of tax liability therefore reduces the after-tax return on the investment. The tax code permits firms to carry back their losses to previous years and reclaim taxes previously paid. The carryback provision not only increases the after-tax return on the investment but also increases cash flow. But the carryback is limited to two years. Any remaining net operating losses may be carried forward for 20 years.

Extending the carryback period beyond two years could increase the incentive to invest (or, more accurately, ameliorate the reduction in the incentive caused by the economy's effect on after-tax returns). It would also increase cash flow to firms that might be especially constrained in borrowing, which could boost investment. The length of carrybacks and carryovers may be more of a long-term issue than one of stimulus policy, however. By themselves, carryback and carryover effects are unlikely to generate substantial changes in investment in the short run. They can, though, be more important in the short run as a complement to such investment incentives as accelerated depreciation or an investment tax credit, so that money-losing firms receive the full benefit of those incentives.

Spending Proposals

Increasing government spending could also stimulate the economy in the short term, although the degree of stimulus and its timing varies considerably among different types of spending. Spending proposals can be classified in two broad categories: transfer payments to households, such as unemployment insurance benefits and Food Stamps, and government purchases of goods and services, such as public works programs.

Direct Transfer Payments to Households

Direct transfer payments to households are, in terms of stimulating demand, essentially indistinguishable in principle from personal tax cuts. All of the same characteristics that make such tax cuts effective or ineffective also apply to transfers. More disposable income in the hands of consumers can be expected to increase demand. Because many transfer programs are currently targeted toward lower-income families, increases in the benefits the programs pay are likely to be spent and therefore pro-

27. See Jane Gravelle, *Incremental Investment Credits,* CRS Report for Congress 93-209 S (Congressional Research Service, February 1993).

vide a relatively effective fiscal stimulus. Possible policy changes could include extending or expanding unemployment benefits and temporarily increasing Food Stamp benefits.

Unemployment Benefits. The unemployment insurance (UI) program provides temporary income support to workers who lose their jobs. In most states, eligible unemployed workers can receive up to 26 weeks of benefits that are funded by the states through payroll taxes on employers. A second level of benefits is available in states with especially high unemployment. UI recipients in those states can receive up to 13 additional weeks of benefits under the federal/state extended benefit program, which is financed equally by federal and state payroll taxes. CBO does not anticipate that many unemployed workers who exhaust their entitlement to regular benefits will be in states that will have met the criteria for triggering the extended benefit program in 2008.

One approach would be to enact a temporary increase in the maximum duration of UI benefits, as was done in previous downturns. For example, in March 2002, the Congress enacted the Temporary Extended Unemployment Compensation program, which provided up to 13 weeks of additional UI benefits to unemployed workers who had exhausted their entitlement to regular UI benefits and an additional 13 weeks in states with especially high unemployment. That program, which was amended several times, provided benefits to unemployed workers totaling roughly $1 billion per month during its two-year life.

A new program to extend unemployment insurance to those who exhaust their regular benefits could cost about $1 billion to $2 billion per month, depending on the number of additional weeks provided. Based on CBO's analyses of the family income of long-term UI recipients in previous periods, it seems likely that recipients would quickly spend most of those benefits. For example, an examination of the experiences of long-term UI recipients in 2001 and early 2002 who had not found work soon after their benefits ended—that is, the people for whom extensions of UI benefits are intended—indicated that their average family income was about half of what it had been when they were working. Moreover, more than one-third of the former recipients who had not returned to work had a family income below the poverty line (measured on a monthly basis), and about 40 percent lacked health insurance. [28]

Other options to temporarily expand UI benefits could involve changes in benefit levels and eligibility rules. For example, UI benefit levels vary across states, but the federal government could fund a temporary increase in UI benefit levels across all states. Another possibility includes temporary expansions in eligibility for UI, with the additional beneficiaries financed by the federal government. Such expansions might include use of more recent work histories of unemployed workers to establish eligibility and coverage of part-time job seekers who were laid off from part-time jobs.[29] Because these options would also tend to boost income among families very likely to spend most of the additional money rapidly, the options would be relatively cost-effective.

The availability and size of UI benefits may, however, somewhat discourage recipients from searching for work and from accepting less desirable jobs. Extending the duration of benefits or increasing their size means that at least some recipients may remain unemployed longer than they would have without that aid.[30] The effect is probably most pronounced when jobless rates are relatively low; when joblessness is high and work is especially hard to find, extensions of UI benefits appear to lengthen spells of unemployment by a smaller amount.

Food Stamps. Another approach would be to temporarily increase Food Stamp benefits for households already receiving them. In general, to be eligible for Food Stamp benefits an applicant's monthly household income must

28. Congressional Budget Office, *Family Income of Unemployment Insurance Recipients* (March 2004), pp. 1–3.

29. Most states determine an applicant's eligibility for benefits on the basis of their work during the first four of the last five completed calendar quarters before the claim is made, although several states include the most recent quarter for workers who would not otherwise qualify for benefits. Many states require workers to be available for full-time work to qualify even if the job lost was a part-time job.

30. A rough rule of thumb is that making benefits available to all regular UI recipients for an additional 13 weeks increases their average duration of unemployment by about two weeks and that increasing UI benefit levels by 10 percent increases the average duration of unemployment by about one week. Those estimates are based on surveys of the relevant literature, reported in Stephen A. Woodbury and Murray A. Rubin, "The Duration of Benefits," and Paul T. Decker, "Work Incentives and Disincentives," in Christopher J. O'Leary and Stephen A. Wandner, eds., *Unemployment Insurance in the United States: Analysis of Policy Issues* (Kalamazoo, Mich.: W.E. Upjohn Institute for Employment Research, 1997), pp. 211–320.

be at or below 130 percent of the poverty guideline (currently $2,238 for a family of four in the contiguous United States), and countable assets must be less than $2,000. Once eligibility has been determined, the amount of the monthly Food Stamp benefit is calculated. A household is expected to contribute 30 percent of its net income (gross income minus deductions for certain expenses) toward food expenditures. In 2008, the maximum amount that an eligible four-person household with no income in the contiguous United States can receive is $542 per month.

During fiscal year 2006, approximately 27 million people received Food Stamp benefits each month. Nearly all benefits went to the 87 percent of Food Stamp households that were in poverty. Over half of all benefits went to the 39 percent of Food Stamp households whose income was less than or equal to half of the poverty line. The vast majority of Food Stamp benefits are spent extremely rapidly. And because Food Stamp recipients have low income and few assets, most of any additional benefits would probably be spent quickly.

Aid to State and Local Governments

During downturns, state and local governments experience a reduction in revenues resulting from the effect of lower economic activity on sales, income, and other tax bases. Unlike the federal government, which can freely borrow to finance its fiscal shortfall and faces no requirement to balance its budget, these entities have to reduce spending and increase taxes (or some combination of both) to address the resulting fiscal problem. Consequently, the behavior of state and local governments often serves to reduce aggregate demand further.

Recent evidence indicates that many states respond relatively quickly to a downturn in the economy, even if it occurs after their budgets have been enacted for the year. Although states generally wait until their normal legislative sessions before raising taxes in response to a weak economy, most governors have administrative authority to cut spending if revenues fall, and many of them have used those powers in the past. During the last recession, for example, 37 states reduced their spending by a total of $13 billion (about 2.6 percent of total expenditures) between July 2001 and June 2002, after their budgets had been passed.[31]

One option for giving federal aid to state governments during an economic downturn is to temporarily increase the federal matching rate for the Medicaid program. Medicaid is a joint federal/state program that pays for health care services for a variety of low-income individuals. In 2007, the federal government spent $172 billion on benefit payments under Medicaid, and states spent $128 billion. The federal government's share of spending on the program is determined by a statutory formula that sets the matching rate for each state at no lower than 50 percent and no higher than 83 percent (according to a formula based on each state's per capita income relative to the national average). The current federal matching rates average 57 percent nationwide and vary across states from 50 percent to 76 percent. A temporary increase in the federal matching rate for Medicaid would reduce the amount of funding that states needed to spend on Medicaid to provide the same level of Medicaid services.

To ease budgetary pressures facing the states in 2003, the Congress passed legislation that temporarily increased each state's federal matching rate for Medicaid by 2.95 percentage points: CBO estimated the cost of the higher matching rates, which remained in effect for five quarters, at $10 billion. That legislation also provided the states with $10 billion in grants that they could use for specified purposes. To receive the higher matching rate, states were not permitted to lower their eligibility thresholds. More than half of the states reported that the increased matching rates enabled them to avoid or delay making cuts—or to make smaller cuts—to their Medicaid program.[32]

In general, the extent to which federal aid to state and local governments helps arrest the decline in demand depends on the degree to which those governments alter their behavior. If they cut spending less or raise taxes less as a result of federal aid, the policy will help keep demand from falling as much in the economy. The cost-effectiveness of federal aid to states and localities will also depend on exactly how the recipients use the aid. Policies can have very different effects on the economy, and the principles of an effective federal stimulus that were discussed earlier generally apply to stimulus carried out by states and localities as well.

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31. National Association of State Budget Officers, *The Fiscal Survey of States* (November 2002).

32. Kaiser Commission on Medicaid and the Uninsured, "Financing the Medicaid Program: The Impact of Federal Fiscal Relief," April 2004, available at www.kff.org/medicaid/7073.cfm.

The cost-effectiveness of the aid could also depend on how it is distributed geographically and on whether the aid is accompanied by maintenance-of-effort requirements. Recessions tend to have uneven effects across the country. Some states may be in deep recessions, while other states may still be growing at a comparatively healthy pace. Additional federal aid to states that are facing fiscal pressures or are already in recession would probably stimulate the economy. However, federal aid to states whose budgets are relatively healthy may provide little stimulus, especially if those states use the aid to build up their "rainy-day" funds instead of increasing spending or reducing taxes.

Public Works Projects

In addition to stimulating firms' investment in plant and equipment, the government can invest in capital itself as a means of boosting demand. Federal, state, and local governments are responsible for large swaths of the economy's capital stock, which includes ports, bridges, and roads. Those responsibilities also include various forms of reconstruction, such as in areas badly damaged by natural disasters. Proposals also exist for large-scale government investment in new technologies, such as new-generation power plants, facilities that produce alternative fuels, and automobiles that use alternative fuels.

Conceptually, spending on these kinds of projects seems to offer an appealing way to counteract an economic downturn and has the potential to enhance long-term economic growth. Because these projects are capital projects, their timing can be flexible. When demand is not sufficient to fully employ productive resources in the economy, a backlog of such projects is available that can employ workers and use capital. If those resources were indeed not being used fully, the social cost of the projects could be substantially reduced.

Practically speaking, however, public works involve long start-up lags. Large-scale construction projects of any type require years of planning and preparation. Even those that are "on the shelf" generally cannot be undertaken quickly enough to provide timely stimulus to the economy. For major infrastructure projects supported by the federal government, such as highway construction and activities of the Army Corps of Engineers, initial outlays usually total less than 25 percent of the funding provided in a given year. For large projects, the initial rate of spending can be significantly lower than 25 percent.

Some of the candidates for public works, such as grant-funded initiatives to develop alternative energy sources, are totally impractical for countercyclical policy, regardless of whatever other merits they may have. In general, many if not most of these projects could end up making the economic situation worse because they would stimulate the economy at the time that expansion was already well under way.

Assessing Different Types of Fiscal Stimulus

The foregoing discussion of various proposals for fiscal stimulus suggests three main criteria for comparisons between proposals:

- Are the proposals likely to be cost-effective, in the sense that they produce a significant amount of stimulus relative to their budgetary cost?
- Are they likely to be timely, in the sense that once the decision is made, they would produce stimulus quickly?
- How uncertain are the economic effects of the proposals?

Another important consideration is whether implementation of the proposals would involve significant administrative difficulties.

CBO has summarized the impact of the major stimulus alternatives according to those three criteria (see Table 1). Those comparisons cannot be made with any precision, however. For that reason, in Table 1 CBO has indicated the characteristics of the various options with general terms. Any administrative issues are discussed in the "Comments" column of that table.

Proposals for Home Mortgage Markets

Because problems in the housing and home mortgage markets have contributed to weaker economic activity and concerns about a recession, some current actions and proposals to address economic weakness are tied

Table 1.

Characteristics of Various Policies as Short-Term Economic Stimulus

Policy	Cost-Effectiveness[a]	Length of Lag from Enactment to Stimulus[b]	Uncertainty About Policy's Effects	Comments
		Individual Tax Proposals		
Lump-Sum Rebate	Large	Medium	Large	A rebate is generally likely to be more effective the more it is focused on people who are likely to spend it. A rebate whose size increases for people with larger tax liabilities is likely to be less effective than a uniform refundable one. Experience is mixed with respect to effectiveness, introducing some uncertainty about the rebate's effect. Processing and mailing the rebate checks would take some time.
Temporary Tax Reductions				
Withholding Holiday for the Employee Payroll Tax	Large	Medium	Large	Some evidence suggests that consumers spend more of a dollar rise in take-home pay than of a dollar rebate. But a brief holiday, such as a month, might be viewed the same as a rebate, which could reduce the stimulus. Particularly complex variants may introduce some delays in implementation. Applying a holiday to the employer side of the payroll tax is unlikely to be cost-effective.
Across-the-Board Tax Rate Cut	Small	Short	Small	Much of the tax reduction goes to upper-income people, who are less likely to spend it.
Deferring or Eliminating Scheduled Tax Increases				
Extending the AMT Patch	Medium	Long	Medium	Taxpayers may expect, on the basis of experience, that the patch will be extended, so failure to extend it may weaken consumption. However, affected taxpayers are likely to be in upper-income groups and therefore are not likely to change their spending much in response to a temporary delay of higher taxes. In addition, they may not know they are affected—in which case the growing AMT liability will not affect their behavior in 2008.
Deferring or Eliminating Tax Rate Increases Under EGTRRA or JGTRRA	Small	Long	Small	Whatever its long-term effects on work incentives and investment, changing the schedule of tax rates in 2011 and beyond is unlikely to have much effect on short-term demand in 2008.

Continued

Table 1.

Continued

Policy	Cost-Effectiveness[a]	Length of Lag from Enactment to Stimulus[b]	Uncertainty about Policy's Effects	Comments
		Business Tax Proposals		
Cut in Corporate Tax Rates	Small	Long	Small	Corporate tax rate reductions have only a limited effect on new investment decisions and may take time to affect business investment because capital spending decisions are often made in advance. Improved cash flow may, however, have some effect on investment decisions, especially among smaller firms.
Incentives for New Investment	Medium	Medium	Large	Most of the stimulus appears to come at the end of the period of the incentive. But a short incentive period may not be effective if it does not allow businesses enough planning time. The last time such incentives were employed, the results were not encouraging. Analysts are consequently less confident in them.
Extending Operating Loss and Carryback Provisions	Small	Medium	Large	These provisions have little effect by themselves, although improved cash flow may have some effect on firms facing difficulty in accessing outside capital. Perhaps more important, these provisions can enhance the effectiveness of investment incentives.

Continued

specifically to the housing market.[33] Effective stimulus need not be directed specifically at the source of economic weakness, however. Indeed, actions and proposals to bolster housing and financial markets are not fiscal stimulus in the traditional sense as discussed above. They do not directly affect large numbers of consumers and businesses, nor do they involve sums of money that would probably be necessary to push the economy out of recession should it enter one. Nevertheless, by addressing specific problems in those markets that private participants might find difficult to resolve, they could play an important role in reducing the severity of a potential recession.

33. Traditional fiscal stimulus also would help stabilize housing and home mortgage markets, but targeted actions would probably be more efficient.

The end of the housing boom in 2005 has led to declining house prices and the reduced availability of mortgage credit. As house prices began to soften and fall, delinquencies and foreclosures on subprime adjustable-rate mortgage loans (ARMs), which were 6.6 percent of total residential mortgages at the end of 2006, began to increase unexpectedly, a consequence of the lax credit standards, weaker house prices, and higher interest rates on ARMs whose interest rates had reset to higher rates as scheduled in the terms of their loan contracts. The unexpected losses on subprime mortgages have created considerable uncertainty about the eventual size of the losses. Lenders with exposure to losses on subprime mortgages, held either directly or indirectly in mortgage-backed securities, have tightened their lending standards and

Table 1.

Continued

Policy	Cost-Effectiveness[a]	Length of Lag from Enactment to Stimulus[b]	Uncertainty about Policy's Effects	Comments
		Spending Proposals		
Direct Transfer Payments to Households				
Extending or Expanding Unemployment Benefits	Large	Short	Small	These benefits are regularly extended in recessions, and most of any additional benefits are likely to be spent quickly.
Temporarily Increasing Food Stamp Benefits	Large	Short	Small	Additional benefits are likely to be spent rapidly by recipients, who tend to be experiencing periods of economic difficulty.
Providing General Aid to State and Local Governments	Medium	Medium	Large	States vary in their response to revenue shortfalls. Aid to states could be implemented through an adjustment to the federal Medicaid matching rate.
Investing in Public Works Projects	Small	Long	Small	These projects are likely to involve expenditures spread out over a long time and also take a long time to get under way.

Source: Congressional Budget Office.

Note: AMT = alternative minimum tax; EGTRRA = Economic Growth and Tax Relief Reconciliation Act of 2001; JGTRRA = Jobs and Growth Tax Relief Reconciliation Act of 2003.

a. The impact on aggregate demand that the policy would generate in a given quarter, relative to its lifetime budget cost.

b. Approximate time between enactment and when the policy would have achieved the bulk of its effect on aggregate demand. "Short" means less than about a half year. "Medium" means from about a half year up to a year. "Long" means more than a year.

pulled back from subprime lending, preferring to conserve capital and hold less risky assets.[34]

Consequently, some homeowners facing higher interest rates on their subprime ARMs and lower house prices are having trouble refinancing into more affordable loans. With about 1.7 million subprime ARMs worth $367 billion facing their first interest rate reset during 2008 and 2009, analysts are concerned that mortgage foreclosures will climb significantly higher and, along with falling housing prices, overwhelm the ability of mortgage markets to restructure or refinance loans for creditworthy borrowers.[35] In the worst case, a breakdown of mortgage markets could put the economy on a self-reinforcing downward spiral of less lending, weaker economic

34. The problems in the subprime mortgage market have spilled over into the broader financial markets. The use of new and complex investments to fund subprime lending, such as collateralized debt obligations, has made it difficult for participants in financial markets to identify the magnitude of the exposure of other participants to subprime mortgage losses. Financial institutions, not knowing the exposure of other financial institutions to subprime losses, are reluctant to lend to each other, reducing the liquidity of the interbank market. Financial institutions also have pulled back from all risky assets, reducing the availability of credit and raising the price of risky lending from its unusually low level of recent years.

35. The number of resets comes from Sheila C. Bair, "The Case for Loan Modification," *FDIC Quarterly*, vol. 1, no. 3 (2007), pp. 22–29.

activity, lower house prices, more foreclosures, even less lending, and so on, either causing or significantly worsening a recession.[36]

Many of the losses in housing markets cannot be avoided because they are the result of lax credit standards and otherwise excessive underpriced risk taking in the past. Policymakers cannot undo all those losses, and attempting to do so would reward the excessive risk taking, which could encourage excessive risk taking in the future, and shift the losses from borrowers and lenders to taxpayers.

A possible role for policymakers is to help the housing and mortgage markets cope with the aftereffects of the end of the housing boom. Some actions (described below) have already been taken.[37] Policymakers may consider other proposals for helping mortgage markets overcome impediments to changing terms of troubled mortgage loans, which could both reduce lenders' losses and help homeowners. Policymakers may also consider increasing opportunities for subprime borrowers to refinance mortgage loans. Both actions would help avoid foreclosures, eliminating one source of downward pressure on house prices. Finally, policymakers might be able to help stabilize the subprime mortgage market by establishing or empowering an agency to buy subprime loans. Such an option, however, could significantly shift mortgage losses from current lenders and investors to taxpayers.

Important factors to note, however, are that house prices are likely to fall farther before the housing correction is complete and that misguided policies can make matters worse. Policies that work against the market's necessary adjustments may delay the recovery of financial markets and impair the pace of economic activity. One example is the forbearance policy of Japanese bank regulators during Japan's recession of the 1990s. By allowing Japanese banks to delay recognizing losses on real estate and other loans after Japan's real estate boom ended in 1990, the policy helped delay the recovery of Japan's banks.

36. The problems are not limited to subprime ARMs. Analysts are also concerned about potential problems with prime ARMs and so-called alt-A mortgage loans. Alt-A loans are believed to be less risky than subprime loans but more risky than prime loans.

37. For example, the Congress excluded from taxation the gains on certain mortgage debt forgiven on principal residences and extended the deduction for private mortgage insurance in the Mortgage Forgiveness Debt Relief Act of 2007 (P.L. 110-142).

Overcoming Impediments to Changing the Terms on Troubled Mortgages

One way to help stabilize housing markets and, consequently, the mortgage markets is to promote modifications in the terms of existing loans so that the loans become more affordable to borrowers and more valuable to holders. Lenders have a strong incentive to renegotiate loan terms that have become onerous to borrowers, because doing so may avoid even larger losses that are likely to be incurred in a home foreclosure and sale.[38] And keeping homeowners in their homes would help stabilize neighborhoods and could prop up house prices a bit by putting fewer homes on the market.[39]

Opportunities to renegotiate mortgage terms were more prevalent when lenders held most of their loans in their own portfolios. Today, however, lenders hold few loans directly but instead sell them into pools for mortgage-backed securities. Those securities have been further divided into pieces as backing for other securities such as collateralized debt obligations. Consequently, a mortgage loan can be owned by a large number of investors, meaning that, among other obstacles, it is costly to obtain the agreement of investors to change the contractual terms of a loan.

In these circumstances, policymakers have sought ways to facilitate more affordable terms on existing mortgage contracts. One way is to encourage lenders to take full advantage of existing opportunities to restructure loan terms and help them to do so. Another proposal calls for changing the treatment of residential mortgages in personal bankruptcy.

38. For example, lenders can lose between 30 percent and 60 percent of the value of their loans in a foreclosure because of legal fees, lost interest, property expenses, and lower sales prices. State foreclosure laws also can affect the size of the losses. See Karen M. Pence, "Foreclosing on Opportunity: State Laws and Mortgage Credit," Finance and Economics Discussion Paper 2003-16 (Board of Governors, Federal Reserve System, May 13, 2003). Anthony Pennington-Cross, in "The Value of Foreclosed Property," *Journal of Real Estate Research*, vol. 28, no. 2 (2006), pp. 193–214, finds that the value of property in foreclosure falls by slightly more than 20 percent.

39. For estimates of how foreclosures affect neighbors' property values, see Dan Immergluck and Geoff Smith, "The External Costs of Foreclosure: The Impact of Single-Family Mortgage Foreclosures on Property Values," *Housing Policy Debate,* vol. 17, no.1 (Washington, D.C.: Fannie Mae Foundation, 2006), pp. 57–79.

Promote the Restructuring of Mortgage Loans. This approach is embodied in the "moral suasion" efforts of federal agencies that regulate banks, thrifts, and credit unions to encourage financial institutions to work with homeowners whose mortgages they hold and who are unable to make their mortgage payments. The goal is to facilitate as many restructurings as possible within the bounds of the terms of the loan contracts. Promoting loan restructuring by mandating changes in loan terms through legislation could create the appearance of abrogating existing contracts. The adverse consequences for financial markets of such a policy could be severe.

Federal regulators could also encourage other actions to avoid sales of foreclosed properties, such as renting defaulted homes back to the homeowners. This approach could minimize the disruption for homeowners and provide an income stream for investors.[40] Like renegotiated terms, however, such agreements were probably more feasible when mortgages were held by the issuers. Moreover, ensuring that previous homeowners take proper and sufficient care of their homes may prove difficult.

Promoting maximum use of existing authority to modify loan terms, as specified in the pooling and servicing agreements of mortgage-backed securities, is also an apparent objective of the Administration's plan for "fast track" loan modifications. That plan explicitly addresses the complexities created by the widespread securitization of subprime mortgages. It attempts to facilitate a standardized modification that is consistent with the terms of existing contracts in order to expedite mortgage restructuring for eligible borrowers, that is, a temporary interest rate freeze on adjustable-rate mortgages that are likely to default if the interest rate is adjusted upward.[41]

To be eligible for a freeze under this proposal, borrowers must be current on their mortgage payments; that is, they cannot be more than 30 days late at the time their mortgage would be modified, and they must not have been more than 60 days late at any time within the previous 12 months. This provision is intended to ensure that borrowers could afford their current mortgage if the interest rate was frozen at the initial rate. As proposed, the plan applies only to certain types of ARMs that have their first interest rate reset between January 1, 2008, and July 31, 2010.[42] The plan also excludes borrowers who are judged to be capable of making their mortgage payments at the higher reset rates.[43] In general, furthermore, modifications are legal only if they cost the lenders less than foreclosure. Some analysts estimate that the proposal may benefit between roughly 10 percent and 20 percent of borrowers with subprime ARMs.

Change Bankruptcy Law. A legislative approach to facilitate the modification of existing terms on mortgages would expand the authority of bankruptcy judges to do so in cases filed under Chapter 13 of the bankruptcy code (title 11).[44] Several bills before the Congress propose changing Chapter 13 to allow bankruptcy judges some leeway to modify mortgage debts, including reducing the amount of a homeowner's mortgage debt to the value of the underlying collateral. This approach would make the treatment of mortgage debt consistent with the treatment of secured debt on consumer goods such as motor vehicles. The rationale for the current differential treatment of residential mortgages is that exempting mortgage debt from reduction would lower mortgage interest rates and encourage home ownership.

Allowing bankruptcy judges to modify the terms of mortgage loans would give distressed homeowners another avenue for shedding burdensome debt. It might also give mortgage lenders a greater incentive to restructure debts outside of the bankruptcy court system. From one perspective, furthermore, it would eliminate a current prefer-

40. See Dean Baker and Andrew Samwick, "Save the Homeowners, Not the Hedge Funds," *Providence Journal*, August 31, 2007.

41. In November 2007, Governor Schwarzenegger reached an agreement with subprime lenders to adopt streamlined procedures to assist borrowers in California.

42. Foreclosures started on subprime fixed-rate mortgage loans are substantially lower than on subprime ARMs. They were almost 1.4 percent of the outstanding number of subprime fixed-rate loans in the third quarter of last year, up from about 1.1 percent in 2005, according to data collected by the Mortgage Bankers Association. By contrast, foreclosures started on subprime ARMs were 4.7 percent in the third quarter of last year, up from about 1.5 percent for all of 2005.

43. Initial interest rates for subprime ARMs that were originated between 2003 and 2006 averaged between 6.85 percent and 8.23 percent and are typically scheduled to rise by about 2½ percentage points at the reset date. By contrast, "teaser" interest rates in the prime market were as low as 1 percent to 2 percent. See Sheila C. Bair, "The Case for Loan Modification," Table 1.

44. Chapter 13 of the bankruptcy code covers the rescheduling of an individual's debt. Most individuals file under Chapter 7 of the bankruptcy code, which deals with the liquidation of assets as payment for outstanding debts.

ence for mortgage debt relative to other types of debt among lenders and thereby possibly help avoid future excesses in the mortgage markets. It could, however, add to the caseload of the bankruptcy court system, causing delays in resolving cases. (Restricting the new authority to mortgages originated after the date of the legislation would mitigate this effect, but it would also defeat the purpose of providing relief to currently troubled borrowers.) Another cost to this type of policy could be higher mortgage interest rates, although the magnitude of the increase is difficult to predict and could depend on the exact change in policy.

Expanding Opportunities to Refinance Subprime Mortgages

The effects of securitization in complicating the ability of lenders to negotiate loan modifications suggests that policymakers might more fruitfully focus on creating favorable opportunities for borrowers to refinance. That is, borrowers may be able to avoid default by paying off existing mortgages with the proceeds from new, more affordable loans. Policies to do so quickly might focus on making increased use of existing federal credit programs and the housing government-sponsored enterprises (GSEs). Alternatively, the Congress could consider new or expanded programs to increase federal assistance to community-based organizations that provide services, counseling, and foreclosure protection to households. The Administration has also recommended that the Congress pass legislation that would allow state and local governments to issue tax-exempt bonds to help troubled borrowers.

Expand Authority of the FHA, Fannie Mae, and Freddie Mac. One option is to expand the Federal Housing Administration's (FHA's) authority to guarantee refinanced loans. Using the FHA's existing authority, the Bush Administration has initiated a new offering called FHASecure, which modifies the existing rules for the agency's mortgage insurance and increases opportunities to refinance for borrowers who are in default but had been making timely mortgage payments before their loans reset. Eligible borrowers also must have at least 3 percent equity in the home, sufficient income to make the mortgage payments, and loans that have reset or will reset between June 2005 and December 2008. The Administration estimated in August 2007 that 240,000 homeowners would be eligible to participate in the program. In fiscal year 2007, the dollar volume of loans that were refinanced into FHA loans nearly doubled, to $16 billion. Some of that increase may be due to FHASecure, but market conditions may also be making FHA loans more attractive. Although the details of the bills differ, both the House and the Senate have passed legislation that would substantially increase the size limit on mortgages eligible for FHA's guarantees, change FHA's guarantee fees, and allow more flexible options for down payments.

The Congress could also consider a proposal mandating that Fannie Mae and Freddie Mac, two GSEs created to support housing finance, play a larger role in supporting the financing of subprime mortgages.[45] Even though financial markets are distressed, the GSEs are likely to be able to raise new funds for subprime mortgage lending. With the support of an implicit federal guarantee of their debt and other liabilities, Fannie Mae and Freddie Mac have privileged access to funds in the capital markets. During times of financial turmoil and uncertainty, when there is often a "flight to quality" by investors, the securities issued by those entities tend to be favored investments. Various legislative proposals also have been made to have Fannie Mae and Freddie Mac contribute to affordable housing funds, which would support lower-income subprime borrowers.[46]

Adopting these proposals could increase the supply of subprime mortgages (including refinance loans) and could lower mortgage interest rates. However, the proposals also raise concerns about an increase in risk to the financial system (and perhaps implicitly to the federal budget) from further concentrating mortgage holdings in enterprises that have experienced problems with financial controls and accounting. Using a federal agency such as FHA, rather than the for-profit housing GSEs, would

45. Lawrence Summers, "This Is Where Fannie and Freddie Step In," *Financial Times*, August 26, 2007; and statement of Alex Pollock, resident fellow, American Enterprise Institute, "Legislative and Regulatory Options Regarding Mortgage Foreclosures," before the House Financial Services Committee (September 20, 2007).

46. Moreover, legislation passed by the House increases the maximum mortgage size that the housing GSEs are permitted to purchase—from the current limit of $417,000 to the lesser of the median home price in the area or 150 percent of the conforming loan limit—in designated high-cost areas. The Senate version would make the increase in the maximum loan size temporary. That change would increase the supply of jumbo mortgages, for which the availability of funds has been limited and for which interest rates have risen in recent months.

allow the government to determine the assistance given to borrowers.[47]

Increase Federal Assistance to Community-Based Organizations. Another proposal would increase federal assistance to community-based organizations, such as community development corporations and community development financial institutions that provide services, counseling, and foreclosure protection to households.[48] Among other things, counseling may help steer borrowers to prime markets and away from subprime markets and may also be used to make delinquent borrowers aware of alternatives to foreclosure. In 2008, the Congress appropriated $50 million for the Department of Housing and Urban Development's Housing Counseling Assistance Program. The program provides housing counseling services to eligible homeowners and tenants, including home purchase, financial management, and rental counseling. (The Home Ownership and Equity Protection Act of 1994 has no provisions requiring counseling; however, some states require lenders to notify borrowers of counseling opportunities.) In addition, the Congress provided $180 million to the Neighborhood Reinvestment Corporation for mortgage mitigation activities.[49] A bill passed by the House and one pending in the Senate would require lenders to alert delinquent borrowers to counseling opportunities, some of which could be provided by housing advocacy groups.

Allow State and Local Governments to Issue Tax-Exempt Bonds for Refinancing. Policymakers might also consider passing legislation permitting state and local governments to help troubled borrowers by issuing tax-exempt bonds for refinancing home mortgages. Such aid is currently available for first-time home buyers or home buyers in areas designated as economically disadvantaged. Proposed legislation would temporarily allow state and local governments to refinance troubled mortgages with the proceeds of tax-exempt bonds. Those governments would have to take care in hiring and monitoring mortgage originators to handle the refinancing of those mortgages so that the refinancing did not lead to net losses for the program. There are concerns that such a tax-subsidized effort would hurt first-time home buyers, for whom this legislation was originally intended, by propping up home prices. There are also concerns about whether the proposed legislation would bring sufficient benefits to homeowners to justify the impact that the increase in tax-exempt issuance would have on federal revenues.

Government Purchases of Subprime Mortgages

Efforts to encourage the restructuring and refinancing of subprime mortgages may be insufficient to stabilize this mortgage market, and the market may not begin to function effectively again until some of the current uncertainty about the value of subprime mortgages has been dispelled. Some analysts have therefore proposed that the federal government buy subprime mortgages.[50] Under such proposals, the federal government would create or empower an agency to establish a schedule of prices for different tiers of loans. The prices would be steep discounts from the estimated values of the loans in the tiers. The agency would evaluate and classify the loans it was asked to buy. Proponents believe that such a program would put a floor on the prices of subprime mortgages and allow market participants to price the assets of financial institutions. The agency would aim to sell the mortgages at higher prices when financial markets were better able to price them and were more amenable to undertaking the risk.

This type of policy has some historical precedent. The Resolution Trust Corporation (RTC) sold the assets of failed thrift institutions beginning in 1989 to clean up the thrift crisis of the 1980s. The Home Owners' Loan Corporation (HOLC), created in 1933 during the Great Depression, exchanged bonds for defaulted mortgages with lenders and investors at a discount and adjusted the loan terms to help borrowers.[51] The circumstances of the events leading up to the creation of those agencies, however, are different from those today. In the case of the RTC, the federal government had a claim on the assets of the failed institutions through the deposit insurance system. In the case of the HOLC, the loans were defaulting not because they were poorly underwritten, as were some

47. See Douglas W. Elmendorf, "What Should Be Done to Help Households Facing Foreclosure?" (2007), available at www.brookings.edu/opinions/2007/11_mortgages_elmendorf.aspx.

48. Edward M. Gramlich, *Subprime Mortgages: America's Latest Boom and Bust* (Washington, D.C.: Urban Institute Press, 2007).

49. Consolidated Appropriations Act of 2008 (P.L. 110-161).

50. Mark Fisch and Benn Steil, "Root Out Bad Debt or More Pain Will Follow," *Financial Times,* December 20, 2007.

51. See Alex J. Pollock, "Crisis Intervention in Housing Finance: The Home Owners' Loan Corporation," American Enterprise Institute, December 2007, and references cited therein, available at www.aei.org/docLib/20071231_22557FSODecg(2).pdf.

of the subprime loans of today, but because many of the borrowers became unemployed in the Depression.

But such an approach could expose the government to large costs. An important element of the proposal is pricing the subprime ARMs. They vary in quality, and their values critically depend on local real estate prices. Because the subprime ARMs are a recent innovation, there is little historical experience to guide their pricing, particularly because many of the loans were poorly underwritten. Moreover, lenders would have an incentive to keep the good loans and sell the bad ones to the government. If the government mispriced the loans, the program would essentially shift the risks from the holders of the subprime loans to taxpayers at too low a price.[52] The cost of such a program could be very high if the government consistently overestimated the value of the mortgages or if it were more generous than necessary to avoid defaults and promote participation in the program. Moreover, some of the purchased loans would probably default under more favorable terms, and the government would probably suffer losses on those foreclosures.

In any event, intervention by the federal government could displace private initiatives that would not impose costs on taxpayers. For example, Berkshire Hathaway recently acted on an opportunity to enter the bond insurance market after that market had experienced financial difficulties. Another example is the recently announced purchase of Countrywide Financial, a major mortgage lender with a large exposure to losses on subprime mortgages, by Bank of America. Others may find similar opportunities to buy subprime assets.

52. The proposal essentially gives put options to the owners of the subprime loans (that is, it gives the owners an option to sell the loans at known prices). The owners will exercise the put options when the payoffs are most favorable to them, and conversely, most costly to the government. If the owners have better information about the value of the loans than the government evaluators have, exercising these options would expose the government to underpriced risks and greater costs.

Macroeconomic Effects

Although the actions and proposals to help stabilize home mortgage markets do not have large macroeconomic effects in and of themselves, their contributions could nonetheless be significant. In the case of the proposals for restructuring and refinancing mortgages, the main effects come from the help given to creditworthy borrowers who can avoid foreclosure and the attendant losses for both borrowers and lenders. The number of those borrowers appears to be relatively modest. Nonetheless, these options, by keeping some houses off the market, would help limit declines in prices in some housing markets. They also would reduce losses by lenders, which would give lenders greater capacity to make new loans. Moreover, keeping people in their home could improve their welfare, both directly and indirectly by helping to limit the deterioration of their neighborhoods as a result of a large number of foreclosures.

By itself, the option to create an agency to buy subprime loans would probably have a larger impact on economic activity than any of the restructuring or refinancing options. It would help to increase not only the supply of mortgage credit but also the supply of nonmortgage credit by giving financial institutions a better sense of the adequacy of their capital levels and those of other financial institutions. However, that option could be very costly for taxpayers.

Even if the individual options have small effects, some of the options taken together may help the economy by reducing the risks of a self-reinforcing downward spiral (of less lending, weaker economic activity, lower house prices, more foreclosures, even less lending, and so on). Such a spiral could further impair economic activity and potentially turn a mild recession into a long and deep recession. Consequently, some of the options may therefore lessen the load now being placed on monetary policy to relieve the stresses in the financial system from the subprime turmoil and reduce the chance of recession.