



March 2, 2009

Honorable Charles E. Grassley
Ranking Member
Committee on Finance
United States Senate
Washington, DC 20510

Dear Senator:

At your request, the Congressional Budget Office (CBO) has prepared a year-by-year estimate of the economic effects of the American Recovery and Reinvestment Act of 2009 (ARRA, Public Law 111-5), which was enacted on February 17, 2009.

Short-Run Effects

The macroeconomic impacts of any economic stimulus program are very uncertain. Economic theories differ in their predictions about the effectiveness of stimulus. Furthermore, large fiscal stimulus is rarely attempted, so it is difficult to distinguish among alternative estimates of how large the macroeconomic effects would be. For those reasons, some economists remain skeptical that there will be any significant effects, while others expect very large ones.

CBO has developed a range of estimates of the effects of stimulus legislation on gross domestic product (GDP) and employment that encompasses a majority of economists' views. By CBO's estimation, in the short run ARRA will raise GDP and increase employment by adding to aggregate demand and thereby boosting the utilization of labor and capital that would otherwise be unused because the economy is in recession. Most of the budgetary effects of the legislation are estimated to occur over the next few years, and as those effects diminish, the short-run impact on the economy will fade.

Different provisions in the law differ in both the magnitude and timing of their effects on aggregate demand. To simplify analysis of the overall effects, CBO grouped the various provisions into a number of more general categories. Each category was assumed to have a range of effects on the economy that could be summarized by "multipliers"—the cumulative effect on output of a one-time increase in spending, or reduction in taxes, of one dollar. The numbers in Table 1 indicate the cumulative impact of the provisions in each category, on average, on GDP over several quarters. For example, a one-time increase in federal purchases of goods and services of \$1.00 in the second quarter of this year would raise GDP by \$1.00 to \$2.50 in total over several quarters, with most of that effect in the first two quarters and little effect beyond a year.

The multipliers are applied to outlays when they occur and to changes in taxes or transfer payments when they affect disposable income. CBO's estimates therefore account for the different rates of spending for various types of appropriations and, similarly, for the timing of the different tax cuts or transfers.

Table 1 also shows the categories to which CBO assigned the major provisions of ARRA. (In some cases, when different elements of a single provision were estimated to have different multipliers, the total cost of a provision was divided among more than one category. In those cases, the provision is shown in the table in the category to which most of its budgetary cost applied.) Provisions affecting outlays (including refundable tax provisions) are identified by the same names used in CBO's cost estimate for the conference agreement on H.R. 1 (see Table 2). Provisions affecting revenues are identified by the names used in the Joint Committee on Taxation's revenue estimate for the same legislation.¹

Long-Run Effects

In the long run, the economy produces close to its potential output on average, and that potential level is determined by the stock of productive capital, the supply of labor, and productivity. Short-run stimulative policies can affect long-run output by influencing those three factors, although such effects would generally be smaller than the short-run impact of those policies on demand.

In contrast to its positive near-term macroeconomic effects, the legislation will reduce output slightly in the long run, CBO estimates. The principal channel for that effect, which would also arise from other proposals to provide short-term economic stimulus by increasing government spending or reducing revenues, is that the law will result in an increase in government debt. To the extent that people hold their wealth as government bonds rather than in a form that can be used to finance private investment, the increased debt will tend to reduce the stock of productive private capital. In economic parlance, the debt will "crowd out" private investment. (Crowding out is unlikely to occur in the short run under current conditions, because most firms are lowering investment in response to reduced demand, which stimulus can offset in part.) CBO's basic assumption is that, in the long run, each dollar of additional debt crowds out about a third of a dollar's worth of private domestic capital (with the remainder of the rise in debt offset by increases in private saving and inflows of foreign capital). Because of uncertainty about the degree of crowding out, however, CBO has incorporated both more and less crowding out into its range of estimates of the long-run effects of the stimulus legislation.

The crowding-out effect will be offset somewhat by other factors. Some of the legislation's provisions, such as funding for improvements to roads and highways, might add to the economy's potential output in much the same way that private capital investment does. Other provisions, such as funding for grants to increase access to

¹ See www.house.gov/jct/x-19-09.pdf.

college education, could raise long-term productivity by enhancing people's skills. And some provisions will create incentives for increased private investment. According to CBO's estimates, provisions that could add to long-term output account for between one-quarter and one-third of the legislation's budgetary cost.

The effect of individual provisions could vary greatly. For example, increased spending for basic research and education might affect output only after a number of years, but once those investments began to boost GDP, they might pay off over more years than would the average investment in physical capital (in economic terms, they have a low rate of depreciation). Therefore, in any one year, their contribution to output might be less than that of the average private investment, even if their overall contribution to productivity over their lifetime was just as high. Moreover, although some carefully chosen government investments might be as productive as private investment, other government projects would probably fall well short of that benchmark, particularly in an environment in which rapid spending is a significant goal. The response of state and local governments that receive federal stimulus grants will also affect their long-run impact; those governments might apply some of that money to investments they would have carried out anyway, thus lowering the long-run economic return on those grants. In order to encompass a wide range of potential effects, CBO used two assumptions in developing its estimates: first, that all of the relevant investments together will, on average, add as much to output as would a comparable amount of private investment, and second, that they will, on average, not add to output at all.

In principle, the legislation's long-run impact on output also will depend on whether it permanently changes incentives to work or save. However, according to CBO's estimates, the legislation will not have any significant permanent effects on those incentives.

Net Effects on Output and Employment

Taking all of the short- and long-run effects into account, CBO estimates that the legislation implies an increase in GDP relative to the agency's baseline forecast of between 1.4 percent and 3.8 percent by the fourth quarter of 2009, between 1.1 percent and 3.4 percent by the fourth quarter of 2010, between 0.4 percent and 1.2 percent by the fourth quarter of 2011, and declining amounts in later years (see Table 3). Beyond 2015, the legislation is estimated to reduce GDP by between zero and 0.2 percent. To illustrate the short- and long-run effects of the legislation on output, with CBO's January baseline projection of potential GDP set as a reference point, Figure 1 shows three different projections of the economy's actual output: CBO's January baseline projection of GDP (which does not include the effects of ARRA), GDP using CBO's high estimate of the effects of the legislation; and GDP using CBO's low estimate of the effects of the legislation.²

² For details of CBO's January 2009 baseline, see Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2009-2019* (January 2009).

Honorable Charles E. Grassley

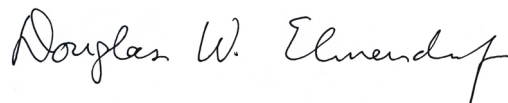
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Corresponding to the effects on output, CBO estimates that ARRA will increase employment by 0.9 million to 2.3 million by the fourth quarter of 2009, by 1.2 million to 3.6 million by the fourth quarter of 2010, by 0.6 million to 1.8 million by the fourth quarter of 2011, and by declining numbers in later years. The effect on employment is never estimated to be negative, despite lower GDP in later years, because CBO expects that the U.S. labor market will be at nearly full employment in the long run. The reduction in GDP is therefore estimated to be reflected in lower wages rather than lower employment, as workers will be slightly less productive because the capital stock is slightly smaller.

These estimates differ only slightly from those presented in CBO's letters to you, Senator Gregg, and Congressman Camp on February 11, 2009; at that time, the legislation had not yet been enacted, and CBO's estimates were based on an average of the effects of two versions of H.R. 1: as passed by the House and as passed by the Senate.

I hope this information is helpful to you. If you have any further questions, I would be glad to answer them. The staff contacts for the analysis are Ben Page and Robert Arnold, who may be reached at (202) 226-2750.

Sincerely,



Douglas W. Elmendorf
Director

Identical letter sent to the Honorable Dave Camp.

cc: Honorable Max Baucus
Chairman
Senate Committee on Finance

Honorable Judd Gregg
Ranking Member
Senate Committee on the Budget

Honorable Kent Conrad
Chairman
Senate Committee on the Budget

Honorable Thad Cochran
Ranking Member
Senate Committee on Appropriations

Honorable Daniel K. Inouye
Chairman
Senate Committee on Appropriations