



## How Will The Budget Stimulus Work When Central Bank Rates Are Close to Zero?

Why Tax Cuts Are The Worst Possible Fiscal Stimulus

*By Arthur Donner and Doug Peters*

What is the correct mix of policies within a fiscal stimulus package (tax cuts, government spending increases, or both) when an economy is in recession, prices are falling, and interest rates are extremely low and close to zero?

Recall that this is a scenario associated with the scourge of price deflation, of the expectation of continuously falling prices leading to further postponing of spending. As unemployment and excess industrial capacity rises, this tends to lead to falling wages and prices. A serious by-product of a deflationary economy is that, despite low nominal interest rates, real or inflation adjusted interest rate costs increase. Thus, serious recessions, which lead to lower inflation, can trigger a destructive deflationary spiral.

With Canada's new budget approved by Parliament and the US budget package approved by Congress, the question becomes how quickly and how effectively will the two fiscal stimulus packages work? Both countries Finance and Treasury Departments provide some rough indicators of magnitude and speed in their budget papers.

The Keynesian concept of the multiplier is at the heart of the analytical debate relating to budget impacts and effectiveness. In plain words, the multipliers measure the bang one gets for the fiscal buck—the amount of short-run economic expansion one gets from a dollar of spending hikes or tax cuts.

Multipliers can be estimated from historical data to analyze the effects of any component of fiscal policy on the economy (or GDP). For that matter, multipliers can be calculated for any kind of expenditure shift or change in income on GDP. For example, if a planned increase in government spending of \$100 occurs, with no change in taxes, and this causes GDP to grow by \$150, then the spending multiplier for that activity is 1.5. Other types of multipliers can be calculated, such as multipliers associated with tax cuts. Since some portion of a tax cut is usually saved and does not pass directly into the spending stream, tax multipliers tend to be lower than government spending multipliers.

The effectiveness of the multipliers for expenditure increases and tax cuts are set out for Canada in Table 1. That table indicates that expenditure increases, especially on infrastructure, are most quickly effective in producing results by increasing real Gross Domestic Product (and thus jobs) with multiplying effects of one-and-one-half times in the second year (2010) and a full one times in the first year (2009).

As expected, tax cuts are less effective in the short term, having multiplier effects of less than one in both years. The exception are tax measures to help low-income families which are effective in the second year. Corporate tax cuts are the least effective, having virtually no effect on the total economy in the first two years.

**Table 1: Expenditure and Tax Multipliers In Canada** (Dollar impact on the level of real GDP of a permanent one dollar increase in fiscal measures)

Expenditure or Tax Measure	2009	2010
Infrastructure Investment	1.0	1.5
Housing Investment Measures	1.0	1.4
Other Spending Measures	0.8	1.3
Measures for low-income households	0.8	1.5
Personal Income Tax Measures	0.4	0.9
Corporate Income Tax Measures	0.1	0.2

**Source:** Department of Finance, Budget 2009, Annex 1, Economic Action Plan: Employment and Output Impacts, January 27, 2009

**Table 2: US Policy Multipliers** (Cumulative impact on GDP over several quarters of various policy options)

Policy Option	Low estimated effect	High estimated effect
Purchase of Goods and Services by the Federal Government	1.0	2.5
Transfers to State and Local Governments for Infrastructure	1.0	2.5
Transfers to State and Local Governments Not for Infrastructure	0.7	1.9
Transfers to Persons	0.8	2.2
Two-Year Tax Cuts for Lower- and Middle-Income People	0.5	1.7
One-Year Tax Cuts for Higher-Income People	0.1	0.5
Tax-Loss Carry back	0	0.4

**Source:** Congressional Budget Office letter to Honorable Charles E. Grassley, March 2, 2009.

**Note:** For each option, the figures shown are a range of “multipliers,” that is, the cumulative change in Gross Domestic Product over several quarters, measured in dollars, per dollar of additional spending or reduction of taxes

In the US there are similar effects to GDP from tax cuts (little effect), and much greater and quicker effects from spending increases, especially on infrastructure.

Not surprisingly, in the case of the recently passed roughly US\$750 billion fiscal stimulus package (the American Recovery and Reinvestment Act of 2009), the deep recession becomes shallower. (See Chart 1.) Of course, one hopes that the larger multipliers are the effective ones, for they would minimize the recession-induced economic decline and the resulting severe job losses.

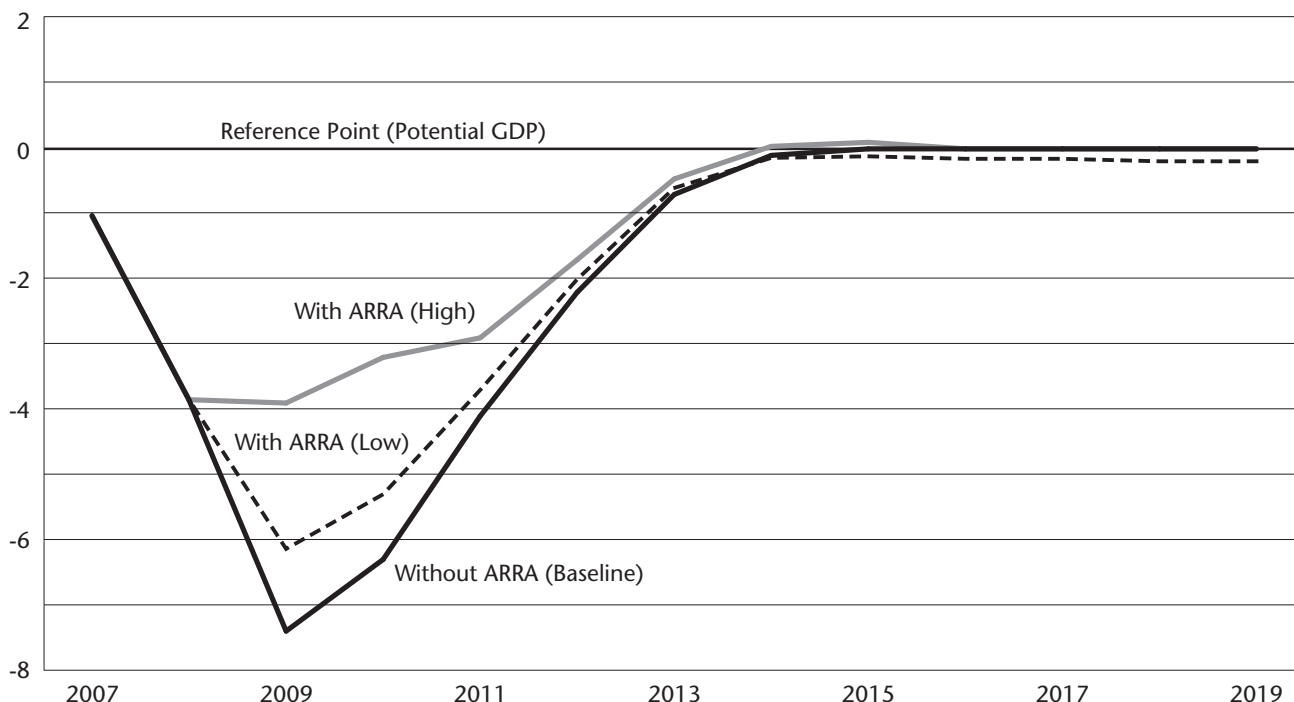
In both countries the fiscal policy multipliers must be treated with caution as central bank interest rates are close to zero in both countries (zero in US and only 0.5% in Canada). An interesting and provocative preliminary study done by economist, G. B. Eggertsson, at the Federal Reserve Bank of New York indicates that there are sharp differences in the multipliers for both spending increases and for tax cuts when central

bank rates are near or at zero. (Gauti B. Eggertsson, *Can a tax cut deepen the recession?* preliminary and incomplete, December, 2008, Federal Reserve Bank of New York, December, 2008)

His study also confirms that when using fiscal policy stimulus at positive interest rates (which are what all economic models are based on), the spending multipliers are larger than tax multipliers.

But when central bank interest rates are zero then spending increases become even more effective in increasing GDP. In fact, he concludes that tax cuts become counterproductive when central bank interest rates are zero, since their effect is to decrease GDP. “...(U)nder the special circumstances which the US is experiencing today—interest rates that are close to zero and deflationary pressures—tax cuts are contractionary in a standard New Keynesian model. Why? Tax cuts cause deflationary pressures in the model and thereby increase real interest rates.” (Real

**Chart 1: Difference Between Potential GDP in CBO's Baseline and Actual GDP Without and With the Impact of the American Recovery and Reinvestment Act of 2009 (Percentage difference in the fourth quarter of each year)**



**Source:** Congressional Budget Office letter to Honorable Charles E. Grassley, March 2, 2009.

interest rates are actual interest rates minus inflation. With a zero interest rate deflation or falling inflation causes real rates to rise.)

Since Canada's central bank rate is already only 0.5%, and could follow the US Federal Reserve rate to zero at the next official change date, one must question the effect that tax cuts might have on the Canadian economy. The New York Federal Reserve economist, Eggertsson, states "...empirical studies on taxes and spending that use post-war data can be misleading in guiding policy today. The entire post-war period was characterized by positive short-term nominal interest rates while they have collapsed to zero today."

The US policy paper is a preliminary one and it may or may not apply to Canada. But what is evident is that the close relationship between monetary and fiscal policies and the relationship between policy measures and the real economy and employment can change significantly when the central bank rate is zero or close to zero.

Canada's stimulus package in the 2009 budget can now come under question as to both its speed and efficacy to expand the economy now in recession. As Canada's central bank interest rates move close to zero the possible negative effect of tax cuts should be carefully considered and of concern to policymakers.

The much greater effectiveness of infrastructure spending will likely be the key to a rapid shift out of recession. If new initiatives are needed, as is likely, then they should be in the area of federal spending on infrastructure programs. One might suggest that to get such spending programs going quickly that the federal financing of infrastructure might be increased to 60 per cent for the first year, with provinces at 30 per cent and municipalities at ten per cent. In the second year the proportions would drop to federal share of 40 per cent, 40 per cent for provinces and 20 per cent for municipalities. In the third year the sharing could go back to the one-third each.

The timing of policy measures is also important. The effects of tax cuts will operate on the economy

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quickly. However, if these effects are negative, as the Eggertsson paper suggests, then the economies will have a sharp decline into recession. That, indeed, seems to be happening now. The effects of spending programs will take some time to expend their funds and will have an effect somewhat later. It would thus be consistent with a sharp rebound of the economy from recession.

Policy makers need to be very careful in designing stimulus packages in a zero interest rate environment. They should be careful to avoid the Hoover-Bennett

formula—the backward-looking policies of those leaders turned the recession of 1930 into the Great Depression. A zero, or near zero, central bank interest rate is unknown territory for the Canadian economy. It is also unknown territory for the economic models used to forecast the effects of government stimulus packages on that economy.

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