The Simple Arithmetic of Boosting Government Purchases

J. Bradford DeLong
U.C. Berkeley and NBER

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An Exceptional Time

This is an exceptional time—a time in which many of the normal rules of the Dismal Science are changed and transformed. It is a time for, as Paul Krugman puts it, not normal economics but rather "depression economics."[1] The terms on which the U.S. government can borrow now are exceptionally advantageous. And because of high unemployment the benefits of boosting government purchases are exceptionally large.

The result is that the normal benefits and costs of borrow-and-spend policies by the government are overturned for the short run—for as long as the current economic crisis of high unemployment lasts. Yet I find that many people do not understand that and how arguments that hold perfectly well in normal times do not apply today. In normal times a boost to government purchases:

- Produces a limited increase in production and employment.
- Is associated with a substantial increase in national debt.
- Which then must be financed at a sizeable interest rate.

[1] Paul Krugman (2008), *The Return of Depression Economics and the Financial Crisis of 2008* (New York: W.W. Norton: 0393337804).

Thus only government spending initiatives that promise a high value for the dollar are worth undertaking. Now, however, things are very different. Let's run through the arithmetic—first in normal times, and then in a financial crisis like this one.

Normal Economic Arithmetic

Consider a $100 billion boost to government purchases in some calendar year. In a normal year the Federal Reserve will worry about inflation, and raise interest rates somewhat to offset the inflationary impact of the fiscal boost. The multiplier will therefore be something like 0.4—we will spend $100 billion on government purchases and gain perhaps $40 billion in extra production and associated employment out of it. Those who earn that extra $40 billion will pay taxes—perhaps $16 billion. So the net impact on the government debt will be that by spending an extra $100 billion we will have added some $84 billion to the national debt.

Normal Government Purchases Arithmetic

NORMAL ECONOMICS	
$100.0	billion in extra government purchases
0.4	government purchases multiplier
$40.0	billion boost to real GDP
0.4	marginal tax and reduced social insurance benefits share
$84.0	billion in extra government debt
$4.2	long-term government financing rate of 5% gives us an annual real amortization cost of.
$60.0	crowding out of investment
$6.0	long-term reduction in real GDP and private-sector incomes
$10.2	net annual cost

That debt must then be amortized. At a 5% per year long-run real rate of interest on government bonds amortizing that debt will cost Americans $4.2 billion a year.

But wait: there is more. The Federal Reserve's fight against inflation and increase in interest rates will have reduced investment: because of the $100 billion in government purchases perhaps $60 billion of private

investment that would have been made won't be made—it will be crowded out. As a result of the lower capital stock, some $6 billion a year of income that would have been earned won't be.

Thus the net cost will be a reduction in Americans' disposable incomes of $10.2 billion per year.

That is not an attractive bargain: to purchase $40 billion of extra production now at the expense of a reduction in incomes of $10.2 billion in every year in the future. That is a usurious real interest rate of 25.5%. No one sane would recommend a policy with such costs and benefits.

Depression Economic Arithmetic

How different are things in times—like now—when depression economics applies!

First, more government spending does not lead the Federal Reserve to raise interest rates to fight inflation—the Federal Reserve has pushed interest rates to the floor right now and wishes it could push them negative, to –5% per year or so. Thus the multiplier is not 0.4 but more like 1.5. We do not get $40 billion of additional production and employment, but rather $150 billion.

Second, that boost to production creates a substantial reflow in taxes that makes the spending program lunch not free but cheaper: $150 billion of added production leads to $60 billion of additional tax revenue, leading to only $40 billion in increased debt.

Third, the financial crisis means not only that there is no offsetting Federal Reserve interest rate increase but also that the government can borrow at uniquely favorable terms: 2% per year in real terms for the next thirty years. Amortizing the $40 billion of additional government debt requires only $800 million a year in additional interest payments and taxes.

Fourth, the absence of Federal Reserve inflation-fearing interest rate

increases means that there is no crowding-out pf private investment. Private-sector incomes down the road are unchanged—or increased.

Depression Government Purchases Arithmetic

DEPRESSION ECONOMICS	
$100.0	billion in extra government purchases
1.5	government purchases multiplier
$150.0	billion boost to real GDP
0.4	marginal tax and reduced social insurance benefits share
$40.0	billion in extra government debt
$0.8	long-term government financing rate of 2% gives us an annual real amortization cost of...
$0.0	zero crowding out of investment
$0.0	no long-term reduction in real GDP and private-sector incomes
$0.8	net annual cost

The net cost? $800 million per year. To gain $150 billion of increased production and incomes this year at a cost of an $800 million a year payment going forward—that is an investment worth doing at any hurdle interest rate greater than 0.53% per year. It's not a free lunch—they take away my union card as an economist if I start claiming that things are free lunches—but it is a very cheap lunch: like getting a 2 lb. lobster with all the trimmings for $1.95.

How Big Should the Fiscal Boost Be?

To my mind, it is a no-brainer given the arithmetic that we should be doing an extra $100 billion in stimulus. In fact, it is a no-brainer that we should be doing several more such tranches.

How many? Well, the arithmetic holds until:

- Further tranches of additional deficit spending stoke inflation and lead the Federal Reserve to take steps to offset their impact on production and employment.
- Further tranches of stimulus lead to a deterioration in the long-term corporate bond market and crowd-out private investment.

- Further tranches of stimulus undermine confidence in U.S. long-term public finances and must be financed at higher Treasury interest rates.

Last December Lawrence Summers and the rest of the incoming Obama National Economic Council feared that an increase in the size of the Obama additional deficit-spending program from $800 billion to $1.2 trillion would bring these factors into play. It is now reasonably clear that they were overly pessimistic about the effects of additional short-term government spending, in large part because they were overly optimistic about the state of the economy.

How many more such $100 billion tranches should we undertake? I would favor starting with $100 billion next month, and continuing with an additional $100 billion program every month while we watched the bond market and the inflation forecasts, and saw.

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