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Tax Cuts and Economic Stimulus: How Effective Are the Alternatives?

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Summary

Several different types of tax cuts have been debated during the consideration of the fiscal stimulus bill, which was eventually enacted in early March 2002 (H.R. 3090). Among the tax cuts discussed are tax rebates targeted towards lower income individuals, a speed-up of already planned tax rate reductions for higher income individuals, a temporary sales tax holiday, a temporary payroll tax holiday, a temporary investment stimulus (which was ultimately included in H.R. 3090), and corporate tax cuts (primarily repealing the alternative minimum tax). A tax cut is more effective the greater the fraction of it that is spent. Empirical evidence suggests individual tax cuts will be more likely to be spent if they go to lower income individuals, making the tax rebate for lower income individuals likely more effective than several other tax cuts. There is some evidence that tax cuts received in a lump sum will have a smaller stimulative effect than those reflected in paychecks, but this evidence is limited and the results subject to some reservations. While temporary individual tax cuts in general are likely to have smaller effects than permanent ones, temporary cuts that are contingent on spending (such as temporary investment subsidies or a sales tax holiday) are likely more effective than permanent cuts. (Sales tax holidays may, however, be very difficult to implement in a timely fashion). The effect of business tax cuts is uncertain, but likely to be quite small for tax cuts whose main effects are through cash flow. This report will be updated as events warrant.

Several different types of tax cuts have been discussed during consideration of the fiscal stimulus. Some have been included in various versions of the stimulus tax cut legislation (H.R. 3090, H.R. 3529 and H.R. 622 as amended) and some of the debate has centered on the effectiveness of alternatives. Among the tax cuts discussed are tax rebates targeted towards lower income individuals, a speed-up of already planned tax rate reductions for higher income individuals, a temporary sales tax holiday, a temporary payroll tax holiday, a temporary investment stimulus, and corporate tax cuts (primarily repealing the alternative minimum tax). The final version of H.R. 3090 included a temporary investment stimulus.

Effectiveness of a tax cut for short run stimulus purposes is judged by the extent to which the tax cut increases private demand (either consumption or investment spending). A tax cut that is saved will have no short term stimulative economic effect (or long term one, if the cut is financed by a deficit, since increased private saving would be offset by decreased government saving). Thus, in general, tax cuts received by individuals will not be successful as a short run stimulus if they lead to additional saving, and tax cuts received by firms will not be successful unless they lead to spending on investment (or lead quickly to spending on consumption by shareholders).

The following four propositions can generally be supported by economic theory and empirical evidence:

(1) Individual income tax cuts directed at lower income individuals will likely have a larger effect than cuts directed at higher income individuals, other things equal. This distributional effect suggests that the most effective tax cut would be a rebate which is not only a flat amount but specifically directed at lower income individuals (who did not have tax liability). While payroll and sales taxes are more concentrated among moderate and lower individuals than the normal income tax, they are largely proportional taxes and the bulk of them will still go to middle and higher income individuals. Most income tax cuts actually exclude the bottom 20% of the population who do not pay income tax. The speed-up of rate reductions will be concentrated among the top 30% of those who do pay the income tax.

(2) There is weak empirical evidence that a lump sum tax cut is less likely to be spent than one that is received in small amounts increments (e.g. through withholding). This effect could make the rebate less effective than alternative individual tax cuts if it were not for the distributional evidence. However, the distributional effect is more solidly grounded in economic theory, and is based on more concrete and extensive empirical evidence.

(3) Certain types of temporary tax cuts are likely to be more effective than permanent ones while, in other cases, they are less effective. The most important illustration of this effect is a temporary investment subsidy, but it could also apply to a temporary sales tax holiday or any design where spending is required to obtain the subsidy and is for a limited duration. Otherwise, temporary cuts are likely to be less effective than permanent ones.

(4) Corporate tax cuts that do not make new investments more profitable are unlikely to have much effect on investment or consumer spending, especially when the economy is in a recession.

The remainder of this report provides a summary of the evidence and economic reasoning supporting these propositions. Before discussing these propositions, however, it is important to note the differences between a model where individuals consume based primarily on current income compared to those where individuals consume primarily out of permanent (lifetime) income, because much of the empirical analysis focuses on this issue. Optimal lifetime consumption models imply that consumption is based on permanent income and suggest very little will be spent out of transitory income (because it has little effect on permanent income). Thus, a temporary tax cut, which is the normal mode of a fiscal stimulus, would be ineffective. Extensive empirical investigation has rejected this permanent income model in its pure form and suggests that consumption responds to permanent and current income.

Proposition 1: A tax cut directed at lower income individuals should have a larger effect on spending than one directed at higher income individuals.

Data show that the fraction of income saved rises as income rises. For example, the saving rate in the top 1% of the income distribution is over 10 times the rate in the lowest 20%, and is almost three times the average.

This pattern is far too pronounced to be accounted for by business cycle reasons and cannot be explained by life cycle patterns and thus, itself implies a departure from the permanent income model of consumption.¹ A saving rate that rises across incomes could be expected even in a permanent income model if each individual has the same permanent saving rate. At any time, some individuals may be earning lower than average amounts and others higher than average amounts. Thus the transitory income would understate permanent income in some cases and overstate it in others. Since more individuals with unusually low incomes would fall into the lower groups (and more with higher incomes into the high groups), some pattern of rising saving rates is expected. But empirically the effect is far too large to be explained by this phenomenon (which can be examined by looking at variations over time for an individual). A rising saving share with income could also arise from life cycle reasons. Typically income is low in the early years of life, rises during the working career and falls at retirement. If individuals want consumption to be smoother than income, they will save less when they are young and old and have lower incomes, and save more in the middle when they have higher incomes. However, when examining the data, we find that age does very little to explain saving behavior and the patterns of rising saving rates with income persist within age groups.

Aside from these empirical observations, there are theoretical reasons to expect that lower income individuals are likely to spend more of an additional dollar of income than do higher income individuals, especially in the case of a temporary tax cut, which is the kind of cut normally associated with fiscal stimulus. They may have a lower lifetime saving rate because social welfare programs are likely to have a higher wage replacement rate during instances of bad luck (e.g. disability) or old age and because they are less likely to wish to leave bequests. Indeed, for some means-tested programs, assets can disqualify an individual from coverage. They may have less information with which to optimize over time and, if they save at all, simply have a target amount (at least in the short run), so that additional income is spent (including temporary income increases). Finally, they are more likely to be subject to liquidity constraints; that is, to prefer to spend more than their earnings and not be able to because they cannot borrow and have no assets. Indeed, permanent income theories suggest that for a temporary tax cut, tax cuts for non-liquidity constrained individuals may have virtually no effect, while tax cuts for liquidity constrained individuals will be largely spent.²

¹ See Martin Browning and Annamaria Lusardi, "Household Savings: Micro Theories and Micro Facts," *Journal of Economic Literature*, vol. 34, December 1996; Congressional Budget Office, "Can Permanent Income Theory Explain Cross Section Consumption Patterns?," Technical Paper 1997-3, John Sabelhaus and Jeff Groen, July 1997.

² An extensive literature has addressed these issues. They are related to the empirical rejection, by and large, that consumption is solely determined by permanent income, as occurs with rational, optimizing models of consumer behavior in perfect capital markets (as reviewed in Brown and
(continued...)

Proposition 2. A tax cut provided through a lump sum payment may be less likely to be spent than one which shows up in withholding, but the evidence is weak.

This differential effect (which would not occur in a permanent income model) was pointed out by the Congressional Budget Office (CBO) in its recent comparison of the effectiveness of alternative tax cuts.³ CBO referred to a comparison of results from two studies that examined the effect of income tax refunds, and of expected rate cuts from pre-announced tax cuts of the early 1980s.⁴ Both studies rejected the permanent income model (suggesting some spending effects from a transitory tax cut), but larger effects were found for the rate reductions.

There are, however, two reservations about comparing these two events to gain insight into the effects of lump-sum tax cuts versus tax cuts reflected in paychecks over time. First, to the extent that individuals use over-withholding as a means of forcing themselves to save, one would not expect spending to rise when the refund is received, even though it might rise when an unplanned rebate is received. Thus, finding a smaller amount of spending out of a refund than out of tax cuts reflected in pay checks may not be very meaningful. Secondly, the model assumes that individuals were certain that the later phases of the Reagan tax cuts would be received. If there was some uncertainty, however, the fact that spending did not increase until the tax cut was actually received may partially reflect not the failure of the permanent income model, but the lack of certainty about receipt of the cut.

² (...continued)

Lusardi, cited above). These empirical tests generally find a smaller marginal propensity to consume than is indicated by long run, economy wide savings rates, but nevertheless one far above zero. Some economists have suggested that heterogeneity among consumers is responsible, that is, that some individuals behave according to the rational optimizing model, while the consumption of others is closely affected by current income. There is evidence that liquidity constraints play an important role. In addition to the review in Brown and Lusardi, above, see N. Gregory Mankiw, "The Savers-Spenders Theory of Fiscal Policy," *American Economic Review*, Vol. 90, May 2000, pp. 120-125 for a review and two additional papers that find support for liquidity constraint effects: Jonathan A. Parker, "The Consumption Function Revisited" (working paper); and Jonathan McCarthy, "Imperfect Insurance and Differing Propensities to Consume Across Individuals," *Journal of Monetary Economics*, Vol. 36, November, 1995, pp. 301-327. However, positive results are not universally found including results in several recent studies (Nicholas Souleles, "The Response of Household Consumption to Income Tax Refunds," and Jonathan Parker, "The Reaction of Household Consumption to Predictable Changes in Social Security Taxes," both in the *American Economic Review*, vol. 89, September 1999, pp. 947-958, and 959-973; Nicholas Souleles, "Consumer Response to the Reagan Tax Cuts," forthcoming, *Journal of Public Economics*). Studies that have not found effects, however, have generally excluded or under-represented low income individuals who are most likely to be liquidity constrained. In addition, the Souleles study may be flawed if overwithholding is used as a form of forced savings by low and moderate income individuals and the Parker study may be flawed if there are unmeasured seasonal differences in spending by wealth.

³ Congressional Budget Office, *Economic Stimulus: Evaluating Proposed Changes in Tax Policy*, January 2002.

⁴ See the Souleles articles discussed in footnote 2.

If a differential does indeed exist, this effect could make the payroll tax cut (and sales tax holidays) more effective than a rebate. However, these “lump sum” effects would have to be offset by the distributional effects discussed in proposition I and supported by considerable empirical evidence. For that reason, it would be difficult to conclude that a payroll tax holiday would be more effective than a rebate directed at low income individuals.

Proposition 3. Certain types of temporary tax cuts may be more effective than permanent ones.

In general, the permanent income modeling of consumption, even when it does not hold in a pure form, suggests that temporary tax cuts will be less effective than permanent ones, presenting something of a dilemma because, tax cuts motivated for fiscal policy reasons need to be temporary (if they are not to hamper long term growth). However, temporary tax cuts that depend on spending (rather than receiving income) are likely to be more effective in the short run than permanent ones. During a period of slack employment, a payroll or individual income tax cut is simply a temporary windfall which can be spent at any time without any further consequence for the size of the tax cut. But if the tax benefit is triggered by spending, a temporary tax cut will be more effective (just as a temporary sale tends to induce a large response). The most common example is the investment tax credit or a similar subsidy, such as temporary partial expensing of investment, but the same would be true of a temporary sales tax holiday.

Note that while this feature may make a temporary tax cut more effective than a permanent one, it does not mean that the stimulus is more effective than other alternatives when all factors are considered. Most evidence suggests that investment subsidies have a small effect on investment.⁵ And, it may be particularly difficult to induce investment (even with a temporary subsidy) when excess capacity exists. While firms benefit from the temporary subsidy, they lose the benefit of delaying cash outlays. If investment is insensitive to these cost effects, a subsidy directed at increasing consumption may be more effective even if the latter is not the type where the temporary nature provides a benefit. In the case of the sales tax holiday versus other individual cuts, there may be a substantial implementation lag in arranging the sales tax holiday since sales taxes are imposed by the states, and fiscal stimulus may be applied at the wrong time. Moreover, the anticipation of the holiday should be contractionary. That is, a pre-announced future temporary spending subsidy is initially contractionary.

Proposition 4. Corporate tax cuts that do not make new investments more profitable would not have much effect.

A repeal of the corporate alternative minimum tax with a refund of existing credits does not necessarily make new investment more profitable; indeed, it is possible that new investment may be subject to higher tax burdens under the regular rates than under the lower rates in the AMT.

⁵ See CRS Report RL31134, *Using Business Tax Cuts to Stimulate the Economy*, for a survey of the evidence and for a general discussion of different types of business tax subsidies.

Economic theory suggests that the investment decision should be driven by its expected profitability. A tax decrease not associated with that profitability should have no effect on investment. Rather, a tax decrease (which increases a firm's cash flow) is more likely to be spent on reducing debt, or paying out dividends. Both choices would not expand aggregate demand.⁶

There is a potential constraint, however: if the firm does not have access to outside capital or finds outside capital excessively costly, cash flow might have an effect on investment. This effect would be likely, however, to be focused on small firms, and most of the AMT is paid by large ones.

There is some empirical evidence of a positive relationship between firm investment and cash flow. However, interpreting this evidence with respect to the effectiveness of a corporate cash flow as a stimulus to investment spending during an economic contraction is hampered by two important reservations. First, in most cases, cash flow is correlated with the productivity of investment and investment growth, and investment may be responding not to cash flow but to investment outlook. Secondly, even if there is some independent effect of cash flow in normal circumstances, then whether an increase in cash flow would induce a firm to make new investments during periods of excess capacity is doubtful.⁷ In any case, a choice that is more focused on investment (such as an investment subsidy) would have a more pronounced effect than one that is not.

Note also that some large multinational firms are subject to the AMT because of limits on the foreign tax credit. Eliminating the AMT in their case would make investment more attractive abroad, not in United States. Spending on investment abroad would not directly increase aggregate demand in the United States, although it could have effects on exchange rates and, eventually, on net exports.

⁶ It is possible that knowledge of a tax cut could induce stockholder's consumption, or that cash flow translated into dividends would do so, but this effect is delayed and less certain than a direct tax benefit, as well as accruing to higher income individuals who are less likely to spend it.

⁷ For a survey of this issue, see R. Glenn Hubbard. "Capital Market Imperfections and Investment," *Journal of Economic Literature*, vol. 36, March 1998, pp. 193-225.