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

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Summary

The economic effects of the COVID-19 pandemic may lead Congress to consider a general fiscal stimulus in the form of tax cuts. This report discusses tax cuts enacted during the previous recessions and their potential effectiveness.

In response to the Great Recession several types of tax cuts were debated as possible fiscal stimulus bills—with fiscal stimulus legislation enacted in February, 2008 (P.L. 110-185) and a much larger one in February 2009 (P.L. 111-5). Both bills included individual tax cuts aimed at lower- and middle-income individuals, along with business tax cuts. In December 2010, along with an extension of expiring tax cuts, a temporary payroll tax cut was adopted. Many, but not all, tax cuts that were expiring after 2012 were extended permanently.

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 weak evidence that tax cuts received in a lump sum will have a smaller stimulative effect than those reflected in paychecks, but this evidence is uncertain. However, studies of the 2001 rebate found that a significant amount of that rebate was spent. While temporary individual tax cuts likely have smaller effects than permanent ones, temporary cuts 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.) The effect of business tax cuts is uncertain, but likely small for tax cuts whose main effects are through cash flow.

The economic effects of the COVID-19 pandemic may lead Congress to consider a general fiscal stimulus in the form of tax cuts. This report discusses tax cuts enacted during the previous recessions and their potential effectiveness.

Several tax cuts were discussed during consideration of fiscal stimulus in response to the Great Recession, and the specific proposal (the American Recovery and Reinvestment Act of 2009, P.L. 111-5). This stimulus as enacted included individual tax cuts directed at lower- and middle-income individuals and also included business tax cuts.

An earlier fiscal stimulus (P.L. 110-185) adopted in February 2008 included rebates and accelerated depreciation (bonus depreciation) for businesses. Some of these types of provisions were included in stimulus tax cut legislation in 2001-2003 and some of the debate centered on the effectiveness of alternatives. Among the tax cuts discussed in 2001 were tax rebates targeted towards lower-income individuals, a speed-up tax rate reductions for higher income individuals, a temporary sales tax holiday, a temporary payroll tax holiday, a temporary investment stimulus, corporate tax cuts (primarily repealing the alternative minimum tax), and dividend reductions. The 2001 tax cut included a rebate and the final version of the 2002 tax cut bill included a temporary investment stimulus. President Bush proposed accelerated rate cuts and dividend relief in his stimulus package for 2003. Proposals such as rebates were made by Democratic leaders. Although the economy recovered from the recession, issues of fiscal stimulus arose again in the 109th Congress in the wake of Hurricane Katrina. The tax stimulus enacted in response included rebates for both low and middle income individuals and temporary bonus depreciation for businesses.

In February of 2009, Congress passed a much larger package (P.L. 111-5), which included spending and tax cuts. Among tax cuts the single largest provision was a two-year refundable earnings credit, the making-work-pay credit, with a dollar cap that was provided through a change in withholding rather than a rebate. Other tax components target lower-income individuals and businesses. The business provisions included a bonus depreciation extension and a carryback of net operating losses. The legislation also extended the Alternative Minimum Tax, which tends to go to higher-income individuals.

In December of 2010, along with extending expiring tax cuts (which tended to benefit middle- and higher-income individuals) and unemployment benefits, P.L. 111-312 adopted a temporary two-percentage-point reduction in the payroll tax. As with the making-work-pay credit, its benefits were received in paychecks over time, and unlike the rebate or making-work-pay credit, was not targeted to lower- and middle-income families. Many, but not all, tax cuts that were expiring after 2012 were extended permanently. The payroll tax was not extended, and bonus depreciation was extended for a year.

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 lower-and moderate-income 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 44% of the population who do not pay income tax unless they are refundable (as with the February 2008 cut). Similarly, payroll tax cuts exclude 16% of the population who do not pay payroll taxes.[1] Tax reductions enacted in 2001 were concentrated among the upper part of the income distribution as are dividend and capital gains tax reduction. A flat dollar reduction, if refundable, would be more concentrated on lower and middle incomes than tax cuts that reduce rates or allow deductions.

(2) There is weak empirical evidence that a lump sum tax cut is less likely to be spent than one received in small increments (e.g. through withholding). This effect could make a 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, and the effect of corporate rate cuts is likely small.

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.

[1] Philip Stallworth and Daniel Berger, "The TCJA Is Increasing The Share Of Households Paying No Federal Income Tax, Tax Policy Center," September 5, 2018, https://www.taxpolicycenter.org/taxvox/tcja-increasing-share-households-paying-no-federal-income-tax.

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.[2] One study found that the savings rate for the top 1% was at least 300 times the average.[3] Arraying families by wealth, another study found that the top 1% saved 37%, the next 9% saved 15%, and the bottom 90% saved 0%.[4]

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.[5] 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.

[2] This pattern can found in data from the Bureau of Labor Statistics, Consumer Expenditure Survey, https://www.bls.gov/cex/2018/combined/decile.pdf, although there are a number of concerns about measurement in this survey, especially with respect to capturing high incomes or capturing all income. The bottom 10% had a negative savings rate of 4.3% and the second 10% had a 2.8% saving rate, whereas the top 10% had a 24.6% saving rate.

[3] Rishabh Kumar, "Personal Savings from Top Incomes and Household Wealth Accumulation," *International Journal of Political Economy*, vol. 45, 2016, pp. 224-240.

[4] Emmanuel Saez and Gabriel Zucman, "Wealth Inequality in the United States Since 1913," *Quarterly Journal of Economics*, vol. 131, iss. 2, May 2016, pp. 516-538.

[5] See Martin Browning and Annamaria Lusardi, "Household Savings: Micro Theories and Micro Facts," *Journal of Economic Literature*, vol. 34 (December 1996); and John Sabelhaus and Jeff Groen, *Can Permanent Income Theory Explain Cross Section Consumption Patterns?*, Congressional Budget Office, Technical Paper 1997-3, July 1997. The general view that incentives directed at low-income individuals are more effective is reflected in different multipliers used by macroeconomic forecasters, as discussed in CRS Report R45780, *Fiscal Policy Considerations for the Next Recession*, by Mark P. Keightley.

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.[6]

[6] 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 Browning and 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 an additional paper that finds support for liquidity constraint effects: 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," *Journal of Public Economics*, vol. 85, 2002, pp. 99-120). 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. In addition, in two studies examining individual responses to rebates (provided in 2001 and in 2008) evidence suggested that lower-income households spent more of their income. See David S. Johnson, Jonathan A. Parker, and Nicholas S. Souleles, "Household Expenditures and the Income Tax Rebate of 2001," *American Economic Review*, vol. 96, December 2006, pp. 1589-1610 and Jonathan Parker, Nicholas Souleles, David S. Johnson, and Robert McClelland, "Consumer Spending and the Economic Stimulus Payment of 2008," *American Economic Review*, vol. 103, no. 6, 2013, pp. 2530-2553. A study of the 2011 payroll tax cut using survey data that asked respondents about how they spent the tax cut found no differences between spending shares by income. See Grant Graziani, Wilbert van der Klaauw, and Basit Zadar, "Spending Response to the 2011 Payroll Tax Cuts," *American Economic Review*, vol. 8, no, 4, 2016, pp. 124-159. Parker and Souleles find, in their study of the 2008 rebate, that while answers to survey questions do not show a difference across incomes, inferences about actual spending do show a difference. See Jonathan A. Parker and Nicholas S. Souleles, "Reported Effects vs. Revealed Preference Estimates: Evidence from the Propensity to Spend Tax Rebates," *American Economic Review: Insights*, vol. 1, no. 3, pp. 273-290.

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 studies of the effectiveness of alternative tax cuts.[7] 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.[8] 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 paychecks 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. 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. In addition, some evidence on the 2001 and 2008 tax rebates suggested that a large fraction of that rebate was spent.[9] Evidence on the payroll tax cut in 2011 found a smaller share of that tax cut spent than the rebate, but that difference may reflect methodological and distributional differences or differences in economic conditions.[10]

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[7] Congressional Budget Office, *Economic Stimulus: Evaluating Proposed Changes in Tax Policy*, January 2002 and *Options for Responding to Short-Term Economic Weakness*, January 2008.

[8] See Nicholas Souleles, "The Response of Household Consumption to Income Tax Refunds," *American Economic Review*, vol. 89 (September 1999), pp. 947-958; and Nicholas Souleles, "Consumer Response to the Reagan Tax Cuts," forthcoming, *Journal of Public Economics*.

[9] David Johnson, Jonathan Parker, and Nicholas S. Souleles, "Household Expenditures and the Income Tax Rebates of 2001," *American Economic Review*, vol. 96, no. 5 (December 2006), pp. 1589-1610; Sumit Agarwal, Chunlin Liu, and Nicholas S. Souleles, "The Reaction of Consumer Spending and Debt to Tax Rebates: Evidence from Consumer Credit Data," *Journal of Political Economy*, vol. 115, no. 6 (December 2007), pp. 986-1019; and Jonathan Parker, Nicholas Souleles, David S. Johnson, and Robert McClelland, "Consumer Spending and the Economic Stimulus Payment of 2008." A recent survey of study of the 2009 income tax cut that would lead economists to predict a larger spending rate actually showed a smaller one on surveys. See Claudia R. Sahm ,Matthew D. Shapiro, and Joel B. Slemrod, *Check in the Mail or More in the Paycheck: Does the Effectiveness of Fiscal Stimulus Depend on How it is Delivered*?, National Bureau of Economic Research Working paper 16246, July 2010, Joel B. Slemrod at http://www-personal.umich.edu/~shapiro/papers/w16246.pdf. This finding may simply reflect the lack of reliability of survey results, however. Parker, Souleles, Johnson and McClellan (cited above) found answers to survey questions to be poor predictors of response. In a subsequent study of the 2008 rebate, Parker and Souleles found survey responses related to statistical estimates of spending, but with higher responses from statistical evidence. They generally found a large fraction of the 2008 rebate to be spent with somewhat higher spending by lower-income households. See Jonathan A. Parker, Nichols S. Souleles, "Reported Effects vs. Revealed Preference Estimates: Evidence from the Propensity to Spend Tax Rebates," *American Economic Review: Insights*, vol. 1, no. 3, pp. 273-290.

[10] Grant Graziani, Wilbert van der Klaauw, and Basit Zadar, "Spending Response to the 2011 Payroll Tax Cuts," *American Economic Review*, vol. 8, no. 4, 2016, pp. 124-159. This study relied on survey data.

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. Although expensing of equipment is no longer an option (as 100% is currently allowed following the 2017 tax cut), investment credits would still be a possible investment incentive.

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 and that the temporary investment subsidy enacted in 2006 was not very effective.[11] 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; corporate rate cuts are less effective than investment subsidies.

One proposal considered in the past was a repeal of the corporate alternative minimum tax with a refund of existing credits. Such a change 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. The corporate AMT was permanently repealed after the 2017 tax cut, but other measures of a similar nature might be considered. An extension of net operating loss (NOL) carrybacks was proposed in the 2009 stimulus package and would likely not make investments more profitable although a restoration of NOLs (which were eliminated in the 2017 tax cut, might be considered to aid businesses severely affected by COVID-19). [12]

[11] See CRS Report RS22790, *Tax Cuts for Short-Run Economic Stimulus: Recent Experiences with Rebates and Bonus Depreciation*, coordinated by Jane G. Gravelle and CRS Report R43432, *Bonus Depreciation: Economic and Budgetary Issues*, by Jane G. Gravelle for a review of the evidence indicating that this investment incentive was not very effective. See also CRS Report R41034, *Business Investment and Employment Tax Incentives to Stimulate the Economy*, by Thomas L. Hungerford and Jane G. Gravelle (available upon request) for a broader comparison of business incentives.

[12] See CRS Insight IN11240, *COVID-19: Potential Role of Net Operating Loss (NOL) Carrybacks in Addressing the Economic Effects*, by Mark P. Keightley.

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.[13] Similarly, a corporate rate reduction, which largely benefits existing capital, would have modest effect compared to a stimulus directed at new investment. An extension of net operating loss carrybacks as proposed in the 2009 stimulus package would likely not make investments more profitable (although such a measure might be considered to aid businesses severely affected by COVID-19).

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. 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.[14] 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. During the period of tight credit now being experienced a net operating loss carryback may have more effect because distressed firms are finding it more difficult to borrow.

General corporate rate cuts are less likely to be effective than investment subsidies because they have a smaller "bang-for-the-buck" because much of their cost is a windfall that only affects cash flow and not the return to new investment. Since even temporary investment subsidies do not appear to have worked effectively, a corporate rate cut or other provision that primarily affects cash flow would be expected to have a small effect.

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[13] 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.

[14] 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.