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

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Summary

The economic effects of the Coronavirus Disease 2019 (COVID-19) pandemic has led Congress to enact general fiscal stimulus in the form of tax cuts and spending increases. Further stimulus may be considered. This report discusses tax cuts enacted during the Great Recession, as well as those recently enacted and those under consideration.

In response to the Great Recession several types of tax cuts were debated as possible fiscal stimulus—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 for stimulus 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. Multiplier estimates reflect these considerations.

Multiplier estimates from fiscal stimulus enacted during the Great Recession suggest that the most effective tax stimulus provisions in the recent legislation addressing the COVID-19 pandemic were likely the individual rebates, with business provisions having smaller effects. The Paycheck Protection Program and spending and transfer programs were also likely to have larger effects, although some of these demand-side stimulus programs that transferred incomes to individuals may be less effective due to the unique nature of the supply constraints in the current environment. Even if they do not stimulate spending, these measures could also be viewed as relief measures that may help individuals and businesses deal with debt and be more able to comply with social distancing measures designed to prevent the spread of the coronavirus.

The economic effects of the Coronavirus Disease 2019 (COVID-19) pandemic has led Congress to consider general fiscal stimulus in the form of tax cuts. Additional stimulus proposals are under consideration. This report discusses tax cuts proposed or enacted during the Great Recession, current enacted provisions, and potential ones, and their potential effectiveness.

Tax Cuts During the Great Recession

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 toward lower-income individuals, a speed-up of 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 targeted 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. Unlike the rebate or making-work-pay credit, the payroll tax reduction 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 reduction was not extended, and bonus depreciation was extended for a year.

Tax Cuts In Response to the Coronavirus

Congress has enacted four measures relating to the coronavirus. The first was an appropriations bill, the Coronavirus Preparedness and Response Supplemental Appropriations Act, 2020 (P.L. 116-123), which provided \$8.3 billion in emergency funding for federal agencies to respond to the coronavirus. This measure was followed by two relief measures that contained tax provisions. The Families First Coronavirus Response Act (P.L. 116-127) provided refundable employer tax

credits against payroll taxes to compensate for family and medical leave mandated in the bill. The estimated cost is \$95 billion in revenue loss along with \$10 billion in outlays because the credit is refundable.¹ The bill also had spending provisions that increased the total cost to \$191 billion.²

The Coronavirus Aid, Relief, and Economic Security (CARES) Act (P.L. 116-136) had much larger revenue effects, including a refundable rebate, phased out at high-income levels, of \$393 billion (\$142 billion in revenue loss and \$151 billion in outlays), \$229 billion in business tax provisions (primarily increasing the use of net operating losses but including a tax credit for retaining employees costing \$55 billion), and a number of minor individual tax provisions costing \$11 billion. The bill also provided a delay in the payment of payroll taxes, increasing cash flow by \$352 billion in the first two years, which were subsequently offset by later payments.³

The CARES Act also included another relief provision, the Paycheck Protection Program (PPP), which was structured as a loan for small business that could be forgiven if the business retained workers. The PPP was estimated to cost \$377 billion, and it also contained a provision excluding the forgiven loan from being included in income (which the tax law otherwise would have counted as income).⁴ The exclusion may be negated by IRS guidance disallowing the deduction of expenses.⁵ Although structured as a loan forgiveness, such a program has a similar effect as the employee retention tax credit. The PPP can also be considered as an alternative to unemployment benefits because loan forgiveness is contingent on retaining and paying employees.

The CARES Act also had direct spending, transfers, and other deferrals or loans that increased its overall cost to \$1.7 trillion; the largest of these provisions in dollar terms was an expansion in unemployment benefits that cost \$268 billion.⁶

The final bill, The Paycheck Protection Program and Health Care Enhancement Act (P.L. 116-139)⁷ did not include tax provisions. It would add \$321 billion to the PPP, \$62 billion in additional small business loan authority, and \$100 billion in health-related spending (\$75 billion for health providers and \$25 billion for COVID-19 testing).

¹ For a discussion, see CRS Insight IN11243, *Tax Credit for Paid Sick and Family Leave in the Families First Coronavirus Response Act (H.R. 6201) (Updated)*, by Molly F. Sherlock.

² See Congressional Budget Office, H.R. 6201, Families First Coronavirus Response Act, April 2, 2020, at <https://www.cbo.gov/publication/56316>.

³ Congressional Budget Office, H.R. 6201, Families First Coronavirus Response Act, April 2, 2020, at <https://www.cbo.gov/publication/56316>. For a summary of the tax provisions with links to CRS products, see CRS Report R46279, *The Coronavirus Aid, Relief, and Economic Security (CARES) Act—Tax Relief for Individuals and Businesses*, coordinated by Molly F. Sherlock.

⁴ See CRS Report R46284, *COVID-19 Relief Assistance to Small Businesses: Issues and Policy Options*, by Robert Jay Dilger, Bruce R. Lindsay, and Sean Lowry. A comparison of the program with the employer retention tax credit can be found in CRS Insight IN11324, *CARES Act Assistance for Employers and Employees—The Paycheck Protection Program, Employee Retention Tax Credit, and Unemployment Insurance Benefits: Overview (Part 1)*, coordinated by Molly F. Sherlock; CRS Insight IN11329, *CARES Act Assistance for Employers and Employees—The Paycheck Protection Program, Employee Retention Tax Credit, and Unemployment Insurance Benefits: Assessment of Alternatives (Part 2)*, coordinated by Molly F. Sherlock; and CRS Insight IN11378, *IRS Guidance Says No Deduction is Allowed for Business Expenses Paid with Forgiven PPP Loans*, by Sean Lowry and Jane G. Gravelle.

⁵ See CRS Insight IN11378, *IRS Guidance Says No Deduction is Allowed for Business Expenses Paid with Forgiven PPP Loans*, by Sean Lowry and Jane G. Gravelle.

⁶ See CRS In Focus IF11475, *Unemployment Insurance Provisions in the CARES Act*, by Katelin P. Isaacs and Julie M. Whittaker.

⁷ Congressional Budget Office, H.R. 266, Paycheck Protection Program and Health Care Enhancement Act, April 2, 2020, at <https://www.cbo.gov/publication/56338>.

Additional stimulus legislation may be considered, which might include aid to state and local governments and additional funds for the PPP.⁸

The Effectiveness of Alternative Tax Cuts

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). Because part of a tax cut is saved, no tax cut will be as stimulative as government spending.

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.⁹ 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 and even weaker theoretical basis 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.

⁸ See Rick Newman, Yahoo Finance, May 6, 2020, at <https://finance.yahoo.com/news/what-to-look-for-in-the-fourth-stimulus-bill-195635959.html>.

⁹ Philip Stallworth and Daniel Berger, “The TCJA Is Increasing The Share Of Households Paying No Federal Income Tax, Tax Policy Center,” September 5, 2018, at <https://www.taxpolicycenter.org/taxvox/tcja-increasing-share-households-paying-no-federal-income-tax>.

The remainder of this report provides a summary of the evidence and economic reasoning supporting these propositions, followed by a brief discussion of current policies. 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.¹⁰ One study found that the savings rate for the top 1% was at least 300 times the average.¹¹ Arraying families by wealth, another study found that the top 1% saved 37%, the next 9% saved 15%, and the bottom 90% saved 0%.¹²

This pattern is far too pronounced to be accounted for by business cycle reasons and cannot be explained by life-cycle patterns and thus implies a departure from the permanent income model of consumption.¹³ 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, age does very little to explain saving behavior and the patterns of rising saving rates with income persist within age groups.

¹⁰ This pattern can be 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.

¹¹ Rishabh Kumar, "Personal Savings from Top Incomes and Household Wealth Accumulation," *International Journal of Political Economy*, vol. 45 (2016), pp. 224-240.

¹² 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.

¹³ See Martin Browning and Annamaria Lusardi, "Household Savings: Micro Theories and Micro Facts," *Journal of Economic Literature*, vol. 34 (December 1996), pp. 1797-1855, 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 temporary tax cuts for non-liquidity constrained individuals may have virtually no effect, while tax cuts for liquidity constrained individuals will be largely spent.¹⁴

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.¹⁵ CBO referred to a comparison of results from two studies that examined the effect of income tax

¹⁴ 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, iss. 2 (May, 2000), pp. 120-125. For a review and an additional paper that finds support for liquidity constraint effects, see Jonathan McCarthy, "Imperfect Insurance and Differing Propensities to Consume Across Individuals," *Journal of Monetary Economics*, vol. 36, iss. 2 (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, iss. 4 (September, 1999), pp. 947-958, and 959-973; Nicholas Souleles, "Consumer Response to the Reagan Tax Cuts," *Journal of Public Economics*, vol. 85, iss. 1 (July, 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, iss. 5 (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 (October, 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, "Workers' Spending Response to the 2011 Payroll Tax Cuts," *American Economic Journal: Economic Policy*, vol. 8, no. 4 (November, 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 (December 2019), pp. 273-290.

¹⁵ Congressional Budget Office, *Economic Stimulus: Evaluating Proposed Changes in Tax Policy*, January 2002; and *Options for Responding to Short-Term Economic Weakness*, January 2008.

refunds, and of expected rate cuts from pre-announced tax cuts of the early 1980s.¹⁶ 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.¹⁷ 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.¹⁸

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

¹⁶ 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,” *Journal of Public Economics*, vol. 85, iss. 1 (July 2002), pp. 99-120.

¹⁷ 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,” *American Economic Review*, vol. 103, no. 6 (October, 2013), pp. 2530-2553. A recent 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?” *American Economic Journal: Economic Policy*, vol. 4, iss. 3 (August, 2012), pp. 216-250. 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 and 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, (December, 2019), pp. 273-290.

¹⁸ Grant Graziani, Wilbert van der Klaauw, and Basit Zadar, “Spending Response to the 2011 Payroll Tax Cuts,” *American Economic Review*, vol. 8, no. 4 (November, 2016), pp. 124-159. This study relied on survey data.

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.¹⁹ 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 temporary restoration of NOL carrybacks (which were eliminated in the 2017 tax cut), as well as additional measures to allow benefits of losses was included in proposals to aid businesses severely affected by COVID-19.²⁰

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.²¹

¹⁹ 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 to congressional clients upon request) for a broader comparison of business incentives.

²⁰ See CRS Insight IN11296, *Tax Treatment of Net Operating Losses (NOLs) in the Coronavirus Aid, Relief, and Economic Security (CARES) Act*, by Jane G. Gravelle; and CRS Insight IN11240, *COVID-19: Potential Role of Net Operating Loss (NOL) Carrybacks in Addressing the Economic Effects*, by Mark P. Keightley.

²¹ 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.

Similarly, a corporate rate reduction, which largely benefits existing capital, would have modest effect compared to a stimulus directed at new investment.

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.²² 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.

Multipliers and the Effectiveness of Stimulus Proposals

This evidence on the effectiveness of alternative stimulus methods is reflected in multipliers. A multiplier indicates how much additional output is produced by a given amount of revenue loss or spending increases. For example, a multiplier of 0.5 estimates that a dollar of revenue loss produces \$0.50 of additional output, whereas a multiplier of 1.5 indicates that a dollar of revenue loss will produce \$1.50 of additional output. Multipliers differ among policies and also depend on how close the economy is to full employment.

During the Great Recession, multipliers for a refundable rebate (constituting most of the individual tax relief in the CARES Act) were estimated in a range of 0.4 to 1.22 by the Congressional Budget Office (CBO) and at 1.22 by a private forecaster (Moody’s).²³ Net operating loss benefits (constituting most of the business provisions in the CARES Act) were estimated at 0 to 0.4 by CBO and 0.25 by Moody’s. Non-tax options, such as direct transfers to individuals and aid to state and local governments had multipliers similar to, or larger than, refundable rebates. CBO estimated multipliers of between 0.4 and 2.1 for direct transfers (such as unemployment) whereas Moody’s estimated multipliers between 1.55 and 1.71. Aid to state and local governments has multipliers estimated at 0.4 to 1.8 by CBO and 1.34 by Moody’s. The larger multipliers for these options reflected the greater share of the benefit spent.

²² For a survey of this issue, see R. Glenn Hubbard, “Capital Market Imperfections and Investment,” *Journal of Economic Literature*, vol. 36, iss. 1 (March, 1998), pp. 193-225.

²³ See CRS Report R45780, *Fiscal Policy Considerations for the Next Recession*, by Mark P. Keightley for a full list of multipliers for different policies.

It is possible that standard multipliers do not apply in this recession when consumers face supply constraints that inhibit spending due to the closure of businesses. By contrast, employment has declined very rapidly since March. Some families receiving tax rebates include workers who have lost their jobs or otherwise seen their incomes diminish due to COVID-19. Although only a subset of the population, their rate of spending may be higher than the standard multiplier would suggest. Penn-Wharton Budget Model researchers estimate that the effects of the CARES Act implies a multiplier of 0.4 for the rebates and 0.2 for business provisions.²⁴ This study assigned similar multipliers of around 0.4 to the PPP and most other provisions but estimated higher multipliers for spending on health and disaster (0.8) and aid to state and local governments (0.7).

Even if the CARES Act and other measures enacted to address the effects of the coronavirus are not very effective as stimulus measures, the measures could also be thought of as relief measures more than stimulus measures. For example, if individuals and businesses use payments to pay debt, these payments do not increase spending, but they may help individuals to avoid credit problems and businesses to survive. They may also make it easier for individual and businesses to comply with social distancing measures to help prevent the spread of the coronavirus.²⁵

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²⁴ Alexander Arnon, Zheli He, and Jon Huntley, Short-Run Economic Effects of the CARES Act, Penn Wharton Budget Model, April 8, 2020, at <https://budgetmodel.wharton.upenn.edu/issues/2020/4/8/short-run-effects-of-the-cares-act>.

²⁵ This view is taken by Grace Enda, William G. Gale, and Claire Haldeman, “Careful or Careless? Perspectives on the CARES Act,” The Brookings Institution, March 27, 2020, at <https://www.brookings.edu/blog/up-front/2020/03/27/careful-or-careless-perspectives-on-the-cares-act/>. For other studies suggesting provisions to stimulate demand might not have as large an effect, but that providing a safety net would be desirable policy, see Emmanuel Saez and Gabriel Zucman, “Opinion: Government Should Say to Businesses: Don’t Lay Anyone Off—We Got This!,” *Market Watch*, March 18, 2020, at <https://www.marketwatch.com/story/government-should-say-to-businesses-dont-lay-anyone-off-2020-03-17>; and Veronica Guerrieri, Guido Lorenzoni, Ludwig Straub, and Ivan Werning, *Macroeconomic Implications of COVID-19: Can Negative Supply Shocks Cause Demand Shortages*, National Bureau of Economic Research, Working Paper 26918, April 2020.

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