# Comments on JCT Efforts To Model Dynamic Economic and Budget Effects Of Fiscal Policy Changes

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## Background.

"Essays In Supply Side Economics", edited by David Raboy, published by IRET, gives a good discussion of the differences among Keynesian, monetarist, neo-classical and rational expectations theories. It will help people to understand what neoclassicists are thinking and whether a model is in line with the supply side or neo-classical approach. It is available on the IRET website, www.iret.org, under the heading "supply-side economics".

Three chapters are particularly useful. "Supply Side Economics and Public Policy", by Norman B. Ture, highlights the focus of Supply Side economics on the relative price effects of fiscal policy changes, and makes the key point that there are no first order "demand" effects from a tax rate change.

"The Theoretical Heritage of Supply Side Economics" by Raboy is an interesting discussion of the roots of supply side and Keynesian economics. He traces supply side thinking back to Smith, Say, Marshall and the marginalists, and traces Keynesian and post-Keynesian philosophy to Malthus. It serves to suggest that economic analysis based on relative price effects, far from being a peculiar recent development, is the mainstream of economic thinking.

"Rational Expectations and Supply Side Economics: Match or Mismatch?" by David G. Tuerck, may be the most useful for the present discussion. It demonstrates that rational expectations and supply side theory are compatible. In particular, it reminds us that the rational expectations view of the ineffectiveness of fiscal policy in altering long run real activity refers to fiscal policies that seek to affect real output through manipulation of aggregate demand. As William Fellner observed, "Rational expectations reduces to two fundamental propositions: (1) that the systematic or anticipated components of government demand-management policy will be neutral with respect to real economic variables and (2) that demand management policies aimed at influencing those variables will, therefore, be ineffective." (Essays, p. 91.) Nota bene: this does not imply that relative price effects of fiscal policy will be ineffective.

## Labor elasticity of supply.

Jane Gravelle has offered a paper reviewing literature on labor supply elasticities. It seeks to answer the question of the relationship between income and substitution effects on labor supply. Jane would like us to assume that labor elasticities of supply may be close to zero. (Note: if it were, then we would be better off imposing all taxes on labor and none on returns to elastically-supplied capital!) Much of the analysis in the literature that is reviewed looks at labor force behavior over time. This research is misdirected and is irrelevant to the real question.

It is sometimes stated that reductions in marginal tax rates would have little effect on hours worked because the workers would have higher disposable incomes as well as a new trade-off between labor and leisure. The positive income effect would lead them to reduce hours worked. The reduced time cost of earning income to buy market goods and services, and the corresponding higher opportunity cost of an hour of leisure, would cause them to work longer. Which effect would dominate is an empirical question that could go either way. We may be on the disadvantageous side of a "backward-bending supply curve of labor".

Supply side, monetarist and rational expectations theory would all disagree. A supply curve is a schedule of the quantities of a product or service, including labor services, that would be supplied if the suppliers were offered various amounts of compensation at a moment in time, other things equal. In the case of the supply of labor, that means a constant population, capital stock, technology, and level of skill of the workforce and management. Consequently, at a point in time, the workforce cannot have, simultaneously, more leisure and more real output simply because tax rates have been reduced. Unless the workforce responds to the lower tax rates by working more, there will be no added output, and since output equals income, there will be no added income, and therefore there will be no added income out of which to "buy" more leisure. There is no first order income effect from a tax reduction; that is, there is no immediate change in income from the tax cut per se, and income is not the channel through which the tax cut alters economic behavior. Income increases only if there is first a positive input supply response due to the relative price effects, in which case aggregate supply, output, income, and demand will subsequently rise together.

The only way that the whole country or world can work less and still have more goods and services is for capital deepening or technological advances to boost productivity. That takes time. Over time, productivity and income can grow, and people can increase their consumption of leisure and of market goods and services too, and will do so because both are "normal goods" whose consumption rises with income. Even so, at any single moment in that time period, people would work more for a higher reward. It is no contradiction to say that people will work longer at any point in time if their tax rates are cut because the reward to work increases, and to observe that, as technology, productivity, and real incomes advance over time, people take more leisure.

At a point in time, the production technology ensures that there is no immediate income effect from a tax cut, but many analysts are used to thinking in terms of money flows, rather than real variables. So let's think that way. One might note that, in a tax/transfer system, the income effects of a tax rate change cancel out, and all that are left are the substitution effects.

Monetarists would point to the government budget constraint, and point out that there is no demand effect unless the Federal Reserve buys the added government debt, which is a change in monetary policy, not fiscal policy. Otherwise, the government would borrow back with one hand what it gave out with the other. "Disposable income" might go up, but disposable income less what we put into the government bonds and had left to spend on other stuff would not.

Friedman would further point to "sticky consumption" and permanent income theory to suggest that the tax cut would be saved. Rational expectations theorists would point to the need to save the tax cut against the day when taxes would go up to recover the lost revenue. The tying up of the "static" revenue loss of tax cuts on existing levels of income, due to the need to save the tax reduction on that amount of income to repay the government at some future time, however, does not eliminate the relative price changes that result from the tax rate cut that increase the reward for additional units of output by imposing less tax on the associated additional income. As for the tendency to buy leisure, there will not be any additional income unless people respond to the incentive to produce more output. Until they do, there is no added income, and nothing but the relative price effects.

The backward bending supply curve of labor can only exist at a point in time for a subset of the population, or for a society as a whole over time (in which case it is not a true supply curve, but a string of points illustrating a set of curves shifting over time).

Suppose everyone puts a dollar into the Big Game lottery, and I win! I will certainly work less, due to my sudden positive income effect. Everyone else who played the Game, however, will have to work a bit more because they lost the dollars they contributed to my winnings (and to the states that took their cuts), and had negative income effects.

Take the textbook example. Suppose Alcoa opens a bauxite mine in Jamaica, and pays its workers North American wages, well above the Jamaican prevailing wage. Those few workers can earn more working fewer hours, and can buy more goods and more leisure, than they could before the mine opened. But that added income came from the additional capital investment done by the company, a transfer of capital into the island, which boosted productivity and output. The workers' shares of the added income allowed them to buy goods produced by their fellow Jamaicans, or imported from foreigners, who still have to work to produce them.

After CBO Director Alice Rivlin made the "negative income effect" argument in the late 1970s in an analysis of proposed marginal tax rate reductions, Paul Craig Roberts pointed out an amusing implication. Marginal tax rate reductions lower the relative price of market goods and services and raise the relative price of leisure. For the public to respond to the drop in the price of goods and services by taking so much added leisure that production and consumption of goods and services would fall would suggest that market goods and services are, collectively, Giffen goods. Giffen sought to find an example of a good in which the income effect of a price change outweighed the substitution effect by looking at the case of bread consumed by the poor, which was all they could afford and which took up most of their income. A fall in the price of bread might let them buy a chicken which would substitute for a bit of the bread. Even that example did not pan out. Since we have never been able to identify even one Giffen good, the CBO contention seems unreasonable. Roberts asked Dr. Alice Rivlin if she or her staff could resolve the paradox. He never received a reply.

The paradox is resolved, of course, by noting that there can be no first order income effect from the tax cut. That also resolves the paradox of the short term and long term labor supply response to tax cuts. Since there are no first order income effects from a tax rate cut, labor supply elasticities must always be positive with respect to the after-tax wage. Any aggregate labor supply curve is upward sloping. This does not conflict with the observation that aggregate labor supply curves shift upwards over time as productivity and real incomes rise (requiring a higher wage to bid people out of leisure).

**Federal Reserve policy.**

It is unreasonable to model the Federal Reserve as pursuing a perverse monetary policy determined to offset any real growth stemming from reductions in the distorting effects of high tax wedges. That would be directly contrary to the Fed's charge under the Humphrey-Hawkins Act to promote growth and low unemployment while maintaining price stability.

Years ago, the Fed may have believed that fiscal factors unrelated to prior bursts of money growth could cause inflation, but that "demand side" notion is outmoded, even at the Fed. Greenspan has been forthright in admitting that productivity gains have made faster growth possible in recent years, and have permitted him to keep money growth faster than would otherwise have been the case. Unlike the Fed of the Martin-Volcker era, Greenspan and at least some of his colleagues know that deficits are not "stimulative" in the old Keynesian sense in the absence of Fed accommodation.

Even if the Fed were not yet up to speed on this idea, the research and modeling being done to permit dynamic scoring of tax changes will, presumably, set that record straight, and reveal that favorable shifts in the aggregate supply curve are, ceteris paribus, disinflationary. Assuming the JCT makes its model available to the Fed along with other researchers and policy people for examination and elucidation, and they will not make that kind of policy error. By showing them what monetary policy works best with this new view of fiscal policy, the JCT effort will guide them to the right monetary policy, and will not need to assume the wrong one. It would be appropriate to illustrate the damage done by wrong policy, but the exercise should also demonstrate the beneficial impact of the right policy, and label it as such.

Such open communication with the Fed will avoid errors like 1966-67, when model projections of inflation from the Kennedy tax cuts and the Vietnam build-up caused the Fed to tighten, and gave us a mini-recession before the Fed scrambled to reverse course. It seems that none of the model builders had told the Fed that the models had assumed the Fed would accommodate the deficit, and that was the channel through which the supposed fiscal stimulus would work. The Fed assumed the models were showing inflation and stimulus from the fiscal policy changes alone, even if the Fed did not accommodate with easier money. So the Fed leaned against an inflationary wind that was not, in fact, blowing, and then had to reverse course. The Fed learned from that, and learned again in 1981-85, when tax reductions helped disinflate the economy unexpectedly fast by lowering the tax wedge on inputs.

Remember, in a neo-classical framework, the Fed is supposed to focus on price stability, and has limited influence on real variables. They should behave accordingly, and take their cue from various price indices. They should not expect demand to outstrip supply in a neo-classical world, as the two only rise together (since there are no income/demand effects from a tax cut unless people respond by offering more inputs and producing more output).

The Fed should focus on prices, not interest rates, because if tax reductions boost the real return to physical capital, financial market interest rates would rise in tandem, and efforts to hold rates down might cause the Fed to create too much money. And if the Fed gives up on "inflationary gap" and demand theory, there is no rational theory or operational variable that would lead the Fed to slam on the brakes, either. Following an incentive tax cut, added output chasing the existing money supply would tend to lower prices. Therefore, the Fed should expand the money supply in step with the growth of real output and with the resulting demand shift for money balances, to maintain steady prices. Following a non-marginal, non-incentive tax cut, the Fed should assume no demand effects, no added growth, and no change in the price level, and it should not change its policy. No other Fed policy and no other assumption about it make sense.

**Offsets to rebalance the budget down the road.**

The best approach is to model the tax cut or spending increase and show the result for the budget with no additional policy changes. That would show politicians and everyone else the magnitude of the impact on the budget, ceteris paribus, and without having to select one future offset as inevitable.

(Of course, if the exercise begins at a time of surplus, and the tax cut, after reflows, leaves the budget in balance or so slightly in deficit that debt service is not crowding out other spending, there is no need for any future action in the real world. The tax cut would reduce the future surpluses available for spending increases, but would not threaten the budget. In the world of the model, the supply side real output deltas from the tax rate changes should not depend on the starting point, however; the same change in the after-tax wage and cost of capital should have the same outcome regardless, so long as the rate changes are in effect.)

The model should show the changes for various fiscal shifts consistently, basing the impacts on their relative price effects as in a neo-classical model, not on Keynesian demand effects. Presumably, incentive-improving tax cuts (that lower the cost of capital and raise the after-tax wage at the margin) would show some added economic growth and some revenue reflow, reducing the gap to be closed by future spending cuts (or less spending growth) or future tax increases. That is, spending would not have to be cut dollar for dollar with the static-measured cost of the tax cut. Non-incentive tax cuts (not at the margin and having no effect on the cost of capital) would show no growth, and a larger future gap to be closed by future dollar for dollar spending cuts (or less spending growth) or tax increases. Spending increases (other than very productive infrastructure outlays) that absorb resources that would otherwise be available to the private sector (in part to increase capacity) would also show either no growth or a reduction in growth, and no revenue reflow or a net reduction, and would show a large future gap to be closed by spending cuts (or reduced spending growth) or tax increases. Increased transfer payments, especially those with phase-outs, would show disincentive effects and reduce output and revenue.

If future policy offsets to a current period tax change are modeled, the JCT should be consistent with the model, and show the results of the various types of offsets. It should show the effects of a disincentive generating tax hike (at the margin and raising the cost of capital), a non-disincentive generating tax hike (not at the margin and not raising the cost of capital), and various spending cuts. The spending cuts should be ones with no adverse real effects (cuts in government consumption or ineffective investment), or beneficial effects (cuts in transfers that discourage work and saving). The spending cuts should not just be of the "let's stop building roads and bridges and anything else productive and scare the pants off the Congress" sort of example -- a sort of "Washington Monument Syndrome" applied to tax modelling.

Note that spending cuts would allow for budget rebalance without offsetting the growth effects of incentive tax reductions. Note that closing a spending-induced budget gap with future disincentive tax increases would show a future hit to the economy, after no gains from the initial spending hike. These results are an indication that the spending cost more than its static budget outlays. Also, in the case of a tax cut, if failure to restrain spending to pay for the net-of-reflow tax cut forces future tax increases, the future loss of the real output and income gains must be added to the dollar cost of the spending to get a true measure of the cost of the spending. As long as the JCT treats spending and taxes consistently, it would not distort the picture being painted of the relative merits of the various policy options.

**Open versus closed economies.**

The U.S. economy is part of the world economy. Capital flows very freely across borders, and even labor is somewhat free to move about. The model should clearly reflect this reality. There should be no exaggeration of the very limited impact of U.S. deficits per se on market interest rates. The notion that policy makers abroad would move quickly to enact competing tax cuts to prevent any net flow of capital to the United States is not based on historical evidence. After the Thatcher and Reagan tax cuts, it was years before other nations followed suit. The U.S. has also failed to respond to the reduction in corporate taxes in most other OECD nations over the past decade, to the point that the U.S. corporate tax rate is now fourth highest in the OECD (and about to become second highest as others continue to cut).