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SUBJECT: Replacing the Income Tax with Increased Sales Taxes: What Do We Know?

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OVERVIEW

Proposals to substantially reduce or eliminate the state income tax and replace the lost revenue through a higher sales tax rate, an expanded sales tax base, or some combination of the two, are being considered in a dozen states, specifically Georgia, Hawaii, Idaho, Kansas, Louisiana, Missouri, Nebraska, New Jersey, Ohio, Oklahoma, Oregon and South Carolina (Hamilton 2012). While no state has fully repealed its income tax and replaced it with an expanded role for the sales tax, Oklahoma and Kansas have significantly reduced their income tax rates. In addition, proposals such as the Fair Tax (Boortz and Linder 2005; 2008) and the Flat Tax (Hall and Rabushka 2007) that call for substituting a broad-based national consumption tax for the existing federal income tax have been an important topic of on-going policy discussion and research.

Despite the political interest at the state level, there is a paucity of research examining the economic effects of replacing state income taxes, in whole or in part, by expanding the sales tax. Since no state has actually eliminated its income tax, and the significant cuts in the income tax in Oklahoma and Kansas are so recent that it has not been possible to measure the effect of such a policy. So, what can we say about the economic effects of a policy to replace the state income tax in whole or in part with an expanded sales tax? This memo provides a discussion of what we can say about the economic effect, particularly the growth in personal income, of substituting an expanded sales tax for a reduced income tax. In the rest of this memo by tax reform we mean revenue elimination of the income tax and an expansion of the sales tax.[1]

ECONOMIC THEORY

One approach to addressing this issue is to rely on economic theory as the basis for what should be expected. Economic theory holds that taxes matter, and it is likely that every economist believes that behavior is affected by taxes. So, what does economic theory suggest would be the economic effect of a tax reform? In general, economic theory suggests that a reduction in income tax rates, holding everything else constant, will increase the investment in plant and equipment and increased in-migration, leading to increased economic growth. It is

this effect on investment that is the primary argument advanced in support of a shift from an income tax to a tax on consumption, like a sales tax.

The increase in investment will occur because lower income tax rates will increase the net return on investment. The effect on household migration is a bit more complicated. If total taxes for a household would be the same with and without the income tax, there is no incentive for anyone to move to or from the state as a result of such a tax policy. Of course, such a tax reform is likely to increase total income and sales taxes for some households and reduce them for others, meaning that some households would have an incentive to leave the state while other households have an incentive to move here.

In summary, economic theory suggests that a policy of replacing income taxes with increased sales taxes will change behavior and likely lead to an increase in economic growth. But economic theory leaves unanswered the question of *how much* taxes actually matter in inducing economic growth. Some believe that the effect of taxes is so small that their effect cannot be detected in the available data, while others believe the effect is large.

RESEARCH ON THE IMPACT OF TAXES ON ECONOMIC GROWTH

There are two kinds of empirical evidence that can be advanced to inform tax policy. The first relies on numerical simulation models, which are simple mathematical representations of the economy that allow for the complex interactions of consumers, workers, firms, and government. Such models have been used to explore the economic effects of policies to replace the national income taxes with a consumption tax. These models are the only evidence that has been developed as to the effect of a policy to replace the income tax with an expanded sales tax. These models suggest that shifting from income taxes to consumption taxes will increase the economic growth rate.

But there are limitations of these models. The income and consumption taxes that are considered in the existing simulation models do not reflect important features of state income taxes and state sales taxes. Thus, using the results of the existing models to infer the results of change in actual state taxes should be done with care. The advantage of simulation models is that they can capture the effects of tax changes allowing for interaction across markets while holding other policies constant, which is something that can't be done with regression models. Their disadvantage is that they assume that behavior is consistent with economic theory, but the actual behavior of firms and individuals may not conform to economic theory.

The second approach is statistical analysis of the relationship between taxes and economic growth. There is a host of empirical studies of the effect of taxes on economic growth; for reviews of this literature see, Buss (2001), Wasylenko (1997), and Bartik (1991). The measured effects of taxes on economic growth vary widely across these studies, from zero to negative effects. As we explain in more detail below, most of the existing research is flawed, each in its own way, although some studies are better than others. Of greatest relevance is that none of these studies

actually consider the proposed policy, i.e., a revenue neutral replacement of the income tax with an expanded sales tax.

The simplest empirical studies compare the growth rate over some period between states with and without income taxes. If one compares growth rates over the past decade, states without income taxes have grown faster. However, for earlier periods that outcome is not necessarily what we would find. For example, during the 1960s, when 16 states did not have an income tax or did not tax earnings, personal income grew faster in states with income taxes. But, these studies are meaningless since they do not control for other factors that affect economic growth.

Many studies relate annual employment or income in a state to taxes per capita or the highest marginal income tax rate, controlling for a few other variables, such as education level. In general, the more recent studies find that lower taxes are associated with higher income and employment, although the measured effect is generally small. One of the more carefully done studies (Helms 1985) finds that taxes do not matter if the revenue is spent on services such as education and transportation.

There are major limitations with these studies. First, many of these studies ignore other important factors that would affect state employment, for example, how the tax revenue is used, the presence of natural resources, and the amount of sunshine. Second, employment and tax rates could both be driven by expansions and contractions of the state or national economies, for example if states increase tax rates when tax revenue decline due to reductions in employment. This suggests that the cause of the negative relationship between income and tax rates is from income changes to tax changes and not from tax changes causing income changes. This makes it difficult to separate the effect of taxes from the effects of changes in the economy. Third, nearly all of these studies consider the effect of all tax sources or specific taxes on employment and other state economic conditions; however, there is little research on the economic effect of significantly and simultaneously reducing income taxes and expanding sales taxes.

There are two recent studies, conducted by Arduin, Laffer & Moore Econometrics (ALME), one for Oklahoma and one for North Carolina, that have been given prominence by advocates of replacing the income tax with an expanded sales tax. I and other academic economists (Olsen 2012; Willner 2012; Rogers 2012) have reviewed these analyses and have identified a number of faults.

For Oklahoma, ALME (2011) conclude that eliminating the state's income tax and cutting expenditures by an equivalent amount would increase the annual growth rate of real personal income from 2.99 percent per year to 5.65 percent per year once the income tax is totally phased out; this is a huge increase in the growth rate and unprecedented in almost any circumstance, including the growth boom of the 1990s.

ALME's analysis on which their conclusion is based is a regression model that uses individual state data for each year over the period 2001-2008. The variable they are trying to explain is the

annual growth rate in real state personal income. The variables they use to explain differences over time and across states in the annual growth rate of real state personal income are the growth rate in population, the sum of the top federal and state income tax rates, and the ratio of state and local government expenditures to personal income. ALME reports that reductions in the tax rate and the ratio of expenditures to income will increase state personal income growth. These results are not specific to a given state and thus can be applied to any or all states, including Georgia.

Arduin, Laffer & Moore Econometrics' research suffers from many problems, including the following three major issues:

1. ALME does not control for other factors that are likely to affect growth in income, and that have been shown to significantly affect economic growth. These factors include spending on education, cost of living, amenities such as warm weather and mountains, and natural resources such as oil and gas which over the past decade allowed states such as North Dakota to both keep taxes low while increasing personal income.

2. Using the sum of federal and state income tax rates biases the results. During the period considered, federal tax rates fell. Thus, the measured effect of income taxes on personal income mixes the effect of federal tax changes, which apply to all states and are much larger than state rates, and the state tax rate. The Institute on Taxation and Economic Policy (2012) re-estimated ALME's regression using just the state income tax rate and find that decreases in the state tax rate reduces, not increases, personal income, although the effect is not statistically significant.

3. The expenditure variable, which is measured as expenditures divided by personal income, accounts for much of the predicted increase in personal income from the policy ALME considers. ALME find that as expenditures per dollar of personal income goes down, growth of personal income increases. But this result occurs largely because the two variables are mathematically related rather than for any causal reason. Suppose that state and local expenditures did not change over the period, but income increased (which it did every year for the period considered). It follows that the larger the growth rate of income, the larger the decrease in the ratio of expenditures to income. As a result, just due to pure mathematics, it will follow that increases in income will be found to be associated with a decrease in the ratio of expenditures to income. The negative relationship does not show any "causal" effect.

The various reviews of ALME's analysis point out many other flaws with the analysis. One review states that the ALME's work is inconsistent with accepted empirical practices in economics (Rogers 2012). While reducing income tax revenues and increasing sales tax revenues could increase the growth in personal income, one cannot in good conscience rely on this particular analysis to support such a position.

For the study they conducted for North Carolina, ALME (2012) estimated a different regression equation. They provide few details so it is hard to determine exactly what they did. However, they appear to attempt to explain state differences in growth in state personal income using differences in the average marginal income tax rate and the average marginal sales tax rate, controlling for region and expenditure burden. They do not explain how expenditure burden is measured. Their table of results suggest they used the state income tax rates and not the sum of federal and state tax rates. They report results for two regressions; the text implies that in one they use the level of the tax rates, while in the other they use the change in the tax rates. In the first regression, the tax rates have no statistically significant effect on income growth, and they actually report a positive effect of the sales tax rate on income growth, suggesting that increasing the sales tax will increase income growth. In the regression using the change in the tax rate, they do find that the change in personal income is negatively affected by the change in the income tax rate, although the statistically significance is low. However, states with growing personal income, and thus growth in tax revenue, could use that revenue growth to cut income taxes, leading to a negative correlation between income growth and the income tax rate, but with the causation going from income growth to tax rate reductions. Other than controlling for region and some measure of expenditures, the study controls for no other factors.

The ideal way to study the effect of eliminating or substantially reducing the income tax would be to conduct an experiment in which states are randomly assign to a treatment group or a control group. The states in the treatment group would be required to reduce their income tax rates and increase their sales taxes, while those states in the control group would be prohibited from changing their income tax rates. We could then observe the change in personal income between the two groups and be relatively confidence that the difference in income growth was due to the change in the income tax rate. But of course such an experiment is not feasible, its just an academic's fantasy.

However, we might be able to use "natural" experiments in which the change in the income tax rate could be considered random. One type of "natural" experiment is the adoption of a "millionaire tax" that some states have adopted. Young and Varner (2011) studied New Jersey's millionaire tax and found essentially no effect on the migration of millionaires. They compare migration pre- and post-adoption for two groups, those subject to the millionaire tax, and high income taxpayers not subject to the tax. Since millionaires and near-millionaires are similar, the difference in their tax treatment should be reflected in difference in behavior of the two groups. The same authors studied California's millionaire tax (Varner and Young 2012) using a similar empirical approach as they used for their New Jersey study. They find no effect of the millionaire tax on the migration of millionaires in either state.

Despite all of the research that has been conducted on the relationship between taxes and economic growth, we don't have a good answer to the question, if Georgia were to replace its income tax with an expanded sales tax, what would be the magnitude of the effect on the growth of state income? Economists would generally agree that growth would increase, but they would only be guessing about the magnitude of the effect.

Because empirical studies of the effect of taxes report effects that range from zero to large, one can always find a study that supports any position that one wants to take on such tax policy. That lack of consistent evidence is unfortunate. First, it allows prior beliefs to drive the evidence one uses rather than the evidence informing beliefs. Second, it suggests that a major tax reform can be promoted without solid, objective research on which there is general agreement as to the consequences of the reform.

SUMMARY

Replacing the income tax with an expanded sales tax is a major tax policy change. Before undertaking such a significant tax reform, the reform should be carefully and fully studied. The current debate seems to focus on the effects such a policy would have on economic growth. While many economists would likely agree that eliminating the income tax and expanding the sales tax would increase economic growth, other than general agreement that effect will likely be small, they cannot say how big the effect will be. A lot of the research, including that by ALME, is badly done or does not directly address the specific policy issue of a revenue neutral reduction in income tax and an expansion of the sales tax, and thus should not be included in the debate.

Furthermore, economic growth is not the only factor that should be considered in the discussion of such a tax policy. There are at least four major factors that should be addressed in deciding whether to replace the state income tax with an expanded sales tax:

- How would such a policy change economic behavior? Related to this the question of what sales tax rate is required to replace the income tax revenue, since a substantial increase in the sales tax rate is likely to significantly change consumption patterns, increasing spending on non-taxed goods and services and shopping in states with lower sales tax rates.

- How will the distribution of tax burdens change? There is a common belief that such a policy will increase the tax burden of lower income households. But, we need to know how big those changes would be and how might the measured changes differ if we used a five-year average of income rather than annual income, since income fluctuates from year to year.

- How will the cost of tax administration change? For example, will a higher sales tax rate increase sales tax avoidance and thus require greater oversight of compliance? How will cost of administration change if the state has to register and monitor personal service providers.

- Finally, what will be the effect on the level of employment, income, and income per capita? The focus on growth, in this memo and in the public discussion, has been on the growth of total employment and income. Policy makers need to be concerned with the change in per capita income as well. If the growth the state gets from reducing the income tax are low-wage jobs, that outcome is not of much help to most current residents.

One should have good answers on all of these issues before deciding whether to undertake such a major tax change.

NOTES:

[1]While much of the discussion about these tax reforms revolves around the implications for economic growth – and this will be the focus of this memo - there are at least four other factors that should be considered when deciding on major tax reforms: 1) Fairness: what is the effect of the reform on the distribution of tax burdens? Examining fairness includes both considering taxpayers' ability to pay as well as treating those in like situations the same. 2) Efficiency: how will the behavior of individuals and firms change as a result of the reform? For example, how will decisions about work effort, consumption patterns, location, and hiring change as a result of the reform? 3) Administrative Cost: how does the reform affect the cost of tax administration? Does the reform increase or decrease the ability of taxpayers to comply with the tax code and the ability of the government to enforce taxes? 4) Stability: how does the reform affect the tax systems' response to changes in the economy? Generally, a tax system should grow in proportion to economic growth. These criteria are in fact quite similar to those proposed by the 2011 Georgia Special Council on Tax Reform and Fairness for Georgians.

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