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Comments on Papers by Michael Wasylenko and Ronald Fisher

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Introduction. Both Mike Wasylenko and Ron Fisher provide good reviews of the research literature on how state and local fiscal systems affect economic development. My comments will highlight the main themes in their reviews. I will also give my own perspective on these themes. My emphasis is on how research can better inform policymakers.

Main themes of Wasylenko and Fisher. There are five themes in Wasylenko and Fisher's reviews that I wish to highlight. First, one recurring theme is that research on state and local fiscal systems and economic development often results in quite fragile results. Equally competent research projects may get widely divergent estimates of the economic development effects of fiscal variables. Second, the fiscal variables in this research are difficult-to-measure. The measurement difficulties are particularly acute for public service variables. Third, the research faces econometric difficulties because measured fiscal variables are often endogenous, in that they might be affected by economic development.

Fourth, despite these problems, there is some consensus that tax and public service variables do have some effects on state and local economic development. Wasylenko argues that tax studies suggest an elasticity of -0.2 for interregional studies, and elasticities at least four times as great for intraregional studies. Fisher points out that many studies find that public services of at least some kind matter for state and local economic development.

Fifth, both Wasylenko and Fisher emphasize that a fiscal system's effect on economic development is an incomplete measure of its true social benefit. A complete benefit-cost analysis should consider who pays for and who benefits from the public services, who gets the jobs, and the effects of economic development on the local budget.

I will add a few of my own comments to these various themes, and suggest how more research might help policymakers.

The fragility of estimates and consensus findings. As mentioned by Wasylenko, my position is that the interregional tax elasticity is between -0.1 and -0.6, which seems consistent with Wasylenko's conclusion. I also agree with Wasylenko and most other researchers that the intraregional tax elasticity is considerably greater, perhaps in the range from -1.0 to -3.0.

It is true that as interregional studies add in controls for fixed regional effects and public services, the estimated tax elasticity often increases in absolute value. Fixed effect controls are particularly influential on estimates. Some might interpret this as establishing that elasticities closer to -0.6 are more plausible than elasticities close to -0.1. I have argued in the past that fixed effect estimates have econometric advantages. However, few studies have both fixed effect and public service controls, which means that one must be wary about endorsing these greater elasticity numbers.

In addition, I have become more concerned in recent years about measurement and endogeneity problems in many studies that use fixed effect controls. Studies that use fixed effect controls often use coarser data on taxes and public services. Fixed effect studies must generate multiple observations for each local economy to allow estimation. This means that one must use the most readily available tax and public service data, which are data on revenues and expenditures. But current revenue or expenditure per capita, or as percentages of personal income, are poor measures of tax rates or public services. Furthermore, fiscal measures using current revenue and expenditure are probably highly endogenous. I will discuss these measurement and endogeneity issues later in these comments.

The fragility of estimates has led some to be skeptical of the consensus estimates of tax elasticities (for example, see McGuire, 1992). To convince skeptics that taxes and public services affect economic development, we need more studies that rely on natural "experiments"—studies that observe how similar local economies or firms respond to large, exogenous changes in tax regimes or public services. With large changes in tax rates or public services, measurement issues and endogeneity issues become less of a concern. If we can compare similar local economies or firms, concerns about omitted variable bias are reduced.

To be specific, we need studies that will examine the response to large changes in tax or expenditure regime, such as Proposition 13 in California, Proposition 2.5 in Massachusetts, the Engler Administration's shift from property to sales taxation in Michigan, or Kentucky's school reforms. To avoid problems caused by unobservable differences in state economies, we could focus on comparing individual counties' economic development in states that experienced these regime shifts, to similar counties in states that did not experience these regime shifts. Research by Isserman and his colleagues indicates ways in which similar counties might be identified (Isserman, 1994). To further control for unobservables, the research might analyze differences across industries to see if they are consistent with the expected impacts of these shifts in fiscal regime. For example, one expects capital intensive industries to be especially responsive to property taxes, and industries using skilled labor to be especially responsive to school quality.

The best examples of this kind of research are a paper by Hines (forthcoming) and another by Holmes (1995). Hines's study is the most convincing evidence to date that taxes matter to business location decisions. His study compares the effects of taxes on business

location for firms from countries that provide full tax credits for U.S. taxes paid—thus making state and local taxes irrelevant to the location decision—to the effects of taxes for foreign firms from countries that only allow U.S. taxes to be deducted before profits are taxed in the home country. Holmes' study compares job growth for counties on the border between right-to-work and non-right to work states with job growth in counties in the interior of the two groups of states.

Hines' study finds that firms from countries that only allow deductions for U.S. taxes are more sensitive in their location decisions to state and local taxes than firms from countries that allow tax credits for U.S. taxes. This finding is hard to explain unless taxes, or some state characteristic that is highly correlated with taxes, really do affect location decisions. Holmes' study finds large growth advantages for right-to-work over non-right-to-work states for counties near the border between the two groups of states, compared to counties in the interior of the two groups. This finding is hard to explain unless right-to-work laws, or some state characteristic that is strongly correlated with right-to-work laws, really do affect economic development.

Measuring public services. Accurately measuring the quality and quantity of public services is difficult. Consider education. I suspect the difficulty in measuring education quality is one reason some studies, as Fisher points out, do not find education to have significant effects on economic development. It is difficult to believe that current expenditure on education is the measure of education quality that is most relevant to business decision-making. Education should be most relevant to businesses because it affects the productivity of the workers that the business can hire. The current quality of the workforce depends on

education quality over a lengthy history. Furthermore, education quality depends only in part on public sector inputs; other determinants include the socioeconomic characteristics of the students. Finally, the gross amounts of public sector inputs such as money, or number of teachers per student, is only part of the public sector contribution to educational quality; one also has to consider the effectiveness with which these public sector resources are deployed.

Fisher suggests that including fixed effects for local jurisdictions may control for the omitted variables, other than current public spending, that affect the quality of state and local public services. Fixed effects may help, but I am not confident that they resolve this problem. We need studies that more carefully measure public service quality, from a business perspective. We need studies that focus on large exogenous changes in public service quality. For example, one might consider states that have undertaken significant education reforms, and carefully measure how workforce quality changes as a result.

The endogeneity issue. The endogeneity of state and local fiscal variables is particularly acute for variables that are measured using actual revenues and expenditures, because revenues and expenditures are clearly directly and immediately affected by local economic development. Endogeneity problems are reduced when researchers use measures such as tax rates, or serious measures of public service quality. Tax rates and public service quality are of course politically endogenous, in that local economic development trends will influence policymakers' choices about tax rates and public service quality. But the response of tax rates and public service quality to local economic development may be long delayed, making tax rates and public service quality "less endogenous" than actual revenues and expenditures.

Because of both the measurement error problems and endogeneity problems, I have become increasingly skeptical of the "budget constraint" approach used by Helms (1985) and other researchers (e.g., Bartik, 1996a). Defining all tax and public service variables as percentages of personal income, or per capita, almost ensures that all fiscal variables will be poorly measured. It makes no sense to scale all tax and public service variables by the same denominator, whether the denominator is population or personal income. For example, as Wasylenko points out, shouldn't education quality depend more on spending per student than per person or as a proportion of personal income? In addition, public service quality may, as noted above, be only loosely related to current expenditure. Finally, all the current revenue and expenditure variables in the Helms' approach are highly endogenous. One can use instrumental variables to try to correct for this, but it is difficult to find good instruments that will be convincing to other researchers.

Why do we care about how state and local fiscal variables affect economic development? As noted by Wasylenko and Fisher, we should be clear about why the effect of state and local fiscal variables on economic development is important for social well-being. I argue that there are four reasons that the relationship between fiscal variables and economic development is important for public policy. Research should be more focused on how fiscal variables affect economic development in ways that are relevant for public policy.

(1) Employment growth. I argue that we care about local employment growth because wages often do not clear labor markets. Wages often exceed the opportunity cost of labor; studies by Gordon (1973) and Jones (1989) suggest that the lowest wage at which the typical unemployed individual is willing to work—their "reservation wage"—average about 85 percent

to 90 percent of their previous wage. Because wages often exceed the opportunity cost of labor, creating jobs in a local labor market usually provides social benefits.

I have argued that the social benefits of job creation probably persist in the long-run (Bartik, 1991). Blanchard and Katz (1992) argue that the effects of employment growth on local employment rates die out after five years. Bartik (1993) uses Blanchard and Katz's data to argue that their model is misspecified. When their data are used in a more general model, the effects of local employment growth on labor force participation persist for at least 17 years.

These social benefits of local employment growth probably are higher in local economies with high unemployment, because reservation wages will be lower. These social benefits of job creation may be nonexistent in low unemployment areas, where reservation wages may be close to market wages. If the costs of job creation are similar across different local economies, then high unemployment areas should more vigorously pursue economic development. But we know little about whether the costs of creating jobs through tax reductions or public service expansions are different in different local areas. As argued by Courant (1994), we need more research on the relative effectiveness of development policies in different local economies.

What implications do the benefits of local employment growth have for the principle that local public services levels should be chosen so that marginal benefits of public services equal marginal costs? (This issue is raised by Fisher.) This principle still applies, except that we must consider an additional category of benefits and costs. We traditionally have just considered the direct effects of public services and taxes on household well-being. We now

must also consider the indirect effects, by affecting employment growth, of public services and taxes on household well-being.

As Wasylenko points out, a complete benefit-cost analysis of local fiscal policy should also consider the revenue effects of local employment growth. I would add that the analysis should consider the effects of growth on public expenditure. Research suggests that local employment growth is often a fiscal drain, once one considers the marginal capital expenditure required to deal with the resulting household in-migration (Bartik, 1996b).

(2) Employment growth by industry. The benefits of local employment growth vary by industry. Growth in high "wage-premium" industries probably has greater effects on labor force participation and earnings (Bartik, 1996c). We need more research on how the effects of state and local fiscal variables differ across industries. My own experience is that industry-specific estimates often are imprecisely estimated or have implausible magnitudes. I suspect that similar findings are buried in unpublished computer printouts of many other researchers.

(3) Productivity. We want to know the effects of state and local fiscal variables on productivity even if local income per capita is unchanged. The usual assumption in economics is that in the long-run, local or sector-specific increases in productivity are spread over the entire economy. We need more research that looks at how local policies affect productivity.

(4) Externalities. As highlighted by Fisher, a key issue is whether the public services of one state or local area provide spillover benefits for nearby state or local areas. If so, then state and local fiscal decisions will likely be inefficient without federal intervention. This issue has become even more important given trends toward a reduced federal role in providing public services. To my knowledge, only Bartik (1996a) has examined this issue. This study

found evidence that state public services cause positive spillovers on manufacturing output in nearby states. More research should examine this issue.

Conclusion. In sum, current research on fiscal policies and local economic development suffers from three key problems:

- serious measurement difficulties;
- a lack of focus on the issues that are crucial for public policy;
- endogeneity of the fiscal variables.

New research is needed to address these problems. We need research that is more careful about measuring public service quality and tax rates. We need research that provides more specific evidence on how fiscal variables affect different industries and different local economies. We need more research that looks at effects of fiscal variables on productivity and spillover effects on nearby state and local areas. Finally, research on fiscal variables and economic development will be more convincing if it can exploit large, natural "experiments" in varying state tax and public service policies.

These types of new research will require much more time spent on data construction. The payoff for this extra time will be empirical results that are more useful for policymakers.

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