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One of the most important concerns of a state or local government is whether state policies will encourage or dampen growth in its manufacturing sector. A large amount of research has been done in an effort to determine what causes a locality's manufacturing sector to grow. These studies (Bartik 1994, for example) typically test for the effects of state and local tax rates as well as of other specific policies, such as state enterprise development zones.

Until recently, the general role played by state economic development agencies has been ignored, in part because researchers lacked a consistent measure of state development agency activities. Considering how much money states spend on these agencies the mean expenditure per worker in 1990 was \$10.67 this omission is unfortunate. Since 1990, however, the National Association of State Development Agencies (NASDA) has put together a biennial State Economic Development Expenditure Survey, which includes a breakdown of the expenditure data for 46 states. For example, NASDA describes investment attraction as encompassing activities in which state development agencies provide information to decisionmakers in domestic and foreign countries about the advantages of doing business in these areas; in pursuit of this goal, the agencies may help to create a state's image and market its business incentives through targeted programs of public information, advertising, direct mail, and other communication techniques.

de Bartolome and Spiegel (1995, 1996) have incorporated this development expenditure data into

analyses of the effects of state industrial policy. In this Weekly Letter, we review their findings concerning the effectiveness of state development expenditures in increasing manufacturing employment. While their analysis does not necessarily imply that state development agencies are effective in inducing additional local investment and hence increasing jobs relative to the level of development expenditures, it does indicate a positive relationship between the per capita level of state development expenditure and the growth rate of a state's manufacturing sector.

Smokestack chasing

One might characterize the objective of the state economic development agency as smokestack chasing encouraging manufacturers to relocate in the state, either from other states or from abroad. Alternatively, a state economic development agency may be concerned with increasing local employment and wages. These goals are complementary if, as is commonly believed, manufacturing employment represents good jobs. In such a case, an inflow of manufacturing capital into a state would lead to increased manufacturing employment and higher wages. de Bartolome and Spiegel (1996) concentrate on the contribution of state economic development expenditure to manufacturing employment growth, because data on state manufacturing capital stocks are unavailable for their recent sample period.

The data are analyzed in the framework of a specific-factors model, in which labor is mobile across sectors, but capital is not that is, capital used in one sector is unproductive in others. This model is tested against the neoclassical model, in which labor and capital are mobile across sectors. These models differ in that the specific-factors model predicts that the amount of manufacturing employment a locality ends up with will be determined in part by the initial share of manufacturing employment, while the neoclassical model offers no prediction about the effect of the initial share of manufacturing employment. This distinction allows for the testing of the specific-factors model specification against that of a neoclassical model of production. The existence of factor-specificity may indicate that workers who lose their jobs may experience greater wage declines. Therefore, the scope for intervention in the form of development spending may be enhanced.

Spending and employment change: 1990-1993

Analysis of the data shows that the mean change in the amount of manufacturing labor per unit of state labor from 1990 to 1993 was -0.006, ranging from a low value of -0.034 in Connecticut to a high value of 0.024 in South Dakota. Mean state development agency spending per worker in 1990 was \$10.67, and it also varied widely, from a low of \$0.52 in Florida to a high of \$34.78 in Arkansas.

The relationship between state spending on development per worker and state manufacturing growth is shown in [Figure 1](#) (*this file requires Adobe Acrobat*). Even casual observation suggests that a strong positive correlation exists, despite the presence of a number of notable outliers. Several western states, including Nevada, North Dakota, and Idaho, engaged in relatively little development spending per head, but experienced vigorous growth over the sample period. On the other hand, some industrial states, such as Maine and Pennsylvania, engaged in relatively large development expenditures without stemming the secular declines they experienced in manufacturing employment. Offsetting these outliers are states such as South Dakota and Arkansas, which spent a lot and grew a lot, and Florida and New Hampshire, which spent little and experienced manufacturing declines.

The states in the Twelfth District all spent less than the national average per worker on economic development associated with attracting manufacturing. In particular, California and Washington had low levels of economic development expenditure per worker, in both states less than half of the national average. Although Hawaii is listed as spending even less, one must be cautious about this figure, because a large private economic development agency spends extensively on items such as tourist promotion in Hawaii, which were not included in the reported figure relevant for manufacturing.

Controlling for other factors that influence employment growth

In testing the impact of development spending on manufacturing employment, one would obviously want to control for other factors that independently influence employment growth. Commonly, studies of regional growth patterns of this type control for factors that can be loosely grouped into four categories:

- (i) factors describing the basic conditions of the state economy: these include a measure of state market strength proxied by personal income per worker, a measure of state agglomeration forces proxied by employment per establishment, a measure of state infrastructure measured as the number of enplaned passengers in the state per worker, and a measure of state dependence on the defense industry measured as numbers of contracts awarded per worker;
- (ii) factors representing state demographic conditions: these include a measure of state size proxied by the number of industrial laborers in the state and a measure of state racial characteristics proxied by the percentage of the state population that is African-American;
- (iii) factors representing state labor force conditions: these include state expenditure per worker on education, the 1989 percentage of state manufacturing employment that is unionized, and the average rating of state congressional representatives by the AFL-CIO;
- (iv) factors representing state policy: these include state income tax and state sales tax per worker, the state corporate tax rate, the average rating of state congressional representatives by the U.S. Chamber of Commerce, and the share of Democratic state congressional representatives.

Results

The parametric results of the study confirm the positive relationship between expenditures by a state's development agency and growth in the state's manufacturing sector. This result is quite robust. Including the factors listed above in any possible combination a method known as extreme bounds analysis does not remove the statistically significant positive relationship.

The results also support, albeit less strongly, the specification of the specific-factors model, in that the smaller the share of labor in the manufacturing sector initially, the larger is the increase in employment for a given size capital inflow. This relationship is not predicted by a model where capital is fully mobile across sectors.

Finally, only two of the other explanatory factors were significant: the composition of the state congressional delegation and the size of the defense industry. In particular, the more dependent a region was on defense spending, the less the region saw of growth in manufacturing employment. This result probably reflects the downsizing in the defense industry during this period.

Conclusion

It should be stressed that these results do not imply that state development agencies provide good value for the money; rather, their efforts appear to provide at least some positive effect in terms of employment in the manufacturing sector. Many would be surprised at even this result. It is useful, however, to have an idea about the magnitude of the response estimated, which can be derived from the point estimate of the base regression in the paper. On this basis, it appears that if a state development agency increased its annual expenditures per worker by \$10.00 over the current mean of \$10.67, in other words, roughly doubling state development expenditures, then manufacturing jobs in that locality would increase by 1-1/6 percent per year. Whether this is a large or small increase is beyond the scope of this Weekly. Moreover, the standard errors associated with this measure allow for an estimate anywhere from a 1/2 percent increase to a 1-5/6 percent increase at a 5 percent confidence level.

Despite these caveats, the result appears to be relatively robust for the time period studied. This study

obviously was constrained by the fact that a uniform data set for state development expenditures has existed only since 1990; therefore, the results do not represent a final conclusion concerning the effectiveness of these policies. However, many skeptics would have doubted that any objective study would imply any positive contribution of these agencies. For the period studied, at least, state development agencies appear to have passed that test.

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