WHICH ECONOMIC DEVELOPMENT POLICIES WORK: DETERMINANTS OF STATE PER CAPITA INCOME

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Abstract

Economic development policies add to state economic efficiency and welfare if they compensate manufacturing firms for the positive externalities they produce. Incentives which try to alter business behavior, but do not produce positive externalities greater than their costs may, however, distort the market-place and result in reduced state economic efficiency and welfare. This article reports the results of a pooled cross sectional time series analysis that was conducted to estimate the influence of different types of economic development policies on one measure of overall welfare, change in state per capita income, for the years 1979 through 1995. Results suggest state development policies which offer tax breaks to all manufacturing firms, and programs which offer state loans and loan guarantees for all manufacturing firms, are positively related to growth in state per capita income. Programs which attempt to elicit specific firm behavior, such as incentives for new investment and incentives to create jobs, were negatively related to growth in per capita income. "Demand" side entrepreneurial state policies had no significant influence on per capita personal income.

Introduction

State policy makers invest in economic development policies as a means of reducing unemployment, attracting new capital investment, and building a larger tax base. But states have often invested blindly, not knowing which economic development policies actually achieve these goals. Proponents have made plausible cases for competing economic development policies, including: tax breaks for industry, tax breaks and/or subsidies for firms locating in the state, tax breaks and /or subsidies for existing plant expansion, and even social programs recast as investment in

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human capital. At the same time, critics have questioned the efficacy of economic development programs, suggesting states are competing against themselves in a zero sum game. The critics make an equally convincing case that converging state economic development programs cancel each other out, and only succeed in plundering state treasuries without any real benefit. Hampered by a lack of consensus on a theoretical model to explain economic development and the lack of a consistent body of evidence about which, if any, economic development policies have an impact on economic growth, states have been forced to rely on educated guesswork when adopting economic development policies.

Economic development policies can be theoretically justified on the grounds they improve economic efficiency and therefore the welfare of state citizens. Yet a lack of a clearly reasoned and empirically tested economic development strategy may cause states to squander scarce public resources on projects which cost more than the benefits those projects will deliver to its citizens. Inefficient economic development spending may reduce, rather than enhance, the efficiency of the state economy and the welfare of state residents. This study will first differentiate industrial development policies by what type of incentive they offer to encourage industry. Second, this study will test which strategies contribute to economic efficiency and welfare, and which do not.

If economic development policies can be justified on the grounds they improve economic efficiency, then a positive sum game is possible. State intervention may improve the efficiency of the market and total welfare because the market does not take externalities into account when setting prices and the quantity produced (Feiock, Dubnick and Mitchell, 1993: p. 61). The argument for state involvement in economic development is similar to that used to justify public aid to higher education. The state supports education because it generates positive externalities. Externalities occur whenever a private transaction creates either costs or benefits to a third party not involved in a transaction. The positive externalities which occur when a student receives higher education include: the student becomes a more informed citizen, a more productive employee, and is likely to contribute more in taxes during his/her lifetime. If the student had to pay the entire cost of education, he/she would not take into account the benefits to others in his/her calculation of whether to attend college. Without subsidies to higher education, some students would choose not to attend college, even though the benefits to them and society combined exceed the cost of education. Too little education would be produced because students and universities would not consider the benefits to third parties. Without state intervention, externalities cause markets

to fail as a self regulating mechanism, and a sub-optimal amount of the good causing the positive externality is produced. Both market efficiency and total welfare can be improved by subsidizing those transactions which produce positive externalities, and taxing those which produce negative externalities (Weimer and Vining, 1992: pp. 152-162).

Positive externalities from the manufacture of exportable goods provide a theoretical justification for offering incentives to encourage the production of exportable goods. The manufacture of exportable goods creates positive externalities which extend far beyond the parties involved in the sale of the good. The export of goods bring new money into a state (Blair, 1995: pp. 123-130) and creates a multiplier effect which generates economic activity of up to 5 times the value of the original transaction (Peterson, 1981: p. 23). This economic activity creates jobs. Few state expenditures can contribute as much to the public welfare, yet alone at so little cost to the public. The state, therefore, can increase its economic efficiency and welfare by providing subsidies up to the amount of positive externalities generated by the manufacture of exportable goods. Current tax policies often create counter-productive disincentives for manufacturing exportable goods (Reich, 1983: pp. 3-9). The removal of these disincentives would also improve economic efficiency and state welfare. By adding to economic efficiency, economic development policies can create a positive sum game. Goods and jobs which otherwise would not exist would be created, not merely relocated.

The findings of this study suggest that incentives offered to all manufacturers, including tax breaks for manufacturing as a whole and financing aid for manufacturing, can increase economic efficiency and overall welfare, as measured by per capita personal income. Not every economic development policy, however, will make a positive contribution to economic efficiency and state welfare. Poorly conceived programs which offer subsidies in excess of the positive externalities of the goods manufactured may distort the market in the other direction, divert labor and capital from more productive alternative uses, may waste public funds which would have produced a better return if invested in other public programs or left in the hands of the taxpayers, and reduce economic efficiency and public welfare. Unfortunately, the economic development literature has done little to differentiate between types of economic programs and economic development strategies. Lacking a clear model, the efforts of practitioners and politicians have often been unfocused, causing them to "shoot at anything that flies and claim anything that falls" (Rubin, 1988: p. 236). The competition of states to attract large, highly visible plants (Grady, 1987: p. 87) has resulted in counter productive smokestack

chasing and bidding wars, driving up the costs of incentives (Fulton, 1988: p. 39). In 1978, Pennsylvania gave Volkswagen a $71 million incentive package for a plant that was hoped to employ 20,000 workers, for a projected cost per $3,550, per job (Fulton, 1988; p. 32). The plant closed after 5 years and never employed more than 5,700 people, for a cost of $12,000 per job. In 1980, Tennessee won the competition for a Nissan plant with an incentive package that cost 33 million dollars (Wilson, 1989: p.8), or $11,000 per job (Fulton, 1988: p. 33). When Tennessee won a Saturn plant in 1985, the cost was 80 million dollars (Wilson, 1989: p. 8), or $26,000 per job (Fulton, 1988: p. 33). Shortly afterward, Kentucky won a new Toyota plant with an incentive package which monopolizes the states economic development budget with a price tag of between 125 and 150 million dollars, or a cost of about $50,000 per job (Fulton, 1988; p. 39). In 1993, Alabama won the bidding war for a Mercedes plan with an incentive package of 253 million dollars for a plant that will employ 1,500 workers (Zipser, 1995: p. 23), for a cost of nearly $165,000 per job (Kahan, 1996: p. 446). The costs of the incentives almost equal the cost of the 300 million dollar plant! As costs of these highly visible incentives packages surpass the value of the externalities they are supposed to correct, the act of granting these incentives will reduce economic efficiency and overall welfare. The potential for wasting scarce public dollars on counter productive economic development spending creates an urgent need to differentiate between policies which contribute to economic efficiency and public welfare, and those which detract from it.

The literature only imperfectly differentiates between types of programs. Much of the literature treats economic development policies as a monolithic block, without differentiating between different types of policies. Some authors use a variable "economic development policy" to identify the total number of economic development policies (Brace and Mucciaroni, 1990: p. 157; Brace, 1991: p. 300) or the percentage of listed policies offered (Brace, 1993: pp. 91-92), without differentiating by type of policy. Others use total economic development spending, without differentiating what incentives the funds are spend on. (Bingham and Bowen, 1994: pp. 501; Goss and Phillips, 1997: p. 88). One study used factor analysis to arrive at statistical constructs (Hunter, 1994: p. 30) which solved a statistical problem by reducing a large number of economic development polices to four variables, but did not result in factors which decision makers can identify with specific types of policies. Another study (Ambrosius, 1989: p. 285), rather than classifying policies, selected only 8 policies and tested them individually.

Several studies identify distinct economic development strategies underlying state economic development programs, and differentiate between selective, or targeted, policies, and generic policies which reward all firms for engaging in the desired activity (Kahan, 1996: p. 445). Peter Eisinger, (1988: pp. 12, 228-34) has made some differentiations, between supply side policies, which seek to attract taxpayers by reducing the cost of production, and demand side policies which seek to find growing markets for current and potential state products. He also differentiated supply side theories into: 1) regressive tax policies, which reduce the tax burden on corporations 2) debt financing programs, which make or guarantee loans to manufacturers 3) labor market deregulation, which reduces the cost of labor 4) geographically targeted policies, to stimulate growth in selected areas and 5) regulatory policies. Several studies follow Eisinger's classification system for the period 1970 through 1985 (Grant and Wallace, 1994: p. 44; Grant and Hutchinson, 1996: p. 28; Grant, 1996: p. 35). These studies construct indicators using factor analysis (Grant and Wallace, 1994: p. 44; Grant, 1996: p. 38). While this approach identifies distinct dimensions of development efforts, it introduces ambiguity about exactly what is being tested and reduces the usefulness of the results to policy makers who urgently need guidance as to what specific types of policies are productive. To enable public officials to focus limited public resources on the most effective economic development policies, economic development policies have to be more clearly differentiated and the effect of each type tested.

Differentiating Economic Development Policies

Economic development policies can be differentiated into several categories based upon the mechanisms by which they seek to attract industry. Business text books give us insights about which categories of costs and benefits business people are trained to evaluate in their investment decisions. Incentives can then be classified according to the criteria used by firms to select potential investments. Conway Data Inc. publishes the only comprehensive annual survey of business incentive legislation across the 50 states in its publication Site Selection (Grady, 1987: p. 87). Many of the programs listed in this publication fall neatly into the categories used by business to make investment decisions.

Business finance texts teach the use of a Net Present Value (NPV) equation and the related Internal Rate of Return (IRR) to guide managers in the selection of potential investments. The equation for evaluating either the net present value of potential investments, or their internal rate

of return, include components representing: the cost of capital, the initial investment, annual cash inflows from sales, annual fixed cash outflows from expenses and taxes, and estimates of annual variable cash flows from expenses and taxes. In the capital budgeting procedure, firms usually rank potential projects according to their rates of return beginning with the most profitable. Projects are usually selected for funding as long as the rate of return exceeds the cost of capital.

Financing Aid

Financing aid for industry, whether in the form of loans or loan guarantees, seeks to make investment in a state more attractive by reducing the cost of capital. Financing aid can be divided into state financing assistance, and local financing assistance. State financing assistance for industry includes: 1) state authority or agency revenue bond financing, 2) state authority or agency general obligation bond financing, 3) state loans for building construction, 4) state loans for equipment, machinery, 5) state loan guarantees for building construction, 6) state loan guarantees for equipment, machinery and 7) state financing aid for existing plant expansion. Local financing assistance for industry is very similar to its state counterpart and includes: 1) city and/or county revenue bond financing, 2) city and/or county general obligation bond financing, 3) city and/or county loans for building construction, 4) city and/or county loans for equipment, machinery, 5) city and/or county loan guarantees for building construction, and 6) city and/or county loan guarantees for equipment, machinery.

Both public loans and loan guarantees would reduce the interest expense on the portion of a project that was financed by debt, thus reducing the overall cost of capital. State loans guarantees would reduce the risk to lenders, reducing the interest rate they require for the loan. State loans could reduce the cost of borrowing by offering below market interest rates, and by allowing companies to avoiding the flotation costs usually associated with selling bonds. States should also be able to borrow money at slightly lower rates than firms because of lower risk. Deeper interest rate cuts, however, would require a significant subsidy. The literature includes examples of interest on state loans as low as 2 percent (Wilson, 1989: p. 11).

Because interest expenses are tax deductible, for each dollar of interest subsidy paid for by the state, a firm with a marginal tax rate of 35 percent will benefit only 65 cents, with the other 35 cents being diverted to

Washington in increased federal corporate income taxes because of reduced corporate tax deductions for interest.

One other weakness of financing aid is that it influences only part of the cost of capital, the debt portion. Because financing a project with 100 percent debt is extremely risky, both for the lender and for the borrower, new debt must be matched by new equity. By mixing debt with equity, borrowers avoid high scheduled payments, and lenders reduce the risk of default. Therefore firms blend debt with equity. Firm's practice of blending debt with equity allows the state to leverage private funds with public loans, but it also dilutes the influence of reduced interest costs on the cost of capital. The mathematics of cost of capital calculations suggest each percentage decrease in the cost of debt will decrease a firm's cost of capital by only a fraction of one percent. The after tax cost of capital is a blend of the cost of equity and the cost of debt calculated by the equation:

Cost of = (Cost of*Portion of) + ((Cost of *(1-tax rate) * Portion of).
Capital Equity Equity Debt Debt

The cost of equity is the return stockholders demand for taking a risk by investing in a firm. Because the risk is greater than that of lenders, the return required is higher. If a firm has a cost of equity of 14%, a cost of debt of 10%, a 50-50 blend of debt and equity, and the marginal tax rate is 35%, the cost of equity would be 10.25%

10.25% = (14% * .50) + (10% * (1-.35)) * .50).

A one percent reduction of the interest rate would reduce the after tax cost of capital only 0.32%.

9.93.% = (14% * .50) + (9% * (1-.35)) * .50).

Therefore, substantial state subsidies may be required to significantly reduce the cost of capital.

State financing aid has the advantages of (1) making more investments within the state feasible, and (2) allowing the state to use loans to leverage additional private investment. Even if all states adopted identical policies, the reduced cost of capital would make more private investment financially feasible, increasing the number of new plants, plant expansions, and new jobs. A positive sum game is therefore possible. The disadvantages of state financing aid is: (1) states will incur some costs to provide sufficient interest subsidies to make an appreciable impact on the

cost of capital, and (2) some of the money states invest in interest subsidies will exported from the state to pay increased federal taxes.

Tax Breaks for Existing Industry

Tax breaks for existing industry benefit plants in operation, rather than new plants under construction. They work by reducing variable costs from taxes associated with operating all plants, independent of when the plant was placed in operation. Tax incentives for operating industrial plants include: 1) corporate income tax exemption, 2) personal income tax exemption, 3) excise tax exemption, 4) inventory tax exemption on goods in transit, 5) tax exemption on manufacturers inventory, 6) tax exemption on raw materials used in manufacturing, and 7) accelerated depreciation of industrial equipment. These tax benefits are driven by production, rather than new investment. Excise, inventory, goods in transit and raw materials taxes are variable costs driven by production. Income taxes and depreciation are driven by profits, which only occur when the plant is in operation. Tax incentives for existing firms remove any tax disincentives for maximizing production at existing state plants. They also remove any disincentives for locating extremely profitable plants in a state.

Advantages of tax breaks to existing industry include they are more focused than policies offering low corporate tax rates to all firms. Tax breaks for industry allow states to continue to collect substantial corporate taxes from sectors which must locate near their markets, such as the retail and service sectors, yet also provide a favorable tax climate for manufacturing, which can export its production across state and national borders and is therefore free to locate where conditions are most favorable. Furthermore, the current tax system creates disincentives for investment in manufacturing (Reich, 1983: pp. 3-5) and state tax exemptions for

Tax Breaks and Subsidies for New Investment

Tax incentives and subsidies for new investment target limited economic development dollars to new investment in the state. They reduce the fixed costs stemming from the construction of a plant and the purchase

of machinery, and therefore only apply to new investment. Policies which help reduce the fixed costs of new investment include: 1) tax exemption or moratorium on land, capital improvements, 2) tax exemption or moratorium on equipment, machinery, 3) sales/use tax exemption on new equipment, 4) tax incentive for industrial investment, 5) state provides free land for industry, and 6) state owned industrial park sites. These incentives exclusively reward new industrial investment, and are not available for existing plant and equipment. Some, such as free land for industry, reduce the initial investment, while tax breaks on new investment reduce fixed costs in future years.

Some of these incentives may ignore the important role of existing plant expansion in state economic growth. While industrial relocations are highly visible, only about 3 percent of plants relocate every year (Schmenner, 1979: p. 128). Another 3 to 6 percent of existing stock is added as new branch plants (Schmenner, 1979, p. 129). Most growth is the result of the expansion of existing facilities (Blair and Premus, 1987: p. 74) with between 6 and 9 percent of plants expanding every year (Schmenner, 1979: p. 127). Incentives for highly visible new plants may be politically expedient, but expansion of existing plants may be a more important source of economic growth.

Entrepreneurial State Policies

Peter Eisinger's (1988: p. 9) "entrepreneurial state" policies seek to nurture growth of existing state industries rather than attract outside capital. He advocates policies he labels "demand side", because they would find markets for state products, as opposed to the "supply side" approach of reducing costs to industry. Demand side policies focus on finding markets for current state products and developing new state products for emerging markets. These policies, if successful, would influence the internal rate of return of potential investments by increasing the projected cash flow from sales. Policies fitting this model which have been implemented include: 1) tax credit for the use of specified state products, 2) state help in bidding on federal procurement contracts, 3) state program to increase export of state products, 4) tax exemption to encourage research and development, 5) state program to promote research and development, 6) state science and/or advisory council and 7) state and/or universities conduct feasibility studies to attract/assist new industry. Entrepreneurial state policies are drastically different from other policies in that they focus on improving cash inflows (sales) rather than reducing cash outflows (expenses and taxes).

Incentives and Subsidies to Create Jobs

Another set of polices are designed to provide incentives for the employment and training of industrial employees, or to subsidize the recruiting and training of industrial employees. These policies would reduce the after-tax cost of hiring and training labor. These polices include: 1) tax incentive for the creation of jobs, 2) state recruiting, screening of industrial employees, 3) state supported training of hard core unemployed, 4) state incentives to industry to train the hard core unemployed, 5) state supported training of industrial employees and 6) state retraining of industrial employees. Employment polices are theoretically equally beneficial to both the state and manufacturers. If employment policies are successful, the state would have reduced unemployment compensation costs. Manufacturers would also benefit from reduced costs of recruiting and training industrial workers. Additional savings may be obtained if industry can use unemployed workers, for which there is little demand, rather than having to outbid existing firms for employed workers.

Other Policies

Two policies, which represent other potentially important factors, did not fit neatly into the preceding categories. Theses policies are state right to work laws, and state sponsored industrial development authorities.

State right to work laws. Eisinger (1988: pp. 165-169) identified labor deregulation as one of the five supply side policies used to reduce the costs to industry. State right to work laws appear to be a pivotal policy variable. First, correlations of potential variables suggest state right to work laws appear to influence the percent of workers belonging to unions. Since potential correlation problems prevented using both measures in the analysis, right to work laws were chosen for inclusion because it is a policy variable, rather than union membership, which was only a potential control variable.

State sponsored industrial development authority. A state sponsored industrial development authority would indicate an ongoing state intervention in the state business climate, rather than a piecemeal intervention resulting from legislation.

Non-Economic Development Policy Variables

Political Variables

Tufte (1978: pp. 9-27) hypothesized there was a electoral economic cycle caused by the tendency of chief executives to stimulate the economy during election years to assure voter satisfaction and their re-election. Other potential results of election years, including increased political uncertainty, could have a chilling effect on new investment. Election years are represented by a dummy variable, set at one for years when the governor is elected. Gridlock may occur when one party occupies the governor's mansion and the other dominates the legislature. A dummy variable was created, set at one whenever the governor was of one party and the opposite party controlled both houses of the legislature.

State Fiscal Variables

Several variables reflect fiscal variables which will vary across states. Change in state debt, (assuming debt is financed in national or world markets) would represent an influx of cash into the state. If public works projects or counter cyclical spending stimulates state economies, change in state debt would be positively related to change in per capita income. Federal spending as a portion of GSP would also represent an inflow of cash in the state economy. Assuming states contribute to the treasury in proportion to their GSP, a state with a larger portion of its GSP from the Federal government would be receiving more cash inflow from wages and payments than outflow from taxes. States with a small federal sector, on the other hand, probably pay more in taxes than flows back into the state in wages and payments. One would therefore expect having a large federal sector, paid for out of the common treasury, would be positively related to state per capita income. State education spending was identified by Jones as mixed expenditure, having both investment and consumption elements (Jones, 1990: p.233). Education is a major cost driver which drives state taxes to support state aid to education, and local taxes to support local schools. The influence of education spending would therefore be hard to predict.

Methodology

Structure of the Study

Pooled cross sectional time series analysis was used for this study. The 48 contiguous states were used as subjects, as is the convention in studies of state economic performance (Brace 1993: p. 125). The

availability of data allowed the analysis to span seventeen years, from 1979 through 1995, providing a total of 816 cases.

This study also attempted to avoid common statistical problems with both serial correlation and unstable results due to multicollinearity. First, serial correlation is often controlled by either using dummy variables for states of lagged dependent variables, a process which also may absorb some of the differences in state policy. The Durbin Watson statistic for this equation estimated in this study did not indicate a problem with serial correlation, so none of the standard procedures to correct for serial correlation were required. Thus, the results should have more explanatory power than previous studies. Second, multicollinearity can produce unstable regression results which are not reliable. This study took extensive precautions to avoid multicollinearity. The first line of defense against was vigilance against high correlations in independent variables. Some pairs of variables, while both theoretically valuable, are too closely correlated to include in the same equation. In this circumstance, only one of the pair, the most descriptive, was included. The second line of defense is the use of variance inflation factors (VIF) to detect variables which, although not highly correlated to any one variable, nevertheless may be moderately correlated to several variables in the equation. Variables with high VIFs were examined, and those which were least explanatory of state per capita income were deleted. Furthermore, variables with little explanatory power were eliminated, simplifying the correlation matrix and reducing the VIFs of variables with more explanatory power. The resulting equation contained no VIF higher than 2.238, suggesting the final product is a stable equation in which neither the sign of the coefficients nor the significance of the observed relationships is the result of the inclusion of a correlated variable.

Dependent Variable

The dependent variable chosen to measure improvement in state welfare is the change in per capita personal income (PCPI). Per capita income, while not a perfect measure of welfare, captures the tangible and objectively measurable component of citizen welfare. Intangible components of quality of life, while important, are beyond the capabilities of this methodology. Change in per capita income was arrived at by dividing the current PCPI by the previous year's PCPI, and subtracting one. The result is a decimal with a mean .06367.

The first regression equation suggested some corrections were necessary. Half of the outliers were from one state, North Dakota, and some of those were highly influential. Per capita personal income for that state was erratic, falling in both 1980 and 1988 and growing by over 25 percent in both 1981 and 1989. Non-farm income, however grew steadily, suggesting the variation in per capita personal income was due to temporary agricultural losses, which are not related to public policy. To prevent one state from having undue influence on the regression equation, change in per capita personal income was averaged for the period 1978 through 1981 and for the years 88 and 90 to smooth the effects of agricultural calamities. A subsequent examination of the error term across states uncovered similar problem with South Dakota, which had declining per capita personal income in 1980 and exaggerated growth in the following year. After averaging South Dakota's growth in per capita personal income from 1979 through 1981, the variance in error terms was very similar across states, with only slightly higher variability among states with large agricultural sectors.

Explanatory Variables

Economic Development Policies. The number of economic development policies in each of the substantive categories described earlier was translated into an index. The number of economic development policies adopted has increased over time in all categories, except for state right to work laws (SRWL). For state right to work laws, a dummy variable could be used, coded 1 if a SRWL was present, and 0 if it was not. For all other economic development variables, the number of policies in a category offered by each state was divided by the average number of policies in that category offered in the 48 contiguous states, to prevent the measure of economic development policies from becoming a function of year. If the average number of policies in a category offered by the 48 contiguous states was four in a given year, a state offering five was scored 1.25 (5/4 = 1.25) and a state offering three was scored 0.75 (3/4 = 0.75). The resulting indices of economic development polices are similar to that used by the ACIR for tax effort. A five year prior moving average was then calculated for each index, and used as the independent variable for that category of polices.

National Influences. National influences were calculated for inflation, recession, times of rapid growth and fluctuations in oil prices, all of which are expected to have an irresistible national influence on state per capita income. Inflation was calculated as the percentage change in the

consumer price index. Recession was coded 1 for a year in which there were 2 consecutive quarters of falling gross domestic product (GDP), and zero for other years, following economist Arthur Okum's 1962 formal definition of recession. Economic booms were coded one for years with more than 5 percent real growth in GDP, and zero for other years. Oil windfall was calculated as the product of per capita oil production in barrels, times positive 1 when prices rose more that 33 percent a year, and time negative one when prices fell more than 33 percent a year, and zero for all other years.

State Influences. Variables were calculated to measure unemployment, cash flows due to federal spending and state counter cyclical spending. Unemployment was calculated as a 2 year prior moving average of the unemployment rate, on the assumption (Solow, 1956: pp. 68-70) that the availability of labor would attract capital. A two year prior moving average, was calculated for the federal output as a portion of gross state product (GSP), on the assumption that federal output would constitute a cash inflow into the state which was paid for by the nation as a whole. A large federal portion of GSP would suggest the state was receiving more in federal spending than it was contributing in taxes, where a small portion would suggest the opposite. Federal spending is hypothesized to increase the money supply in the state. Changes in state per capita real debt would indicate borrowing. States, unable to regulate their money supply, may resort to counter cyclical spending in an effort to stabilize their economies. If debt were used for this function, and it was financed on national and/or world markets, this issuance of debt would result in a temporary cash inflow into the state, which could possibly stimulate the state economy.

Sector Variables. Farm, manufacturing, service and wholesale sectors were expressed as a portion of gross state product (GSP) and a two year prior moving average was calculated to smooth out any unusual one year events. Different sectors have different growth rates, and their portion of the economy in a jurisdiction explains part of the growth rate in that jurisdictions (Blair, 1995, pp. 145-8).

Political Variables. Political variables include a dummy variable coded one for Gubernatorial election years, and a dummy variable for divided government coded one if the governor and legislature were of opposite parties. These variables suggest uncertainty in the political environment, and are hypothesized to reduce investment. An alternative hypothesis for Gubernatorial election years is that the economic-electoral cycle would increase income in election years (Tufte, 1978: p. 28).

State Fiscal Variables. State fiscal variables include measures for the state corporate income tax burden, fiscal centralization and state and local education expenditures. The state corporate income tax burden was calculated as the state corporate income tax collections, divided by the remainder of gross state product minus state personal income. The remainder should be a rough approximation of corporate output, less wages. The corporate tax, divided by this output less wages, is a measure of the corporate tax burden. Other things being equal, corporate taxes should be negatively related to economic growth. Fiscal centralization was calculated as state spending as a portion of combined state and local spending. Theoretically, corporations gain more from local services like police and fire protection, than they do from state services (Peterson, 1981: p. 78). Yet local spending falls heavily on the property tax, and industrial and commercial property is often taxed at a higher rate than residential property, making local spending a disincentive to building plant and installing equipment. State and local education expenditures, while having some investment elements (Jones, 1990: p. 223), are also a major driver of state and local spending. Since state aid to school districts is the largest category of state spending and school spending is the largest category of local expenditure, education expenditure may be a proxy for state and local tax rate. State and local education expenditure was correlated with state and local tax burden, so only one of the variables could be included in the regression equation. While both were significant in the same direction, the more significant relationship, that with education spending, was retained in the equation.

Findings

State Economic Development Policies

Policies designed to improve the overall business climate for all industry were positively related to growth in per capita personal income, but incentives which were designed to elicit specific responses from the market were negatively related to growth in state per capita income. Successful policies included tax breaks for existing industry and state financing aid for industry, which both were positively and significantly related to growth in personal state income. The influence of right to work laws had a positive sign, but did not have a statistically significant relationship to growth in per capita income.

TABLE 1
Determinants of Change in State Per Capita Personal Income

	â	t
Economic Development Policies		
Tax Breaks for Existing Industry	.01010	3.51
Tax Breaks for New Investment	.00322	-2.11
State Financing Assistance	.00380	2.87
Local Financing Assistance	-.00033	-.23
Entrepreneurial State Polices	-.00142	-.39
Programs to Increase Employment	-.00620	-2.20
State Right to Work Law	00224	1.32
State Econ. Development Org.	-.00040	-.32
State Fiscal Variables		
Corporate Income Tax	.119	4.46
Centralization of Expenditures	.02751	2.31
State and Local Education Expend.	-.00003	-4.82
State Influences		
Change in Real Per Capita Debt	.00001	-1.97
Federal portion of GSP	.120	3.41
Unemployment (preceding 2 years)	-.0486	-1.56
Political Variables		
Governor Election Year	-.00179	-1.27
Gov. and Legis. Opposite Parties	-.00129	-.95
Sectors as Portion of GSP		
Farm	-.109	-4.07
Manufacturing	0246	2.09
Service	.0245	-1.23
Wholesale	.231	3.49
National Influences		
Inflation	569	25.88
Oil Price Changes	.00016	4.47
Recession	-.02266	-11.93
Boom (Real growth > 5%)	.03550	12.74
Constant	01742	1.26
Summary	tatistic	Significance
F	68.693	.000
Adjusted R Squared	.67	
Durbin Watson	1.903	Not Significant
Pooled Durbin Watson	2.020	
N	816	Not Significant

(48 states*17 Years)

State policies which try to encourage specific responses from manufacturing firms, such as incentives for new investment and incentives for increasing employment, were both negatively and significantly related to growth in state personal income. Entrepreneurial state policies, state development organizations and local financing assistance for industry appeared to have no consistent influence on growth in state per capita income. This study was not designed to test whether local financing assistance has an influence on local income, only if it increased state income.

While these findings support Eisinger's (1988: pp. 227-30) suggestion that existing industries need to be nurtured, they refute his recommendations on how to do it. The polices which contribute to state welfare, as measured by per capita income, do not seek to redirect the invisible hand, but seek to create a favorable tax climate, and provide financing options, for all industry. Firms are still responsible for finding the most productive and profitable uses for labor and capital. Policies which detract from state welfare, on the other hand, seek to circumvent the invisible hand by offering incentives for specific firm decisions, like investing new capital and increasing employment. The reduction in state per capita income attributed to these programs suggests the programs are fundamentally flawed. A possible cause may be that these incentives distorted the market functions and caused capital and labor to be allocated inefficiently, reducing the efficiency of the state economy and state welfare. These findings suggest the firm, rather than the state, is the best judge of what investments will be viable.

Even if incentives for new investments and new jobs induce the desired response, that desired response is a distortion of the optimal allocation of capital and labor. Inefficient allocation of capital will reduce the return to capital. If in-state firms are the primary recipients of these incentives, their return (excluding incentives) will be reduced. The mobility of capital world wide, combined with the possibility that these programs will attract external capital, may prevent shortages of capital. Labor, however, is not mobile internationally and is only partially mobile between states due to inertia, personal preferences and family ties (Stiglitz, 1988: p. 654; Peterson and Rom, 1989: p. 711). Inefficient utilization of labor may create labor shortages for other productive activities, but the inefficient utilization of labor may preclude higher wages. In competitive world

markets for manufactured goods, inefficient allocation of labor cannot go unpunished. Real wages are a function of productivity (Gwartney and Stroup, 1993: p. 13), so inefficient utilization of labor will result in lower wages.

The role for the state, which will maximize economic efficiency and total welfare, is to develop a favorable environment for business, but not to interfere with the function of the invisible hand as it decides how to allocate labor and capital to their most productive uses.

State Fiscal Variables

State fiscal policy is significantly related to growth in state personal income, but not necessarily in the ways commonly believed. First, corporate taxes were positively and significantly related to growth in per capita personal income. Corporate taxes are levied against a much larger base than industry alone, including retail and the growing service sector. Overall corporate taxes are not a significant deterrent to economic growth, and their effect on industry can be countered by tax breaks specific to industry. Second, the centralization of expenditures also was positively related to growth in per capita income. This may suggest that the property tax, which is local government's primary source of income, is a disincentive to investment in plant and equipment. Third, education expenditures were significantly and negatively related to growth in per capita income, suggesting either that the benefit from education is more than compensated for by high state taxes for state aid to education and high local taxes for education expenditures, or that the benefits are long term, rather than short term (Feiock and Storm, 1999).

State Influences

Only one of the state effects was in the expected direction. The federal portion of GSP, which would be related to cash infusions into the economy from the federal treasury, is positively and significantly related to growth in per capita personal income. The federal sector, like the manufacturing sector, is an export industry which attracts out of state dollars. A second variable expected to be positively related to growth in per capita income was significantly related in a negative direction. Change in state per capita real debt, a measure of deficit spending which is hypothesized in Keynsian economics to stimulate employment, was negatively related to growth in per capita income. State efforts at counter cyclical spending appear misplaced. Finally, unemployment is not significantly, related to growth in per capita personal income.

Political Influences

The political influences tested in this study were generally not significant. Per capita income grew slower in gubernatorial election years than non-election years, suggesting Tufte's (1978) electoral-economic cycle was not replicated on the state level. Rather than economic activity being stimulated during election years, the uncertainty of an election year, if anything, may dampen it.

Sector Effects

The portion of GSP generated by export sectors, manufacturing and wholesale distributors, was positively and significantly related to growth in per capita income. The farm portion of GSP was negatively and significantly related to growth in per capita income. The service sector was not related to growth in per capita income. While a growing sector, service wages are relatively low, possibly explaining the lack of effect.

National Influences

National influences suggest state economies cannot be de-coupled from national trends. Four of the six most significant results were national effects. Other things being held constant, state per capita income will increase to match 56 percent of inflation. Per capita personal income appears to fall two percent during years with recessions, defined as 2 quarters of declining GDP. Per capita personal income gets a three 3 percent boost in times of supernormal growth (real growth in GDP over 5 percent). Finally, oil price changes influenced income in states with oil production, adding slightly to per capita personal income when prices increased, and subtracting slightly from it when oil prices fell.

Conclusion

It is impossible for a state not to have an industrial policy because the unplanned effects of taxes, expenditures and neglect will create an implicit policy (Reich, 1983: p. 3). This study is based on the premise that the state can increase state economic efficiency and total state welfare by subsidizing the production of goods with positive externalities up to the value of those externalities. State welfare was operationalized as per capita personal income. My findings suggest that incentives offered to all manufacturers, including tax breaks for manufacturing as a whole and

financing aid for manufacturing, can increase state economic efficiency and overall welfare, as measured in per capita personal income.

The power of economic development policies, however, is a two edged sword. Poorly conceived incentives, which distort, rather than correct, the functioning of the market, can reduce the efficiency of the market and erode total welfare. Incentives for which the cost exceeds the value of the externalities they were supposed to correct can overcorrect the market, exchanging one type of inefficiency for another. The waste of scarce public funds that could otherwise be spent on more productive pursuits, or left in the hands of private citizens, also detracts from economic efficiency and total welfare. State efforts to redirect the invisible hand, by offering incentives to build a new plant or to create jobs, tend to reduce state economic efficiency and erodes state per capita income.

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