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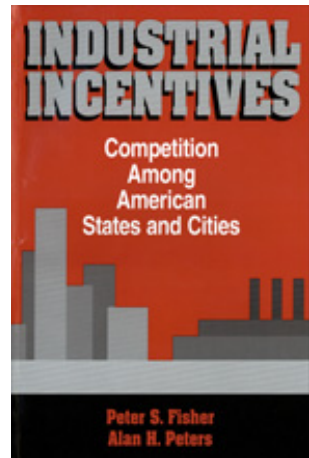
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# State and Local Incentive Competition for New Investment

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# 1 State and Local Incentive Competition for New Investment

Over the past decade and a half, “economic development” has become entrenched as an important function of state and city government. Unlike much of the other, more hidden, work undertaken by states and cities, the special economic development deals offered by local officials to lure new investment are often covered prominently in the press. Few have been unimpressed by the \$250 million Alabama reputedly gave Mercedes-Benz or by the estimated \$130 million South Carolina gave BMW (Council of State Governments 1994, p. 12). Possibly as a result of such eye-grabbing deals, it has become commonplace, not only in the press but among policymakers and academics, to characterize the current level of economic development effort as too highly competitive and probably detrimental to sound fiscal policy. State and local competition for new industrial investment has been widely criticized for being a zero-sum, or worse, a negative-sum game—in other words, providing no national benefits—and for being potentially harmful to economic growth because it reduces the ability of state and local governments to finance investments in education and infrastructure. Indeed the subtext of much popular reporting and even academic discussion is that states and cities have become imprudently generous to private investment while cutting back on more typical governmental activities. It is unsurprising then that some prominent researchers have called for the federal government to severely limit state and local economic development efforts (Burstein and Rolnick 1996; Rolnick and Burstein 1996; Schweke, Rist, and Dabson 1994) or for a major reorientation of the state and local economic development effort (LeRoy 1994; Smith and Fox 1990).

Notwithstanding the existence of both this sort of criticism of economic development policy and a number of academic and policy journals dedicated to the issue of state and local economic development policy, very little is known about the size of the economic development effort. We have some idea of the staff size at state development agencies and of the budgets of those agencies (although for reasons that will

become clear, it is most unlikely that these budget numbers say much about the size of the state economic development effort), and we have some knowledge of what economic development instruments states are able to use (although there are important discrepancies among the various directories of state instruments). However, there is virtually no reliable information on the really important questions: How much are states willing to provide to a firm? What are state incentives actually worth to a firm? What sort of places offer the biggest incentives? At the city level, the situation is that much worse; here there is not even a reliable directory of instruments or budgets. One result is that public and even academic debate on economic development issues is often seriously flawed.

Possibly two of the most crucial issues for economic development concern are 1) measuring the worth *to the firm* of incentives offered and 2) identifying the spatial pattern of incentives (in other words, determining which communities offer the largest and smallest incentives). These issues are important because almost all economic development policy is based on the idea—emanating from modern location theory—that the purpose of incentives is to influence business location decisions by improving the relative profitability of investing at a particular site (Blair and Premus 1987; Chapman and Walker 1990). Unfortunately, the academic and policy literature on economic development has tended to focus on other issues, usually the cost of incentive programs to government or the nominal size of incentive deals. The Alabama incentive package to Mercedes-Benz was reported by one source to be composed of \$112 million in infrastructure improvements, \$30 million to build a training facility, \$60 million for training, \$8.7 million for tax abatements on machinery and construction materials, and \$39 million in other incentives (Council of State Governments 1994, p. 12). What is unclear is the extent to which Mercedes-Benz benefits from each dollar of public money spent. Is Mercedes-Benz able to capture the full \$30 million in state funds spent on the training facility or the \$112 million spent on infrastructure? These problems are even more stark in the BMW deal. Fifty million dollars of BMW's \$130 million package was for expansion of the Greenville-Spartanburg airport. It seems unreasonable to assume that BMW will be able to capture all of the benefits of airport expansion; airports are public facilities, and it is much more likely that many (if not most) of the airport's improvements

will be captured by other individual and corporate business users, not BMW. Much of the economic development literature ignores this problem.

More generally, the literature has mostly failed to distinguish between the nominal value of incentive awards and their actual value to the firm. For instance, the 1980s saw considerable Japanese auto plant investment in the United States. In a widely quoted article looking at this issue, Milward and Newman (1989) claimed that Mazda had received state incentives worth around \$15,000 per employee for its investment in Flat Rock, Michigan. This figure included \$19 million in worker training, \$5 million in road improvements, \$3 million in on-site railroad improvements, \$21 million in an economic development loan to be recaptured, and \$5 million in water system improvements. This gives a total of \$53 million for what was then projected to be 3,500 employees at the new plant. In the same article, various other Japanese auto manufacturers were reported to be receiving vast incentive deals. Similar claims about the nominal value of economic development deals are commonly made in the press and in the academic and policy literature. However, there are problems with such measures beyond the matter of a firm's ability to capture directly the benefits of an incentive. Consider the case of Mazda just cited. The costs and benefits associated with various types of economic development incentives vary greatly; adding up nominal awards across different programs has the effect of comparing apples with oranges. Most obviously, a \$1 million capital on-site railroad improvement award is likely to be much more costly for government, and much more beneficial to the recipient firm, than a \$1 million capital loan. In the Mazda case, consider the \$19 million worker training award. If this award provides workers with general and transferable skills, then it is unlikely that it was worth the full \$19 million to Mazda, but if the training were highly customized to Mazda's special needs, then it may indeed have replaced \$19 million in expenses that Mazda would otherwise have incurred.

So, the question remains, How should the worth of incentives be measured? The first concern of this book is to measure, from the point of view of the firm, the true benefits of state and city incentives. A cogent answer to this question is a prerequisite to any sensible debate on the impact of incentives on a firm's investment decisions. Moreover, an answer also allows us to begin to provide innovative and useful

responses to a related issue that has dogged the economic development literature: can development incentives reasonably be expected to influence a firm's location decisions? In all of this, our purpose is not to add to the already extensive econometric and survey literature on whether economic development incentives measurably affect the location decisions of firms. While our results do complement this research, our purpose is limited to measuring the worth of incentives to the firm.

Unfortunately, providing a comprehensive and cogent measurement of the worth of economic development incentives to firms is a dauntingly complex task. A vast proportion of the work going into the answers provided in this book is methodological. As a result, much of the book is itself devoted to methodology (although more technical discussions are segregated into Chapter 3 and Appendixes B and C and may be avoided by readers not interested in such issues). Simply put, the answers we give in this book derive from the output of a very large computer simulation model (the Tax and Incentive Model, or TAIM). It has been our experience that the answers provided by TAIM—and equally by competing models—are often crucially dependent on the assumptions incorporated into the model. Understanding the assumptions is an important part of understanding the answers themselves. One of the criticisms we have of some—although certainly not all—of the work done in the same tradition as ours (researchers using the hypothetical firm method) is that public policy conclusions are made on the basis of data and assumptions the underpinnings of which are inadequately discussed.

The second concern we focus on is the spatial pattern of economic development incentives. In particular, do poorer, more distressed places tend to offer bigger incentives than wealthier, less distressed places? We believe this matter has received insufficient attention in the literature. An answer to this question is crucial; if *competitive* state and local economic development policy is to provide net benefits for the nation, then it should, we believe, tend to promote the redistribution of employment from areas of low economic distress.<sup>1</sup> For this to occur, economic development efforts should be concentrated or more active in poorer, economically troubled places.

Although our research concentrates on these two issues—the worth and spatial pattern of incentives—our results also shed light on a set of related, secondary questions:

- Would it be feasible for the federal government to limit the state and local economic development effort?
- What is the role of enterprise zones in delivering incentives to firms?
- What proportion of the total incentive package is a tax-based entitlement and what proportion derives from non-tax awards (such as grants, loans, and loan guarantees)?

Here we focus on taxes and incentives across the 24 most important industrial states and a sample of 112 cities within those states. We measure the value of incentives available in these states and municipalities from the standpoint of a business.<sup>2</sup> That is, we assess the after-tax income effects of state and local tax and incentive regimes. This enables us to explore the size and redistributive impacts of state and local incentive programs in considerable detail.

## **THE EXPANSION OF AND JUSTIFICATION FOR STATE AND LOCAL INCENTIVES**

Although states were subsidizing private industry with public money over a century and a half ago, and although explicit “smoke-stack chasing” began nearly 60 years ago with Mississippi’s “Balance Agriculture with Industry” program, it is only over the past two decades that there has been explosive growth in state and local economic development activity (McCraw 1986; Netzer 1991). Many, if not the majority of, state-level economic development agencies were established during this period, and although no accurate historical census of municipal economic development agencies exists, it is likely that the majority of local economic development departments were either established or greatly increased over the past 20 years (Eisinger 1988, pp. 16–17). So too, the instruments of economic development have expanded rapidly, and the use made of any single instrument has intensified. Eisinger (1988), using data from the annual survey of economic development incentives by *Site Selection and Industrial Development* (and the magazine’s precursors), developed a measure of state-level policy penetration that assesses the use by states of economic develop-

ment instruments available at a particular time period. He found that from the mid 1960s to the mid 1980s there were large increases both in the variety of instruments available to state officials and in the use made of any particular instrument. Eisinger (1995) claims that there is some evidence of a slowdown in the economic development effort during the early 1990s, and data from the Council of State Governments suggest that this is indeed the case (Council of State Governments 1994, pp. 4–6). What limited information we have on the expenditures of state and local economic development agencies suggests a substantial increase in spending during the 1980s (Fisher 1990) but some “state fiscal crisis-induced” cutbacks during the early 1990s (Bradshaw, Nishikawa, and Blakely 1992). State appropriations for state economic development agencies rose from \$255 million in 1982 to \$999 million in 1988 (National Association of State Development Agencies 1988) but declined somewhat in the early 1990s (although these figures are far from being unambiguous indicators of the development effort). The net result is that both relocating and new plants in the United States now appear to regularly receive incentive packages consisting of various combinations of federal, state, and locally financed subsidies. These can include a mix of property tax abatements, sundry tax credits and exemptions for such things as investment in plant and machinery or research and development, job training credits and wage subsidies, road and other infrastructure improvement incentives, and various sorts of capital grants, loans, and loan guarantees.

The usual justification for these types of incentives is that they are necessary for the local expansion of employment opportunities, given the competitive investment environment in which states and municipalities currently exist. In other words, a locality usually finds itself competing for new private investment with other similarly endowed localities; in order to “capture” a relocating firm, the locality must ensure that it offers, other things being equal, the “least cost” site. This understanding of the role of economic development policy is based explicitly on traditional industrial location theory. Here, firms are held to be profit maximizers that evaluate alternative business sites based on product demand and the costs of production at various sites (Wasylenko 1981). Localities having high product demand (or at least good and cheap access to areas of high demand) and low costs for pri-

mary inputs (such as wages, land, energy, and capital) and processing costs (such as taxes and general regulations) will be most attractive to firms. From the viewpoint of city or state government, the argument in favor of economic development incentives is that they might be able to reduce the cost structure of a potential plant just enough to induce relocation from the maximum-profit site to the incentive-offering site (Blair and Premus 1987; Chapman and Walker 1990). Although the range of incentive instruments is extraordinarily diverse, “all focus on reducing the costs of doing business” at a particular site (Gerking and Morgan 1991, p. 34).<sup>3</sup>

This raises a more basic question: Why should states and localities want to use scarce revenues to encourage new industrial investment? The political justification is almost always that, since states and municipalities are part of a competitive interjurisdictional locality market, incentives are necessary to lure new investment and the jobs (for residents of the state or municipality) and the taxes resulting from that investment. Consequently, incentive programs are usually judged—in the popular media, by politicians, and very often by development officials—on their ability to retain or generate new employment. The central financial justification is that new investment, and its resultant direct, indirect, and induced jobs and spending, will help maintain or expand the state or local government’s revenue base and presumably improve the government’s ability to provide its residents with services (or reduce the per-capita costs of providing the current level of services). The principal economic justification is that the new investment and its associated multiplier will enhance the income of the locality’s residents.<sup>4</sup>

## **CRITICISMS OF INCENTIVE COMPETITION**

A number of criticisms have been leveled at incentive competition. Some individuals have worried about the effects on the ability of state and local government to provide services. Without proper analysis and administration, incentives may become overly generous, resulting in a net drain on a local government’s revenue base. Incentive competition could, in fact, divert resources from state and local programs, such as



investments in education, that in the long run are important contributors to economic growth, locally and nationally. As a corollary of this argument that the net fiscal impact of incentives could be negative, some have noted that the economic growth sought by development officials can in the long run raise the costs of providing municipal services. There is evidence that larger city size is associated with higher per-capita costs of supplying city services to residents (Muller 1975, pp. 3–19; Ladd and Yinger 1991, pp. 83–85). Thus, leaving aside the issue of the direct costs and benefits of an incentive regime itself, incentive-induced development may result in fewer or more costly public services for a locality's residents.

Others have argued that, without a commitment to the long-term management of incentives, job creation may never materialize or may materialize only at the expense of job loss elsewhere in the state, municipality, or metropolitan area. Indeed, the professional economic development literature is littered with stories in which incentives did not produce the requisite revenue or job benefits (Glickman and Woodward 1989; Guskind 1990; Hovey 1986). Related to these issues is a much broader concern that states and municipalities often provide incentive packages based more on politics and perceptions than on a formal consideration of either the local costs and benefits or of the optimal size of the incentive package necessary to induce relocation. Certainly, this has been a constant theme in the coverage by the popular press of the various deals for foreign auto manufacturers. Nevertheless, the focus of scholarly criticism has not been on these practical issues of program administration but on the economic justification for development incentives. Indeed, criticisms of the economic justification raise fundamental questions about the merit of locational subsidies.

Since American labor is highly mobile—over 13 percent of the metropolitan population moves across metropolitan areas in any given four-year period—some economists have argued that, at least in the long run, labor will tend to move from areas of high unemployment to areas of low unemployment (Marston 1985).<sup>5</sup> Job-creating incentives in a single locality are therefore unnecessary and probably counterproductive. Without the incentives, unemployed or underemployed workers in a locality would eventually find jobs elsewhere. If government were genuinely concerned with the welfare of its citizens,

it would more logically spend revenues not on locational incentives to encourage investment, but on increasing the mobility of the unemployed so that these individuals would benefit from the work opportunities in more vigorous labor markets elsewhere.

Moreover, if workers are mobile, using incentives to create jobs in one location merely provides inducement for job-seekers from elsewhere to move into that location (Logan and Molotch 1987). Thus, the original unemployed inhabitants of that locality may benefit very little, if at all, from incentive-induced new investments. By extension, in the long run, such investment may have little or no positive effect on the locality's unemployment or labor force participation rates. This sort of argument has led others to claim that while the public rhetoric of incentives is always couched in language focusing on the job gains for unemployed and underemployed locals, the true beneficiaries of incentive-induced growth are not local job-seekers but the owners of that immobile and scarce resource, land (Logan and Molotch 1987). Therefore, economic development policy is likely to have a regressive impact on the local distribution of income.

Rubin and Zorn (1985) have argued that, because state and local programs tend to be competitive and therefore merely encourage the movement of employment opportunities from one place to another but do not actually result in net national job creation, the overall benefits to the nation of state and local incentive programs are close to nil. Incentives merely result in the spatial reshuffling of investment, which would, *sans* incentives, have occurred *somewhere* anyway. Borrowing a term from game theory, a number of critics have characterized state and local incentive competition as essentially a zero-sum game.<sup>6</sup>

Insofar as the incentive-induced reshuffling of investment results in a spatial pattern less efficient than the pattern would have been without such incentives, it is plausible to argue that state and local incentives produce net economic welfare losses for the national economy and thus may more usefully be characterized as negative-sum.<sup>7</sup> The contention here is that incentive competition induces firms to choose locations based on their tax consequences rather than on the basis of real resource cost differentials (such as the price and productivity of land and labor, transportation costs, and so on). Taken together, these criticisms present a damning picture of economic development practice in

the United States. However, there is reason to believe that many of the criticisms are misplaced.

## **WHY ECONOMIC DEVELOPMENT INCENTIVES MAY BE USEFUL: REVISIONIST RESEARCH**

There is an expanding body of research suggesting that the preceding arguments against the use of incentives are misplaced. For instance, there is evidence that some groups of people, especially older, less-skilled, or minority workers, are relatively nonmobile, and that even for skilled, younger, or nonminority workers, spatial mobility is quite limited in the short run. Moreover, a number of economists have argued that interjurisdictional competition for investment may be 1) economically efficient, 2) have a much smaller negative impact than has been claimed, or 3) have effects not nearly as strong as assumed in the literature. Given some assumptions about the nature of competition among localities,<sup>8</sup> Oates and Schwab (1991) contend that, in equilibrium, business taxes become true benefits taxes in that they equal the value businesses place on the government services they receive. In these circumstances, interjurisdictional competition fosters economic efficiency. Netzer, while disagreeing with Oates and Schwab about the efficiency of local taxes, nevertheless argues that incentive competition does not have the negative impacts claimed by its critics: "If markets are not functioning perfectly, economic development policy instruments that offset the imperfections can move toward, rather than away from, efficiency in resource allocation" (Netzer 1991, p. 230). Thus,

economic development incentives are . . . neither very good nor very bad from the standpoint of efficient resource allocation in the economy. With all the imperfections, the offering of incentives does not represent a fall from grace, but neither does competition in this form operate in ways that truly parallel the efficiency-creating operations of private competitive markets. Given the low cost-effectiveness of most instruments, there is little national impact, only a waste of local resources in most instances. (Netzer 1991, pp. 239–240)

Netzer also maintains that the supposed zero-sum nature of American economic development policy rests on an implausible assumption: that the American economy is closed. Although the proportion of foreign direct investment (FDI) in the United States (measured as a share of total employment or assets) is still much smaller than in a number of European countries, foreign investment has become an increasingly important part of the American economy, and states and localities very often target their incentives to encourage FDI (Glickman and Woodward 1989). In fact, a large number of American states have overseas offices chartered specifically to encourage such investment (Archer and Maser 1989; Kudrle and Kite 1989). Thus, incentives do not merely move a set number of jobs around the United States; they may also serve to encourage new investment from abroad. Other critics have shown that the level of interjurisdictional competition is much more limited than had previously been thought (Hanson 1993). Indeed, Hanson argues that there is inertia in the economic development efforts of states and cities; for example, the best predictor of what a locality will offer this year is what it offered last year.

Insofar as state and local economic development programs are concerned, some of the most interesting recent empirical work has suggested that incentives might be beneficial both to localities and to the nation. Bartik (1991b) claims that incentive-induced employment growth might have advantageous long-term effects on a locality's labor force participation and unemployment rates. Moreover, incentive competition may have significant benefits from the national perspective.<sup>9</sup>

Bartik's argument, backed by various empirical results, is that incentive-induced employment growth in a locality's labor market may be long-term, progressive, and salutary. Employment growth in a metropolitan area will lead to a permanent drop in the area's unemployment rate and to an increase in its labor force participation rate. In percentage terms, the real earnings effects of incentive-induced job growth are greater for black and less-educated workers than for white or more educated workers, and greater for lower-earning males than for higher-earning males (Bartik 1991b, pp. 184–185). As a result, the impact of employment growth on income distribution may be modestly progressive. Based on these results and on a speculative benefit-cost analysis, Bartik goes on to make two major claims:

- In places of high unemployment, economic development incentives are more likely to be cost-effective.
- From the national standpoint, to the extent that incentives are concentrated in places of high unemployment, economic development policy may tend to be positive-sum.

Translated crudely, economic development policy is likely, all else being equal, to be more beneficial if pursued more vigorously by poorer places and to be less so if pursued more vigorously by wealthier places. The reason for both of Bartik's claims is that the wage level necessary to induce movement of unemployed individuals into jobs (the reservation wage) is likely to be lower in high-unemployment areas than in low-unemployment areas. Thus, the true benefits of employment—the wage offer made to the individual minus his or her reservation wage—are greater from a benefit-cost viewpoint in locations with high unemployment than in those with low unemployment. To the extent that areas with a low reservation wage are net investment recipients, reshuffling of jobs may produce net national benefits. These findings and claims clearly challenge much of the traditional scholarly wisdom about the local and national impact of spatially competitive economic development incentives, and they set the stage for the argument of this monograph.

Bartik's positive scenario rests on three critical and logically sequential arguments:

- Economic development incentives probably can influence firm location and expansion decisions and thus can result in shocks (sudden growth) to local labor demand.
- Reservation wages are indeed higher in low-unemployment areas and lower in high-unemployment areas.
- The pattern of incentives at the state and local level tends to result in the relocation of investment from areas of low unemployment to areas of high unemployment.

Most of the rest of this book focuses on the first and third arguments. We ignore the second because providing a cogent answer would take us much too far from the central focus of our research and because the academic literature on the issue, while quite thin, is generally supportive of Bartik's position.<sup>10</sup> In the case of the first argument, the literature

is massive but still inconclusive; in the case of the third, the literature is small and contradictory.

## **ISSUE 1: CAN INCENTIVES REASONABLY BE EXPECTED TO INFLUENCE BUSINESS LOCATION DECISIONS?**

It should be obvious that to claim any benefits from economic development policy we must be reasonably sure that it works—that incentives can reasonably be expected to influence the investment behavior of expanding and relocating firms. From a theoretical perspective, taxes and incentives are a locationally variable business cost, and thus, at the margin, will influence location and investment decisions. At the same time, the costs of locally supplied labor are about 14 times state and local business tax costs, and regional variations in construction,<sup>11</sup> energy, and labor costs are often larger than variations in state and local taxes (and incentives). Small differences in labor costs can outweigh quite large differences in tax costs. Cornia, Testa, and Stocker found that “a mere 2 percent difference in wages could offset as much as 40 percent in taxes” (1978, p. 2). Thus, some have claimed that where taxes and incentives do influence location decisions, it is largely as tie-breakers between essentially similar locations (Schneider 1985).

Unfortunately, measuring the impact of taxes and incentives on growth is extremely complex. It is very difficult to evaluate the achievements of economic development policy, because it is hard to know what industrial investment would have occurred in its absence (Diamond and Spence 1983).<sup>12</sup> Our practicable ability to model and predict accurately changes to a local economy, a task necessary if we are to measure the precise impact of an incentive program, is quite limited. Moreover, our ability to measure cause and effect is circumscribed by often significant (and variable) time lags between the introduction of a policy instrument, spending allocations to that instrument, offers to individual firms, investment decisions on the part of a particular firm, the actual construction of a factory by the investing firm, and the achievement of a normal employment level at the factory site.<sup>13</sup> Nevertheless, there is a vast literature on the economic impact of

development incentives. Because there are a number of recent comprehensive reviews, we will merely provide a summary of the literature.

In the United States, five basic methods of evaluating the impact of incentives have been developed. Considerable work has been done using two of these methods. Unfortunately, the results of this research effort cannot be said to support any strong statements on the impact of incentives on firm investment and location behavior.

### **The Survey Technique**

In a number of studies, researchers have surveyed executives to determine what role incentives (and other locational factors) play in a firm's relocation and expansion decisions. The surveys often distinguish between "must have" location factors and merely "desirable" factors. There is evidence that the location choice of large manufacturing firms tends to be based on a sequential evaluation of factors at successively narrower spatial scales, with decisions first on a broad geographic region, then a state, a metropolitan area (or county), a city, and, finally, a plant site. Therefore, some surveys have attempted to distinguish the impact of incentives (and other locational factors) at various spatial scales (Schmenner 1982).

The advantages and disadvantages of the survey technique are well known (Calzonetti and Walker 1991). At their best, surveys provide direct information about the actual siting decisions made by executives. Also, the more complex statistical assumptions that beset econometric analyses can be avoided. Unfortunately, survey researchers often have difficulty finding the cohort of individuals within a corporation who were responsible for a particular location decision. Moreover, executives may have a direct interest in saying that incentives were important even if they were not—admitting that an incentive had little effect in one's location decision might cause later political problems—although, given the findings of the literature, this problem may have been exaggerated. Finally, while surveys may rank the importance of various locational factors, they do not provide a precise measure of the impact of each locational factor on local growth. In fact, the results from the survey-based literature are unclear, with some research indicating incentives are indeed important to location decisions (Premus 1982; Walker and Greenstreet 1989; Calzonetti and Walker 1991;

Rubin 1991), and other work indicating the opposite (Morgan 1964; Stafford 1974; Schmenner 1982).<sup>14</sup>

### **The Case Study Technique**

Other researchers have taken a different tack and, using variations on the case study method, have evaluated the impact of specific economic development programs. The advantage of this method is that the work has covered a variety of different incentive instruments, from enterprise zones, research parks, and property tax abatements to export promotion schemes. Unfortunately, there are also major problems with this approach. In the first place, incentive programs are often very small relative to the local economy in which they operate. Thus, even where subsidies are effective, measuring their impact on a local economy is rendered difficult by economic white noise, by the other local factors that influence growth. Moreover, impact evaluations need to establish some sort of comparative control economy in order to measure precisely the effect of incentives. In the best of all worlds, the control economy would be identical to the economy receiving the incentive except that the control would not receive the incentive, but choosing a control is itself fraught with practical methodological and political difficulties. Unsurprisingly, given the range of programs covered, the published research using the single program approach is as contradictory, in terms of both detailed method and results, as the survey-based literature.<sup>15</sup> However, even work focusing on broadly similar types of programs shows discrepant results. For instance, in a recent widely quoted volume on enterprise zones, one study found clear evidence of impact success (Rubin 1991), while studies reported in two other papers found little or none (Elling and Sheldon 1991; Grasso and Crosse 1991).

### **The Econometric Technique**

A third strategy has been to use econometric techniques to measure the impact of incentives on state and local growth. At the outset it should be noted that, although the econometric literature is large, nearly all published models concern taxes. There is very little work on non-tax incentives, and most of this research focuses on infrastructure



programs.<sup>16</sup> Moreover, of the tax models, very few have data on local abatements or on the various tax credits commonly in use at the state level. Most merely use effective tax rates (ETRs)<sup>17</sup> as the exogenous (independent) tax and incentive variable within the location equation. For reasons we discuss in Chapter 3, we doubt very much that traditional ETR measures provide an accurate depiction of the tax liability faced by firms. In fact, we believe the econometric literature would be much improved if greater use were made of more defensible measures of tax and incentive incidence.

Econometric models have been developed for various spatial scales and for a number of different state and local taxes. State and local growth measures have included “levels of” or “changes in” indicators such as employment, gross state product, per-capita personal income, number of new plant openings, and small-firm birth rates. The models also range widely in their technical sophistication, from simple regressions with poorly specified locality growth variables and with no treatment of time lags in the growth variable or of endogeneity in the explanatory variables, to considerably more complex models that address most, if not all, of these issues. Almost all develop equations that use variables such as local labor costs, transportation costs, energy costs, infrastructure provision, and tax costs to explain (predict) local growth.

Since impressive reviews of this literature have been published recently, we will not repeat that work. Nevertheless, a number of points should be noted. No definite conclusions can be reached on the basis of the published research. Even the reviews seem to disagree about the impact of (tax) incentives on economic growth. Eisinger (1988), in an admittedly partial assessment of both the econometric and survey evidence, suggests that the majority of work still indicates that state and local taxes have little or no influence on economic growth. Nevertheless, also in 1988, Newman and Sullivan, in a much more involved review, wrote, “The most recent studies, employing more detailed data sets and more refined econometric techniques, have generated results which cast some doubt on the received conclusion that tax effects are generally negligible” (Newman and Sullivan 1988, p. 232). Bartik, in what is probably the most comprehensive assessment of recent

research to date, takes Newman and Sullivan's conclusions a step further:

The most important conclusion . . . is that most recent business location studies have found some evidence of significant negative effects of state and local taxes on regional business growth. The findings of recent studies differ from those in the 1950s, 1960s, and early and mid-1970s, which generally did not find statistically significant and negative effects of taxes on state and local growth. (Bartik 1991b, pp. 38–39)

The reason for this change is that the newer work is technically more sophisticated and thus better able to describe the relationship between incentives and growth.

However, there have been other dissenting voices. In a review of Bartik's summary of the literature, McGuire (1992), who has herself produced important work indicating that taxes do influence growth (Wasylenko and McGuire 1985), argues that Bartik claims too much. In particular, McGuire is concerned that some studies that did find a significant effect of state taxes on job growth have not been replicable and are not robust to changes in specification or time period.<sup>18</sup> She argues that the recent literature is as contradictory and inconclusive as the earlier literature. Our own sense is that there is a pressing need in econometric studies for a better measure of state and local tax and incentive policy. Underlying all of the econometric literature is the assumption that firms select locations so as to maximize their income. Thus, taxes and incentives should not be evaluated from the point of view of government—receipts or spending—but from the point of view of the firm's income. We provide such a firm-oriented measure later in this book.

### **The General Equilibrium Technique**

A fourth and quite recent strategy has been to use applied general equilibrium models to measure the impact of tax policy, for example, on the location of economic activity (Morgan, Mutti, and Partridge 1990). General equilibrium models have an advantage over econometric models in that they specify the structural relationships, and thus interactions, between the economic variables in the model. Unfortunately, the work in this area is still too new to draw definite conclusions about the impact of taxes on local growth.

## The Hypothetical Firm Technique

Given the difficulties of drawing any solid conclusions based on the existing literature, a few researchers have opted for an entirely different approach to the problem of taxes, incentives, and growth. This solution involves looking at the impact local taxes and incentives have on a firm's actual income. In order to accomplish this, researchers build models that replicate the operating ratios, balance sheets, income, and tax statements of real (or, at least, potentially real) firms; this technique is sometimes called the "hypothetical firm," or "representative firm," method. It allows researchers to calculate exactly what impact a state's or city's taxes would have on a firm's income. Almost all of the work in this tradition has looked at comparative tax burdens.<sup>19</sup> Very little research has used hypothetical firm results within an explicit economic development framework. Bartik et al. (1987) analyzed the location of the General Motors Saturn plant. Using realistic simulations of transportation, labor, and tax costs, they calculated that the best location for the new plant would be Nashville, Tennessee, about 30 miles from Spring Hill, the actual site chosen by the company. However, as yet, no hypothetical firm models have explicitly incorporated economic development incentives such as grants, loans, and training awards.<sup>20</sup> All current models remain essentially tools for calculating comparative tax burdens.

Hypothetical firm models, because they focus directly on the income effects of taxes, have tended to show that state and local taxes can and do have an important influence on the returns on investment of the firm. Few studies, on the other hand, have directly compared the impact of spatial variation in taxes with spatial variation in, for example, the costs of labor, transportation, or infrastructure. Those that have appear to suggest that in some circumstances taxes (and other incentives) may have a major impact on the profitability of various investment locations (Bartik et al. 1987; Peters and Fisher 1996).

We will not pursue the hypothetical firm literature here, since most of the rest of the book is taken up with our extension of the hypothetical firm technique to include most major economic development incentives. However, a few points are worth noting right away. There is increasing policy interest in using the hypothetical firm approach to look at the relationship between incentives and growth. Recently, a

number of states (and quasi-government organizations) have commissioned hypothetical firm studies (Brooks et al. 1986; Laughlin 1993; Wisconsin Department of Revenue 1995).<sup>21</sup> We believe part of the reason for this movement is disappointment that the other techniques, those that are generally much simpler to implement, have failed to provide clear prescriptive answers on the question of taxes and growth. Another factor is that recent developments in computer technology have made hypothetical firm models much easier to build. Finally, there also is the misguided belief that the hypothetical firm technique does not suffer from the ambiguities (particularly the statistical ambiguities) that beset the other methods, that the effect of two competing states' tax regimes on a firm's income can indeed be calculated directly.

In a few cases, the results of hypothetical firm studies have been included in econometric analyses of the relationship between taxes and growth (or, at least, taxes and investment). Industry-specific measures of the burden of taxes deriving from the hypothetical firm model replace ETRs as one of the dependent variables in the econometric equation (Steinnes 1984; L. Papke 1987, 1991; Tannenwald and Kendrick 1995; Tannenwald 1996). Obviously, none of these studies was able to include non-tax incentives. Nevertheless, we believe that in general this is the right way to measure taxes (and incentives) within econometric models of the impact of state and local policy on growth.

### **Conclusions: How We Propose to Deal with the Incentive Question**

Leaving aside work in the hypothetical firm tradition, solid conclusions about the broad impact of business incentives on the locational decisions of firms cannot be drawn from the existing academic literature. As it now stands, the published research is contradictory on many of the most important issues. Although we are inclined to believe that taxes and incentives have major impacts on some locational decisions, we are also bound to admit that the scholarly literature—again excluding research in the hypothetical firm tradition—does not necessarily support or contradict our position.

Part of the confusion in the literature is a consequence of the way in which taxes and incentives have been assessed. This appears to be particularly true for the econometric studies that have relied on averaged

tax measures (in other words, ETRs) or simple tax rates as the “incentive.” As noted, very few econometric (or other) studies have taken the results of detailed tax impact models as their “incentive measure,” although it is clear that doing so would provide a vastly more accurate picture of the influence of taxes and incentives on firm investment and location behavior. A major move forward in the econometric literature would seem to be unlikely without first having a rigorous implementation of the hypothetical firm technique to cover both taxes and non-tax economic development incentives. We believe that our work with the hypothetical firm method, discussed in Chapters 2 and 3, provides such a step. The incorporation of the results of this model may give future researchers a much more accurate picture of taxes and incentives, and thus could bring about a more reliable measure of the impact of taxes and incentives on location decisions.<sup>22</sup>

## ISSUE 2: THE SPATIAL DISTRIBUTION OF INCENTIVES

The second issue we consider refers to Bartik’s *minimum requirement* that state and local incentive programs must meet if they, taken together, have the potential to produce net national benefits. It is the requirement that the spatial pattern of incentives offered by states and localities does not run counter to the need to promote the redistribution of jobs from places with lower unemployment to places with higher unemployment. In practical terms, if state and local incentives do produce national net benefits, we should expect, *at the very least*, that places with higher unemployment would offer greater incentives than places with lower unemployment. As indicated earlier, from the national perspective the point of redistributing employment (even the identical number of jobs paying identical wages) from places of low unemployment to places of high unemployment is to exploit the differential between offered wages and reservation wages. Most of this book contains our empirical evaluation of the spatial distribution of incentives. We now turn to the extant literature on this distribution. We look at the research in some detail because it has not been recently reviewed.

Do poorer places provide more in the way of incentives? It is reasonable to assume that the states and municipalities with the highest unemployment face the greatest political pressure to create jobs, and thus one might expect them to offer the largest incentives. On the other hand, high unemployment and slow job growth are likely to coincide with state and local fiscal distress, a declining tax base, and a reduced capacity to support new expenditure initiatives (Guskind 1990). Furthermore, many of these programs are tax expenditures and thus escape scrutiny during the annual budget process; once enacted, during a recession perhaps, they will tend to persist long after their political, no less economic, rationale has disappeared. Indeed, Hanson (1993) found that there is considerable long-term inertia in state-level economic development policy-making. Also, it is hard to imagine a state official who would not believe that having more jobs is always a good thing. Given the tendency of states to imitate one another and their fear of appearing antibusiness by not having a decent menu of financial inducements to offer prospective businesses,<sup>23</sup> there is every reason to suppose that economic development incentives will become quite widespread and may end up bearing little or no relationship to state and local economic conditions.

The empirical work on this question is sketchy and contradictory. At the broadest level, Fosler (1988) has claimed that, historically, states experiencing economic distress have tended to be the ones adopting new economic development instruments and institutionalizing the economic development process. According to Eisinger (1988), the expansion in economic development incentives in the Northeast and Midwest during the 1970s and 1980s was a direct result of deindustrialization in those regions. At the local level, Fainstein (1991) has argued that the administrative switch from regulating growth (with zoning and other growth management instruments) to promoting growth (through incentives) was a direct result of economic restructuring in the United States. All three writers have supported these claims with simple historical data showing policy adoption following economic decline.

It is true that, in a number of states, severe economic decline did prompt the development of new and powerful instruments. For example, the combined impact of severe employment loss in Iowa's biggest manufacturing sector and the farm crisis provided the political impetus

for the development, in the mid 1980s, of the state's flagship economic development program, the Community Economic Betterment Account (CEBA). It is also true, however, that this program continues today, at a time when Iowa's unemployment rate is between 2 and 3 percentage points *below* the national average.

Clarke's (1986) more detailed study of state governments, conducted for the National Governors' Association, suggests that recession and industrial restructuring, and the gubernatorial initiatives they trigger, are important catalysts for expansion of the state economic development effort. Of recent statistical analyses undertaken, Lugar (1987) developed models predicting state economic development policy adoption in eight categories (plus a summary category). He found that "overall state effort in industrial development is associated with lower wages and higher unemployment" (p. 47). Gray and Lowery (1990) ran regressions on the adoption of 43 state-level economic development instruments (and on two subsets of these 43). According to their results, the level of economic distress (measured by 1982 per-capita manufacturing income and by the 1983 unemployment rate) was an important motive for policy adoption.

At the city level, Clinger-mayer and Feiock (1990) ran separate regression models for five different categories of economic development instruments: industrial revenue bonds (IRBs), Urban Development Action Grants, abatements, national advertising, and business assistance centers. Their economic need variables (measured by city per-capita personal income and the city bond rating) were positively related to policy adoption in all five policy categories. On the other hand, the local development of pro-growth coalitions and various local institutional arrangements, such as a mayor-council form of government, accounted for far more of the adoption of highly visible economic development instruments than did the level of local economic distress. Green and Fleischman (1991) compared policy adoption by central cities, suburbs, and nonmetropolitan communities. They found that in suburban communities the 1980 poverty rate was positively and significantly related to the development effort, but this was not the case in central cities or nonmetropolitan communities. However, their other "economic need" measures—the percentage of the population minority and the percentage of jobs in manufacturing—were not statistically significant in any of the models they developed.

Other studies broadly support these results. Bowman (1987), Rubin and Rubin (1987), and Feiock and Clinger-mayer (1986) found that more distressed localities tended to use a wider set of economic development tools or to spend more on incentives.<sup>24</sup> For economic development policy that targeted high technology, Atkinson (1991) found greater political and administrative commitment to policy instruments in states that perceived economic distress.

In contrast, Grady (1987) found little correlation at the state level between changes in the level of economic distress and expanded use of economic development incentives. Hanson (1993) found that the state unemployment rate did not account for much variation in economic development policy choices in two of his four broad state policy categories. Interestingly, he found considerable policy inertia; states modified incrementally what they had already been doing. Confirming Brierly's (1986) earlier work, Reese (1991) found in a study of tax abatements in Michigan that wealthier cities and cities with growing economies abated more.

Two recent pieces, which pay much more attention than do other studies to defining how policy expenditures vary spatially, have also demonstrated little positive correlation between the amount of incentives offered by and the economic distress of a locality. Fisher's (1991) simulation of the impact of investment and job creation tax credits, and of sales tax exemptions for manufacturing machinery and equipment, on the cost structure of two hypothetical firms found little evidence to suggest that the spatial pattern of incentives favored states and cities with high unemployment. "Competition does not appear to be perverse in its effects, [by] redistributing jobs away from distressed states; the pattern simply shows no consistent relation between a state's economic distress . . . and the magnitude of the state tax incentives offered . . ." (Fisher 1991, p. 20). Sridhar's (1996) study of the distribution of spending in the Illinois Enterprise Zone program uncovered no clear link between the intensity of incentives offered and the local unemployment rate.

Overall, the literature is inconclusive about whether incentives are concentrated in more distressed localities. Four factors account for the inconclusiveness: 1) varying methodological approaches, with some researchers using broad historical analyses and others using statistical ones; 2) varying levels of sophistication, even within the body of statis-



tical research; 3) model misspecification, especially the failure to include measures of the impact of locality competition on policy adoption (Feiock 1989, p. 267),<sup>25</sup> and 4) disparate independent and dependent variables. The dependent variable issue requires special consideration. In other words, the problem is similar to that of the econometric literature on taxes, incentives, and growth. Not enough effort has been put into accurately measuring taxes and incentives.

## **MEASURING INCENTIVES AND THE STANDING OFFER**

Most studies measure the economic development effort in ways that lack a sound theoretical basis for comparing variations in incentive levels across localities. For instance, the increase in the number of programs offered by a state or locality says nothing about the increase in spending on those incentives. In fact, states often have incentives on their books that are essentially unfunded.<sup>26</sup> Conceivably, the size of the economic development staff might say a lot about the proper management of the locality's economic development instruments (although we doubt it), but it says nothing of how much money is available for subsidizing individual firms. Similarly, total spending ignores the discrepancies in the size of states. A \$10 million program in Wisconsin shows a very different economic development effort than a similarly sized program in California. Spending per capita solves this latter problem but raises a yet more fundamental one. If two states both spend an identical per-capita amount on a particular sort of economic development instrument and if, in the first state, the program funds a much larger number of plants (again on a per-capita basis) than in the second state, then at least from the point of view of the firm, the second state would be offering a larger locational incentive than the first. Thus per-capita expenditure differences among localities ignore the way localities see fit to distribute their funds. Spending per job created or retained has more intuitive appeal for measuring policy concentration because it provides a seemingly clear (and comparative) measure of the actual value that the locality puts on each new or retained job. It indicates how much the locality is willing to give to create 50 or 100 or 200 jobs. This can be compared to spending on a similar number of jobs in other

programs and other localities (the method has been used in a number of federal programs to indicate something of incentive costliness). Nevertheless, this approach has severe methodological problems.

Different sectors, and even different plants within the same sector, operate at different levels of capital intensity. Identical incentive expenditures per job might result in disparate levels of total investment. Moreover, per-job data are not available for many programs, especially those that are part of state tax codes. There are also very important conceptual and administrative difficulties involved in using jobs created or retained as an outcome measure (these are discussed in Chapter 3). The most important objection is that, if incentives do influence a firm's location decision, it is only because the incentives alter the relative costs associated with operating at a particular site. Per-job incentive expenditures fail to capture this notion. Except for job training grants and loans and jobs tax credits, almost all incentives lower the cost of capital, not labor, so incentive dollars per job will not reflect the incentive amount per dollar of capital. Although there may be some, presumably sector- and asset-size-specific, relationship between the reduction in plant (establishment or operating) costs associated with an incentive and actual spending on the incentive (measured on a per-job basis), as far as we are aware no empirical test of this relationship exists. We also do not believe that the empirical data for such a test are available.

Thus, it turns out that the answers to two of the most important questions facing economic development policy suffer from the same sort of problem. On the issue of whether taxes and incentives significantly affect growth, almost all work has used inferior measures of state and local taxes and—where indeed researchers have been concerned with non-tax subsidies—incentives. On the issue of what causes localities to offer higher or lower levels of incentives, the identical problem arises, but now in a more pronounced form, because much of this literature has been concerned with non-tax subsidies rather than taxes. No logically and empirically coherent measure of the economic development effort exists.

The intensity of a locality's tax and non-tax incentive effort is best measured not by incentive spending per job, but by the locality's *standing incentive offer* to the individual firm. The standing offer is obtained from the standard menu of taxes and incentives applicable to a firm

locating at a particular site; it is the dollar value of the income deriving from that tax and incentive package available to the firm at that site. In this book, a comparison of spatial variation in the size of the standing offer to spatial variation in wage rates is used to assess the impact of taxes and incentives on firm investment and location behavior. The relationship between the size of this standing offer and the economic health (especially the unemployment rate) of the locality making the offer is used to assess whether economically distressed places pursue development policy more vigorously.

In this study, we analyze spatial variations in state and city standing offers and then correlate the standing offer of each state and city in our sample with the unemployment rates of those states and cities. We find that there are large differences among the standing offers of various states and cities. Indeed, in some cases the standing offer differences between two sites are larger than the labor costs differences. This suggests to us that taxes and incentives may have an important impact on firm investment and location decisions.

With regard to the overall pattern of standing offers, we find a somewhat distressing pattern. There is little reason to believe that higher unemployment states and cities provide the largest standing offers. This suggests that the antecedent condition for Bartik's argument that incentives may have net national benefits is not true: the spatial pattern of taxes and incentives in America is not likely to promote the redistribution of jobs from places of low unemployment to places of high unemployment.

## **THE STRUCTURE OF THE BOOK**

This book is divided into six chapters. Chapter 2 covers some basic, albeit important, empirical issues, such as our choice of states, cities, incentives, and industrial sectors, and briefly describes our implementation of the hypothetical firm method. The methodological descriptions in Chapter 2 are restricted to a few sets of issues crucial to understanding our results; a much more comprehensive discussion is in Chapter 3, which covers most of the questions that readers familiar with the hypothetical firm method will want answered. (Readers with

less interest in these technical issues may want to pass over this chapter and proceed directly to Chapter 4.) The substantive focus in Chapter 3 is on two separate sets of concerns: 1) the traditional methodology of hypothetical firm simulations and our extensions of this methodology and 2) our technique for the inclusion of non-tax incentives into the traditional hypothetical firm framework. The chapter, especially the second part, provides a very extensive discussion of a range of quite practical modeling issues. The reason for this detail is that because we are the first to incorporate non-tax incentives comprehensively, on many technical issues there was no established literature to guide our decisions. Methodological assumptions play an important role in determining the results of hypothetical firm simulations; consequently, transparency of method is crucial.

In Chapters 4 and 5 we present our substantive results. Chapter 4 looks at the menu of incentives that states and cities offer and the differences these incentives make to a firm's income. Chapter 5 considers the spatial pattern of the standing offer. It focuses on whether poorer places actually offer larger incentives. The conclusion, Chapter 6, summarizes our findings and defines a future research agenda for economic development in the United States. We also discuss briefly a number of economic development policy issues for which our results have some bearing.

## NOTES

1. Our interest is in competitive economic development policy, in other words, policy instruments that encourage the relocation of investment within the United States. We are not concerned here with those economic development tools meant to increase productivity, such as industrial extension services, or those tools meant to promote exports or encourage entrepreneurship.
2. In a manner similar to that advocated by Rasmussen, Bendick, and Ledebur (1984).
3. Unfortunately for policymakers, there is evidence from the survey literature that businesses often make location decisions on the basis of non-economic factors, such as a good climate. Statistical models of the growth of high-technology industries routinely include climate indexes, not because of the "least cost" issue of plant heating costs but because it is believed that high-technology engineers prefer to work in places with attributes such as sunshine (Markusen et al. 1986). Opportunities for good golfing were a claimed reason Scotland was the recipient of such a large proportion of Japanese and American high-technology inward investment during the 1980s. There is a range of evidence that locational behavior is influenced in a manner not obvious from traditional location theory. For instance, geographical models of corporate growth have indicated a distance-decay relationship in the establishment of branch plants. Ray (1971) found that American branch plants operating in Canada were much more likely to be controlled by headquarters in Chicago, Detroit, or New York, while those in Mexico were more likely to be con-

trolled by headquarters in Los Angeles. Models of corporate expansion developed by Taylor (1975) and Watts (1980) also support the idea of limited spatial searches.

However, neither the use of non-economic factors nor the spatial restriction of search behavior necessarily undermines the general appropriateness of traditional location theory. Non-economic factors may have a clear economic impact on the availability of inputs; for instance, if an important cohort of a firm's employees values sunshine and other amenities highly, then the provision of these through appropriate location may be considered part of the employee's competitive benefit package. A more general point should also be made: personal factors may enter location decisions, "but to the extent that firm's profit-maximizing location is altered by personal preferences, the firm will trade off profits for personal factors" (Wasylenko 1981, p. 160). With regard to the spatial search issue, traditional location theory can be expanded to take into account factors such as the costs of locational information and the friction of distance.

4. This is the central "positive" justification for economic development policy. It is true that there are a number of other important justifications. Kieschnick (1981, p. 26) discusses five:

- equalizing interstate tax differentials, which may serve as an inducement for a firm to select an alternative business location;
- serving as a wage subsidy to offset the effects of wage rigidity or labor immobility;
- lowering the costs of capital to induce greater overall capital formation, independent of location choices;
- serving to redistribute income from labor to capital under the politically acceptable guise of providing development incentives; and
- serving as a "signal" to out-of-state businesses that the state has "pro-business" regulatory and spending policies.

5. For a statement of this argument in the context of infrastructural incentives, see Foster, Forkenbrock, and Pogue (1991).

6. For restatements of the zero-sum position, see Glickman and Woodward (1989) and Rubin and Zorn (1985). For an early discussion of the zero-sum aspect of economic development policy, see Rinehart and Laird (1972). Interestingly, Rinehart and Laird argue that there may be national benefits from state and local competition for jobs. Wolkoff (1990) believes that critics who have described economic development policy in zero-sum terms have tended to misuse or, at least, to overly simplify game theory.

7. This would be true until a locality market equilibrium were reached and all localities provided an equivalent level of incentives. At this point, the impact of incentives might be zero-sum. Of course, equilibrium will not be a normal condition of the market because it will always be in the interest of a locality to provide some new incentive to gain some short-term advantage over all other localities (Netzer 1991, p. 225). However, even at the equilibrium point there may be negative economic consequences for the nation through a misallocation of resources. Most obviously, capital subsidies would lead to excessive national capital intensity (with potentially negative consequences for jobs).

The problem with this latter argument, as Netzer fully admits, is that its assumptions cannot be sustained: there already exist significant imperfections in the locality market; the United States is not a closed economy, and incentives could attract investment from other countries; jurisdictional spillover effects exist; and state and local governments already levy an inefficient system of taxes. Incentives do not necessarily increase these inefficiencies.

Some researchers do not put much store in the misallocation of resources argument and claim that insofar as various incentives work to lower the cost of capital, they induce greater overall capital formation, independent of location factors. They may therefore be "good" from the national perspective (Kieschnick 1981, p. 26).

8. These are as follows: 1) jurisdictions compete for business investment by lowering their taxes and by providing the services needed by business; 2) there are no interjurisdictional spill-over effects; and 3) there are sufficient jurisdictions to approximate a competitive market.

9. Underlying Bartik's results is a theory of skill acquisition, the "hysteresis effect." Essentially, migration towards places that have experienced demand-induced job shocks will take place over a period of time because people are not perfectly mobile. Original residents of the place undergoing growth will therefore receive some short-term labor market advantages: for instance, some residents who would otherwise not have jobs will be employed. The human capital resources of these workers will improve, and they will thus be better able to compete with new immigrants when the latter finally arrive. Thus, a temporary labor market advantage will have longer-term effects.

10. Job search theory suggests that the optimal search strategy for the job seeker is to accept the first job offer that exceeds the seeker's reservation wage (Zuckerman 1984). The reservation wage is the lowest wage at which the worker would be willing to accept a job offer and is usually interpreted as a measure of the benefits, psychic and otherwise, that the individual places on leisure time. Bartik (1991b) argues that, on average, the local reservation wage will vary inversely with the local unemployment rate. The reason for this is that in low-unemployment localities, where obtaining a job is relatively easy, individuals who place a high value on getting a job would tend to find work, while those who do not clearly place a high value on their leisure time. On the other hand, in high-unemployment localities, where finding a job is relatively difficult, individuals tend to be willing to work for low wages. As indicated, this purported relationship between the local unemployment rate and the reservation wage is crucial for Bartik's broader argument about the potential positive net national benefits of state and local incentives. It also underpins the research presented in this book: if incentives do tend to promote the redistribution of investment (and therefore jobs) to places of high unemployment, this is beneficial only to the extent that the benefits of employment are greater in high-unemployment localities than in low-unemployment localities.

Unfortunately, only one published study has looked directly at the relationship between the local unemployment rate and the reservation wage. This study was conducted on British data and found that for every 1 percentage point increase in the local unemployment rate, the average reservation wage of the unemployed declined by £0.012, or 1.6 percent (Jones 1989). Sridhar (1996) replicated, as closely as possible, Jones's model using U.S. data from the 1987 Panel Study of Income Dynamics (PSID) established at the University of Michigan. Sridhar's results generally accord with Jones's: she found that for every 1 percentage point increase in the unemployment rate, there was a 10 cent decrease in the reservation wage. This is the first clear U.S. evidence of an inverse relationship between the local unemployment rate and the reservation wage of the unemployed.

11. These estimates are from Bartik (1991b, p. 61). As our work and that of others show (see, for example, Papke 1995), this number varies considerably across sectors.

12. Diamond and Spence (1983) are referring to the evaluation of British regional policy. In fact, many of the instruments, goals, outcomes, and problems of British and European "regional policy" are reflected in U.S. "economic development policy." Both have focused on promoting job growth within subnational regions. Very often, grants, municipal loans, and labor subsidies have been used to encourage relocation (or "inward investment," to use the British euphemism) of firms from other regions. In this book, where appropriate, we treat regional policy and economic development policy as essentially equivalent and make use of the regional policy literature.

Nevertheless, it should be noted that there are some important differences between "economic development policy" and "regional policy." Regional policy is generally financed and directed by central government; for instance, Regional Selective Assistance (a major British subsidy provided

during the 1980s) was funded and managed by the London-based Department of Trade and Industry. Economic development policy in the United States is directed by, and very often financed by, state and local government. As a result, central control of regional competition, and thus restrictions on that competition, are clear with most regional policy instruments, but less so with economic development policy.

13. This fact poses considerable problems for the administration of policy incentives as well as for research on policy effectiveness (Peters 1993).

14. For recent reviews of the survey literature, see Calzonetti and Walker (1991), Eisinger (1988), and Blair and Premus (1987).

15. Bartik (1991b) has also provided a recent review of this literature and finds that it is generally supportive of the concept that incentives influence the locational behavior of firms.

16. Recent exceptions include Goss (1994), Goss and Phillips (1994), and Spiegel and de Bartolome (forthcoming), all of whom looked at the impact of economic development agency spending in their models. As indicated in the text, the relationship between infrastructure and growth has been studied in some detail. See Singletary et al. (1995) for recent evidence from the infrastructure literature. There is also a limited amount of work that considers other incentives. See Loh (1995) for a very useful recent study of jobs-targeted development incentives. Marlin (1990), for instance, has looked at the relationship between the issue of IDBs and gross state product. Krmenc (1990) has investigated the relationship between IDBs and employment growth.

17. Effective tax rates are usually calculated by dividing regional gross tax receipts (from all taxes or from particular taxes such as corporate income taxes) by some base, usually employment or population.

18. This refers to a comparison of the results in Wasylenko and McGuire (1985) to those in McGuire and Wasylenko (1987), Carroll and Wasylenko (1990), and Carroll and Wasylenko (1991).

19. This literature is covered comprehensively in Chapter 3. For two recent implementations of this method by the scholar most closely associated with the method, see J. Papke (1995, 1996).

20. This would mean to endogenously incorporate economic development incentives into the financial statements of the firm.

21. A review of this literature is provided in Chapter 3.

22. Until now, hypothetical firm simulations have not included modeling of non-tax incentives such as grants, loans, and loan guarantees (although there has been one very limited attempt). Moreover, the hypothetical firm simulations have suffered from problems of spatial and sectoral scale. These are discussed more fully in Chapter 3.

23. Discussions of business climate surveys certainly bear this out; see Eisinger (1988) and Skoro (1988).

24. See also Hanson (1985), Sharp (1986), Swanstrom (1985), and Young and Mason (1983).

25. Hanson (1993) presents the most sophisticated attempt at including variables for policy competition between states.

26. Also, the directories on which incentive counts are based are sometimes seriously unreliable.