Theories of Interjurisdictional Competition

> . . . one of the great strengths of federalism is the opportunity it presents for the development of intergovernmental competition. . . . The national government itself should undertake to strengthen competition among the states. It can do so in prosaic yet effective fashion by acting to improve information and mobility (Dye 1990, pp. 177, 193).

> Competition among states for specific businesses is commonplace and growing more costly. . . . Congress should stop the use of preferential taxes and subsidies by state and local governments to compete with one another to attract and retain businesses (Burstein and Rolnick 1996, pp. 36, 35).

These two recent statements by scholars of interjurisdictional competition should give us all pause. One talks of the strengths of competition among states and local governments; the other speaks of the costs. The first proposes that the federal government *strengthen* interjurisdictional competition; the other argues that the federal government should *stop* efforts "by state and local governments to compete with one another to attract and retain businesses." One might ask which statement is right and which is wrong. One might also ask whether each statement has some elements of truth, depending upon the particular context.

This paper attempts to provide the reader with a basic understanding of interjurisdictional competition. First, the term is defined and various forms of interjurisdictional competition are distinguished. I then discuss necessary preconditions for interjurisdictional competition. Other questions raised include the following: How does one determine a state or local government's competitors? How can one measure the competitiveness of a state or local government? The bulk of the paper reviews various theories of interjurisdictional competition, focusing on economic theories. When describing the theories, I ask the following questions:

1) What are the author's major assumptions?
2) What type of interjurisdictional competition does the model or

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theory best describe? To what extent does the model help us understand the implications of interjurisdictional competition for economic development?
3) What are the effects of interjurisdictional competition in this theory or model?
4) What are the shortcomings of this theory or model?

The conclusion returns to the issue of whether interjurisdictional competition has beneficial or detrimental effects. Specifically, it highlights the wide range of considerations that affect one's evaluations of the effects of interjurisdictional competition.

What Is Interjurisdictional Competition?

Interjurisdictional competition can be defined as:

> rivalry among governments in which each government is trying to win some scarce beneficial resource or in which each government is seeking to avoid a particular cost (U.S. ACIR 1991, p. 9).

State efforts to use tax incentives and other economic development incentives to attract or retain potentially mobile businesses clearly fit this definition. So do local government efforts to avoid hosting hazardous waste facilities. This definition, which can be called "active rivalry," is my preferred definition of interjurisdictional competition, but there are others.

A highly competitive market, such as the market for sugar beets in the United States, is not characterized by conscious rivalry among the farmers supplying the sugar beets because each farmer supplies such a small part of the total market. Yet this market is certainly characterized as competitive. This thought process leads to a second definition of interjurisdictional competition:

> Interjurisdictional competition is the manner in which the free movement of goods, services, people and capital constrains the actions of independent governments in a federal system (ACIR 1991, p. 10).

This definition, which can be termed "implicit competition," might best apply to the competitive situation of local governments in a metropolitan area like Chicago, which has more than 100 independent, general purpose local governments. Each local government faces a situation similar to the price-taking firm in a perfectly competitive market. For example, the local government may be convinced that it cannot raise taxes too high without risking out-migration of high-income taxpayers and businesses. This definition implies that collusion among governments is infeasible, as is identification of particular rivals for any one local government.

A third definition can be termed "yardstick competition." As described by Albert Breton,

> if citizens of a jurisdiction use information about the policies implemented in other jurisdictions to gauge and evaluate the performance of their own government, that process will increase electoral competition at home and thus incite the governing politicians to act in their benefit more than they would otherwise (Breton 1991, p. 40).

Whereas the "implicit competition" definition emphasized Albert Hirschman's exit mechanism as the means by which individuals and businesses can influence state and local government policy, the "yardstick competition" definition emphasizes Hirschman's voice mechanism (Hirschman 1970).[1] Furthermore, the "yardstick competition" definition is the only one of the definitions here that focuses on the politics within the governmental unit itself.

Governments competing for economic development use taxes, services, and regulations as competitive tools, in a sense combining these forms of competition.

Interjurisdictional competition encompasses competition between governments having similar powers, and in this paper includes interstate and interlocal competition. There also is competition between the federal government and the states, or between the states and their local governments, which is sometimes called intergovernmental competition or vertical intergovernmental competition. That type of competition is not considered here.

It is sometimes useful to distinguish between different public policy arenas within which state and

[1] With respect to market-provided goods, the terms "exit" and "voice" can be applied in the following manner. When I decide to shop at a new grocery store because I am for some reason dissatisfied with my current grocery store, I am making use of my option to "exit." On the other hand, when I complain to the manager of my current grocery store, or fill out a customer "satisfaction" survey, I am making use of my "voice" option.

local governments compete. For example, one recent report distinguished between tax, service, regulatory, and economic development competition (ACIR 1991). Of course, since governments competing for economic development use taxes, services, and regulations as competitive tools, in a sense competition for economic development combines the other three forms of competition. That is the approach taken in this symposium, which subsumes policies on taxes, services, and regulations under the general heading of "state and local public policies designed to promote economic development."

Preconditions for Interjurisdictional Competition

Many countries around the world have a federal government structure, but not all of them are concerned to the same degree with the phenomenon of interjurisdictional competition. What preconditions are necessary for interjurisdictional competition? George Boyne (1996, pp. 718–19) argues for three:

1. Competition is promoted by a fragmented structure . . . containing a large number of authorities. . . .
2. Competition is enhanced by a high level of local autonomy which encourages innovation and diversity. . . .
3. Competition is strengthened if local authorities are heavily reliant on local sources of revenue. . . .

Thus, interstate and interlocal competition is a much more visible issue in the United States with its 50 states and nearly 87,000 local governments than in Canada (10 provinces, 8,000 local governments), Australia (8 states, 900 local governments) or Germany (16 laender, approximately 16,000 local governments).[2] Likewise, not all fragmented governmental structures facilitate interjurisdictional competition. For example, even though there are currently 32 separate boroughs in the municipality of London, "the central imposition of a geographically uniform business [tax] rate" reduces significantly any interjurisdictional competition for business firms (Boyne 1996, pp. 715–17). Finally, the primary reason for the minor concern with interjurisdictional competition in Australia compared with the United States may be the centralization of revenue-raising power at the central government level. Largely because of constitutional provisions and the courts' interpretations of those provisions, only the central government in Australia is allowed to levy individual income, corporate income, or general sales taxes.

A further level of inquiry involves *how* fragmented a governmental structure is, and the implications for the appropriate model of interjurisdictional competition. William Fischel (1981) applied a measure of market concentration from industrial organization to local governments. He used data from the 1970 Census to calculate the local government equivalent of four-firm concentration ratios for 25 urban areas. That is, he calculated the percentage of the total land area that was accounted for by the largest four suburbs. According to his calculations, only three urbanized areas appeared to have a monopolistic local government structure (Baltimore, Miami, and Washington, DC), and 15 of the urban areas had a concentration ratio of less than 40 percent, making them "effectively competitive."

Interstate and interlocal competition is a much more visible issue in the United States with its 50 states and nearly 87,000 local governments than in Canada, with 10 provinces and 8,000 local governments.

Hoyt (1993) looks at more recent data for a smaller group of metropolitan areas and comes to nearly opposite conclusions from those of Fischel: "the large percentage of population concentrated in a few governing units (cities) in the largest metropolitan areas in the United States suggests that modeling tax policy decisions as a game with a small number of players may be appropriate for many metropolitan areas" (p. 359). At first glance, it is difficult to reconcile Fischel's and Hoyt's conclusions. Fischel notes that the New York urban area has 399 local governments and that the four largest suburbs account for only 12 percent of the total suburban land. Hoyt notes that the two largest cities in the New York metropolitan area account for 41.8 percent of the total metropolitan population. Upon further reflection, the difference between the Fischel and Hoyt findings centers on their

[2] *Statistical Abstract of the United States, 1995*, p. 297; International Monetary Fund, *Government Finance Statistics Yearbook 1995*, pp. 645, 660, and 683.

treatment of central cities. When central cities are excluded, one finds, as Fischel does, that many metropolitan areas have a large number of small suburban governments. When focusing on suburbs only, a competitive model of local government seems appropriate. Hoyt includes the central cities as well as suburbs when calculating the percentage of the metropolitan population in the two largest cities. A number of U.S. metropolitan areas have rather large central cities, surrounded by a fragmented suburban government structure. When Hoyt's approach is taken, the governmental structure of metropolitan areas appears more oligopolistic than competitive.

No one has done a similar analysis for the U.S. states, as far as I know. If one assumes that all 50 states are in competition, then a competitive model may be the appropriate one. To the extent to which one assumes that each state competes only with its neighbors and selected states with similar industrial or demographic structures, then an oligopolistic model would appear most appropriate. We now turn to the task of determining a state or local government's competitors.

Who Are a State's Competitors?

Because of the lack of research on specification of appropriate competitors for local governments, this section will focus on the question of defining a state's competitors. Most state tax studies choose a selected number of states for comparison purposes. The set of states chosen always includes neighboring states, but typically includes non-neighboring states that are similar in some respect. Thus, a study of fiscal issues facing Massachusetts state government included other New England states, a group of high technology states (Arizona, California, Maryland, North Carolina, Texas, and Washington), and a group of industrial states (Illinois, Michigan, New Jersey, New York, and Pennsylvania) for comparison purposes (Munnell and Browne 1990). One can consider all of these states as fiscal competitors for Massachusetts.[3]

A recent study of Maine's tax system compared Maine's tax burden to other New England states and to Alabama and Wisconsin (two states which, like Maine, lead the nation in paper production) and to Florida (which, like Maine, has a large retiree population) (Kenyon, Plesko, and Collins 1996). Presumably Maine competes for the location of businesses and individuals with all the New England states, with Alabama and Wisconsin for the location of paper production facilities, and with Florida for wealthy retirees.

A tax study for Nevada included 16 competitor states: all contiguous states; all states in the western third of the continental United States; Hawaii and Florida (because like Nevada their states are heavily influenced by tourism); Texas and South Dakota (because like Nevada they do not levy income taxes); Alaska (because like Nevada it raises unusually large amounts of revenue from one industry); and New Jersey (because it was the only other state in the country in 1990 to have a large casino industry) (Ebel 1990).

Case, Hines, and Rosen's (1993) paper on fiscal policy interdependence of the states can be interpreted as a formal exercise in looking for competitors for all states in the continental United States. They estimate a cross-section time series model for the continental United States from 1970 to 1985, in which a state's expenditures are assumed to be a function of its own characteristics and the expenditures of some set of similarly situated states.[4] They find that a one-dollar increase in the expenditures of similarly situated states increases a state's own expenditures by 70 cents. The authors try various constructions of similarly situated states based on geography, per capita income, percentage of the population that is black, and proportion of the population employed in agriculture, manufacturing, services, or trade. Oddly enough, of all their measures, "similarity in racial composition as measured by the percent of population that is black, performs significantly better than any other." It should be emphasized that they were looking for a single measure of "similarly situated states" that applied to all states in the continental United States. In light of the varying criteria for choosing competitor states in the studies of Massachusetts, Maine, and Nevada described above, it could be that Case, Hines, and Rosen were tackling an impossible task in trying

[3] These 17 states were first identified as the Commonwealth's principal economic competitors by the Massachusetts High Technology Council, an interest group representing many of Massachusetts' largest high-tech companies.

[4] The authors refer to similarly situated states as neighbors, whether they are in geographic proximity or not. I find this confusing (why should we label New York and California neighbors?) so I have used the authors' more cumbersome phrasing of "similarly situated states" instead.

to find a single dimension that applied to all states. Furthermore, since states compete for different mobile actors—for businesses, tourists, high-income individuals, and wealthy retirees, among others—one could come up with varying sets of competitor states depending upon the target of competitive policies under consideration.

How Can One Measure a State's Competitiveness?

Given that the task of determining which states are competitors is unresolved, it is not surprising that controversy reigns regarding how to rank states' competitiveness. A multitude of studies and articles in the popular press rank state tax burdens and business climates—too many to review here—so the following paragraphs will attempt to look at some of the major lines of debate regarding how to measure a state's competitiveness.

Company CEOs may be as concerned about the level of taxes they pay as about the level of taxes paid by their company. Furthermore, recent research concludes that gross wages adjust rapidly to changes in taxes, another argument for taking individual as well as business taxes into account in ranking a state's business climate.

One controversy is over whether to focus on the level of individual taxes or business taxes or both in considering a state's competitive standing. One could answer that, when considering interstate competition for business, the level of business taxes is appropriate, but when considering interstate competition for households, the level of individual taxation is appropriate. However, company CEOs may be as concerned about the level of taxes they pay as about the level of taxes paid by their company. Some CEOs will want to take both individual and business taxes into account. Furthermore, research by Wallace (1991, p. 230) concluded that "state personal income tax differentials are reflected positively in wages for some industry/occupation categories." More recent research by Feldstein and Vaillant (1994) comes to the stronger conclusion that gross wages adjust rapidly to changes in taxes. Given that wage levels are generally believed to affect business location decisions, this is another argument for taking the level of individual as well as business taxes into account when ranking a state's business climate. As an aside, it is interesting to note that the current governor of Maine, Angus King, when writing about Maine's business climate, quoted three sets of figures on the level of individual taxes in his chapter, but only one set of statistics on business taxes—the level of workers' compensation taxes per $100 of payroll (King 1995, pp. 29–36). Clearly, Governor King thinks that the level of taxes on individuals is an important component of a state's business climate.[5]

A second level of debate is over precisely how to measure the level of a state's business taxes. A large body of literature has grown up that is critical of these simple measures of state business tax competitiveness: the highest statutory corporate income tax rate, state and local corporate income taxes per $1,000 of personal income, state and local corporate income and property taxes per $1,000 of personal income, and the share of total state and local taxes initially collected from business (see Arthur Andersen 1972; DeSeve and Vasquez 1977; Hunt 1986; Papke and Papke 1976; and L. Papke 1987 and 1991). Most authors publishing in this literature prefer measures that reflect the impact of a comprehensive set of business taxes on the profitability of marginal business investment projects. Which measure is chosen can have a great impact on a state's relative ranking. According to Tannenwald's (1996) calculations using the latest available data, Massachusetts is ranked a high-tax state when one relies on the highest statutory corporate income tax rate or state and local corporate income taxes per $1,000 of personal income. Using either a measure of the tax impact on the profitability of a marginal business investment or state and local corporate income and property taxes per $1,000 of personal income, Massachusetts is ranked as a relatively low-tax state.

Tannenwald (1996) asserts several requirements

[5] The title of Governor King's chapter is "Maine's Business Climate: Cloudy, with a Chance of Showers."

of an adequate measure of business tax burden. A business tax burden measure should:

1. "focus on those taxes that most directly affect a firm's bottom line."
2. "measure such taxes' impact on the profitability of marginal business investment projects."
3. "evaluate the tax burden that a marginal facility will bear over its entire lifetime."
4. "take into account taxes paid to all levels of government and how these taxes interact to affect a firm's level of profit."

Each of these requirements sounds generally reasonable, although one could quibble with certain details. (Should the expected lifetime of a business investment be assumed to be 60 years, 20 years, or some shorter length of time, given the rapid pace of change in our economy?) The larger question is whether the measures that *should* reasonably matter to business location decisions really *do* matter. It is at least conceivable that simplistic popular measures of tax burden such as those published annually by *Money* magazine may matter for some business decisions (Smith and Kirwan 1995, p. 93).[6] A further level of inquiry is what elected officials think matters for business decisions. If elected officials think that simplistic measures of business tax burden, such as the level of the highest statutory corporate tax rate, are those that matter, then perhaps interstate competition takes place according to these measures. More research is needed on what measures of tax burden really do matter in the interstate competition for business.[7]

A final important question regarding measuring a state's competitiveness is whether to broaden the analysis to include nontax items such as the quality of public services, environmental quality, wage rates, regulatory burdens, and so forth. The Corporation for Enterprise Development makes a strong plea for taking more than taxes into account: "We have to move the debate about business climate away from simple notions of tax competitiveness or 'getting the government off our backs' to focus on what are the real disincentives to economic competitiveness and opportunity." The Corporation for Enterprise Development argues that business climate depends upon six components: education, physical infrastructure, regulation, taxation, development incentives, and modernization (1996, p. 3). Moving beyond tax measures seems sensible, but this raises a whole new set of controversies. Exactly which nontax measures should be included? How should each of the measures be weighted?

Most research to date on measures of state competitiveness has concentrated on normative statements of what factors should be taken into account, how such factors should be measured, and empirical studies that use these methodologies to rank the competitiveness of states. More research needs to be done on these twin issues: What measures of state tax and other policies actually matter for business location decisions? What do governors and legislators think matters for business location decisions? The difficulty of this research agenda is increased because both are likely to be changing over time. As researchers debate what measures *should* affect business location decisions, the measures actually having an impact on business location decisions are likely to change.

Alternative Theories of Interjurisdictional Competition

Because of the great number of papers on this subject, I will not attempt an exhaustive review of alternative theories of interjurisdictional competition. Instead, I will give a flavor of the range among the various theories that have been put forward, beginning with a summary of the seminal theory, the Tiebout model, and ending with a recent book whose author attempts to build a broad, general model of competition within governments, between governments, and between governments and other social institutions. Table 1 presents a complementary summary of the six theories of interjurisdictional competition I discuss.

The Tiebout Model

The key actors in Tiebout's (1956) model are individuals (consumer-voters) who decide which of many local governments to locate in, based on their demands for government services and the public

[6] Prior to the 1995 Maine tax study, there was much discussion of Maine's ranking in the 1995 *Money* magazine, which listed Maine as having the fourth highest tax burden among the 50 states and the District of Columbia. This debate took place despite the fact that the *Money* magazine figures were rather simplistic calculations of tax burden for a hypothetical household with $79,000 in earnings, an income level well above the average earnings for a Maine family.

[7] Certain studies have found simplistic measures of tax burden to be statistically significant determinants of state employment, income growth, and so on (Carroll and Wasylenko 1994; Munnell 1990). Other studies have not. A popular simplistic measure is state and local taxes as a percentage of personal income. Since growth in income depresses this ratio, rather than vice versa, studies that use this ratio to estimate the impact of taxes may produce upwardly biased results.

Table 1
Theories of Interjurisdictional Competition (IJC)

Assumptions	Type of IJC	Effects of IJC	Model Shortcomings
Tiebout (1956)			
Individuals vote with their feet; full knowledge; large number of communities; individuals fully mobile; no spillover effects.	Competition for individuals based on tax/service package; most applicable to IJC among suburbs in large metro areas.	Productive efficiency; allocative efficiency; taxes are benefit taxes.	Model does not include business firms; assumptions of perfect mobility and full information are heroic.
Oates/Schwab (1991)			
Jurisdictions compete for mobile businesses using tax/service packages; full knowledge; large number of communities; no spillover effects.	Competition for businesses based on tax/service package; most applicable to IJC among suburbs in large metro areas.	Productive efficiency; no allocative efficiency; taxes are benefit taxes.	Model does not include competition among individuals; assumptions of full information and no bargaining power on the part of businesses are unrealistic.
McGuire (1991)			
Jurisdictions compete for mobile individuals using tax/service packages; individuals have preferences for redistribution and governments rely on ability to pay taxes.	Competition for individuals based on tax/service package; most applicable to IJC among states.	Productive efficiency; no allocative efficiency; suboptimal level of public services or of taxes, or both; less mobile individuals will pay higher taxes; high-income taxpayers will benefit from selective tax relief.	Model could be clarified by being formalized; useful to separate out the roles of businesses and individuals.
Wolkoff (1992)			
Jurisdictions use economic development subsidies to try to induce potentially mobile firms to stay; some firms are potentially mobile, others are not, but the jurisdiction cannot easily distinguish between types of firms; both jurisdictions and firms engage in strategic behavior.	Competition for businesses based on package of economic development subsidies; applicable to states or cities large enough to conduct economic development programs.	Model does not address productive efficiency, allocative efficiency, or equity; model seeks to explain why some seemingly irrational economic development policies, such as providing subsidies to immobile firms, can be rational.	Model focuses on rationality of economic development policies from the perspective of a single jurisdiction, not from the perspective of the country as a whole; no consideration is given to the separate roles of individuals and businesses.
Besley/Case (1995)			
Voters use information about neighboring jurisdictions to judge incumbents; elected officials are disciplined by voice; no mobility of individuals; politicians know more about cost of public services than voters; some politicians engage in rent-seeking.	Yardstick competition in which voice dominates exit; most applicable to IJC among states.	Model does not address allocative efficiency or equity; yardstick competition does not always guarantee productive efficiency.	Difficult to generalize from 19 different possible equilibria; government services not included in model; no role for businesses; assumption of zero mobility can be criticized.
Breton (1996)			
A broad model of politics and public finance is developed, which emphasizes competition within and between governments at different levels; governments seek to maximize expected consent; individuals maximize utility.	Both implicit competition and yardstick competition play a role; model appears equally applicable to interstate or interlocal competition, in either a large numbers or a small numbers situation.	IJC can lead to efficient provision of publicly provided goods and services if competition is vigorous and the national government serves as an adequate monitor of competition among governments; but depending upon the circumstances, competition can also be unstable and inefficient.	The model is too broad to provide much insight into competition for economic development specifically; it does not separate out the roles of individuals and businesses.

service/tax packages offered by the various governments. Tiebout assumes that individuals have full knowledge of the various government revenue and expenditure packages; that individuals may choose among a large number of communities; and that individuals are fully mobile (for example, that jobs place no locational constraints on them). Furthermore, he assumes that no intercommunity spillover effects are present and that each community is able to attain its optimal size, at which the average cost of producing its particular package of public services is minimized.

Tiebout's model best describes interjurisdictional competition for households in large metropolitan areas with many suburban governments. To the extent that Tiebout's rather restrictive conditions are met, goods and services provided by suburban local governments will exhibit both allocative efficiency (the right amounts of government services are produced) and productive efficiency (they are produced at the lowest possible cost). In Tiebout's model, local taxes are benefit taxes, proportional to the benefits from government services received by households, rather than taxes based on ability to pay. No redistribution of income takes place in his system of local governments.

Tiebout's model can be criticized for its restrictive assumptions and, indeed, a voluminous literature has grown up which extends and critiques Tiebout's model. For our purposes, a crucial shortcoming of his model is that it does not include business firms, so that it is not particularly helpful in illuminating the phenomenon of interjurisdictional competition for economic development.

The Oates-Schwab Model of Interjurisdictional Competition for Mobile Capital

The Oates-Schwab model (1991), which is clearly in the Tiebout tradition, focuses on the mobility of capital rather than of households:

> In this model, jurisdictions compete for a mobile capital stock by lowering taxes and providing public inputs to firms, such as roads and police and fire protection. In return for a larger capital stock, residents receive higher wages. A community must, however, weigh the benefits of higher wages against foregone tax revenues and the cost of public services (1991, p. 129).

Oates and Schwab assume that the local government's objective is to maximize the welfare of its constituents, subject to the applicable budget constraints. They also assume that no beneficial or negative spillovers occur and that a sufficient number of local governments exist to approximate a competitive market. Furthermore, they assume that communities have full information about the wage benefits provided by the location of business firms in their communities, and that firms can correctly evaluate the tax and expenditure packages offered by the various communities. An assumption implicit in their model is that economic development efforts by local governments (that is, the attempts to determine optimal tax–public service packages for business firms, and bargaining with business firms) are costless.

The major result of the Oates-Schwab model is that taxes on both households and business firms become benefit taxes. Firms pay exactly the cost of the public services provided to them.

Oates and Schwab state:

> Within a metropolitan area, for example, where there are a large number of communities competing against one another, our competitive version of fiscal competition may represent a reasonable approximation to actual fiscal behavior. For states, however, strategic interaction may be more prevalent (1991, p. 136).

The major result of the Oates-Schwab model is that taxes on both households and business firms become benefit taxes. In the case of business firms, communities neither subsidize them to locate in their community, nor tax them in excess of the costs of public services provided to them. Instead firms pay exactly the cost of the public services provided to them. In this benefit tax equilibrium, communities will have no incentive to further increase subsidies to businesses. If communities were to do so, the cost in terms of forgone tax revenues or higher public service costs would exceed any benefits in the form of increased jobs or income.

Like the Tiebout model, the Oates-Schwab model is devoid of redistribution by local governments. No ability-to-pay taxes are levied, only benefit taxes. Interjurisdictional competition may not be equitable in the Oates-Schwab world (if ability-to-pay taxes at

the local level are necessary to obtain equity), but it is productively and allocatively efficient.

Several of the Oates-Schwab assumptions can be, and have been, criticized (see Reschovsky 1991). The full knowledge assumptions are probably the most difficult to swallow. In a world fraught with economic uncertainty, can a local government effectively evaluate the benefits provided by a new business firm locating in its jurisdiction? It seems likely that the business has much better information than does the local government about what benefits it can realistically provide. Similarly, it is difficult for a jurisdiction to evaluate the public service benefits provided to business firms or the relationship between public service benefits and taxes paid.[8] A single large business is also likely to have the kind of bargaining power unknown in a competitive model. Local officials may be reluctant to pass up the opportunity to attract or retain a high-profile business, finding the political liability resulting from a lost opportunity more damaging than the cost of "paying too much" to persuade a firm to locate in their jurisdiction.

McGuire's Model of Destructive Competition

Therese McGuire (1991) has built an informal model of interjurisdictional competition, which she labels "destructive competition," that has less happy consequences. She assumes that individuals "have preferences for redistribution and thus choose revenue systems that rely on ability-to-pay taxes" (p. 154). McGuire further assumes that the nation's population is heterogeneous in terms of income and mobility. An optimal level of public services and taxes can be computed, one that conceivably could be attained in the case of zero mobility of individuals or businesses.

However, this optimal level of public services and taxes will never be attained. Any single jurisdiction will have an incentive to cut taxes for relatively wealthy and mobile individuals or businesses in order to lure them to relocate. The jurisdiction would hope to be able to use the revenue gained from the incoming wealthy to cut taxes for current residents or to increase public services. The problem, of course, is that all jurisdictions will have the same incentive to cut taxes for the wealthy and mobile. As the competing tax breaks cancel each other out, little net relocation of the wealthy households will occur. However, the wealthy mobile will end up bearing a lower tax burden than the optimum. Either public services will be provided at a suboptimal level or tax burdens on other taxpayers will be higher, or both.

McGuire concludes that allocative efficiency cannot be achieved in the case of destructive competition. She argues that household mobility will ensure that productive efficiency will be attained, however, as jurisdictions seek to maximize their attractiveness by minimizing the burden of their taxes for a given level

In McGuire's model, both horizontal and vertical inequities result from interjurisdictional competition. Less mobile individuals will bear higher tax burdens than their more mobile counterparts. Vertical inequities will also result, as high-income taxpayers benefit from selective tax relief.

of public services. (If allocative efficiency obtains, the right amounts of various goods and services are produced; if productive efficiency holds, the goods are produced at least cost.) In McGuire's model, both horizontal and vertical inequities result from interjurisdictional competition. Less mobile individuals will bear higher tax burdens than their more mobile counterparts. Vertical inequities will also result, as high-income taxpayers benefit from selective tax relief.

As McGuire notes, her model bears strong similarities to the prisoner's dilemma of game theory.[9] As

[8] Oakland and Testa (1996) argue that business taxes should equal the costs of providing public services to the business community. They make heroic efforts to measure public service benefits for businesses and business taxes paid within the Seventh Federal Reserve District (Iowa, and major portions of Illinois, Indiana, Michigan and Wisconsin) and find that "business taxes exceed business expenditures by healthy proportions" (p. 10).

[9] According to Kreps (1990, pp. 37–38), "The story that gives this game its name runs as follows. The police have apprehended two criminals whom they strongly suspect of a crime (and who in fact committed the crime together). But the police lack the evidence necessary to convict and must release the two prisoners unless one provides evidence against the other. They hold the two in separate cells and make the following offer to each:

with the prisoner's dilemma, the best situation for any particular state is to offer an effective tax break and not have that tax break matched by its competitor state. The next best scenario (and the welfare-maximizing strategy for all states taken together) is for neither state to offer a tax break. The third best situation is for both states to offer tax breaks, and the worst situation is for the state not to offer a tax incentive in the face of its competitor's tax incentive. As in the case of the original prisoner's dilemma game, we predict that each state will offer a tax incentive. As Eichberger (1993, pp. 66, 206) notes, the problem is not a lack of communication between the competing states, nor a lack of understanding of the nature of the game they are playing. The incentives of the game simply drive both states to offer tax incentives, in the absence of a noncompetitive agreement *that can be enforced by some outside agency* (the federal government?).

McGuire's model bears strong similarities to the prisoner's dilemma of game theory. The best situation for any particular state is to offer an effective tax break and not have it matched by its competitor state. The next best scenario is for neither state to offer a tax break.

McGuire asserts that her model of destructive competition is likely to be most applicable to competition among states. State governments rely heavily on income and sales taxes, both of which are more in the nature of ability-to-pay taxes. States also fund a good deal of redistributive expenditure, such as welfare spending. Although McGuire couches her model primarily in terms of individuals, the results would seem to apply in the same manner if states were to use tax breaks to compete for wealthy mobile businesses instead of individuals.

McGuire's model is suggestive and offers insights on interstate competition that neither the Tiebout model nor the Oates-Schwab model offers. The model could be clarified by being formalized, however. It would also be helpful for the model to separate out the roles of households and businesses.

Wolkoff's Model of Competition for Business Via Economic Development Subsidies

Michael Wolkoff (1992) addresses a narrower question than have the above authors, but a question that touches at the heart of this conference's theme. He asks whether a formal model of economic development programs can explain the existence of some seemingly irrational public policies. For example, he and other analysts have observed that some economic development programs appear to provide subsidies to all firms who apply for them, making no effort to distinguish between those firms whose locational decisions are likely to be influenced by such subsidies and those that are not. At first glance, economic development policies such as this make no sense.

In Wolkoff's model, jurisdictions use economic development subsidies to try to induce potentially mobile firms to stay in the community. Firms are of two types: those that are potentially mobile and those that are not. A central problem in Wolkoff's model is that the jurisdiction cannot easily distinguish between these two types of firms (this is a form of asymmetric information). Both the firms and the jurisdictions engage in strategic behavior. (As Hoxby (see below) explains, behavior is strategic when an entity must calculate the response to its own actions when determining its own action.) The community decides on the size of the subsidy and the probability that it will give a subsidy to a firm requesting one. The firm decides on the size of subsidy it requests.

The methodology Wolkoff uses is game theory. First, he sets up a game tree with all possible outcome states. Each outcome state indicates the type of the firm (potentially mobile or not), whether the firm

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> Implicate your colleague. If neither of you implicates the other, each of you will be held for the maximum amount of time permitted without charges being made. If one of you implicates the other and is not implicated, we will release the first and prevail upon the judge to give the recalcitrant second party the maximum sentence permitted by law. If both of you implicate the other, then both will go to gaol, but the judge will be lenient in view of your co-operation with the authorities.

The story suggests that of the four possible outcomes for a prisoner, it is best to implicate and not be implicated, second best neither to implicate nor to be implicated, third (and a good deal worse) to implicate and be implicated, and worst to be implicated while failing to implicate your colleague . . . we are led to predict that each side will implicate the other since this is a dominant strategy for each. . . ."

requests a subsidy, whether the jurisdiction grants a subsidy, and whether the firm decides to leave the community or not. After narrowing his focus to those outcome states that are not impossible or nonsensical (for example, it would make no sense for a firm that was not potentially mobile to decide to leave the community), Wolkoff takes his analysis to the next stage. At that stage, he sets up an equation that represents the expected value of the community's various courses of action. The expected value depends upon the probability that a particular firm is potentially mobile, the size of the subsidy, the benefits to the city of investment by the firm, and the political costs if the community refuses to give the firm a subsidy. Wolkoff assumes that the community chooses the size of subsidy and probability of granting a subsidy in order to maximize the expected value of its action. For the explicit solution of his model, Wolkoff refers the reader to another paper (Wolkoff 1989).

Wolkoff's model explains two types of seeming irrationalities in existing economic development programs. Suppose that all firms request the same subsidy, whether they are potentially mobile or not. The community then has no way of distinguishing between the two types of firms. It turns out that the most advantageous strategy for the community will be for it to offer modest subsidies to all firms. The inevitable result is that some firms with no potential for relocation will receive a subsidy. What seems like a waste of funds from the community's perspective is rational maximizing behavior.

An alternative scenario outlined by Wolkoff is based on a community's effort to separate potentially mobile from immobile firms. To do this, the community makes subsidy awards uncertain. Immobile firms then reduce the size of their subsidy requests. The community ends up avoiding providing large subsidies to firms that have no possibility of relocating. However, at the same time, the community rejects the requests of, and thereby loses, some mobile firms. When looked at in isolation, the fact of providing insufficient economic development subsidies to certain mobile firms appears irrational. Wolkoff's point is that we cannot look at such phenomena in isolation. According to Wolkoff, "the apparent irrationality at the micro level is resolved when one understands these decisions as being part of a more general subsidy strategy for all firms" (1992, p. 352).

Outside of his formal model, Wolkoff offers two other explanations for the seeming irrationality of some economic development programs. One explanation is a political one. Wolkoff argues that the political credit to be gained from an economic development program that is only partially effective may be great. As Wolkoff states, "the symbolic benefits of being able to point to the operation of a policy actually may be more valuable to political officials than the fiscal benefits tied to the investment itself" (1992, p. 343). A second explanation is organizational. Wolkoff points out that economic development officials are generally charged with fostering economic growth, but typically they are not responsible for the consequent effects on a jurisdiction's budgets. Particularly when some program costs are difficult to identify and measure, one ends up with behavior that is rational from the perspective of the economic development official but wasteful from the perspective of the community at large.

Wolkoff's model shows that if there is no way to distinguish whether firms are mobile or not, the most advantageous strategy will be for the community to offer modest subsidies to all firms. What seems like a waste of funds from the community's perspective is rational maximizing behavior.

Despite Wolkoff's efforts to explain current economic development programs as rational, one does not come away from his paper with a very favorable view of interjurisdictional competition for economic development. One finds in Wolkoff's paper that communities sometimes award subsidies to firms that will be unaffected by such subsidies, that communities sometimes neglect to offer subsidies to certain firms sufficient to entice them to stay, that political appearances may be more important to a public official than economic growth generated, and that the structure of economic development programs within governments may create a systematic ignorance of the costs of economic development initiatives.

Wolkoff's focus on interjurisdictional competition for economic development is a valuable complement to the models discussed earlier. Most important, Wolkoff no longer assumes full knowledge on the part

of the actors, as was implicitly or explicitly assumed in the previous papers. He introduces the important assumption that firms know whether they might consider relocating out of a community, but the jurisdiction's political representatives are not privy to the same information. At the same time, Wolkoff leaves some important elements of the debate surrounding economic development programs out of his model. He does not look at the rationality of economic development programs from the perspective of the country as a whole, nor does he separate out the roles of individuals and businesses in a community.

The Besley-Case Model of Yardstick Competition

Besley and Case (1995) look at interjurisdictional competition in a very different way than do the preceding authors. For Besley and Case, the exit option is of minimal importance; it does not appear explicitly in their model, even though they acknowledge its existence. Instead, voice is key to the accountability of elected officials. Imperfect information is also crucial to the Besley-Case model. Politicians know more about the cost of providing public services than do voters, and voters use information about tax changes in neighboring jurisdictions to evaluate the performance of their incumbents. Politicians come in two types: good politicians who do no rent-seeking, and bad politicians who do rent-seeking. (Rent-seeking implies a departure from productive efficiency. If a politician engages in rent-seeking, he or she raises taxes more than is necessary given the increased cost of public services.) Politicians use strategic behavior in their tax-setting in order to influence voters' beliefs regarding whether they are good or bad politicians. Voters fail to reelect incumbents whom they judge by their tax changes, relative to the tax changes of neighboring jurisdictions, to be bad politicians.

According to the Besley-Case model, voters care only about tax changes, not about government service levels. They find that "own tax changes increase the probability of incumbent defeat, and neighbors' tax changes reduce the probability."

The Besley-Case model is most likely applicable to interstate competition because the smaller numbers of states make the strategic behavior of state politicians more likely. Their model could apply also to suburbs in a metropolitan area if the number of competing suburbs were not too large. The Besley-Case model does not illuminate the implications of the phenomenon of interjurisdictional competition for economic development. Their decision to minimize the importance of interstate mobility may imply that they think state officials are oversensitive to exit threats from high-income taxpayers or businesses.

It is difficult to summarize the effects of interjurisdictional competition in the Besley-Case model. Their model does not address allocative efficiency or equity. It does generate implications for productive efficiency (which exists in the absence of rent-seeking), but these implications are complex. Depending upon the incumbent type (good or bad) and the cost shock (low, medium, or high), 19 different equilibrium outcomes of incumbent tax-setting and voter behavior are possible. One might presume that the yardstick competition would serve to prevent bad politicians from rent-seeking, and thus generate productive efficiency. However, the authors present one example when, because of the strategic behavior of the bad incumbent, this does not hold. Instead, voters are subject to higher than necessary taxes in period one. In period two, however, the bad incumbent has been ousted, and voters presumably have a better chance of obtaining productive efficiency.

The Besley-Case model is complex in many ways, but simple in others. According to the model, voters care only about tax changes, not about government service levels. The Besley-Case model can illuminate interjurisdictional competition about tax levels, but not more complex interjurisdictional tax competition, or service competition or competition for economic development. On the other hand, the complexities of their game theory model are such that the precise implications of their theory cannot be empirically tested. Besley and Case find their empirical evidence to be consistent with their theory. They find that "own tax changes increase the probability of incumbent defeat, and neighbors' tax changes reduce the probability." Further, they find that "when a neighboring state increases/decreases taxes by one dollar, the

home state will increase/decrease taxes by roughly 20 cents" (p. 36).

Breton's General Model of Competitive Governments

Albert Breton (1996) formulates a general theory of competitive governments in his latest book. His model of public finance and politics encompasses a wide range of competitive situations: competition for the support of the governed within governments, competition between governments and other social institutions, competition between governments at different levels (for example, between states and local governments), and the governmental competition that is the focus of this paper—competition between governments at the same level, or interjurisdictional competition. He assumes that individuals seek to maximize utility and that governments seek to maximize expected consent.

In his treatment of interjurisdictional competition, he includes both what I have termed implicit competition (which he calls the Tiebout mechanism) and yardstick competition (which he calls the Salmon mechanism). Both are generally present in interjurisdictional competition, but in a pure Tiebout world, Breton correctly notes, yardstick competition could not exist (1996, p. 234). If the Tiebout model operated perfectly, the population would sort itself by preference for publicly provided goods until each community was homogeneous and different from every other community. Then, of course, individuals could not use the performance of neighboring governments to judge the performance of their own governments; governments would be too much different from each other in terms of their public service/tax packages.

Breton has a generally benign view of governmental competition, and he argues that:

> intra-, inter-, and extragovernmental competition operates in such a way as to build or forge a link between the tax prices that citizens pay and the (marginal) value they put on the goods and services provided them by governments and by other sources of supply—competition operates in such a way as to induce a revelation of demand for government-supplied goods and services. That link or revelation mechanism I have called the Wicksellian Connection, because Wicksell (1896) was, to my knowledge, the first person to see that if certain conditions were satisfied a Pareto-optimal link or connection between costs and benefits would emerge (1996, p. 311).

Although his general view of governmental competition is benign, Breton does recognize that competition can have detrimental effects as well. Breton focuses primarily on the question of stability, which he argues must exist before efficiency can be achieved. He notes several instances of potential instability in interjurisdictional competition. One is competition among states to attract businesses through adoption of lenient corporate charter laws, which may lead to a race to the bottom in which most states are pressured to adopt the standards of the most lenient state. Another is the phenomenon of urban crisis in the United States in which increased tax rates in central cities sometimes drive wealthy households to the suburbs, making public finance in the central city more tenuous, leading to additional central city tax hikes, and more migration, and so on. Nevertheless, Breton's examples of instability or inefficiency are clearly secondary to his overall theme of the potential benefits of governmental competition.

Breton has a generally benign view of governmental competition, although he does recognize that competition can have detrimental effects as well.

One of Breton's most important points is that the national government plays a major role in monitoring competition among states and local governments. The national government can improve the results of competition through prohibitions and standards (such as prohibiting tax exporting), and through regional development policies or intergovernmental grants, which can be designed to ensure that the less-well-off jurisdictions can compete on a more equal footing with better-off jurisdictions.

The breadth of Breton's model is both a virtue and a weakness. His model includes a wide range of important facets of politics and public finance: It includes internal government behavior as well as relationships among governments, allows for cooperation or collusion as well as interjurisdictional competition, encompasses different forms of competition, and evaluates the results of competition. However, the breadth of his analysis means that he touches specifically on interjurisdictional competition for economic development only in passing.

Table 2
Considerations in Assessing Beneficial and Detrimental Aspects of Interjurisdictional Competition

Values
- Efficiency (for example, productive efficiency, allocative efficiency)
- Equity
- Other values (for example, rate of adoption of policy innovations, individual liberty)

Arena of Competition
- Taxation—general or specific
- Government services
- Regulation
- Economic development

Governmental Structure
- Many or few competing governments
- Degree of autonomy of competing governments
- Framework for competition established by national government

Other Structural Issues
- Availability of information for all parties
- Existence of spillovers
- Extent of mobility

Objective Functions and Behavior of Key Actors
- Governments
- Individuals
- Businesses

Considerations in Assessing Beneficial and Detrimental Aspects of Interjurisdictional Competition

This paper began with two contrasting quotations—one that extolled the virtues of competition among governments and another that criticized its effects and called for ameliorative action. The question was raised whether one quote was right and the other wrong or whether each represented some part of a larger truth. This survey of several theories of interjurisdictional competition, particularly the summary of Breton's general theory, serves to show that each quotation has some elements of truth. Table 2 lays out some of the considerations important in deciding whether interjurisdictional competition has predominantly beneficial or detrimental results in a particular model or situation.

A first consideration is the set of values one uses to judge the effects of interjurisdictional competition. The models of Tiebout, Oates/Schwab, and McGuire clearly demonstrate the beneficial features of interjurisdictional competition in a world with minimal concern for redistribution or equity. This conclusion could be turned on its head, however. For an individual who places a high value on equity, specifically equity based on principles of ability to pay, the Tiebout, Oates/Schwab, and McGuire models could be convincing evidence of the predominantly negative effects of interjurisdictional competition.

The arena of competition also seems to make a difference in one's assessment of interjurisdictional competition. Dye's quotation comes from a treatise on general tax and government service competition among states and local governments, while the critical remarks by Burstein and Rolnick clearly refer to "competition among states for specific businesses." A 1991 survey of the literature indicated that some of the strongest criticisms of interjurisdictional competition centered on "individually negotiated tax packages designed to lure new industry or retain existing industry." It concluded, "Theoretical research has argued that such competition may have the characteristics of a negative-sum game (ultimately everybody loses). Empirical evidence has buttressed the theoretical research by concluding that the cost effectiveness for the offering government for most types of tax incentives is very low" (ACIR 1991, p. 64). A comparison of the Wolkoff (1992) paper with the Tiebout and Oates/Schwab papers is consistent with the view that state and local competition for economic development is the type of interjurisdictional competition most deserving of criticism.

The governmental structure can also affect one's judgment of interjurisdictional competition. As Breton argues, if the framework for competition established by the national government is flawed in some important way, competition among governments can be unstable. Oates and Schwab might argue that without appropriate efforts by the national government to take care of the redistributive function, their evaluation of the effects of interjurisdictional competition becomes much less benign.

Other structural issues also play a role in generating benign or negative effects of interjurisdictional competition. The asymmetric information favoring business firms allows them to bluff governments and obtain subsidies to stay in a jurisdiction even when they are immobile, in Wolkoff's model. Tiebout and Oates/Schwab admit that interjurisdictional competition would not be efficient in the face of spillovers of government services.

Finally, the objective functions and behavior of key actors in the system have a profound effect on the nature of interjurisdictional competition. For example, the desire of politicians to engage in rent-seeking in the Besley-Case model is the root cause of the lack of productive efficiency. In short, some politicians are out to fleece the public.

My natural inclination is to look at a glass and note that it is half full rather than half empty. Thus, this survey of models, which shows that interjurisdictional competition may have either beneficial or detrimental effects, leads me to appreciate the potential benefits of interjurisdictional competition and to search for ways to change institutional structures to reduce or, if possible, eliminate negative effects of interjurisdictional competition. I have come to the conclusion that interjurisdictional competition is prevalent in the United States, and that we cannot and should not attempt to squelch it, but that we might better channel or regulate it.

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Discussion

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In "Theories of Interjurisdictional Competition," Daphne Kenyon gives us a thorough, interesting survey of the interjurisdictional competition literature. The survey is a means to an end: a necessary step towards identifying what the theoretical and research agenda on interjurisdictional competition *should* be. Now, the role of a discussant of a paper that discusses a literature is a somewhat odd one: What does a "meta-discussant" do? In these comments, I hope to further the goal of the paper by picking out several areas where I think the author can actually go beyond the literature (and push it forward) by taking a critical stand. This is actually my main contention with Kenyon's paper: It is very informative and insightful, but in places the literature would benefit from its being more decisively critical.

For instance, take the problem of how to define the market ("choose the competitors") that a jurisdiction faces when competing. This question is central for both theoretical and empirical work on interjurisdictional competition, and the author explains the strategies used in the literature to define jurisdictional markets. She concludes that a variety of different strategies should be pursued together—for instance, comparing the state of Maine to a market composed of locationally similar states *plus* industrially similar states. That a variety of comparability measures should be used to define the market is correct, but I think we can go much further than this.

How ought we to define the market a jurisdiction faces when competing? The jurisdictions that are competitors share underlying similarities of situation that permit a mobile factor to compare amongst them when choosing where to locate. The two main mobile factors are capital (businesses) and labor (residents), with attached human capital. What matters is not where factors generally choose to locate, but whether there were jurisdictions whose underlying situation was sufficiently similar to warrant comparison.

The grounds on which we say two jurisdictions have underlying situational similarity should be insensitive to the policies of the jurisdictions and to the outcomes related to competition between the jurisdictions. For example, we do not want to say two jurisdictions are comparable simply because they have decided to use the same tax, such as a sales tax rather

than an income tax. All such policy decisions are endogenous to the competition facing the jurisdictions. We must even be wary of treating the industrial mix and demographic mix of a jurisdiction as exogenous (though this may be more appropriate for some analyses than for others). For example, suppose that Delaware faces more interjurisdictional competition than most states because of its small size and proximity to other states. Then, Delaware may be forced by competition to treat businesses better (that is, extract fewer rents from businesses) and may have a different industrial mix and population as a result. While we should insist against jurisdictions being defined as competitors on the basis of their having similar policies, our concern about endogenous industry and population should depend on our knowledge about the costs versus the benefits of mobility. For instance, states with many small, competing jurisdictions might have cheaper, better garbage collection—but we may be safely able to assume that few residents or businesses are drawn into the state solely on account of this desirable service. Therefore, we might take the industrial and demographic mix of the state as given for an analysis of the effect of interjurisdiction competition on garbage services.

Jurisdictions that are competitors share underlying similarities of situation that permit a mobile factor such as capital or labor to compare amongst them when choosing where to locate.

Several underlying factors make for situational similarity and can nearly always be treated as exogenous: climate, geography (including time zone, proximity to other places, proximity to oceans and other natural transportation corridors), natural resources, and legal and cultural history (for instance, the historical prominence of Massachusetts for private college education). These things are, after all, what makes a jurisdiction fundamentally distinctive and, thus, not perfectly substitutable in the long run with all other jurisdictions. The studies cited by the author contain several pertinent examples. Florida should not be considered Maine's competitor simply because they both have many retirees. Maine has underlying characteristics that appeal to retirees (coastal towns, and so on) but Maine should be compared on these fundamentals to all other states that have attributes appealing to retirees. Alabama should not be considered Maine's competitor simply because they both have paper mills. The underlying characteristic that unites them is probably the availability of harvestable trees. No state should ever be considered the competitor of another simply because they have similar per capita income—this is too obviously an outcome, not an underlying condition. However, if we could identify the underlying conditions that make them likely to have similar per capita incomes, it would be reasonable to declare them competitors on those grounds.

In fact, technology increasingly is making all states in the United States good competitors for one another. One has only to think of the growing numbers of firms that (and people who) have little location-specific business: mail order catalog businesses, credit card processing businesses, and so on. This brings me back to a point made earlier in the paper. The author correctly points out that at least three conditions influence how much competition exists among jurisdictions: fragmentation, autonomy, and the "localness" of finance. To these, I would add technology related to mobility and the cost of doing business long-distance. More of the literature on jurisdictional competition really should use shocks to these conditions to provide exogenous variation in the degree of competition. This is more common in the literature about localities (as opposed to states), where research has looked into, for instance, the effects of centralizing school finance at the state level. Nevertheless, using shocks to these conditions appears to be a rather neglected methodology, compared to looking at how many "neighbors" (however defined) a jurisdiction has.

I am unsure how Kenyon relates the literature on how to measure a state's "competitiveness" to theories of interjurisdictional competition. Of course, a relationship exists simply because we want good "dependent variables"—good measures of the *outcomes* of interjurisdictional competition. For instance, we might use a measure of the long-run profit associated with a jurisdiction, as advocated by Tannenwald (1996). However, Kenyon implies that the literature containing rankings of states' "competitiveness" has a more complex connection with interjurisdictional competition than just the correct measurement of dependent variables. This seems incorrect. Suppose we have a ranking of states by their measured business climates.

Then, if interjurisdictional competition is very relevant, all we are seeing are compensating differentials for differences in the unobserved amenities associated with different states. The case where we are not just seeing compensating differentials is the case where states are monopolies (most businesses and individuals are immobile), but in this case interjurisdictional competition is irrelevant (as it would be in a comparison of tax rates on wage and salary income between Sweden and the United States). This is a place where the author can take more of a critical stand by pointing out what part of the "competitiveness" literature is useful for thinking about interjurisdictional competition and setting aside the rest.

Turning to the models of interjurisdictional competition, I think it would be helpful if the author did more to clarify where the various models really differ in mechanism. For instance, it would be useful to take a cue from industrial organization theory and divide them into price-taking models and strategic models. It is better not to speak of strategic models loosely—a model is strategic only if the jurisdiction must calculate the response to its own actions when it determines its own action. That is, the jurisdiction must be sufficiently large relative to the market that its own actions provoke a reaction in the market.

Using this standard definition of strategic models, only one strategic model is described: the Hoyt model. (The part of the Besley-Case model that is relevant to interjurisdictional competition is really about information—I will come to this issue later.[1]) Consider the others. First, we have the Tiebout model—the price-taking model where the movers are individuals and we get the familiar result that taxes are benefits taxes. Second, we have the Oates-Schwab model: exactly the same, except that the movers are businesses. Then, we have the McGuire model of "destructive competition." This is not a strategic model and the nomenclature, "destructive competition," is misleading. This model shows that the Tiebout process constrains the political structure of jurisdictions, so that political methods that are systemically inferior from the point of view of either individual consumers or business consumers (of jurisdictions) are unsustainable. The McGuire model starts by noting that ability-to-pay taxes generate fiscal spillovers among individuals within a jurisdiction. Rich people subsidize their neighbors' public goods consumption if public goods are supported by an income tax and everyone in a jurisdiction gets to consume them equally. So, jurisdictions naturally compete for these spillovers, as they would for any other rents, and competition bids down the income tax rate for the rich through tax breaks until the rich are not exploited. I do not know why this process should necessarily be called "destructive": In many cases, it enhances allocative efficiency even if it disallows certain types of redistribution. The Tiebout process's ability to eliminate inferior[2] political methods is general. For instance, consider a political structure that gives too many rents to incumbent public goods providers by allowing only them to set the voting agenda—for instance, not providing a mechanism whereby residents may vote upon changes in the tax rate. The Tiebout process will tend to eliminate all such political structures if they are systemically rent-enhancing, because jurisdictions with such structures would have to give compensating differentials to get people to live there.

We might make progress in strategic models by motivating them with actual puzzles: for instance, whether a jurisdiction should discount its price of doing business now in the hope of getting certain businesses to move in and getting market power over rival jurisdictions.

As for strategic models of interjurisdictional competition, it seems there is a dearth of useful theory here, but no dearth of interesting problems. The main use of discussing the Hoyt model appears to be the recognition that strategic models are very sensitive to the fine choice of jurisdictions' objective function. This points to the need to *derive* the objective function from the type of competition that exists—in much the same way that one can derive some of the political structure

[1] There is strategic behavior in the Besley-Case model, but not among jurisdictions. The strategic behavior is on the part of the politician who is "large" with respect to his voter/taxpayers and must calculate their responses to his own moves in order to determine his moves to begin with.

[2] That is, inferior in terms of private allocative efficiency.

from the existence of a Tiebout process. We might make progress in strategic models by motivating them with actual puzzles (as opposed to merely borrowing them from industrial organization theory). For instance, we might ask whether a jurisdiction should discount its price of doing business *now* in the hope of getting certain businesses to move in, and—through those businesses—getting market power over rival jurisdictions. In the *future*, the jurisdiction might be able to charge high prices (of doing business) and earn rents.

Finally, Kenyon should be praised for identifying so many of the issues that the research agenda on interjurisdictional competition should treat. Of these issues, two merit particular attention. The first is the need to integrate internal government behavior and the interdependence of state and local governments. This can best be done by recognizing the information provided by interjurisdictional competition and using this information as a lever in a model of internal government behavior. The Besley-Case model essentially has this character, and my agency model of local public goods production also uses this methodology.[3] A second issue is how to integrate individuals and businesses in models of interjurisdictional competition. The best way to proceed here is to treat them as the same except in certain abstract ways. For instance, individuals not only can "vote with their feet," they also can vote. Businesses do not have the vote, but they may have access to another technology: "paying for votes" by contributing to campaigns and thus possibly influencing voters.

Overall, Kenyon's paper provides an excellent basis for us to start thinking about the issues and problems that will drive the research agenda on interjurisdictional competition forward.

[3] Hoxby, Caroline M. 1996. "Tiebout and a Theory of the Local Public Goods Producer." NBER Working Paper No. 5265 (revised 1996).

Discussion

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Daphne Kenyon's paper provides a stimulating and thought-provoking review of the theoretical literature on interjurisdictional competition for economic development.[1] In the paper she clearly articulates several alternative definitions of interjurisdictional competition and then spells out very clearly several alternative theories. Her approach is to focus on the normative content of the theories developed in the papers she reviews. The central question addressed in her review is whether economic theory can tell us if, at least on conceptual grounds, interstate competition enhances allocative and productive efficiency. We know that, subject to some limiting assumptions, economic competition leads naturally towards economic efficiency. The central question addressed by Kenyon's paper is how well this powerful result about the operation of the market translates to competition among governmental units.

Although she does not say so directly, Kenyon's review of the literature leaves one with the firm impression that the theoretical literature on interjurisdictional competition is not very well developed. In fact, a glance at the program for today's symposium indicates that with the exception of Kenyon's paper, the agenda concentrates on empirical issues related to interjurisdictional competition. This division between theoretical and empirical appears to reflect the fact that while considerable progress has been made in addressing a number of empirical issues, we are a long way from developing a comprehensive theory of interjurisdictional competition.

Theoretical models can make two important contributions to the study of interjurisdictional competition. First, they can help structure the empirical analyses and suggest specific testable hypotheses. Second, they help provide answers to the normative question Kenyon posed in the title of her 1988 ACIR study—"Interjurisdictional Tax and Policy Competition: Good or Bad for the Federal System?"

In my view, for the purposes of this conference the most important of the papers Kenyon reviewed is

[1] I should note that reflecting the fact that we are economists, Kenyon's paper and my comments highlight economic theories of economic development. Nevertheless, political scientists, sociologists, and planners have all written about theories of economic development. See, for example, Bingham and Mier (1993).

the one by Oates and Schwab (1991). Although she characterizes the Oates and Schwab model as in the Tiebout tradition, it is more accurately the converse of Tiebout. Tiebout posits competition among jurisdictions for mobile individuals, while Oates and Schwab assume that individuals are immobile, and local governments compete to attract mobile capital. Local governments actively compete for businesses by choosing a mix of services to attract businesses. Oates and Schwab demonstrate that, in such a competitive environment, all local taxes will become benefit taxes. Thus, for both residents and businesses, the taxes they pay will exactly equal the value they place on the public services they receive. Oates and Schwab then proceed to show that their competitive model will result in an economically efficient allocation of resources.

Like all models based on perfect competition, Oates and Schwab need to make a number of quite restrictive assumptions. They nevertheless argue that their model can serve as a useful benchmark in discussions of interjurisdictional competition. Both their model and their conclusions echo the basic insight of tax incidence theory in a competitive framework. The ultimate burden of any tax falls on immobile factors of production or immobile individuals. Thus, to the extent that capital is mobile across jurisdictional boundaries, local government residents will be unable to shift a portion of their tax burden onto businesses. Any attempt to increase taxes on business capital above the value of services received by businesses will result in the out-migration of capital.

Tiebout posits competition among jurisdictions for mobile individuals, while Oates and Schwab assume that individuals are immobile, and local governments compete to attract mobile capital, choosing a mix of services to attract businesses.

The important lesson here is that in designing economic development strategies, governments should aim to set tax rates on business capital approximately equal to the public services provided. Only in circumstances where capital is tied to immobile factors or to location-specific factors will it be possible, in the long run, to levy taxes on business capital that are in excess of the value of services provided to business.

Questions arise over exactly what services businesses receive. In particular, do businesses benefit directly from expenditures on public education? Some economists argue that firms pay for the education of workers by paying wages equal to the marginal product of labor, and hence they gain no further benefit from contributing to the financing of public education (Oakland and Testa 1996). This argument strikes me as overly static. Capital may well be mobile, but that does not mean that mobility is costless. Once a business is established in any given location, being forced to move because an educated labor force is unavailable will certainly entail some costs. Thus, businesses may well benefit from contributing to the ongoing production of an educated labor force in its current location.

An important consequence of competitive models of the type developed by Oates and Schwab is that they preclude the use of ability-to-pay taxes by local governments.[2] Thus, although interjurisdictional competition is efficiency-enhancing, it is not consistent with the pursuit by competing state and local governments of distributional objectives. This conclusion leads Oates and Schwab to declare that their normative support for interjurisdictional competition is conditional on the federal government playing a central role in income distribution by providing "adequate support for low-income households throughout the country" (p. 141).

In general there is strong support among public finance economists for the proposition that in a federal system the central government is the appropriate level of government to carry out the distributional functions of government. Nevertheless, public policy in the United States is moving in the opposite direction. A central element of the fiscal agenda of the Republican-controlled 104th Congress was the reduction of federal authority over a wide range of policies and the return to the states of responsibility for a broad range of public services. With the eventual support of the Clinton Administration, the Congress enacted a welfare reform bill that ended the *entitlement* of low-income individuals to cash assistance from the government and replaced a system of matching grants

[2] In an interesting paper, Timothy Goodspeed (1989) concludes that although an ability-to-pay income tax is inefficient relative to a head tax, the degree of inefficiency is relatively small.

with block grants that will provide states with a fixed amount of money for use in providing cash assistance for the poor and assisting them in finding employment. Furthermore, according to Congressional Budget Office calculations, over the next six years, the welfare reform bill mandates nearly $55 billion in cuts in programs for low-income families and individuals. Most of these spending reductions come in the Food Stamp program, in the Supplemental Security Income (SSI) program, and in reduced assistance to legal immigrants.

In addition, the President and the Republican leadership of Congress agreed to the basic elements of a plan to balance the budget by the year 2002. They agreed that balance would be achieved without any cuts being made in Social Security benefits or in defense spending. Instead of raising taxes to help balance the budget, the budget-balancing plans proposed by both the Congress and the President included substantial tax cuts.

The congressional budgetary resolution generated substantial savings by reducing spending on Medicare. President Clinton used these proposed cuts in Medicare as a potent political weapon against the Republicans during the presidential campaign. As a result, both presidential candidate Dole and President Clinton have promised that, if elected, they will balance the budget without making substantial cuts in Medicare.

The consequence of these bipartisan agreements is that the entire cost of balancing the federal budget must come from spending cuts alone. As spending on Social Security, Medicare, defense, and interest payments account for two-thirds of total federal government spending in fiscal year 1996, all the spending cuts must come from the one-third of the budget that remains "on the table."

Of the government spending that is subject to cuts, over 40 percent is made up of grants to state and local governments. In fiscal year 1996 these grants totalled $250 billion. Of this total, $99 billion (40 percent) was distributed through the Medicaid program; $38 billion (15 percent) through other entitlement programs such as AFDC, child nutrition, foster care and adoption assistance, and child support enforcement programs; and the remaining $113 billion (45 percent) through a large number of non-defense discretionary grant programs. Many of these discretionary programs provide assistance to individuals and families with low incomes, by distributing grants for a range of services including housing, education, and job training.

Although the final details of a budgetary agreement between President Clinton and the new Congress will need to be worked out, as long as Social Security, Medicare, and defense spending remain off the table and tax cuts remain on the table, large cuts in programs that benefit low-income and moderate-income individuals are inevitable. These cuts in federal grants, combined with welfare reform, will create substantial fiscal problems for many state governments.[3] If history is any guide, one of the ways state governments will deal with the fiscal pressure is to shift the costs of providing public services to local governments, either by directly cutting state fiscal assistance to local governments or by shifting responsibilities for the provision of certain public services to local (including county) governments.

Local governments find themselves in a very difficult situation. Devolution has left them responsible for providing public services to low-income households, yet interjurisdictional competition makes any attempt to levy ability-to-pay taxes self-defeating, at least in the long run.

These recent fiscal developments at both the national and state levels (often referred to as "devolution"), place strong pressures on local governments, sometimes articulated as state mandates, to provide a range of public services targeted to poor and needy families. To the extent that local governments operate in a competitive environment, Oates and Schwab have demonstrated that their ability to tax mobile capital is severely limited. As Therese McGuire (1991) points out, the ability of local jurisdictions to tax high-income individuals may also be limited, if those individuals are mobile. Local governments thus find themselves in

[3] For a brief discussion of the fiscal pressure devolution will create in four states, see Reschovsky (1996).

a very difficult situation. On the one hand, devolution has left them responsible for providing public services to low-income households. On the other hand, interjurisdictional competition makes any attempt to levy ability-to-pay taxes a self-defeating proposition, at least in the long run. From a normative perspective, the shifting of responsibility for the redistributive functions of government from the federal government to local governments is likely to result in less redistribution than desired by the average (median) citizen.

Our efforts to better understand the role that fiscal and regulatory policies play in encouraging economic development might profit from our stepping back and asking the general question of why economic growth occurs in certain locations and not in others.

The recent move towards devolution highlights another way in which states may compete. The replacement of open-ended matching grants for welfare with block grants means that states will now bear the full cost of providing benefits to migrants from other states. If states with relative generous welfare programs do in fact attract low-income families, block grants have the effect of increasing the fiscal penalty faced by states with these high-benefit programs.

The economics and political science literature includes a number of theoretical models designed to explain state and local government expenditure decisions. These include the median and decisive-voter models, as well as agenda-setting, Leviathan, and bureaucratic models. As far as I know, none of this theoretical literature explicitly addresses the question of whether governments pursue competitive strategies that involve cutting or avoiding costs associated with distributional programs. Some of the empirical literature on the determination of state welfare benefit levels attempts to determine whether states explicitly tie their benefits levels to levels in neighboring states. The evidence is mixed and the issue remains unsettled.[4]

Recently a number of people have suggested that the imposition of block grants for welfare will set off a "race to the bottom," with states competing with each other to lower the generosity of their welfare systems or to tighten the conditions under which any individual can receive assistance.[5] A race to the bottom could be set off if a few states cut their benefits sharply or restrict access to benefits. Neighboring states, fearing an influx of potential welfare recipients, will have a incentive to match the benefit cuts. If this process continues unabated, the net result may be that states that currently have relatively generous welfare programs will, over time, reduce benefits to levels close to those in the least generous states. It is important to emphasize, however, that state legislatures that believed that their state's welfare policy attracts migrants have always had a fiscal incentive to compete with other states by cutting welfare benefits. Block grants will probably make states more sensitive to welfare policies in neighboring states, but it is not at all clear that the competitive forces are strong enough to result in a true race to the bottom.[6]

In carrying out a race to the bottom, states are attempting to attract economic development by reducing the cost of government. States can also compete by trying to reduce directly the non-fiscal costs associated with carrying out business, by reducing state regulations. Although not included in Kenyon's paper, this issue is addressed in a number of theoretical papers on regulatory federalism. These papers, most of which focus on environmental regulation, address the question of whether interjurisdictional competition leads to suboptimal environmental quality. In a recent paper, Arik Levinson (1996) reconciles two studies that reach conflicting conclusions about the impact of environmental regulatory competition. In the first paper, Oates and Schwab (1988) use a model quite similar to the one cited earlier to demonstrate that interjurisdictional environmental regulatory competition is efficient. In contrast, Markusen, Morey, and Olewiler (1993, 1995) present a model of two regions competing on the basis of pollution taxes to attract polluting manufacturers. Their results can be inter-

[4] Studies of interstate linkages in welfare policy include Craig (1993), Gramlich and Laren (1984), Ribar and Wilhelm (1994), Peterson, Rom, and Scheve (1995, 1996), and Shroder (1995).

[5] This argument is clearly articulated by Peterson (1995).

[6] Howard Chernick (1996) has argued that while the switch to block grants will result in a substantial reduction in state welfare spending, in properly specified models of state welfare benefit levels, the effects of interstate competition are either statistically insignificant or not large enough to produce a race to the bottom.

preted as an argument that centralized regulation of local environmental problems is required in order to avoid a suboptimal Nash equilibrium. Levinson is able to demonstrate that these conflicting policy recommendations occur because the two models apply to different circumstances. The Oates and Schwab model represents a situation where different regions compete to attract capital investments from an efficient domestic capital market, while the Markusen, Morey, and Olewiler model more closely represents a situation where states compete for investment from abroad.

Kenyon ends her paper by setting forth considerations useful in assessing the benefits and costs of intergovernmental competition in various models and situations. She is correct in stressing the need to clasify one's values in making such assessments. It is difficult to assess interjurisdictional competition without a clear sense of the goals of such competition. Paul Courant (1994), in a recent article in the *National Tax Journal*, argues forcefully that the real goal of state and local economic development policies should be to change the level and distribution of economic welfare. He argues that too often the entire focus of interjurisdictional competition is on the number of new jobs created or the dollar value of new investments, with no attention paid to whether the achievement of these goals has increased economic well-being. Finally, our efforts to better understand the role that fiscal and regulatory policies play in encouraging economic development might profit from our stepping back and asking the general question of why economic growth occurs in certain locations and not in others. The work of Paul Krugman on economic development and economic geography may prove helpful in this regard.[7]

[7] For a good introduction to his research on economic development and economic geography see Krugman (1995). Another useful perspective on the growth of regions is provided by AnnaLee Saxenian (1996).

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