A TRANSACTION COSTS EXPLANATION OF INTER-LOCAL
GOVERNMENT COLLABORATION

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This study develops a model of collaboration choice among city governments. The theoretical model suggests that collaboration is a function of transaction costs that vary with different institutional arrangements utilized in cities, as well as the degree of competition between cities. This study argues that cities facing high transaction costs and high competition are less likely to participate in collaboration and to participate less deeply. Underlying these environmental factors are resource factors that create incentives for cities to collaborate for efficiency gains, which affect both the decision to collaborate and the depth of collaboration. Eleven hypotheses are presented to explain why cities choose to participate in collaboration in the first stage of the analysis and how deeply they collaborate in the second stage. Utilizing a Heckman model of this two-stage process, I find broad support for a number of variables that measure each of these theoretical constructs.
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CHAPTER 1
INTRODUCTION

Over roughly the last decade, a growing number of scholars have documented a variety of mechanisms that governments utilize to implement public policy. They have demonstrated that actual policy implementation often fails to resemble the textbook description of a single, hierarchically organized agency expertly administering policy based on sound business science methods. Instead, these scholars show that policy often is implemented collaboratively through what has been termed *implementation networks*.

Implementation networks are loose organizations of governmental and non-governmental actors that jointly implement policy. They are governance institutions that, unlike the traditional agency structures for policy implementation, have as their defining characteristics the distinct lack of hierarchy. Collaboration is the activity within networks.

Policy implementation through networks requires a significantly different skill set for the public manager that must operate within them to achieve policy goals. Administrators must work to institutionalize formal and informal “rules of the game” that define the network as an institution. They must facilitate the sharing of information, encourage the formulation of compromises, and master the art of coalition building. This is much different – and substantially more
difficult – than traditional, agency-centered, top-down management, which typically focuses on such technical issues as planning, organizing, staffing, coordinating, reporting and budgeting (the famous POSDCORB).

The processes occurring in these governance structures, characterized as they are by the inclusion of multiple agencies without a formal hierarchy, look much less like management and much more like collective choice – i.e., political processes.

This should not be surprising. The divide between policy and administration has long been recognized as an artificial construct. Even as early as Dimock’s 1937 essay marking the fiftieth anniversary of Woodrow Wilson’s (1887) pioneering work on the policy-administration dichotomy, some were questioning the viability of the theoretical divide.

Today we cannot accept unqualifiedly the generalization of Woodrow Wilson to the effect that ‘the field of administration is the field of business…’ Many is the time that officials wished that this were true. But it is not; politics runs all the way through administration. Group pressures operate directly and ceaselessly upon every branch and subdivision of public administration (Dimock 1937, 32).

It is perhaps surprising, then, that it has only been since Pressman and Wildavsky’s (1973) seminal critique that we have begun to fully explore just what implementation structures really look like.

We find examples of collaborative policy implementation everywhere. Work by Hall and O’Toole (2000, 2004), for example, suggests that as much as 85 percent of all federal legislation that creates new tasks requires implementation by multiple agencies and non-governmental actors that must
work together to achieve the policy goals. At the local level, analyses by Agranoff and McGuire (1998, 2001, 2003) show that even in the competitive, often zero-sum world of local economic development, 90 percent of cities surveyed participated in collaborative behavior with a host of other actors, including other cities. Fully 65 of these local governments exchanged financial resources as part of that collaborative effort.

Collaboration, then, must provide substantial incentives to overcome the difficulties and loss of policy autonomy associated with coordinated implementation in a more pluralistic environment. The existing literature on collaboration rarely speaks to the question of why governments choose to collaborate rather than go it alone. Most scholarship is focused on management issues in networks – how public administrators can facilitate bargaining over outcome preferences and coordinate action among non-hierarchically related actors. The little theory that does exist focuses on resource exchange and resource dependency explanations. Central to these theories is the idea that collaborators come together because they can achieve more than they could have working separately.

Niskanen (1971) used the term “slack” to describe general bureaucratic resources, and the term is useful in this context. Slack resources generated by collaborative policy implementation can be used for a host of alternative goals, including agency aggrandizement, new program implementation, enhanced
effectiveness of existing programs, or cost reduction in the form of lower tax rates.

The challenge of viewing collaborative policy implementation as a simple mechanism for generating slack resources is that, if the motivation is always present to some extent, then why is there so much variability in the use of collaboration as an implementation mechanism? This study begins to answer this question by testing a model of collaboration choice utilizing a large sample of cities throughout the United States.

In some ways, studying cities assumes a limited definition of collaborative behavior. It is often the case that non-governmental actors are important players in implementation networks. But collaboration between cities provides an interesting test case because of the degree of political and administrative autonomy between them.

Unlike counties, cities across the country serve substantially the same functions, are authorized to tax and spend in similar ways, and do not overlap each other (as they overlap and share tax bases with counties). They are not typically required to coordinate their actions, although they may find it to their benefit to do so. Cities and their elected policymakers are typically relatively free to make decisions in the best interests of their residents, regardless of the positive or negative externalities those decisions might impose on other jurisdictions. And thus, collaborative behavior is ostensibly voluntary between
cities and best characterized as the joint implementation of local government policy, the costs of which are high.

Collaboration between cities, then, presents a high standard for collaborative behavior. One might suspect that cities are loath to relinquish their policy autonomy, however useful collaboration might be in generating slack resources, and that such collaborative efforts would be infrequent and inconsequential.

In fact, cities collaborate frequently, and the value of that collaboration is substantial. As this study will demonstrate, approximately 68 percent of all cities collaborate with each other, and the average value of that inter-local collaboration is more than $1 million. Cities implement policy jointly in all areas of local services, from education and health and human services to infrastructure and public safety. The U.S. Census Bureau estimates that in 1996, the total value of inter-local collaboration was $3.9 billion (U.S. Census Bureau 1997). That figure represents 3.4 percent of total municipal budgets for all cities that participated in some form of collaboration, and is almost half the size (46.5 percent) of all federal grants to those local governments.

Further, the variability of collaborative behavior across cities suggests that the choice to collaborate is more complex than a focus on the underlying motivation to generate slack resources implies. The choice to collaborate (or not) does not occur in a vacuum. Environmental attributes alter the payoff structures potential collaborators face, changing their preferences for
collaboration. While myriad factors might be considered as potentially impacting collaboration choice, this study focuses on three primary areas: institutional arrangements and the transaction costs associated with them, inter-local competition, and the underlying motivation to reap efficiency gains.

Institutions and Transaction Costs

Collaborative arrangements that involve the exchange of resources often take the form of contracts. In effect, each collaborative arrangement is a transaction, and those transactions are subject to political transaction costs in a way that parallels transaction costs in the private sector.

As Williamson (1989) points out, transaction costs are the costs of “planning, adapting, and monitoring task completion under alternative governance structures.” Similarly, political transactions occur under different “institutional arrangements.” These varying institutions create differing transaction costs in the political sphere as they do in the economic one. Time inconsistency, asset specificity, asymmetric information, monitoring, and residual rights of control all have analogies in political agreements.

Economists and political scientists have utilized this approach to describe a variety of political phenomena, from the Congressional-bureaucratic relations, to regulatory policy, and to the development of majority voting blocks in European parliaments (Austen-Smith and Riker 1987, Baron 1991, Dixit 1996, Epstein and O'Halloran 1994, Epstein and O'Halloran 1999, Shepsle 1979, Shepsle and Weingast 1987)
While the research on institutions generally has been prolific in recent years, the application of these ideas to implementation networks and collaborative behavior is mostly absent. Much of the work to date has focused on the collective choices made within networks. Although rarely conceptualized this way (see Milward and Provan 1998b for an interesting exception), networks themselves can be conceptualized as institutions created to help reduce the transaction costs associated with collaborative policy implementation operating at the collective choice level, using Ostrom's (1999) taxonomy of institution types.

Constitution-level institutions (or, charters at the municipal level) may alter the decision processes at the collective choice level, but what city-charter level institutions might matter?

This study suggests that at a minimum, three institutions matter most: city manager versus other forms of government (especially the strong mayor form), at-large versus single-member (ward) district representation, and partisan versus non-partisan elections. Since the reform era, these institutions have been center stage in the debate about the best way to organize municipal governments. Originally codified to create a more business-like approach to policy implementation, the reform structures of the city manager form of government, at-large district representation, and non-partisan elections potentially have interesting and non-obvious impacts on collaboration decisions.

To the extent that collaborative policy implementation is more inclusive and pluralistic, these reform institutions might be expected to reduce
collaborative behavior on the part of a city organization (O'Toole 1997). Alternatively, these city charter institutions might be viewed in terms of their ability to foster collective decision-making generally. Their relative ability or inability to reduce the costs of collective decision-making within the organization can then be applied to collaborative behavior. As will be shown, approaching these institutions from this second perspective leads to substantially different propositions about how they might affect collaborative behavior.

Competition and Locational Factors

Researchers have found that “locational factors” – whether a city is a central city, is a suburban city located in a metropolitan area, or is a city located outside of a metropolitan area – affect collaborative behavior (Agranoff and McGuire 1998, Agranoff and McGuire 2003). Some suggest, as do Agranoff and McGuire, that central cities and non-metropolitan cities are most likely to participate in collaboration. Others believe that proximity breeds closer ties.

But while the findings are intriguing, little theory has been brought to the question. The work of Tiebout and colleagues (Ostrom, Tiebout, and Warren 1961, Tiebout 1956) could be utilized for this purpose. The Tiebout Model asserts that some cities compete to provide an optimal basket of public goods to residents and businesses, but that competition is only most fierce between those cities with a similar customer base.

This competition creates countervailing motivations for cities. On the one hand, cities are motivated by competition to reduce costs to either provide
additional services or reduce tax rates. One of the ways cities can attempt to accomplish this goal is through the generation of slack resources made available by jointly implementing a service with another city. On the other hand, cities will avoid agreements that disproportionately favor their collaboration partner. Why? Because any relative gain to the collaboration partner can be used for greater enhancement of services or reduction of tax rates, all of which attract residents and business from one jurisdiction to another.

Thus, cities considering collaboration must be aware of the relative gains each cities receives from the collaborative effort. And the greater the degree of collaboration, the greater the gap between the relative winner and loser.

Competition, however, is not universal. In the Tiebout Model, it is most acute between cities that are most alike. Cities that are less alike, by contrast, are in less competition because they are attempting to attract different target groups. The greatest opportunity for collaboration – and the slack resources it generates – is between cities that are not similar and can focus on the absolute gains to be achieved.

Cities outside of metropolitan areas present a difficult case. On the one hand, they are less concerned about competition because fewer direct competitors are nearby. But on the other hand, few potential collaborators are nearby. Such cities should be interested in collaboration more often, but the opportunities may be more rare.
Underlying Motivations: Slack Resources and Economic Need

Institutional arrangements and competition provide a framework within which governmental actors work. They impact outcomes in the sense that they change payoff structures and affect the decision calculus of the actors. But they do not provide a clear indication of the underlying motivations of actors considering collaboration. We are left wondering: What’s the appeal of slack resources? And how does collaboration help attain them?

Existing research in collaboration points to two main theories: resource exchange and resource dependency. The first is based on the idea that collaborators enter into mutually advantageous agreements because together, they can achieve more than they can separately (O'Toole 1988, Powell 1990, Thurmaier and Wood 2002). Or they can provide a superior good or service. These mutually dependent relations involve the exchange of ideas, information and resources.

The second theory – resource dependency – assumes one organization is dependent on another to accomplish the policy goal (Agranoff and McGuire 2001, Pfeffer and Salancik 1978, Provan 1993). A small suburban city, for example, might be dependent on a central city for regional planning services for which the smaller cities shares a portion of the cost. Or they both may be jointly dependent on federal grants provided in their metropolitan area that require the cities to work jointly.
These literature on resource theories suggest that cities collaborate because 1) the policy could not be implemented otherwise, 2) the policy could be implemented, but less effectively, or 3) the policy could be implemented, but less efficiently. In other words, collaboration is at least in some cases a less costly mechanism for the production of public goods and services. The collaborative effort generates slack resources through efficiency gains. Those slack resources can then be used to improve the effectiveness of the program, or they can be diverted for other purposes, including improving other programs or reducing tax rates.

These slack resources come at a cost, as discussed previously. The resources must be valuable enough to overcome the costs associated with loss of political and administrative autonomy, and they have to be worth the difficulty of working in a non-hierarchically organized group to arrive at collective decisions.

Because slack resources – in the form of budgetary resources – are highly fungible, it is conceivable that all governmental organizations would be interested in participating in collaboration. But those cities with the most challenging social and economic problems may more often find that the cost of collaborative policy implementation is outweighed by the benefits of generating additional resources to be utilized elsewhere in the organization.
Research Questions

Although collaboration is often not treated as such, the discussion above suggests that collaborative behavior is a choice. While collaboration may be attractive under some circumstances, this is certainly not universally true, as the previous discussion suggests. In fact, institutions, competition and underlying motivations to generate slack resources provide an interesting set of possible explanations for the variation in collaborative behavior. In this section, three research questions will be developed from this literature with an eye toward building a theory of collaborative choice in Chapter 3.

Research Question 1: Can different institutional arrangements reduce the political transaction costs associated with collaborative agreements between cities?

I argue in this study that to understand collaborative choice, we have to understand how different city-charter institutional arrangements impact the transaction costs associated with collaboration.

As discussed above, there are at least two ways to think about how charter-level institutions in cities might affect collaboration. The traditional view assumes that the city manager form, at-large districts and non-partisan elections are less pluralistic and, thus, each of these institutions reduces the propensity to collaborate. A collective choice approach, on the other hand, assumes that it is the institution's ability to reduce the transaction costs associated with group decision-making.
Utilizing this second approach, this study will develop a rationale for assuming that the city manager form and single-member districts (not at-large districts) reduce the transaction costs of internal collective choice, which can be externalized to reduce the transaction costs associated with collaboration. It will be suggested that partisan identification in elections, on the other hand, has no impact on the ability to reduce the transaction costs associated with collaboration.

These institutions affect *ex ante* transaction costs, but *ex post* factors also play a role. Among the most important of these is transaction monitoring. For organizations that find it difficult to monitor transactions, collaboration presents challenges. Efficiency gains may be available, but those gains might be absorbed by the increased cost of monitoring the collaborative agreement. Organizations with sophisticated monitoring mechanisms find the marginal cost associated with one additional agreement relatively smaller and may be more willing to enter into agreements because of this reduced cost.

A theory of collaborative choice, then, must incorporate both *ex ante* and *ex post* forms of transaction costs to sufficiently evaluate how behavior is biased by different institutional arrangements.

Research Question 2: Will cities facing a more competitive environment be more concerned with relative gains and thus forego deeper collaboration that in many cases may benefit one city more than the other?

Another environmental factor that may affect collaborative choice is the degree of competition between cities. If cities do, as Tiebout suggests, compete
in a quasi-market to provide an optimal mix of goods and services at the lowest possible tax rate, then they should be worried any time a competitor might gain an advantage.

The work of Tiebout (1956) and especially Ostrom, Tiebout and Warren (1961) has several implications for the study of collaboration choice. First, the drive to efficiency created by market competition between cities should encourage them to collaborate to the extent possible to capture any slack resources that can be translated into better goods and services (the public sector equivalent of product differentiation) or reduced taxes (equivalent to a cost reduction to consumers).

But when cities collaborate, the slack resources generated are not necessarily equal. No evidence exists on this point, but it is difficult to imagine that an even distribution among collaborators of the slack resources created is common. More often, it is likely that one city gains more than the other. Since both gain by the collaboration (or it would not occur at all), why should city leaders worry weather one city gains more than another? In fact, they may not worry. Cities that provide very different baskets of goods may have little cause to worry about uneven gains with collaborators. But for cities with similar baskets of goods, competition enters the decision calculus. Gains to one collaborator above those received by another lead to changes in the equilibrium between the cities. A second implication, then, is that cities in highly competitive markets will be less likely to collaborate than cities in less competitive markets.
But how can competitive markets be defined? Cities compete for the same customer base when their basket of goods and tax rates are similar – and when they are in proximity to each other. Thus, the third implication is that homogenous markets of cities will be more competitive than heterogeneous markets of cities.

The question of relative versus absolute gains from collaboration focuses attention away from the binary choice to collaborate or not and toward the choice of how much to do so. Competition does not create transaction costs associated with reaching an agreement, but it creates uneven outcomes from the gains to be had from the collaboration. The greater the degree of collaboration, the greater the gains from it and the more lopsided the relative gains become. Therefore, the fourth implication of the Tiebout Model for collaboration is that competition can shed light on the choice of the degree of collaboration, rather than the choice to participate or not.

Research Question 3: Do cities facing a greater need for resources collaborate more to free up resources to be used on other priorities?

Finally, it is important to remember that actors attempt joint policy implementation because they hope to achieve some gain from the interaction. Institutions and market competition help provide a context in which choices are made regarding collaboration, but the underlying motivation remains.

It is likely that the motivation to generate slack resources, omnipresent though it may be, varies systematically. For example, cities with unusually high
tax rates, poor economic conditions or proactive policymaking bodies may be especially keen on generating slack resources to be utilized on other priorities.

**Studying Collaborative Choice**

The discussion above suggests a two-stage theoretical model in which varying institutional arrangements and their associated transaction costs affect the probability of an inter-local collaborative transaction occurring, while competition affects the depth of such transactions. The underlying motivation to generate slack resources, conversely, affects the decision calculus at both stages.

In this study, I develop a model of collaboration choice based on these ideas. The model synthesizes work on institutions, inter-local competition and slack resources to show the conditions in which actors will choose to collaborate or not, and the degree to which they will do so.

The model is tested on a dataset of 2,825 cities across the country using two variants of the Heckman technique for estimating models in which the first stage represents a theoretically relevant censoring mechanism and the second stage represents the equivalent of a regression analysis of a continuous (but censored) dependent variable. Thus, the dependent variables in the model are, first, the binary choice of whether or not to collaborate and, second, the degree of collaboration, measured as dollars transferred from one city to another.

The empirical findings are consistent with the theory and the discussion presented above. A number of measures of the motivation to generate slack
resources are statistically significant, as are variables measuring institutional arrangements and the degree of competition.

The next chapter discusses previous research in more detail, and suggests that while we have learned much about how implementation networks operate, we do not yet know as much about the patterns of collaborative behavior. In Chapter 3, a full theoretical model is developed, and several measures of the concepts are suggested. In Chapter 4, an empirical model is estimated to test the hypotheses derived from the theory in Chapter 3. Implications for theory-building and for practitioners working in the field are discussed in the final chapter.
As suggested in the Introduction, networks are institutions created to reduce the transaction costs of ongoing, joint policy implementation. Networks reduce transaction costs at the collective choice level through myriad mechanisms – including making routine work of sharing information, devising common strategies and goals, and pooling resources – but they are not without their costs. These costs include the efforts to find common ground on implementation decisions, as well as a loss of autonomy.

More broadly, collaboration – and the networks through which collaboration occurs – arise from the need to bridge jurisdictional gaps created by a highly fragmented local government environment. As administration scholars have long noted, the more than 80,000 local governments in the United States creates a web of overlapping jurisdictions, governmental organizations often working at cross purposes, unmatched needs and resources to meet those needs, and positive and negative cross-jurisdictional externalities (Nice and Fredericksen 1996).

Some problems resulting from local-government fragmentation can be overcome through relatively simple informal cooperation on issues such as coordinated road construction, while other problems are overcome by higher
levels of government. Creation by the state of special districts or federal grants in aid programs are but two examples.

Between informal cooperation and a solution from a higher level of government is collaboration of the sort investigated in this study. Collaboration is formal to the extent that agreements on the exchange of resources are made, but still represents local-level autonomous decision-making. Thus, collaboration is a choice for local governments.

This chapter explores the existing literature regarding that choice. For the purposes of this study, three broad areas of scholarship are relevant.

The first suggests that any agreement comes with associated costs that are outside of the actual cost of producing the good or service. These non-production costs – known as transaction costs – influence the decision calculus about whether or not to enter into agreements. In the political sphere, these costs take the form of political transaction costs, and different institutional arrangements can affect the relative degree of these costs. According to this view, different institutional arrangements – the so-called “rules of the game” – create different political transaction costs associated with collaboration decisions.

A second body of literature suggests that where cities are located – and the nature of the environment they find themselves in – matters a great deal in the decision calculus of cities considering collaboration. Cities in different circumstances face environments with varying levels of competition. This competition creates cross-cutting incentives for cities. On the one hand,
competition creates an incentive for cities to work together when it will reduce costs. But on the other hand, competition also makes it difficult for some cities to work together if the gains to be had are unequal.

A third body of scholarship suggests that cities collaborate to generate slack resources, which can be utilized to meet other policy goals. Clearly, all cities have an incentive to generate slack resources to some extent, but this underlying motivation varies with the needs of the community.

Institutions and Transaction Costs

The decision to collaborate occurs within varying structures of government. While there has been a great deal of work about how networks operate as structures – or institutions – there has been less work on the impact that institutions have on the choice to collaborate. Institutions in this sense are more than the branches of government. They are “the rules of the game in a society or, more formally, are humanly devised constraints that shape human interaction” (North 1990, 3).

Governance institutions have been broadly categorized into three levels: constitutional, collective choice and operational (Ostrom 1999). Cities, of course, do not have constitutions, but they do have the equivalent – city charters. These charters specify the broad shape and form of a city: the form of government, methods for selecting elected representatives and appointed administrators, and caps on tax rates, among others. Cities do a number of things at the collective choice level: their councils or boards make policy decisions within the rules that
bind them, citizens and private organizations lobby their locally elected representatives for services, and they act within and through networks. At the operational level, cities pave streets, mow the grass in parks, and provide police and fire protection. At each level, actions and interactions are constrained by rules created at the level above.

Institutional arrangements – North’s “rules of the game” – can vary, creating different costs of choices at the next level. The primary interest is how institutions create different transaction costs associated with any exchange, including collective action. Coase (1937) first introduced the idea of transaction costs, but it was not until the 1970s when their study in economics was reinvigorated by Williamson (1975, 1979). Transaction costs are the non-production costs associated with any transaction. They are, in Williamson’s words (1985, 19), “…the economic equivalent of friction in physical systems.”

Transaction costs come in two primary forms: *ex ante* costs are any costs associated with establishment of the agreement, while *ex post* costs are associated with any unanticipated consequences of the contract, including the costs of monitoring the contract for those unanticipated consequences. While *ex ante* costs are born by would-be collaborators prior to reaching an agreement, *ex post* costs are incurred after the agreement is struck. However, actors within organizations rationally anticipate and estimate *ex post* costs, and in so doing, considering these costs in the decision calculus of whether or not to participate in any agreement.
What’s critical about transaction costs is that they vary, depending on the institution chosen at the level above. For Williamson (1985, 18), the issue is that “a comparative study of issues of economic organization is this: Transaction costs are economized by assigned transactions (which differ in their attributes) to governance structures (the adaptive capacities and associated costs of which differ) in a discriminating way.”

The utility of this approach to analyzing political transactions was recognized quickly, and a number of scholars have utilized this approach in a variety of different ways. Some of that scholarship evaluates how political institutions create differing transaction costs for economic markets (see, for example, Dixit 1996, Eggertsson 1990, North 1981, North 1990) while others translate the concepts from the transaction-cost perspective into political transaction costs (Austen-Smith and Riker 1987, Baron 1991, Diermeier 1995, Epstein and O'Halloran 1994, Epstein and O'Halloran 1999, Hammond and Knott 1999, Lubell 2004, Ostrom 1983, Riker 1980, Schneider et al. 2003, Shepsle 1979, Shepsle and Weingast 1987, Shepsle and Weingast 1995, Tsebelis 1999). This process of taking the transaction cost approach and applying it to political transactions is the most beneficial to this study.

In the public administration literature, most of the work studying collaborations and networks understandably has been at the collective choice level. It is at this level that potential collaborators work together to create an
ongoing network. It is at this level that “good management” matters. And it thus at this level that the work on a “theory of network management” is progressing.

Provan and Milward (1998b), for example, utilizes institutional theory to explain outcomes in four mental-health service networks. McGuire’s (2002) taxonomy of management tasks – activation, framing, mobilizing and synthesizing – are designed to foster trust, encourage information exchange and solidify the commitment to norms (as varying types of formal and informal institutions) of a network.

But these institutions and the varying transaction costs they create are less helpful to an understanding of the choice to collaborate. For this, we must evaluate the institutions at the city charter level. But what institutions matter at this level? After all, cities have lengthy charters that stipulate any number of things, from maximum tax rates to the type of elections to be held, to the names of departments in the organization.

Perhaps the most important and universal institutions at the municipal level are those that specify the form of government. Since the progressive era at the start of the twentieth century, reform-minded scholars have focused attention on three primary concerns: the city manager form of government, at large electoral districts and non-partisan elections (Kettl 2002). These institutions differ sharply from strong mayor systems, single-member districts and partisan elections. The reforms were intended to create a boundary between policymaking and policy administration. For Woodrow Wilson, the academic, and
other reformers, "administration lies outside the proper sphere of politics. Administrative questions are not political questions. Although politics sets the tasks for administration, it should be not suffered to manipulate its office" (Wilson 1887, 210). These reforms at the city level helped create this divide between the administration of local government and the policymaking of local government.

Less scholarship exists to suggest how we might expect these institutions might incentivize collaborative behavior.

On the one hand, implementation of policy within a networked setting can be viewed as more inclusive and pluralistic (O’Toole 1997). Networks, by definition, include more actors with a vested interest in the outcomes of policy. Whether one characterizes this coterie of collaborators as liberalism (Lowi 1979), advocacy coalitions (Sabatier 1999), issue networks (Heclo 1978) or policy subsystems (Baumgartner and Jones 1993, Stein and Bickers 1995), the case can be made that networks typify a more inclusive process of implementation.

This is, however, counter to the goals of the reform movement, which attempted to remove group action from implementation, carried out to the best technical abilities of the administrator. As Wilson (1887, 214) put it: “The cook must be trusted with a large discretion as to the management of the fires and ovens.”

Thus, reform cities with their business-like city managers, influence-limiting at-large elections, and non-partisan elections would appear to be counter to the ideas of liberal-democratic collaborative policy implementation. But on the
other hand, it may be that these city charter institutions have differing effects on decisions to participate in collective governmental action. We might look to the nature of each institution for clues in this regard.

City managers, for example, act as the chief full-time representative of the city for those seeking power over aspects of implementation. Thus, in their traditional role as the city’s gatekeeper, their duties already require the ability to forge alliances and build coalitions to aid the part-time council members.

Furthermore, research demonstrates that city managers – whose fortunes are less directly tied to electoral politics – are able to make credible commitments to reduce rent-seeking behavior in at least some contexts (Feiock, Jeong, and Kim 2003, Feiock and Kim 2000). According to this argument, the city manager form is selected by policymakers as a mechanism for coping with numerous interests or stakeholders in a way that most limits rent-seeking behavior. By this reasoning, city managers would seem to be better suited to working through networks to implement policy than strong mayors or weak mayors with strong councils or boards.

Some scholars have suggested that it is the motivation of the administrator himself that inform the choice of collaborative behavior. Bardach (1998), for example, provides an interesting evaluation of the reasons why administrators might be more or less keen on interagency collaboration.

He identifies what he calls value-creating reasons, careerist reasons and bureaucratic rationales. Value-creating reasons why administrators would not
want to collaborate include mission-related risk aversion, by which he means that governmental agencies have a core concept of their mission and collaboration often entails negotiating on this definition. This relates to other value-creating reasons against collaboration identified by Bardach, including the challenge of managing conflicting organizational values, the time required to collaborate, and balancing the representation of differing constituency groups. As Bardach points out, collaboration can also contribute to the value of policy output, and this can provide a positive motivation for administrators.

Similarly, administrators have career motivations that both encourage and discourage collaborative behavior. Against collaboration are such motivations as job security (if the collaboration is perceived as a means for downsizing agencies), status within an organization, and fear of futility. On the other hand, career opportunities exist in networks for administrators as well. They may find that networks provide an opportunity for personal renewal, new job opportunities or, more insidiously, a chance to shift blame for poor outcomes.

Finally, administrators have bureaucratic reasons why they may or may not like collaborating in the implementation of policy. In the ongoing bureaucratic battles over funding, turf, autonomy and accountability, administrators might find that networks take money away from other projects, allow others to invade their policy domain, reduce their decision-making authority and increase review by stake-holders. Alternatively, networks also potentially provide opportunities for
administrators to increase their turf into new policy areas and enhance the revenue available for implementation from other organizations.

Ultimately, Bardach provides no method for determining which of these countervailing motivations will cause administrators to act. And more importantly, there is nothing telling in Bardach’s list about the institution of city manager and how it might lead to one choice or another.

At-large electoral districts, similar to the city manager form, were designed to limit the impact of narrow interests and rent seeking. Single-member or ward districts encourage politicians to be narrow in their interests (Kettl 2002). At-large districts were created to curb the worst excesses or potential of this parochialism. Thus, ward politicians may be more likely to support an implementation system that incorporates a greater array of interests, reflecting the broader array of narrower interests represented at the council table.

The final reform, non-partisan elections, is less clear when evaluated along these lines. Parties, after all, must create large coalitions to win votes, and are thus less inclined toward narrow or parochial interests. But non-partisan elections are not necessarily more narrow or parochial than partisan ones.

Whether one regards the reform institutions of city manager form, at-large districts and non-partisan elections as attempts to limit pluralism in the administration of policy or as mechanisms to control rent-seeking behavior on the part of narrow interests, the potential for these institutions to create differing transaction costs for collaborative transactions seems clear. Transaction costs
are like gatekeepers – they allow some transactions through and hold back or constrain others. But the propensity to collaborate is not the only choice facing networked actors. The literature on networks demonstrates convincingly that collaboration is a matter of degree as much as it is a matter of kind. Beyond the question of whether or not to collaborate, what factors influence the degree of collaboration?

**Competition and Locational Factors**

One of the more interesting findings of a number of scholars has been what Agranoff and McGuire term “locational factors” (1998) and their influence on choice of collaborative behavior. Agranoff and McGuire (1998, 2003) find that central cities and cities outside of metropolitan areas are more likely to participate in collaborative behavior in the economic development field, whereas suburban cities within metropolitan areas are less likely to do so. Morgan and Hirlinger (1991), on the other hand, find that intergovernmental contracting is increased between cities located in metropolitan areas. Park (1997) finds empirical evidence that both competition and cooperation exists between cities and counties located in metropolitan areas.

Beyond the simple observation that cities within metropolitan areas are close to each other, we are provided few theoretical clues about why we might observe these different behaviors.

The Tiebout Model (Ostrom, Tiebout, and Warren 1961, Tiebout 1956) can provide some help. “When more than one public jurisdiction is capable of
rendering service in a single area, further competitive tendencies may develop,” (Ostrom, Tiebout, and Warren 1961).

In other words, proximity breeds competition for cities that provide a similar basket of goods at comparable tax rates. Cities are in competition for resources to provide services, including employers and retailers, and they are in competition for citizen-residents. Employers, retailers and even residents are mobile consumers of government public goods, the Tiebout Model suggests, and will locate in the jurisdiction that provides them the mix of public goods and services that most closely matches their preferences.\(^1\)

This competition creates a drive to efficiency in the production of public goods and services. Since the production of public goods – as differentiated from the provision of public goods – is as likely to be characterized by increasing returns to scale as the production of private goods, there is incentive for producers of public goods to collaborate in many cases.

Proximity, then, also provides opportunities for jointly producing a good or service to take advantage of economies of scale, but this collaboration is not without political costs (Ostrom, Tiebout, and Warren 1961): “…the consequent centralization of decision-making tends also to reduce the local autonomy or degree of independence exercised by the local governing boards.”

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\(^1\) The Tiebout Model is not without serious criticism. Most importantly is the concern that at the micro-level citizen-consumers in the Tiebout Model require more information about and attention to government policy that typically occurs (Lowery and Lyons 1989, Lowery, Lyons, and DeHoog 1990, Lyons and Lowery 1989, Sharp 1984). Recent research (see, for example, Teske et al. 1993) shows that only a portion of the electorate need be informed and willing to move (vote with their feet) to create an appropriate competitive environment and subsequent drive to efficiency.
Characterizing this process as a joint production of a public good focuses attention on the key difference between collaborative behavior between cities and privatizing or contracting out the production or provision of public goods to the private sector. In collaboration, cities must jointly agree on how goods and services are produced. In contracting with a private firm, the decision processes are retained by the government.

Thus, for cities that are similar, proximity creates competition; for cities that are dissimilar, there is an opportunity for collaboration. Cities outside of metropolitan areas do not face the same level of competition, but may find it more difficult to connect with collaborators due to a lack of proximity to potential network partners.

Underlying Motivations: Slack Resources and Economic Need

As O’Toole (O’Toole 1988) points out, collaboration by definition involves the exchange of ideas, information and, most importantly, resources. For this reason, scholars often hypothesize that networks evolve around relationships of exchange, and this exchange can make the collaborators mutually dependent on the other members of the network.

Just how this exchange relationship evolves, however, is a matter of some debate. Some view the exchange within a network of non-hierarchically linked organizations as equitable. In this view, networks are “typified by reciprocal patterns of communication and exchange” (Powell 1990, Thurmaier and Wood 2002). From this “resource exchange” perspective, potential collaborators join
networks when it is in their best interest to do so – if their utility is improved by acting collectively rather than acting alone.

If the production of public goods or services is characterized by increasing returns to scale, then joint production can be efficiency-enhancing, providing a strong motive for collaboration. As Oliver (1990) points out: “When resources are scarce and organizations are unable to generate needed resources, they will be more likely to establish ties with other organizations.”

A variant of exchange theory is the idea that collaborators join forces because they need one another, or more specifically, one collaborator needs the other. Resource dependency theory posits that organizations collaborate because they need what the other has to be able to implement policy (Agranoff and McGuire 2001, Oliver 1990, Pfeffer and Salancik 1978, Provan 1993). In this view, the decision to collaborate is not founded on improving production, but rather on being able to provide a public good at all.

Often, collaborators are jointly dependent on some third party for resources, such as federal funding for local initiatives that span jurisdictional boundaries. Implementation of such a policy creates dependencies between the cities that are cooperating on the program, as well as between the cities and the federal funders of the program. It is for this reason that networking has been characterized as “managing up, down and out” (O'Toole, Meier, and Nicholson-Crotty 2003).
The sheer complexity of federal grants programs to local governments can create strong incentives for cities to work together, as Agranoff and McGuire (2001) point out: “Federalism has become more challenging – in terms of the problems approached, nongovernmental organizations invoked, and expanded managerial vehicles (regulations, loans, tax credits and the like) – more emphasis has been placed on horizontal and vertical actors working together.”

Despite the nefarious implications of using the term “dependency” to describe these collaborations, organizational theory scholars find that the mutual dependence improves the probability of a successful or “effective” network (Provan and Milward 1995, Provan and Sebastian 1998, Radin 1997). Resource dependency theory focuses on the reduction of uncertainty in ongoing relations between organizations (Oliver 1990, Pfeffer and Salancik 1978). Monitoring is easier within a network of collaborators, according to this view. And shirking or cheating is less likely because of institutionalized norms of appropriate behavior and for the simple reason that in a network setting where collaborators know each other, cheaters will “likely get caught” (Provan 1993). Regular interaction encourages cooperative behavior, even if cooperation is not efficient in the short run (Axelrod 1997).

Even if production of a particular public good or service is not characterized by increasing returns to scale, we might still expect bureaucracies to seek out means of producing a good or service more efficiently because any savings generated becomes a “slack” resource available for other purposes
(Bendor and Moe 1985, Horn 1995, Niskanen 1971, Stein 1990). These freed-up resources are then available for any number of other purposes, including investment in the more efficient program, use in other programs, tax rate reductions or bureaucratic aggrandizement.²

Efficiency also can be an important aspect of the collective choice to implement the program in the first place (Horn 1995). “Efficiency is important because this increases the value of the transaction to the intended recipients for a given burden (alternatively, it reduced the burden – and the corresponding opposition – imposed by any given redistribution). For a given distribution, inefficiency is a waste of potential political support” (Horn 1995, 154).

If inefficiency is omnipresent (Musgrave 1959, Samuelson 1954, Samuelson 1955), should local governments always collaborate? For some scholars, the answer is that governments should consolidate (Wood 1958). According to this traditional administrative view, providing public services is necessarily inefficient (Nice and Fredericksen 1996). Economies of scale can be achieved through large public organizations. The trend since World War II of increasing numbers of local governments is inherently inefficient.

While production efficiencies may often be available, the availability of efficiencies in the provision of public goods and services is much less clear, all the more so when providing services through a network. Networks are complex,

² Thus bureaucracies may be technically efficient without being socially efficient – in other words, it may provide more services than society wants (Schneider 1989). Tiebout’s Model (1956) solves this dilemma.
interactive groups of non-hierarchically organized actors who may or may not share a common idea of the “best” way to implement policy. Coordinating action and finding a consensus view in such a setting is much more difficult than management in a traditional bureaucratic organization.

Implementation of policy within a network, then, could hardly be characterized as efficient. Networks consist of multiple actors who have no formal authority over one another and often have different perspectives on how implementation should proceed. “Managing” under these circumstances is much more difficult for the public administrator, who is often held accountable for the output of the network, than implementation under the umbrella of a single bureaucratic organization, like a city.

In fact, two of the central features of networks are complexity and uncertainty (O’Toole 1997a). Ongoing efforts to build relationships between network actors can reduce these costs of collaboration, but this requires the proactive efforts of actors in the networks, usually the administrators of public agencies (Agranoff and McGuire 2003, McGuire 2002).

Despite questions about efficiency, collaborators may still opt to work together in a network because effectiveness is enhanced. Outcomes matter, and in many cases, a network can achieve a better outcome for the program recipients than a single bureaucratic agency can. The work of Meier and O’Toole (2002, 1999, 2003, see also Smith and Meier 1994) on education outcomes and management practices, for example, suggests that public administrators in the
Texas school systems achieve higher school district performance when they collaborate with other stakeholders to form networks on actors interested in school outcomes.

However, scholars investigating the impact of network structure on the effectiveness of mental health services (Milward and Provan 1998b, Provan and Milward 1995) found that the more centralized the implementation structure, up to and including implementation through a single bureaucracy, the more effective it was, as rated by service recipients.

We are left wondering whether networks help or hinder efficiency, help or hinder effectiveness or, though improvements in communication and information-sharing, ultimately help or hinder collective activity within the network. The confusion arises partly from the applications of ideas from different disciplines in ways that may or may not be appropriate for the political sphere.

For example, resource exchange and dependency concepts were developed in the organizational theory literature to explain why firms in the marketplace might choose close-knit relationships over perpetual open-market transactions. Corporate networks in this view represent the vast gray area between pure market transactions and vertical integration into a firm.

The translation of these ideas to the study of governance structures (Frederickson 1997) falls short because governments rarely have the option of integrating vertically (imagine a metropolitan suburb voluntarily becoming a unit of the metro central city). Thus, governments are not facing a choice of
integrating with other firms to varying degrees (from loose networks all the way to full vertical integration), but rather are facing a choice between producing public goods and services under one roof (it’s own) or jointly.

Conclusion

These three literatures come from disparate schools of thought and originated for different purposes, but together can provide a comprehensive look at why collaboration occurs. The study of institutions provides insights about the non-production costs associated with reaching agreements between cities. Negotiating and monitoring agreements are not costless activities, and institutional arrangements that reduce these costs should increase the probability of agreements.

Competition between cities for resources in the form of residents, employers and retailers creates countervailing motives. On the one hand, cities have an incentive to find economy of scale efficiencies to reduce costs, but on the other hand, they have incentive to avoid arrangements that would provide a greater benefit to a competitor. This perspective is arguably most true for cities that face the greatest degree of competition.

Underlying variation in institutional arrangements and the degree of competition is the motivation to generate slack resources. Despite the origination of the term in the public choice literature on agency aggrandizement, slack resources can utilized by governmental organizations more broadly for any number of purposes. The motivation to generate slack resources, while
undoubtedly ubiquitous throughout the public sector, may be particularly acute in cities where needs in the community are greatest. It could be argued that in these cities, the marginal increase in available resources will have the greatest value to the organization and to the community.

In the next chapter, I utilize the scholarship described here to build a model of collaboration choice. As will be demonstrated, institutional arrangements affect the propensity of cities to enter into collaborative agreements, while competition affects the decision about how deeply the city should collaborate. Variation in the underlying motivation to generate slack resources is expected to affect both decisions.
In the previous section, I explored the theoretical development of the three main bodies of literature regarding the process of collaboration choice. What becomes clear is that scholarship in this field is a grab bag of approaches, definitions, theoretical notions, hypotheses and quantitative analyses.

Each of the studies presented has its merits, as well as its faults. Exchange and dependencies theories help us understand the motivation for collaboration – cities seek out partners when they need additional resources (broadly defined) or when the resources that other potential collaborators can offer are sufficiently valuable. But the motivation to generate and utilize slack resources is pervasive. Why aren’t all cities collaborating all the time?

Part of the answer lies in the varying incentives that differing city-charter level institutions create. Different institutions create varying transaction costs for the collaborative transaction. Still, transaction costs alone cannot explain motivations for behavior. As Williamson (1985, xii) points out, “To be sure, transaction cost arguments are often best used in conjunction with, rather than to the exclusion of, other ways of examining the same phenomena.” In other words, the transaction cost approach provides only a partial explanation.
Another important part of the answer lies in the competition that occurs between cities in close proximity. Competition creates a greater sensitivity about the relative gains each collaborator receives. When gains are less equal and competition is most intense, collaboration is particularly challenging. When market competition is lower, collaborators are free to seek deeper relationships.

I begin this chapter by synthesizing these disparate bodies of literature to show how the concepts in each can help explain the decision calculus of collaborative behavior and to set the stage for the analysis to come. In the first part of this chapter, I utilize the various literatures in a general discussion of how they interact to create different incentive structures for collaboration. Following that, I apply the general discussion to city behaviors and suggest some specific patterns of collaboration I expect if the theory holds out in reality, focusing especially on the transaction costs of varying institutional arrangements and the impact of competition.

Collaboration by Choice

To begin to understand why cities opt to collaborate and how deeply they do so, we must understand not just the resource, efficiency and effectiveness motivations that exist, but we also must understand the different institutions in which those motivations occur and the transaction costs associated with each. Furthermore, we must understand how competition between cities biases their behavior when considering collaboration.
Coase's 1937 work marked the beginning of the recognition of the role of transaction costs in the theory of the firm, and the extension of these ideas to other forms of institutional governance. In this framework, firms are viewed as governance structures rather than as mere production-distribution entities. His work provided new insights into the emergence of firms and markets, and has led to numerous studies of firm decisions to integrate vertically and horizontally, make or buy decisions, and the non-market costs of exchange generally. As Arrow (1969, 48) points out: "market failure is not absolute; it is better to consider a broad category, that of transaction costs, which in general impede and in particular cases block the formation of markets."

Williamson's reinvigoration of the transaction cost approach made the material approachable for political science. For Williamson, transaction costs can be defined as the "comparative costs of planning, adapting, and monitoring task completion under alternative governance structures" (1989, 142). In other words, the costs of striking a deal vary, depending on the institutions in place. Some institutions create more costs for dealmaking than others.

The private market is hardly the only realm in which dealmaking takes place. Political scientists (and economists) quickly began applying this approach to governance institutions.

Transaction costs include *ex ante* costs of negotiating and forming a contract or agreement and the *ex post* costs of monitoring and enforcing the
agreement. Of course, “it is important to recognize that the two sets of cost elements are usually interdependent” (Rao 2003, 8).

The question of which governance institutions matter in evaluating transaction costs is common, and there is no easy answer. As Rao (2003, 9) points out: “Political transaction costs are quite general, and need to be specified in terms of system characteristics for specific assessment.”

As suggested in the last chapter, the reform institutional arrangements of city manager form of government, at-large districts and non-partisan elections are perhaps the most important institutions at the city charter level. In their study of the city manager form, Feiock, Jeong and Kim (2003, 617) point out that: “The form of government embedded in the city charter operates as a constitutional contract.”

For early reformers like Wilson, these institutions explicitly divide the administration of policy from the making of it. In this view, the city manager form of government, at-large districts and non-partisan elections are decidedly less democratic, at least with respect to implementation of policy. Collaborative implementation networks, conversely, are necessarily more inclusive mechanisms, much as policy networks are generally (Heclo 1977, 1978). In fact, some scholars in the networking field see implementation networks as part of a broader pattern of policymaking behavior that in more inclusive, open and (arguably) democratic (Kickert, Klijn, and Koppenjan 1997). We might expect,
then, that the city manager form, at-large districts, and non-partisan elections would create disincentives to participate in collaborative policy implementation.

An alternative way to view these institutions is to consider how each aids city governments in reducing the transaction costs normally associated with collaborative policy implementation.

First, implementation networks represent more inclusive methods for deciding the details of producing and delivering public goods and services. This more inclusive mode potentially provides an opportunity for rent-seeking behavior on the part of network participants. City managers, who have established norms of professional conduct and their careers less directly tied to the outcomes of any given election, can make credible commitments to block such behaviors in a pluralistic setting (Feiock, Jeong, and Kim 2003, Feiock and Kim 2000). Mayors acting as chief executives and city council members, who rely on the financial and electoral support of various interests, can less successfully commit to resisting such rent-seeking behavior. Thus, the city manager form, suited as it is to balancing and filtering numerous interests, can reduce the transaction costs of rent-seeking that potentially exist in networks of collaborators.

Second, single-member districts motivate politicians to focus on narrow interests (Kettl 2002). At-large districts, alternatively, curb parochialism by creating an incentive structure that motivates politicians to focus on services to the majority. Cities organized to support the more pluralistic method of Policymaking associated with single-member districts must institutionalize
mechanisms for negotiation and deal-making in the policy *making* process. Such mechanisms would reduce the transaction costs associated with policy *implementation* in a pluralistic network structure.

Third, in opposition to the anti-democratic view of non-partisan elections, a transaction cost approach suggests that they have little impact on the choice to collaborate. Parties help reduce the transaction costs associated with voters gathering information on candidate policy positions. Non-partisan elections, then, make such information gathering more costly. However, this information costs explanation has no implications for how motivations to collaborate might be altered under partisan or non-partisan institutional arrangements.

These institutional arrangements represent the *ex ante* variation in political transaction costs. But *ex post* costs also must be considered. One of the most important costs of managing an agreement or transaction is monitoring. Any agreement must be monitored in some way to ensure ongoing compliance with the terms of the agreement. This monitoring can be done informally by administrators who are working on the project or it can be done formally through a program audit process. Because monitoring can be costly and because that cost is not a part of the production cost of the agreement, it represents a transaction cost.

Monitoring requires resources in the form of personnel – accountants, lawyers, and other staff – but ultimately, it requires information on the compliance of the collaborators. Gathering information on compliance can often require
reviews not only of operational functions, but detailed analyses of financial records. And when disputes arise between collaborators, negotiations must be organized to settle them. All of which, of course, drives up the cost of acquiring and using information. As North (1990, 27) suggests: “The costliness of information is the key to the costs of transacting, which consist of the costs of measuring the valuable attributes of what is being exchanged and the costs of protecting rights and policing and enforcing agreements.”

Thus, a transaction costs theory of collaboration must utilize both ex ante and ex post forms of costs to sufficiently evaluate how behavior is biased by different institutional arrangements.

Within this institutional framework, cities have varying motivations to participate in collaborative arrangements. One of the primary motivations affecting collaboration is the degree of competition between potential collaborators.

Tiebout (1956) argues that cities compete in a market-like way to provide an optimal mix of goods and services at the lowest overall tax rate. They do this because they are in competition for residents, employers and retailers, who are – at least at the margins – discriminating consumers of government service packages.

As Ostrom, Tiebout and Warren (1961) suggest, this competition is most acute when cities are in close proximity because the cost of relocation are lower.
But proximity also presents opportunities for collaboration. Cities within metropolitan regions fit this characterization best, as the authors point out.

The underlying factor that helps us understand why cities seek collaboration versus competition is related to homogeneity. Cities that provide a very similar basket of goods at similar prices (overall tax rates) and are in close proximity will be the most competitive. In such cases, the total gains that each might receive through collaboration is less important than the relative gains one achieves more or less than the collaboration partner. If one city in a collaboration can achieve more slack resources for the other, it can use those resources in any number of ways to gain a comparative advantage against its collaborator in their competition for residents, employers and retailers. Competition, then, creates a zero-sum game for collaborators. When cities provide a different basket of goods and services and consequently serve different publics, the degree of competition is lower. Lower competition for proximate cities creates incentives to focus on absolute gains. Both cities gain from collaboration, and unequal gains are tolerated because they do not mean a potential loss of residents, employers and retailers to their collaboration partner. In these situations, the game is transformed from a zero-sum game to a positive-sum game.

The focus on absolute and relative gains implies an interest in the degree of collaboration. Competition, in this respect, is different than the institutional arrangements discussed above. The transaction costs of varying institutional arrangements affect the decision calculus of joining a collaborative arrangement
(i.e., can a deal be struck). Competition focuses on the degree or depth of the collaborative arrangement. Competitive cities are no more or less interested in collaboration than other cities, but deep collaboration is difficult because unequal gains from collaboration cannot be sustained between cities focused on relative gains issues.

This discussion suggests a model of the environmental and institutional constraints on collaborative behavior depicted in Table 3.1. The columns represent environments of low and high competition, while the rows represents generally high or low transaction costs of reaching a collaborative agreement.

Transaction costs affect the propensity to enter into collaborative agreements because they affect the costs of doing so. Low transaction costs allow for easier agreement and monitoring of collaborative agreements when the underlying motivations exist to pursue such agreements. High transaction costs make such agreements more difficult, and I thus expect to find fewer agreements when transaction costs are high.

High competition creates a focus on the relative gains from collaboration. Low competition allows cities to focus on the absolute gains from collaboration. Because the focus is on the gains from collaboration, I argue that the degree of competition affects the depth of the collaborative agreement.

This two-by-two matrix shows how simplified combinations of transaction costs and competition suggest different outcomes for collaboration. When transaction costs are low and competition is low, I expect many transactions and
deeper collaborative arrangements. On the other end of the spectrum, when transaction costs are high and competition is high, cities will be less likely to overcome transaction costs to collaboration and will be less likely to pursue deep collaboration because of concerns about relative gains.

On the other diagonal, the institutional and competition signals are mixed and the results are more intriguing. When transaction costs are high but competition is low, I expect that cities will want to pursue deep collaboration, but will have a difficult time doing so because the cost of reaching an agreement are high. In this scenario, I would expect to find fewer transactions, but the ones that occur should be deep. Alternatively, when transaction costs are low but competition is higher, I expect that cities will act opportunistically. Because transaction costs are low, it is easy to forge an agreement. However, a greater focus on relative gains makes deep collaborations problematic. Rationally acting cities are expected to pursue collaborative arrangements on the chance that they may be able to gain more slack than their collaboration partner and thereby create a price or service-level differential between it and its competitor, but the collaborative arrangements will rarely be deep because the relative loser in the zero-sum game does not have an incentive to give up those unequal gains to its competitor.

Underlying the environmental impact of varying levels of competition and the institutional structures that frame city decision-making is one critical motivation: the desire to generate slack resources. While the commonly used
term may have a pejorative connotation, no moral judgments are necessary in this analysis, and in fact, it is assumed that the motivation to generate slack can – and probably does – come in many forms, all well-documented in the literature discussed in the previous chapter. Perhaps one of the most important motivations for generating slack resources is the competitive environment that many cities face. Competition, especially between homogenous cities, creates an incentive to provide goods and services by the most efficient means possible as a means of reducing costs and, ultimately, overall tax rates (Tiebout 1956).

Another line of scholarship suggests that administrators are motivated to generate slack resources because they can be used for agency aggrandizement (Niskanen 1971, 1975). These scholars argue that the personal motivations of the administrators to build larger agencies may be a rationale for the generation of slack resources.

Research on implementation networks focuses primarily on resource constraints as an underlying motivation. Cities that lack sufficient resources to adequately fund the implementation of a program will seek out partners to share the costs. In some circumstances, additional resources may mean the difference between having or not having a program at all. In other circumstances, additional resources may make a substantial difference in program effectiveness. In still other circumstances, the program may require community-wide participation, as is the case with federal grants programs.
A final underlying motivation is suggested by the traditional urban policy and management literature. From the early work predicting city structure (see, for example, Dye and Macmanus 1976, Lineberry and Fowler 1967) to work on interlocal agreements (Morgan and Hirlinger 1991), economic development policy (Feiock, Jeong, and Kim 2003, Feiock and Kim 2000), the rise of local government political entrepreneurs (Schneider and Teske 1992), and local government outsourcing (Ferris and Graddy 1986, Ferris 1987), researchers have suggested that any number of socio-demographic characteristics of the population of a city matter in a wide variety of contexts. Cities that have more severe needs – as measured by a host of socio-economic indices – are especially motivated to generate slack resources. Those resources can be utilized for additional programs to at least alleviate problems associated with poverty.

Unfortunately, there is little agreement over the appropriate measures of community economics and demographics, and there is little in the way of theoretical connection to the question under investigation. Most explanations are ad hoc. However, while the variability in the use of such measures is significant across research programs, the importance of these measures – in terms of statistically significant findings – cannot be ignored.

Actors with preferences over whether to collaborate and the degree to which they wish to collaborate function within institutions and environments that
constrain their behavior. Thus, a synthesis of the work on institutions, inter-local competition and slack resources suggests three main propositions.

First, institutions at the city charter level that were designed to reduce the transaction costs associated with collective choices function as designed, encouraging potential collaborators to do so. A subsidiary proposition from this literature suggests that city sophistication reduces the \textit{ex post} transaction costs associated with monitoring of any collaborative agreement.

Second, heterogeneous markets reduce the normal competitive nature between cities, which reduces the focus on relative gains and allows cities to focus on any absolute gains that might be possible from collaboration. This focus on the gains from collaboration leads to a focus on the degree of collaboration, so we should expect competition to impact the second stage of the decision process.

Third, as the discussion on slack resources indicates, any gains from collaboration are more likely when cities are in greater need of those resources.

The Big Picture

In this section, a testable model based on the above discussion will be developed. It will become evident in the discussion to follow that cities considering collaboration potentially have two decision points. The first choice is whether or not to collaborate; the second is the degree to which they will do so.

The theory developed here suggests that the first decision is based on the transaction costs associated with different institutional arrangements at the city
charter level, as well as a city’s ex post ability to monitor the collaborative effort. If an optimal mix of institutions is in place, cities will choose to collaborate and must then decide on the level or depth of the collaboration. The discussion above suggests that this decision is partly a function of the degree of competition in the “market” that cities face. At both stages, cities also consider the underlying benefits of collaboration – the resource slack that can be generated.

These three main propositions developed from the existing literature leave many questions unanswered, especially with respect to measurement and empirical analysis. These details will be discussed in the following section, and the propositions will be developed into 11 testable hypotheses. The data for measuring each of these hypotheses will be presented, along with a discussion of their sources and methods of data gathering.

Modeling Collaborative Choice

The theory developed here proposes to view collaboration as consisting of two choices: first, to collaborate, and second, the degree of collaboration. Collaboration and networking have been conceptualized in numerous ways in the literature. For example, survey studies of collaborative behavior measure the number and type of contacts within a network to evaluate outcome effectiveness. Examples from research on economic development policy (Agranoff and McGuire 1998, Agranoff and McGuire 2001, Agranoff and McGuire 2003, McGuire 1999, McGuire et al. 1994) and local education management (Meier and
O'Toole 2002, O'Toole and Meier 1999, O'Toole and Meier 2003, O'Toole, Meier, and Nicholson-Crotty 2003) are noteworthy examples.

Others have measured collaborative behavior in a similar way using a case-study approach (Milward and Provan 1998a, Milward and Provan 1998b, Milward and Provan 1999, Milward, Provan, and Else 1993, Provan and Milward 1995). While these analyses are helpful, they do not develop a model of collaboration as a choice.

Research in privatization and outsourcing at the municipal level are more helpful in this regard. In this literature, the choice to outsource city services is explicitly modeled as a choice. Scholars in this field evaluate the decision of cities to outsource to non-profits, for-profit firms and other governments (Brown and Potoski 2003a, Brown and Potoski 2003b, Ferris and Graddy 1986, Ferris and Graddy 1991, Ferris 1987, Morgan and Hirlinger 1991). While their use of choice models is helpful, their assumption that outsourcing (equivalent to the “make or buy” decision of business firms) is the same as outsourcing to another city is problematic.

This study assumes the data generating process for collaboration decisions is distinct from the process for outsourcing. The reason is that with outsourcing, authority is retained by the city. The contracting firm is monitored by the city for compliance with the specifications in the contract, but the ultimate decision-making authority is retained by the government. In collaboration, authority is shared by the collaborators. Cities rarely hire other cities, as such, or
buy public goods and services from them. The caveat to this is the case of wholesale purchase of utility goods or services, such as raw water for redistribution. Because of the methodology of the government survey utilized in this study, the purchase of wholesale utility goods and services is not considered.

There are a variety of mechanisms for cities that wish to collaborate. Inter-local agreements have been studied as part of intergovernmental relations for some time. But it is the introduction of the concepts of collaboration and networking that aid us in distinguishing the types of inter-local interactions. These interactions can take many forms, from relatively simple joint service agreements for fire service to complex, ongoing interactions involving multiple implementation decision points and actual exchange of financial resources.

The exchange of financial resources is perhaps the least common form of inter-local collaboration because the gains are so easily measured in terms of a common standard – currency. Thus, defining collaboration in terms of dollars exchanged between cities ignores a vast amount of the non-monetary activities of cities that is commonly considered collaboration. And by limiting the analysis to the collaboration only between cities, this study ignores theoretically and practically important network activity by non-governmental organizations, as well as local governments that are not classified as cities (including counties, metropolitan planning agencies, and a variety of special districts).

However, the benefits of narrowing the focus of this study to the exchange of financial resources between cities far outweigh these potential negatives.
Perhaps most importantly, the dependent variables at each stage can be measured objectively. Studies that rely on self-reported activity on the part of each actor in the network require that the actors remember who they contact and how often and that the actors will not give themselves larger credit for activities than they actually deserve. And with these types of studies, it is difficult to distinguish between cities that do not collaborate and those that do. After all, most cities do some minimal amount of networking with their peers.

Thus the focus on exchange of financial resources places a higher, but more objective burden on the definition of collaboration. If we utilize the amount of dollars exchanged between cities as our measure of collaboration, then the first stage of the decision process – choosing to collaborate – can be operationalized as whether or not dollars are exchanged. And in the second stage, the degree of collaboration can be measured by the amount of dollars exchanged.

About two-thirds of cities the United States take part in some form of this definition of inter-local collaboration (see Table 3.2). Of those, the vast majority (1,785) are for general governmental purposes (including police, fire and parks, but also including administrative functions like budget, finance and legal services). The second-largest category is for infrastructure programs. A list of the categories, the number of collaborative arrangements and the average value of each type is presented in Table 3.2.
The U.S. Census Bureau gathers this data as part of its Census of Governments that it conducts every five years. The data used in this study is from the 1997 Census of Governments, which includes data for each city’s fiscal year that ended between July 1996 and June 1997. The dependent variable at the first stage of the process is a dummy variable coded as a 0 when the city does not receive inter-local funds and a 1 when it receives any amount of funds. In the second stage, the dependent variable is measured as the total amount of funds that each city receives through inter-local collaboration.

It should be noted that expenditure data could also have been used, but because of the methods by which municipalities account for inter-local revenue versus the ways they account for inter-local expenditures, the Census of Governments data on inter-local expenditures is seriously under-reported and biased. The problem with expenditure data is that most inter-local expenditures are buried within the operating budgets of the departments with oversight for any particular inter-local agreement. Inter-local revenue, on the other hand, is usually accounted for in a separate category with other revenue from other government agencies. Usually, there are a small number of these accounts, so identifying inter-local revenue is easier for the administrative staff completing the census forms. The Census of Governments data on inter-local funding is in thousands of dollars. This study divides that number by the population of each city to arrive at a per capita value of the degree of inter-local collaboration.
The Political Transaction Costs of Collaboration

An examination of the literature related to city reforms suggests competing explanations of the impact of charter-level institutions and the potential for collaboration. Pluralist arguments focus on the limitations that reform institutions – city manager form, at-large districts and non-partisan elections – place on the inclusiveness of policymaking in cities. But collaborating to jointly implement policy necessarily entails a more inclusive, pluralistic (and arguably inefficient) process. A simple pluralist interpretation of the reform institutions, then, would suggest that organizations operating under these reform structures would be least likely to opt for collaboration.

A more compelling approach can be found in institutionalist explanations of the origination of the municipal reform movement. The city manager function can be viewed from this perspective as a mechanism for reducing information costs associated with making policy in a complex environment (Hayek 1945). The administrative professional with less of an interest in a particular policy than with efficient implementation is well-suited to gather diverse opinions from a variety of stakeholders, assimilate that information, and provide useful policy recommendations to part-time, less knowledgeable (but ultimately more democratically accountable) policymakers. The city manager in such a scenario would find it in his or her career interest to help policymakers find ways to reduce the rent-seeking behavior of narrow interests and balance competing claims and goals (Feiock, Jeong, and Kim 2003, Feiock and Kim 2000).
By this argument, city managers are well-suited to working within networks of competing interests while implementing policy. City managers may find it easier than election-bound mayors to limit the impact of rent seekers and find common ground among competing interests. Thus, the city manager form can reduce the transaction costs associated with collaboration and make the option more viable for cities that are motivated to collaborate.

The institution of at-large district representation fulfills a similar role, but with a different outcome for collaboration. The alternative to at-large representation is single-member district representation. The single-member district form encourages policymakers to be narrowly interested in the affairs of their specific district, rather than the city overall. But the city council or board must still find consensus among its members to effectuate policy. Thus, policymakers elected to single-member districts learn quickly the art of political compromise and deal-making. The city organization, focused on this need to create consensus, becomes adept at facilitating it. Collaboration between cities requires many of the same sets of compromise and deal-making skills. The organization’s ability to facilitate compromise in one sphere is institutionalized and carries over to other areas. Thus, the institution of single-member districts in a city reduces the transaction costs associated with reaching a collaboration agreement.

Finally, the impact of non-partisan elections is indeterminate from the institutionalist perspective. It has been argued that non-partisan elections tend to
favor Republican candidates over Democratic ones, but recent empirical
evidence suggests this claim is dubious (Cassel 1985, Welch and Bledsoe 1986).
But even if true, neither the literature nor common practice suggests that either
party has a particular partisan interest for or against collaboration. Are
policymakers elected in a non-partisan election more or less likely to be
supportive of collaboration? It is difficult to see why this might be the case.
Running for city council on a party ticket or in a non-partisan election makes little
difference in helping the city reduce the costs of collaborating. Thus, an
institutionalist interpretation of the impact of the institution of non-partisan
elections is that they do not increase or reduce the transaction costs associated
with collaboration.

This study takes the institutionalist approach and suggests varied impacts
of the three reform institutions on the decision to collaborate. Thus, the following
hypotheses are proposed.

\[H1:\text{ Cities with the city manager form of government are more likely to choose to}
\text{collaborate than cities with a strong or weak mayoral form.}\]

\[H2:\text{ Cities with a higher proportion of single-member districts are more likely to}
\text{choose to collaborate than cities with a higher proportion of at-large districts.}\]

\[H3:\text{ Cities with non-partisan elections are no more likely to choose to collaborate}
\text{than cities with partisan elections.}\]

The form of government for cities changes rarely and only with significant
fanfare, since it typically can only be changed by a state legislature or by a vote
of the electorate. Despite this, data on the form of government for U.S. cities is not as readily available as one might suspect. The definitive source for this information comes from the International City/County Management Association (ICMA), and is gathered annually through a survey the organization submits to its membership (all three portions of the form of government are not asked every year). Fortunately, the 1997 ICMA survey asked cities to provide details on these three institutions (ICMA 1997). Unfortunately, the response rate for the ICMA survey is much lower than the response rate for the Census of Governments. Thus, a significant limiting factor for data availability is the number of ICMA responses to the 1997 survey. In that survey, 4,552 responses were returned.

To test Hypothesis 1, a city manager variable is coded as a dichotomous “dummy” variable with 1 representing cities with the city manager form of government and 0 for cities with some other form (almost all have the mayor-council form of government). To test Hypothesis 2, a variable is constructed that measures the proportion of at-large districts in each city as a percentage of the total number of districts. To test hypothesis 3, a dummy variable is coded 1 if partisan affiliation of the candidate is not reported on the ballot for city elections and 0 if the partisan affiliation is reported.

Ex Post Contract-Monitoring Sophistication

Ex ante contract negotiation costs are not the only transaction costs identified in the literature, however. Crucial to understanding how costly
transactions can occur is the idea of *ex post* transaction costs. All agreements require monitoring after a deal is struck. Instrumentally rational actors take the cost of monitoring into account when they consider collaboration, and different institutional arrangements can decrease this cost for collaborators.

While some institutional arrangements – such as the city manager form – can improve contract monitoring through the facilitation of information exchange between collaborators, we also must consider the impact of a city’s sheer ability to monitor. With simple agreements, monitoring may be relatively simple and front-line administrative staff may be capable of handling this duty in addition to their regular functions. However, as agreements increase in complexity and number, the degree of sophistication required to monitor collaborative agreements increases. Thus, cities that have more sophisticated mechanisms for monitoring contract compliance will be more likely to enter into collaborative transactions.

The concept of sophistication, however, is broad and ill-defined. What, in particular, is important about sophistication? It could mean a better-than-average finance department or perhaps an internal audit department with sufficient resources to periodically review contracts. The literature provides few clues.

Certainly cities with larger staffs will be better able to accommodate a marginal increase in workload associated with a new agreement. But a large staff also may reflect community preferences for an activist government and high levels of public goods provision. City size, on the other hand, can provide a
rough clue about the degree of sophistication of the city’s governmental organization. Regardless of the degree of activism required of a particular municipal government, cities with a larger population necessarily have larger city structures than cities with a smaller population. As a rough proxy for government sophistication, population size can be representative of the city’s ability to effectively monitor collaborative agreements. This discussion suggests the following hypothesis.

**H4:** Cities with a larger population can more effectively reduce the transaction costs associated with contract monitors and choose to collaborate more than small cities with a concomitantly less effective contract-compliance ability.

To test Hypothesis 4, a variable is utilized from the Census of the Population. For each city, the population variable is the raw population, as collected by the U.S. Census Bureau.

**Competition and Locational Factors**

Ostrom, Tiebout and Warren (1961) argue that competition between cities biases behavior. Central to their argument is that citizens and employers, at least at the margins, are discriminating consumers of publicly provided goods and services. These individual welfare-maximizers can and will “vote with their feet” and move to the jurisdiction that provides them with the optimal mix of services at the lowest cost (i.e., the lowest aggregate tax rate). Cities that offer a similar set of alternatives find themselves in competition with one another for residents and employers, which translate – through a variety of mechanisms –
into governmental resources. Tibeout’s (1956) central argument is that this competition drives local governments to provide public goods efficiently.

The argument of this study is that the same competition also makes inter-local collaboration very difficult. The reason is that cities that are in direct competition worry that the gains to be had from collaboration will provide slack resources unequally. This slack can then be used to enhance services or reduce taxes in the city that gains more from the collaboration. That gain can thus be translated into a comparative advantage for the city that gains more in relative terms. Thus, for cities that are in competition, the relative gains that each city enjoys from the collaboration are far more important than the absolute gains that both may receive.

Unlike transaction costs, however, competition influences collaborative behavior not at the choice stage but in the second stage, when cities consider the depth of the collaboration. The reason is that competition creates incentives for cities to act opportunistically. So, when transaction costs are low, cities may attempt to collaborate in an effort to create more slack resources than its collaborator, thereby giving it an advantage in courting residents and employers. Costly though this information may be to discover, I suggest that collaborators quickly discover that their partners are trying to achieve a competitive advantage through the collaboration and the arrangement falls apart. Thus, I expect that competitive cities are just as likely to try to collaborate as non-competitive ones,
but the degree of collaboration will fall short in competitive situations because of the rareness of equal gains.

Because the data available for cities are not dyadic – in other words, we do not know from the Census of Governments dataset from whom the revenue comes– we cannot make characterizations directly about the collaborating cities. Instead, we must rely on a characterization of the general market in which the city finds itself. This is an imperfect but necessary simplification of the concept.

*H5: Cities in markets characterized by a higher degree of competition participate in collaborative arrangements to a lesser degree.*

Operationalizing this hypothesis presents some challenges. The Tiebout Model implies that it is cities that are most alike – in terms of goods and services provided and tax rates – that will be most competitive. Data at the level of the collaborative agreement are not available, and data on the individual city cannot provide a meaningful way to measure how much alike it is to other cities. However, by measuring the degree of overall homogeneity in the “market,” we can get a sense of the degree of competition in that “market.”

But what is the relevant “market” when considering the competition between cities? Ostrom, Tiebout and Warren (1961) evaluate local government interactions in the metropolitan area, or what they term a “polycentric political system” (Ostrom, Tiebout, and Warren 1961, 831) because of the distributed nature of political authority in a metropolitan area (see Park 1997 for a similar use of metropolitan areas). This is a useful approximation of the marketplace for
cities for a couple of reasons. First, metropolitan areas are defined by the federal
government across the country, so there is a commonly agreed to identification
of them. Second, because the designation is a federal one, data is available at
the metropolitan area.

The federal government identifies metropolitan areas as Metropolitan
Statistical Areas, or MSAs. Some MSAs are parts of larger Consolidated
Metropolitan Statistical Areas. The Dallas-Fort Worth region, for example,
consists of the Dallas MSA and the Fort Worth MSA. Together, they constitute a
Consolidated MSA. Each MSA, then, is a “market” in which cities find
themselves, and these markets are more or less competitive.

To measure the degree of competition that characterizes each market, the
standard deviation of the populations of the cities in that MSA is divided by the
total population of the MSA to arrive at a standardized measure of the population
dispersion. MSAs with smaller dispersions consist of cities that are more alike in
size. MSAs with higher dispersions have cities that are more dissimilar in size.

Another way to characterize this measure is to say that MSAs with smaller
dispersions are more homogenous, while MSAs with higher dispersions are more
heterogeneous. This way of characterizing the dispersion calculation allows us
to reference the literature from the study of common pool resources and
international political institutions. As Ostrom and Keohane (1995) point out,
these literatures – which take a similar approach to the study of institutions and
collective action – are split over the impact of heterogeneity of actors and its
impact on successful collective action. This study joins that debate and utilizes a hypothesis that is similar to ones found in the international institutions literature that heterogeneity reduces competition, which reduces concern about relative gains, which improves the potential for deeper collaboration.

For each MSA in the country, the population standard deviation and sum were calculated from the 2000 Census of the Population. The standard deviation was then divided by the total to arrive at a standardized measure that would be consistent across all MSAs. Thus, each MSA has a value for relative homogeneity. Each city within an MSA is assigned that the same value for its individual measure of market competition.

It is anticipated that cities outside of MSAs face less competition because they are not necessarily proximate to other competing cities. Thus, all cities outside of an identified MSA are coded 0 for this variable. This creates a problem for the measure as it relates to all other cities, however. As initially calculated, the variable increases from small-size standard deviations, indicating homogenous markets, to large ones. Thus, except for non-MSA cities, the variable measures from most likely to be competitive on the low end of the scale (most homogenous markets) to least likely to be competitive on the high end of the scale (most heterogeneous markets). For consistency in coding with the non-MSA cities, an inverse scale of competition is calculated for all cities in MSAs by dividing 1 by the competition scale. This creates a measure of
competition that goes from least competitive (0 for non-MSA cities) to most competitive (cities in very homogenous markets).

One can easily imagine that size is only one of many attributes of cities that provide an indication of homogeneity as it impacts competition. However, population size is sufficiently broad enough to serve as a proxy measure for a large number of other, more narrow measures of homogeneity. Some thoughts on this issue will be presented in the concluding chapter.

As discussed in the previous chapter, competition coincides with locational factors often identified in various studies of municipal governance. Thus, it is appropriate to include measures of locational factors as a check against the competition hypothesis and for consistency with previous studies.

Different studies have tested alternate hypotheses about the impact of city location. Some suggest that it is a city’s inclusion in an MSA that matters most, while others have suggested that central cities have unique characteristics that make them more motivated to participate in collaborative agreements. At least three distinctions between city types, then, can be made. Most generally, cities are either a central city, a suburban city within an MSA, or a city outside an MSA. Previous studies have documents that central cities and cities outside of MSAs are most likely to collaborate.

H6a: Central cities and cities outside of federally defined MSAs are more likely to choose to collaborate.

H6b: Central cities and cities outside of federally defined MSAs choose to collaborate to a greater degree.
To test Hypotheses 6a and 6b, a dummy variable for central cities was coded as a 0 for all cities except central cities, which were coded as a 1. A dummy variable for cities outside of MSAs was coded 0 for all cities except those located outside of an MSA, which were coded with a 1. The third category – non-central cities within an MSA – is the control group against which the other two are measured. Data on the status of a city is available from the ICMA.

Underlying Motivations: Generating Slack Resources

Whether one is inclined to favor a more equitable view of resource exchange relations or a potentially more nefarious one involving dependency between the collaborators, it safe to assume that cities attempt joint policy implementation because they hope to achieve some gain from the interaction. If transaction costs economics provides us with a method for understanding the varying impact of institutions on collaboration, then resource theories provide the governance equivalent of neoclassical economics. And whether a city may be interested in relative or absolute gains from this exchange, the fact remains that there are some gains to be had. We must, therefore, be interested in the underlying motives for collaboration, as well as the environmental variables that constrain that behavior. A thorough analysis of each collaborative agreement would reveal what those gains are, but what broad measures exist to suggest when cities will, in general, be interested in gains from collaborative resource exchange?
Existing scholarship suggests at least three measures that can be utilized to approximate a city’s underlying interest in the gains from collaboration. First, cities that have a more proactive policy agenda may be more interested in collaboration. As discussed in the previous chapter, the slack that is potentially generated from collaborative arrangements can be utilized for other purposes. Cities that have a more aggressive agenda for the provision of goods and services to its residents would be even more interested in generating slack resources than other cities.

Second, cities that have an already high tax burden would be more interested in generating slack that can be used to reduce the tax burden on its residents and compete more effectively in its “marketplace.” Cities in otherwise comparable situations may have dramatically different tax burdens due to any number of reasons, including past decisions on the long-term financing of capital purchases, environmental or demographic particularities of the city, or unusually high costs of goods and services production.

Third, cities that receive federal funding for a variety of programs often are required as a stipulation of the grant that other stakeholders be involved in the administration of that grant. Thus, cities that receive more federal grant funding may be more likely to collaborate with other cities because of federal imperatives to do so. Even when a federal grant does not require it, cities often work together because they know that regional solutions with significant local
resources dedicated to the problem are often more appealing to federal grants administrators than solutions that are jurisdiction-bound.

The literature on the resource motivations that cities have for collaboration suggest the following hypotheses. The existing scholarship is silent on the issue of whether such motivations might affect the choice to collaborate or the depth of the collaboration, so for completeness of model-building, it will be hypothesized that they affect both stages of the decision process.

\[ H7a: \text{Cities with a more proactive policy agenda are more likely to choose to collaborate.} \]

\[ H7b: \text{Cities with a more proactive policy agenda choose to collaborate to a greater degree.} \]

\[ H8a: \text{Cities with a higher tax burden are more likely to choose to collaborate.} \]

\[ H8b: \text{Cities with a higher tax burden choose to collaborate to a greater degree.} \]

\[ H9a: \text{Cities that receive federal grants funding are more likely to choose to collaborate.} \]

\[ H9b: \text{Cities that receive federal grants funding choose to collaborate to a greater degree.} \]

To test Hypotheses 7a and 7b, each city’s total reported expenditures in nominal 1996 thousands of dollars were divided by the population of the city to arrive at a per capita figure that is standardized by city size. To test Hypotheses 8a and 8b, the reported amount of tax revenue in $ thousands (excluding non-tax revenue) in 1996 was divided by the population to create a per capita figure. Finally, to test Hypotheses 9a and 9b, each city’s total reported amount of federal grants funding in $ thousands in 1996 was divided by the population to create a
Underlying Motivations: Social and Economic Conditions

While the motivation to generate slack resources whenever possible is ever present because of the opportunities such resources represent, that motivation may be particularly acute for cities that face more severe social and economic conditions. A higher number of unemployed residents, a higher number of working poor or a higher proportion of youth are just some of the many examples of circumstances that may lead cities to more aggressively pursue collaboration. If, through collaboration, cities with more severe socio-economic conditions can generate slack resources, they can make use of those resources by providing programs to alleviate social stress.

H10a: Cities with a population with greater economic needs are more likely to choose to collaborate.

H10b: Cities with a population with greater economic needs choose to collaborate to a greater degree.

Indices to measure these hypotheses are numerous. Previous research over the last 20 years in urban policy and management, as well as networking, suggest several possibilities. The data from the 2000 Census of the Population, which was used for the calculation of the competition variable and the size variable can be used for these purposes. The following measures of economic and social need are utilized in this analysis: median home value, per capita income, proportion of white population, the percentage of the population living per capita figure. Data for all three measures are available from the Census of Governments.
below the poverty line, the percentage of the working-age population (16 years and older) that is unemployed, the proportion of the adult population (25 years and older) that has at least a college degree, the proportion of the population that is over 65 years and older, and the proportion of the population that is 18 years or younger.

Regional Variation

Finally, scholars of city politics and management have found regional variations in a host of research domains, from networking to outsourcing. To the extent that the use of differing administrative approaches diffuse from innovative communities to their neighbors, it is reasonable to assert that regional variation in the practice of collaboration may exist.

\textit{H11a: Cities in different regions of the country are more likely to choose to collaborate.}

\textit{H11b: Cities in different regions of the country choose to collaborate to varying degrees.}

Little scholarship exists to provide a rationale for why cities in some regions of the country might choose to collaborate more frequently or to a greater extent than cities in other regions. Thus, no specific assertions are made regarding which regions will have more collaboratively active cities. The cities in this study are classified into one of four regions, which are then treated as a series of dummy variables. The North Central region is the largest and will be the control group against which the other regions will be measured.
Putting It All Together

The 11 hypotheses discussed in this chapter suggest that the choice of whether or not to collaborate and the degree of collaboration are predicated on an underlying motivation to generate slack resources that can be used for a variety of other purposes. The hypotheses related to resource needs and economic needs in the community provide a perspective on these motivations.

But these motivations occur within a broader environment that includes varying institutional forms and varying degrees of market competition. The transaction costs associated with the form of government and government size can help us understand when cities will choose to collaborate, while the degree of competition provides a rationale for why we might expect some collaborative arrangements to be deeper than others.

In the next chapter, an empirical model is specified that accounts for the choice to collaborate in the first stage of the decision process and the choice of degree of collaboration in the second stage. The hypotheses are tested using this two-stage model with data from 2,825 cities across the country utilizing the variables discussed in this chapter.
In this chapter, an empirical model is developed to test the hypotheses discussed in Chapter 3. The model is tested using a sample of 2,825 cities throughout the country, and the results are reported with accompanying discussion of the implication of the findings.

An empirical model of collaborative choice must account for both the choice of participation in a collaborative agreement and the degree of that collaboration. Following the theoretical model developed in the last chapter, the empirical model does this by modeling the choice to collaborate as a dichotomous (yes/no) choice in the first stage, and as a continuous variable for depth of collaboration at the second stage (for those cities that chose “yes” at the first stage).

Methodology

Running a simple regression model of the value of the degree of collaboration with the set of independent variables discussed in the last chapter is insufficient for my purposes for two important reasons.

The first is theoretical. The dependent variable in the second stage is the degree to which a city collaborates. In 909 cases — 32 percent of the sample — a city participated in no collaboration, so the value of this dependent variable is $0.
The theoretical model suggests that there is the possibility of a non-random selection process at work when cities choose not to participate or to participate at some level. In other words, cities that participate in some amount of resource-sharing for collaborative purposes are theoretically distinct from cities that do not. The theory developed in Chapter 3 suggests that transaction costs and motivations to generate slack resources affect the selection process. Without explicitly modeling this selection process, outcomes from a regression analysis of the second stage – the degree of collaboration – would be biased (Greene 2002).

The second is methodological. The data for the degree of collaboration are left-censored. That is, each city that opts not to participate in collaboration and has a value of $0 for the degree of collaboration, which is equivalent to having a missing value because we do not observe the city’s true preference for the amount of collaboration. Censored data are data for which we have observations of the independent variables but the dependent variable is unobserved or has a value of $0. In such situations, ordinary least squares regression (OLS) is biased because the dependent variable is censored at $0.

For a theoretical model that suggests a two-stage empirical model and censored data, the Heckman procedure is recommended (1976, 1979). The Heckman model has two equations: the first – the selection equation – predicts whether an observation is censored (does a city collaborate or not), and the

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3 For truncated data – where the independent variables are missing for potential observations that are not selected in the first stage – and for a model that does not explicitly contain a separate data generating process at each stage, the Tobit model is preferred (Long 1997).
second – the outcome equation – predicts the value of the dependent variable of interest (degree of collaboration), given the likelihood that an observation is censored or observed. The selection equation provides a measure of the risk that a city chooses to participate in collaboration and thus has a non-zero value in the second stage. The inverse Mills ratio is a calculated value from the selection equation for each case – each city – of this selection risk. It is used in the outcome equation to account for the risk introduced by selection process modeled in the first equation.

There are two ways to estimate a Heckman model. The first is known as the “two-step” method. Here, the first stage is fit using a probit estimator. The inverse Mills ratio is calculated for each observation and utilized as an independent variable in the second stage, which is fit using OLS. This method produces consistent, but inefficient estimates. The second method, FIML (full-information maximum likelihood), jointly estimates both equations using maximum likelihood estimation methods. This method is both consistent and asymptotically efficient. The FIML method, however, is more sensitive to model specification than the two-step procedure. Both methods are run in this study to test the robustness of the traditional two-step procedure and the specification sensitivity of the FIML procedure. Further discussion of the methodology is provided in Appendix B.
Description of Data and Variables

To test this two-stage model, data were collected on 2,825 cities across the country with a population greater than 2,000. As discussed briefly in the last chapter, the data come from two sources in three datasets. The U.S. Census Bureau collects and makes available data on the population in its decennial Census of the Population and data on local governments in its Census of Governments, which is conducted every five years in intervals that do not coincide with the Census of the Population. The International City/County Management Association (ICMA) conducts annual surveys of its membership in which it periodically asks for details on the form of government utilized in each member city. Details on the operationalization are provided in the previous chapter and in the Appendix.

The Census of the Population is the largest dataset with 23,964 data units, which includes cities and other local “places,” many of which do not conform to the typical definition of a town or city. Of those, however, only 10,398 have a population of more than 2,000. The Census of Governments has data on an equally large number of units: 19,372. Despite the large number of cases in these datasets, the overlap between them is only 5,533 cases with a population greater than 2,000. The ICMA Survey limits the available cases further.

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4 The Stata statistical software package provides procedures for running the traditional two-step selection model, as well as the FIML model.
It has a total of 4,548 cases. The three sources have 2,825 cases in common where no data are missing.

The sample in this study generally resembles the cities in the country as a whole, based on a breakdown of population categories. In Table 4.1, three different sets of data are broken down by size of the population of the city. The first set of data are from the Census of the Population and includes all 10,398 “places” in that dataset with a population of more than 2,000. The proportions of each category of population size are very close to those of the second set of data, which represents the 5,533 cases that the Census of the Population and the Census of Governments have in common. The final set of data are the 2,825 cases utilized in this study. As Table 4.1 shows, most of the categories are equivalent to the broader population except the category for cities with a population of less than 3,000. The study dataset under-samples this group relatively significantly.

Approximately 58 percent of the sample cases in this category are in non-MSA cities, much higher than the 40 percent proportion in the sample with all city sizes. Smaller cities are someone less likely to be in metropolitan areas, and the study sample under-represents this phenomenon. Supplemental analyses suggest, however, that this under-representation does not present significant challenges to the conclusions drawn from this research. First, the entire model was run with data in which all non-MSA cases were excluded. While the parameter estimates changed modestly, no change in the statistical significance
of the variables was evident. Second, the model was again run with data that excluded all cities with a population below 3,000. Only the variable measuring the proportion of the population with a college education became statistically insignificant, and it only did so in the second stage of the model. In summary, then, it appears that the under-representation of very small cities in the sample does not challenge the conclusions presented in this study.

The sources of data for each of the variables utilized in this analysis are summarized in Table 4.2. The Census of Governments provides data on inter-local revenue received by each city for the fiscal year that ended between July 1996 and June 1997. Table 3.2, discussed in the previous chapter, shows the breakdown of the types of inter-local revenue by broad purpose. The largest category by far is for General Services, which includes most local government functions, including public safety, parks, and libraries. Of the 2,825 cities in the study, 1,785 participated in at least one inter-local collaboration involving some General Services function. The average value of General Services collaboration was $1,127,740 in 1996, slightly higher than the average of all collaborative arrangements of $1,053,307. Collaborative efforts in the area of education, while small in number, represented the largest average dollar value of any type of collaboration at $22,159,450. Collaborative arrangements in the area of transportation were similarly small in number but large in value with an average of $19,199,560. Other categories had more cities participating in some amount of collaboration, but the average values were significantly smaller.
The Census of Governments data show that many cities participated in some form of collaboration – 1,916 cities or 68 percent of the sample collaborated to some extent in 1996 (see Table 4.3 for a description of the dependent variables utilized in this study). And when they did collaborate, they collaborated in more than one functional area, as Table 3.2 demonstrates. But the Census of Governments data do not provide details on how many collaborative agreements the inter-local flows of dollars represent, or with whom each city collaborated.

The dependent variable in the first stage of the analysis – the selection stage – is dichotomous, representing the choice set of participate in collaboration or do not participate. Operationally, this variable is coded a 1 if any inter-local (city to city) revenues were recorded by each city in 1996 or 0 if no revenues were recorded by the city. In the second stage of the analysis, the dependent variable is the amount of inter-local revenues recorded. To control for the size of the city, the amount is divided by the population size to arrive at a per capita figure and is then logged to approximate a normal distribution for purposes of analysis\(^5\). The unlogged dependent variable is graphically depicted in Figure 4.1.

As can be seen, the data are censored at 0, has many observations relatively close to 0, but has a few large observations far out in the tail of the

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\(^5\) The Census of Governments data is provided in thousands of dollars, thus the dependent variable in the second stage of the model is measured in logged thousands of dollars per capita. In the discussion section, the marginal effects of each statistically significant variable are reported after taking the exponent to “unlog” the data and provide a more intuitive description of the impacts.
distribution. A histogram of the logged dependent variable is presented in Figure 4.2 for comparison purposes.

The measure of the institutional variables come from the 1997 ICMA Survey. Of the 2,825 cities in the sample, 1,568 or 56 percent have a city manager as the chief executive officer of the organization (see Table 4.4). The remaining 1,257 cities have either a strong mayor or a commission form of government. The cities in this sample have an average of 63 percent of the seats on their councils represented by at-large districts and 47 percent represented by single-member or ward districts (descriptive statistics of all continuous independent variables are provided in Table 4.5). The variability of this measure is high, however, with a standard deviation of 43 percent and a range from 0 at-large seats to all at-large seats. Finally, 2,114 or 75 percent of the cities in the sample have non-partisan elections, defined as an election in which the partisan affiliation of the candidates is not presented on the voting ballot. The remaining 711 cities have partisan elections.

The non-partisan dummy variable is coded 0 for non-partisan elections and 1 for partisan elections.

In addition to the three charter-level institutions, transaction monitoring sophistication is expected to reduce the transaction costs associated with collaboration. This concept is operationalized in this study simply as the size of the population of each city. Data for this measure come from the 2000 Census of the Population. The 2,825 cities in this study have an average population of
21,268 and vary significantly in size. The smallest cities in the study have a population of 2,000 while the largest city has a population of 2,895,964.

The measure of market competition in this study is operationalized as the degree of homogeneity of the size of cities in an MSA. The data come from the 2000 Census of the Population. Details of the calculation of this measure are provided in the Appendix. The average degree of homogeneity is 14.5, but this figure ranges widely from 0 for cities that are located outside MSAs and for cities that are single-city MSAs (there are eight of them) to a high of 64.1.

“Locational factors” variables are included in the model as controls and alternative explanations to the market competition variable. Cities are coded as being either a central city, a suburb within an MSA (the control group in this study) and cities not included in an MSA. In the sample of 2,835 cities in this study, 214 or 7 percent of them are categorized as central cities. Non-MSA cities number 1,149 and represent 41 percent of the sample. Finally, suburban cities located within MSAs number 1,462 and represent 52 percent of the sample.

The three slack resource variables – expenditures, tax revenues and federal grants – come from the Census of Governments dataset. Each measure is provided in thousands of 1996 dollars and is divided by the population to control for the size of the city and arrive at a per capita figure. The expenditures variable, measured in $1,000s per capita, has a mean of .86, or the equivalent of $860 per capita. It ranges from as little as $20 per person to a high of $26,860. The tax revenues variable – which measures only revenue collected from the
imposition of taxes, but not fees, fines or other miscellaneous sources of municipal revenue – has a mean of .34, or the equivalent of $340 per capita. It ranges from $0 tax dollars in revenue to $4,610 per capita. The federal grants variable has a much smaller mean value at .02 per capita, or the equivalent of $20 per capita. It ranges from $0 for some cities to a maximum of $2,990 per capita.

Eight variables are included in the analysis to measure the hypothesis that cities with greater socio-economic need will pursue collaboration in an effort to generate slack resources to address those needs. Four of the variables can be characterized as demographic in nature: proportion of Anglos in the population, the proportion of the adult population with a college education, the proportion of the population under the age of 19, and the proportion of the population that is 65 or older. The other four variables measure different aspects of economic well-being in the community: median home value, per capita income, the proportion of the population living below the poverty line, and the proportion of the working-age population that is unemployed. Summaries of these variables are presented in Table 4.5.

Potential regional variation in collaborative behavior is modeled in this study with a series of dummy variables. The data come from regions coded by the ICMA in its survey of cities, and breaks out cities into the following categories: Northeast (including New England and the Mid-Atlantic geographic areas), North Central (including the East North-Central and West North-Central
geographic areas), South (including the South Atlantic, East South-Central, and West South-Central geographic areas), and West (including the Mountain and Pacific Coast geographic areas). Table 4.4 reports the number of cities in each of these regions. The North Central region is the largest in the sample with 1,189 or 42 percent of the cities, and is thus used as the comparison group.

Statistically Significant Variables

The estimated coefficients for the two equations of the Heckman selection model are presented in Tables 4.6 and 4.7. Table 4.6 presents the estimated effects of the independent variables hypothesized to affect the likelihood of engaging in collaboration. The first column of the table presents the hypothesized effects of each independent variable, while the second and third columns present the two-step and FIML estimates, respectively. Table 4.7 presents the estimated effects of the independent variables on the degree of collaboration, taking into account the impact of the selection process modeled in the first equation. As in Table 4.6, Table 4.7 presents the hypothesized effects in the first column, the two-step estimates in the second column, and the FIML estimates in the third column.

A brief overview of the statistically significant variables will be presented in this section. A discussion of the substantive interpretation of the variables will be presented in the following sections. As can be seen from Tables 4.6 and 4.7, several variables are statistically significant and in the anticipated direction in both stages of the model.
In the selection stage of the model – choosing to collaborate – the city manager variable is statistically significant and in the anticipated positive direction for both estimators, while the at-large representation variable is in the anticipated negative direction but only significant in the two-step estimator. As expected, the variable for partisan elections is not significant in both estimators. The variable measuring monitoring sophistication – operationalized as the total size of the population of the city – is positive and significant in both estimators.

All three variables included in the first stage to measure the degree to which cities are intent on generating slack resources are statistically significant. Expenditures per capita and federal grant funds per capita are both significant and in the positive direction. Tax revenue per capita, while statistically significant, is in the negative direction. I anticipated that higher tax revenue would lead cities to explore alternative mechanisms for policy implementation that would reduce costs and allow for reductions in the tax burden on residents. The results of this study, however, demonstrate just the opposite – cities with high tax revenue are least likely to participate in collaboration. A thorough discussion of this result will be presented in the following section.

Three of the eight socio-economic variables included in the selection stage of the model to capture economic motivations to generate slack resources are statistically significant in both the two-step and FIML estimators. As anticipated, the variable measuring the proportion of Anglos in the population of the city is significant in the negative direction in both the two-step and FIML
estimators. The variable for the proportion of the population with a college education is statistically significant but in the positive direction, indicating that as the proportion increases, collaboration is more likely, not less as anticipated. Likewise, the variable measuring the proportion of the total population that is under 19 years of age is statistically significant, but not in the anticipated direction. Surprisingly, the socio-economic variables that most closely align with economic conditions – median home value, unemployment, the poverty rate and median income – are not statistically significant in the selection stage of the model. Nor is the demographic variable measuring the proportion of the population over the age of 65. Details and implications of these findings will be discussed in the next section.

In the selection stage of the model, the variables measuring locational factors are generally not statistically significant. Dummy variables are included to capture whether or not a city is considered a “central city” and whether or not a city is located in a Metropolitan Statistical Area (MSA). The non-MSA dummy variable is significant in the positive direction in the FIML estimate.

A series of regional dummy variables are included in the selection model to capture possible regional variation in collaboration. Only the dummy variable for Region 4 – representing the mountain and Pacific coast areas of the country – is statistically significant in the selection stage.
The second stage of the model – assessing the degree of collaboration among cities measured as inter-local dollars received per capita – has several variables that are statistically significant and in the anticipated direction.

The critical variable – degree of market competition – is statistically significant in the anticipated negative direction, indicating that as competition, measured as the degree of homogeneity in the market, increases the degree of collaboration decreases. This finding is consistent across both the two-step and FIML estimators.

As in the selection stage of the model, the slack resource variables are all statistically significant in the second stage of the model. Expenditures and federal grant revenue per capita are both significant and in the anticipated positive direction. As in the first stage, however, the coefficient on the tax revenue per capita variable is in the negative direction, opposite of what was hypothesized.

Again, as in the selection stage of the model, three of the socio-economic variables are statistically significant, although the variable measuring the proportion of adults with a college education fails to achieve statistical significance in the FIML estimator. The proportion of Anglos in the population is statistically significant and in the anticipated negative direction in both the two-step and FIML estimates. The proportion of the population with a college degree is statistically significant, but in the positive direction, rather than the anticipated negative direction. And the variable measuring proportion of the population that
is under 19 years of age is significant, but in the negative direction. I had anticipated that the relationship would be positive.

As with the selection stage, the variables I had anticipated would be most linked with a need to generate slack resources through deeper collaboration are not significant, including median home value, per capita income, the poverty rate, and the unemployment rate, as was the demographic variable measuring the proportion of the population over 65 years of age.

In the second stage of the model, the locational factors are again mostly not statistically significant. The central city dummy variable is significant in the negative direction only in the FIML estimator.

As in the first stage, the second stage of the model includes a series of regional dummy variables to control for regional variation. Again, the dummy Region 4 variable that captures the mountain and Pacific coast areas is statistically significant and positive.

Measuring the Substantive Effects of the Independent Variables

Substantive interpretation of Heckman models presents some special challenges. In one sense, interpretation is similar – if the coefficients of the variables are statistically significant in the empirical model, then we can tentatively reject the null hypothesis that the variable does not contribute to explaining the variance in the dependent variable. But evaluating the substantive impact of independent variables on the dependent variable in challenging
because the relationship between the independent variables and the dependent variable is non-linear. One important issue is that since some of the independent variables appear in both equations, we must account for the joint effect of a change in the independent has on 1) a change in the probability of selection, and 2) a change in the expected value of the dependent variable in the outcome equation. In addition, as is often the case with maximum likelihood estimators, the value of a coefficient changes with changes in the value of the independent variable, which is further complicated in Heckman models because the value of the coefficient changes with any change in the value of the inverse Mills ratio in the first equation (selection risk).

Thus, to investigate the impact of the independent variables, the marginal effects of each variable must be calculated. As a practical matter, many choices exist for evaluating the true impact of an independent variable on the dependent variable when maximum likelihood techniques are used. One common method is to estimate the model with each of the continuous variables held at their means, and then to re-estimate the model at some substantively useful deviation in each independent variable from its mean. We can then compare the predicted value of the dependent variable resulting from this change for each continuous independent variable. For dummy variables, its simply a matter of predicting the model with a value of 0 for the dummy variable, and then predicting it again with a value of 1 for the dummy variable. The resulting change in the dependent variable is the marginal effect of that variable.
In the selection stage of the model, the marginal effects are discussed in terms of their impact on the change in the probability of collaborating – a change in the \( P(Y=1) \). In the second stage of the model – the degree of collaboration – the independent variables are evaluated in terms of their impact on changes in the amount of inter-local dollars received per capita. Because the dependent variable is logged, the exponent of the marginal effects is taken to convert all results back into dollars per capita. It also should be noted that while the estimation was carried out in thousands of dollars per capita (logged), the marginal effects results discussed below have been converted to dollars per capita for ease of exposition.

A summary of the marginal effects of the statistically significant variables is presented in Table 4.8. Implications of these findings are discussed with both an eye toward theory building and cumulation in the literature on collaboration and implementation networks, and toward practical lessons for managers of public organizations considering collaboration.

Marginal Effects of Institutional Variables

A major proposal of this study is that different institutional arrangements in cities impact the relative interest in participating in collaborative arrangements. Collaborative agreements are difficult deals to strike. Collaboration involves the joint implementation of a policy decision by two independent governmental entities. While there may be a host of underlying motivations to collaborate, cities must give up some amount of independence or sovereign political choice to
achieve these underlying motivations. They require that cities agree to a production methodology of the public good or service, and agree on the distribution of outcomes of the policy.

Thus, collaboration has sometimes high political transaction costs. In the last chapter, I identified four potential institutions that are critical to most discussions of city organization. However, I interpreted the effects of these institutions in light of their ability to facilitate deal-making and reduce political transaction costs. The empirical tests support the hypotheses presented in the last chapter on city institutions.

Particularly interesting is the support for a collective choice interpretation of the role of these institutions, rather than a pluralism interpretation. A traditional, pluralistic view of the institutions of municipal management, district representation, and partisan elections suggests that the reform movement of the early twentieth century created institutions in cities that were more structured, “business-like” and generally less inclusive mechanisms for decision-making. However, I suggested in the last chapter that this view may be overly simplistic. I argue that each institution has a differing effect on the ability of cities to reach collective choices, and that these differing methods for reducing the transaction costs associated with collective choice within the city structure will transcend that structure and impact collaborative behavior in a similar way.

I hypothesized that the city manager form of government would be more likely to lead to collaborative behavior because city managers are more likely to
limit the impact of rent seekers and find common ground among competitors in a collaboration network. As the discussion in Chapter Two on Bardach’s (1998) work suggests, there may be many other reasons why city managers, rather than mayors, are particularly adept at participating in collaboration. The empirical tests find relatively strong support for this model. Holding all other variables in the first stage of the model at their means, a city with a city manager is 5.3 percent more likely to participate in collaboration than a city that has a strong mayor or utilizes the commission or town hall form of government. Thus, the presence of a city manager reduces the transaction costs associated with collaborative agreements.

The proportion of at-large districts to total districts in a city, on the other hand, have a marginally negative effect on the choice to collaborate. I argued in the previous chapter that cities with a larger proportion of single-member districts would become more adept at balancing the competing interests of more narrowly focused interests endemic in such a system. Such cities should have a better understanding of how to facilitate sophisticated political logrolls, and I argue that the organization’s ability to foster consensus on the city council can be transferred to the arena of collaborative networks. The results of this analysis lend equivocal support for this argument. The variable is significant in the two-step estimation, but not in the more robust FIML estimate. Based on results of the two-step estimate, a 10 percent increase from the mean of 63 percent in the
proportion of at-large districts leads to a 3 percent decrease in the probability of a city choosing to collaborate.

The robustness in the results is challenging to evaluate. It may be that a “cut point” exists that sorts cities into primarily district or ward representation versus at-large representation. If this cut point could be identified and a dummy variable created, perhaps a more robust finding would result. However, exploration of this issue during initial phases of the analysis produced no intuitively obvious cut point that provided stronger results. More work is needed to more adequately specify the relationship between organizational facilitation of political deal-making and the organization’s choice to collaborate in implementation networks.

The third critical city charter-level institution investigated is the impact of non-partisan elections. The traditional view of partisan elections is that they create incentives to create partisan conflict over technical decisions. Among other things, the municipal reform movement attempted to remove party politics from such technical questions as whether to resurface roads with asphalt or concrete or where to locate a fire station in a growing part of the city. While it may be argued that non-partisan elections – in place in approximately 75 percent of the cases in this study – create a policy environment that is less inclusive, there is no evidence that anything related to partisanship impacts an organization’s willingness to participate in collaborative arrangements.
This analysis includes a dummy variable for the presence or absence of partisan identification in city elections because non-partisan elections are central to the reform movement and a critical charter-level institution. But I anticipated that I would fail to reject the null of no effect from this variable in the empirical analysis. And in fact, I was not able to reject the null hypothesis in either the two-step or FIML estimates. Thus, I find that the presence or absence of partisan labels on election ballots has no impact on the probability of a city choosing to collaborate.

I also hypothesize that monitoring sophistication is an important non-charter institution that potentially can reduce transaction costs for cities considering collaboration. As an initial test of this idea, I suggest that the total population size of a city is a fair proxy measure for a host of issues that lead a city to be characterized as “more sophisticated,” including larger, more well-trained and experienced legal, financial and audit staffs. I argue that the marginal cost of monitoring one additional collaborative agreement is much smaller for a large organization than a small one. For this reason, I anticipated that monitoring – while always creating a transaction cost – is relatively less costly for large organizations. This lower relative cost should make large cities more interested in entering into collaborative agreements. I find that in the FIML estimate, an increase in the population of 10,000 above the estimate average of 21,268 will lead to 1.3 percent increase in the probability of choosing to
collaborate. This is a particularly strong result considering that the cities in the analysis range in population from 2,000 to almost 2.9 million.

Overall, the results suggest that the presence of a city manager, a lower proportion of at-large elections and the size of the city reduce the political transaction costs associated with reaching collaborative agreements. The impact of the at-large elections variable is less robust, however, than the others. And interestingly, non-partisan elections – an important municipal institution in other settings – has no impact on collaboration choice.

Marginal Effects of Competition and Locational Factors

The second key proposition in this study suggests that the depth of collaborative transactions is a function of, among other things, the degree of competition that cities face. Whereas the institutions of city government affect the choice of whether or not to collaborate by altering the costs of reaching an agreement on a transaction, competition is hypothesized to impact the second stage of the decision process – the depth of the transaction.

I suggest that cities in highly competitive markets worry about relative gains that can be achieve through collaboration, rather than absolute gains. When a city worries about relative gains, it worries that its collaboration partner might utilize unequal slack resources generated by the collaborative effort in ways that hurt its partner. A city that gains more from the collaboration might, for example, opt to reduce its tax rate to attract businesses to its jurisdiction – perhaps some businesses that had previously been located in the jurisdiction of
its collaboration partner. Or it might opt to use the greater gains to improve services to attract wealthy residents – like building or improving its park or library system – who live in large homes with high property values.

Collaborative arrangements with a low dollar value may not threaten cities in competitive environments, but arrangements with high dollar values will certainly do so, according to this proposition. Thus, competition affects not the selection stage – participate or not – but the degree of collaboration because the degree is linked with the most obvious measure of relative gains – dollars.

As discussed in the previous chapter and in the variable description section above, no simple, commonly agreed-upon measure of municipal competition exists. Because available data are not dyadic, the best measure of competition – based on Tiebout’s work – is a measure of dispersion of population size within an MSA. As discussed previously, the variable measures the standard deviation of the population in an MSA divided by the population of each MSA, and then assigns that value to each city. Each city not in an MSA or is a single-city MSA receives a value of 0. For cities in an MSA, the competition variable is inverted to make the measure consistent with assignment of 0 to non-MSA cities. Thus, non-MSA cities have the lowest competition score (0), while cities with the lowest “standardized” standard deviation have the highest score for the competition variable.

The analysis shows that the competition variable is statistically significant and in the hypothesized negative direction. Increasing levels of competition –
operationalized as the degree of market homogeneity – lead to reduced levels of collaboration. The marginal effects analysis shows that an increase of one standard deviation in the variable from its mean reduces collaboration levels by $127 per capita, which is equivalent to a $1.27 million reduction for a city with a population of 10,000.

In the previous chapter, I suggested that the competition variable – focused as it is on inclusion in metropolitan areas – might be a theoretical foundation for previous findings that “locational factors” affect collaboration. For this reason, control variables are included in the model that account for a city’s location relative to an MSA – as the central city of an MSA, as a suburb of the central city in the MSA or outside an MSA. Dummy variables are included in the model at both stages – one for any city that is a central city and one for cities that are outside of MSA, with suburban MSA cities used as the control group.

Generally, my argument is supported by the analysis. In the two-step estimates, neither variable is statistically significant in either in the first or second stage. However, in the first-stage FIML estimate, the dummy variable for non-MSA cities is significant in the positive direction, indicating that non-MSA cities participate in collaboration more than suburban MSA cities. In the FIML estimate of the second stage, the central city dummy variable is significant in the negative direction, suggesting that central cities participate in less deep collaboration, ceteris paribus.
I anticipated that suburban cities would be the least likely to collaborate because they are the most homogenous – not only in size, but often in the mix of public goods provided – and are thus the most likely to be in competition with each other and most concerned about relative gains. The result of the non-MSA dummy variable is consistent with this proposition, although it is significant in the first stage, not the second. However, the negative sign on the central city variable in the second stage is interesting and more difficult to interpret. For example, many of the other significant variables – such as federal grants per capita and proportion of Anglos in the population – may be explaining higher collaboration rates among central cities, while the dummy variable is picking up residual, unmeasured factors in central cities that are unrelated to underlying motivations. It is unclear exactly how this result should be interpreted, but it suggests that further review of the nature of competition and its impact on collaboration is warranted.

Marginal Effects of Slack Resource Variables

While institutions affect the costs of reaching a collaboration agreement and competition affects the degree of collaboration, they tell us little about the underlying motivations for collaborating in the first place. The first set of variables that provide a measure of this underlying motivation serve as proxy measures for a city’s interest in generating slack resources that can be used for a host of other purposes.
Expenditures per capita, tax revenue per capita and federal grants per capita were all hypothesized to increase the probability of collaborating and to increase the degree to which a city collaborates. I expected higher levels of each of these variables to indicate cities that were searching for ways to generate slack resources – high expenditures to indicate policy pro-activeness on the part of a city, high tax revenue to indicate a need to utilize slack to reduce taxes, and high federal grant revenue to indicate more dramatic economic needs in the community.

The findings support the hypotheses related to expenditures per capita and federal grant revenue per capita. Holding all other variables at their means, a $100 per capita increase from the mean of expenditures leads to a 0.3 percent increase in the probability of participation in collaboration (first stage) and an approximate $69 per capita increase in the value of collaboration (second stage). A $100 per capita increase from the mean in federal grant revenue leads to a 5.4 percent increase in the probability of participation in collaboration and a $40 per capita increase in the value of collaboration. Thus, cities with larger budgets per capita more aggressively pursue collaboration deals, and participate more deeply in them. Cities that receive more federal grant funds also are more likely to participate in collaboration, and participate more deeply.

Interestingly, the variable for tax revenue per capita, while statistically significant at both stages of the model, is not in the anticipated direction. I hypothesized that cities with high tax revenue would be more likely to pursue
collaborative arrangements as a means of generating slack resources and reducing total tax burdens. In fact, the results show that the opposite is true. A $100 per capita increase in tax revenue from the mean is associated with a 2.8 percent reduction in the probability of collaborating and a $41 per capita decrease in the degree of collaboration.

A possible explanation for this finding is that collaboration and taxes are policy substitutes. For a given level of demand for public goods and services, cities have the option of providing these good and services themselves (whether the production and provision is done in-house or outsourced is a separate discussion) or jointly with a partner or partners. Providing them jointly means higher levels of collaboration; providing them by themselves may mean doing so less efficiently and with a concomitant higher tax burden on residents.

Another possible explanation is that the nature of the temporal domain of this study does not allow for the full evaluation of the relationship between tax revenue and collaboration. Higher taxes may eventually lead to greater participation in collaborative arrangements, but the timeframe for implementation of that policy change may be years (or decades). Further analysis of this relationship is clearly warranted.

Marginal Effects of Underlying Economic and Social Conditions

Another set of possible indicators of a city’s underlying motivation to generate slack resources is the socio-economic profile of the community. Cities that have a population with greater needs for public services have an incentive to
generate slack resources through collaboration because those resources can be put to other uses. I include eight independent variables to attempt to capture this concept. Of the eight, four are primarily demographic in nature: the proportion of Anglos in the population, the proportion of the adult population with at least a college degree, the proportion of the population under the age of 19 and the proportion of the population over the age of 65. The other four variables attempt to measure economic stress in the community: median home value, per capita income, proportion of the population living below the poverty line and proportion of the adult population that is unemployed.

Of the eight measures, three are statistically significant. The proportion of Anglos in the population, the proportion of adults with at least a college education, and the proportion of the population that is under the age of 19 are significant in both the first and second stages of the model in at least one of the two estimates. However, only one of the three variables is in the anticipated direction.

I hypothesized that as the proportion of Anglos in the population decreases – or, as the proportion of non-Anglos increases – the need for government services would increase, leading to greater collaboration. This hypothesis is supported by the analysis. Based on the FIML estimate, a 10 percent increase from the average proportion of 84 percent of Anglos in the population leads to a 2.7 percent decrease in the probability of participating in
some form of collaboration and a $40 per capita decrease in the degree of collaboration.

The proportion of college-educated adults in the population was expected to decrease the need for generation of slack resources through collaboration, but the results indicate otherwise. Cities with higher levels of college-educated adults are more likely to participate in collaborative arrangements. Based on the FIML estimate and holding all other variables at their means, a 10 percent increase in the proportion of the population with a college education above the average of 23 percent leads to an increase of 1.9 percent in the probability of participating in collaboration. This variable was not statistically significant in the FIML model in the second stage.

Cities with high proportions of the population under the age of 19 or over the age of 65 were expected to increase the need for resources that can be generated through collaboration. Communities with many young or old residents often require more services from local governments than communities where a larger portion of the residents are working age. However, the analysis does not bear out these hypotheses. The measure for the proportion of the population over the age of 65 is not statistically significant in either the two-step or the FIML estimates at both stages of the model. And while the variable measuring the proportion of the population under the age of 19 is statistically significant, it is in the unanticipated negative direction, suggesting that as the proportion of young people in the population increases, collaboration decreases. A 10 percent
increase in the proportion of the population under 19 from the mean of 26 percent leads to a 22.4% decrease in the probability of participation in collaboration and a $46 per capita decrease in the degree of collaboration.

One potential explanation is that in communities with a large proportion of youth, solutions to public goods problems come not in the form of collaboration but are solved through some other mechanism. School districts, for example, are special districts at the local level in which the city may or may not have a policy role, depending on state laws. These special districts, which often span city borders, resolve public goods provision to youth that might otherwise require collaborative arrangements among cities. More will be said in the concluding chapter on the general point of substitutability of special districts and other imposed joint policy implementation structures versus voluntary collaborative agreements.

Another interesting finding is that none of the economic variables are statistically significant in either stage in the two-step or FIML estimates. Of the four variables that are descriptive of the demographic make-up of the community, three are statistically significant. Only the variable measuring the proportion of the population over the age of 65 is not statistically significant. Of the four variables that are descriptive of the economic conditions in the community, none are significant.

This may be due to the inclusion of the federal grants revenue measure discussed in the last section. Federal grants are provided to communities
primarily to solve or at least alleviate the social problems associated with
economic hardship. Although federal grants provide funding for such uses as
aviation (through the Federal Aviation Administration) and public transportation
(through the Federal Transit Administration), a bulk of the federal funds flow to
communities with the greatest economic needs. Thus, a community’s need for
economic assistance may already be captured by the federal grants per capita
variable.

It is interesting to note, however, that the federal grants variable is not
collinear with any of the socio-economic variables (or any variable in the
analysis, for that matter). Only three of the socio-economic variables are
collinear in the analysis: the variables measuring median home value, per capita
income and the proportion of the population with a college degree are collinear at
conventional levels. See Table 4.9 for a list of the correlations between all of the
socio-economic variables.

It is possible that this collinearity is the cause of the insignificant findings
for median home value and per capita income, as well as the unanticipated
positive sign on the variable measuring the proportion of the population with a
college education. However, supplemental analysis of the model that included
only one of these three variables with each run did not lead to different
outcomes. A model that excludes the college education and per capita income
variables does not produce a statistically significant result for the median home
value variable; a model that excludes the college education and median home
value variables does not produce a significant result for per capita income; and the exclusion of the per capita income and median home value variables does not change the sign or the statistical significance of the college education variable.

Because I have no reason to believe that one of these variables is more important than another in potentially explaining collaborative behavior, I left all variables in the final model to be estimated and simply note the collinearity.

Marginal Effects of Regional Variation

I hypothesized that some regions of the country might participate in collaboration at higher rates and at higher amounts. A series of four dummy variables was created to test this. Variables for three of the regions were included in the model at both stages of the analysis while the final region – the North Central, including the East North-Central and West North-Central geographic areas – was left out of the model as the benchmark comparison region.

Only cities in Region 4 – the West, including the Mountain and Pacific Coast geographic areas – was statistically different from the North Central region. In the West, cities are 14.6 percent more likely to choose to collaborate. These cities also collaborate marginally more deeply that other cities – at a small but statistically significant $4 more per capita than other cities. All other regions of the country appear to participate in collaborative arrangements at approximately the same rate.
The West region is the smallest region in the sample with only 242 or 8.6 percent of the total number of cities in the study. Table 4.10 provides information on regional variation of population and collaborative behavior. As a percentage of the total cities within a region, the number of cities in the West participating in collaboration is higher than any other region, including the North Central region (the control group in the full model). However, regional variation in the degree of collaboration – as measured by the average logged per capita value of inter-local revenue – is less clear. Cities in the West are not the most different from those in the North Central region. That distinction belongs to cities in the South, which participate 10.3 percent more deeply than cities in the North Central region.

The inclusion of the regional dummy variables was based on a hypothesis that regions are different, but existing theory provides no clear indication of which regions might be different and, importantly, why they might be so.

Case studies in collaboration have tended to focus on other regions of the country. The Agranoff and McGuire survey in the Midwest (2003), the O'Toole and Meier studies in Texas (2002, 1988, 1999, 2003, O'Toole, Meier, and Nicholson-Crotty 2003), and the Thurmaier and Wood study of Kansas City (2002) are prominent examples. The Provan and Milward study, however, includes Tucson, Arizona, and Albuquerque, New Mexico, with Providence, Rhode Island and Akron, Ohio (1998b, 1995). This analysis suggests that an
overlooked area for case studies is the western portion of the country, where cities are more likely to opt to collaborate and do so more deeply.

**Overall Performance of the Model**

Tables 4.6 and 4.7 presents data for both the traditional two-step method of estimating a Heckman model and the more robust FIML method. In the two-step model, statistical significance of the z-score value of lambda (the inverse Mills ratio) is the standard test for independence of the two equations. As can be seen, the z-score on lambda is 3.19 and statistically significant. In the FIML model, the test for the independence of the equations is a likelihood ratio test that \( \rho = 0 \) distributed as \( \chi^2 \). Computationally, it is a comparison of the joint likelihood of a probit model in the selection stage and a regression model in the second stage versus a Heckman model likelihood. Because \( \chi^2 = 5.87 \), the p-value that the two stages could be modeled as one stage is 0.0154.

Evaluating the overall fit of the model is more difficult. Unlike OLS, maximum likelihood methods have no clear measure of explained variance like the \( R^2 \). A Wald test of the joint significance of the independent variables in both stages of the model has a \( \chi^2 \) value of 146.56, which is statistically significant. An optional, but weak, method for evaluating the overall fit of a maximum likelihood model is the pseudo \( R^2 \), which is given by the following formula:

\[
Pseudo \ R^2 = 1 - \left( \frac{\text{final}}{\text{initial}} \right)
\]
where $\ell$ is the log likelihood of the model, $\ell_{\text{final}}$ is the likelihood value with all variables included in the model, and $\ell_{\text{initial}}$ is the likelihood with only the intercepts included at each stage. The pseudo $R^2$ for the joint model is 0.025. While this indicates a rather weak model overall, its value is difficult to assess because it is a measure of the joint log likelihood of both stages of the model.

One method of estimating the goodness of fit at each stage is to deconstruct the stages of the model and estimate each separately. To do this, the first stage is estimated with probit and the inverse Mills ratio is calculated from the results. The inverse Mills ratio is then included as an independent variable in the second equation utilizing OLS. This is equivalent to running the Heckman two-step estimator in Stata. Utilizing this method, the pseudo $R^2$ in the probit model is 0.045, while the $R^2$ in the OLS model is 0.067.

Another alternative method for analyzing the model is to compare the predicted outcomes in the first stage with the actual outcomes. Table 4.11 shows the actual and predicted 0’s and 1’s in the first stage from the FIML estimator. A total of 1,494 of the 2,825 (or 53%) cases were predicted accurately. The model does a much better job predicting 1’s (the choice to collaborate) at 74% than it does predicting 0’s (the choice to not collaborate) at 37%.

Clearly a model with higher predict rates is preferred to one with lower rates. However, utilization of goodness of fit measures when existing models of collaboration choice are non-existent is problematic. As Long (1997, 102) points
out, there is little “convincing evidence that selecting a model that maximizes the value of a given measure of fit results in a model that is optimal in any sense other than the model having a larger value of that measure.” In other words, there is no benchmark against which to compare measures of fit from this model, and in such circumstances, the most critical issue is to evaluate the relevance of the independent variables and their impact on variation of the dependent variables.
CHAPTER 5
CONCLUSION

This study begins with the premise that policy implementation in a network setting is a vastly more complicated and political process than implementing policy in a traditional bureaucratic setting. Implementation networks are political in the sense that, because there is no formal hierarchy among the participants, decisions about the details of how the implementation will proceed are made collectively.

And collective choice is difficult. It requires discussion, information gathering and compromise. Despite the costs associated with this process, cities participate in networks – they choose to collaborate – at a high rate. Approximately 68 percent of the cities in this study participated in some form of collaboration with at least one other city.

This study provides some reasons why cities do so. Based on a wide-ranging review of three disparate scholarly literatures, I develop a model that suggests the decision process is best represented by two phases. In the first phase, a city decides whether or not to participate in collaboration based on the transaction costs of the collaboration, which are a function of the particular institutional arrangements in that city. In the second phase, the city decides the
degree to which it will participate based on the degree of competition in its relevant marketplace. Underlying both of these stages are the resource motivations facing cities. Collaboration, while difficult, is potentially more efficient and can generate slack resources for cities. For cities facing greater needs in the community, the potential of creating slack resources is especially attractive.

The three research questions posed in the first chapter related to each of the bodies of literature discussed in Chapter 2. The research questions raised by a review of the current literature are:

Research Question 1: Can different institutional arrangements reduce the political transaction costs associated with collaborative agreements between cities?

Research Question 2: Will cities facing a more competitive environment be more concerned with relative gains and thus forego deeper collaboration that in many cases may benefit one city more than the other?

Research Question 3: Do cities facing a greater need for resources collaborate more to free up resources to be used on other priorities?

In Chapter 3, I develop a theoretical model of collaboration choice by cities. Eleven hypotheses are deduced from this model and measures are suggested to test these hypotheses. The results of the study presented in Chapter 4 suggest that the answer to each of the three research questions above is “Yes.” Cities appear to collaborate for all these reasons, and they do so in theoretically and practically interesting ways.
Research Findings

The first stage of the decision process a city faces is whether or not to participate in collaboration. I hypothesize that this dichotomous decision on the part of cities is predicated on the institutional arrangements a city faces and the underlying motivation to generate slack resources.

In particular, I test the effect of 20 independent variables on the probability that a city will participate in collaboration. Consistent with a collective choice interpretation of the municipal institutions literature, I find that cities with the city manager form of government and with a lower proportion of at-large districts are more likely to participate in collaboration. I also find that monitoring sophistication – as measured by the size of the city – is an important indicator of a city’s propensity to join collaborative agreements.

The findings on factors measuring underlying motivations are mixed. For example, I find that cities with higher federal grants per capita and higher expenditures per capita are more likely to opt to collaborate, consistent with my theory. But I find that as tax revenue per capita increases, the probability of participating in a collaborative agreement decreases. I had anticipated that high tax burdens on residents would provide an incentive for cities to find methods of generating slack resources that could be used to reduce that tax burden.

In addition, I find that as the proportion of Anglos in the population increases, the propensity to participate in collaboration decreases. This is consistent with the slack resources argument that cities with high proportions of
non-Anglos will have greater community needs and will seek to meet those needs through collaborative arrangements. However, the variables measuring the proportion of adults with a college education and the proportion of the population under the age of 19, while significant, are not in the anticipated direction. I expected that cities with a lower proportion of educated residents and more minors would have greater economic needs that would motivate cities to participate in collaboration. In fact, the opposite appears to be the case. Cities with a lower proportion of youth and a higher proportion of college graduates are more likely to participate in collaboration.

Interestingly, none of the economic variables measuring the underlying motivation to generate slack resources are statistically significant. These variables measured median home value, per capita income, the proportion of the population with incomes below the poverty line and the proportion of adults who are unemployed.

The second stage of the decision process a city faces, assuming that in the first stage the city decides it will participate in collaboration, is determining the degree or level of collaborative behavior. In this study, I measure the degree of collaboration as the amount of dollars exchanged between cities, excluding the purchase of utilities. I hypothesize that cities that face a competitive environment do not pursue collaboration to the degree that cities in less competitive environments do so. I also hypothesize that the factors measuring the underlying motivation to generate slack resources affect a city’s level of collaboration.
I find that competition does affect collaborative behavior, as anticipated. Cities in more heterogeneous markets – markets in which cities are relatively more alike – are collaborate less deeply than cities in more heterogeneous markets.

As in the first stage, the results for the variables measuring the motivation to generate slack resources are mixed. Federal grants per capita and expenditures per capita are statistically significant in the anticipated direction, but the variable measuring tax revenue per capita, while significant, is again in the negative direction.

Of the demographic variables measuring the motivation to generate slack resources, only the proportion of Anglos in the population and the proportion of the population under the age of 19 are statistically significant. As in the first stage, none of the demographic variables that are economic in nature are significant.

In both stages, control variables are included for location of the city. The first series of dichotomous variables that capture the location of a city relative to a metropolitan area – Agranoff and McGuire’s “locational factors” (1998, 83) – are included as a test of the competition variable. Two dummy variables are included. One for central cities and one for cities outside of Metropolitan Statistical Areas (MSAs). The third category – cities in MSAs that are not central cities – is the comparison group. It was anticipated that the competition variable would capture much of the variation in behavior between these three types of
cities. In general, this was the case, but not completely. In the first stage, the dummy variable for non-MSA cities is statistically significant at the .05 level (but not at the .01 level) in both the two-step estimation model and the FIML estimation model. In the second stage, the central city dummy variable is statistically significant (at the .01 level) in the FIML model, but not in the two-step estimation model. Even controlling for competition factors, cities outside of MSAs have a higher propensity for participating in collaboration. And after controlling for competition and other factors that may be important in central cities, they participate at lower levels than their suburban neighbors.

In addition to the series of locational dummy variables, a series of regional dummy variables is included in the model at both stages. Cities were divided into four regions of the country. The results show that cities in the West are more likely to participate in collaboration and to participate at higher rates than cities in the North Central region, which has the largest number of cities in the sample and is utilized as the control group. None of the other regions are statistically different from the North Central region.
Contributions to the Theory and Practice of Collaboration

This study conceptualizes collaboration as a choice that cities have. While incentive structures may make collaboration an attractive alternative, it is optional. Much of the existing scholarship on collaboration focuses on resource constraints that necessitate a city’s participation in a network. But to the extent that institutional and competitive environments matter, assertions regarding the generation of slack resources are insufficient.

Thus, an important contribution from this study to the growing body of research on collaboration and implementation networks is that we should model participation as a choice. A corollary contribution is the idea that the choice is best modeled as one involving two stages. This is important for a couple of reasons. First, the decision at each stage is affected by different sets of factors, so a universal model of a single stage would not adequately account for the different ways that institutions and competition impact the choice. Second, ignoring the impact that selection in the first stage has on estimates in the second stage could present serious challenges to inference. Thus, the utilization of a two-stage selection model like that presented in this study is both theoretically and methodologically the most appropriate.

A second important element of this study is the idea that the institutional designs found in city charters matter a great deal in understanding the choice to collaborate, and they matter in ways that are inconsistent with traditional reformist ideas about municipal institutions. Early reformers considered the city
manager form, at-large districts and non-partisan elections as mechanisms for reducing the political aspects of policy implementation. Collaboration is necessarily more political, yet this study does not find support for a reformist interpretation of the impact of these institutions on collaboration. Instead, it finds support for a collective choice interpretation in which each institution is evaluated for its ability to reduce the costs of reaching collective choice internally.

Institutional arrangements that reduce internal transaction costs associated with collective choice appear to also reduce the transaction costs associated with collaboration. This study finds that cities with the city manager form and cities with a smaller proportion of at-large seats have a greater propensity to choose to collaborate. Partisanship, alternatively, appears to have no effect on the choice of whether or not to collaborate. Thus, this study provides new insights about the impact of municipal institutions on collaboration choice, adding to the body of work not only on collaboration and networks but also on institutions at the local level.

Third, the degree of homogeneity in the market a city finds itself in drives competition between cities. Cities in competitive markets act opportunistically. Cities focused on relative gains are especially sensitive to this opportunistic behavior, reducing interest in deep collaboration. This study contains two theoretically interesting aspects relative to competition. First, utilization of the Tiebout model as a foundation for understanding the conditions under which governments will be more or less sensitive to relative or absolute gains is
uncommon. The majority of work spawned by the Tiebout model has focused on the degree to which cities actually compete or that resident-consumers act in ways consistent with the model. Less work has been done to explore the ramifications of Tiebout's work if the model is correct. This study offers such an effort, and it finds support for the Tiebout model in the collaborative behavior of cities. Second, the discussion of homogeneity and heterogeneity of markets situates this study in an interesting theoretical discussion between those who argue that cooperation in solving common pool resource problems at the local level is significantly enhanced by homogeneous actors and those who argue that cooperation at the international level to provide public goods is enhanced by heterogeneous actors (Keohane and Ostrom 1995).

Fourth, while institutions, competition and the motivation to generate slack are all important theoretically, they are also important practically. This study demonstrates, for example, that collaboration between cities with strong mayor systems that serve approximately the same public would be particularly difficult. When cities serving the same public are trying to collaborate, they must pay careful attention to the gains each receives from the collaborative activity – only through equal gains (a high standard, to be sure) can a deep collaboration be forged.

On the other hand, successful collaborations will be easier to forge between cities that are very different, and when they have city managers and single-member districts. For the average administrator or mayor trying to create
an implementation network, such practical rules of thumb would seem to be useful.

Limitations of This Study

This study, while useful in providing theoretically and practically useful insights about the process of collaboration choice, has limited generalizability in three important respects.

The first challenge to generalizability lies in the study’s definition of collaboration. In this study, collaboration is determined by whether or not and the degree to which resources are shared. Thus, I focus on one particular – and particularly difficult – type of collaboration. But the literature on collaboration demonstrates that collaboration can take many forms, from information exchange to joint outsourcing. The value of this more limited approach is that by studying collaboration involving resource exchange, I set a high standard for what constitutes collaboration and in so doing, eliminate simple cooperative efforts that do not require joint decision making. The bar is set high, and yet we still find that the majority of cities participate in at least some amount of this difficult-to-achieve collaboration. Future work expanding the scope of collaborative efforts for a similarly large sample of collaborators would be most helpful. While we might plausibly expect that the institutional arrangements of cities would have a similar effect across different types of collaboration, it is probable that the impact of competition would change. In this study, collaborators exchange revenue, a fungible asset that can be easily utilized to enhance services or reduce taxes.
Thus, it may be that the impact of competition is the most acute when the collaboration involves resource exchange.

A second challenge is the limitation imposed by the unit of analysis. Collaboration in this study is limited to the study of cities only. In reality, collaborative arrangements involve myriad actors from the governmental, non-profit and for-profit sectors of the economy. They form complex webs of relationships that facilitate information exchange, build coalitions, share resources, and implement policy.

This limitation is useful because cities are autonomous entities, and we can have some assurance that any observed joint action is truly voluntary. And as a practical matter, data on non-governmental entities are rarely available. The only data currently available on the collaborative efforts of non-profit and for-profit organizations comes in the form of case studies.

But the limitation also has costs. For example, my ability to generalize the findings of this study is limited. The institutional arrangements in this study are specific to cities. They would have little relevance to a non-profit organization considering collaboration, for example. And competition between cities is rather unique in its form and degree. One might anticipate that other organizations may have countervailing motivations to collaborate and compete with one another, but perhaps not to the extent that cities have such motivations. Future work that incorporates different types of collaborators into a broad study of the type
presented here could significantly broaden our understanding of the conditions under which institutions and competition matter most.

The third challenge is rooted in the choice to study collaboration in isolation. Collaboration is one of many solutions to the general problem of local fragmentation in a polycentric metropolitan area (Ostrom, Tiebout, and Warren 1961). Other solutions may involve simple voluntary agreements that do not involve resource exchange or they may involve complex solutions that can take any number of forms, from the creation of special districts to state or federal redistribution of income (Nice and Fredericksen 1996). This study focuses on a complex solution, but one that is ultimately voluntary for the participants. A more complete theoretical model would incorporate an explanation of the choices along this spectrum of solutions to fragmentation. The unanticipated negative sign on the coefficient of the tax revenue per capita variables, as discussed in Chapter 4, seems to suggest that policy substitutability should be accounted for in a more complex model. An empirical test of such a model similarly would be more complex than the one presented in this study, but would provide an opportunity to investigate where collaboration fits within the broader world of local governance structures.

Epilogue

Scholars have long recognized that policy implementation is much less business-like than Woodrow Wilson would have us believe. Governance structures are complex webs of organizations sharing – and sometimes
competing for – authority over public policy. Studies of collaboration over the last 15 years have demonstrated that this is no less true for policy implementation than it is for policy making. But while scholars have developed sophisticated models of collective choice in the policymaking arena, we have fewer in the policy implementation arena.

This study attempts to correct that shortcoming by proposing a model of collaborative choice that reaches beyond a basic understanding of the needs in a community to incorporate transactions costs and competition explanations. To the extent that I have been successful in this attempt, the conclusions we can draw from this study will help cumulate knowledge regarding the complex processes of governance in the modern era.
### TABLE 3.1
Collaborative Choice

<table>
<thead>
<tr>
<th>Degree of Competition</th>
<th>LOW</th>
<th>HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low Competition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Most</td>
<td>Many transactions</td>
<td>Opportunistic</td>
</tr>
<tr>
<td></td>
<td>Many are deep</td>
<td>Many transactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Few are deep</td>
</tr>
<tr>
<td></td>
<td>LOW</td>
<td>HIGH</td>
</tr>
<tr>
<td>Selective</td>
<td>Few transactions</td>
<td>Few transactions</td>
</tr>
<tr>
<td></td>
<td>Few are deep</td>
<td>Few are deep</td>
</tr>
<tr>
<td></td>
<td>HIGH</td>
<td>SELECTIVE</td>
</tr>
<tr>
<td>Opportunistic</td>
<td>Few transactions</td>
<td>Few are deep</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Few are deep</td>
</tr>
<tr>
<td></td>
<td>HIGH</td>
<td>LEAST</td>
</tr>
<tr>
<td>Least</td>
<td></td>
<td>Few transactions</td>
</tr>
<tr>
<td></td>
<td>Few are deep</td>
<td>Few are deep</td>
</tr>
</tbody>
</table>

Transaction Costs

LOW

Selective

HIGH

LEAST

Low Competition

Many transactions

Many are deep

Opportunistic

Many transactions

Few are deep
TABLE 3.2
Inter-local Collaborative Behavior

*Types of collaboration*

<table>
<thead>
<tr>
<th>Types of Collaboration</th>
<th>#</th>
<th>Mean Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>20</td>
<td>$22,159,450</td>
</tr>
<tr>
<td>Transportation</td>
<td>25</td>
<td>$19,199,560</td>
</tr>
<tr>
<td>Utilities</td>
<td>27</td>
<td>$2,342,040</td>
</tr>
<tr>
<td>Health &amp; Human Services</td>
<td>147</td>
<td>$1,374,460</td>
</tr>
<tr>
<td>General Services</td>
<td>1,785</td>
<td>$1,127,740</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>434</td>
<td>$985,940</td>
</tr>
<tr>
<td>Average Value</td>
<td></td>
<td>$1,053,307</td>
</tr>
</tbody>
</table>


### TABLE 4.1
Comparison of Sample to Population

<table>
<thead>
<tr>
<th>Classification</th>
<th>Population Census</th>
<th>Population Census + Governments Census</th>
<th>Study Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Cities</td>
<td>Proportion of Cities</td>
<td>Number of Cities</td>
</tr>
<tr>
<td>More than 200,000</td>
<td>90</td>
<td>0.9%</td>
<td>51</td>
</tr>
<tr>
<td>100,000 - 200,000</td>
<td>159</td>
<td>1.5%</td>
<td>80</td>
</tr>
<tr>
<td>50,000 - 100,000</td>
<td>423</td>
<td>4.1%</td>
<td>222</td>
</tr>
<tr>
<td>25,000 - 50,000</td>
<td>847</td>
<td>8.1%</td>
<td>448</td>
</tr>
<tr>
<td>10,000 - 25,000</td>
<td>2,070</td>
<td>19.9%</td>
<td>1,080</td>
</tr>
<tr>
<td>5,000 - 10,000</td>
<td>2,438</td>
<td>23.4%</td>
<td>1,278</td>
</tr>
<tr>
<td>3,000 - 5,000</td>
<td>2,229</td>
<td>21.4%</td>
<td>1,171</td>
</tr>
<tr>
<td>Less than 3,000</td>
<td>2,142</td>
<td>20.6%</td>
<td>1,203</td>
</tr>
<tr>
<td>Total</td>
<td>10,398</td>
<td></td>
<td>5,533</td>
</tr>
<tr>
<td>Sources of Data</td>
<td>Variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 1997 Census of Governments for fiscal years ending July 1996-June 1997 from U.S. Census Bureau | Total city tax revenue  
Total city expenditures  
Federal grants provided to each city  
Dollar value of collaboration  
(dependent variable) |
| 2000 Census of the Population from U.S. Census Bureau         | Population  
Proportion of Anglos in city population  
Proportion of population 65 or over  
Proportion of population under 19  
Proportion of adult population with college education  
Median home value  
Per capita income  
Proportion of population living below the poverty line  
Proportion of working age adults who are unemployed |
| Municipal Form of Government, 1996 survey from International City/County Management Association | Form of government (city manager or other)  
Proportion of at-large council districts  
Status of partisan identification in municipal elections  
Status of city relative to location in an MSA  
- central city, in MSA but not central city, or not in MSA  
Regional location of city |
TABLE 4.3
Measurement of Dependent Variables

*Dichotomous Measure of First-Stage Dependent Variable*

<table>
<thead>
<tr>
<th>Cities in study that participated in…</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some collaboration (coded 1)</td>
<td>1,916</td>
<td>68%</td>
</tr>
<tr>
<td>No Collaboration (coded 0)</td>
<td>909</td>
<td>32%</td>
</tr>
<tr>
<td>Total cities in study</td>
<td>2,825</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Continuous Measure of Second-Stage Dependent Variable*

<table>
<thead>
<tr>
<th>Unlogged inter-local $ thousands per capita</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.05</td>
<td>0.09</td>
<td>0.0002</td>
<td>1.94</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Logged inter-local $ thousands per capita</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-4.18</td>
<td>1.72</td>
<td>-10.62</td>
<td>0.66</td>
</tr>
</tbody>
</table>

Note: The dependent variable in the second stage of the analysis is logged. The unlogged version of the variable is presented here with the logged version for informational purposes.
TABLE 4.4  
Summary of Dichotomous Independent Variables

<table>
<thead>
<tr>
<th>Simple Dummy Variables</th>
<th>Number</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No 0</td>
<td>Yes 1</td>
</tr>
<tr>
<td>Has City Manager form of government</td>
<td>1,257</td>
<td>1,568</td>
</tr>
<tr>
<td>Has Partisan elections</td>
<td>2,114</td>
<td>711</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Series Dummy Variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location Relative to an MSA:</td>
<td>Number</td>
<td>Proportion</td>
</tr>
<tr>
<td>Is a Central City</td>
<td>214</td>
<td>7.6%</td>
</tr>
<tr>
<td>Is a Suburban City in an MSA (Analysis Control Group)</td>
<td>1,462</td>
<td>51.8%</td>
</tr>
<tr>
<td>Is a city outside of an MSA</td>
<td>1,149</td>
<td>40.7%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,825</td>
<td>100%</td>
</tr>
<tr>
<td>Location in the United States:</td>
<td>Number</td>
<td>Proportion</td>
</tr>
<tr>
<td>Northeast (New England and Mid-Atlantic)</td>
<td>405</td>
<td>14.3%</td>
</tr>
<tr>
<td>North Central (East North-Central and West North-Central)</td>
<td>1,189</td>
<td>42.1%</td>
</tr>
<tr>
<td>South (South Atlantic, East South-Central, and West South-Central)</td>
<td>989</td>
<td>35.0%</td>
</tr>
<tr>
<td>West (Mountain and Pacific Coast)</td>
<td>242</td>
<td>8.6%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,825</td>
<td>100%</td>
</tr>
</tbody>
</table>
TABLE 4.5
Summary of Continuous Independent Variables

<table>
<thead>
<tr>
<th>Continuous Institutional Variables</th>
<th>No.</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>At-Large District Representation (percent)</td>
<td>2,825</td>
<td>63.38</td>
<td>43.57</td>
<td>0.00</td>
<td>100.00</td>
</tr>
<tr>
<td>Monitoring Sophistication (population size)</td>
<td>2,825</td>
<td>21,268</td>
<td>72,566</td>
<td>2,000</td>
<td>2,895,964</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Continuous Competition Variable</th>
<th>No.</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of Market Competition</td>
<td>2,825</td>
<td>14.51</td>
<td>17.69</td>
<td>0.00</td>
<td>64.10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Continuous Slack Resource Variables</th>
<th>No.</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Revenue Per Capita</td>
<td>2,825</td>
<td>0.34</td>
<td>0.29</td>
<td>0.00</td>
<td>4.61</td>
</tr>
<tr>
<td>Federal Grants Per Capita</td>
<td>2,825</td>
<td>0.02</td>
<td>0.08</td>
<td>0.00</td>
<td>2.99</td>
</tr>
<tr>
<td>Expenditures Per Capita</td>
<td>2,825</td>
<td>0.86</td>
<td>0.86</td>
<td>0.02</td>
<td>26.86</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Continuous Socio-Economic Variables</th>
<th>No.</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of Anglos in city population</td>
<td>2,825</td>
<td>83.72</td>
<td>17.39</td>
<td>0.58</td>
<td>100.00</td>
</tr>
<tr>
<td>Proportion of population 65 or over</td>
<td>2,825</td>
<td>15.36</td>
<td>5.82</td>
<td>2.21</td>
<td>63.90</td>
</tr>
<tr>
<td>Proportion of population under 19</td>
<td>2,825</td>
<td>26.49</td>
<td>4.60</td>
<td>2.84</td>
<td>45.38</td>
</tr>
<tr>
<td>Proportion of adult population with college education</td>
<td>2,825</td>
<td>22.78</td>
<td>14.25</td>
<td>2.90</td>
<td>89.40</td>
</tr>
<tr>
<td>Median home value</td>
<td>2,825</td>
<td>116,401</td>
<td>95,392</td>
<td>21,200</td>
<td>1,522,001</td>
</tr>
<tr>
<td>Per capita income</td>
<td>2,825</td>
<td>22,495</td>
<td>12,645</td>
<td>6,576</td>
<td>157,814</td>
</tr>
<tr>
<td>Proportion of population living below the poverty line</td>
<td>2,825</td>
<td>11.68</td>
<td>7.42</td>
<td>0.37</td>
<td>43.56</td>
</tr>
<tr>
<td>Proportion of working age adults who are unemployed</td>
<td>2,825</td>
<td>3.47</td>
<td>2.11</td>
<td>0.00</td>
<td>35.47</td>
</tr>
<tr>
<td>Hypothesized Direction</td>
<td>Two-Step Coef.</td>
<td>Std. Error</td>
<td>FIML Coef.</td>
<td>Std. Error</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------</td>
<td>------------</td>
<td>------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td><strong>Institutional Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City Manager Form</td>
<td>+</td>
<td>0.145 **</td>
<td>0.053</td>
<td>0.163 **</td>
<td>0.053</td>
</tr>
<tr>
<td>At-Large District Representation</td>
<td>-</td>
<td>-0.001</td>
<td>0.001</td>
<td>-0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>Non-Partisan Elections</td>
<td>0</td>
<td>-0.004</td>
<td>0.069</td>
<td>-0.004</td>
<td>0.068</td>
</tr>
<tr>
<td>Monitoring Sophistication (population size)</td>
<td>+</td>
<td>0.034 **</td>
<td>0.011</td>
<td>0.040 **</td>
<td>0.011</td>
</tr>
<tr>
<td><strong>Slack Resource Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tax Revenue Per Capita</td>
<td>+</td>
<td>-0.662 **</td>
<td>0.106</td>
<td>-0.688 **</td>
<td>0.107</td>
</tr>
<tr>
<td>Federal Grants Per Capita</td>
<td>+</td>
<td>1.784 **</td>
<td>0.531</td>
<td>1.730 **</td>
<td>0.516</td>
</tr>
<tr>
<td>Expenditures Per Capita</td>
<td>+</td>
<td>0.076 **</td>
<td>0.032</td>
<td>0.077 **</td>
<td>0.031</td>
</tr>
<tr>
<td><strong>Socio-Economic Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Anglos in Population</td>
<td>-</td>
<td>-0.006 **</td>
<td>0.002</td>
<td>-0.006 **</td>
<td>0.002</td>
</tr>
<tr>
<td>Proportion of Population 65 Years or Older</td>
<td>-</td>
<td>-0.009</td>
<td>0.006</td>
<td>-0.008</td>
<td>0.006</td>
</tr>
<tr>
<td>Proportion of Population Under 19</td>
<td>+</td>
<td>-0.044 **</td>
<td>0.008</td>
<td>-0.043 **</td>
<td>0.008</td>
</tr>
<tr>
<td>Proportion of Adults with College Education</td>
<td>-</td>
<td>0.006</td>
<td>0.003</td>
<td>0.006</td>
<td>0.003</td>
</tr>
<tr>
<td>Median Home Value</td>
<td>-</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Per Capita Income</td>
<td>+</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Proportion of Population Below Poverty Line</td>
<td>+</td>
<td>-0.002</td>
<td>0.006</td>
<td>-0.002</td>
<td>0.006</td>
</tr>
<tr>
<td>Proportion of Adults Unemployed</td>
<td>+</td>
<td>-0.017</td>
<td>0.015</td>
<td>-0.017</td>
<td>0.015</td>
</tr>
<tr>
<td><strong>Locational and Regional Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central City (Yes/No)</td>
<td>0</td>
<td>0.003</td>
<td>0.134</td>
<td>-0.016</td>
<td>0.134</td>
</tr>
<tr>
<td>Non-MSA City (Yes/No)</td>
<td>0</td>
<td>0.109</td>
<td>0.067</td>
<td>0.114</td>
<td>0.067</td>
</tr>
<tr>
<td>Region 1</td>
<td>0</td>
<td>0.116</td>
<td>0.091</td>
<td>0.129</td>
<td>0.091</td>
</tr>
<tr>
<td>Region 3</td>
<td>0</td>
<td>-0.024</td>
<td>0.067</td>
<td>-0.025</td>
<td>0.067</td>
</tr>
<tr>
<td>Region 4</td>
<td>0</td>
<td>0.466 **</td>
<td>0.106</td>
<td>0.466 **</td>
<td>0.106</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>2.209 **</td>
<td>0.378</td>
<td>2.174 **</td>
<td>0.377</td>
</tr>
<tr>
<td>Inverse Mills lambda</td>
<td></td>
<td>2.603 **</td>
<td>0.816</td>
<td>0.560 **</td>
<td>0.183</td>
</tr>
</tbody>
</table>

* Indicates statistical significance at the .05 level
** Indicates statistical significance at the .01 level
TABLE 4.7
Results of Second-Stage Analysis

<table>
<thead>
<tr>
<th>Hypothesized Direction</th>
<th>Two-Step</th>
<th>FIML</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
<td>Std. Error</td>
</tr>
<tr>
<td><strong>Competition Variable</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree of Market Competition</td>
<td>-0.008 ** 0.003</td>
<td>-0.009 ** 0.003</td>
</tr>
<tr>
<td><strong>Slack Resource Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tax Revenue Per Capita</td>
<td>+ -1.486 ** 0.383</td>
<td>-0.738 ** 0.189</td>
</tr>
<tr>
<td>Federal Grants Per Capita</td>
<td>+ 2.082 ** 0.859</td>
<td>0.828 * 0.484</td>
</tr>
<tr>
<td>Expenditures Per Capita</td>
<td>+ 0.559 ** 0.085</td>
<td>0.478 ** 0.062</td>
</tr>
<tr>
<td><strong>Socio-Economic Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Anglos in Population</td>
<td>-0.022 ** 0.005</td>
<td>-0.014 ** 0.003</td>
</tr>
<tr>
<td>Proportion of Population 65 Years or Older</td>
<td>-0.010 0.013</td>
<td>0.000 0.009</td>
</tr>
<tr>
<td>Proportion of Population Under 19</td>
<td>+ -0.074 ** 0.024</td>
<td>-0.029 ** 0.012</td>
</tr>
<tr>
<td>Proportion of Adults with College Education</td>
<td>- 0.013 * 0.006</td>
<td>0.007 0.004</td>
</tr>
<tr>
<td>Median Home Value</td>
<td>- 0.000 0.000</td>
<td>0.000 0.000</td>
</tr>
<tr>
<td>Per Capita Income</td>
<td>+ 0.000 0.000</td>
<td>0.000 0.000</td>
</tr>
<tr>
<td>Proportion of Population Below Poverty Line</td>
<td>+ -0.005 0.012</td>
<td>-0.002 0.009</td>
</tr>
<tr>
<td>Proportion of Adults Unemployed</td>
<td>+ -0.044 0.032</td>
<td>-0.026 0.023</td>
</tr>
<tr>
<td><strong>Locational and Regional Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central City (Yes/No)</td>
<td>0 -0.039 0.254</td>
<td>-0.370 ** 0.159</td>
</tr>
<tr>
<td>Non-MSA City (Yes/No)</td>
<td>0 0.110 0.159</td>
<td>-0.021 0.113</td>
</tr>
<tr>
<td>Region 1</td>
<td>0 0.071 0.178</td>
<td>-0.011 0.127</td>
</tr>
<tr>
<td>Region 3</td>
<td>0 0.078 0.144</td>
<td>0.097 0.107</td>
</tr>
<tr>
<td>Region 4</td>
<td>0 0.823 ** 0.282</td>
<td>0.352 * 0.156</td>
</tr>
<tr>
<td>Constant</td>
<td>-1.762 ** 0.867</td>
<td>-2.640 ** 0.586</td>
</tr>
<tr>
<td>Inverse Mills lambda</td>
<td>2.603 † 0.816</td>
<td>0.560 † 0.183</td>
</tr>
<tr>
<td>Chi Square test of independent equations</td>
<td>5.870 ‡</td>
<td></td>
</tr>
</tbody>
</table>

* Indicates statistical significance at the .05 level
** Indicates statistical significance at the .01 level
TABLE 4.8
Marginal Effects of Independent Variables

**STAGE ONE**

<table>
<thead>
<tr>
<th>Dependent Variable:</th>
<th>Hypothesized Direction</th>
<th>MARGINAL EFFECTS</th>
<th>Leads to a Change In Probability of Collaboration of</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = Do Not Collaborate</td>
<td>1 = Collaborate</td>
<td>A change in X of</td>
<td></td>
</tr>
</tbody>
</table>

City Manager Form   +   A change from 0 to 1 in value of dummy variable   5.3% increase in probability
Monitoring Sophistication (population size)   +   10,000 increase in the population   1.3% increase in probability
Tax Revenue Per Capita   +   $100 increase per capita   2.8% decrease in probability
Federal Grants Per Capita  +   $100 increase per capita   5.4% increase in probability
Expenditures Per Capita   +   $100 increase per capita   0.3% increase in probability
Proportion of Anglos in Population  -   A 10 point increase in the percent of the population   2.7% decrease in probability
Proportion of Adults with College Education   +   A 10 point increase in the percent of the population   1.9% increase in probability
Proportion of Population Under 19   +   A 10 point increase in the percent of the population   22.4% decrease in probability
Cities located outside of MSAs   0   A change from 0 to 1 in value of dummy variable   4.0% increase in probability
Located in Western Region (Mountain and Pacific Coast)   0   A change from 0 to 1 in value of dummy variable   14.6% increase in probability

**STAGE TWO**

<table>
<thead>
<tr>
<th>Dependent Variable:</th>
<th>Hypothesized Direction</th>
<th>MARGINAL EFFECTS</th>
<th>Leads to Change in Per Capita Value of Collaboration of</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ thousands per capita</td>
<td>$48.85</td>
<td>A change in X of</td>
<td></td>
</tr>
</tbody>
</table>

Degree of Market Competition  -   An increase of one standard deviation from the mean   $127 decrease per capita
Tax Revenue Per Capita   +   $100 increase per capita   $41 decrease per capita
Federal Grants Per Capita  +   $100 increase per capita   $40 increase per capita
Expenditures Per Capita   +   $100 increase per capita   $69 increase per capita
Proportion of Anglos in Population  -   A 10 point increase in the percent of the population   $40 decrease per capita
Proportion of Population Under 19   +   A 10 point increase in the percent of the population   $46 decrease per capita
Central Cities   0   A change from 0 to 1 in value of dummy variable   $5 decrease per capita
Located in Western Region (Mountain and Pacific Coast)   0   A change from 0 to 1 in value of dummy variable   $4 increase per capita

Note that the marginal effects are only calculated for variables that are statistically significant in the FIML estimate.
### TABLE 4.9: Correlation Matrix of Socio-Economic Independent Variables

<table>
<thead>
<tr>
<th>% of Anglos</th>
<th>% Over 64</th>
<th>% Under 19</th>
<th>% with College</th>
<th>Median Home Value</th>
<th>Per Capita Income</th>
<th>% Below Poverty Line</th>
<th>% Unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of Anglos in Population</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Population 65 Years or Older</td>
<td>0.21</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Population Under 19</td>
<td>-0.23</td>
<td>-0.56</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Adults with College Education</td>
<td>0.15</td>
<td>-0.16</td>
<td>-0.14</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median Home Value</td>
<td>0.14</td>
<td>-0.14</td>
<td>0.02</td>
<td>0.70</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Capita Income</td>
<td>0.19</td>
<td>-0.02</td>
<td>-0.05</td>
<td>0.67</td>
<td>0.88</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Proportion of Population Below Poverty Line</td>
<td>-0.53</td>
<td>0.09</td>
<td>0.06</td>
<td>-0.44</td>
<td>-0.44</td>
<td>-0.48</td>
<td>1.00</td>
</tr>
<tr>
<td>Proportion of Adults Unemployed</td>
<td>-0.40</td>
<td>-0.09</td>
<td>0.04</td>
<td>-0.24</td>
<td>-0.26</td>
<td>-0.33</td>
<td>0.53</td>
</tr>
</tbody>
</table>
### TABLE 4.10
Regional Variation

<table>
<thead>
<tr>
<th>Regions</th>
<th>Mean City Population</th>
<th>Number of Cities in Region</th>
<th>Number of Cities that Collaborate</th>
<th>Percentage of Cities that Collaborate</th>
<th>Logged $ Value of Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region 1</td>
<td>15,531</td>
<td>405</td>
<td>275</td>
<td>67.9%</td>
<td>-4.41</td>
</tr>
<tr>
<td>Region 2</td>
<td>20,973</td>
<td>1,189</td>
<td>776</td>
<td>65.3%</td>
<td>-4.35</td>
</tr>
<tr>
<td>Region 3</td>
<td>22,985</td>
<td>989</td>
<td>676</td>
<td>68.4%</td>
<td>-3.91</td>
</tr>
<tr>
<td>Region 4</td>
<td>25,303</td>
<td>242</td>
<td>187</td>
<td>77.3%</td>
<td>-4.10</td>
</tr>
</tbody>
</table>
### TABLE 4.11
First-Stage Predicted and Observed Outcomes

<table>
<thead>
<tr>
<th>Actual selection</th>
<th>Predicted selection</th>
<th>0</th>
<th>1</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>600</td>
<td>1,022</td>
<td>1,622</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>309</td>
<td>894</td>
<td>1,203</td>
</tr>
<tr>
<td></td>
<td></td>
<td>909</td>
<td>1,916</td>
<td>2,825</td>
</tr>
</tbody>
</table>

Correctly Predicted: 52.9%
0's Correct: 37.0%
1's Correct: 74.3%
FIGURE 1
Histogram of Unlogged Second-Stage Dependent Variable
FIGURE 2
Histogram of Logged Second-Stage Dependent Variable
APPENDIX A

VARIABLE CODING AND MEASUREMENT
Details of the coding of the two dependent variables and the 21 independent variables utilized in this study is presented in this Appendix. The hypotheses are reproduced here for convenience. Detailed support for each variable utilized and its relationship to the relevant hypothesis or hypotheses can be found in Chapter 3. Chapter 4 discusses the descriptive statistics for each of the variables listed here.

Dependent Variables

The dependent variable in the first equation is a dichotomous dependent variable coded as 0 when the city does not receive inter-local funds from another city and 1 when it receives any amount of funds. In the second stage, the dependent variable is measured as the total amount of funds that each city receives through inter-local collaboration. In the second stage, this figure is logged to create a normally distributed variable.

The U.S. Census Bureau gathers this data as part of its Census of Governments that it conducts every five years. The data used in this study is from the 1997 Census of Governments, which includes data for each city’s fiscal year that ended between July 1996 and June 1997.

It should be noted that expenditure data could also have been used, but because of the methods by which municipalities account for inter-local revenue versus the ways they account for inter-local expenditures, the Census of Governments data on inter-local expenditures is seriously under-reported and biased. The problem with expenditure data is that most inter-local expenditures
are buried within the operating budgets of the departments with oversight for any particular inter-local agreement. Inter-local revenue, on the other hand, is usually accounted for in a separate category with other revenue from other government agencies. Usually, there are a small number of these accounts, so identifying inter-local revenue is easier for the administrative staff completing the census forms. The Census of Governments data on inter-local funding is in thousands of dollars. This study divides that number by the population of each city to arrive at a per capita value of the degree of inter-local collaboration.

Institutional Variables

**H1:** Cities with the city manager form of government are more likely to choose to collaborate than cities with a strong or weak mayoral form.

**H2:** Cities with a higher proportion of single-member districts are more likely to choose to collaborate than cities with a higher proportion of at-large districts.

**H3:** Cities with non-partisan elections are no more likely to choose to collaborate than cities with partisan elections.

**H4:** Cities with a larger population can more effectively reduce the transaction costs associated with contract monitors and choose to collaborate more than small cities with a concomitantly less effective contract-compliance ability.

Data for the variables testing the first three hypotheses come from the ICMA Survey. In the survey, the variable UFOG is coded as the following: 1 for mayor-council form of government, 2 for council-manager form (also called the city manager form), 3 for the commission form, 4 for the town meeting form and 5 for the representative town meeting form. Of the 2,858 usable responses from the ICMA survey, 1,219 cities have the mayor-council form, 1,586 have the city
manager form, 51 have the commission form, and 2 have the representative town meeting form. None have the town meeting form. For this study, a dummy variable is created with 1 coded for cities with the city manager form and 0 for all other types.

Questions 24A and 24B of the ICMA survey gather information on the form of district representation. Question 24A asks the number of districts that are elected at-large and question 24B asks the number of that are elected by ward or district. The variable in this study utilizes the proportion of at-large districts to the total number of districts.

Question 17 of the ICMA survey asks respondents to report whether or not the political party affiliation of candidates for office appears on the ballot. The ICMA codes “No” answers as a 1 and “Yes” answers as a 2. For this study, ICMA question 17 is recoded to be 0 for cities with partisan elections (in which the party affiliation of the candidate appears on the ballot) and 1 for cities with non-partisan elections (in which the party affiliation of the candidate does not appear on the ballot).

Data to test Hypothesis 4 comes from the 2000 Census of the Population. The data used in this study was taken from a data DVD from the Census Bureau (U.S. Census Bureau 2000). The data is gathered by the Census Bureau at the census tract and is aggregated by city and county.

This coding scheme used by the Census Bureau presents challenges for the analysis of cities. When data queries are performed on the Census database
(U.S. Census Bureau 2000), cities that cross county borders have a row of data representing the portion of the population that resides in the part of the city that is located in each county. So, if a city is located in two different counties, the data query returns for that city two rows of data that must be aggregated to get one row per city. All data from the population census was aggregated in the SPSS statistical package before being combined with the data from ICMA and the Census of Governments.

Competition and Locational Factors

**H5:** Cities in markets characterized by a higher degree of competition participate in collaborative arrangements to a lesser degree.

**H6a:** Central cities and cities outside of federally defined MSAs are more likely to choose to collaborate.

**H6b:** Central cities and cities outside of federally defined MSAs choose to collaborate to a greater degree.

As discussed in Chapter 3, the degree of market competition a city faces is calculated as follows:

\[
\text{Competition} = \begin{cases} 
1 / (\text{Standard Deviation of Population in MSA} / \text{Total Population in MSA}) & \\
0 & \text{for non-MSA cities} \\
0 & \text{for MSAs with only 1 city}
\end{cases}
\]

The 2000 Census of the Population is again used for the calculation of this variable. Queries were run in Microsoft Access to calculate the standard deviation and sum of the population for all cities in each MSA. Each of the 261 MSAs in the study thus received a relative competition score. Each city located within that MSA was coded with the value of the competition calculation for its MSA.
Cities outside of MSAs received a value of 0 for the competition variable. Since it is assumed that non-MSA cities face the least competition, the calculated competition measure for MSA cities was inverted to create a variable that moves monotonically from 0 for the least competition to 64.1 for the most amount of competition.

To measure the competing idea that the location of the city relative to the MSA, a series of dummy variables was coded from the ICMA survey. Central cities are defined as the core city of an MSA, per the designation by the federal Office of Management and Budget. The measure in the ICMA dataset, UMETRO, is coded as 1 if the city is a central city, 2 if is a suburban city in an MSA, and 3 if the city is located outside an MSA. The UMETRO variable was recoded to a series of dummy variables for this analysis. A dummy variable for central cities was coded as a 0 for all cities except central cities, which were coded as a 1. And a dummy variable for cities outside of MSAs was coded 0 for all cities except those located outside of an MSA, which were coded with a 1. The third category – non-central cities within an MSA – is the control group against which the other two are measured.

Underlying Motivations: Generating Slack Resources

H7a: Cities with a more proactive policy agenda are more likely to choose to collaborate.

H7b: Cities with a more proactive policy agenda choose to collaborate to a greater degree.

H8a: Cities with a higher tax burden are more likely to choose to collaborate.
H8a: Cities with a higher tax burden choose to collaborate to a greater degree.

H9a: Cities that receive federal grants funding are more likely to choose to collaborate.

H9b: Cities that receive federal grants funding choose to collaborate to a greater degree.

Data to test these hypotheses were gathered from the Census of Governments. All three measures are in thousands of nominal 1996 dollars and are divided by the population of the city to arrive at a comparable per capita figure.

The expenditure data includes all municipal expenditures, regardless of category. While broad categorizations of this data are available from the Census of Governments, fine-tuned distinctions among categories are not. Furthermore, cities handle expenditures in different ways – a municipal golf program might be accounted for in an enterprise fund in one city, while it is operated with the parks department in the general fund of another city. To limit the bias that such differences of definitions between cities has on the analysis, all expenditures are included.

Tax revenue includes any revenue in a city that properly can be considered a tax. This includes the big three at the local level: property, sales and income taxes. But it also includes narrower consumption taxes like the hotel/motel tax, as well as any excise taxes the city may be collecting.
Finally, federal grant funds are available from the Census of Governments. While there are some categorizes of this measure, all categories were included in this analysis.

Underlying Motivations: Social and Economic Need

**H10a:** Cities with a population with greater economic needs are more likely to choose to collaborate.

**H10b:** Cities with a population with greater economic needs choose to collaborate to a greater degree.

Eight variables from the Census of the Population are utilized to capture the breadth of these two hypotheses. Two of them – median home value and per capita income – are available immediately in the Census. The remainder must be calculated from multiple variables in the Census.

The variables for proportion of the population that is Anglo and proportion of the population living below the poverty line are provided in the Census as raw figures. Each raw figure is divided by the total population and multiplied by 100 to arrive at a proportion. Similarly, the variables for the proportion of the population over 65 and under 19 are reported in the Census as raw figures that must be divided by the total population and multiplied by 100 to arrive at a proportion.

The variable for the unemployment rate is calculated from a raw figure in the Census representing the number of people without a job in each city. But rather than divide by the entire population, the raw figure was divided by the population of the city that is at least 16 years of age and not older than 65.
Similarly, the variable measuring the proportion of adults with a college education is calculated from a raw figure in the Census for the total number of people in each city that have a college degree. That figure was divided by the total number of people in the population 25 years old or older.

**Regional Variation**

*H11a: Cities in different regions of the country are more likely to choose to collaborate.*

*H11b: Cities in different regions of the country choose to collaborate to varying degrees.*

The ICMA survey utilizes the variable UREGN to code the following regions: 1 for Northeast (New England and Mid-Atlantic), 2 for North Central (East North-Central and West North-Central), 3 for South (South Atlantic, East South-Central, and West South-Central) and 4 for West (Mountain and Pacific Coast). The UREGN variable is recoded for this study as a series of dummy variables coded 1 if the city is in that region, and 0 otherwise. The largest category is the North Central region with 1,204 of the 2,858 usable ICMA responses, and is used as the control variable.
APPENDIX B

DESCRIPTION OF METHODOLOGY
The theory presented in Chapter 3 suggests an empirical model with two stages. In the first stage, the city decides whether or not it will participate in collaborative arrangements. If the answer is yes in the first stage, then the city must decide in the second stage the degree to which it will participate in such arrangements.

Borrowing from Greene (2002), the first stage is a selection equation specified generically as

$$z_i = w'\gamma_i + u_i$$

And the second stage is the regression equation specified generically as

$$y_i = x'\beta + \epsilon_i$$

where $w'$ and $x'$ are vectors of regressors and

$$E[y_i | y_i \text{ is observed}] = E[y_i | z_i > 0]$$

$$u_i \sim N(0,1)$$

$$\epsilon_i \sim N(0,\sigma)$$

$$\text{corr}(u_i, \epsilon_i) = \rho$$

When $\rho \neq 0$, Ordinary Least Squares produces inconsistent estimates of $\beta$ because of the non-selection hazard introduced into the second equation resulting from the selection process in the first equation (Greene 2002, 783). Heckman (1976, 1979) resolves the non-selection hazard in the second equation by the inclusion of the inverse Mills ratio as an additional regressor in the second equation.
The inverse Mills ratio is computed as

\[ m_i = \frac{\phi(w_i \gamma)}{\Phi(w_i \gamma)} \]

where \( \phi \) is the normal density function and \( \Phi \) is the standard cumulative normal density.

Utilizing this specification, then, the dependent variable in the first equation is a dichotomous dependent variable in which \( z_i = 0 \) when the city does not receive inter-local funds from another city and \( z_i = 1 \) when it receives any amount of funds. In the second stage, the dependent variable is measured as the total amount of funds that each city receives through inter-local collaboration.
REFERENCES


