

A Transaction Cost Model of State Government Procurement

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A. Introduction

This paper is an explanation of how one might apply transaction cost theory to public financial management (PFM). Transaction cost theory is a powerful and general theoretical framework that seeks to explain institutional development and organizational efficiency. It has the potential to serve as an organized theoretical framework for many findings from case studies and field observation in PFM and public administration more generally. In this paper I apply transaction cost theory to findings from the 2000 Government Performance Project (GPP) survey of state government practice in procurement.¹ The selection of procurement was solely a matter of convenience; if transaction cost theory has true potential as a theoretical framework in this area, then many other subfields of PFM should be fruitful areas of application.

Public financial management is a field of study that generally has been approached from descriptive and normative perspectives. The dominant normative values of PFM are legal and accounting compliance, and administrative efficiency. Both of these values suggest a deeper value. Compliance for what? Administrative efficiency for its own sake or for some more fundamental reason? I suggest that this deeper reason may in part be the development of strong institutions that give the appropriate incentives for social and economic development. Further, transaction cost theory is a rich source of hypotheses and assertions to develop a better positive theory of PFM. Transaction cost theory has its limitations, but a thorough explanation in this context is warranted.

B. Theoretical Background

“Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social, or economic. Institutional change shapes the way societies evolve through time and hence is the key to understanding historical change.” (North 1990, 3)

Transaction cost theory grew out of the theory of the firm, and has recently been transferred to some public administration questions. It has also been applied to macro questions of budgeting by looking at both the emergence of and the effect of constitutional provisions and institutional rules on budgetary outcomes. Important work has applied transaction cost theory to budgetary process and policy issues such as legislative grants of discretion (Horn 1995), the appropriations process and zero-based budgeting (Patashnik 1996), tax and expenditure limitations (Dixit 1996), trust funds (Patashnik 2000), and administrative turnover (Clingermayer and Feiock 2001). However there has been very little written applying transaction cost to PFM. This is ironic, because using the transaction as the unit of analysis would appear to be a comfortable analytical framework when applied to financial management questions. Thompson and Jones (1986) and Thompson (1993) are two of the few who have made this connection by applying this theory to administrative grants of discretion in appropriations and contracts to subordinate agencies. They develop four typologies of control structures (outlay budgets, responsibility budgets, fixed-price contracts, and flexible-price contracts) and argue that matching the appropriate structure to each service area can improve efficiency.

Recently, Bartle and Ma argued that in certain areas of PFM, such as managing debt, cash, investments, and purchasing, that transaction cost theory could be productively applied. They wrote, “in many areas of financial management, it is not much of a leap of faith to assert that governments attempt to achieve their objectives in the most efficient way (including transaction costs), and not too bold to assert that they should.... [E]fficient and neutrally competent administration has been one of the central values of U.S. public administration, so the goal of efficiency here is not at odds with the prevailing normative view” (Bartle and Ma 2001, 178). Therefore, both normative and positive questions of PFM are well suited to the focus of transaction cost theory.

Certain concepts are central to transaction cost theory. They are as follows:

- Decision-makers are assumed to behave in a way consistent with *bounded rationality*, in that they consider a restricted range of alternatives but in a rational way. They also may behave *opportunistically* in some situations. In making such a decision, they weigh the costs and benefits of defaulting from the expected behavior. Bartle and Ma write, “Opportunism may or may not exist in any situation, but this approach incorporates it as a variable, allowing it to vary from absent to rampant....Assuming it away is naive” (2001, 171). Finally, actors may have varying *preference for risk*. As with opportunism, one need not assume a single preference for risk among all actors.
- Transactions may be affected by *uncertainty*. Opportunities for opportunistic behavior serve as one of the main modes of analysis in this area. Applied to PFM, this makes it possible for public financial managers, their contractors, governing bodies, or other actors to face uncertain situations in their transactions. The source of this uncertainty may be either opportunistic behavior of the individuals or an uncertain environment. Analysis of the choices made by parties in the face of such uncertainty then should help us to better understand the institutions in place. For example, bond insurance is an institutional structure choice that a manager may make (or lenders may require) to protect them against a variety of forms of uncertainty.
- *Information* may not be distributed equally. Where one party to a transaction has more or better information than the other, again the possibility of opportunistic behavior presents itself. Parties might incur costs to gather additional information, or may proceed into the transaction hoping for the best. Information problems are clearly more acute when the parties involved have low trust for each other. For example, one factor that has made some inter-governmental agreements more viable is a high degree of trust between the parties (Bartle and Swayze 1997).
- *Asset specificity* is a common issue in this theoretical framework. If an asset is by its nature tied to a specific service, then it is vulnerable to the “hold up” problem where one party in a contract might exploit the other party’s vulnerability. Investments in capital assets, humans, or political commitments can create a perceived commitment to a specific program or activity that may be difficult to reverse. For example, an investment in computer system or software might be very expensive to reverse, locking the organization into that choice for a long time. This creates a situation of *path dependence* where institutional structure is inflexible, and in some cases, inefficient for the long-term.

One of the central questions in transaction cost theory is, in any situation how are institutions shaped by the attributes of actors and transactions? The classic question examined by Coase (1937) was, why do integrated firms exist rather than market contracts? He asserts that they do so in order to minimize transaction costs. In the context of PFM, a parallel question is, why does any given institutional structure exist? Can it be explained by these concepts?

A second critical challenge is to better understand how institutional arrangements affect transaction costs, which in turn affect social and economic development. North (1990) has demonstrated that a society’s economic institutions can evolve in either efficient or inefficient ways from the initial institutional arrangements. These arrangements are the products of an endogenous web of incentives, investments, and institutions that may or may not contribute to healthy economic and social development. The increasing returns to scale on technological and institutional investments creates a path dependence that makes it difficult and expensive to alter that path. As a result, institutions in society may follow either productive or unproductive paths depending on the incentives created by the earlier institutional structure, which then tends to reinforce itself. Two societies may therefore diverge onto very different paths because of the formal or informal incentives and institutions that exist. There is some controversy about whether pressures will prevail upon governments to be generally efficient. This has been debated at a theoretical level (Patashnik, 2000) but ultimately it is an empirical question. In the context of PFM, examining the incentives created by financial institutions, the transaction costs they cause, and their long-term social impact can help us better understand the viability of these institutions, and ultimately government and society. For example Clingermayer and Feiock (2001, 32-33) found that the form of government and the system of representation affected the ability of cities to respond to economic development policy options.

Will the application of transaction cost theory to PFM be productive? The proof will ultimately be in the pudding. Can it explain the development of management practice? And does it serve as an acceptable basis for normative judgments about financial management customs, practices, and mandates? The remainder of this paper

attempts to suggest strengths and weaknesses in the application of transaction cost theory to PFM, drawing from the GPP survey of the U.S. states.

3. Applying Transaction Cost Theory to State Procurement Practice

A review of state government procurement and contracting policy finds that there is a great deal of variation among the states in practice in this area (Bartle and Korosec, 2000). Some states are truly state of the art, while others are very far behind, and perhaps even complicit in corruption. This section relates the findings in five areas of state procurement, as demonstrates the relevance of transaction cost theory.

A. Cooperative Purchasing

Many states are engaged in cooperative purchasing. NASPO (1997, 80) reports that in 46 states, there was statutory authorization for cooperative procurement with different units of government (such as local governments and state universities) and in 34 states this included multi-state purchasing. The Western States Contracting Alliance is a multi-state purchasing pool of 15 states. However some states, such as North Dakota, are statutorily prohibited from cooperative purchasing with other states. Cooperative purchasing can exploit scale economies, especially for low volume purchasers or remote states. For example, South Dakota reports that it is difficult for field offices to get three bids on smaller contracts because of the paucity of potential suppliers. Vermont reports that there are only two providers of pavement materials in the state which makes competitive bids are difficult to attain. While cooperative purchasing offers potential economies, there are transaction costs in establishing these cooperatives and negotiating and coordinating orders. Aronson and Hilley (1996, 370) write, "Although it may be time consuming and sometimes costly to get started, cooperative purchasing has compelling advantages ... including more buying power, more accurate and comprehensive specifications, and better vendor service." While in some cases the transaction costs likely outweigh the purchasing savings, it seems that it would be unwise to prohibit this practice. A good example is Utah's State Travel Office which provides travel services to state agencies, local governments, and state universities with a contract travel agency. It estimates that in 1999 it saved the state \$5.4 million in airfare alone. In this example, the initial institutional characteristics probably caused Utah to follow a different path than North Dakota which prohibits this practice. In Utah there were different rules and probably enterprising actors who had incentives and saw the opportunity to reduce travel costs, creating a more efficient set of institutions.

B. Economies of Scope

Master contracts are used extensively by most states. Many states report having over 100 such agreements and some over 1,000. Massachusetts reports that typically 84% of their goods are purchased through master contracts. Utah's target is for 80% of commonly needed goods to be on statewide contracts. Goods purchased under master contracts tend to be for repetitively purchased items, such as office supplies, vehicles and parts, food, computers, and software. Michigan has a master contract for all desktop computer products and services which substantially reduces costs due to volume discounts and low contract management costs (NASPO, 1996). Very significant savings are reported in some cases: for instance, Kentucky reports saving over \$6 million per year. However other states use them only in a limited way. A transaction cost theorist would look to see if those states not using master contracts did so because the costs of these arrangements were higher, or because of a failure of the states to recognize these opportunities.

C. Compliance Monitoring

States report using a wide variety of measures to attempt to ensure compliance with the terms of a bid. Some of these are relatively passive, such as reliance on complaints. Many are punitive, such as contract termination, suspension, and refusal to pay. Performance bonds and sureties are also employed. Others involve more interaction with the contractor through the life of the contract, such as post-award conferences, performance clauses, monitoring by the agencies, and compliance audits. Pennsylvania provides a model in tracking vendor performance through the life of the contract by requiring that agencies complete periodic evaluations and by scoring vendors throughout the life of each contract. Louisiana has developed a Quality Procurement Assessment and Training program whose

function is to educate agencies in contract administration and performance monitoring. While it is important to ensure compliance, there are problems with some methods. MacManus (1992) reports that required bonds for bidding, payment, and performance were mentioned as negatives by businesses, especially minority-owned businesses. This suggests that these businesses might be less likely to bid on state contracts with these requirements. It is likely that appropriate compliance measures vary among contracts and states, so this range of practice is to be expected, probably attributable to variation in both information distribution between vendors and buyers and uncertainty in transactions. From a normative perspective, transaction cost theory would argue that the appropriate choice is that which minimizes the sum of transaction and production costs. A positive transaction cost theory would attempt to examine if governments adopted the cost-minimizing practice.

D. Information Technology

Information technology (IT) is a major area of change in procurement. Some states have taken some very innovative steps that will enhance the value of their purchases. Perlman (2001) reports in Governing that as of 2001, 14 states have established e-procurement initiatives, while 12 others are beginning to do so. Purchasing cards are fairly widespread, and apparently are producing important benefits. One source reports that on average, it costs about \$125 to process a paper transaction compared to between \$5 and \$15 by doing so electronically (Perlman, 2001). However use of information technology in procurement is uneven across the states and within states. Some states report no use of the Internet or purchase cards. The degree of IT use is hampered in some cases by lack of IT support or ability. In Iowa, limited funding and resistance to change were cited as a barrier, and Montana reported a need to make a case for e-procurement to demonstrate its benefits to vendors and customers. Again, these suggest the likelihood of inefficient institutional development.

Maryland's integrated purchasing software system allows for verification of approved funding, checks to ensure that the order is not above the amount approved, and then establishes an encumbrance. This greatly reduces paperwork, speeds up the approval process, and improves inventory management. But in Arizona, agencies' procurement software is not even compatible with that of the state procurement office. Whether by luck or foresight, Maryland selected the "right" software and then integrated the financial and procurement systems, creating the opportunity for efficient outcomes. In contrast, in Arizona the earlier investment created inefficient incentives and an institutional structure that reinforces that unfortunate investment.

North (1990, 93-94) has pointed that because of self-reinforcing mechanisms in technological development, that there will be a variety of possible technological outcomes, likely inefficiencies caused by early investment in inappropriate technology, a "lock-in" effect which is difficult to escape, and path dependence. This seems to very closely describe the development of IT among the states.

E. Corruption

In a 1997 survey, 61 percent of state purchasing agents surveyed reported knowledge of instances of "back door selling," where vendors influence users to induce preference and constrain competition. While 96 percent of the respondents thought this practice interfered with fair competition, in only 24 percent of the cases was there an established format for reporting non-competitive bidding to the Attorney General (NASPO, 1997). For social reasons and because of the lack of a reporting format, apparently some states have allowed a corrupt system to take root. Changing the institutional structure and resulting incentives and patterns of behavior then becomes very difficult, causing long-term inefficiency and unfairness.

4. Conclusion

The application of this theory to PFM seems to have promise, as indicated by the cases discussed here. It does seem to be difficult to test these theories in a rigorous way against competing explanations, in part because of the reliance of transaction cost theory on deep historical explanations. While some assertions may be able to be tested using cross-sectional analyses, many of them probably require extensive historical case studies. However this might be just what is needed to enhance our understanding of financial institutions and practice.

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Notes

1. The survey was a part of the financial management section of the Government Performance Project. The survey was mailed to state governments in the summer of 2000. These questions were answered either by budget or finance managers, or often by procurement and contract managers. Of the 50 states surveyed, 48 responded (Connecticut and Florida did not). Following up this survey, Governing reporters interviewed state officials by telephone in the fall of 2000. Unless otherwise noted, the data source is the GPP survey. This paper also supplements that survey with one done by the National Association of State Purchasing Officials (NASPO) in 1997 and 2001 (NASPO, 1997, 2001).