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Fiscal Conditions, Political Interests, and Service Outsourcing Decisions: The Case of Georgia Counties

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Abstract

The question why a government chooses a specific service delivery tool to provide public service to its citizenry is a central intellectual inquiry in public administration. This paper develops a framework to explain the production and sector choices of public services by political-economic environment, organizational capacity, service market conditions, and nature of service. Using operation and financial data of Georgia county governments during 2000-2006, we apply the framework to analyze Georgia counties' public service outsourcing decisions, focusing on the effects of fiscal conditions and political interests. The logistic regression results show that the choice of external production is negatively associated with government's revenue raising capacity, managerial capacity, and citizens' political demand for local control yet positively associated with conservative ideology. The choice of private sector is positively correlated with conservative political interest, increase in discretionary financial resources, and the centrality of government's position in local service provision market.

I. INTRODUCTION

During the last quarter of the past century, a resurgence of market-oriented thoughts had provoked many public sector reforms in the United States. Reform strategies included not only to run government like a business (Osborne and Gaebler 1992; Gore 1993), but also to introduce market mechanisms to production and delivery of public goods and services to a great extent (Savas 1987, 2000; Kettl 1993; Seidenstat 1999; Auger 1999). A variety of public service provision tools, such as outsourcing, which leverage resources and talents of government, private, and nonprofit organizations in various manners, have been explored both in theory and in practice (Stern 1990, 1993; Salamon 2002). Consequently, the question why a government chooses a specific tool to provide public service to its citizenry became a central intellectual inquiry of public administration scholars.

Past studies on privatization, outsourcing, or public-private partnerships have examined a long list of factors that affect a government's service outsourcing decision, such as fiscal stress, economy of scale, market condition, unionization, conservatively ideology, nature of service, etc. It is commonly agreed that a government's service outsourcing decision is ultimately an economic decision as well as a political one (Kettl 1993; Hirsch 1995; Sclar 2000; Ni and Bretschneider 2007). However, empirical studies have generated mixed finding about the effects of fiscal and political factors. The perplexing results may occur because of the multifaceted nature of fiscal and political factors. Measured in disparate dimensions, fiscal or political variables may have different effects on a government's service outsourcing decision. Furthermore, existing contracting

and sector choice studies generally intend to model the service provision choice—the choice of in-house provision, governmental supplier, or private provider (sometimes also including non-profit provider)—all in one analyses using multinomial or ordered logit (Brown and Potoski 2003; Feiock, Clinger, and Dasse 2003; Warner and Hefetz 2004; Joassart-Marcelli and Musso 2005; Feiock, Clinger, Shrestha, and Dasse 2007). Rather than differentiating the stages in a service outsourcing decision, such analyses may overlook the nuance of the complicated economic and political dynamics in the decision making process. In addition to the mixed findings, most of the empirical research on external service provision has been placed solely in the context of municipalities, little is known about these local behaviors in larger regions beyond certain metropolitan areas.

To fill these research gaps, we develop a framework to examine the dynamics of political-economic environment, organizational capacity, service market condition, and nature of service in the production and sector choices of service provision (Ferris and Graddy 1986, 1988) and analyze the effects of fiscal condition and political interests in county governments' service outsourcing decisions using operation and financial data of Georgia counties during 2000-2006.

The article is organized as follows. The second section reviews the current understanding of public service outsourcing. In the third section, we introduce the theoretical framework of the two-stage service provision choice model, and discuss the focus of this study. Data and research methods are explained in section four, followed by the results of logistic regressions in section five. Finally, we summarize the findings and address implications to public practitioners and researchers.

II. THE MYTH OF OUTSOURCING

As driven by the privatization movement and the reinventing government campaign in the past several decades, public sector organizations have adopted multiple service provision tools, such as outsourcing, privatization, or public–private partnerships, in addition to the traditional in-house production and delivery of public services (Stern 1990, 1993; Salamon 2002). Among many of the new service provision tools, outsourcing undoubtedly has increased in the past three decades, and research interest in this area has also burgeoned. Railey and Tamkin define outsourcing as the act of an "organization pass[ing] the provision of a service or execution of a task, previously undertaken in-house, to a third party to perform on its behalf" (1996:5). Under such arrangements, a public agency "remains fully responsible for the provision of affected services and maintains control over management decisions, while another entity operates the function or performs the service" (GAO 1997:8). Unlike privatization, through outsourcing, the delivery of public service may be transferred to existing vendors in both the private and public sector.

No matter it is in private or public sector organizations, the decision to outsource is often made based on cost-efficiency. It is widely believed that the beauty of outsourcing has been the relative production cost advantage of external service providers (Donahue 1989; Savas 2000). Numerous studies have cited monetary or cost-efficiency as a key factor in government outsourcing decisions (Kettl 1993; Hirsh 1995; Seindenstat 1999). In recent decades, as local governments have been experiencing financial stress due to property tax revolts or decreased intergovernmental transfers, outsourcing has

often been considered as an alternative to reduce taxpayer burden (Hirsch 1995; Boyne 1998). However, empirical evidence on the relationship between fiscal condition and outsourcing is mixed. Boyne (1998) points out that most of the empirical results on the relationship between fiscal stress and outsourcing are statistically insignificant and suggests reconsider the theoretical relationship between fiscal condition and outsourcing. It is learned in some studies that local governments may adopt outsourcing to improve service quality and those governments that are in better fiscal condition are more likely to afford this purpose vigorously. For example, O'Toole and Meier (2004) in a study of outsourcing in school districts found that high levels of local resources were positively related to the amount of outsourcing. Therefore, past empirical studies may have falsely combined two distinct subgroups of governments—those pursuing service quality and those pursuing cost savings—into a single sample (Boyne 1998). In a recent study of intergovernmental contracts, Carr et al (2008) find that limited fiscal capacity often leads many local governments, especially townships, to work collaboratively with state or county actors to provide services; however, local governments with greater fiscal capacity, especially cities, are stronger potential partners and so are more likely to contract with other local governments using horizontal arrangements.

In addition to economic rationalities, outsourcing decision is also subjected to political and ideological considerations. Outsourcing decisions are often considered to have a positive relation with conservative ideology of limiting and downsizing government. Public decision makers with more conservative values tend to have stronger ties to private sector businesses and hence favor outsourcing, especially privatization.

However, empirical evidence of political and ideological factors in outsourcing decision is very limited (i.e. Brudney, Fernardez, Ryu, and Wright 2005). Ni and Bretschneider (2007) found the impact of ideological composition of government decision makers on outsourcing decisions was discrepant, which somehow reflects the rhetoric value of outsourcing being used by both parties to win popular support. Their findings, however, also indicate that, despite the rhetoric value of outsourcing, political competition may hinder the decision, because the checks and balances of political control will prevent over usage of contracts. In addition, constituency interests in outsourcing are multifaceted. Generally speaking, outsourcing is in disagreement with constituents' interests in local control, because governments' reliance on other entities for service delivery could lead to a declination of local representation and inflexibility to meet community needs. However, outsourcing, especially to private sector, is consistent with high-income or business sector constituents' interest in small government and more employment opportunities. Bureaucrats' complex interests also add to the political puzzle of outsourcing. This can be illustrated by the disparate interests embedded in different institutional settings of government. For example, the council-manager form of government is associated with professionally trained manager or chief administrator, whose professional training is expected to bring in the economic vigor desired for the government. Thus professional manager is more likely associated with outsourcing to attain economic benefits (Jang 2006; Miranda and Kim 2006). However, professional manager usually connotes better organization capacity in management and production. In addition, having public services produced in-house and thus supervising the large amount of government revenue directly,

public manager could have more bureaucratic power over the organization. For example, Brown and Potoski (2003) found that, ceteris paribus, the presence of a professional manager is correlated with in-house service production. Jang (2006) in a study of park and recreation service (a periphery service to bureaucratic power) contracting found that professional managers are active in contracting municipal service deliveries to the external providers not on order to reduce expenditure level but for better service qualities.

Therefore, despite the proliferation of literature on privatization, contracting, and outsourcing and the augmentation of causal factors examined by past studies, the effects of fiscal and political determinants to service provision decisions remain a mystery. Despite the multifaceted nature of these determinants, existing studies on contracting and sector choice, which uniformly have used a multinomial logit model, has not shined much light on these intellectual perplexities. Those studies generally use the in-house provision of the service as the base case and compare it with other governmental and private provisions (in some cases, also non-profit provision). This method is not effective in observing the nuance of the political and economic dynamics in two-stages of outsourcing decisions: first, the choice of whether to produce services internally or externally (production choice) and second, the choice of sector with whom to contract—other governments, private firms, or nonprofit organizations (sector choice) (Ferris and Graddy 1986), as it is reasonable to expect that some financial and political factors may have different impacts in production and sector choices.

III. A FRAMEWORK OF OUTSOURCING DECISION

Drawing from the foregoing insights, we treat the service outsourcing decision as a two-stage dynamic process including the production choice and then the sector choice. The central thesis is that economic and political interests, along with other factors, may have different impacts in different stage of outsourcing decision.

The production choice is primarily influenced by cost-efficiency considerations as well as the nature of service. Economic environment factors, such as economy of scales, fiscal capacity, and market conditions are expected to have an impact on outsourcing decision. The sector choice is ultimately a political decision though largely constrained by service nature and market condition. At this stage, public expenditure is at the discretion of decision makers to achieve different purposes, for instance, to subsidize private sector or to maintain government control, to pursuing better quality and more diversity or to persist traditional service provision channels. The nature of service is also a defining factor in sector choice. Governments may be more likely to outsource peripheral services than core services, more likely to outsource business-type activities than governmental-activities, and more likely to outsource services that involve lower transaction cost in the contracting process (Donahue 1989; Stern 1990, 1993; Globerman and Vining 1996; Hodge 2000). In some cases, the characteristics of the service alone define the sector choice for service with a pure public good or coercive nature is not likely to be outsourced to a private firm.[1]

In this study, we focus on the effects of fiscal condition and political interests. Fiscal condition and Political interests are two important of the political-economic

[1] The authors would like to thank one reviewer's comment on effect of service nature on sector choice.

environment that relates to organizational production capacity. These fiscal and political factors may be measured in different dimensions, which may have different manifestations on the service provision decision. For instance, fiscal condition of a locality may be measured by revenue-raising capacity, the actual revenues collected from multiple tax bases, the availability of discretionary resources, or the change of capacity or actual revenues. Likewise, political factors of local service delivery may be reflected not only by partisan ideologies, but also by the level of political activity. By disentangling fiscal and political factors in multiple ways, we can examine their intricate effects on the choice of public service delivery. In particular, we will test the following hypotheses:

- *A government with better fiscal condition is less likely to outsource their service production (H_1);*
- *If a government with better fiscal condition does outsource, it is more likely to choose private sector services vendors (H_2) ;*
- *A government in an ideologically more conservative community is more likely to outsource its service (H_3);*
- *If a government with conservative ideology does outsource, it is more likely to do so to private sector vendors (H_4).*

IV. DATA AND METHODOLOGY

We test the above hypotheses in the context of Georgia counties during 2000-

2006.[2] The units of analysis are Georgia counties' service outsourcing decisions to 19 common public services from year 2001 to 2006 (see Table 1).[3] We use a sample of 10661 observations to examine the production choice model, that is, the probability that a county would outsource a particular service ("OUT"). Regarding the sector choice model, the sample size is 2870, where a local service is outsourced either to private vendors or other governments. The dependent variable is the probability that a service would be contracted to private vendors ("PRIVATE"), if outsourced.

The two-stage model of outsourcing decision is presented by the following equations:

[Table 1 about here]

$$For\ all\ local\ services\ provided,\quad Logit(OUT_{ijt}=1)=f(\mu_i,X_{ij(t-1)}) \tag{1}$$

$$If\ OUT_{ijt}=1,\quad Logit(PRIVATE_{ijt}=1)=g(\mu_i,X_{ij(t-1)}) \tag{2}$$

where

f = model for the production choice, g = model for the sector choice;

i = service, j = government, t = year, t-1= one-year time-lag;

μ_I = a fixed-effect for service i; *and*

X = a vector of independent variables.

Description and summary statistics of all variables are presented in Table 2 and

[2] The data of public service provision come from *Georgia Government Management Indicators Survey* (2001-2006). The major sources of fiscal data are *Georgia Local Government Finance Survey* (2000-2005) by Georgia DCA, and *Statistical Report* (2000-2005). The primary source of socioeconomic data is the *Georgia County Guide*. The election data come from the Office of the Secretary, State of Georgia.

[3] Georgia has 158 counties, among which there are 4 city-county consolidated governments, which are excluded from our data sample. Excluding missing data record, we get a sample of 19399 local service provision choices. Slightly more than half (10661 among 19399) of these services were provided, either locally or through outsourcing.

Table 3. A government's revenue-raising capacity is measured by logged per capita property tax base (PTCLG) and logged per capita sales tax base (STCLG). Property tax is the mainstay of local finance for Georgia counties, and so PTCLG is the major indicator of local fiscal capacity (Zhao, 2005). Local option sales tax is a smaller portion of local revenue than the property tax. However, Georgia counties with higher per capita sales tax bases have higher capability to "export" tax burdens to nonresidents, which may result in different preference of service level and provision choice (Zhao and Hou, 2008). The actual revenue of a county is measured by logged per capita total revenue (TRVLG), which includes both own-source revenues and all intergovernmental transfers. TRVLG also reflects the actual budget level, because Georgia counties are required to balance their annual budget. We also include the percentage of annual changes for these fiscal measures, denoted as PTCCH, STCCH, and TRVCH, respectively. A significant decrease of tax base or budget is an indicator of fiscal stress. An increase of tax base or budget, on the other hand, provides slack resources for local governments. We expect these fiscal variables to be negatively associated with the probability of outsourcing, because counties with higher fiscal capacity or expenditure levels may have higher organizational production capacity to provide services by themselves (H_1). For services that are outsourced, however, counties in better fiscal condition, especially with more slack resources, may be more likely to choose private sector service vendors to achieve better quality or diversity (H_2).

[Table 2 and Table 3 about here]

Political interests are represented by DEMREP, TURNOUT, and UNPAVED.

DEMREP is the ratio of Democratic vs. Republican votes in gubernatorial elections. It is expected to have negative impacts on both the production choice and the sector choice, because counties with predominantly Republican voters may have a pro-market tendency that favors outsourcing (H_3), especially to the private sector (H_4). TURNOUT is the percentage of population voting in gubernatorial elections. Counties with higher voting rates, regardless partisan preferences, may have lower probability in both production and sector choice models, because residents that are politically active may favor in-house or public service to maintain local control in service delivery. Lastly, UNPAVED is the percentage of local roads that are unpaved. Construction and maintenance of local roads are considered a key service provided by Georgia counties. With similar level of fiscal capacity, counties with higher UNPAVED may have a bias again public infrastructure. Thus UNPAVED may reflect a choice of low public service level and is expected to have positive impact on the sector choice.

In addition, we control for other variables that are considered important or typically included in past literature on local service provision. Metropolitan Statistical Areas (MSA) is often used as a differentiator of urban or rural areas, which may affect the economy of scale or availability of service options (Honadle 1984; Walls, Macauley, and Anderson 2005; Feiock, Clingermayer, Sherestha, and Dasse 2007). We also include population, personal income, educational level, and the percentages of black, senior, and population under poverty (Feiock and Clingermayor 2001, Morgan and Hirlinger 1991).[4]

[4] Personal income is highly correlated with educational level and was thus dropped from the models.

V. RESULTS

Regression results for the two-stage service provision choice are presented in Table 4. For both stages of choice, we include two separate models to account for two sets of fiscal variables to avoid multicollinearity between the actual budget level and revenue-raising capacity. For each model, we report coefficients, standard errors, and standardized odds-ratio of independent variables. In addition, to better interpret the results of Logit regressions, in Figure 1 & 2 we plot the predicted effects of several variables that are most influential to the dependent variables.

[Table 4, Figure 1 and Figure 2 about here]

- *The Production Choice (model P1 and P2)*

The empirical results of fiscal variables generally support our hypothesis H_1. Per capita budget level (TRVLG) and revenue-raising capacity (both PTCLG and STCLG) all have negative and significant coefficients, indicating that counties with better fiscal condition are less likely to outsource their services. With a slightly lower Akaike Information Criterion (AIC), Model P2 has a better fit than Model P1. This suggests that the probability of outsourcing is more directly related to revenue-raising capacity than the actual budget level, but the difference is marginal. In particular, the standardized odds-ratio for PTCLG is 0.787, that is, if PTCLG increases one standard deviation, the odds-ratio of outsourcing would decrease by a factor of 0.787. If PTCLG increases from its minimum to its maximum, the odds-ratio of outsourcing may decrease by a factor of

0.238.[5] Likewise, the overall magnitude of effect is about 0.416 for TRVLG and about 0.598 for STCLG. For the annual change of fiscal condition, PTCCH and STCCH both have negative coefficients as expected. The only unexpected finding is the positive and significant coefficient for TRVCH, which suggests that the probability of outsourcing is higher if a county has a sudden increase of budget level that is probably due to increase in intergovernmental transfers, because the increases of property tax and sales tax capacities do not have the same effect.

The results of political variables also support our hypothesis H_3. Democrat-Republican Ratio has a negative and significant coefficient in both P1 and P2, meaning that counties with strong Republican preference are more likely to outsource. This is consistent with our earlier expectation. The overall magnitude of the partisan effect is about 0.413, that is, the odds-ratio of outsourcing will decease by a factor of 0.413 for counties with mostly Democratic votes than for those with mostly Republican votes. The level of voter TURNOUT shows expected negative signs on both P1 and P2, but the coefficient is only significant in P1 (with a magnitude of 0.626). These results for TUNROUT reaffirms our assumptions that political competition hinders public decision-making and that active citizens do not like services provided by third parties. Results of several other variables also confirm our hypotheses on organizational production capacity. Counties with professional managers are less likely to outsource. The result is consistent with previous findings (i.e., Brown and Potoski 2003; Ni 2007) and supports our presumption that an appointed manager connotes better organizational capacity and

[5] The result is calculated assuming that PTCLG ranges from -3 standard deviation to +3 standard deviation, and so the magnitude of overall effect is 0.787^6 = 0.238.

has the preference of developing public service in-house to enhance their bureaucratic power. Counties run by appointed professional managers rather than elected commissioners may be less likely to outsource because of higher in-house organizational capacity. Counties in MSAs are less likely to outsource, probably because they tend to have higher level of scale economy.[6] Though metropolitan areas often offer more service-provider options, county level governments may be central government service providers to other lower level agencies (Hoene, Baldassare, and Shires 2002; Carr 2004). Counties with higher socioeconomic status (indicated by higher EDULEVEL, lower POVERTY, and less SENIOR) are less likely to outsource, probably because they have higher internal organizational capacity.

Overall, it is safe to say that results from the production choice model support our hypotheses that the decision of outsourcing is affected by both political interests and organizational capacity.

- *The Sector Choice (model S1 and S2)*

As is expected in hypothesis H_6, the sector choice is predominantly affected by political variables in both models (S1 and S2). First, although Democrat-Republican Ratio is not significant, its effect is picked up by the negative correlation of BLACK to private suppliers. Second, as expected, counties with higher level of public roads unpaved

[6] Feiock, Clingermayer, Sherestha, and Dasse 2007 found that cities in an MSA (both urban and suburban cities) are more likely to contract to profit-seeking firms than other cities as metropolitan areas offer more service-provider options, including for-profit providers. However, ICMA data shows that MSA urban cities are less likely to outsource while MSA suburban cities are more like to outsource (Walls, Macauley, and Anderson 2005). The focus of this study is on counties, which may have different outsourcing decision mechanism from that of cities because of their different services responsibilities, relative scale of economy, or roles in the interlocal service "market." For instance, vertical cooperation may occur between cities and counties when they are on the opposite side of interlocal exchange.

are more likely to select private sector vendors in outsourcing. The overall magnitude is 2.986 odds ratio. The results for BLACK and UNPAVED strongly support our hypothesis that counties that are more politically conservative are more like to outsource their services to private sector vendors *(H_4).* Fourth, the coefficient of voter TURNOUT has the expected sign but not significant. It seems that the activeness of citizenry has more impact on the production choice rather than on the sector choice. This result reflects that bipartisan citizen groups are effective at preventing externalizing service production when their interests of internalizing control converge; however, their impacts in sector choice decisions may be traded off due to their divergent interests in public or private sector vendors.

The effects of fiscal variables on the sector choice are at most marginal. With two sets of fiscal variables, model S1 and S2 are almost identical in their explanatory power, and they yield insignificant coefficients for most fiscal variables. The only exception is the annual change of sales tax capacity (STCCH), which has a positive and significant effect on private contracting, with an overall effect of 2.138 odds-ratio. It seems that governments with more discretionary resources are more likely to choose private sector service production. Another possible explanation is that sales tax base may not be a pure indicator of fiscal conditions but also an indicator of a county's role in the regional service market. Georgia counties with significant annual growth of sales tax capacity in recent years tend to be new regional sales centers in the south (Zhao and Hou, 2008). Far from major cities like Atlanta, these counties probably have higher organizational

capacity than most local governments nearby, and therefore they are less likely to contract to other governments for services.

A surprising finding from the sector choice models is that education level is very closely associated with private outsourcing. The overall effect is about 57.042 in odds-ratio. We find that in Georgia counties education level is highly correlated with personal income, and also positively related to conservative political ideology. It is possible that EDULEVEL in this context reflects an additional aspect of political interests associated with socioeconomic status. Professional management does not have a significant effect on sector choice. This confirms our expectation that organizational capacity is more important for the production choice than for the sector choice.

VI. CONCLUSION

Public service provision choice is a multifaceted, complicated decision. We disentangle the effects of fiscal conditions, political environments, and other institutional arrangements in the production and sector choice decisions with Georgia counties. The empirical results indicate that the effects of fiscal conditions and political interests vary in different stages of outsourcing decision.

Overall this study fills an important gap and helps resolve many of the perplexities in public administration literature. It will also help public managers contemplating outsourcing in confrontation of cost-efficiency incentives. First, our findings help better understand the nature of outsourcing in public organizations. Outsourcing is a complex, dynamic decision. At different stages of decision-making,

economic and political rationalities vary significantly. While in production choice, government decision weights more toward economic factors; in sector choice it is more likely to be affected by political considerations. Second, the findings help disentangle many aspects of the relationship between fiscal condition and outsourcing decision. Under fiscal stress, a government may choose to produce externally to gain cost-efficiency; with more slack resources, it may privatize to pursue service quality and diversity. Third, they help delineate the complex interests associated with outsourcing in local political environment. Outsourcing, though contending the general public's interest in local control, serves special interest groups' desires: politicians may use it to reward their patrons; bureaucrats may exploit it to enhance internal control; and special interest groups may leverage it to strengthen or expand their business or employment opportunities. Finally, the results also point to some of the new areas for future research efforts. Besides fiscal conditions and political interests, the study of the characteristics of different public services, the competitiveness of local public service markets, and the natural and institutional settings of governments (i.e. the comparative advantage of a locality in a regional service market) can certainly uncover some more ulterior patterns in local public service outsourcing decision. As providing high quality service to citizenry will be the unchangeable theme of public administration, more research effort in public service provision mechanisms will be indispensable.

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Table 1: Service provision alternatives (2001-2006)

Service Type	In-house delivery	Outsource to other gov.	Outsource to private	Not provided
Animal control	47.70	10.88	4.29	37.13
Building inspection	68.16	4.99	0.90	25.95
Building permits	78.64	3.79	0.20	17.37
Construction/code enforcement	73.05	3.79	0.80	22.36
Emergency medical services	58.08	15.87	21.56	4.49
Emergency 911	73.75	12.67	0.00	13.57
Fire protection	70.56	16.17	2.10	11.18
Health screening services	22.55	19.16	4.49	53.79
Jail	92.22	6.39	0.10	1.30
Law enforcement	99.40	0.40	0.00	0.20
Planning	67.17	9.68	3.49	19.66
Public hospital	2.99	33.83	3.59	59.58
Public transit	35.93	7.68	11.18	45.21
Senior citizen program	53.89	13.47	9.18	23.45
Wastewater collection	14.27	17.37	1.70	66.67
Wastewater treatment	12.48	19.16	1.60	66.77
Water distribution	25.45	23.05	1.60	49.90
Water supply	20.66	27.94	1.90	49.50
Water treatment	18.76	26.15	2.59	52.50

Table 2: Description of variables

Variable	Description
OUT	Outsourcing [1], inhouse prodcution[0]
PRIVATE	Outsourcing to private sector[1], to other governments [0]
MSA	Metropolitan Statistical Areas [1], otherwise [0]
POPLG	Population (log)
POPLG2	Square log-population
EDULEVEL	Percentage of population over 25 with 4-year college education
POVERTY	Percentage of population under poverty line
MANAGER	Professional manager [1], otherwise[0]
TRVLG	Per capita total revenue (log)
TRVCH	Annual change of per capita real total revevue
PTCLG	Per capita property tax base (log)
STCLG	Per capita sales tax base (log)
PTCCH	Annual change of per capita property tax base
STCCH	Annual change of per capita sales tax base
UNPAVED	Percentage of local roads unpaved
DEMREP	Ratio of Dem/Rep votes in gubernatoral elections
TURNOUT	Percentage of population vote in gubernatoral elections
BLACK	Percentage of black population
SENIOR	Percentage of population with age 65 or above

Note:

Table 3: Summary descriptives of production and section model

	Production model (n=10661, OUT=27%)				*Sector model (n=2870, PRIVATE=21%)*			
	Mean	St.D.	Min	Max	Mean	St.D.	Min	Max
MSA	0.30	–	0.00	1.00	0.27	–	0.00	1.00
POPLG	10.26	1.13	7.51	13.73	10.27	1.11	7.51	13.73
EDULEVEL	14.92	7.73	5.43	43.59	14.07	6.15	5.43	43.59
POVERTY	15.44	5.91	2.61	30.68	15.60	5.50	2.61	30.68
MANAGER	0.40	0.49	0.00	1.00	0.37	0.48	0.00	1.00
TRVLG	6.28	0.27	5.10	7.25	6.26	0.27	5.10	7.25
TRVCH	1.03	0.15	0.45	2.61	1.03	0.14	0.45	2.61
PTCLG	3.13	0.36	2.20	4.48	3.09	0.33	2.24	4.48
STCLG	1.94	0.72	-2.09	3.10	1.94	0.76	-2.09	3.10
PTCCH	1.05	0.11	0.52	1.77	1.05	0.10	0.65	1.60
STCCH	1.00	0.11	0.21	2.38	0.99	0.11	0.21	2.38
UNPAVED	27.00	16.68	0.20	66.70	26.29	17.04	0.20	64.40
DEMREP	0.73	0.46	0.20	3.65	0.72	0.42	0.20	3.65
TURNOUT	25.40	6.65	10.76	51.84	24.95	6.36	10.76	51.84
BLACK	26.45	17.64	0.12	85.79	25.83	17.85	0.12	85.79
SENIOR	10.08	5.02	0	26.58	10.27	4.91	0	3.28

Note: Fiscal measures are in constant 2000 dollar.

Table 4: Fixed-effects Logit regressions for the production and sector choice

Production:	*Model P1*			*Model P2*		
(OUT)	Coef.	St. E.	S.O.Ratio	Coef.	St. E.	S.O.Ratio
MSA	-0.363***	0.083	0.848	-0.437***	0.085	0.819
POPLG	-1.029***	0.363	0.312	-0.685*	0.378	0.460
POPLG2	0.054***	0.017	3.734	0.039**	0.018	2.591
EDULEVEL	-0.042***	0.007	0.720	-0.033***	0.007	0.774
POVERTY	0.027***	0.009	1.175	0.033***	0.009	1.212
MANAGER	-0.316***	0.058	0.856	-0.318***	0.058	0.856
TRVLG	-0.538***	0.112	0.864	–	–	–
TRVCH	0.420**	0.181	1.064	–	–	–
PTCLG	–	–	–	-0.666***	0.100	0.787
STCLG	–	–	–	-0.119***	0.051	0.918
PTCCH	–	–	–	-0.049	0.283	0.995
STCCH	–	–	–	-0.130	0.246	0.986
UNPAVED	-0.009***	0.002	0.856	-0.014***	0.003	0.794
DEMREP	-0.301***	0.104	0.870	-0.319***	0.103	0.863
TURNOUT	-0.012**	0.004	0.925	-0.004	0.005	0.975
BLACK	0.002	0.003	1.037	-0.002	0.003	0.966
SENIOR	0.013**	0.006	1.067	0.016***	0.006	1.083
AIC	*9180 (df = 10661)*			*9150 (df = 2870)*		
Sector:	*Model S1*			*Model S2*		
(PRIVATE)	Coef.	St. E.	S.O.Ratio	Coef.	St. E.	S.O.Ratio
MSA	-0.219	0.171	0.907	-0.282	0.177	0.882
POPLG	2.971***	0.882	26.730	2.999***	0.928	27.55
POPLG2	-0.164***	0.043	0.022	-0.165***	0.045	0.021
EDULEVEL	0.103***	0.016	1.886	0.110***	0.017	1.962
POVERTY	-0.009	0.018	1.049	0.010	0.018	1.055
MANAGER	0.039	0.116	1.019	.029	0.118	1.014
TRVLG	-0.007	0.236	0.998	–	–	–
TRVCH	-0.279	0.416	0.963	–	–	–
PTCLG	–	–	–	-0.150	0.213	0.951
STCLG	–	–	–	-0.038	0.098	0.971
PTCCH	–	–	–	-0.344	0.619	0.966
STCCH	–	–	–	1.142**	0.520	1.135
UNPAVED	0.011**	0.005	1.204	0.011**	0.005	1.200
DEMREP	0.241	0.256	1.108	0.295	0.162	1.124
TURNOUT	-0.001	0.010	0.995	-0.001	0.010	0.994
BLACK	-0.019***	0.006	0.709	-0.021***	0.007	0.684
SENIOR	0.018	0.012	0.917	0.016	0.012	0.922
AIC	*2290 (df = 2870)*			*2290 (df = 2870)*		

Fixed effects for the services are not reported in the table.

* Significance at the 1% level; ** at the 5% level; *** at the 1% level.

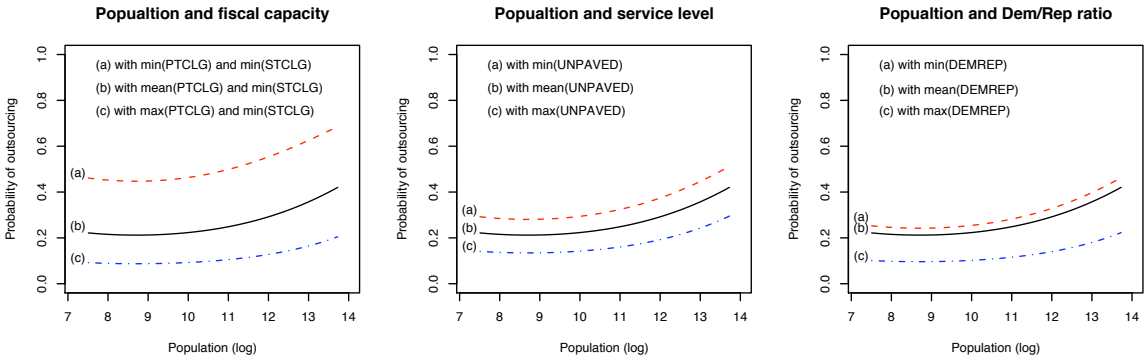

Figure 1: Predicted effects on the production choice

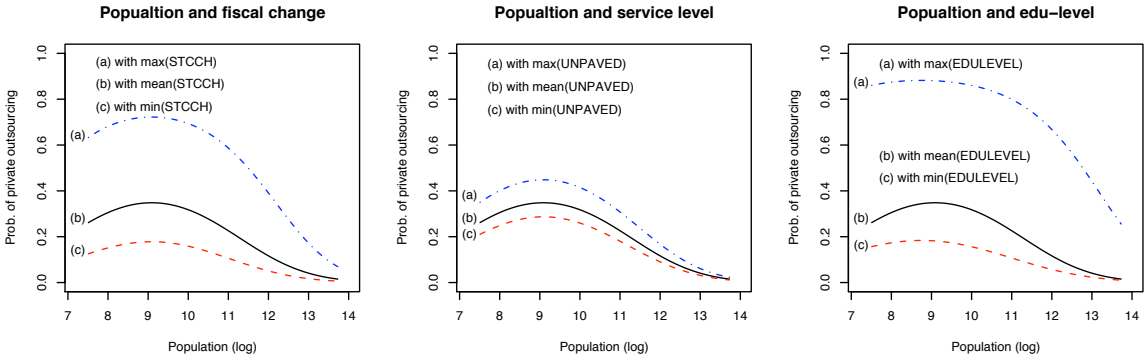

Figure 2: Predicted effects on the sector choice