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To: Mark Muro, Policy Director, Metropolitan Policy Program, Brookings Institution  
From: Darcy Rollins, Policy Analyst and Antoniya Owens, Research Assistant  
Date: March 23, 2006  
Re: Empirical evidence of the effects of government fragmentation

On March 14, 2006 you requested that the New England Public Policy Center identify recent empirical research on the following subjects: (A) the relationship between government fragmentation and population decentralization and/or development dispersion; (B) the relationship between government fragmentation and regional economic performance; (C) the extent to which intergovernmental tax competition is a “driving” factor in residential and/or commercial decentralization. This memo identifies and, whenever possible summarizes recent empirical research on these subjects. Copies of available papers are appended.

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#### **A. Research on the relationship between government fragmentation and population and development dispersion**

The following studies investigate empirically the relationship between government fragmentation and population dispersion. Government fragmentation refers to the dispersion of centralized government power to multiple, lower units of government. The research findings generally converge on the conclusion that fragmented government structure correlates with wider dispersion, i.e. more sprawl.

Carruthers J. and Ulfarsson G. “Fragmentation and Sprawl: Evidence from Interregional Analysis.” *Growth and Change*, 2002. (Attached)

By examining the relationship between governmental fragmentation and several measurable outcomes of urban development (density, urbanized land area, property value, public expenditures on infrastructure), this paper evaluates the efficacy of state and regional planning programs aimed at reducing urban sprawl. The four dimensions are modeled in a simultaneous equations framework, providing substantive evidence on how fragmentation and other exogenous factors affect metropolitan growth patterns. Fragmentation is found to be associated with lower densities and higher property values, but has no direct effect on public service expenditures; less fragmented metropolitan areas occupy greater amounts of land due to the extensive annexation needed to bring new development under the control of a central

municipality. The findings of the analysis lend support to state and regional planning efforts aimed at increasing cooperation among local governments, but also suggest that further research is needed in order to evaluate whether or not they produce their intended effects.

Carruthers, John. "Growth at the Fringe: The Influence of Political Fragmentation in United States Metropolitan Areas." *Papers in Regional Science*, 2003. (Attached)

Abstract: "Urban sprawl has evolved into an exceptionally complex public policy problem in the United States over the course of recent decades. One factor that has made it particularly difficult to deal with is its relationship to the fragmented structure of the American system of land use governance. Acting on behalf of their residents, local governments enact land use regulations to secure lifestyle preferences for low density, suburban living environments while at the same time ensuring a high quality of public service provision. This article examines the effect of this process on metropolitan spatial structure through a series of econometric models designed to test the following hypothesis: that fragmentation promotes sprawl by increasing the proportion of growth that occurs at the unincorporated urban fringe. The estimation results reveal substantive evidence that municipal fragmentation and several related factors—including special districts, infrastructure investments, and white flight processes—have a significant and enduring effect on the growth of outlying areas."

Razin, Eran and Rosentraub, Mark. "Are Fragmentation And Sprawl Interlinked? North American Evidence." *Urban Affairs Review*, 2000.

Abstract: "The association between municipal fragmentation and suburban sprawl is examined, based on a cross-sectional analysis of all U.S. and Canadian metropolitan areas with more than 500,000 residents in the 1990s. Results reveal that this association is rather weak but significant and is sustained even when the less fragmented and more compact Canadian metropolitan areas are excluded from the analysis. The impact of residential sprawl on fragmentation is significant, but fragmentation does not predict sprawl. Low levels of fragmentation do not guarantee compact development, but lack of excessive fragmentation might be a precondition for compact development in North America."

Lewis, Paul. *Shaping Suburbia: How Political Institutions Organize Urban Development*, 1996.

Lewis applies a political fragmentation index (PFI) to measure political fragmentation across states. The PFI uses metropolitan areas as basic units of analysis and applies a weighting scheme to reflect the differing responsibilities of the local and state government levels in different states. Lewis finds that metropolitan fragmentation is associated with weaker dominance of central cities and leads to inequality. Evidence for the hypothesis that fragmentation leads to greater degrees of sprawl is weaker, when other relevant factors are held constant.

Byun, Pillsung and Esparza, Adrian. "A Revisionist Model of Suburbanization and Sprawl: The Role of Political Fragmentation, Growth Control, and Spillovers." *Journal of Planning Education and Research*, 2005.

Abstract: "This article proposes a process-based conceptual model that explains sprawl in the United States since the 1970s. In contrast to traditional explanations that look to "natural," or ecological, processes, our explanation of sprawl focuses on the local regulatory environment

and the ways in which residents and homebuilders respond to it. We look at the way in which growth controls—given fragmentation—produce "spillovers" and whether spillovers have been a principal force (process) fueling suburbanization and exurbanization in recent decades. Although the role of spillovers has received some attention recently, few scholars have launched comprehensive analyses of its impact on the contemporary urban landscape. Our spillovers-based explanation of sprawl will likely hold for metropolitan regions in which growth management/control has been imposed in the absence of statewide or regionwide coordination.”

Some evidence suggests that the problems of sprawl and income redistribution are less severe when local government is consolidated. It has been argued that fragmented local governments are less successful at addressing issues associated with urban sprawl (housing, environmental, and transportation problems). A broad discussion of the findings of these and other authors can be found in Lewis (1998).

- Downs, Anthony. *New Vision for Metropolitan America*. Washington: Brookings Institution. 1994.
- Lewis, Paul. *Deep Roots: Local Government Structure in California*. Public Policy Institute of California. 1998. (Attached)
- Rusk, David. *Cities Without Suburbs* (2nd Ed.). Washington: Woodrow Wilson Center. 1995.
- Savitch, H. V. and Ronald K. Vogel. “Paths to New Regionalism”, *State and Local Government Review*. 2000. (Attached)

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## **B. Research on the relationship between government fragmentation and regional economic performance**

There are two dominant, traditional theories explaining the relationship between the degree of government fragmentation and economic development: a polycentric model and the centrist model. Recently, a regionalist perspective has been developed. Following a brief explanation of each theory, empirical research supporting the specific perspective is listed.

The **polycentric model** holds that a fragmented government structure – multiple units of government serving the same region - supports economic growth. Sometimes called the public choice model, this theory argues that a fragmented government structure offers greater choice among government-provided service and tax/fee bundles for residents and firms with diverse preferences. Further, polycentrists argue that fragmentation constrains government costs and elevates the performance of local government through competition. An increase in the level of political representation and participation by individuals has been attributed to government fragmentation. (Nelson and Foster, 1999) Polycentrists believe that these outcomes support economic growth. Empirical studies that correlate a high degree of government fragmentation with economic growth include:

Akai, Nobuo and Masayo Sakata. "Fiscal Decentralization Contributes To Economic Growth: Evidence from State-Level Cross Section Data for the United States." *Journal of Urban Economics* . 2002. (Attached)

Abstract: "This paper provides new evidence that fiscal decentralization contributes to economic growth, in contrast to previous studies that have denied such a contribution. Our new state level data for the United States enable us to estimate the effect of fiscal decentralization more objectively than previously, because the data set exhibits little cultural, historical, and institutional variation. We also provide the finding that the definition of fiscal decentralization is important in relation to the effect of fiscal decentralization on economic growth."

Eberts, Randall and Timothy Gronberg. "Structure, Conduct and Performance in the Local Public Sector." *National Tax Journal*. 1990. (Attached)

This study analyzes the relationship between the number of local governments in a jurisdiction and their efficiency and size, as measured through public expenditures. For the suburban public sector, increased jurisdictional fragmentation and decreased concentration are negatively related to the ratio of own-source revenues to suburban income. Multiple governments are found to decrease the relative cost of government in suburban areas, presumably making the community more attractive to households and investors.

Stansel, Dan. "Local Decentralization and Local Economic Growth: A cross-sectional Examination of US Metropolitan Areas." *Journal of Urban Economics*. 2004. (Attached)

Abstract: "This paper builds on the growing empirical literature that explores the relationship between government structure and economic growth. It uses a new data set of 314 US metropolitan areas to examine the relationship between local decentralization and local economic growth. The results indicate a negative relationship between the central-city share of metro area population and economic growth and a positive relationship between both the number of municipalities per 100,000 residents and the number of counties per 100,000 residents and economic growth. Those findings provide support for the hypothesis that decentralization enhances economic growth."

In contrast, **centrists** assert that governmental consolidation supports economic growth. Centrists argue that large, multi-purpose governments are most efficient in administration and production and are able to address regional problems and prevent costly duplication of services. Further, business investors may be discouraged and confused by multiple layers of government. Centrists argue that consolidated systems have a larger pool of resources at their disposal and, therefore, can offer a wider variety of desirable services to residents and businesses than a fragmented system comprised of small municipalities (Nelson and Foster, 1999). Empirical studies that correlate government consolidation with economic growth include:

Hamilton, David, David Miller and Jerry Paytas. "Exploring the Horizontal and Vertical Dimensions of the Governing of Metropolitan Regions." *Urban Affairs Review*. 2004

Abstract: "The study of metropolitan areas too often ignores the dynamic relationship at the intersection of state and local governments. This study suggests a two-dimensional typology of

governance in metropolitan regions. The authors found that governance affects the long-term competitiveness of the metropolitan economy. Governance does not determine economic outcomes but reduces the ability to adapt. The worst combination for metropolitan competitiveness is decentralization within regions where there is a centralized state government.”

Nelson, Arthur and Kathryn Foster. “Metropolitan Governance Structure and Income Growth.” *Journal of Urban Economics*. 1999 (Attached)

This study investigates the relationship between metropolitan governance structures and growth in personal per capita income in metropolitan statistical areas (MSAs) and provides an overview of literature on the subject. The study has two main findings that support centrist and regionalist (see discussion, below) perspectives: first, as decision making becomes fragmented, growth in personal income declines. Second, the presence of a regional government has a positive effect on personal income growth, even when fragmentation exists. The authors conclude that that individual welfare appears to be advanced by the presence of more consolidated governments and a governance structure capable of coordinating decisions among local governments for regional benefit.

Zhang, Tao and Heng-fu Zou. “Fiscal Decentralization, Public Spending and Economic Growth in China.” *Journal of Public Economics*. 1997. (Attached)

Abstract: “This study of decentralization in China demonstrates that the allocation of fiscal resources between the central and local governments has affected economic growth since reforms in the late 1970s. The study finds that a higher degree of fiscal decentralization of government spending is associated with lower provincial economic growth in China over the past fifteen years. This consistently significant and robust result is reported as surprising in light of the argument that fiscal decentralization usually makes a positive contribution to local economic growth.”

Other empirical research and case studies that were not reviewed but may support the centrist model include:

- Ward, R. “The Impact of Metropolitan Fragmentation on Economic Development.” *Urban Resources*, 1987.
- Frisken, F. “The Contributions of Metropolitan Government to the Success of Toronto’s Public Transit System: An Empirical Dissent from the Public Choice Paradigm.” *Urban Affairs Quarterly*, 1991.
- Dolan, D. “Fragmentation: Does it Drive Up the Costs of Government?” *Urban Affairs Quarterly*, 1990.

In recent years a third **regionalist** perspective has downplayed the importance of the actual fragmentation of governments and focused instead on the economic and social advantages offered by the existence of region-wide mechanisms for collaborative decision making. Regionalists contend that

the number, size, or arrangements of local governments are relatively incidental when dealing with regional issues. Their primary concern is the role of metropolitan governance structures in making decisions on issues of regional significance (Nelson and Foster, 1999). The following case studies and books likely investigate the regionalist model of the relationship between government structure and economic growth:

- Dodge, W. R. *Regional excellence*. National League of Cities. 1996.
- Nunn, S., and Rosentraub, M. S. “Dimensions of Inter-jurisdictional Cooperation.” *Journal of the American Planning Association*. 1997.
- Orfield, M. *Metropolitics: A Regional Agenda for Community Stability*. Brookings Institution. 1997.
- Pastor, M., Jr., Dreier, P., Grigsby, E., and Lopez-Garza, M. *Growing Together: Linking Regional and Community Development in a Changing Economy*. Los Angeles: Occidental College, International and Public Affairs Center. 1997
- Yaro, R. D., and Hiss, T. *A Region at Risk: The Third Regional Plan for the New York-New Jersey-Connecticut Metropolitan Area*. Island Press. 1996.

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### **C. Research on the extent to which intergovernmental tax competition drives residential and/or commercial decentralization**

Empirical research specifically on the extent to which intergovernmental tax competition drives residential and commercial decentralization is limited. Most focuses on the impact of sprawl on government fiscal policy, not vice versa. Some literature exists on the relationship of property tax policy and decentralization (Breuckner 2000); a body of research in this subject argues for alternative taxation methods to curb sprawl (for example, Daniels 2001, Gihring 1999).

Brueckner, Jan. “Property Taxation and Urban Sprawl.” *Paper for presentation at the Lincoln Institute Conference on Property Taxation and Local Government Finance Scottsdale, Arizona, 2000*. (Attached)

Abstract: “This chapter explores the connection between property taxation and urban sprawl. It is shown that the property tax's tendency to reduce the intensity of land development, which follows from its taxation of improvements, causes a city to expand spatially in order to accommodate its population. Since the resulting expansion is socially inefficient, the analysis suggests that property taxation may contribute to undesirable urban sprawl. Using a different model, the second part of the paper shows that, by generating tax liabilities that lie well below the marginal cost of urban infrastructure, the property tax makes urban development appear artificially cheap. Excessive development then occurs, with city populations and land areas expanding beyond socially desirable levels.”

Daniels, T. L. "Coordinating Opposite Approaches to Managing Urban Growth and Curbing Sprawl." *American Journal of Economics and Sociology*, 2001.

Abstract: "The purchase of development rights to farmland and open space has recently gained in popularity as a growth management tool. On the other hand, land value taxation, a modification of Henry George's Single Tax, would tax land more heavily than improvements, thus encouraging the development of land. While land value taxation and the purchase of development rights appear to be opposing fiscal policies, they could be employed together as part of a regional planning strategy to encourage in-fill development within and near cities and to curb sprawl by retaining farm, forest, and ranch lands."

Gihring, T.A. "Incentive Property Taxation: A Potential Tool for Urban Growth Management." *Journal of the American Planning Association*, 1999.

The literature on the subject of the importance of taxes to location decisions and economic growth generally is exhaustive, and largely inconclusive. Early studies of the subject found that taxes had only a limited effect of location decisions and growth, while the more recent consensus is that that taxes do matter, but not that much. It seems that taxes matter most in inter-metropolitan competition. Still, no studies have been able to show definitely how much taxes matter. Research suggests that business location decisions are based on factors other than taxes, including access to markets, the availability of skilled and educated labor force, and infrastructure. The articles cited below provide extensive reviews of the empirical literature on the subject:

- Mark, Stephen, Therese McGuire, and Leslie Papke. "What Do We Know About The Effect of Taxes On Economic Development? Lessons from the Literature for the District of Columbia." Prepared for the District of Columbia Tax Revision Commission. 2005.
- Lynch, Robert. *The Effects of State and Local Taxes and Public Services on Economic Development*. Economic Policy Institute.
- The Effects of State and Local Public Policies on Economic Development. *The New England Economic Review*. March/April 1997.

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The Maine State Planning Office published two studies in the late 1990s's that indirectly considered the question of whether or not high tax rates encouraged decentralized residential development. However, neither study attempts to empirically correlate intergovernmental tax competition or even tax levels with household location decisions.

*The Cost of Sprawl*. Maine State Planning Office. 1997.

This report quantified the cost of decentralization in Maine and provided anecdotal evidence that lower tax rates in rural communities may have contributed to household relocation from central to rural areas.

*Why Households Move: Two Maine Surveys*. Maine State Planning Office. 1999 (Attached)

Survey of over 600 Maine households moving investigates the demographic profile and preferences of movers. The survey included a question about the extent to which taxes influenced relocation choice. While many of the survey respondents identified high taxes as a factor for moving, the report did not cite it as one of the more significant reasons for moving.

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**D. Other relevant research: The relationship between governmental fragmentation and citizen satisfaction with community**

In the process of fulfilling the specific research request, we identified another area of research that may be of interest to your work: the relationship of government consolidation/structure and citizen satisfaction with their host community.

The papers cited below empirically investigate the relationship between citizen satisfaction, government structure and government services provided, factors which influence household location decisions. Psychological attachment to one's community was found to be much higher in places with consolidated government structures compared to fragmented ones (Lowrey, Lyons, DeHoog 1992). Citizens in consolidated settings have greater satisfaction with services. Satisfaction is indirectly related to government structure: satisfaction is a factor of psychological attachment to the community and the number of services provided is related to government structure, and more services are provided by consolidated governments (Lowrey, Lyons, DeHoag 1990). While the level of government consolidation itself has little direct affect on service satisfaction, it does effect its variance: satisfaction variance is greater under a fragmented system. A broad discussion of the findings of these and other authors can be found in Lowery (2001).

- Lowery, David, Lyons, William E., and DeHoog, Ruth H. "Citizenship and Community Attachment in the Empowered Locality: An Elaboration, a Critique, and a Partial Test." *Urban Affairs Quarterly*, 1992.
- Lowery, David, Lyons, William E., and DeHoog, Ruth H. "Institutionally-Induced Attribution Errors: Their Composition and Impact on Citizen Satisfaction with Local Governmental Services." *American Politics Quarterly*, 1990.
- DeHoog, Ruth H., Lowery, David, and Lyons, William E. "Citizen Satisfaction with Local Government: A Test of Individual, Jurisdictional, and City Specific Explanations." *Journal of Politics*, 1990.
- Lowery, David. "Metropolitan Governance Structures from a Neo-progressive Perspective." *Swiss Political Science Review*, 2001. (Attached)