The Effects of Fiscal Decentralization on the Size of Government: A Meta-Analysis

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This study examines the effects of decentralization on the size and scope of government. I use meta-regression analysis in this article to elucidate the impact of differences in study design on study findings. The results indicate that the study's unit of analysis and choice of decentralization measure impact estimates of the effect of decentralization on government size. In particular, studies utilizing the local unit of analysis and federalism measure of decentralization are more likely to find that government shrinks as decentralization increases while studies utilizing the fragmentation measure appear more likely to find the opposite result.

Government big enough to supply everything you need is big enough to take everything you have. . . . The course of history shows that as a government grows, liberty decreases.—Thomas Jefferson

Governments can err, Presidents do make mistakes, but the immortal Dante tells us that divine justice weighs the sins of the cold-blooded and the sins of the warm-hearted in different scales. Better the occasional faults of a Government that lives in a spirit of charity than the constant omission of a Government frozen in the ice of its own indifference.—Franklin D. Roosevelt

In a well-known essay published in 1651, British philosopher Thomas Hobbes argues for the creation of government ruled by a supreme monarch. Hobbes contends that left to their own devices in the absence of a strong ruler, human beings would be prone to violence and brutishness. Hobbes names his nation-state, "Leviathan," after the sea monster referred to in the Bible. While Hobbes's Leviathan is just as large and powerful as the Bible's, its intentions are benevolent, its size and power a necessity of civilization. Nevertheless, Hobbes's choice of moniker for government reflects a certain wariness and ambivalence about its breadth and scope.

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The same mixed feelings toward government are reflected in economics. On one side of the coin are models of public choice such as the median voter model, first articulated by Black,[1] which suggest some type of aggregation of individual preferences to some higher level. On the other side of the coin are theories proposed by Brennan and Buchanan[2] and Tiebout,[3] which hold that the behavior of government is more likely to mirror that of private firms rather than more benevolent conduct.

One particular strain of this literature involves decentralization as a check on the size of government. This view is articulated by Brennan and Buchanan's groundbreaking work, *The Power to Tax*. In *The Power to Tax*, Brennan and Buchanan[4] declared that, "Total government intrusion into the economy should be smaller, *ceteris paribus*, the greater the extent to which taxes and expenditures are decentralized, the more homogenous, are the smaller units, the smaller the jurisdictions, and the lower the net locational rents." In the fiscal federalism literature, this theory has become known as the Leviathan hypothesis. On the other hand, the perpetual debate about consolidation of local governments also suggests that decentralization can increase the size of government through duplication and overlap of services.

The empirical evidence on the effects of decentralization on the size of government is mixed. This paper attempts to clear the air as it comes to this relationship. First, it reviews and summarizes a few studies that have examined this relationship. Second, it analyzes the differences between study findings through the method of meta-regression analysis (MRA). To my knowledge, it is the first to study this relationship between decentralization and government size using MRA. Ultimately, the goal of this study is to shed light on the mediating factors involved in the relationship between decentralization and government size. Under what conditions is decentralization likely to increase or reduce the size of government? As governments look to tighten their belts, some may find decentralization or consolidation may have differing results based on the type of decentralization pursued or the unit pursuing the decentralization. My results indicate that study design elements as the unit of analysis and the measure of decentralization can impact the results of studies examining this relationship.

This paper begins with a review of the literature on the effects of decentralization on the size and scope of government, before presenting the meta-regression methodology. The third section discusses the variables used in this analysis. The fourth section presents results and the fifth section concludes and discusses the results.

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1. D. Black, "On the Rationale of Group Decision-Making," *Journal of Political Economy* 56 (1948): 23–34.

2. G. Brennan and J. M. Buchanan, "Towards a Tax Constitution for Leviathan," *Journal of Public Economics* 8 (1977): 255–273. G. Brennan and J. M. Buchanan, *The Power to Tax: Analytical Foundations of a Fiscal Constitution* (Cambridge, UK: Cambridge University Press, 1980).

3. C. M. Tiebout, "A Pure Theory of Local Expenditures," *Journal of Political Economy* 64, no. 5 (1956): 416–424.

4. Brennan and Buchanan (1990), 185.

LITERATURE REVIEW

While Brennan and Buchanan are credited with the appellation of "Leviathan" to public finance, studies of the relationship between decentralization and the size of government were in existence before the term was coined. Tiebout[5] was among the first to argue that governmental bodies—his focus was on local governments—may operate in much the same way private firms do in a market. Tiebout argued that residents of a county, municipality, state, or other jurisdiction could shop for a set of public services in much the same way they shopped for consumer goods. In a later article, Ostrom, Tiebout, and Warren[6] suggested that within this market scheme, jurisdictions may compete with each other by offering different sets of public service levels and taxes. Stigler[7] and Aaron[8] argued competition forced local governments to reduce their expenditures in the Stigler case or expand their expenditures in the Aaron case in order to retain their tax base.

In *Fiscal Federalism*, Oates[9] summarized both the case for decentralized government and the case for centralized government, and argued instead for some mixture of the two, called a federal system:

> From an economic standpoint, the obvious attraction of the federal form of government is that it combines the strengths of unitary government with those of decentralization. Each level of government, rather than attempting to perform all the functions of the public sector, does what it can do best. The central government presumably accepts primary responsibility for stabilizing the economy, for achieving the most equitable distribution of income, and for providing certain public goods that influence significantly the welfare of all members of society. Complementing these operations, subcentral governments can supply those public goods and services that are of primary interest only to the residents of their respective jurisdictions.

Among the benefits of decentralization are the promotion of more efficient methods of production through competition and the promotion of better decision-making through a more explicit recognition of the costs of public programs. Oates also presented empirical evidence at the country level demonstrating a negative though insignificant relationship between centralization and central government revenues.

Baird and Landon[10] presented some of the earliest empirical work on fiscal federalism in 1972. Their measure of decentralization, which is in the form of a count of government units within a larger government unit or area, has become known as a fragmentation

5. Tiebout (1956).

6. V. Ostrom, C. M. Tiebout, and R. Warren, "The Organization of Government in Metropolitan Areas: A Theoretical Inquiry," *American Political Science Review* 55, no. 4 (1961): 831–842.

7. G. J. Stigler, "The Tenable Range of Functions of Local Government," in *Private Wants and Private Needs*, ed. E. S. Phelps (New York: Norton Publishers, 1965), 167–176.

8. H. J. Aaron, "Local Public Expenditures and the Migration Effect," *Western Economic Journal* 7 (1969): 385–390.

9. W. E. Oates, *Fiscal Federalism* (New York: Harcourt Brace Jovanovich Inc., 1972): 14.

10. R. K. Baird and J. H. Landon, "Political Fragmentation, Income Distribution, and the Demand for Government Services," *Nebraska Journal of Economics* 11 (1972): 171–184.

measure. They found that greater fragmentation was associated with higher government expenditures. Wagner and Weber[11] looked at the same issue. They found a negative and significant relationship between the number of municipalities in a county and the total expenditures of the county.

Brennan and Buchanan generalized beyond the local level, arguing that all forms of government acted as "Leviathans." Their model depicted government as a revenue-maximizer in much the same way private firms are profit-maximizers. Decentralization is necessary to create competition for the government monopolist. Empirical evidence of the Leviathan hypothesis using time-series data was offered by Marlow.[12] Marlow found that decentralization had a negative impact on the growth of total public expenditures, an aggregate measure comprised of expenditures at the federal, state, and local levels. His analysis indicated that the measure of government size and the data analysis technique used had an impact on the results of the study. Saunders[13] attempted to explain international differences in public expenditures through an analysis of Organisation for Economic Co-operation and Development (OECD) countries. He found a dummy variable indicating nations with federal systems was a significant predictor of lower public expenditures, and hence evidence of the Leviathan hypothesis. Schneider[14] measured government size using public-sector employment levels and wage rates and found support for the Leviathan hypothesis. Other studies documenting a negative association between fiscal decentralization and public sector size include Pommerehne,[15] Giertz,[16] Sjoquist,[17] DiLorenzo,[18] Nelson,[19] Schneider,[20] Zax,[21]

11. R. E. Wagner and W. E. Weber, "Competition, Monopoly, and the Organization of Government in Metropolitan Areas," *Journal of Law and Economics* 18, no. 3 (1975): 661–684.

12. M. L. Marlow, "Fiscal Decentralization and Government Size," *Public Choice* 56, no. 3 (1988): 259–269.

13. P. Saunders, "Explaining International Differences in Public Expenditure: An Empirical Study," *Public Finance* 43, no. 2 (1998): 271–291.

14. M. Schneider, "Intercity Competition and the Size of the Local Public Work Force," *Public Choice* 63, no. 3 (1989a): 253–265.

15. W. W. Pommerehne, "Quantitative Aspects of Federalism: A Study of Six Countries," in *The Political Economy of Fiscal Federalism*, ed. W. E. Oates (Lexington, MA: Lexington Books, 1977), 275–355.

16. J. F. Giertz, "Centralization and Government Budget Size," *Publius* 11, no. 1 (1981): 119–128.

17. D. L. Sjoquist, "The Effect of the Number of Local Governments on Central City Expenditures," *National Tax Journal* 35, no. 1 (1982): 79–87.

18. T. J. DiLorenzo, "Economic Competition and Political Competition: An Empirical Note," *Public Choice* 40, no. 2 (1983): 203–209.

19. M. A. Nelson, "An Empirical Analysis of State and Local Tax Structure in the Context of the Leviathan Model of Government," *Public Choice* 49, no. 3 (1986): 283–294.

20. M. Schneider, "Fragmentation and the Growth of Local Government," *Public Choice* 48, no. 3 (1986): 255–263.

21. J. S. Zax, "The Effects of Jurisdiction Types and Numbers on Local Public Finance," in *Fiscal Federalism: Quantitative Studies*, ed. H. S. Rosen (Chicago: University of Chicago Press, 1988), 79–106.

Grossman,[22] Schneider,[23] Eberts and Gronberg,[24] Joulfaian and Marlow,[25] Ehdaie,[26] Stein,[27] Bates and Santerre,[28] De Mello,[29] Lalvani,[30] Rodden,[31] Campbell,[32] Chen,[33] Zhu and Krug,[34] Brülhart and Jametti,[35] and Craw.[36]

There is also reason to believe that decentralization may actually increase the size of government. This paradigm is reflected in perpetual debates about consolidation of special districts. One reason why consolidation could be negatively associated with government size is economies of scale. With economies of scale, expansion is associated with cost savings. Duplication and overlap of public services is also a concern with decentralization, which would lead to higher levels of total public expenditures.[37]

22. P. J. Grossman, "Fiscal Decentralization and Government Size: An Extension," *Public Choice* 62, no. 1 (1989): 63–69.

23. M. Schneider, "Intermunicipal Competition, Budget-Maximizing Bureaucrats, and the Level of Suburban Competition," *American Journal of Political Science* 33, no. 3 (1989b): 612–628.

24. R. W. Eberts and T. J. Gronberg, "Structure, Conduct, and Performance in the Local Public Sector," *National Tax Journal* 43, no. 2 (1990): 165–173.

25. D. Joulfaian and M. L. Marlow, "Centralization and Government Competition," *Applied Economics* 23 (1991): 1603–1612.

26. J. Ehdaie, "Fiscal Decentralization and the Size of Government: An Extension with Evidence from Cross-Country Data," Working Paper No. 1387 (Washington, DC: The World Bank, 1994); available from: *http://www-wds.worldbank.org.libezproxy2.syr.edu/external/default/WDSContentServer/IW3P/IB/1994/12/01/000009265_3970716142007/Rendered/PDF/multi0page.pdf*: accessed 25 February 2008.

27. E. Stein, "Fiscal Decentralization and Government Size in Latin America," *Journal of Applied Economics* 2, no. 2 (1999): 357–391.

28. L. J. Bates and R. E. Santerre, "Testing the Leviathan Hypothesis: An I/O Note," Paper presented at the Proceedings of the American Society of Business and Behavioral Sciences Track Section of Economics and Economic Geography, Las Vegas, NV, February 2000.

29. L. de Mello, "Fiscal Federalism and Government Size in Transition Economies: The Case of Moldova," *Journal of International Development* 13 (2001): 255–268.

30. M. Lalvani, "Can Decentralization Limit Government Growth? A Test of the Leviathan Hypothesis for the Indian Federation," *Publius* 32, no. 3 (2002): 25–45.

31. J. Rodden, "Reviving Leviathan: Fiscal Federalism and the Growth of Government," *International Organization* 57, no. 4 (2003): 695–729.

32. R. J. Campbell, "Leviathan and Fiscal Illusion in Local Government Overlapping Jurisdictions," *Public Choice* 120 (2004): 301–329.

33. C. Chen, "Fiscal Decentralization, Collusion and Government Size in China's Transitional Economy," *Applied Economics Letters* 11 (2004): 699–705.

34. Z. Zhu and B. Krug, "Is China a Leviathan?" Working Paper (Rotterdam, the Netherlands: Erasmus Research Institute of Management, November 2004); available from: *http://publishing.eur.nl/ir/repub/asset/7175/ERS%202005%20087%20ORG.pdf*: accessed 7 February 2009.

35. M. Brülhart and M. Jametti, "Does Tax Competition Tame the Leviathan?" Working Paper (Lausanne, Switzerland: Centre for Economic Policy Research, 2008); available from: *http://www.chass.utoronto.ca/cepa/Mariojamettipaper.pdf*: accessed 7 February 2009.

36. M. Craw, "Taming the Local Leviathan: Institutional and Economic Constraints on Municipal Budgets," *Urban Affairs Review* 43 (2008): 663–690.

37. Schneider (1986).

Crook[38] also argues that decentralization may increase government spending due to capture by local elites, a problem that is particularly salient in the developing world.

Martin and Wagner[39] found evidence that decentralization was positively associated with the size of the public sector. Their results are supported by Santerre,[40] who found that greater interjurisdictional competition was associated with higher city expenditures and government size. Country-level time-series results presented by Ashworth, Galli, and Padovano[41] measuring fiscal decentralization in terms of revenue decentralization also suggested a positive link between decentralization and the size of the public sector. Other studies finding a positive relationship between decentralization and government size include Palumbo,[42] Forbes and Zampelli,[43] Dolan,[44] Berberich and Metzler,[45] Yao,[46] and Berry.[47]

This necessarily brief review has highlighted the fact that a wide variety of variables and regression techniques have been used to model this relationship between fiscal decentralization and government size. As seen in Table 1,[48] which summarizes every study

38. R. C. Crook, "Decentralization and Poverty Reduction in Africa," *Public Administration and Development* 23 (2003): 77–88.

39. D. T. Martin and R. E. Wagner, "The Institutional Framework for Municipal Incorporation: An Economic Analysis of Local Agency Formation Commissions in California," *Journal of Law and Economics* 21, no. 2 (1978): 409–425.

40. R. E. Santerre, "Leviathan or Median Voter: Who Runs City Hall?" *Eastern Economic Journal* 17, no. 1 (1991): 5–14.

41. J. Ashworth, E. Galli, and F. Padovano, "Decentralization as a Constraint to Leviathan: A Panel Cointegration Analysis," Working Paper (Pavia, Italy: Società Italiana di Economia Publica e Territoriale, Università di Pavia); available from: *http://www.unipv.it/websiep/wp/530.pdf*: accessed 7 February 2009.

42. G. Palumbo, "City Government Expenditures and City Government Reality: A Comment on Sjoquist," *National Tax Journal* 36, no. 2 (1983): 249–251.

43. K. F. Forbes and E. M. Zampelli, "Is Leviathan a Mythical Beast?" *American Economic Review* 79, no. 3 (1989): 568–577.

44. D. A. Dolan, "Local Government Fragmentation: Does It Drive Up the Cost of Government?" *Urban Affairs Quarterly* 26, no. 1 (1990): 28–45.

45. C. Berberich and J. M. Metzler, "Fiscal Federalism and the Leviathan: The Evil Beast or the Lesser Evil?" Working Paper (Kiel, Germany: The Kiel Institute for the World Economy, 2005); available from: *http://www.lrz-muenchen.de/~metzler/berberich,metzler_2005_leviathan.pdf*: accessed 7 February 2009.

46. M. Yao, "Fiscal Decentralization and Public Sector Employment: A Cross-Country Analysis." Unpublished doctoral dissertation, Georgia State University, Atlanta, GA, 2007; available from *http://etd.gsu.edu/theses/available/etd-07282007-171452/unrestricted/yao_ming-hung_200708_phd.pdf*: 7 February 2009.

47. C. Berry, "Piling On: The Fiscal Effects of Jurisdictional Overlap," Working Paper (Cambridge, MA: Harvard University, Department of Government, 2008); available from: *http://politics.as.nyu.edu/docs/IO/4754/berry.pdf*: accessed 7 February 2009.

48. J. E. Anderson and H. van den Berg, "Fiscal Decentralization and Government Size: An International Test for Leviathan Accounting for Unmeasured Economic Activity," *International Tax and Public Finance* 5 (1998): 171–186; H. Chen, "Search for 'Leviathan': Evidence from the USA," Unpublished master's thesis, Lakehead University, Thunder Bay, ON, Canada. Available from: *http://web.cenet.org.cn/upfile/53552.doc*: accessed 7 February 2009; R. W. Eberts and T. J. Gronberg, "Can Competition among Local Governments Constrain Government Spending?" *Federal Reserve Bank of Cleveland Economic Review* 24, no. 1 (1988): 2–9; L. P. Feld, G. Kirchgässner, K. Konrad, and T. Verdier, "The Political Economy of Direct

on decentralization and government size used in this particular analysis, the results are mixed, with some studies indicating support for the Leviathan hypothesis and others not. This study looks at the variations in the studies themselves to better elucidate the variables involved in this complex relationship between decentralization and government size and the role study design plays in demonstrating this relationship.

METHODOLOGY

Regression Design

This study relies on MRA to study the Leviathan hypothesis. In introducing MRA to the field of economics, Stanley and Jarrell[49] stated that "MRA provides us with the means to analyze, estimate and discount, when appropriate, the influence of alternative model specification and specification searches" (p. 162). To put it in plain terms, MRA can be thought of as multiple regression analysis of multiple regression analyses.

(footnote Continued)

Legislation: Direct Democracy and Local Decision-Making," *Economic Policy* 16, no. 33 (2001): 331–367; L. P. Feld, G. Kirchgässner, and C. A. Schaltegger, "Decentralized Taxation and the Size of Government: Evidence from Swiss State and Local Government," Working Paper No. 1087 (Munich: CESifo, 2003); available from: *http://www.cesifo-group.de/pls/guestci/download/CESifo%20Working%20Papers%202003/CESifo%20Working%20Papers%20November%202003/cesifo1_wp1087.pdf*: accessed 26 February 2008; J. Fiva, "New Evidence on the Effect of Fiscal Decentralization on the Size and Composition of Government Spending," *Finanz-Archiv* 62, no. 2 (2006): 250–280, P. J. Grossman, "Fiscal Decentralization and Public Sector Size in Australia," *Economic Record* 68, no. 202 (1992): 240–246; P. J. Grossman and E. G. West, "Federalism and the Growth of Government Revisited," *Public Choice* 79 (1994): 19–32; J. B. Heil, "The Search for Leviathan Revisited," *Public Finance Review* 19, no. 3 (1991): 334–346; J. Jin and H. Zou, "How Does Fiscal Decentralization Affect Aggregate, National, and Subnational Government Size?" *Journal of Urban Economics* 52 (2002): 270–293; R. D. Kneebone, "Centralization and the Size of Government in Canada," *Applied Economics* 24 (1992): 1293–1300; J. Meloche, F. Vaillancourt, and S. Yilmaz, "Decentralization or Fiscal Autonomy? What Does Really Matter?" World Bank Working Paper Research Paper 3254 (Washington, DC: World Bank, 2004); available from: *http://www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2004/04/15/000012009_20040415162715/Rendered/PDF/WPS3254.pdf*: accessed 7 February 2009; W. E. Oates, "Searching for Leviathan: An Empirical Study," *American Economic Review* 75, no. 4 (1985): 748–757; R. F. Salvino, "Home Rule, Selectivity and Overlapping Jurisdictions: Effects on State and Local Government Size." Unpublished doctoral dissertation. Georgia State University, Atlanta, GA, 2007. Available from: *http://aysps.gsu.edu/urag/workingpapers/2007/URAG_wp_701.pdf*: accessed 7 February 2009; R. J. Shadbegian, "Fiscal Federalism, Collusion, and Government Size: Evidence from the States," *Public Finance Review* 27, no. 3 (1999): 262–281; D. Stansel, "Interjurisdictional Competition and Local Government Spending in U.S. Metropolitan Areas," *Public Finance Review* 34, no. 2 (2006): 173–194; R. E. Wagner, "Revenue Structure, and Fiscal Illusion, and Budgetary Choice," *Public Choice* 25 (1976): 45–61; J. J. Wallis and W. E. Oates, "Does Economic Sclerosis Set In with Age? An Empirical Study of the Olson Hypothesis," *Kyklos* 41, no. 3 (1988): 397–417.

49. T. D. Stanley and S. B. Jarrell, "Meta-Regression Analysis: A Quantitative Method of Literature Surveys," *Journal of Economic Surveys* 3, no. 2 (1989): 161–170.

TABLE 1
Studies Used in This Article

Study	Measures of government size	Measures of decentralization	Unit of analysis	DTE focus?	Overall support for Leviathan hypothesis?
Baird and Landon (1972)	Expenditures	Fragmentation	Local	No	No
Oates (1972)	Revenues	Revenues	Country	No	No
		Expenditures	Country	No	
Wagner and Weber (1975)	Expenditures	Fragmentation	Local	No	Yes
Pommerehne (1977)	Expenditures	Federalism	Country	No	Yes
		Other			
Martin and Wagner (1978)	Expenditures	Fragmentation	Local	No	No
Wagner (1978)	Expenditures	Expenditures	Local	No	No
		Fragmentation			
Giertz (1981)	Expenditures	Revenues	State	No	Yes
Sjoquist (1982)	Expenditures	Fragmentation	Local	No	Yes
DiLorenzo (1983)	Expenditures	Expenditures	Local	No	Yes
		Revenues	Local	No	
Palumbo (1983)	Expenditures	Fragmentation	Local	No	No
Oates (1985)	Revenues	Revenues	State	No	No
		Expenditures	State	No	
		Fragmentation	State	No	
		Revenues	Country	No	
		Expenditures	Country	No	
		Revenues	Country	Yes	
		Expenditures	Country	Yes	
Nelson (1986)	Revenues	Revenues	State	No	Yes
	Revenues	Fragmentation	State	No	
Schneider (1986)	Expenditures	Fragmentation	Local	No	Yes
Eberts and Gronberg (1988)	Expenditures	Fragmentation	Local	No	Yes for general-purpose units; no for special-purpose units
Marlow (1988)	Expenditures	Expenditures	Country	No	Yes
Saunders (1998)	Expenditures	Federalism	Country	No	Yes
Wallis and Oates (1988)	Expenditures	Expenditures	State	No	No
	Revenues	Revenues			
Zax (1988)	Expenditures	Fragmentation	Local	No	Yes
Forbes and Zampelli (1989)	Revenues	Fragmentation	Local	No	No
Grossman (1989)	Revenues	Fragmentation	State	No	Yes

TABLE 1 (Continued)

Study	Measures of government size	Measures of decentralization	Unit of analysis	DTE focus?	Overall support for Leviathan hypothesis?
Schneider (1989a)	Other	Fragmentation	Local	No	Yes
Schneider (1989b)	Expenditures	Fragmentation	Local	No	Yes
Zax (1989)	Revenues	Fragmentation	Local	No	Yes for general-purpose units; no for special-purpose units
		Revenues	Local	No	
Eberts and Gronberg (1990)	Expenditures	Fragmentation	Local	No	Yes
Dolan (1990)	Other	Fragmentation	Local	No	No
		Expenditures			
Joulfaian and Marlow (1991)	Expenditures	Expenditures	State	No	Yes
		Fragmentation	State	No	
Heil (1991)	Revenues	Revenues	Country	No	No
	Expenditures	Expenditures	Country	No	
Joulfaian and Marlow (1991)	Expenditures	Expenditures	State	No	Yes for total public expenditures; no for subnational expenditures
		Fragmentation	State	No	
Oates (1972)	Expenditures	Expenditures	Local	No	No
			State		
Santerre (1991)	Expenditures	Fragmentation	Local	No	No
Grossman (1992)	Expenditures	Expenditures	Local	No	No
		Expenditures	Country	No	
		Expenditures	State	No	
Kneebone (1992)	Expenditures	Expenditures	State	No	Yes for local expenditures; no for provincial expenditures
			Local		
Ehdaie (1994)	Expenditures	Revenues	Country	No	Yes
		Revenues	Country	No	
Grossman and West (1994)	Expenditures	Expenditures	Local	No	Yes for total public expenditures; no for subnational expenditures
Anderson and van den Berg (1998)	Revenues	Revenues	Country	No	No
		Expenditures	Country	No	

TABLE 1 (Continued)

Study	Measures of government size	Measures of decentralization	Unit of analysis	DTE focus?	Overall support for Leviathan hypothesis?
Shadbegian (1999)	Expenditures	Expenditures	State	No	Yes for total public expenditures; no for subnational expenditures
Stein (1999)	Expenditures	Expenditures	Country	No	Yes
Bates and Santerre (2000)	Expenditures Revenues	Fragmentation Fragmentation	Local	No	Yes
Chen (2000)	Expenditures Revenues	Expenditures Revenues	State	No	No
De Mello (2001)	Expenditures	Expenditures Fragmentation	State State	Yes Yes	Yes
Feld, Kirchgässner, Konrad, and Verdier (2001)	Expenditures Revenues	Revenues Revenues	Local	No	No
Jin and Zou (2002)	Expenditures	Expenditures Revenues Federalism	Country Country Country	No No No	Yes for subnational and total public expenditures; no for central government expenditures
Lalvani (2002)	Expenditures	Expenditures	State	Yes	Yes
Ebel and Yilmaz (2003)	Expenditures	Revenues	Country	No	Yes for own-source revenues; no for transferred revenues
Feld, Kirchgässner, and Schaltegger (2003)	Revenues	Revenues Fragmentation	State State	No No	Yes for revenue decentralization; no for fragmentation
Rodden (2003)	Expenditures	Revenues	Country	No	Yes
Campbell (2004)	Expenditures	Expenditures Fragmentation	Local	No	Yes
Chen (2004)	Expenditures	Expenditures	State	Yes	Yes
Meloche, Vaillancourt, and Yilmaz (2004)	Expenditures	Expenditures Revenues	Country	Yes	No

TABLE 1 (Continued)

Study	Measures of government size	Measures of decentralization	Unit of analysis	DTE focus?	Overall support for Leviathan hypothesis?
Zhu and Krug (2004)	Expenditures	Expenditures Fragmentation	State	Yes	Yes
Berberich and Metzler (2005)	Expenditures	Revenues Expenditures Other	Country	No	No
Ashworth, Galli, and Padovano (2006)	Expenditures	Revenues	Country	No	
Fiva (2006)	Expenditures	Revenues Expenditures Federalism	Country Country Country	No No No	Yes for revenue decentralization; no for expenditure decentralization
Stansel (2006)	Expenditures	Fragmentation	Local	No	Yes for spending growth; no for spending levels
Salvino (2007)	Revenues	Expenditures Fragmentation Revenues	Local	No	No
Yao (2007)	Other	Expenditures Federalism	Country	No	No
Ashworth, Galli, and Padovano (2006)	Expenditures	Revenues	Country	No	No
Berry (2008)	Expenditures Revenues	Fragmentation	Local	No	No
Brülhart and Jametti (2008)	Revenues	Fragmentation	Local	No	Yes
Craw (2008)	Expenditures	Fragmentation	Local	No	Yes

Note: DTE stands for developing or transition economy.

As one would assume from the name, MRA is a form of meta-analysis. Meta-analysis is a technique that has been most commonly used in the behavioral and health science fields to summarize and corroborate findings across studies. However, it has not been favored in economics for a variety of reasons. Phillips and Goss[50] provide an excellent discussion of these issues, with the main criticism being that summarizing research with a

50. J. M. Phillips and E. P. Goss, "The Effect of State and Local Taxes on Economic Development: A Meta-Analysis," *Southern Economic Journal* 62, no. 2 (1995): 320–333.

single variable ignores the impact of moderating variables on the relationship in question. MRA addresses this and other concerns by making potential biases as part of the study. In fact, they become the focal point of the study. We can control for the potential sources of biases within the regression framework and use that information to uncover various interaction effects on the variable of interest. It provides more information on the conditions (or moderator variables) that are more or less likely to result in a certain outcome. Moderator variables affect the direction and or strength of the relationship between an independent and dependent variable.

The basic multiple regression model is represented by equation 1:

$$y = X\beta + \varepsilon, \tag{1}$$

where y is the $(t \times 1)$ vector of dependent variables, X is a $(t \times k$ matrix) of regressors, β is a $(t \times 1)$ vector of fixed regression coefficients, and is a stochastic error term with classical assumptions.

In an MRA, y contains a vector of estimates of the effect being measured. In this study, I use the estimates of t-statistics as measures of the effect of decentralization on government size. The t-statistic has several advantages over standardized and unstandardized coefficients or any other estimate of effect. First, the t-statistic is a unitless measure, allowing easy comparability across studies. Second, t-statistics, by definition, represent the difference between an estimated value and a null hypothesis, divided by the standard error of the estimate. Hence, it is analogous to a traditional standardized mean difference meta-analysis effect size estimate.[51]

X in an MRA represents a vector of variables that measure relevant characteristics of an empirical study that may explain variation in results across studies. X is the focal point of this paper. Estimates of the explanatory variables in this study provide insight into the factors that drive differences across various studies of the Leviathan hypothesis. The explanatory variables used in this study are described in section four.

MRA is not perfect, no social science method is. For example, the problem of publication bias persists. Roberts[52] writes, "Whilst the replication of empirical results should be a natural part of the scientific approach to economics, results which 'merely confirm' earlier ones have a much lower probability of publication than results which contradict existing ones and challenge the status quo" (p. 296). In addition, there is a tendency for journals to publish articles with significant findings, while null findings remain unpublished.

This study presents six sets of regression estimates. The first regression estimates the impact of various study characteristics on the t-statistic estimate of the decentralization variable using each estimate in the sample. In other words, a single study may have numerous estimates, all of which are included in the analysis. The second model spec-

51. M. W. Lipsey and D. B. Wilson, *Practical Meta-Analysis* (Thousand Oaks, CA: Sage Publications, 2001).

52. C. Roberts, "Issues in Meta-Regression Analysis: An Overview," *Journal of Economic Surveys* 19, no. 3 (2005): 295–298.

ification involves estimating the entire sample of regression estimates controlling for study random effects. Random effects estimation is a statistical method used to address unobserved heterogeneity between units or in this case, studies. The drawback when it comes to random effects though is that it does require some assumptions about the nature of the error term.[53] Specifications III–V restrict the sample based on one of the characteristics of the study. Each of these regression specifications serves as a check on robustness.

Stanley and Jarrell noted that the variation in data sets, variables, and sample sizes are likely to lead to heteroskedastic error terms. To address this problem, I present Huber–White standard errors adjusted for clustering by study.

Process

I began the process of selecting articles for this MRA through a search of the EconLit, PAIS International, and JSTOR databases. The majority of cases in the sample were from this initial search. A brief perusal of this initial sample suggested several variables that attempted to operationalize a similar construct but differed across studies. These variables were noted before continuing the search. Published articles in peer-refereed journals, unpublished articles like working papers and reports, and book sections with empirical results were included in the search. All together 61 studies provided data for this study, 11 of which were unpublished, one is a review article published in a non-peer-reviewed journal, four are from books, and the remainder from peer-reviewed academic journals.

The second stage of the search process involved a "snowball" search of studies, with references from the initial search of articles used to locate additional articles for the sample. This snowball search continued for three more iterations before the search failed to generate additional references to the sample. In search for unpublished articles on the Leviathan hypothesis, I conducted a search on the National Bureau of Economic Review's Working Papers database. This search failed to add any additional studies to the sample. As a final step, I conducted a Google search to further uncover unpublished and published research relating to decentralization and its impact on government size.

The criteria involved in selecting articles for this study were simple. First, the dependent variable of the estimate had to be a measure of government size. This criterion meant studies that measured government size in terms of expenditures, revenues, number of government employees, and government pay ratio were included in the sample. Second, the *t*-statistic had to be an estimate of the impact of some measure of decentralization including expenditure decentralization, revenue decentralization, and fragmentation. Each estimate in each study was then coded according to the characteristics described in the next section. These codes were then reviewed once to enhance accuracy in coding.

53. See J. M. Wooldridge, *Introductory Economics: A Modern Approach* (Mason, OH: Thomson South-Western, 2003), for more information on random effects estimation.

VARIABLES

There are 11 variables of interest in this study based on the codes generated from the studies and regressions within those studies in the sample. The dependent variable, described in the previous section, is the *t*-statistic. The explanatory variables correspond to individual study characteristics that may have an impact on the results of studies examining the relationship between decentralization and government size. In this section, I describe each of these variables in detail.

Year

Observations were coded according to the median year of the data used in the analysis. In the case of cross-sectional analyses, the actual year of the data used for the dependent variable in the regression was coded. For estimates using panel data, the median year of the dependent variable used in the regression was coded. I controlled for median year to control for any temporal impact on the effect estimate of decentralization on government size. Views of government change over time and one would think that these changing perspectives may affect the findings of studies examining the impact of decentralization on government size.

Degrees of Freedom

The formula for the *t*-statistic incorporates degrees of freedom in the calculation. As the number of degrees of freedom in the regression increase, all else equal, the probability of finding a significant result should increase. I controlled for the degrees of freedom to ensure that studies that utilized large datasets were not driving the results of my study.

Unit of Analysis

The estimates in my sample of studies occur at three units of analysis. These units are local government, state or province, and country. I control for unit of analysis because decentralization and its effect on government size may vary according to the unit that is analyzed. Given the different sources of revenues and expenditure responsibilities of different levels of government, this possibility seems likely.

Measure of Government Size

Some measure of government size is the dependent variable in all of the studies in the sample. The overwhelming majority of studies analyzed in this paper used government expenditures or revenues to capture the size of government. While revenues and expenditures are expected to be roughly equal at the state and local levels due to balanced budget requirements, at the federal level, the possibility of deficit may mean more differentiation between the measures. In addition, with the advent of state rainy day or

budget stabilization funds, large differences between revenues and expenditures may be possible even at the state and local level.

Level of Government Size Variable

The government size variable by itself does not tell us anything about the level of analysis of the government size variable. In other words, an estimate of the impact of decentralization on government size has different implications if the dependent variable is total public expenditures for all levels of government as opposed to if the dependent variable was total subnational expenditures. For example, cost differences due to duplication may be more evident in a total size measure rather than a subnational measure.

Measure of Decentralization

Decentralization has traditionally been measured using four types of measures: revenue decentralization, expenditure decentralization, fragmentation, and federalism. Federalism only applies to the country level of analysis and is represented by a dummy variable coded as 1 if the estimate used a federalism measure. In the case the estimate used was a measure of centralization, the sign of the *t*-statistic was reversed. Each of these measures has its own strengths and weaknesses. Zax,[54] for instance, suggests that because fragmentation is intended to measure interjurisdiction competition, it may be more appropriate for analyses at the local level, where more jurisdictions are in direct competition with each other.

Own-Source Revenues or Expenditures

As concluded by Ebel and Yilmaz,[55] whether or not the measure of decentralization variable captured all subnational revenues or expenditures or solely own-source revenues or expenditures can have important consequences for study findings. Most of the estimates in the sample used a total measure, which, Ebel and Yilmaz argue, overrepresents the degree of decentralization.

Panel Data Method

Regressions that used a panel data method, in the form of either fixed effects modeling or difference modeling, were coded 1, with other regressions coded 0. Panel data methods have the advantage of reducing endogeneity but also reduce variation that may be

54. J. S. Zax, "Is There a Leviathan in Your Neighborhood," *American Economic Review* 79, no. 3 (1989): 560–567.

55. R. D. Ebel and S. Yilmaz, "On the Measurement and Impact of Fiscal Decentralization," in *Public Finance in Developing and Transitioning Countries: Essays in Honor of Richard Bird*, eds. J. Martinez-Vazquez, and J. Alm (Northampton, MA: Edward Elgar Publishing, 2003), 101–121.

interesting and important. Fixed effects and ordinary least-squares estimates often vary greatly as a result.

Published in Peer-Reviewed Journal

In general, articles published in peer-reviewed journals are understood to have gone through a formal double-blind peer review process. Consequently, the quality of the research is as a general rule thought to be superior to that of working papers and research published in books. However, the research in journals has been showed as biased toward finding a significant result.[56] I use this variable, coded 1 for studies published in a peer-review journal, to analyze systematic differences between the two types of research and their effect on the estimate of fiscal decentralization on government size.

Focus on Developing or Transitioning Economies

Regressions using data from a developing nation or developing nations were coded 1 to ascertain whether the relationship between government size and decentralization was different for developing and transition economies in comparison with developed countries. This control is important as fiscal decentralization is often considered an important economic development tool, but this goal is often undermined because of the concept of the "soft budget constraint." The incentives for sound fiscal management may be undercut if officials at lower levels of government expect to be bailed out by higher levels of government.[57] This state of affairs may mean more government spending than is socially optimal or levels of taxation that may be below the socially optimum level; either effect may have implications for a study's findings.

Measure of government size, level of government size variable, measure of decentralization, and unit of analysis were recoded to generate additional independent dummy variables for each of the characteristics in the category.

Descriptive statistics for each of the variables used in this study can be found in Table 2. Some interesting patterns are worthy of mention. The average *t*-statistic indicates a negative relationship between decentralization and the size of government (support for the Leviathan hypothesis), but is not greater than the 1.96 critical value required for significance at the 0.05 level. There is also considerable variation in this variable with values ranging from $-45{,}000$ to 45,000. A majority (53.4%) of estimates measured government size in expenditures rather than revenues or other measures. About three-quarters of government size estimates measured government size at the subnational level. The preferred unit of analysis is local. Decentralization in the sample of estimates is usually measured in terms of expenditures or fragmentation. Own-source

56. Colin B. Begg, "Publication Bias: A Problem in Interpreting Medical Data," *Journal of the Royal Statistical Society (Series A)* 151, no. 3 (1988): 419–463; Bradford J. de Long and K. Lang, "Are All Economic Hypotheses False?" *Journal of Political Economy* 100, no. 6 (1992): 1257–1272.

57. W. E. Oates, "On the Evolution of Fiscal Federalism: Theory and Institutions," *National Tax Journal* 61, no. 2 (2008): 313–334.

TABLE 2
Descriptive Statistics

	Mean	Standard deviation	Minimum	Maximum
T-statistic	− 0.572	5.132	− 45.000	45.000
Median year of data	1,986.321	11.688	1,902.000	2,002.000
Degrees of freedom	334.052	664.219	7.000	3,043.000
Unit of analysis				
Local	0.652	0.477	0.000	1.000
State	0.155	0.362	0.000	1.000
Country	0.194	0.395	0.000	1.000
Measure of government size				
Expenditure	0.534	0.499	0.000	1.000
Revenue	0.439	0.161	0.000	1.000
Other	0.027	0.497	0.000	1.000
Level of government size variable				
Subnational government	0.764	0.425	0.000	1.000
Central government	0.027	0.161	0.000	1.000
All levels of government	0.210	0.407	0.000	1.000
Measure of decentralization				
Expenditure	0.331	0.471	0.000	1.000
Federalism	0.029	0.169	0.000	1.000
Fragmentation	0.491	0.500	0.000	1.000
Other	0.016	0.126	0.000	1.000
Revenue	0.132	0.339	0.000	1.000
Own-source revenues or expenditures	0.216	0.412	0.000	1.000
Panel data method	0.100	0.300	0.000	1.000
Published in peer-reviewed journal	0.451	0.498	0.000	1.000
Focus on DTE	0.048	0.214	0.000	1.000

Notes: There are 749 observations. DTE stands for developing or transition economies.

revenues or expenditures account for only 22.1% of the data, in line with a general reliance on using the total source measure in the literature. Only a minority of estimates used panel data techniques, were published in a peer-reviewed journal, or focused on developing and transition economies.

RESULTS

Preliminary Analyses

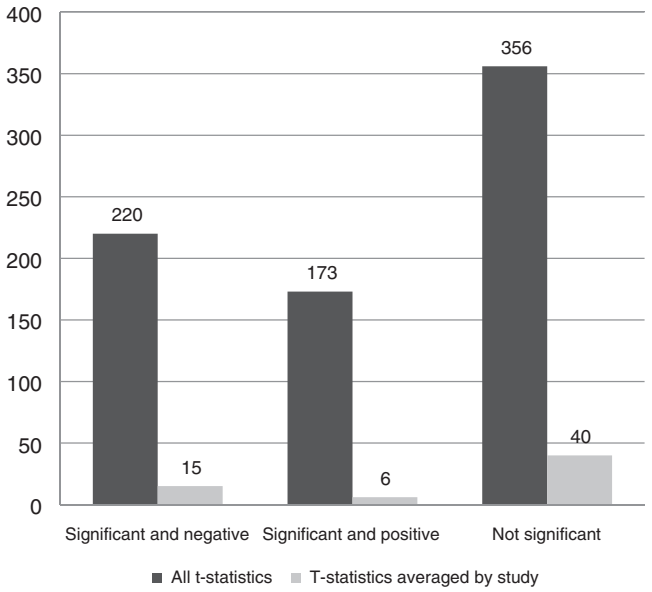
This section presents the findings of this study. I began by analyzing some simple counts of the data, in a process similar to the traditional meta-analysis. These results are pre-

sented in Figures 1 and 2. Figure 1 presents the number of estimates in the sample that are greater than or equal to the 1.96 critical value required for 0.05 significance. The dark bars represent all estimates in the sample and the light bars represent an average of *t*-statistics for each study. The averages are meant to ensure that it is not only a few studies with many estimates that are driving the results.

According to Figure 1, 220 out of 749 estimates in this sample reached the 0.05 level of significance and were negative (suggesting a Leviathan hypothesis), more than the amount that were positive and significant but far fewer than the number of estimates that were not significant. When the estimates are averaged by study the results are similar. More studies found evidence of the Leviathan hypothesis than evidence of increasing costs from decentralization but the majority found evidence of neither.

Figure 2 reduces the threshold of significance to the 10% level. As expected, this course of action has the effect of reducing the number of estimates that are not significant, although this category still has the plurality of estimates. Here, about a third (245) of estimates are supportive of a Leviathan hypothesis. The averaged estimates by study are also similar. While the significant and negative category is larger than the significant and positive category, the majority of studies did not find evidence for any effect of decentralization on the size of government.

FIGURE 1
Estimates Significant at 0.05 Level



While this cursory analysis does not reveal strong support for the Leviathan hypothesis, the evidence in support of decentralization actually increasing the size of government is weaker. Despite a commonly accepted principle that disseminated research tends to be biased in favor of significant finds, this preliminary analysis does not appear to hold for research on decentralization and its impact on the size of government, thereby strengthening my confidence in the representativeness of the data set.

Regression Results

Table 3 presents the meta-regression results of this study. Column I presents the results from regressions using the entire set of observations. Few of the estimates are significant in this specification, although some interesting findings emerge. Significant at a 0.05 level in the first specification are the local unit of analysis and the federalism measure of decentralization. Both variables are negative and hence studies with these two characteristics are more likely to find evidence in support of the Leviathan hypothesis. Significant at the 0.10 level is the state unit of analysis variable. The coefficient on this variable is also negative.

FIGURE 2
Estimates Significant at 0.10 Level

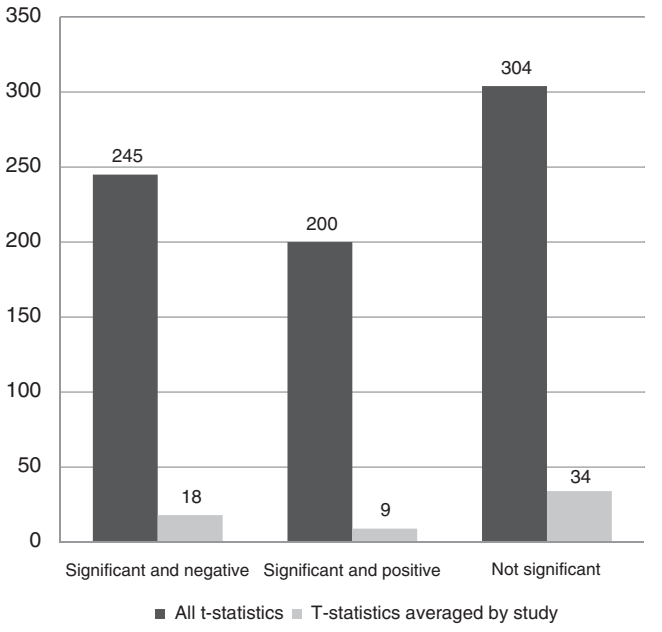


TABLE 3
Regression Results, *T*-statistics as Dependent Variable

Variable	I Full sample	II Random effects	III Dependent variable is expenditure measure	IV Government size level is subnational	V Unit of analysis is local
Median year of data	−0.030	−0.010	−0.018	−0.003	−0.039
	(0.027)	(0.024)	(0.030)	(0.028)	(0.029)
Degrees of freedom	−0.000*	−0.001	−0.000	0.000	−0.000**
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
Unit of analysis (omitted category is country)					
Local	−4.759**	−4.960**	−4.224	−2.082	
	(2.084)	(2.152)	(2.895)	(1.344)	
State	−3.874*	−3.960	−4.040	−0.206	
	(2.024)	(2.531)	(2.619)	(1.770)	
Measure of government size (omitted category is other)					
Expenditure	−0.805	−1.573		−2.345**	−2.283*
	(0.787)	(2.105)		(1.157)	(1.273)
Revenue	0.588	−1.381		−1.097	−1.267
	(0.771)	(2.170)		(1.133)	(1.307)
Level of government size variable (omitted category is central government size)					
Subnational	8.756	11.902***	10.281		0.475
	(5.461)	(3.974)	(6.503)		(1.137)
Total	5.856	7.749**	7.556		Dropped
	(3.898)	(3.354)	(4.859)		
Measure of decentralization (omitted category is other)					
Expenditure	−1.418	−0.192	−1.057	1.641**	0.397
	(1.138)	(0.727)	(1.637)	(0.799)	(0.701)
Federalism	−2.591**	−3.143**	−1.792	Dropped	Dropped
	(1.016)	(1.354)	(1.629)		
Fragmentation	0.539	1.815**	−0.070	3.130***	2.746***
	(1.230)	(0.868)	(1.898)	(1.113)	(0.726)
Revenue	−1.207	−0.095	−1.289	0.729	Dropped
	(1.113)	(0.660)	(1.361)	(1.288)	
Own-source revenues or expenditures	−0.277	−0.746	−0.216	0.608	−0.079
	(0.449)	(0.761)	(0.729)	(0.812)	(0.312)
Panel data method	0.732	0.147	0.791	2.039	0.185
	(1.111)	(1.429)	(1.118)	(2.079)	(0.742)
Published in peer-reviewed journal	−0.388	−0.301	−0.375	0.875	−0.053
	(0.536)	(1.732)	(0.889)	(0.790)	(0.556)
Focus on developing and transition economies	1.174	2.227	1.045	0.223	1.905***
	(1.657)	(3.297)	(1.899)	(2.887)	(0.462)

TABLE 3 (Continued)

Variable	I Full sample	II Random effects	III Dependent variable is expenditure measure	IV Government size level is subnational	V Unit of analysis is local
Constant	56.264	14.948	29.614	5.171	76.429
	(52.820)	(47.811)	(58.803)	(57.391)	(57.480)
N	749	749	400	572	488
R^2	0.088	0.072	0.123	0.045	0.056
Number of clusters	61	61	47	43	30

Notes: Huber–White standard errors adjusted for study clustering presented in parentheses.
***Significant at 0.01 level.
**Significant at 0.05 level.
*Significant at 0.01 level.

A somewhat surprising result can be found in the estimates of median year of data and degrees of freedom. Contrary to expectations, both of the coefficients on these variables are close to zero, a finding that holds for each specification. Not significant in the first specification are median year of data, own-source revenues or expenditures, panel data method, publication in a peer-reviewed journal, a focus on developing or transition economies, the revenue measure of government size, and the expenditure and revenue measures of decentralization. These variables are also either not significant or change sign in the other specifications and hence are not supported by the robustness tests used in this study. The R^2 of this regression model is 0.089, suggesting the regression model explains little of the variation in t-statistics. It should be noted though that low R^2 coefficients are common in MRA.

Column II adds random effects to the regression. The local unit of analysis and federalism measure of decentralization remain significant in this specification. Significant at a 0.01 level in this specification is the subnational level of government size. The total measure is also significant at a 0.05 level as is the fragmentation measure of decentralization. For the most part, the estimates in column II are similar to those in column I while the magnitudes are somewhat larger in the random effects model.

Taken together, only three variables are both significant at a 0.05 level in two specifications and do not change signs. These are the local unit of analysis and the federalism and fragmentation measures of decentralization. The local unit of analysis and federalism measure of decentralization make a study more likely to find evidence that decentralization results in a decrease in the size and scope of government. According to the results, regressions using fragmentation are more likely to find decentralization actually increases the size of government. I discuss possible reasons why these variables matter in the next and final section.

CONCLUSION AND DISCUSSION

Despite over 36 years of research, little consensus has emerged on the effect of fiscal decentralization on the size of government. This study finds evidence that part of the murkiness over research on this relationship can be attributed to differences in the design of the studies themselves. My results indicate that rather than looking at a single coefficient or *t*-statistic, the results of any study of this link need to be examined within the context of the study itself.

The Leviathan hypothesis posits that holding all else constant, decentralization should result in competitive pressures that result in a reduction in the size government. A cursory investigation of the studies reviewed in this article does not support this thesis. Only a little under 30 percent of estimates in the sample demonstrate a negative and significant relationship between fiscal decentralization and government size, but as suggested above, this aggregate measure obscures the impact of moderator variables, variables that affect the direction and or strength of the relationship between an independent and dependent variable, on this relationship between decentralization and government size.

This study reveals that a study's unit of analysis and measure of decentralization appear to influence the findings of studies examining decentralization and government size. In particular, studies utilizing the local unit of analysis and federalism measure of decentralization are more likely to find that this link is negative while studies utilizing the fragmentation measure appear more likely to find the opposite result.

Holding all else constant, studies where the unit of analysis is a local government are more likely to find evidence of a negative relationship versus studies where the unit of analysis is the country. I interpret this finding as a meaning that the competitive pressures due to mobility of tax bases and residents are stronger the closer governments are to its citizens. Governments are hence more likely to be efficient and smaller at the local level. Local governments are also more likely to be in direct competition with each other than states and countries, which may be another force for smaller government. This theory is consistent with Stigler,[58] who argued that competition forced local governments to reduce their expenditures.

I also find that a federalism measure of decentralization makes it more likely for a study to find evidence of a negative relationship. There are many possible explanations for this finding. One possibility is that in federal countries, local governments and state and provinces have more autonomy over revenues and expenditures and hence can react quicker to the demands of their constituencies. This theory is supported by Oates's[59] seminal work on fiscal federalism. Another possibility is that federal countries may have higher levels of political decentralization. If citizens are able to elect their local and

58. Stigler (1965).
59. Oates (1972).

provincial leaders, they have more influence on the behavior of their local and provincial leaders.

This study finds support that fragmentation is associated with bigger government. There are a number of possibilities that can explain this phenomenon. The first is the existence of economies of scale. If a public good or service has high fixed costs (costs not dependent on the level of production) expanding production (by centralizing production, for example) will reduce the average cost per unit. Another possibility is that fragmentation implies duplication. The more governments there are in a single area, the more likely they are to offer similar services, hence increasing the cost of government. This result supports the effort of many local governments to consolidate local services in this period of tight budgets and falling revenues.

Much of the research in economics, and for that matter all of the social sciences, has as its goal, the development of stylized facts about social phenomena. Through the use of MRA, this study finds that the development of a stylized fact about the relationship of fiscal decentralization and government size is challenging, if not impossible. Without a more nuanced understanding of this relationship based on the intervening variables, it is very likely the debate will continue for a long time.

NOTES

I would like to thank Ioana Petrescu and three anonymous referees for their helpful comments.