

The Price of Democracy? Political Representation Structure and Per Capita Expenditure in Victorian Local Government

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Abstract

Local government systems across the world face acute and ongoing fiscal challenges. In Australia, the regulatory response has focused squarely on council consolidation. This has, unfortunately, meant that comparatively little attention has been paid to alternate, less disruptive methods for enhancing municipal sustainability. One such possibility lies in modifying the structure of local political representation. We conduct a number of estimations on a four-year panel of Victorian municipal data to test whether the “law of $1/n$ ” has empirical support at the local government level. Our results clearly show that the number of geographically defined fragments, or wards, within a given municipality is a statistically significant determinant of local government expenditure. A number of public policy recommendations follow from the empirical evidence that might be broadly applicable to other municipal systems.

Keywords

local government, political representative structure, law of $1/n$

Introduction

Many local government systems across the world, including the seven Australian state and territory local government jurisdictions, face daunting

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problems, often centered on securing ongoing financial sustainability. To address these problems, policy makers in many countries have instituted a host of municipal reform programs (Denters and Rose 2005; Faulk and Hicks 2011). However, Australian local government policy makers have focused principally on compulsory council consolidation as the main instrument of reform in all Australian state and territory local government systems, with the exception of Western Australia (Tiley 2012). Several deleterious outcomes arising from forced amalgamation have been identified in the scholarly literature, including loss of “political voice”, reduced municipal efficiency, and higher local government taxes (see, for instance, Drew and Dollery 2014; Drew, Kortt, and Dollery 2016). Moreover, the heavy reliance on a single blunt reform tool means that little effort has been invested in exploring other fruitful approaches to enhancing municipal sustainability. One such alternative lies in reforming the structure of political representation in Australian local government following the insights provided by Weingast, Shepsle, and Johnsen’s (1981) “law of $1/n$.” In essence, this model predicts that the expenditure levels in government, including local government, are proportional to the number of geographically constrained representatives.

The law of $1/n$ has been tested extensively on both state and national legislative assemblies in various countries with mixed results (MacDonald 2008). However, to date, only a handful of studies have considered local government, despite the prospect that “the Law of $1/n$ is much more likely to hold in smaller legislatures than in larger ones” (Primo and Snyder 2008, p. 187). Furthermore, there have been no Australian applications of the model to the local government sector. Nor has any empirical analysis controlled for citizen satisfaction (which can be considered a crude proxy for service quality). This article attempts to address these gaps in the empirical literature on the law of $1/n$ in the context of Victorian local government. Motivated by an interest in finding alternatives to consolidation as the dominant policy-making tool of Australian public policy makers, we explore two research questions: (1) whether there is an association between the number of political representatives and per capita municipal expenditure and (2) whether there is an association between the number of geographical fragments or wards and per capita municipal expenditure. Moreover, we investigate whether the size of any identified association is sufficiently large as to present a viable avenue for enhancing municipal sustainability. We explore these questions in the context of Victorian local government employing a four-year panel of data disaggregated by municipality.

Victoria is the second largest Australian state by population. It offers an ideal “natural experiment” to test the law of $1/n$, as it has a mix of municipal representative structures ranging from geographically unconstrained

councillors (also referred to as “at-large” councillors) to councils comprising 12 municipal districts or wards in an almost normal distribution. Moreover, the number of representatives for local authorities also approximates a normal distribution,¹ ranging from five to 12. Accordingly, Victorian local government offers a fertile institutional milieu in which to consider empirically the law of $1/n$.

The article is divided into six main parts. The section “Theoretical Foundations and Empirical Literature” explores the conceptual foundations of the law of $1/n$ and provides a synoptic sketch of previous empirical applications of the model to local government. The section “Local Government in Victoria” outlines the main characteristics of Victorian local government. The section “Empirical Strategy” details the empirical methodology employed in the study, whereas the section “Results” considers the outcomes of the econometric estimations. Finally, the section “Concluding Remarks” ends the article with some comments on the public policy implications of the analysis, with emphasis on the potential of altering municipal political structures to improve municipal sustainability.

Theoretical Foundations and Empirical Literature

The law of $1/n$ rests on strong theoretical foundations related to the need for political representatives to convert economic benefits into political capital. However, the empirical evidence is rather mixed and inconclusive. We provide a brief explanation of the theoretical foundations before considering the extant empirical literature, which we then use to inform our empirical strategy.

Theoretical Foundations

The law of $1/n$ is predicated on three key assumptions: (1) Political representatives are concerned exclusively with the public projects that flow into their geographical wards, (2) the taxes that pay for the projects are more or less uniform and derive from a common income pool, and (3) the legislature is prone to “universalism”² deriving from a trade in votes (Primo and Snyder 2008). The first assumption of the “law” is consistent with the oft-observed propensity of political representatives to engage in “pork barreling” in response to the fact that they are beholden solely to the residents of the ward for reelection (Weingast, Shepsle, and Johnsen 1981). The second assumption means that “constituent representatives who allocate government projects from a common tax base bear only a portion of the cost burden of constituent-specific projects, and the corresponding cost burden declines as

the number of legislative districts increases” (Bradbury and Stephenson 2003, p. 185). The final assumption reflects the presumption that “‘democracy’ generically understood, embodies majority rule as a central feature,” and it is, thus, necessary to obtain the indulgence of other councillors to pursue a project with geographically concentrated benefits (Buchanan and Yoon 2002, p. 503).

The law of $1/n$ rests on the observation that the economic benefits of public projects can be transformed into political capital where beneficiaries can be identified according to geographic rather than demographic characteristics. In particular, where economic benefits are conferred on geographically constrained constituents, political representatives are able to claim credit and extract political capital (Weingast, Shepsle, and Johnsen 1981). Where the funding for conferred economic benefits can be extracted from nonconstituents, such as taxpayers of other wards contributing to the common pool, then the result is a clear political gain for the representative in question. Furthermore, in addition to being diffuse, economic costs may be difficult to determine by voters, as information costs are high because Australian municipal financial statements do not provide details of expenditures disaggregated to the level of individual projects.

For maximum political capital to be extracted from a geographically defined project, it is important for the funding to be derived from a common tax pool, where the contributions of a given representative’s area are equal or less than the contributions of n other wards. Intuitively, this means that the constituents of the particular political representative will only bear, at most, $1/n$ th of the cost of the geographically constrained spending (Bradbury and Stephenson 2003) and less if intergovernmental grants form a significant component of municipal revenue, which holds for many Australian local authorities. Thus, under the assumptions underpinning the law of $1/n$, residents of one ward could end up paying a small fraction of the cost associated with a project for which they are the principal beneficiaries. However, because major projects are the result of a legislature vote, geographically defined benefits can proceed only with the acquiescence of at least a majority of other representatives. This implies implicit vote trading wherein support is exchanged on the understanding that it will be reciprocated (Buchanan and Tullock 1962). The result is a progression to universalism in voting over time.

An example may go some way toward explicating matters. Consider a very simple case wherein a municipality is separated into three wards A, B, and C, with one representative for each ward. Residents of all three wards pay similar local government taxes that accrue to a common tax pool. The representative of ward A wishes to meet the demands of residents for new

municipal services, such as a new aquatic center, to maximize the prospects of reelection. However, to ensure the passage of the project through council, the representative of ward A must secure a majority, and this will entail the support of at least one of the remaining two councillors. Yet by supporting the project, representatives of wards B and C will effectively be committing their residents to paying for a proportion of the cost, despite the fact that residents in ward A will be the principal beneficiaries owing to the geographical location of the project. In the ordinary course of events, one might expect that the project would have little chance of passing through council. However, the representatives of wards B and C would also have their chances of reelection enhanced by securing a visible project for the residents living in their geographical areas. This common need to convert economic benefits into political capital conjures circumstances in which representatives of one ward have an incentive to allow a project to proceed in a different ward in order that their support might be reciprocated. Moreover, a larger “coalition” of representatives willing to trade support is likely to be more stable over time (Buchanan and Yoon 2002). There is, thus, a rational choice incentive for representatives to become members of universal “virtual coalitions.” Where such universalism is achieved and remains stable, higher numbers of geographically concentrated projects can be expected to pass, and this can lead to higher municipal expenditure.

The logic underlying the law of $1/n$ suggests that it is more likely to prevail in small legislatures dominated by independent political representatives (Primo and Snyder 2008). This is because universalism is promoted by small groups where the actions of individual actors are more transparent and people come into closer contact with one another, thereby fostering collaboration. Moreover, it would seem that political party structures may undermine the law of $1/n$, given that political discipline implies that party objectives rather than individual goals will dominate. In sum, legislature size and political party allegiance may explain why the law of $1/n$ has been questioned at the national and state level but has received solid support in its limited local government applications (Primo and Snyder 2008).

Empirical Evidence

Bradbury and Stephenson (2003, p. 195) employed cross-sectional data on 154 counties in the U.S. state of Georgia and found that “the Law of $1/n$ holds irrespective of whether or not elected representatives are geographically constrained.” Baqir (2002, p. 1351) used a cross-section of 1,968 U.S. city governments and found that the law of $1/n$ holds, “whether legislatures run for office from the entire jurisdiction or from geographic districts within it, their

decisions relating to government spending do not differ.” However, strictly speaking, without geographical fragmentation (wards) within a local government entity, it is not correct to speak of the law of $1/n$, as the economic costs of projects are not reduced by a factor of n nonconstituent geographical areas. Instead, the entire cost is borne by constituents or, in the case of intergovernmental grant income, diluted by the proportion of revenue derived from the grants. Rather, the increase in expenditure associated with a higher number of representatives should be viewed as economic benefits being transformed into political capital. In this instance, it appears that increased expenditure is advantageous purely as a result of the diffuse and often difficult to discern nature of its associated economic costs. Baqir (2002, p. 1351) explained his results as follows:

Keeping the fiscal house in order depends in large part on how many people get to spend out of the tax revenue pool. When more people are added, everybody, including the incumbents raises his or her spending decisions.

It is noteworthy that both of these studies had small council (or legislature) sizes: Bradbury and Stephenson (2003) were dealing with a mean council size of 4.80, and Baqir (2002) had a mean council size of 6.86. The only other prominent empirical application of the law of $1/n$ to local government was a study of Finnish and Swedish municipalities using pooled data over a 25-year period by Pettersson-Lidbom (2012). Pettersson-Lidbom (2012, p. 277) concluded that “the results indicate a negative effect i.e., the larger the size of the legislature the smaller is the size of government in both settings.” However, it is important to note that the legislature size in these jurisdictions was considerably larger than that of the earlier studies, with a mean of 28.66 for Finland and 47.35 for Sweden. Moreover, the municipal politics examined by Pettersson-Lidbom (2012) are dominated by three major parties in Finland, whereas elections are conducted on the basis of “party lists” in Sweden. It is thus evident that the embryonic empirical literature on the law of $1/n$ on local government is unsatisfactory for several reasons. By contrast, the characteristics of Victorian local government are much more consistent with the underlying prerequisites for the operation of the law of $1/n$.

Local Government in Victoria

Victorian local government comprises 79 municipalities represented by five to 12 elected councillors. Of these 79 councils, 22 have no ward structure, whereas the remaining 57 are divided into as many as 12 wards, with a mean of 3.50 divisions. Municipalities are required to consult with the Victorian

Table 1. Victorian Local Government Representative Structure, 2012.

	Population per Ward	Population per Representative
Minimum	1,351	619
Maximum	62,352	24,354
<i>M</i>	23,487.98	7,857
<i>SD</i>	17,700	6,186
Median	18,954.13	4,832

Source. Australian Bureau of Statistics (2014) and the Victorian Electoral Commission (2014).

Electoral Commission (VEC) regarding both the number of councillors and their ward structure (Economou 2010). However, ultimate power to make decisions on the number of wards and representatives rests solely with the Victorian Governor in Council, comprising the governor and members of the ruling Victorian political party. It should be noted that the governor is an apolitical appointee of the Head of the Commonwealth of Australia, Queen Elizabeth II. Moreover, the Victorian Local Government Act (1989) specifically prohibits legal proceedings designed to impinge on the powers of the Governor in Council, including a limitation on the jurisdiction of the Supreme Court (see section 220H and 220I of the Local Government Act of 1989, Parliament of Victoria 1989). This largely unfettered power to alter the political structure of Victorian local authorities stems from the lack of constitutional recognition of Australian local government (Twomey 2013).

Table 1 lists descriptive statistics for population per ward and population per representative. It is clear from these statistics that Victorian local government structure is not currently predicated on population size. Indeed, the reasoning behind representational structure does not appear to have been articulated by the VEC. However, a recent review of local government representation in Victoria has recommended that the maximum number of councillors prescribed by legislation be increased from 12 to 15 and that a ministerial directive be issued to relate the number of councillors to the voting population (with a minimum of six councillors for municipalities of 6,000 voters or less ranging to 15 councillors for local authorities with voting populations exceeding 130,000) (Department of Transport, Planning and Local Infrastructure [DTPLI], Victoria 2014a).

The roles of the representative and administrative arms of local government in Victoria are clearly defined by legislation. The elected council representatives have a role similar to that of a corporate board of directors, implying that “it adopts a strategic view of the future it wishes to achieve for its community and makes plans and policies to achieve this” (DTPLI, Victoria

2014b). The mayor is elected annually by the body of councillors and may be reelected each year if the council so chooses, except for the City of Melbourne and City of Greater Geelong, which have directly elected mayors. A mayor is responsible for chairing council meetings and conducting ceremonial functions. The administrative arm of local government is charged with the execution of the elected arm's policies. Moreover, the general manager is the only administrative appointment made by councillors (DTPLI, Victoria 2014b).

Council elections are held on a four-year cycle on the fourth Saturday of October. Elections are conducted by either postal vote or attendance at polling booths. Each council chooses its method of voting. However, most councils (70) conduct postal voting (VEC 2014). Voting is compulsory for all residents of a municipality, irrespective of whether they own property in the area. Moreover, owners of rental properties have the statutory right to one vote in a municipal election even if they do not reside in the electorate (VEC 2014). Foreign owners of property and one representative of corporations occupying property may also cast a vote in municipal elections but must apply to be added to the electoral roll (DTPLI, Victoria 2013). Despite statutory compulsory voting for residents, an absentee rate of nearly 25% has persisted in local elections since 1999 (Economou 2010). It might be noted that the fine for failing to vote is just half a penalty point, which equates to \$75 as of July 2015 (VEC 2015).

The most recent elections (held in 2012) have confirmed this trend in voter absenteeism as well as a pattern of returning incumbents. Just more than half (52%) of the 631 representative vacancies in Victoria were filled by incumbents. In addition, 26 councillors were returned unopposed, including four mayors (Municipal Association of Victoria 2013). This could be interpreted as evidence in support of the success of universalism in the pursuit of political capital. However, other explanations, including voter apathy, may be responsible. In general, Victorian local government elections have maintained a "strong sense of candidates being independent of political parties" (Economou 2010). Indeed, only the City of Melbourne has political party affiliations on ballot papers (DTPLI, Victoria 2013).

The characteristics of the Victorian local government sector—such as its relatively low number of representatives and wards as well as the predominance of independent candidates—suggest that the law of $1/n$ may explain municipal expenditure levels. If this is the case, then it has implications for local government financial sustainability.

Empirical Strategy

A common criticism of the extant empirical work on the law of $1/n$ is that it is often conducted using cross-sectional data (MacDonald 2008). We thus

Table 2. Law of $1/n$ (“Relaxed”) for Victoria 2009–2012.

	Model 1 Expenditure per Capita (ln)— Entire State	Model 2 Expenditure per Capita (ln)— Excluding Melbourne
No. of representatives	0.077** (0.028)	0.031 (0.022)
Population (ln)	−0.484** (0.073)	−0.382** (0.059)
Satisfaction	−0.007** (0.002)	−0.007** (0.002)
Grants per capita (ln)	0.197* (0.079)	0.204** (0.066)
Fragmented	0.108† (0.071)	0.106* (0.053)
Controls	Yes	Yes
<i>n</i>	79	78
Coefficient of determination	.6499	.7507

† $p < .10$. * $p < .05$. ** $p < .01$.

conducted our analysis using a panel of data spanning the years 2009–2012, inclusive, where 2012 is the most recent year of municipally disaggregated Australian Bureau of Statistics (ABS 2014) data. Consistent with previous work in this field, we used the natural log of per capita spending³ as our regressand (see, for instance, Baqir 2002; Bradbury and Stephenson 2003; Pettersson-Lidbom 2012). We then conducted a random effects panel regression, after first testing that the random effects estimator was unbiased (i.e., Hausman test).

A total of four models were tested. Model 1 (Table 2) tested the law of $1/n$ with geographical constraint relaxed, that is, the association between number of political representatives and expenditure per capita. Model 2 (Table 2) is the earlier model repeated with the City of Melbourne—an extreme outlier with per capita spending in 2012 at \$4,381.31 compared with a mean of \$1,303.16—excluded from the data set. In both models, a dummy variable “fragmented” (where 0 was assigned for “undivided” or “at-large” councils and the value 1 was assigned to councils with geographical fragments or “ward” structures) was included to determine whether there was a statistically significant difference in expenditure associated with geographically fragmented municipalities (councils with wards) when controlling for the number of political representatives.

Model 3 (Table 3) tested the law of $1/n$ following Weingast, Shepsle, and Johnsen’s (1981) “strict” hypothesis: the association between number of geographical fragments (wards) and per capita expenditure will be positive. Model 4 (Table 3) repeated the test of expenditure against number of geographical fragments (wards), with the exclusion of the City of Melbourne.

Table 3. Law of 1/n ("Strict") for Victoria 2009–2012.

	Model 3 Expenditure per Capita (ln)— Entire State	Model 4 Expenditure per Capita (ln)— Excluding Melbourne
No. of geographical fragments (wards)	0.022 (0.019)	0.034** (0.013)
Population (ln)	-0.410** (0.084)	-0.390** (0.060)
Satisfaction	-0.008** (0.003)	-0.008** (0.003)
Grants per capita (ln)	0.170 (0.106)	0.178** (0.082)
Controls	Yes	Yes
<i>n</i>	58	57
Coefficient of determination	.5998	.7578

†*p* < .10. **p* < .05. ***p* < .01.

Table 3 is concerned only with the subset of Victorian councils that have geographically defined fragments or wards.

Other regressors employed include population size, population density, average wage data, proportion of individuals from a non-English-speaking background (NESB), proportion of individuals identifying as Aboriginal and Torres Strait Islander (ATSI), overall satisfaction survey data, length of local government roads, and total intergovernmental grants per capita (Table 4). Except for the case of number of wards, number of representatives, and satisfaction data, natural log transformations were employed to counter skewed distributions.

Model specification includes all variables previously employed in the literature, with the addition of citizen satisfaction data and length of local government roads⁴ and the omission of political party voting data. Citizen satisfaction data are based on a Victorian statewide survey by council of the overall satisfaction of citizens with local government goods and services. It acts as a critical proxy for service quality for it is clear from the empirical literature that service quality affects municipal expenditure (Drew, Kortt, and Dollery 2014a). Local government roads have been included on the basis that this is the single largest expenditure item for Australian (and Victorian) councils, accounting for approximately a quarter of all spending (PricewaterhouseCoopers 2006). Given that the length of roads maintained by Victorian councils ranges from 42 km to 13,081 km, this is clearly an important control variable. Political party voting data used by Bradbury and Stephenson (2003) were omitted in response to the strong independent orientation of candidates (outside of the City of Melbourne) (DTPLI, Victoria 2013; Economou 2010).

Table 4. Regression Variables, Victoria 2009–2012.

	<i>M</i>	<i>SD</i>
Expenditure per capita (ln)	7.072	0.432
Population density (ln)	3.913	2.846
Average wage (ln)	10.636	0.217
NESB (ln)	1.978	1.109
ATSI (ln)	−0.298	0.751
Satisfaction	63.149	4.945
Length of roads (km, ln)	7.084	0.917
Population size (ln)	10.622	1.139
Total grants per capita (ln)	5.401	0.923
No. of wards	3.505	2.334
No. of representatives	8.127	1.741

Note. NESB = non-English-speaking background; ATSI = Aboriginal and Torres Strait Islander.

Of the remaining variables, population density and population size have been shown to be statistically significant determinants of local government expenditure in a host of studies (see, for instance, Drew, Kortt, and Dollery 2014b; Holcombe and Williams 2009). Ethnogeneity has also been demonstrated to be a determinant of local government spending both in Australia and abroad (see, for example, Drew, Kortt, and Dollery 2014a; Van De Walle and Van Ryzin 2011). If local government goods are normal goods in the Samuelsonian sense, then a control for wage levels is clearly warranted (Holcombe and Williams 2009). Finally, nonsource revenue (principally intergovernmental grant funds) account for up to 40% of income for some local authorities. Given the significant empirical evidence in support of the flypaper effect, wherein grant funds raise municipal spending, there is, thus, a strong case for its inclusion as a control variable (see, for instance, Dollery and Worthington 1995).

Results

Model 1 (Table 2) examines the association between the natural log of per capita expenditure and number of political representatives: the case where economic benefits are transformed into political capital without the costs being diluted by n groups of geographically defined constituents. This association was identified by both Baqir (2002) and Bradbury and Stephenson (2003) and rests on the proposition that the costs of public outlays to individual taxpayers are difficult to discern. At first sight, it appears that the

association is also supported by the Victorian local government data (at the 1% level of significance). However, as noted earlier, the expenditure of the City of Melbourne—Victoria's capital—is an extreme outlier. This is due to significant additional public transport, infrastructure responsibilities, and other expenses incumbent on a capital city.

Model 2 (Table 2) omits data from the City of Melbourne, thereby bringing the sample size down to 78 municipalities over four years. As a result, the overall explanatory power of the model increases significantly, which *inter alia* validates the decision to exclude Melbourne. When this outlier is excluded, then the number of political representatives is no longer statistically significant. This suggests that either universalism has not occurred or that costs are not as diffuse or difficult to discern as those in the U.S. jurisdictions studied by Baqir (2002) or Bradbury and Stephenson (2003). Part of the reason for this may be the compilation and dissemination of a range of financial indicators (at the municipal level) for all councils within the Victorian local government, in both Annual Reports and DTPLI comparative data reports. In addition, the 1994 compulsory council merger program, which saw some 60% of Victorian local authorities disappear, may also be acting as a restraint on municipal spending. If this latter factor carries weight, then we would not expect to observe the law of $1/n$ in Model 3 or Model 4.

It is noteworthy that both Model 1 and Model 2 detail a statistically significant association for the dummy variable "fragmented." This association suggests that geographically fragmented councils with ward structures, on average, have just more than 10% higher expenditure per capita than undivided or "at-large" councils, with all other variables (including number of political representatives) held constant. This result has important implications for municipal sustainability and motivates the analysis detailed in Table 3.

Model 3 (Table 3) regresses the number of geographic divisions (wards) against the natural log of per capita spending for fragmented councils (councils with wards), thus testing the law of $1/n$ as articulated by Weingast, Shepsle, and Johnsen (1981). There is no statistically significant association evident between number of geographical wards and per capita spending when all 58 fragmented councils (municipalities with wards) are included in the panel regression. However, when the City of Melbourne is excluded (Model 4), the association between the number of geographical fragments or wards becomes statistically significant at the 1% level. Specifically, Model 4 suggests that the increase of one geographical fragment (ward) results in a 3.4% lift in expenditure per capita *ceteris paribus*. This supports the law of $1/n$ and falls midway between estimates produced in previous work: Baqir (2002) found the degree of fragmentation to be associated with a 1.6% increase in

spending, whereas Bradbury and Stephenson (2003) found an association of 4.4%. It suggests that expenditure increases when political representatives are able to confer benefits on geographically defined constituents.

Concluding Remarks

Our panel study of Victorian local authorities over the period 2009–2012 inclusive, has provided empirical support for the law of $1/n$ in its “strict” sense. However, it has failed to support previous work that suggests municipal expenditure is positively associated with the number of political representatives, irrespective of geographical constraint. Several policy implications flow from our findings.

First, in relation to previous work on local government, the empirical evidence presented in this article seems to support the claim by Primo and Snyder (2008) that the law of $1/n$ is valid only over a restricted domain. Put differently, in common with Baqir (2002) and Bradbury and Stephenson (2003), our study had a relatively limited number of geographically constrained wards, as opposed to Pettersson-Lidbom (2012), which did not support the law of $1/n$. There is, thus, a need for future empirical work on other local government systems so that an estimate of the domain upper bound might be found. Future empirical work might also examine the law of $1/n$ in the context of recently consolidated municipalities, given the evidence that councillors in newly formed entities tend to vote according to the territorial interests of the former municipalities (see, for instance, Spicer 2012).

Second, the absence of a statistically significant association for number of political representatives when the extreme outlier (City of Melbourne) was excluded raises interesting questions. For instance, it may partly explain the findings of Baqir (2002), who recognized the presence of extreme outliers, but does not appear to have truncated his data set. By contrast, Bradbury and Stephenson (2003) did remove an outlier—Burke County—from their data set. Finally, the absence of a statistically significant association with the number of political representatives may mean that increased democratic representation need not diminish financial sustainability, apart from the comparatively negligible expense directly associated with councillor remuneration. If this is the case, then it suggests that the recent recommendation for greater number of political representatives in Victorian local government need not have a deleterious effect on municipal financial sustainability (DTPLI, Victoria 2014a).

An intuitively plausible explanation for our findings is that economic (and hence political) costs of projects are much easier to discern in undivided (“at-large” systems) municipalities. Clearly, it would be quite difficult for voters

to determine the costs of economic benefits disaggregated to a number of municipal geographical wards. On the contrary, municipality-wide costs are transparent and regularly disseminated through annual reports and media reports on contentious projects. This might suggest that dissemination of information on costs contributes to expenditure restraint.

Taken as a whole, the findings presented in this article suggest an additional and, as yet, unexplored approach to the problem of municipal financial sustainability in Australian local government, which goes beyond the unfortunate current emphasis on compulsory council consolidation. As we have demonstrated using the insights of Weingast, Shepsle, and Johnsen (1981), financial sustainability may be significantly enhanced by altering the political structure of local government. In fact, our findings suggest that eliminating municipal wards in favor of an “at-large” or undivided municipal structure might result in savings in the region of 3.4% per ward structure removed *ceteris paribus*. Given that Australian state governments exercise largely unfettered powers over the structure of their local government systems, the proposed policy remedy would appear to be achievable (notwithstanding the possibility of some public disquiet⁵). Unlike the harsh consequences associated with forced amalgamation, including the loss of local political “voice” and large one-off and continuing merger costs, changes to the political structure of councils have relatively few drawbacks. This option thus warrants further consideration by Australian policy makers as well as additional empirical analysis by scholars of local government.

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Notes

1. A normal distribution is a symmetric or bell-shaped distribution that forms the foundation of the most prominent statistical tests.
2. Universalism relies on reciprocity in logrolling among members of a legislature (Bradbury and Stephenson 2003). When reciprocity is widespread, then a virtual coalition of the entire legislature results, “which bestow[s] benefits on virtually every district represented in the legislature” (Stein and Bickers 1994, p. 295).
3. We excluded depreciation expense from municipal expenditure data in response to Pilcher and Van der Zahn (2010) and Drew and Dollery (2015) who showed

that depreciation expense is the subject of significant “gaming” by municipal officials. Moreover, under accounting standard AASB116, depreciation is an accrual accounting device that may not necessarily reflect fair value or consumption of assets. This study is focused on geographically constrained spending over the four-year period, and it is evident that depreciation expense relating to assets that may have been constructed up to 100 years ago (in the case of building depreciation schedules) should be omitted.

4. We also reran the models excluding length of roads and found no material difference in the regressors of interest. These results are available from the corresponding author.
5. We do concede that some loss of political voice may occur in the case where there is a concentration of minority groups in a particular ward. However, we believe that potential for loss of voice is considerably less than what might be lost in the case of council amalgamation, which usually results in a reduction in the total number of political representatives owing to the cap on councillors stipulated in s5B(1) of the Local Government Act (1989).

References

- Australian Bureau of Statistics. 2014. “National Regional Profile 2009-2012.” Australian Bureau of Statistics, Canberra.
- Baqir, Reza. 2002. “Districting and Government Overspend.” *Journal of Political Economy* 110 (6): 1318–54.
- Bradbury, John E., and Frank Stephenson. 2003. “Local Government Structure and Public Expenditures.” *Public Choice* 115:185–98.
- Buchanan, James, and Gordon Tullock. 1962. *The Calculus of Consent*. Ann Arbor: Univ. of Michigan Press.
- Buchanan, James, and Yong Yoon. 2002. “Universalism Through Common Access: An Alternative Model of Distributive Majoritarian Politics.” *Political Research Quarterly* 55 (3): 503–20.
- Denters Bas., and Rose Lawrence., eds. 2005. *Comparing Local Governance: Trends and Developments*. London: Palgrave.
- Department of Transport, Planning and Local Infrastructure, Victoria. 2013. “Local Government Electoral Review.” Discussion Paper. Department of Transport, Planning and Local Infrastructure, Victoria, Melbourne.
- Department of Transport, Planning and Local Infrastructure, Victoria. 2014a. “Local Government Electoral Review—Stage 2 Report.” Department of Transport, Planning and Local Infrastructure, Victoria, Melbourne.
- Department of Transport, Planning and Local Infrastructure, Victoria. 2014b. “Local Government—How Is a Council Structured?” Accessed January 28, 2016. <http://www.dtp.li.vic.gov.au/local-government/guide-to-how-councils-work/how-councils-work/council-structure>.
- Dollery, Brian, and Andrew Worthington. 1995. “Federal Expenditure and Fiscal Illusion: A Test of the Flypaper Hypothesis in Australia.” *Publius* 25 (1): 23–34.

- Drew, Joseph, and Brian Dollery. 2014. "Estimating the Impact of the Proposed Greater Sydney Metropolitan Amalgamations on Municipal Financial Sustainability." *Public Money & Management* 34 (4): 281–88.
- Drew, Joseph, and Brian Dollery. 2015. "Inconsistent Depreciation Practice and Public Policymaking: Local Government Reform in New South Wales." *Australian Accounting Review* 25 (1): 28–37.
- Drew, Joseph, Michael Kortt, and Brian Dollery. 2014a. "Can't Get No Satisfaction." *Australian Journal of Public Administration*. DOI: 10.1111/1467-8500.12117: 1-13.
- Drew, Joseph, Michael Kortt, and Brian Dollery. 2014b. "Economies of Scale and Local Government Expenditure: Evidence from Australia." *Administration & Society* 46 (6): 632–53.
- Drew, Joseph, Michael Kortt, and Brian Dollery. 2016. "Did the Big Stick Work? An Empirical Assessment of Scale Economies and the Queensland Forced Amalgamation Program." *Local Government Studies* 42 (1): 1–15.
- Economou, Nick. 2010. "Parties, Participation and Outcomes: The 2008 Victorian Local Government Elections." *Australian Journal of Political Science* 45 (3): 425–36.
- Faulk, Dagney, and Michael Hicks. 2011. *Local Government Consolidation in the United States*. New York: Cambria Press.
- Holcombe, Randall, and DeEdgra Williams. 2009. "Are There Economies of Scale in Municipal Government Expenditures?" *Public Finance and Management* 9 (3): 416–38.
- MacDonald, Lynn. 2008. "The Impact of Government Structure on Local Public Expenditures." *Public Choice* 136: 457–73.
- Municipal Association of Victoria. 2013. "2012 Election Analysis." Municipal Association of Victoria, Melbourne.
- Parliament of Victoria. 1989. "Local Government Act 1989." Parliament of Victoria, Melbourne.
- Pettersson-Lidbom, Per. 2012. "Does the Size of the Legislature Affect the Size of Government? Evidence from Two Natural Experiments." *Journal of Public Economics* 96: 269–78.
- Pilcher, Robyn, and Mitchell Van der Zahn. 2010. "Local Governments, Unexpected Depreciation and Financial Performance Adjustment." *Financial Accountability & Management* 26 (3): 299–323.
- PricewaterhouseCoopers. 2006. "National Financial Sustainability Study of Local Government." Commissioned by the Australian Local Government Association, PricewaterhouseCoopers, Sydney.
- Primo, David, and James Snyder. 2008. "Distributive Politics and the Law of 1/n." *The Journal of Politics* 70 (2): 477–86.
- Spicer, Zachary. 2012. "Post-amalgamation Politics: How Does Consolidation Impact Community Decision-Making?" *Canadian Journal of Urban Research* 21 (2): 90–111.
- Stein, Robert, and Kenneth Bickers. 1994. "Universalism and Electoral Connection: A Test and Some Doubts." *Political Research Quarterly* 47 (2): 295–317.

- Tiley, Ian. 2012. *Divided We Fall*. Thorofare, NJ: Xlibris.
- Twomey, Anne. 2013. "Always the Bridesmaid—Constitutional Recognition of Local Government." *Monash University Law Review* 38 (2): 142–80.
- Van De Walle, Steven, and Gregg Van Ryzin. 2011. "The Order of Questions in a Survey on Citizen Satisfaction with Public Services: Lessons from a Split-Ballot Experiment." *Public Administration* 89 (4): 1436–50.
- Victorian Electoral Commission. 2014. "Local Government Voting." Victorian Electoral Commission, Melbourne.
- Victorian Electoral Commission. 2015. "What If I Didn't Vote?" Accessed November 24, 2015. <http://www.vec.vic.gov.au/Voting/WhatIfIDidntVote.html>.
- Weingast, Barry, Kenneth Shepsle, and Christopher Johnsen. 1981. "The Political Economy of Benefits and Costs: A Neoclassical Approach to Distributive Politics." *Journal of Political Economy* 89 (4): 642–64.

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