

**The Empirical Analysis of Council Size,
Council Performance and Council
Amalgamation in Australian Local
Government**

INTRODUCTION

Local government in Australia arrived in the early 1830s in the shadow of centralised colonial structures that already provided the key machinery of government (Brown 2008). Indeed, initial attempts to establish local authorities in the states of New South Wales (NSW) and Queensland (Qld) were rejected by wealthy landholders who were reticent to pay property taxes (Dollery, Crase and Johnson 2006). However, over time the need for road and bridge infrastructure became apparent and Road Boards and Road Trusts were established, often encouraged by financial grants upon incorporation. In time, local government subsumed the responsibilities of the Boards and Trusts but retained a focus on ‘roads, rates and rubbish’ (Dollery and Crase 2004). These functions, often characterised as services to property, met limited resistance due to the nexus between them and the property taxation which provided the requisite funding.

Following World War 2, Australian local government expanded its functions to include services such as planning, zoning and environmental health. Over the last two decades, functions have been extended further to include a number of services to individuals such as recreation and culture, education, health, welfare, transport, economic development, public order and safety (Dollery, Garcea and LeSage 2008). It is important to note that local government involvement in health and education has been limited to assistance rather than responsibility for provision. For example, local authorities in rural areas have been involved in offering financial incentives to doctors for relocation but have not been involved with building or staffing hospitals (which is a state responsibility). Many councils now fund a heterogeneous range of services including aged care and child care facilities, safety

surveillance cameras, swimming pools, bus lines and art galleries. Although the functions of local government have expanded significantly in the post war period, Australian municipalities only provide a relatively narrow range of services when compared with their Anglo American counterparts. This is essentially a result of the historical evolution of local government in Australia, the limited opportunity for revenue raising (principally property tax) and the precarious legal status of Australian municipalities.

There is evidence to suggest that local government was considered during the Constitutional Conventions which occurred prior to federation in 1901, however the Australian Constitution does not in fact acknowledge the existence of this third tier of government. As a result ‘Australian local government has always been a comparatively weak creation, and in most jurisdictions has typically operated as much in conflict with the State governments under whose constitutional control they fall’ (Brown 2008, 438). Examples of such conflicts include the significant forced amalgamation of Qld councils, which also coincided with the removal of water provision assets from metropolitan councils (Prasser 2007). Other functions stripped away from Australian local governments by States include gas, electricity, sewerage (in some areas only) and transport (Dollery, Crase and Johnson 2006).

However, it would be incorrect to assume that service provision has moved in just the one direction. Many services have also been added to the local government portfolio by Commonwealth and State tiers. In the case of the Commonwealth government, this has mainly taken the form of attempts to bypass the states in funding services (Dollery, Crase

and Johnson 2006) although the federal government, along with the states, have also been guilty of the practise of cost-shifting (Brown and Bellamy 2007). Cost-shifting occurs when regulatory or service responsibilities are pushed down from higher tiers with non-indexed or partial funding, or where higher tiers of government retreat from functions and local government are obliged to fill the void (Dollery, Jonson and Byrnes 2008). Examples include pensioner rate concessions in NSW, regional airports and library services (Hawker Report 2003).

The overall effect of the narrow taxation base, cost-shifting and functional expansion has resulted in the emergence of concerns regarding the financial sustainability of the sector. A number of state, federal and private inquiries have pointed to the increasing levels of fiscal stress experienced by local governments (see for example the Hawker Report 2003, Price WaterhouseCoopers (PWC) 2006, Independent Local Government Review Panel (ILGRP) 2013). Of particular concern has been the backlog in infrastructure renewal and maintenance (see, for instance, Metropolitan Local Government Review Panel (MLGRP) 2012, ILGRP 2013). A number of options exist for remedying the current position of Australian local government such as broadening the taxation base, increasing and refining grant funding or providing the legislative latitude for local government to independently set rates and fees. However, the ‘overwhelming emphasis [has been] on outright amalgamation’ (Grant, Dollery and Crase 2009). Table 1, below, charts the fate of local governments since 1910.

Table 1: Number of local councils in Australia, 1910-2012

	1910	1967	1982	1990	1995	2008	2012
NSW	324	224	175	176	177	152	152
VIC	206	210	211	210	184	79	79
QLD	164	131	134	134	125	73	73
SA	175	142	127	n/a	119	68	68
WA	147	144	138	138	144	142	139
TAS	51	49	49	46	29	29	29
NT	0	1	6	22	63	16	16
TOTAL	1,067	901	840	726	841	559	556

Source: Adapted from Dollery, Kortt and Grant (2012)

As can be seen, a number of rationalisations of local municipalities have occurred in the last two decades. Of particular note are the significant forced amalgamations of Victorian, NSW and Queensland councils. In the period from 1993-95 Victorian municipalities were reduced from 210 to 78 in forced amalgamations by the then Kennett government (Dollery, Grant and Kortt 2011; Dollery, Garcea and LeSage 2008). This was followed in 2001 by the Carr government forced amalgamations which resulted in reduction of councils from 177 down to 152 (Department of Local Government NSW 2006). The most recent instance of significant boundary reform occurred in Queensland during 2008 when the Beattie government decreased the number of municipalities from 157 to just 73 (Local Government Reform Commission (LGRC) 2007). These amalgamations have proved divisive and acrimonious and this is reflected in the debate over optimal size of local government in the academic literature (see for instance Leland and Thurmaier 2004; Derksen 1998; Dollery, Kortt and Grant 2011).

However, whilst savage, these cuts to the local government sector are unlikely to be the last given the recommendation of recent state government inquiries. In 2012 the MLGRP proposed the elimination of eighteen of the thirty existing Greater Perth metropolitan councils (MLGRP 2012). This was followed in NSW by the Independent Local Government Review Panel's recommendation to eliminate 24 (out of 38) Greater Sydney and amalgamate 24 non-Sydney local governments (ILGRP 2013). The private sector has also been active on the issue of structural reform. Of particular note is the recent Deloitte Access Economics report for the Property Council of Australia, which recommended the consolidation of twelve existing councils into a 'hypothetical Southern Council' (DAE 2011; Drew, Kortt and Dollery 2013).

Yet the almost obsessive preoccupation with structural reform is by no means contained to the Australian continent. Significant and radical forced and voluntary amalgamation programmes have also been executed across Europe, Japan and North America (Dollery and Robotti 2008; Trasberg 2010). For instance, in 2007 the Danish government implemented a programme of boundary reform which reduced 271 municipalities down to just 98 (Blom-Hansen 2009). In a similar vein, the local government reorganisation of English authorities in 2009 resulted in the elimination of 35 municipalities (De Ceuninck *et al* 2010). Therefore it is evident that both Australian and International local government regulators believe that boundary reform is at least part of the answer to the problem of municipal fiscal stress.

This comparison with international reform agenda begs a question regarding how the size of Australian local government compares to other OECD nations. Table 2 presents data on average council size (in population terms) for eighteen advanced countries. In this comparative analysis Australian municipalities are ranked as the fourth largest, following Britain, Denmark and New Zealand. However, the data needs to be considered in the light of a number of facts. Firstly, as noted earlier, there is considerable functional differentiation within the cohort. Secondly, population density in Australia is well below that of the other nations considered in the table. Finally, related to this second point, many Australian municipalities cover vast distances (such as the Cook Shire which is 10,578,100 square kilometres or over 43 times the size of the United Kingdom) (ABS 2011). The combination of vast geographical areas and low population densities tends to confound the comparison of average number of individuals per municipality. However, it would appear that, in an international sense, Australian local governments are far from small.

This thesis examines the question of council size, council performance and council amalgamation in the Australian context. There are two parts to the thesis. In the first part efficiency approaches to determining optimal municipal size are examined. Efficiency approaches generally focus on determining the presence of economies of scale and the domain of local government sizes for which the economies are present. In the second part of the thesis, alternative approaches to the question of council size and performance are

considered - such as the recent attempts to apply financial ratio analysis to the structural reform agenda and the use of effectiveness analysis.

Table 2: An international comparison of average council size, 2007

Rank	Country	Number of councils	Average council size*
1	Britain	415	143,000
2	Denmark	98	55,500
3	New Zealand	85	49,000
4	Australia	556	40,118
5	Japan	3,200	39,943
6	Netherlands	441	37,000
7	Portugal	308	34,500
8	Ireland	140	32,050
9	Sweden	290	31,500
10	Belgium	589	18,000
11	Poland	2,793	13,500
12	Finland	416	12,500
13	Canada	3,752	9,000
14	Germany	12,340	6,500
15	United States	71,343	4,000
16	Austria	2,357	3,500
17	Switzerland	2,758	2,500
18	France	36,783	1,500

Source: Adapted from Callanan, Murphy and Quinlivan (2012)

*Number of individuals per council

Part 2 of the introduction details the arguments for structural reform and positions boundary reform within the broader typology of local government reforms. Part 3 examines the extant academic literature pertaining to efficiency and other approaches for determining council performance and optimal size. The introduction is concluded in part 4 with a brief description of the journal articles which form the remainder of the thesis.

2. Structural Reform in Local Government

The stated aims of local government reform fall into the three broad categories of efficiency, technical capacity and co-ordination. Efficiency endeavours are generally motivated by a desire to promote sustainability or value for money (Sancton 2000; Marshall 1998; Dollery, Wallis and Crase 2007). Claims regarding efficiency usually rest on economic arguments of improvements to scale (Dollery and Crase 2004) and are prominent in the reasoning of those advocating amalgamation of local governments. On the other hand, technical capacity aims of reform seek to enhance administrative and technical capacity (Andrews and Boyne 2009) or ensure the provision of sufficient numbers of adequately skilled staff (ILGRP 2013; Dollery, Byrnes and Crase 2007). Finally, co-ordination goals focus on the need for regional approaches to economic development (LGRC 2007; Sancton 2000), or the enhanced ability of larger local entities to advocate with higher tiers of government (LGRC 2007; MLGRP 2012; ILGRP 2013). A final co-ordination argument focuses on reduced effort and costs for regulatory authorities (Dollery and Crase 2004), although this is rarely explicitly acknowledged.

Yet other less illustrious aims of local government reform have been cited in the academic and broader public literature. These include blame shifting, seizure of local government assets, political payback and populist measures to limit taxation (Prasser 2007). There may be an element of truth in many of these suggested motivations; certainly in Queensland the amalgamation of councils did coincide with the stripping off of water assets (Dollery, Wallis

and Crase 2007). Moreover, blame shifting has become a regular element of the well defined cycle that accompanies episodes of amalgamation (Drew, Kortt and Dollery 2013).

Opponents to local government amalgamation, on the other hand, have contended that small local municipalities are less bureaucratic, more transparent and more competitive than their larger counterparts (Andrews and Boyne 2009; Bailey 1999). Moreover, evidence has been presented which suggests that smaller local governments can exhibit lower cost profiles in some services (Boyne 1995; Dollery and Crase 2004; Drew, Kortt and Dollery 2012).

Alternatives to amalgamation, such as shared services, have also been presented which have the potential to capture scale economies whilst still maintaining local identity and political representation (see, for example, Dollery, Grant and Kortt 2012 for a thorough review of shared service options). Finally, it has been argued that smaller local government is more democratic and may be more responsive to resident needs (Allan 2003, Drew 2013).

As noted earlier, there are a number of recognised methods for altering the financial sustainability and capacity of local government. A useful five-part typology of these methods was first articulated by Garcea and Lesage (2005) and later refined in Dollery, Garcea and LeSage (2008):

- **Structural reforms** include changes to the number, type and boundaries of local government entities. Examples include the forced amalgamation of Queensland

councils (LGRC 2007), proposals to establish reduced function Local Boards (ILGRP 2013) and redrawing boundaries of local government (MLGRP 2012);

- **Financial reforms** involve **changes** to revenue and expenditure via changing the responsibilities of local government or restricting or changing the way expenditure can be conducted. An example is cost-shifting by higher tiers of government (Hawker Report 2003);
- **Internal organisational and managerial reforms** consist of changes to ‘what councils do and how they do it’ (Dollery, Garcea and LeSage 2008, 38). Examples include statutory definition of the role of elected representatives and the executive, the introduction of Compulsory Competitive Tendering in Victoria (Gough and Patterson 2003) and compulsory community consultation via annual reports and resident satisfaction surveys (Department of Planning and Community Development Victoria 2010);
- **Jurisdictional reforms** consist of re-drafting state local government legislation to confer generally ‘greater powers to individual councils to run their own affairs’ (Dollery, Wallis and Crase 2007, 361). The intention is that additional legislative latitude will allow councils to be more innovative and responsive to community need; and
- **Function reforms** involve alteration to the functions performed and interactions with higher tiers of government. An example of this is the Commonwealth’s *Roads to Recovery* programme which directly funded council road infrastructure, bypassing the second tier (Nagpal, Kortt and Dollery 2013).

The focus of this thesis is structural reform – the dominant response of Australian local government regulators to financial sustainability concerns (Grant, Dollery and Crase 2009; Drew, Kortt and Dollery 2013). Specifically, this thesis addresses the question of whether bigger councils are indeed better, in fiscal terms, and the basis for such claims. Existing evidence would suggest that structural reform does not have the potential to mitigate local government fiscal stress (Dollery and Crase 2004; Andrews and Boyne 2009; Drew, Kortt and Dollery 2012). However, the actions of regulatory authorities, both in Australia and overseas, would suggest that they are still to be convinced. The danger is that whilst regulatory authorities maintain a dominant focus on structural reform, little is being done to address financial sustainability through the other four parts of the reform typology (Dollery, Garcea and LeSage 2008).

Claims that larger councils are economically more efficient invariably focus on the concept of economies of scale. Scale economies examine how the average cost of production changes with respect to different levels of output (Drew, Kortt and Dollery 2012). If average costs decrease as output increases then economies of scale are in evidence. Scale economies occur due to better utilisation of plant capacity (which spreads fixed costs over a greater number of units of output), more specialisation (which generally results in lower average variable costs), greater purchasing power and better use of waste products (such as the production of landscaping mulch by council refuse centres) (Dollery, Byrnes and Allan 2007). Eventually, excess capacity of plant, the benefits of specialisation and other scale effects are exhausted

and most business units enter quite a lengthy domain of constant returns to scale wherein average cost per unit is essentially unchanged as production increases. If production is allowed to continue to expand, business units may then experience diseconomies of scale. Diseconomies are characterised by increasing unit cost as production grows. This may be due to the need to purchase or lease additional plant to alleviate capacity constraints, increased bureaucracy and difficulty co-ordinating greater numbers of staff (Dollery and Flemming 2006; Drew, Kortt and Dollery 2013; Allan 2003).

The importance of economies of scale arguments in pressing the case for structural reform can be seen by its constant inclusion in reports by the various state and private inquiries. Both the NSW Independent Local Government Reform Panel and the Perth Metropolitan Local Government Review Panel explicitly state that larger population size is critical to efficient and sustainable local government (MLGRP 2012; ILGRP 2013). However, neither report provides any econometric analysis in support of the contention. On the other hand, the Deloitte Access Economics (2011) report on proposed Tasmanian council amalgamations does provide econometric analysis to support the claim of economies of scale, although the rudimentary analysis was found to be very sensitive to alternate specification (Drew, Kortt, Dollery 2013). Finally, the Local Government Reform Commission, which preceded the radical forced amalgamations in Queensland, also claimed that economies of scale would result in significant savings, but also failed to provide evidence to support the assertions (LGRC 2007).

Nor did the LGRC (2007) or the Queensland government conduct empirical analysis subsequent to the radical forced amalgamation programme to verify whether the claims made regarding economies of scale and enhanced efficiency actually came to pass. This lack of post amalgamation analysis is typical of the Australian structural reform experience (Grant, Dollery and Crase 2009). It may explain the persistence of the belief that structural reform alone can solve the financial problems in local government, widely subscribed to by regulatory authorities. Part of the reason for the paucity of post structural reform analysis is the difficulty in locating financial records after amalgamation and the fact that many reforms occur part way through the financial year. Another reason may be the political implications should the outcomes achieved not match the sales pitch.

According to Allan (2003), this latter explanation might hold the key to the scarcity of post amalgamation evidence. To support this contention Allan (2003) cites evidence that the promised savings of 20% in the Victorian amalgamations only realised 8.5% and that the 17.4% savings touted in South Australia only yielded 2.3%. However, rigorous academic analysis of the data relating to structural reforms does not appear to be in existence (Dollery, Byrnes and Crase 2007). Moreover, there is no evidence regarding the outcome of the Queensland reforms in the literature at all. Whilst disappointing, this failure at follow-up is also typical of the international experience (Andrews and Boyne 2011).

It also appears that there is little follow-up in relation to the costs of amalgamation.

However, the *Review of Local Government Amalgamation Costs Funding Submissions* report by the Queensland Treasury Corporation (2009) is a welcome departure from the trend. This report was produced in response to the Queensland Premier's statement that he 'would consider individual submissions from local governments in respect of costs of local government amalgamations' (QTC 2009, 4). Only 24 of the 31 eligible Queensland councils made submissions for costs associated with amalgamation. Of these, only 2 councils received recommendation for re-imbusement of some of the costs claimed - it was found that the other 22 councils could meet the amalgamation costs themselves through a combination of liquid assets and debt funding (QTC 2009). The mean amalgamation costs claimed in submissions to the Queensland Treasury Corporation was \$8,108,425 (QTC 2009). This would suggest that one-off amalgamation costs are not at all insignificant, despite the universal neglect of reform panels in accounting for these expenditures (Dollery, Byrnes and Crase 2007). It may also provide part of the explanation as to why structural reforms have failed to deliver on their promise (Allan 2003).

The structural reform process itself has been observed to travel a well worn, three stage path (Drew, Kortt and Dollery 2013). In the first instance, state politicians publicly assert that the fragmentation and ineptitude of local government is significantly hindering the economic development of the entire state. This is then followed by an 'independent' commission or panel into the financial sustainability of local government. In many instances the terms of

reference for the panel explicitly state the need to rationalise the existing council structure (MLGRP 2012, 6). A public inquiry ensues, a discussion paper is published and submissions are called for. Very shortly thereafter a final report is handed down and the recommendation to proceed with forced amalgamations is acted on. Typically, the forced amalgamations are conducted in very short time - in the case of Queensland just three and a half months elapsed between establishment of the Local Government Reform Commission and implementation of its recommendations (Dollery, Kortt and Grant 2011). This 'blitzkrieg-like' approach to structural reform ensures limited opportunity to mobilise forces opposed to the amalgamations. However, public acrimony often simmers away and in both recent examples (Victoria and Queensland) culminates in the dismissal of the incumbent political party and isolated de-amalgamations (Allan 2003; Queensland Boundaries Commissioner 2012; Local Government (Delatite Shire) Review Panel 2002).

3. Evidence on Structural Reform

Most of the academic effort regarding the determination of optimal size for local government has focussed on employing an efficiency approach, wherein regression analysis is conducted to determine the presence of economies of scale. Alternatives to this approach such as financial ratio analysis and effectiveness studies have only been applied to the Australian context during the last eight months, so the literature on these is very limited. Dollery, Grant and Kortt (2012) provide an interesting review of international and Australian studies on efficiency approaches and local government size which essentially extends the pioneering work of Byrnes and Dollery (2002). The review of international empirical studies found

evidence for economies of scale, no economies of scale and diseconomies of scale in more or less equal proportion (Dollery, Grant and Kortt 2012). This mixed evidence suggests two possibilities. Firstly, it may reflect mixed realities wherein economies of scale may exist in some jurisdictions at certain points of time but not in others. Given that the evidence was drawn widely from US and UK locations this might certainly be the case. However, a second possibility must also be considered - that the studies provide inconsistent evidence because methodological flaws can be found within a high proportion of the extant analyses.

Extant studies from Australia also provide mixed evidence regarding the presence of economies of scale. Table 3 provides a summary of Australian efficiency analysis, sourced from Dollery, Kortt and Grant 2011 but updated to include recent publications. Notably, the weight of Australian evidence prior to 2012 supports the contention that larger local government will be more efficient in the Australian context. However, recent evidence has largely contradicted this proposition. It is interesting to note that most of the evidence for economies of scale has come out of government and consultant inquiries, whereas the conflicting evidence derives mainly from academic sources (the possibility of moral hazard in consultant literature is dealt with in chapter 1). The two possibilities for explaining these mixed results remain the same; either genuine differences due to heterogeneity, or, methodological flaws. Given that some of the studies examine the same group of councils in the same time period (such as DAE 2011 and Drew, Kortt and Dollery 2013), the second possibility is suggested.

Table 3: Evidence for Economies of Scale in Australian Studies

Major Finding	Author(s)
Evidence of economies of scale	Byrnes, Dollery and Webber (2002) Institute of Public Affairs (1993) KPMG (1998) Local Government Commission (1986) Musgrave et al (1985) Office of Local Government (1993) South Australian Department of Local Government (1988) Soul (2000) DAE (2011)
No evidence of economies of scale	Abelson (1981) Drew, Kortt and Dollery (2012) Drew, Kortt and Dollery (2013)
Evidence of diseconomies of scale	Soul (2000) Drew, Kortt and Dollery (2013)

Source: Adapted from Dollery, Grant and Kortt (2012)

Indeed, in their seminal work, Byrnes and Dollery (2002) detail a number of deficiencies in the extant literature. Of particular note are the use of inappropriate regressands, lack of exogenous controls and poor predictive power of models, failure to account for the service specific nature of scale economies, neglect of alternate functional forms, failure to examine long run effects and failure to control for service quality (Byrnes and Dollery 2002). An examination of each perceived methodological flaw is important as it demonstrates how one might reconcile the inconclusive extant evidence.

Inappropriate regressands focuses on the choice of proxy for local government output and is the ‘primary criticism that can be levelled at the studies’ (Byrnes and Dollery 2002, 395).

The difficulty lies in the fact that, as discussed in section 1 of this introduction, local governments provide a heterogeneous range of services. As a result, it is impossible to create

an index that would adequately reflect the size and composition of council outputs (Holcombe and Williams 2009; Andrews and Boyne 2009). Consequently, scholars have largely settled on the choice of population as proxy for output despite the fact that it is almost universally agreed that ‘population is probably a very poor proxy for service outputs’ (Boyne 1995, 219) and that ‘service outputs vary considerably across areas with the same population size, depending on their socioeconomic characteristics and political preferences’ (Boyne 1998, 150). The continued use of a generally agreed flawed regressand therefore casts considerable doubt on the extant evidence.

The lack of exogenous controls and poor predictive power of some of the Australian empirical models is also a significant cause for reservation. An example of this problem is the South Australian Department of Local Government (1988) bi-variate study. Without including a full suite of exogenous controls it is impossible to determine causation with any degree of certainty. Associations between expenditure data and population size may have been caused by population size but they could equally have been caused by any number of other variables with direct or indirect relationships to size such as, for example, population density (Holcombe and Williams 2009). By failing to include exogenous controls one discards the principle of *ceteris paribus*, so fundamental to many economic arguments. Additionally, the failure to include sufficient and appropriate regressors results in an econometric model with poor explanatory power. Of course this need to fully specify models must be balanced against the danger of inflated standard errors as a result of including multiple variables which measure a single underlying construct (Stipak and Hensler 1982).

Failure to disaggregate data according to specific service profiles has also been raised in critiques of existing Australian studies (Dollery and Crase 2004; Byrnes and Dollery 2002; Dollery, Byrnes and Allan 2007). It is clear from a consideration of the inputs to council services that the presence of economies of scale will be dependent on whether the function is labour-intensive or capital-intensive. ‘Labour-intensive services, such as council rangers, generate few economies of scale because their idiosyncratic nature means that an increased volume of services may require a correspondingly larger number of workers’ (Drew, Kortt and Dollery 2013, 58). On the other hand, capital-intensive services such as water treatment should generate significant potential for economies of scale where plant is operating below capacity as the fixed cost can be distributed across more units of production. Therefore, it would seem appropriate to disaggregate expenditure by function if possible, to understand whether and where economies of scale might be present.

Neglect of alternate functional forms also has a significant part to play in the inconclusive nature of existing evidence on the presence of economies of scale (Byrnes and Dollery 2002). Many of the existing studies only test for linear relationships (see, for example, Office of Local Government (1993) or DAE (2011)). The problem with this approach is that it effectively rules out any possibility of a minimum efficient scale after which economies of scale might revert to constant returns and finally diseconomies, consistent with economic theory. It is difficult to mount an argument for infinite economies of scale, on theoretical grounds (see section 2 of this introduction), yet this is what is predicted in a positive linear association. To accommodate the likelihood of typical u-shaped production curves, alternate functional forms such as quadratic relations must be tested. This is generally achieved

through the inclusion of a population squared term where population is the principal regressor of interest (Drew, Kortt and Dollery 2013).

Extant studies have also been criticised for failing to examine both short-run and long-run effects. In this regard, one should remain cognisant that economies of scale is, by definition, a long-run concept (Byrnes and Dollery 2002). The economic definition of long-run requires all inputs of production to be variable. Therefore, unless analysis provides for this requisite variability, it is possible that they ‘are not measuring economies of scale, but rather determining how population affects short-run costs’ (Byrnes and Dollery 2002, 404). However, this criticism is often very confused in its application owing to the somewhat counter-intuitive nature of econometric analysis. Fixed effects panel analysis (which uses data from a number of years) actually measures short-run effects (or a combination of short-run and long-run effects in the case of random effects methods) whilst cross-sectional regression (which includes just one year of production data) in fact captures long-run effects. The reason why fixed effects panel analysis only estimates short-run effects is because it is based on the variation within a single council during the period of the panel (dummies are effectively created for each individual local government). Therefore, because it measures variation within a single council over a relatively limited period of time, at least one variable is fixed and only short-run associations can be measured. However, cross section regression measures variation from one council to another and therefore effectively makes all inputs variable, thus allowing for estimation of long-run effects (Kennedy 2003; Woolbridge 2010).

A further problem with the extant studies into the optimal size of Australian local government is that they universally fail to control for differences in service quality. Without such a control it is impossible to determine whether less expensive service provision is due to economies of scale or simply a poorer standard of service (Byrnes and Dollery 2002). Unfortunately, uniform data on service quality is currently unavailable in Australia, moreover it is difficult to imagine how a consensus might be reached on measuring service quality (Stipak 1979). An alternative is to use citizen satisfaction data as a proxy for service quality, however this opens up an existential debate regarding whether citizens can accurately judge local government service quality (Brown and Coulter 1983; Parks 1984; Swindell and Kelly 2005). Effectiveness analysis can sidestep some of these reservations by focussing on the association between citizen satisfaction and council population size (Boyne 1996; Mouritzen 1989; Drew 2013).

The final two criticisms of the existing corpus of work on determining optimal size of local government are best considered together. They relate to aligning studies with regulatory targets and the lack of evidence on post amalgamation outcomes. Firstly, econometric analysis for economies of scale (if specified carefully) does have the potential to determine an optimal size for local government, but it has nothing to say about how the greater financial efficiency will affect specific regulatory foci such as infrastructure backlogs or debt coverage. This then suggests a role for financial ratio analysis (FSR). Because this is a relatively novel approach there is no significant relevant literature, however it is reasonable to assume that many of the criticisms levelled at efficiency approaches could equally apply to FSR analysis.

Secondly, the paucity of literature on post-amalgamation outcomes has already been explored and its absence has been used as an explanation for the preoccupation of Australian regulators with structural reform (Dollery, Byrnes and Crase 2007). There are two possible responses to this situation. Firstly, one could conduct post-amalgamation studies to determine whether the outcomes accord with the promises; however, problems locating financial records and difficulties associated with the timing of forced amalgamations makes this approach fraught with problems. The second option is to estimate future post-amalgamation outcomes on the basis of existing data. This second option allows one to essentially ‘try before they buy’, but detailed analysis of this type is largely missing from the current corpus of scholarly work.

4. Structure of Thesis

This thesis is by publication which results in each chapter being a self contained piece. Indeed one of the chapters has already been published (chapter 1) and three others have been accepted for publication (chapters 2, 5 and 6). However, the component chapters can also be taken as an integrated whole which systematically examines each criticism detailed in section 3 and explores its validity, outcomes and alternatives. At the conclusion of these component explorations it will be possible to make an informed assessment as to whether:

- (i) economies of scale uniformly exist in Australian local government;
- (ii) alternative techniques have potential for better evaluating the size and performance of councils; and
- (iii) boundary reform alone has any prospects for enhancing the financial viability of the Australian local government sector.

In chapter 1 (Drew, Kortt and Dollery 2013), an examination of the Deloitte Access Economics (DAE) (2011) consultant report for the Property Council of Australia sheds light on how alternate functional forms and inexact model specification can produce results, which if taken at face value, might result in poor outcomes from boundary reforms. The paper also explores the moral hazard inherent in consultant reports.

After a brief review of the DAE (2011) report, chapter 1 examines a number of the empirical claims made. The first claim relates to the inter-jurisdictional comparison of per capita costs presented in the report. When the comparative analysis was examined in detail it was found that the data presented for Tasmania was dealt with in an inconsistent manner with respect to other jurisdictions. Firstly, financial data for Tasmania related to the 2009/10 financial year whilst other states pertained to 2008/09. Secondly, outliers had been trimmed from the mean for Queensland and Western Australia, but not for Tasmania. This second point was of particular significance given that King Island and Flinders Island councils were located offshore and had significantly greater costs attributable to transport. When the Tasmanian

data was corrected in a manner consistent with the mainland states, the results suggested that Tasmanian local governments were in fact the most efficient (on a per capita expenditure basis) in the country - a conclusion inconsistent with the fundamental arguments set out in the DAE (2011) report.

Attention was then turned to the econometric analysis which formed the cornerstone of the DAE argument that amalgamating the existing 12 councils into a hypothetical Southern Council would yield efficiencies in the order of \$110 million (DAE 2011, 29). The linear regression model used by DAE (2011), employing just one exogenous control (road length), was found to be sensitive to alternate specifications and functional forms. In the first re-estimation, a quadratic population term was added to DAE's (2011) base model. This produced a u-shaped production function with a local *minima* at approximately 35,000 (the quadratic term was significant at the 1% level). Given that the proposed 'Southern Council' was projected to have a population of approximately 250,000, the re-estimated model suggested diseconomies would result from the recommended boundary reform. Exogenous controls drawn from the scholarly literature were then added to the first re-estimation. In this second re-estimation the population terms were found to be only marginally significant (at the 10% level) but the local *minima* remained at a relatively low turning point of 42,000. Finally, a third re-estimation was carried out with the outliers removed - in this case there was no longer any evidence of a significant association between population and per capita cost. These various re-estimations clearly demonstrate the danger in progressing proposed boundary reforms on the basis of poorly specified linear models, consistent with the critique of Byrnes and Dollery (2002) detailed in the previous section.

Chapter 2 deals with the problems relating to limited post-amalgamation evidence and the need to disaggregate expenditure data according to function. In order to achieve these aims financial and demographic data was obtained for the Queensland councils in the last full financial year prior to amalgamation (2006/07; 114 councils) and the most recent set of financial statements subsequent to the 2008 amalgamations (2009/10 financial year; 57 councils). The empirical strategy was divided into two parts. In the first instance, econometric modelling was conducted to determine the presence of economies of scale both before and after amalgamation. In the second stage, expenditure data was disaggregated into the three functional categories available - road, waste and parks.

Quadratic production curves were found to be significant for Queensland councils in both pre (*minima* at 98,000) and post (*minima* at 99,000) amalgamation models. Essentially, the turning point at which diseconomies started to emerge was largely unchanged following the mass forced amalgamations. (The inertia in the turning point was to be expected given that the reforms had focussed solely on boundary change rather than other aspects of the reform typology which might have resulted in altered costs structures (Dollery, Gracea and LeSage 2008)). However, due to the choices made in the boundary reform process, the proportion of the state's population serviced by councils with diseconomies in evidence increased from 64% (10 councils) in 2006/07 up to 84% (13 councils). This result was benchmarked against data that detailed a real increase of 4.7% pa over the relevant period. This aspect of chapter 2

sheds light on how claims of efficiencies made in amalgamation sales pitches might actually pan out.

The expenditure data was then disaggregated by function. When this was done there was no longer any evidence of economies of scale in the roads or waste functions, for either time period. There was, however, evidence of economies of scale in the parks function (representing 5% of total expenditure). Therefore, the analysis was consistent with scholarly literature suggesting that economies of scale are service specific and that disaggregated analysis should be carried out wherever possible (Dollery and Crase 2004; Byrnes and Dollery 2002; Dollery, Byrnes and Allan 2007). It also suggests that alternatives to boundary reform, such as shared services might have produced better results without the economic and social costs of forced amalgamation (Dollery and Akimov 2008).

The third chapter deals solely with the difficult problem of finding suitable measures for local government output. As discussed in section 3, population is typically used as a proxy for output despite universal agreement that it is a rather poor one (Boyne 1995; Boyne 1998; Andrews and Boyne 2009; Byrnes and Dollery 2002; Holcombe and Williams 2009). An alternative to using population might be to use expenditure per household as the regressand and households as the regressor. There are a number of reasons for this preference - firstly, household data is less volatile than population statistics and a theoretical consideration of the dynamics suggests that this will always be the case. Secondly, population data is subject to significant intercensal error in the range of 2.4% to 15.2% depending on statistical area.

Finally, households are correlated better to the nature of Australian local government service provision than population size, resulting in more accurate estimates of production unit costs.

When regressions based on households are compared to models based on population size, one finds that the alternative proxy tends to shift the turning point of quadratic production functions to the left. This is due to the fact that population provides an over-estimate of the number of units of production, thus underestimating the average cost per unit, resulting in an overestimate of the minimum efficient scale. Because of the size of intercensal error, this is likely to result in the sort of inconsistent results that we have seen in the extant literature. It is noted that this inconsistency is likely to be greatest in the year prior to a given census, after which time estimates are generally rebased.

The various models employed in Chapter 3 were then re-estimated to include business unit data. Theory suggested that the inclusion of this data would provide an even more accurate representation of actual local government output and therefore shift the production function *minima* further to the left. This was in fact the result obtained from the re-estimated models. Ideally, business unit data would be indexed according to functional expenditure, however this is not available in Australia at present. The exercise was sufficient to show that the inclusion of weighted business data would produce more accurate results should it become

Chapter four addresses three of the methodological flaws identified in the extant literature - the use of econometric techniques to identify both short-run and long-run effects, the use of data better aligned with regulatory foci and the issue of various functional forms. In this chapter, financial sustainability ratios (FSRs) obtained from TCorp (2013) reports on the financial sustainability of each New South Wales council are regressed against population parameters (population size, density and population growth) and exogenous controls. The use of FSR rather than simple expenditure data resulted in a better alignment with the regulatory authorities focus on ratios, particularly the asset renewal and debt ratios. Both cross section and fixed effects panel analysis were conducted in order to capture short-run and long-run effects. Quadratic and linear models were tested before settling on the latter due to statistical significance and relevant domain concerns. It should be noted that, unlike production functions, there is no theoretical reason why econometric models of FSR should allow for u-shaped associations. Regressions were also stratified according to whether the councils were located in Greater Sydney or outside Sydney. Stratification was used rather than dummies given that the latter technique assumes a restriction of equal slopes that could not be justified on theoretical grounds.

For Greater Sydney councils, the fixed effects panel regression failed to provide any evidence of an association between population size and the ten FSRs. This suggests that proposed amalgamations on the basis of population size are unlikely to result in any short-run improvement to the sustainability of New South Wales councils (as measured by the

TCorp ratios and advocated by the ILGRP) (ILGRP 2013). However, cross-sectional regression results suggested that a 1% increase in population size would lead to a likely 1.06% increase in the Asset Renewal ratio, in the long-run.

For non-Sydney councils, the fixed effects panel regression provided evidence for an increase in Asset Renewal and Operating ratios, in the short-run. However, a number of other regressors were also statistically significant, thus suggesting potential to confound the result. The long-run evidence for the same strata suggested deterioration in the Unrestricted Current ratio should the proposed population based amalgamations proceed (the model predicts that a 1% increase to population size would result in a 0.47% decrease in the ratio). This result may explain why de-amalgamation campaigns persist over time rather than fizzling out. It also demonstrates the importance of considering both the short-run and long-run associations between population size and the regressand of interest.

Chapter five continues the work on FSRs in line with regulatory foci but extends this to address the issue of the paucity of post-amalgamation data. This is achieved by re-estimating the FSRs for each of the Sydney metropolitan councils according to the details of the proposed amalgamations (the proposed amalgamations would see the reduction of Greater Sydney councils from 38 to 14). In order to achieve this objective, each council's 10 FSRs were decomposed into their component parts. The ratio components were then re-combined into a putative 'amalgamated' entity and the FSRs estimated using TCorp (2013) definitions. By doing this it is possible to assess the likely post-amalgamation results *prior* to the

implementation of the boundary reforms. The results that emerged suggested very little improvement to financial sustainability (as measured by TCorp's (2013) FSR) if the amalgamations based on population size were executed (the analysis suggested 161 ratios would improve and 159 deteriorate). Moreover, the re-estimated Infrastructure Backlog, Asset Renewal and Asset Maintenance ratios had almost universally failed to achieve the TCorp (2013) benchmarks. Given that an infrastructure backlog was cited as principle motivation for the proposed boundary changes, this result should be of serious concern to the regulators and various stakeholders. It will be noted that the re-estimated FSR did not account for the significant one-off or ongoing amalgamation costs (due to an absence of recent and reliable cost data) - had it done so, it is more than likely that the projected result would have suggested a net deterioration in FSR following the proposed amalgamations.

Chapter six addresses the last of the methodological issues raised in the literature (that different councils provide varying levels of service quality) as well as presenting a novel approach to the empirical analysis of local government performance and size. This issue is addressed by employing an 'effectiveness' approach which explores the association between local government citizen satisfaction survey data and council population size. Longitudinal data (spanning the years 2008-2010) was used in a fixed effects regression that builds on earlier work employing cross section material (see Drew 2013). The overall result established a negative linear association between citizen satisfaction and population size in Metropolitan and Rural councils. This result suggests that citizen satisfaction decreases with increased population size. The implication of this for boundary reform in Australian local government is that it suggests that reforms aimed at increasing population size are likely to

decrease citizen satisfaction. In this regard, the result is consistent with the bitter acrimony often accompanying forced amalgamations. Moreover, the conclusions suggested by the effectiveness analysis accords well with the observed fate of the state governments that embarked on significant forced amalgamations of local government (Allan 2003). Finally, the results go some way towards explaining the emerging trend of subsequent de-amalgamations (Queensland Boundaries Commissioner 2012; Dollery, Kortt and Grant 2011).

The conclusion to the thesis is directed principally at applying the material from the various chapters in order to provide an assessment of the three questions posed at the beginning of this section. In essence, the conclusion makes an informed assessment of existing techniques and recent alternative approaches for their ability to inform boundary reform measures aimed at improving the financial sustainability of local government in Australia.

References

- Allan, P. 2003. 'Why Smaller Councils Make Sense.' *Australian Journal of Public Administration*, 62(3): 74-81.
- Andrews, R. and G. Boyne. 2009. 'Size, Structure and Administrative Overheads: An Empirical Analysis of English Local Authorities.' *Urban Studies* 46(4): 739-759.
- Andrews, R. and G. Boyne. 2011. 'Structural Change and Public Service Performance: The Impact of the Reorganization Process in English Local Government.' *Public Administration* 90(2): 297-312.
- Aulich, C. 2005. 'Australia: Still a Tale of Cinderella?' in B. Denters and L. Rose (eds) *Comparing Local Governance: Trends and Developments*. Basingstoke: Palgrave MacMillan.
- Bailey, S. 1999. *Local Government Economics: Principles and Practice*. London: Macmillan.
- Blom-Hansen, J. 2009. 'Municipal Amalgamations and Common Pool Problems: The Danish Local Government Reform in 2007.' *Scandinavian Political Studies* 33(1): 51-73.
- Boyne, G. 1995. 'Population Size and Economies of Scale in Local Government.' *Policy and Politics* 23(3): 213-222.
- Boyne, G., 1996. 'Scale, Performance and the New Public Management: An Empirical Analysis of Local Authority Services.' *Management Studies* 33(6): 809-826.

Boyne, G. 1998. The determinants of Variations in Local Service Contracting; Garbage In, Garbage Out? *Urban Affairs Review* 34(1): 150-159.

Brown, A. 2008. 'In Pursuit of the 'Genuine Partnership': Local Government and Federal Constitutional Reform in Australia.' *UNSW Law Journal* 31(2): 435-466.

Brown, A. and Bellamy, J. (eds). 2007. *Federalism and regionalism in Australia. New Approaches, New Institutions?* Canberra: ANU Press.

Brown, K. and P. Coulter. 1983. 'Subjective and Objective Measures of Police Service Delivery.' *Public Administration Review* 43(1), 50-58.

Byrnes, J., and B. Dollery. 2002. 'Do Economies of Scale Exist in Australian Local Government? A Review of the Research Evidence.' *Urban Policy and Research* 20(4): 391-414.

Callanan, M., R. Murphy and A. Quinlivan. 2012. 'Myths and realities of Economies of Scale in Local Government.' Paper presented to the Regional Studies Association and Political Studies Association of Ireland Symposium *Local Government Reform: Myth or Reality?*, Renham Hall, National University of Ireland Maynooth, 8th March 2013.

De Ceuninck, K., H. Reynaert, K. Steyvers and T. Valcke. 2010. 'Municipal Amalgamations in Low Countries: Same Problems, Different Solutions.' *Local Government Studies* 36(6): 803-822.

Deloitte Access Economics [DAE]. 2011. *Local Government Structural Reform in Tasmania*. Tasmania: Property Council of Australia.

DLGNSW [Department of Local Government NSW]. 2006. *Annual Report 2005-06; Sustainable Change*. Sydney: DLGNSW.

DPCDV [Department of Planning and Community Development, Victoria]. 2010. *Annual Community Satisfaction Survey*. Melbourne: DPCDV.

Derksen, W. 1988. 'Municipal Amalgamation and the Doubtful Relation Between Size and Performance.' *Local Government Studies* 14(6): 31-47.

DAE [Deloitte Access Economics]. 2011. *Local Government Structural Reform in Tasmania*. Tasmania: Property Council of Australia.

Dollery, B. and A. Akimov. 2008. 'Are Shared Services a Panacea for Australian Local Government? A Critical Note on Australian and International Empirical Evidence.' *International Review of Public Administration* 12(2): 89-102.

Dollery, B., J. Byrnes and P. Allan. 2007. 'Optimal Structural Reform in Australian Local Government: An Empirical Analysis of Economies of Scale by Council Function in New South Wales.' *Urban Policy and Research* 25: 473-486.

Dollery, B., J. Byrnes and L. Crase. 2007. 'Is Bigger Better? Local Government Amalgamation and the South Australian Rising to the Challenge Inquiry.' *Economic Analysis and Policy* 37(1): 1-14.

Dollery, B., J. Byrnes and L. Crase. 2008. 'Australian Local Government Amalgamation: A Conceptual Analysis of Population Size and Scale Economies in Municipal Service Provision.' *Australasian Journal of Regional Studies* 14(2): 167-175.

Dollery, B. and L. Crase. 2004. 'Is bigger Local Government Better? An Evaluation of the Case for Australian Municipal Amalgamation Programs.' *Urban Policy and Research* 22(3): 265-275.

Dollery, B., L. Crase and A. Johnson. 2006. *Australian Local Government Economics*. Sydney: UNSW Press.

Dollery, B. and E. Fleming. 2006. 'A Conceptual Note on Scale Economies, Size Economies and Scope Economies in Australian Local Government.' *Urban Policy and Research*, 24(2): 271-282.

Dollery, B., J. Garcea and E. LeSage, Jr. (eds). 2008. *Local Government Reform - A Comparative Analysis of Advanced Anglo-American Countries*. Cheltenham: Edward Elgar.

Dollery, B. and B. Grant. 2011. 'Economic Efficiency Versus Local democracy? An Evaluation of Structural Change and Local democracy in Australian Local Government.' *Interdisciplinary Economics* 23(1): 1-20.

Dollery, B., M. Kortt and B. Grant. 2011. 'A Normative Model for Local Government De-Amalgamation in Australia.' *Australian Journal of Political Science* 46(4): 601-615.

Dollery, B., B. Grant and M. Kortt. 2012. *Councils in Cooperation - Shared Services and Australian Local Government*. Sydney: The Federation Press.

Dollery, B., and L. Robotti. 2008. *Theory and Practice of Local Government Reform*. Cheltenham: Edward Elgar Publishers.

Dollery, B., J. Wallis and L. Crase. 2007. 'About Turn: Policy Reversals and the Queensland Local Government Reform Commission.' *Economic Papers* 26(4): 360-371.

Drew, J., 2013. 'Is Bigger Better in Local Government in the Eyes of Victorian Citizens?' *Working Paper 01-2013, Centre for Local Government, University of New England, Armidale.*

Drew, J., M. Kortt and B. Dollery. 2012. 'Economies of Scale and Local Government Expenditure: Evidence From Australia.' *Administration & Society (Online First).*

Drew, J., M. Kortt and B. Dollery. 2013. 'A Cautionary Tale: Council Amalgamations in Tasmania and the Deloitte Access Economics Report.' *Australian Journal of Public Administration* 72(1): 55-65.

Garcea, E. and E. LeSage Jr. 2005. *Municipal Reform in Canada. Reconfiguration, Re-empowerment and Rebalancing.* Toronto: Oxford University Press.

Gough, R. and C. Patterson. 2003. 'Teams, Compulsory Competitive Tendering and Employee Burnout.' *Victoria University of Technology Working Paper 23/2003.*

Grant, B., B. Dollery and L. Crase. 2009. 'The Implications of the Lyons Report into Local Government in England for Structural Reform in Australian Local Government.' *Public Administration* 32(10): 852-867.

Holcombe, R., and D. Williams. 2009. 'Are there economies of scale in municipal government expenditures?' *Public Finance and Management* 9(3): 416-438.

House of Representatives Standing Committee on Economics, Finance and Public Administration (Hawker Report). 2003. *Rates and taxes: A Fair Share for Responsible Local Government.* Canberra: Commonwealth of Australia.

ILGRP [Independent Local Government Review Panel]. 2013. *Future Directions for NSW Local Government - Twenty Essential Steps*. Sydney: Independent Local Government Review Panel.

Kennedy, P. 2003. *A Guide to Econometrics - Fifth Edition*. Cambridge: MIT Press.

Leland, S. and K. Thurmaier. (eds). 2004. *Case Studies of City-County Consolidation: Reshaping the Local Government Landscape*. New York: M.E. Sharpe Inc.

Local Government (Delatite Shire Council) Review Panel [LGRP]. 2002. *Review of Possible restructuring of the Delatite Shire*. Melbourne: LGRP.

LGRC [Local Government Reform Commission]. 2007. *Report of the Local Government Reform Commission Volume 1*. Brisbane: LGRC.

Marshall, N. 1998. 'Reforming Australian Local Government: Efficiency, Consolidation and the Question of Governance.' *International Review of Administrative Sciences* 64: 643-662.

MLGRP [Metropolitan Local Government Review Panel]. 2012. *Final Report of the Independent Panel*. Perth: MLGRP.

Mouritzen, P., 1989. 'City Size and Citizen's Satisfaction: Two Competing Theories Revisited.' *European Journal of Political Research* 17: 661-688.

Nagpal, M., M. Kortt and B. Dollery. 2013. 'Bang for the Buck? An Evaluation of the Roads to Recovery Program.' *Economic Papers* 32(2): 239-248.

Parks, R. 1984. 'Linking Objective and Subjective Measures of Performance.' *Public Administration Review* 44(2): 118-127.

- Prasser, S. 2007. 'Democracy and Local Government - the Queensland Experience.' *The Sydney Papers Spring 2007*: 83-92.
- PWC [Pricewaterhouse Coopers]. 2006. *National Financial Sustainability Study of Local Government*. Sydney: Pricewaterhouse Coopers.
- Queensland Boundaries Commissioner [QBC]. 2012. *Queensland Boundaries Commissioner Report - Proposed Noosa De-amalgamation*. Brisbane: QBC.
- Queensland Treasury Corporation [QTC]. 2009. *Review of Local Government Amalgamation Costs Funding Submissions - Final Summary Report*. Brisbane: QTC.
- Sancton, A. 2000. *Merger Mania*. Montreal: McGill-Queens University Press.
- Stipak, B., 1979. 'Citizen Satisfaction with Urban Services: Potential Misuse as a Performance Indicator.' *Public Administration Review* 39(1): 46-52.
- Stipak, B. and C. Hensler. 1982. 'Statistical Inference in Contextual Analysis.' *American Journal of Political Science* 26(1): 151-175.
- Swindell, D. and J. Kelly. 2005. 'Performance Measurement Versus City Service Satisfaction: Intra-City Variations in Quality?' *Social Science Quarterly* 86(3): 704-723.
- New South Wales Treasury Corporation [TCorp]. 2013. *Financial Sustainability of the New South Wales Local Government Sector*. Sydney: TCorp.
- Trasberg, V. 2010. 'Baltic Local Governments' Fiscal Situation: Two Decades of Reforms.' *Journal of Baltic Studies* 40(2): 179-200.

Wooldridge, J. 2010. *Econometric Analysis of Cross Section and Panel Data - Second Edition*. Cambridge: MIT Press.

Chapter 1

Drew, J., Kortt, M. and Dollery, B. (2013). 'A Cautionary Tale: Council Amalgamation in Tasmania and the Deloitte Access Economics Report', *Australian Journal of Public Administration*, 72(1): 55-65.

Chapter 2

Drew, J., Kortt, M. and Dollery, B.

(2013). 'Did the Big Stick Work? An

Empirical Assessment of Scale

Economies and the Queensland Forced

Amalgamation Program.' *Local*

Government Studies, In Print.

Chapter 3

Drew, J. and Dollery, B. (2013).

**‘Keeping It In-House: Households as an
Alternative Proxy for Local
Government Output.’ Unpublished.**

Chapter 4

Drew, J. and Dollery, B. (2013). ‘The Long and Short of It: Financial Sustainability ratios and Proposed Local Government Amalgamation in New South Wales. Unpublished.

Chapter 5

Drew, J. and Dollery, B. (2013). ‘Is the Game Worth the Candle? Estimating the Impact of the Proposed Greater Sydney Metropolitan Amalgamations on Municipal Financial Sustainability.’ *Public Money and Management, In Print.*

Chapter 6

Drew, J. and Dollery, B. (2013). ‘Does Size Still Matter? An Empirical Analysis of the Effectiveness of Victorian Local Authorities.’ *Local Government Studies, In Print.*

Conclusion

The preceding chapters have discussed in detail the various components of the research presented in this thesis, which examined council size, performance and amalgamation in Australia. This chapter presents the conclusions to the three research questions posed in the Introduction.

Do economies of scale exist uniformly in Australian local government?

The extant evidence (prior to this thesis), if taken at face value, might suggest that economies of scale do exist in Australian local government. However, the exploration of methodological flaws undertaken as part of this research indicates that much of the existing empirical evidence has little value in terms of informing the debate on Australian council size. In particular, inexact model specification (Chapter 1 and Chapter 3), failure to account for the service specific nature of scale economies (Chapter 2), neglect of alternative functional forms (Chapter 1 and Chapter 4), failure to examine long-run effects (Chapter 4), failure to account for varying service quality (Chapter 6), and a lack of post-amalgamation studies (Chapter 2 and Chapter 5) all cast considerable doubt on much of the evidence accumulated prior to 2012.

It is thus likely that no optimal functional size exists for local government – a conclusion also reached by Sancton (2000). Accordingly, the empirical literature cannot be used to

justify compulsory consolidation programs based on increasing the population size of local government as a means of reducing the costs of local government service provision.

Do alternative techniques have the potential to better evaluate the size and performance of councils?

Alternative techniques, such as financial sustainability ratio analysis (Chapter 4 and Chapter 5) and council effectiveness analysis (Chapter 6) appear to hold significant potential for the empirical assessment of proposed structural reforms. However, as we have seen, these approaches are quite novel and there remains a good deal of work to be done before they can be widely applied to local government reform. In particular, a reliable and accurate suite of financial sustainability indicators needs to be created, and these indicators should include, but not be limited to, financial sustainability ratios. Until this is achieved, any FSR analysis will be only as useful as the ratios upon which it is based. The critical task with respect to effectiveness analysis will be to accumulate more effectiveness data from different local government jurisdictions for comparison. Moreover, the identification and use of objective indicators to gauge municipal effectiveness may prove an important complement to the results of subjective resident satisfaction data. As the body of work on effectiveness analysis expands over time, it is likely that new applications and techniques will evolve and that through this work the citizen will be placed firmly in the forefront of local government reform decision making.

Taken as a whole, alternative approaches to evaluating council performance and size are important in refocusing attention on policy priorities and citizen preferences in the local government reform debate. Indeed, it should be clear that future structural reform programs must be assessed by employing a range of techniques which take account of policy priorities, citizen preferences and projected outcomes in addition to traditional efficiency approaches.

What are the future prospects of structural reform for enhancing the financial viability of Australian local government?

As we have seen, a paucity of empirical work on the outcomes from boundary reform may well be the reason why policy makers in Australia have remained steadfastly devoted to structural change through forced amalgamation. Chapter 2 and Chapter 5 directly addressed this problem by evaluating the 2007/8 Queensland compulsory mergers and the proposed Greater Sydney metropolitan amalgamation program.

In each case it has been shown that boundary reform has failed to enhance financial sustainability in local government. It is thus difficult to understand how any rational future policy maker could propose structural reform to improve financial viability cognisant of the lack of supportive empirical evidence.