AN ASSESSMENT OF SGS REPORT LOCAL GOVERNMENT STRUCTURAL CHANGE: OPTIONS ANALYSIS

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EXECUTIVE SUMMARY

In April 2013, the NSW Independent Local Government Review Panel (ILGRP) published *Future Directions for NSW Local Government: Twenty Essential Steps* which proposed various recommendations for improvement, including drastic council amalgamation, especially in Sydney.

Future Directions recommended *inter alia* that Manly, Pittwater and Warringah merge on grounds that: (a) Manly, Pittwater and Warringah would have a combined projected 2036 population of 290,000 people; (b) there were 'close functional interaction and economic/social links' between Manly, Pittwater and Warringah which formed an 'island' in the Greater Sydney metropolitan region; and (c) Manly, Pittwater and Warringah required 'integrated planning of centres, coast, transport etc.'

SGS was engaged by Warringah Council and in June 2013 it produced *Local Government Structural Change - Options Analysis*, which considered alternative structural configurations involving Warringah Council. SGS examined four possibilities:

- **Option 1** (Base case): current boundaries remain unchanged.
- **Option 2** (ILGRP recommendation): Manly, Pittwater and Warringah merger.
- **Option 3** (Shore Regional Organisation of Councils (SHOROC) option): amalgamation of Manly, Mosman, Pittwater and Warringah.
- **Option 4** ('sub-region' option): amalgamation of Manly, Pittwater, Warringah, Ku-ring-gai and Hornsby.

After due consideration, SGS pronounced Option 3 (Manly, Mosman, Pittwater and Warringah merger) its 'preferred option'.

This Report provides a critical appraisal of *Local Government Structural Change.*

Chapter 1: Introduction sets out the background to the report and outlines its contents.

Chapter 2: Strategic Context considers the analysis presented by SGS in its Chapter 3: Chapter 3 placed Hornsby, Ku-ring-gai, Manly, Mosman, Pittwater and Warringah in the context of Sydney metropolitan planning and NSW regional boundaries, provided population and employment growth projections, briefly tackled 'communities of interest', examined 'journey to work patterns' and 'household travel patterns' and compared 'strategic plans for Hornsby, Ku-ring-gai, Manly, Mosman, Pittwater and Warringah'. Although Chapter 3 of *Local Government Structural Change* expended immense effort on reproducing maps depicting various relationships between different parts of the Sydney metropolitan region, this had very little bearing on the question of structural reform through forced amalgamation.

Chapter 2 drew three main conclusions on the analysis undertaken by SGS:

- On the critical question of community of interest, which plays a pivotal role in the success or otherwise of amalgamation, Chapter 3 had almost nothing to say about community of interest for Option, 2, Option 3 and Option 4, apart from a desultory four paragraphs in a 20 page chapter. In particular, it ignored socio-economic factors in determining whether real community of interest exists. Had the SGS bothered to

conduct socio-economic profiling, it would have realised that no 'community of interest' existed and hence amalgamation could not be justified on grounds of 'community of interest'.

- Chapter 2 conducted a thorough examination of the socio-economic profiles of Manly, Pittwater, Warringah, Ku-ring-gai and Hornsby and demonstrated that stark differences existed, especially in terms of 'human service' needs. This necessarily implied that the proposed merger options canvassed in the SGS Report could not be advanced on 'community of interest' grounds.
- Chapter 2 stressed that when Pittwater, Warringah, Hornsby, and Ku-ring-gai (outer Sydney councils) are compared to Manly and Mosman (high density inner Sydney councils), the outer Sydney councils are significantly different in their socio-economic profiles. Given these substantial differences, no empirical 'community of interest' argument can be advanced to justify the merger options as canvassed in the SGS Report. Indeed, forced mergers may well lead to a widening of these socio-economic differences if 'inner-Sydney' local government strategies are pursued at the expense of 'outer-Sydney' councils.

Chapter 3: Local Boards in Merged Metropolitan Councils examines the recommendation by the Panel that local boards be established as sub-council structures to maintain the 'local' in large amalgamated local councils. SGS endorsed this proposal and examined local boards in the context of an amalgamated greater Warringah council, including costing each board at $156,000 per year.

Chapter 3 drew three main conclusions for the analysis undertaken by SGS:

- Despite claims to the contrary by the Panel and SGS, the operation of community/local boards in New Zealand is far from satisfactory. Indeed, community/local boards are used much less frequently and make fewer decisions than when they were first established in 1989.
- SGS ignored the current NSW Local Government Act which already allows for effective 'co-governance' structures, such as Section 355 Committees, and there is thus no need for new legislation and an expensive additional tier of government comprised of local boards.
- The estimated cost of $156,000 per local board per annum by SGS radically understated the real costs of establishing local boards in an amalgamated greater Warringah council. Extrapolating from documented experience in Auckland, the report found that local boards in an amalgamated greater Warringah council would cost $507,631 per board per annum in direct remuneration costs alone. Under Option 3 (Manly, Mosman, Pittwater and Warringah merger) - preferred by SGS – this would imply approximately 4 boards at $507,631 per board for an annual remuneration cost of $2,030,524.

Chapter 4: Financial Ratio Analysis of Proposed Amalgamation Options examined claims that amalgamation would improve the financial sustainability of merged councils in the various structural configurations of a greater Warringah council. *Future Directions* in large part advanced its drastic council amalgamation program, centred in the Greater Sydney metropolitan region, on the basis argument that councils with a larger population size would

be more fiscally viable. But the Panel offered no empirical evidence in support of this claim. In common with *Future Directions, Local Government Structural Change* also entirely ignored the question of whether empirical evidence existed to back the claim that larger councils would be more financially sustainable.

In order to address this absence of empirical analysis, Chapter 4 employed the data presented in *Financial Sustainability of the New South Wales Local Government Sector* by the NSW Treasury Corporation (TCorp), and especially its Financial Sustainability Ratios (FSR) to conduct a financial analysis of Option 2, Option 3 and Option 4 in SGS.

Chapter 4 drew three main conclusions:

- In its econometric estimations to determine whether there were any statistically significant associations between population size and the ten TCorp FSRs, Chapter 4 found that there could be an improvement to just one of the relevant FSRs. However, this excluded substantial one-off and ongoing amalgamation costs. Similarly, the analysis of short-run associations produced no statistically significant results.
- In its estimation the TCorp FSR for Option 2, Option 3 and Option 4 in *Local Government Structural Change*, Chapter 4 found that Options 2 and 3 may result in a negligible net improvement in FSR, whereas Option 4 would result in a net deterioration in FSR. However, all the estimates excluded one-off merger costs (which in Queensland were $8.1 million per amalgamation) and ongoing costs (which in Queensland were about 4.7% per annum).

- Chapter 4 concluded the empirical evidence it had generated showed that there is little likelihood that any of the three Options examined by SGS would result in enhanced local government financial sustainability (as measured by the TCorp FSR).

Chapter 5: Critique of the Econometric Analysis examines the claims made in Chapter 6: Financial Analysis of the SGS report which examined the financial consequences of Option 2, Option 3 and Option 4 using an extremely simplistic econometric modelling technique. SGS claimed that Option 3 has the 'potential to generate the most cost savings' and could generate cost savings 'over the next 10 years would equate to around $344 million'. Similar astounding claims were made with respect to Option 2, which was said to generate $257 million and '$377 million – $12 million' under different assumptions.

In Chapter 5 in this report provided a critical assessment of the econometric analysis conducted by SGS. In its analysis, SGS had examined the relationship between population size and per capita expenditure categories for the councils of Manly, Pittwater, Warringah, Mosman, Ku-ring-gai, and Hornsby for 2011 data only. To test the robustness of the SGS analysis, Chapter 5 examined the relationship between population size and per capita expenditure for Manly, Pittwater, Warringah, Mosman, Ku-ring-gai and Hornsby using a six year panel dataset covering the period 2005 to 2010. Chapter 5 explicitly assessed the three merger options proposed in the SGS Report.

Chapter 5 drew two main conclusions:

- It found that there is no statistically significant relationship between population size and per capita expenditure.
- Given this finding, from a policy perspective, there is no empirical reason to believe that Option 2, Option 3, and Option 4 will result in any significant cost-savings.

In sum, this report finds that since the analysis in *Local Government Structural Change* is fatally flawed in respect of 'community of interest', the cost and operation of local boards, the impact of amalgamation on financial sustainability, and the potential for cost savings through scale economies, public policy makers would be well advised to ignore its recommendation that Option 3 be adopted.

CHAPTER 1: INTRODUCTION

1.1 Background

On 17/18 August 2011, the NSW Minister for Local Government Don Page convoked a *Destination 2036* Workshop in Dubbo made up of mayors and general managers from all NSW local councils. One consequence has been the formation of an Independent Local Government Review Panel (ILGRP) to *inter alia* consider current structural arrangements in NSW local government and make recommendations for structural reform.

In April 2013, the Panel published *Future Directions for NSW Local Government: Twenty Essential Steps* which examined twenty central features of NSW local government and then proposed various recommendations for improvement. Under *Create a Sustainable System* – the second of the twenty main components - the Panel (2013, p.9) stressed that long-run sustainability 'must involve some amalgamations of existing councils, large and small, urban and rural', on grounds that 'there is simply not enough revenue or sufficient numbers of skilled staff to sustain 152 councils across NSW'.

Future Directions for NSW Local Government (2013, p.49, Table 4) recommended that Manly, Pittwater and Warringah merge or at least 'combine as strong County Council'. The Panel set out three grounds for the proposed amalgamation:

(a) Manly, Pittwater and Warringah would have a combined projected 2036 population of 290,000 people.

(b) There were 'close functional interaction and economic/social links' between Manly, Pittwater and Warringah which formed an 'island' in the Greater Sydney metropolitan region.

(c) Manly, Pittwater and Warringah required 'integrated planning of centres, coast, transport etc.'

In an appendix to the Future Directions, *Attachment: Preferred Options for All Councils* of *Future Directions for NSW Local Government*, this proposal is rendered as simply Pittwater must 'merge with Warringah/Manly', with no explanation for the absence of 'combine as strong County Council' option. The Panel offered no other justification nor was any empirical evidence adduced for its recommendation of a consolidated Manly, Pittwater and Warringah 'super council', despite earlier promises by the Panel that its deliberations would be 'evidence-based'.

In response to this radical and unsubstantiated recommendation by the Panel, the Pittwater Council engaged Professor Brian Dollery to conduct an empirical investigation into the proposed amalgamation of Manly, Pittwater and Warringah. In late May 2013, together with his research collaborators - Dr Mike Kortt and Joseph Drew - Professor Dollery produced a Report entitled *Bigger Is Not Always Better: An Assessment of the Independent Local Government Review Recommendation Pittwater Council Be Amalgamated*.

Bigger Is Not Always Better examined the theoretical and empirical evidence on local government amalgamation in the academic literature and official reports which demonstrated that there is an overwhelming weight of conceptual and empirical evidence against local government amalgamation as a means of improving the efficiency of local government and its financial viability.With respect to the proposed merger of Manly, Pittwater and Warringah, econometric analysis in the Report, together with financial ratio analysis, demonstrated that:

(a) A forced merger of Manly, Pittwater Warringah will not improve the financial sustainability of the new larger entity since financial ratios do not improve.
(b) The econometric analysis of an amalgamated Manly, Pittwater Warringah council found no evidence of economies of scale and concluded that cost reductions will not occur as a consequence of a merger.
(c) Given the clearly divergent socio-economic profiles of Manly, Pittwater Warringah, there is no evidence of a strong joint 'community of interest'.

Bigger Is Not Always Better (2013, p. 7) concluded that 'based on the analysis presented in this Report there is no evidence to suggest that the proposed merger of Manly, Pittwater and Warringah - as advocated by the Independent Local Government Review Panel - will result in improve efficiency and financial viability'.

In its response to the recommendations of the Panel that Manly, Pittwater and Warringah be consolidated into a single large local government entity, Warringah commissioned commercial consultants SGS Economics and Planning to undertake an 'independent, high

level strategic and financial assessment of potential options for structural change to local government', including the Panel's recommendation for a merger of Manly, Pittwater and Warringah in *Future Directions*.

In June 2013, SGS produced *Local Government Structural Change - Options Analysis*. *Local Government Structural Change* considered alternative structural configurations involving Warringah Council:

- **Option 1** (Base case): current boundaries remain unchanged.
- **Option 2** (ILGRP recommendation): Manly, Pittwater and Warringah merger.
- **Option 3** (Shore Regional Organisation of Councils (SHOROC) option): amalgamation of Manly, Mosman, Pittwater and Warringah.
- **Option 4** ('sub-region' option): amalgamation of Manly, Pittwater, Warringah, Ku-ring-gai and Hornsby.

These four structural options were examined under three alternative sets of assumptions:

Scenario 1: Under the assumption that (a) current Warringah costs would prevail for five services areas and (b) current council costs would hold for the remaining service areas, SGS modelled post-amalgamation cost savings over the next ten years. In other words, each of the other councils would adopt the levels of service, systems and processes employed at Warringah Council ('lead council model of amalgamation').

Scenario 2: Under assumption that total per capita costs exhibit economies of scale, service cost savings were calculated by comparing total costs pre-amalgamation with the predicted total costs from the model.

Scenario 3: Under assumption that scale economies are present, service cost savings are calculated by comparing total costs pre-amalgamation with the predicted upper limit total costs from the model to take into account statistical uncertainties.

Table 1 summarises the estimated cost savings flowing from the three scenarios for the four alternative structural options:

Table 1: SGS Estimated cost savings under three scenarios ($ thousands)

	Option 1 (Current LG boundaries)	**Option 2** (Manly, Pittwater & Warringah)	**Option 3** (SHOROC councils)	**Option 4** (Northern beaches LGAs, Hornsby and Ku-ring-gai)
Scenario 1 Warringah cost structure	$0	$257,497	$344,471	$236,292
Scenario 2 Average model prediction	N/A	$376,628	$503,061	$732,793
Scenario 3 Upper limit of confidence interval	N/A	$12,142	$96,225	-$45,294

Source: SGS (2013, p.2)

With respect to Table, SGS (2013, p.2/3) drew the following conclusions:

- 'The modelling suggests that Option 3 (Manly, Mosman, Pittwater and Warringah) has the potential to generate the most cost savings. Under scenario 1 (based on the existing Warringah Council cost structure), costs savings over the next 10 years would equate to around $344 million.

- The costs savings for Option 3 (Manly, Mosman, Pittwater and Warringah), in a range established by Scenarios 2 (average model prediction) and 3 (upper limit of confidence interval), would potentially result in savings identified in the model of between $503 million and $96 million, over the next 10 years.
- Option 2 (Manly, Pittwater and Warringah) is the next best option generating $257 million under Scenario 1, and $377 million - $12 million under Scenarios 2 and 3'.

Local Government Structural Change (2013, p.3) added an additional critical caveat to these projections: 'achieving the potential costs savings would require a focused implementation process and ongoing effective management and systems'. It went on to note that 'the potential cost savings from the amalgamation' could be employed to either 'fund the asset renewal gaps and to reduce debt' or alternatively 'fund changes in service levels.

Under scenario 1, if any savings were to be deployed to finance asset renewal and debt repayment, SGS contended that option 2 (Manly, Pittwater and Warringah) and option 3 (Manly, Mosman, Pittwater and Warringah) would still yield 'a net surplus of around $115million and $160 million' respectively.

In addition to estimating projected costs savings for the four options under the three stipulated scenarios, *Local Government Structural Change* (2013, p.4) also conducted a 'multi-criteria analysis' (MCA) employing a 'broader range of criteria for decision making', which involved the 'identification of criteria, weighting of criteria and rating of options against the criteria'. The MCA showed that - under the heroic assumption that amalgamation was voluntary – 'the preferred option' would be the merger amalgamation of Manly,

Mosman, Pittwater and Warringah (Option 3), followed by the consolidation of Manly, Pittwater and Warringah (Option 2).

Unfortunately the analysis conducted in *Local Government Structural Change* is seriously deficient in a number of respects.

Strategic context: It is clear that the SGS Report is primarily a 'political document' designed to favourably 'position' Warringah in any ensuing amalgamation process. For instance, *Local Government Structural Change* assumes that councils merging with Warringah will automatically adopt its levels of service, systems and processes. Similarly, local planning matters, such traffic corridors, are erroneously used by SGS to support 'communities of interest' arguments when socio-economic profiling and housing density analysis should have been employed instead. It is also pertinent to stress what *Local Government Structural Change* does not address, including whether the proposed mergers would benefit local residents (through lower rates, improved services, etc.) in general, or simply Warringah residents in particular.

Governance model: Chapter 4 of *Local Government Structural Change* considers various governance models which could be used to maintain 'local voice' in any large merged council. SGS argues that New Zealand (NZ)-style 'community boards' will help keep the "local" in local government. However, as we shall demonstrate the authors of the Report seem unaware of the documented limitations of NZ community boards. Moreover, *Local Government Structural Change* makes fallacious assumptions about the costs of community boards which do not conform to reality.

Financial analysis: An especially severe defect in *Local Government Structural Change* resides in the fact that it entirely neglects to include financial ratio analysis. Any sophisticated assessment of a proposed merger should always test if key financial ratios can be expected to improve as a consequence of amalgamation. In NSW analysts now have access to the Financial Sustainability Ratios (FSR) used in the Treasury Corporation of NSW ('TCorp') *Financial Sustainability of the New South Wales Local Government Sector: Findings, Recommendations and Analysis* (2013) in its assessment of financial sustainability in NSW local government. *Local Government Structural Change* should thus have undertaken sensitivity tests of the TCorp analysis on the four options. As we shall see in this Report, had this been done SGS would not have been able to draw favourable inferences on the desirability of amalgamation. In this Report, we calculate financial ratios for Options 2, 3, and 4 to test whether financial sustainability increases as a consequence of amalgamation.

In addition, *Local Government Structural Change* should have provided estimates of the costs of amalgamating Option 2, Option 3 and Option 4. As we shall demonstrate in this Report, this could have been done in a robust manner based on the recent Queensland experience, where affected merged councils reported the costs involved to the Queensland Treasury Corporation (QTC).

Econometric analysis: The econometric analysis performed in *Local Government Structural Change* is highly simplistic and misleading. SGS used no control variables at all, in stark contrast to the scholarly literature on this type of empirical estimation. The net result is that we can place no confidence in the SGS analysis and its findings. Indeed, as we show in this

Report, there is absolutely no compelling evidence for scale economies and the putative cost-savings proposed in *Local Government Structural Change* are not plausible.

In this Report we re-estimate options 2, 3, and 4 using control variables, including population density. When this is done, no evidence exists for scale economies.

1.2 Outline of Report

The remainder of this Report is divided into five main parts.

Chapter 2 provides a critique of Chapter 3: Strategic Context of *Local Government Structural Change*, especially the fact that it ignored socio-economic factors in determining whether real community of interest exists.

Chapter 3 sets out a critical evaluation the analysis in Chapter 4: Governance Model in *Local Government Structural Change*. It examines the operations of community/local boards in New Zealand. It also considers whether the current NSW Local Government Act which allows for effective 'co-governance' structures and whether there is a need for new legislation and an additional tier of government comprised of local boards. Finally, it investigates the estimated costs of local board per annum extrapolating from documented experience in Auckland.

Chapter 4 provides a critical assessment of the rudimentary financial analysis in Chapter 5: Base Case of *Local Government Structural Change.* We calculate financial ratios for options 2, option 3, and option 4 to test whether financial sustainability increases as a consequence of amalgamation. We also bring the costs of amalgamation into the analysis.

Chapter 5 provides an appraisal of the simplistic econometric analysis in Chapter 6: Financial Analysis of *Local Government Structural Change.* In addition, we re-estimate options 2, 3, and 4 using control variables, including population density.

Chapter 6 sets out some brief conclusions on *Local Government Structural Change.*

CHAPTER 2: STRATEGIC CONTEXT AND COMMUNITY OF INTEREST

2.1 Introduction

Chapter 3 of *Local Government Structural Change* unfortunately contains no introductory section explaining the purpose of Chapter 3, nor does it have a final section which draws any firm conclusions. However, Chapter 3 places Hornsby, Ku-ring-gai, Manly, Mosman, Pittwater and Warringah in (a) the context of Sydney metropolitan region planning, sub-regional planning and other state government regional boundaries; (b) provides population and employment growth projections; (c) briefly tackles 'communities of interest'; (d) charts 'journey to work patterns' and 'household travel patterns' and (e) compares 'strategic plans for Hornsby, Ku-ring-gai, Manly, Mosman, Pittwater and Warringah'.

While Chapter 3 of *Local Government Structural Change* spent an inordinate amount of effort producing maps depicting various relationships between different parts of the Sydney metropolitan region, this sheds hardly any light on the comparative worth of pursuing Option 2, Option 3 or Option 4 through compulsory consolidation. However, with respect to the vital question of community of interest, which plays a pivotal role in the success or failure of any attempt at forced amalgamation, the discussion in Chapter 3 on community of interest was not only extremely brief (consisting of a mere four paragraphs in a 20 page chapter), but also seriously flawed.

Indeed *Local Government Structural Change* made only two substantive observations on community of interest. In the first place, SGS (2013, p.21) noted that:

> ‘Travel time mapping has been completed to illustrate the relationship between centres and major employment areas and access from the surrounding areas to centres. This has been completed for car use as well as for public transport. The travel time mapping is an indicator of the potential service catchments and the accessibility of centres and assists in developing an understanding of functional regions. The ILGRP (2012) suggested that in the metropolitan area a travel time of 30-45 minutes from the administrative centre of an LGA was a suitable scale to consider for ‘local’ government’.

Secondly, Chapter 3 (p.23) commented as follows:

> ‘The travel time mapping (above) for car trips illustrates a strong north-south travel connection within the northern beaches councils of Warringah, Pittwater and Manly. In addition there are strong north-south connections from Hornsby to Chatswood including the Ku ring gai area. However, travel times east-west are relatively long (to 60 minutes from Dee Why to Hornsby centre) and show the containment of the northern beaches area separate from the wider Hornsby and Ku ring gai LGAs. The travel time mapping for public transport shows 10 minute intervals up to two hours, and includes waiting times and walking to public transport’.

It is plain that both of these observations address only travel times between different parts of the municipal areas of Hornsby, Ku-ring-gai, Manly, Mosman, Pittwater and Warringah, which play only a minor role in determining whether any communities of interest exist between the respective local communities in these local government areas. Given the importance of socio-economic factors in determining whether real community of interest

exists, it is little short of astonishing that *Local Government Structural Change* entirely ignored the socio-economic profiles of the local authorities under consideration. There is thus an urgent need to remedy this shortcoming. Accordingly, Chapter 2 is devoted to a comprehensive analysis of this question.

Chapter 2 thus undertakes a descriptive statistical analysis to examine the socio-economic profile of Hornsby, Ku-ring-gai, Manly, Mosman, Pittwater and Warringah. More specifically, the analysis will compare and contrast: age distributions and population projections, birth and fertility rates, labour force characteristics, family dynamics, income support, education levels, overweight and obesity, mental health conditions, health risk factors, health service utilisation and residential aged and community care places.

Chapter 2 is divided into two main parts. Section 2.2 provides a socio-economic overview of Hornsby, Ku-ring-gai, Manly, Mosman, Pittwater and Warringah. Section 2.3 discusses these differences and based on the grounds of 'community of interest' argues that Hornsby, Ku-ring-gai, Manly, Mosman, Pittwater and Warringah should not be amalgamated in any configuration.

2.2 Council Characteristics

There are 38 metropolitan councils in the Sydney region based on the current local government boundaries. These 38 councils, which constitute 'Greater Sydney', can be further divided into:

- 17 outer Sydney councils (Figure 2.1) of which Pittwater, Warringah, Hornsby, and Ku-ring-gai councils belong; and
- 21 inner Sydney councils (Figure 2.2) of which the Manly and Mosman councils belong.

These local government boundaries, which are defined by the NSW Government, have been used by the Panel in its *Future Directions for NSW Local Government: Twenty Essential Steps* (2013).

Figure 2.1: Outer Sydney Councils (n = 17)

Figure 2.2: Inner Sydney Councils (n = 21)

An overview of council characteristics in terms of population, land area, and population density for Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman is reported in Table 2.1.

Table 2.1: Overview of Council Characteristics, 2009-10

Council	Population	Area sq. km	Population Density
Manly	40,939	14.4	2,843
Pittwater	58,818	90.4	651
Warringah	144,092	149.4	964
Hornsby	162,216	462.3	351
Ku-ring-gai	111,400	85.4	1,304
Mosman	28,767	8.7	3,307
Greater Sydney	**4,003,847**	**3693.7**	**1,084**

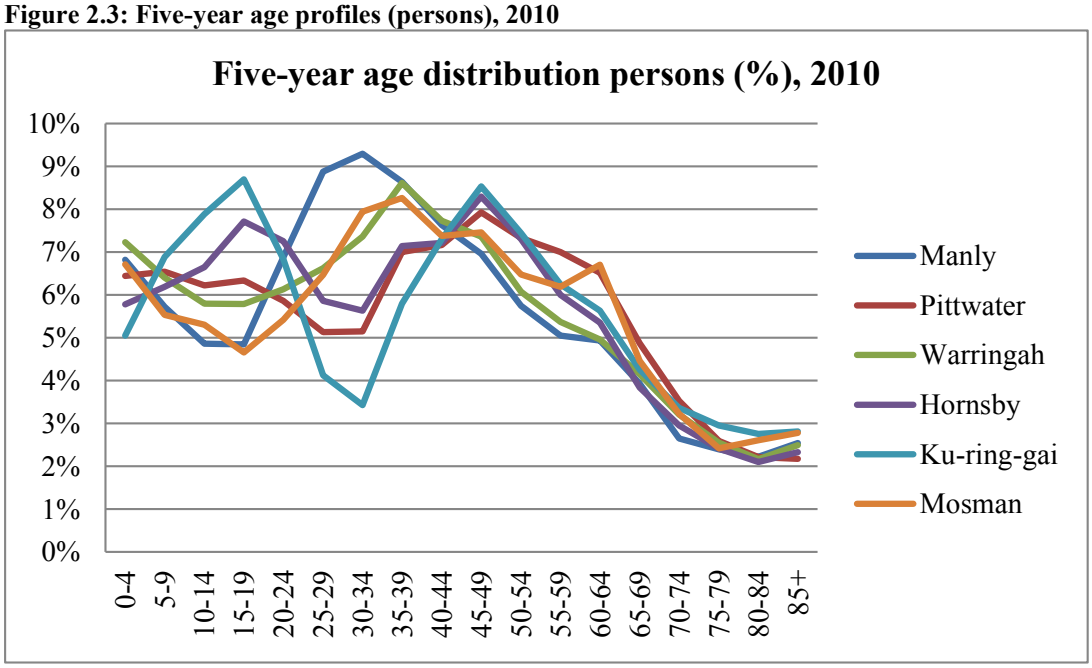
Source: Department of Premier and Cabinet (2010)

With respect to population, Hornsby has the largest population with 162,216 people followed by Warringah (144,092 people) and then Ku-ring-gai (111,400 people). In terms of land area, Hornsby local government area accounts for 462.3 square kilometres followed by Warringah with a land area of 149.4 square kilometres. However, Manly and Mosman are considerably smaller with land areas of only 14.4 and 8.7 square kilometres respectively. With regard to population density (i.e., the number of people divided by the land area in square kilometres), Mosman has a population density of 3,307 persons per square kilometre, which is more than three times the population density for the 'Greater Sydney' region. In contrast, Hornsby has the lowest population density with 351 people per square kilometre, followed by Pittwater with 651 people per square kilometre.

2.2.1 Age Distributions and Population Projections

The five-year age profiles for Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman councils are presented in Figure 2.3.

Figure 2.3: Five-year age profiles (persons), 2010



Source: Social Health Atlas of Local Governments Areas (2011)

With respect to the age distribution in Figure 2.3 the following points are worth noting:

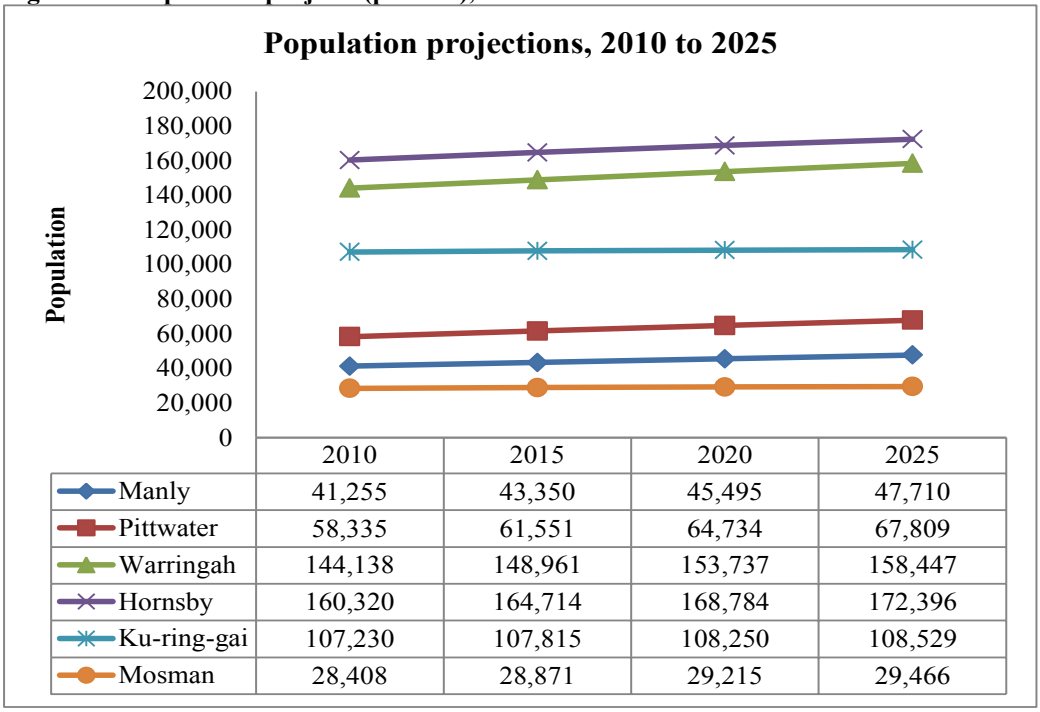
- Manly has the **highest** proportion of people between the age of **20 and 34**.
- Warringah's age profile essentially 'mirrors' Manly's age profile, although it has a higher proportion of 'children' and a lower proportion of 'young adults'; and
- Ku-ring-gai has the **highest** proportion of people between the age of **5 and 19** and the **lowest** proportion of people between the age of **20 and 44**.

Knowledge of these different age profiles is particularly important from a planning and service delivery perspective. Different age profiles will require different planning and service delivery strategies. In other words, the needs of Pittwater (a community with an older age profile) are going to differ markedly from the needs of Manly, Mosman, and Warringah (i.e., communities with a younger age profile). The age profile of Ku-ring-gai is of particular importance given that it has by far highest proportion of people between the age of 5 and 19.

In other words, it is conceivable that the needs of Ku-ring-gai – particularly in terms child care and youth services – are likely to differ markedly from the other five local government areas.

However, it also needs to be borne in mind that these age profiles may change over time due to changing population structures and growth rates at the local government area level. For local planning purposes, it is often instructive to consider population projects at the local government level (Figure 2.4).

Figure 2.4: Population projects (persons), 2010 to 2025



	2010	2015	2020	2025
Manly	41,255	43,350	45,495	47,710
Pittwater	58,335	61,551	64,734	67,809
Warringah	144,138	148,961	153,737	158,447
Hornsby	160,320	164,714	168,784	172,396
Ku-ring-gai	107,230	107,815	108,250	108,529
Mosman	28,408	28,871	29,215	29,466

Source: Social Health Atlas of Local Governments Areas (2011)

For Manly, it is projected that between 2010 and 2025 the population will increase by 16%, which equates to an annual growth rate of 0.9%. For Pittwater, it is projected that the population will also increase by 16% over same period, which also equates to an annual growth rate of 0.9%. For Warringah, it is projected that between 2010 and 2025 the population will increase by 10%, which equates to an annual growth rate of 0.6%. For

Hornsby it is projected that between 2010 and 2025 the population will increase by 8%, which corresponds to an annual growth rate of 0.45%. For Mosman, it is projected that the population will increase by 4% over the same period, which equate to an annual growth rate of 1%. However, for Ku-ring-gai, it is estimate that between 2010 and 2025 the population will only increase by 1%, which corresponds to a comparatively small annual growth rate of only 0.08%.

While these local population projections provide useful insights, it is important to emphasise that these projections need to be viewed with caution. Population projects are based on extrapolating current trends and are best viewed as 'what if' scenarios (i.e., what would happen to the local population if current growth rates persisted in the absence of any external factors). Population projections do not take account of current or future local government policy initiatives (or other external factors for that matter), which may either stimulate or contract local population growth.

2.2.2 Birth and Fertility Rates

Two factors underpinning population growth are the number of births and the fertility rate. According to the Population Health Development Unit at the University of Adelaide, the total fertility rate (birth rate) for Australia from 2005 to 2007 is 1.83. Estimates of the number of births and the fertility rates for Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman are reported in Table 2.2.

Overall, the fertility rates for Manly (1.75 births per woman) and Warringah (1.82 births per woman) are broadly similar to the Australian rate of 1.83. However, Pittwater has the highest

fertility rate (1.93 births per women) while Ku-ring-gai (1.61 birth per woman) and Mosman (1.48 birth per woman) have the lowest fertility rates among this group of councils.

Table 2.2: Births and Fertility Rates, 2005 to 2007

Council	2005 to 2007	
	Births	**Total fertility rate**
Manly	1,878	1.75
Pittwater	2,075	1.98
Warringah	5,938	1.82
Hornsby	5,270	1.72
Ku-ring-gai	2,437	1.61
Mosman	1,072	1.48
Australia	**808,396**	**1.83**

Source: Social Health Atlas of Local Governments Areas 2011

2.2.3 Labour Force Characteristics

Details of the labour force characteristics for Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman are reported in Table 2.3. In 2009, it was estimated that the national unemployment rate was 5.0%. At that time, Warringah had the highest unemployment rate (3.7%), while Mosman (2.1%) and Ku-ring-gai (2.0%) had the lowest unemployment rates. However, it needs to be borne in mind that the unemployment rates for all councils listed in Table 2.3 were significantly below the national unemployment rate.

With regard to labour force participation, Warringah had the highest labour force participation rate (72.5%) followed by Pittwater (69.9%). However, at the other end of the spectrum, Ku-ring-gai had the lowest rate of labour force participation (60.7%) among all six councils listed in Table 2.3.

Table 2.3: Labour Force Participation, 2009

Unemployment	Number	Labour force	% unemployed
Manly	747	22,910	3.3
Pittwater	979	33,191	2.9
Warringah	3,140	84,308	3.7
Hornsby	3,517	88,138	4.0
Ku-ring-gai	1,106	54,261	2.0
Mosman	344	16,116	2.1
Australia	**11,489,366**	**570,741**	**5.0**

Labour force participation	Number	Population aged 15 years and over	% labour force participation
Manly	22,910	33,791	67.8
Pittwater	33,191	47,471	69.9
Warringah	84,308	116,293	72.5
Hornsby	88,138	132,022	66.8
Ku-ring-gai	54,261	89,323	60.7
Mosman	16,116	23,716	68.0
Australia	**11,489,366**	**17,766,042**	**64.7**

Source: Social Health Atlas of Local Governments Areas (2011)

2.2.4 Family Dynamics

Family dynamics is another dimension which can be used to better understand the characteristics of local communities. The data in Table 2.4 is based on the most recent estimates compiled by the Population Health Development Unit at the University of Adelaide.

Table 2.4: Family Dynamics, 2006

Council	% single parent families	% jobless families
Manly	4.7	4.8
Pittwater	5.3	4.9
Warringah	5.4	5.3
Hornsby	4.7	5.5
Ku-ring-gai	3.3	4.8
Mosman	4.3	5.2
Australia	**8.7**	**14.4**

Source: Social Health Atlas of Local Governments Areas (2011)

While these estimates are from 2006, they can nevertheless be instructive in drawing some broad insights into the characteristics of family dynamics in Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai, and Mosman. In Australia, 8.7 per cent of families were classified as being 'single parent families' in 2006. Across all six local government areas the percentage of single parent families was substantially lower than the Australian average. Among these six councils, Warringah had the highest rate (5.4%) while Ku-ring-gai (3.3%) had the lowest rate.

Another conventional measure of family dynamics is the number of 'jobless families' (i.e., parent(s) not employed). In 2006, 14.4% of all Australian families were classified as being jobless families. Across all six local government areas the percentage of 'jobless families' was considerable lower than the national average. Across all six councils the rate of 'jobless families' was highest for Hornsby (5.5%) and Warringah (5.4%), but noticeably lower for Manly (4.8%) and Ku-ring-gai (4.8%).

2.2.5 Income Support

Table 2.5 presents the percentage of residents in Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai, and Mosman receiving income support in 2009. The following income support categories are covered in Table 2.5: (i) Age Pension (AP), (ii) Disability Support Pension (DSP), (iii) Single Parent Payment (SPP), (iv) Long-Term Unemployed Benefit (LTUB), and (v) Youth Unemployment Benefits (YUB).

Table 2.5: Income Support, 2009

Council	% AP	% DSP	% SPP	% LTUB	% YUB
Manly	38.2	2.0	1.6	0.7	1.2
Pittwater	48.9	2.0	2.1	0.7	1.4
Warringah	58.9	2.0	2.3	0.9	1.7
Hornsby	51.6	2.1	1.7	0.7	1.2
Ku-ring-gai	34.7	1.0	0.8	0.3	0.6
Mosman	26.6	1.0	0.7	0.4	1.2
Australia	**72.7**	**5.0**	**5.3**	**2.7**	**5.2**

Source: Social Health Atlas of Local Governments Areas (2011)
Notes: (i) Age pension (AP) males 65 and over and females 63 and over; (ii) Disability Support Pension (DSP) males 16-64 and females 16-62; (iii) Single parents payment (SPP) based on females 15-54; (iv) Long term unemployed (LTUB) males 16-64 and females 16-62; and (v) Youth unemployment benefits (YUB) 15-24.

In 2009, 72.7% of Australians of pension age received the Age Pension. While lower than the national average, the Age Pension rates in Warringah (58.9%), Hornsby (51.6%) and Pittwater (48.9%) were substantially higher than in Ku-ring-gai (34.7%) and Mosman (26.6%). In Australia, the proportion of people receiving a Disability Support Pension (DSP) was 5%. While considerably lower than the national average, DSP rates for Manly, Pittwater, Warringah, and Hornsby were all around 2.0% with even lower DSP rates observed for Ku-ring-gai (1.0%) and Mosman (1.0%).

In 2009, the proportion of Australian receiving a Single Parent Payment (SPP) was 5.3%. While lower than the national average, the SPP rates for Pittwater (2.1%), Warringah (2.3%), Hornsby (1.7%), and Manly (1.6%) were noticeable higher than the SPP rates for Ku-ring-gai (0.8%) and Mosman (0.7%). In Australia, the proportion of individuals in receipt of long-term unemployment benefits (LTUB) was 5.3%. Across all six councils the LTUB rates were considerably lower than the national average with Ku-ring-gain (0.3%) and Mosman (0.4%) having the lowest LTUB rates.

Finally, the proportion of Australians on Youth Unemployment Benefits (YUB) in 2009 was 5.2%. Across all six councils in Table 2.5, the YUB rate in 2009 was considerable lower than the national average. While substantially lower than the national average, Warringah (1.7%) had the highest YUB rate while Ku-ring-gai (0.6%) had the lowest YUB rate.

2.2.6 Participation in Education

Details of the most recently available analysis of participation in education for Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman are reported in Table 2.6. Of particular interest in Table 2.6 is the: (i) percentage of full-time participation in secondary school education at age 16, and (ii) the standardised ratio (SR) for participation in vocational education and training.

Table 2.6: Participation in Education

Full-time participation in secondary school education at age 16	**Full-time participation at age 16**	**People aged 16**	**% full-time participation at age 16**
Manly	317	381	83.2
Pittwater	652	790	82.5
Warringah	1,317	1,551	84.9
Hornsby	2,142	2,452	87.4
Ku-ring-gai	1,727	1,888	91.5
Mosman	225	250	90.0
Australia	**208,200**	**278,303**	**74.8**
Participation in vocational education and training	**Number**	**Rate per 100**	**SR**
Manly	1,854	4.7	60.0
Pittwater	3,561	6.6	84.0
Warringah	8,835	6.5	83.0
Hornsby	10,417	6.5	82.4
Ku-ring-gai	4,622	4.6	57.7
Mosman	1,171	4.6	57.9
Australia	**1,643,867**	**7.9**	**100**

Source: Social Health Atlas of Local Governments Areas (2011)

In 2006, the proportion of Australians aged 16 and engaged in full-time secondary school education was 74.8%. While the participation rate across all six local government areas is considerably higher than the national average, there were noticeable differences between different council groups. For instance, the percentage of full-time participation in secondary school education was significantly higher in Hornsby (87.4%), Ku-ring-gai (91.5%), and Mosman (90.0%) compared to Manly (83.2%), Pittwater (82.5%), and Warringah (84.9%).

The standardised ratio (SR) is 'benchmarked' against the Australian average, which is set at 100. The SR is relatively straightforward to interpret. Consider, for example, the Manly SR of 60. This means that participation in vocation education and training in Manly is 40% *lower* than the Australian average [i.e., (60/100-1)*100]. Comparable interpretations can be made for Pittwater (16% *lower* than the Australian average), Warringah (17% *lower* than the Australian average), Hornsby (18% *lower* than the Australian average), Ku-ring-gai (42% *lower* than the Australian average), and Mosman (42% *lower* than the Australian average). While all six councils fall below the national average, vocational training participation rates are noticeably lower for Manly, Ku-ring-gai, and Mosman.

2.2.7 Overweight and Obesity

The prevalence of overweight and obesity is another important dimension that can be used to understand the local characteristics and health services needs of local communities (Table 2.7). The data presented in Table 2.7 are synthetic estimates based on survey responses from the 2007-08 ABS National Health Survey.

Table 2.7: Overweight and Obesity 2007-08 (synthetic estimates)

Council	Overweight males, 18+		Obese males, 18+		Overweight females, 18+		Obese females, 18+	
	Rate per 100	SR	Rate per 100	SR	Rate per 100	SR	Rate per 100	SR
Manly	38.8	108	17.9	91	21.4	94	12.7	77
Pittwater	38.9	108	18.3	93	22.9	101	12.9	78
Warringah	38.3	106	18.3	93	22.6	100	12.9	79
Hornsby	37.4	104	16.8	85	21.8	96	11.4	69
Ku-ring-gai	39.7	110	16.1	82	22.4	99	11.2	68
Mosman	39.9	111	17.0	87	21.1	93	12.2	74
Australia	**36.0**	**100**	**19.6**	**100**	**22.7**	**100**	**16.4**	**100**

Source: Social Health Atlas of Local Governments Areas (2011)

The medical literature has clearly demonstrated that overweight and obesity are independent risk factors for a range of serious medical conditions, including (but not limited to) Type 2 diabetes, elevated cholesterol levels, hypertension, coronary heart disease, musculoskeletal disorders, and several cancers.

The proportion of Australian men who were classified as either being overweight or obese was 36% and 19.6%, respectively. The proportion of Australian women who were classified as either being overweight or obese was 22.7% and 16.4% respectively. The proportion of overweight men in Manly (38.8%), Pittwater (38.9%), Warringah (38.3%), Hornsby (37.4%), Ku-ring-gai (39.7%), and Mosman (39.9%) is higher than the national average (36%). However, across all six councils the proportion of obese men is lower than the national average (19.6%). Across all six councils the proportion of overweight women was in line with the national average (22.7%), while the proportion of obese women was significantly lower than the nation average (16.4%).

2.2.8 Mental Health Conditions

Mental health conditions place a significant burden on the Australian economy. There are human costs, such as time lost to disability; financial costs to the economy as a result of lost productivity brought on by illness; and also expenditure by governments and individuals to combat the illness. In 2002-03 the total expenditure on mental health services across all levels of government and the private sector totalled $3.3 billion (Senate Select Committee on Mental Health, 2006).

The data presented in Table 2.8 are synthetic estimates based on self-reported survey responses from the 2007-08 ABS National Health Survey. While the synthetic estimates are based on self-diagnosis rather than clinical assessment by a health professional, these data provide a useful insight into the impact of mental health in local communities.

Table: 2.8: Mental Health 2007-2008 (synthetic estimates)

Council	**Males with mental and behavioural problems**		**Females with mental and behavioural problems**	
	Rate per 100	SR	Rate per 100	SR
Manly	8.6	86	11.0	93
Pittwater	8.5	84	10.5	89
Warringah	8.5	84	10.8	91
Hornsby	7.8	78	9.6	81
Ku-ring-gai	7.0	70	9.1	77
Mosman	7.5	74	10.7	90
Australia	**10.1**	**100**	**11.8**	**100**

Source: Social Health Atlas of Local Governments Areas (2011)

In 2007-08, the proportion of Australian men and women who identified themselves with mental and behavioural problems was 10.1 per cent and 11.8 per cent, respectively. Interestingly the rate of mental and behavioural problems among males for Manly (8.6 per 100), Pittwater (8.5 per 100), Warringah (8.5 per 100), Hornsby (7.8 per 100), Ku-ring-gai

(7.0 per 100) and Mosman (7.5 per 100) were all substantially lower than the national rate (10.1 per 100). That said the rates for men were noticeably lower in Hornsby, Ku-ring-gai and Mosman. In broad terms, a similar pattern is evident among women with the lowest rates observed for Hornsby (9.6 per 100) and Ku-ring-gai (9.1 per 100).

2.2.9 Health Risk Factors

Lifestyle factors such as smoking, physical inactivity and alcohol consumption can lead to an increased risk of a variety of chronic diseases, including (but not limited to) cancer, diabetes, and heart disease. The data presented in Table 2.9 presents the 2007-08 synthetic estimates for: (i) smoking, (ii) alcohol consumption, and (iii) physical inactivity

Table 2.9: Health risk factors 2007-08 (synthetic estimates)

Council	Current smokers, persons 18 years and over		Alcohol consumption at levels considered to be a high risk to health, persons aged 18 years and over		Physical inactivity, persons aged 15 years and over	
	Rate per 100	SR	Rate per 100	SR	Rate per 100	SR
Manly	14.5	71	5.1	95	25.3	74
Pittwater	15.2	75	5.4	101	27.1	79
Warringah	15.9	78	5.2	97	28.6	83
Hornsby	12.5	62	4.1	77	28.8	84
Ku-ring-gai	7.8	38	3.8	71	24.0	70
Mosman	11.3	56	4.7	87	23.0	67
Australia	**20.3**	**100**	**5.4**	**100**	**34.3**	**100**

Source: Social Health Atlas of Local Governments Areas (2011)

In 2007-08 it was estimated that the national smoking rate in Australia was 20.3 smokers per 100 people. Across all six councils, the smoking rates were considerably lower than the national rate. However, among this group of councils, it needs to be borne in mind that the smoking rates were noticeably higher in Warringah (15.9 smokers per 100 people) and Pittwater (15.2 smokers per 100 people). By far the lowest smoking rate was observed for Ku-ring-gai (7.8 smokers per 100 people).

'High risk' alcohol consumption is the second health risk factor presented in Table 2.9. In 2007-08 it was estimate that the national 'high risk' drinking rate was 5.9%. The highest rates were observed for Pittwater (5.4%) and Warringah (5.2%), while the lowest rates were observed for Hornsby (4.1%) and Ku-ring-gai (3.8%).

Physical inactivity not only increases the risk of mortality from a range of diseases and but it can also lead to an increased risk of heart disease, Type 2 diabetes and some cancers. In 2007-08, it was estimated that 34.3% of were classified as being physically inactive. Across all six local government areas in Table 2.9, the rate of physical inactivity was considerably lower than the national average.

2.2.10 Health Service Utilisation

Health care services utilisation for Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai, and Mosman is reported in Table 2.10.

Table 2.10: Health Service Utilisation, 2009-2010

Council	Total GP services (MBS and DVA)		45 Year Old Health Checks by GPs (persons aged 45 to 49 years)		Annual health assessments by GPs (persons aged 75 years and over)	
	Rate per 100,000	SR	Rate per 100,000	SR	Rate per 100,000	SR
Manly	478,222.3	81	3,625.2	82	14,977.0	75
Pittwater	534,328.9	91	3,680.4	84	25,024.6	126
Warringah	554,900.0	94	3,654.6	83	16,364.8	82
Hornsby	582,947.4	99	3,601.7	82	20,016.0	101
Ku-ring-gai	499,957.6	85	3,215.1	73	18,408.8	93
Mosman	508,014.0	86	4,064.1	92	13,976.1	70
Australia	**584,167.2**	**100**	**4,397.3**	**100**	**19,636.4**	**100**

Source: Social Health Atlas of Local Governments Areas (2011)

Referring to Table 2.10 the specific types of health care utilisation include: (i) GP services, (ii) the 45-49 year old health checks by general practitioners (GPs), and (iii) annual health assessment for persons age 75 and over.

In the current context, the provision of GP services was 6% and 9% *lower* than the Australian average for Pittwater and Warringah respectively. By way of comparison, the provision of GP services was 19%, 15%, and 14% *lower* than the Australian average for Manly, Ku-ring-gai, and Mosman respectively. This suggests the demand for medical services in Manly is significantly *lower* than the demand for medical services in Pittwater and Warringah.

Moreover, the awareness of annual health checks for the over 75 year olds was considerably higher in Pittwater (26% *higher* than the national average) that in all other local government area listed in Table 2.10.

2.2.11 Residential Aged and Community Care Places

Table 2.11 shows the number of persons in Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman that require residential aged and community care places. Residential aged care includes both high-level and low-level care places. High–level care is described as nursing home care that provides 24 hour nursing and personal care when health deteriorates to such a degree that a person can no longer be cared for adequately in their present accommodation. Low-level care is considered as hostel accommodation, offering a greater quality of life for people who benefit significantly from supportive services, companionship and activities, and for whom living without assistance is difficult. Services provided may include general cleaning, meal preparation and medication supervision.

Table 2.11: Age Care Utilisation, 2010

Council	Total residential aged care places		Community care places	
	Population in residential aged care	Rate per 1,000 population in residential care	No. of community care places	Rate per 1,000 population in community care
Manly	121	29.6	62	15.2
Pittwater	502	81.7	134	21.8
Warringah	1,626	106.9	621	40.8
Hornsby	2,171	136.7	431	27.1
Ku-ring-gai	1,150	86.9	99	7.5
Mosman	302	95.1	n.a.	n.a.
Australia	**182,936**	**87.2**	**51,530**	**24.5**

Source: Social Health Atlas of Local Governments Areas (2011)

Meanwhile, community Aged Care offer low dependency level care for older people who are frail and/or disabled, in their own home. Services provided may include assistance with personal care (e.g. showering); household duties (e.g. shopping or cleaning); and assisting people engage with the community and participate in activities.

As shown in Table 2.11, for every 1,000 people in the Australian population 87.2 are in some form of residential aged care, while 24.5 people use community care. Compared to Manly, a substantial proportion of people in all other councils require some form of residential aged care. On the other hand, Warringah has by far the highest rate of people accessing community care services.

2.3 Discussion

Arguments presented in support of local government amalgamation are often based on the notion of 'community of interest', which according to Fulcher (1989, p.7) encompasses: (i) a 'sense of belonging to an area or locality which can be clearly defined', (ii) the ability to meet the community's 'physical and human services', and (iii) the ability of the 'elected body to represent the interests' of its members. Thus, councils with similar 'community of interest'

profiles represent a stronger rationale for council amalgamation compared to those councils with wildly dissimilar 'community of interest' profiles.

However, given the stark differences between Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman – especially in terms of 'human service' needs – the proposed merger options canvassed in the SGS Report should not be mounted on 'community of interest' arguments. More specifically, the following differences among these six councils are worth noting:

- **Manly** has the **highest** proportion of people between the age of 20 and 24;
- **Ku-ring-gai** has the **highest** proportion of people between the age of 5 and 19 and the **lowest** proportion of people between the age of 20 and 44;
- **Pittwater** has the **highest** fertility rate;
- **Ku-ring-gai** has the **lowest** unemployment rate;
- **Pittwater** has the **highest** proportion of people participating in vocational education and training;
- **Pittwater** has the highest rate of 'high risk' alcohol consumption; and
- **Pittwater** the highest rate of annual health assessment by GPs for persons aged 75 and over.

Moreover, when **Pittwater, Warringah, Hornsby,** and **Ku-ring-gai** (i.e., **outer** Sydney councils) are compared to **Manly** and **Mosman** (high density **inner** Sydney councils), the **outer** Sydney councils have:

- A **higher** number of people on the Age pension; and
- A **higher** number of people in receipt of Single Parenting Payments;

Thus, the observed differences in the socio-economic profiles of Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman mean that different planning and service delivery strategies will need to be implemented for each local government area. Thus, given the differences between Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman, there is no 'community of interest' argument to proceed with the merger options as canvassed in the SGS Report. Moreover, any amalgamation may lead to a widening of these socio-economic differences if 'inner-Sydney' local government strategies are pursued at the expense of 'outer-Sydney' local government strategies.

Finally, it is important to emphasise that had the SGS done a conventional socio-economic profile, it would have realised that no 'community of interest' existed and hence an amalgamation of these councils should not be entertained.

CHAPTER 3: LOCAL BOARDS IN MERGED METROPOLITAN COUNCILS

3.1 Introduction

In its *Future Directions for NSW Local Government,* the Panel proposed wholesale mergers across the Greater Sydney metropolitan region. However, it recognised that the population of newly merged 'super councils' would be several multiples of its present component councils' size. This in turn could render the current governance model ineffective. Accordingly, the Panel argued that changes to existing governance arrangements must be made, with a view to retaining 'local voice' and 'local choice' in post-amalgamation NSW local government.

The Panel advanced a number of alternative options which would assist in retaining the 'local' in local government. These included 'place management', ward systems with ward committees, technological methods of involving local communities, 'modern customer service systems', and 'local boards'. In order to limit the impact of amalgamation on local democracy, the Panel recommended the establishment of local boards to facilitate 'community-level governance'. Three types of 'local board' were suggested by the Panel:

- Local boards to replace small rural or remote councils with populations below 5000 residents.
- Local boards would provide delegated service provision and/or political representation in large amalgamated metropolitan councils.
- Local boards would support local community identity and/or local representation when several regional councils are merged.

According to the Panel, local boards would operate along similar lines to their counterparts in British and New Zealand local government. With respect to metropolitan local government in NSW, the Panel held that local boards would have from five to seven elected members and they would perform the functions delegated to them by their respective metropolitan local council. In particular, in large metropolitan councils local boards would provide local representation and limited local delegated service delivery at suburb or district level.

Chapter 4: Governance Model of *Local Government Structural Change* was devoted to a discussion of the optimal approach to retaining 'local' in local government in a post-amalgamation environment where local authorities in the SHOROC region of Greater Sydney will be substantially larger than they are at present.

Chapter 4 was divided into two main areas:

- In section 4.1, SGS provide a synoptic description of the 'current governance model' for the current Hornsby, Ku-ring-gai, Manly, Mosman, Pittwater and Warringah local authorities, including the number of councillors, enrolled voters, enrolled voters per councillor, and form of ward system.
- In section 4.2 of Chapter 4, SGS set out a case for sub-council representation through local boards of the kind established in New Zealand, especially in the newly amalgamated Auckland City Council. In making this case, Chapter 4 of *Local Government Structural Change* provided a summary of the operation of such boards in New Zealand, selected examples of the operations of local boards, and a cost

estimate for the establishment of local boards in an amalgamated constellation of SHOROC councils.

In Chapter 3 of this report, we provide a critical analysis of the argumentation in Chapter 4 of *Local Government Structural Change.* It is argued that Chapter 4 is seriously flawed in at least three respects:

- SGS has provided an unrealistically optimistic account of the operation of local boards in New Zealand metropolitan councils by overlooking vital critical material on the shortcomings of these boards.
- SGS has erroneously neglected the fact that a vigorous sub-council co-governance sector already flourishes under existing legislative provisions in NSW local government which has empowered local communities in large metropolitan councils. There is thus no need to introduce local boards as an expensive additional layer of local government.
- We demonstrate that the cost estimate advanced by SGS for the establishment of local boards in an amalgamated greater Warringah council drastically understates the actual outlays involved.

Chapter 3 is divided into four main parts. Section 3.2 shows that far from representing a successful model to be emulated, local boards in New Zealand suffer from several shortcomings and their active performance has declined over time. Section 3.3 demonstrates that NSW local government not only already possesses the legislative framework to establish sub-council governance structures, but that flourishing examples of community co-governance already exist in NSW councils. Section 3.4 assesses the cost estimates advanced

by SGS and shows that these estimates radically under-estimate the true costs involved. Chapter 3 ends in section 3.5 with some brief concluding remarks.

3.2 Operation of Local Boards in New Zealand

As we have seen, in line with *Future Directions* by the Panel, as well as its commissioned report *Community Level Governance,* in *Local Government Structural Change* SGS has argued that New Zealand style community boards would be the best approach to sustaining local democracy on any amalgamated greater Warringah council. However, ignorance of the relevant literature has led SGS to paint an unrealistically favourable picture of the operation of community/local boards in New Zealand. It is thus worth considering community/local boards in the light of this critical literature.

Community boards were established as part of broader local government reform in New Zealand in 1989. In 2012, 116 community boards existed in New Zealand. New Zealand community/local boards have two main functions: (a) representation and advocacy on behalf of their local communities and (b) consideration of any matter referred to them by their local councils.

In addition, community/local boards can also tackle the following matters:

- Make annual submissions to local councils on expenditure questions.
- Review the local services provided by the local council to the local community.
- Engage with local community organisations and other local interest groups in the community.
- Undertake any other responsibilities delegated to them by their local council.

Under New Zealand *Local Electoral Act 2001* Section 19 (f), community boards must comprise at least four members, but not more than twelve members. In addition, at least four persons must be elected. Finally, the number of appointed members must be less than half the total membership.

Community Level Governance (2013, pp.12/14) – which was specifically commissioned by the Panel – raised various problems with the operation of community/local boards in New Zealand. For instance, *Community Level Governance* acknowledged that 'over recent years, the number of community boards has been in decline, substantially because of proposals by councils in representation reviews to disestablish community boards'. This has been a consequence of the fact that it reflects 'a combination of what is seen as the relative insignificance of a community board, and a parent council not placing any particular value on continuing a community board already in existence (especially given the remuneration situation)'. Furthermore, *Community Level Governance* admitted that 'an important destabilising factor in the relationship between some councils and their community boards has been the way in which New Zealand's Remuneration Authority has set the remuneration for elected members'. This has had the unintended result that 'unsurprisingly councillors tended to see themselves as meeting half of community board members' allowances out of their own pockets'.

In *Roles and Functions of Community Boards: Report for the Community Board's Executive Committee,* Richardson (2008) provided a thorough appraisal of the effectiveness of New Zealand community boards. Richardson (2008) considered the functions carried out by

community boards, community board 'satisfaction' with relationships between local councils and community boards, and how the functions of community boards have changed over time.

Roles and Functions of Community Boards covered two terms of office (2003/2007 and 2007/2010) in New Zealand local government. It consulted all local authorities with community boards as well as community boards themselves. Richardson (2008) also conducted interviews with local councillors, community board members and associated staff.

Richardson (2008, pp.6/9) summarised his findings as follows:

- Wide variation existed 'in the number of decision-making and advisory powers delegated' in different local authorities, with 45% of community boards enjoying advisory roles, 7% decision-making roles, and 46% council functions.
- Respondents specified that the advisory roles of community board vacillated between formal and *ad hoc* roles, usually at the discretion of council officers, council committees or council meetings.
- Some local authorities had established other engagement mechanisms apart from community boards for pursuing community advice, including advisory structures and designated ward committees.
- Variation existed in the 'delegation of decision-making and advisory roles across functions', with community boards typically exercising 'advisory roles in policy and planning', but with 'decision-making roles in planning and policy were rarely delegated to community boards'.
- Resource management roles were 'largely performed by councils only' and community boards mostly exercised advisory roles in service delivery functions.

- Community boards were most likely to have delegated decision-making in areas 'concerning community centres and halls, community grants, sports and recreation activities, and parks, reserves and gardens'.
- The community board role had metamorphosed through time. Richardson (2008) observed that 'it appears that councils were less likely to delegate decision-making or advisory roles to community boards in 2007 than in 1995'. Moreover, 'there was a significant reduction in the number of community boards that had a decision-making role from 1995 to 2007'. Lastly, 'in most functional areas community boards also had fewer advisory roles in 2007 than in 1995'.

Roles and Functions of Community Boards drew several broad conclusions. In particular, it found that while 'the majority of respondents (65%) were satisfied with the overall relationship between the board and the council, a sizeable minority of respondents (35%) indicated that they were dissatisfied'.

Against this background, it is immediately apparent that New Zealand-style community/local boards are far from an effective form of sub-council governance. Perhaps the most telling observation resides in the fact that while the New Zealand *Local Government Act 2002* empowered community boards to carry out various functions, Richardson (2008, p.9) found that 'community boards appear to have fewer delegations in 2007 than in 1995'!

Given these difficulties with New Zealand community/local boards, NSW local government policy makers would be well advised to steer clear of recreating these problems in NSW.

3.3 Sub-council Co-governance in NSW local government

A depressing aspect of *Local Government Structural Change* resides in its ignorance of the existence of a vigorous sub-council co-governance sector which already operates in NSW local government. Sub-council co-governance structures in NSW are enabled through Section 355 of the NSW *Local Government Act 1993*, which specifies how a council may decide to exercise its functions. More specifically, a function of a council may be exercised as follows:

(a) 'by the council by means of the councillors or employees, by its agents or contractors, by financial provision, by the provision of goods, equipment, services, amenities or facilities or by any other means, or'
(b) 'by a committee of the council, or'
(c) 'partly or jointly by the council and another person or persons, or'
(d) 'jointly by the council and another council or councils (including by means of a Voluntary Regional Organisation of Councils of which the councils concerned are members), or'
(e) 'by a delegate of the council (which may, for example, be a Voluntary Regional Organisation of Councils of which the council is a member).'

Section 355 has led to the establishment of a large number of sub-council structures across NSW local government which have facilitated the participation of people in the governance of their own local areas in collaboration with their local council.

Perhaps the best way of appreciating the operation of Section 355 is by way of a concrete example drawn from the community engagement practices of Lake Macquarie City Council

('LakeMac') in the Hunter region of NSW. Under Section 355 of the NSW *Local Government Act 1993*, LakeMac has developed two different types of 'delegated' management structures to assist local community volunteers to manage and operate local amenities on behalf of Council: Community Operating Committees and Incorporated Clubs and Associations.

The LakeMac delegation model enables an individual or a group of individuals – designated Community Operating Committees and Incorporated Clubs and Associations – to undertake the management and administration of local amenities, such as recreational facilities and community halls. The LakeMac delegation model not only empowers members of the local community to make decisions regarding local facilities, but it also provides the necessary legislative safeguards, including insurance coverage, as well as occupational health and safety training to promote a safe working environment.

The LakeMac delegation model has several noteworthy characteristics: Firstly, the delegation model is essentially 'volunteer driven': its operation and success hinges on a high degree of close collaboration between local community volunteers and LakeMac staff. Under the LakeMac delegation model, a total of 109 facilities are managed and operated by 542 community volunteers (or an average of 5 volunteers per facility managed). Of this total, some 99 recreational facilities (such as sporting fields, tennis courts and equestrian centres) are managed by 476 volunteers (at an average of 4.8 volunteers per facility managed) and 10 community halls managed by 66 volunteers (or an average of 6.6 volunteers per facility managed). While these numbers provide useful insights into the relative strength of volunteering within the LakeMac local community, it should be borne in mind that these

figures do not include leased facilities, which are also managed under the auspices of the LakeMac delegation model.

Secondly, the LakeMac delegation model is unusual insofar as it essentially adopts a 'hands off' approach towards the day-to-day operation and management of local council facilities. Community Operating Committees and Incorporated Clubs and Associations have effectively been empowered to take on this management role with appropriate oversight and support from LakeMac staff and management. This approach inherently offers delegated committees a high degree of control and flexibility in the management of their local facilities – such as annual bookings for the usage of tennis courts – while concurrently freeing LakeMac management to focus on substantive matters pertaining to policy development and long-term strategic planning. Under this arrangement, LakeMac has the distinct advantage of being able to draw upon the invaluable 'local knowledge' of local community volunteers to assist in the policy development process.

Finally, although the delegation model acknowledges the importance of volunteers in delivering a wide range of services, in 2012 LakeMac also formally recognised the contribution of local volunteers by hosting the inaugural *Volunteer Recognition Evening* on 16 May as part of *National Volunteer Week*. A survey by LakeMac of 119 volunteers (out of a total of 212 volunteers) who attended the *Volunteer Recognition Evening* revealed that 91% of respondents felt that the event was either 'very effective' or 'effective' in acknowledging the contribution of volunteers (Ellitt, 2012). Moreover, 71% of respondents reported that the event made them 'feel appreciated by Council' and – as a result of this formal recognition – 61% of respondents would 'continue doing volunteer work for Council' (Ellitt, 2012, p. 8). Although volunteers stressed that 'fees/finance/funding' and 'balancing

work/family/volunteering commitments' represented major constraints on the effective discharge of their duties, it is nonetheless interesting to note that 'seeking new volunteers' was not raised as a major challenge by respondents (Ellitt, 2012). This finding is not only indicative of a strong volunteering culture within the LakeMac community, but it also seems to demonstrate the efforts taken by LakeMac to initiate and stimulate a strong local volunteering sector have been successful.

As we have seen, both the Panel and *Local Government Structural Change* have claimed observed that a 'gap' exists in the current representational structures in NSW local government at the sub-council level, especially in councils with large populations. Moreover, the Panel advocated the establishment of New Zealand style community boards to fill this 'gap' – a claim endorsed by *Local Government Structural Change*.

However, as we have seen, this claim is false. Not only do the legislative foundations for effective local co-governance through 'sub-council' representational structures already exist in NSW local government in the form of Section 355 of the NSW *Local Government Act 1993*, but it is possible to identify flourishing instances of participatory local co-governance through 'sub-council' groups, such as the LakeMac delegation model established under Section 355 of the *Local Government Act 1993*. Accordingly, there is thus no need to 'reinvent the wheel' in NSW local government by introducing additional, expensive and redundant 'sub-council' local co-governance structures. Existing regulation under Section 355 already allows local authorities to engage in extensive local co-governance with local community groups.

3.4 Evaluation of SGS Cost Estimates for Local Boards

For the purposes of financial modelling, SGS assumed that the number of councillors for the greater Warringah amalgamated council would equal stay at Warringah's present number (i.e. 10 councillors including a directly elected Mayor) and this would form the elected body under which local boards would serve. In its pecuniary estimates for the cost of establishing local boards in an amalgamated council, *Local Government Structural Change* (2013, p.35/36) invoked several additional assumptions:

- There would be one local board for every 60,000 residents.
- Each board would have six members, comprised of '2 elected representatives from the local council (councillors) as well as 4 appointed members to reflect the range of interests in the community'.
- Local board members would be paid an annual board fee of $10,000.
- Each local board would be supported by one staff member employed by the local council, with an annual salary of $60,000, together with the use of council facilities.
- Additional support costs were calculated as 30% on-costs.
- Local boards would play an 'advisory role with limited delegated authority from the local council'.
- Local boards will be permanently in place post-amalgamation.

Without further comment and without any explanation for how the calculations were performed, *Local Government Structural Change* (2013, p.36) baldly noted that 'in total, the estimated cost of a board would be $156,000 per annum'. However, a little reflection can uncover the simplistic nature of the calculations performed: SGS simply multiplied 6 board

members by $10,000, added $60,000 for a staff member, to yield a total of $120,000, and then added 30% on-costs ($36,000) to produce the final figure of $156,000! In stark contrast to the New Zealand case, in which the costs of suitable accommodation and numerous other operating expenses were included, SGS entirely ignored any costs other than the direct costs of remuneration!

Given the highly arbitrary nature of this cost estimate, it is worth pursuing the matter in more detail. The monetary costs associated with the establishment and maintenance local boards obviously must comprise two main elements: (a) the costs of the establishment of local boards and (b) the ongoing running costs of local boards. Obviously before any decision is taken on whether local boards should be founded in an amalgamated SHOROC group of councils, it is essential to form firm estimates of both (a) and (b).

Given that both the Panel and *Local Government Structural Change* explicitly propose New Zealand-style boards, and given that Auckland most closely resembles Sydney of all New Zealand local authorities, in order to accurately estimate the costs associated with local boards in metropolitan councils, it is appropriate to refer to the example of the newly amalgamated Auckland Council. A report commissioned by the NSW Panel on sub-council representative structures, entitled *Community Level Governance* (2013, p.17), observed that for Auckland 'local boards are still very much "work in progress"' and it is 'as yet unclear the extent to which they have and exercise substantial authority within their individual areas'.

However, *Community Level Governance* (2013, p.17) noted that each Auckland local board seemed to have 'apparent authority for a budget in the order of $20 million', and the specific case study examined in *Community Level Governance* (2013, p.17) had 'a budget with

operating expenditure of $41 million and capital expenditure of $6.8 million for the 2012/2013 year'. Nonetheless *Community Level Governance* speculated that 'in practice it seems the amount over which the board is able to exercise real discretion is significantly less than $1 million'.

With respect to the costs associated with local boards in the recently merged Auckland Council, *Community Level Governance* (2013, p.18) noted that while 'local board areas have a population on average of approximately 70,000, the staffing resource is only some three or four persons for each board to provide advice, and manage the board's administrative processes' and these persons are 'employed directly by Auckland Council and not the local board'.

In order to garner an informed estimate of the costs of local boards in any Warringah-based amalgamated Sydney council, it is useful to follow the Auckland Council example. In its *Auckland Remuneration Decision 2013/2014,* the New Zealand Remuneration Board (which sets salary levels in the public sector) handed down the following remuneration decision for Auckland: in Howick (the highest paid Auckland local board) the local board chair will be paid NZ$88,222 in 2013 and a board member will be paid NZ$40,344, compared with Great Barrier (the lowest paid Auckland local board) where the local board chair will be paid NZ$45,211 and a board member will be paid NZ$21,713. The resultant direct annual costs for board members can be gathered from the fact that Howick has a chair and eight members and Great Barrier has a chair and four members. It is thus evident that Auckland with 21 local boards which have a total of 148 members, as well as an Auckland Council, has considerable costs associated with local boards (as its second tier of local government). In addition, in Auckland, each local board has a three/four person secretariat.

How would these costs translate to a greater amalgamated Warringah council? If we take the Auckland Council local board member costs for a 70,000 population, and convert it to Australian dollars, then we get $35,081 per board member. At 6 board members per greater amalgamated Warringah board, we get $210,486. If we add 30% on-costs, this brings the total cost per board to $273,631. It should also be stressed this is a conservative estimate since no weighting is given to the additional remuneration paid to board chairs, as it is in Auckland.

We must also take into account of an Auckland-style secretariat of three/four persons. If we again err on the conservative side, and assume (a) each greater amalgamated Warringah local board will have only three (and not four) staff members and (b) each staff member is paid only $60,000, then we get remuneration costs of $180,000. If we add 30% on-costs, then this becomes $234,000. Accordingly, the direct remuneration costs of each greater amalgamated Warringah local board will be $273,631 plus $234,000 for a total of $507,631 per board.

At 70,000 residents per local board, in a post-amalgamation greater Warringah council, we can estimate the cost ranges for Option 2, Option 3 and Option 4 investigated in *Local Government Structural Change* as follows:

Option 2 (ILGRP recommendation): Manly, Pittwater and Warringah merger:
2016 population = 150,349 people @ 60,000 per board = approximately 3 ‘small’ boards.
3 boards @ $507,631 per board = **$1,522,893**

Option 3 (Shore Regional Organisation of Councils (SHOROC) option): Manly, Mosman, Pittwater and Warringah merger:

2016 population = 257, 957 people @ 60,000 per board = approximately 4 'large' boards.

4 boards @ $507,631 per board = **$2,030,524**

Option 4 ('sub-region' option): Manly, Pittwater, Warringah, Ku-ring-gai and Hornsby merger:

2016 population = 553,431 people @ 60,000 per board = approximately 9 boards.

9 boards @ $507,631 per board = **$4,568,679**

In *Local Government Structural Change* the 'preferred option' of SGS is Option 3. As we have seen, this would imply $2,030,524 in remuneration costs alone, without any consideration of further inevitable operational costs.

Given these costs, NSW local government policy makers would be well advised to carefully scrutinise any benefits derived from boards to offset these costs.

3.5 Conclusions

Chapter 3 has considered the thorny problem of establishing an additional layer of local government in NSW in the form of New Zealand-style local boards, as advocated by the Panel in its *Future Directions* and endorsed by SGS in its *Local Government Structural Change.* We can draw three main conclusions for the analysis in Chapter 3.

- Despite claims to the contrary by the Panel and SGS, as we have seen, the operation of community/local boards is far from satisfactory. Indeed, as Richardson (2008) has shown, community/local boards are used much less frequently and make fewer decisions than when they were first established in 1989.
- Both the Panel and *Local Government Structural Change* appear unaware the current NSW Local Government Act already allows for effective 'co-governance' structures, such as Section 355 Committees, and there is thus no need for new legislation and an expensive additional tier of government comprised of local boards.
- The estimated cost of $156,000 per local board per annum in *Local Government Structural Change* radical understate the real costs of establishing local boards in an amalgamated greater Warringah council. We have demonstrated on the basis of documented experience in Auckland that local boards in an amalgamated greater Warringah council would cost $507,631 per board per annum in direct remuneration costs alone. Under Option 3 (Manly, Mosman, Pittwater and Warringah merger) – preferred by SGS – this would imply approximately 4 boards at $507,631 per board for an annual remuneration cost of $2,030,524.

CHAPTER 4: FINANCIAL RATIO ANALYSIS OF PROPOSED AMALGAMATION OPTIONS

4.1 Introduction

Financial Sustainability Ratios (FSR) represented part of the Treasury Corporation of NSW ('TCorp') *Financial Sustainability of the New South Wales Local Government Sector: Findings, Recommendations and Analysis* (2013) effort to provide a 'robust and understandable methodology to conduct assessments of all councils' (TCorp 2013, p 22). Despite significant reservations regarding the appropriateness of some of the ratios and associated benchmarks, they remain a key element in the Panel's decision making (ILGRP, 2013). It is thus reasonable to assess the three alternative proposals presented by SGS Economics & Planning according to the existing suite of FSR developed by TCorp. Moreover, it is important to also test the implicit claim that larger councils (as measured by population size) will provide services at lower cost, and, as a result will be more financially sustainable (SGS, 2013, pp51-3).

Chapter 4 is divided into six main parts. In Section 4.2, we assess the relevance, representativeness and reliability of the existing set of FSR. Section 4.3 then looks at the long-run association between population size and FSR. Section 4.4 employs alternate empirical techniques to examine the short-run relationship between FSR and population size. Section 4.5 re-estimates the FSR for the three proposed options and tests whether these putative entities represent an improvement on the existing council structure FSRs. Section 4.6 then compares the FSRs for each of the three options. Finally, Chapter 4 ends in section 4.7 with a holistic evaluation of the three options assessed by SGS (2013).

4.2 Relevance, Representativeness and Reliability of Financial Sustainability Ratios and Benchmarks

The Financial Sustainability Ratios (FSR) used by TCorp 'has drawn mostly from the Queensland work, particularly as the Queensland Treasury Corporation (QTC) has continued to work closely with the Queensland local government sector' (TCorp 2013, p 20). This is perhaps unfortunate as it implies that TCorp has not availed itself of the considerable scholarly literature in this field. Moreover, given that the QTC FSR were extensively employed in the Queensland Local Government Reform Commission's controversial forced amalgamation program, it is difficult to have any real confidence in their reliability, especially since four forcibly merged councils have received approval to de-amalgamate in Queensland just four years after the QTC informed amalgamations (QBC 2012).

Of particular concern is the omission of critical ratios, such as budget overrun, per capita long term debt, variation in market value of property, and community satisfaction data (Brown 1993; Falconer 1991; Groves and Valente, 1994; Kloha, Weissert and Kleine, 2005; Walker and Jones, 2012). Moreover, some of the ratios included in the TCorp/QTC suite exhibit significant redundancy. An example of this is the Interest Cover and Debt ratios which have a correlation coefficient of 0.79. Yet another example is the Own Source ratio, which is really just a reflection of current Grant Commission algorithms for allocation of Commonwealth funds. Furthermore, unless there is a plan to somehow alter the funding algorithms, it is difficult to understand what relevance such a ratio may have. In sum, it is unwise to presume that the simultaneous omission of critical ratios and inclusion of largely redundant ratios could provide an accurate picture of a council's financial performance.

There are also grounds for concern regarding the reliability of some of the FSR and associated benchmarks. For instance, the Capital Expenditure ratio has already been cited in the academic literature as 'a perfect example of where for additivity and logical reasons, measuring different infrastructure attributes results in decisions being based on data which may be bereft of any externally verifiable referents' (Pilcher 2009, p 172). However, this ratio is not the only one to exhibit problems of logical coherence. The Cash Expense ratio is also flawed with respect to its benchmark (greater than 3.0) – presumably assigned on the basis that most rates instalments occur on a quarterly basis. Such a benchmark fails to take into account the date of financial statement compilation with respect to the due date for the first rate instalments – an appropriate benchmark for this ratio would clearly be 2. Yet another example of flawed logic occurs with respect to the Asset Maintenance ratio benchmark of greater than 1 – to achieve such a benchmark a council would need to spend more on asset maintenance than required, which would clearly be *unsustainable*.

The Building and Infrastructure ratio is also flawed. This can be demonstrated by considering the case of a council which applies a one-off lift to capital expenditure and infrastructure renewal spending for a given year. For that same year, both the Capital Expenditure and Building and Infrastructure renewal ratios will improve. However, should the council revert back to the original spending level in subsequent years, both of these ratios will decline below that of the first year – yet the infrastructure will unarguably be in a better overall state. This aberration occurs because the capitalisation of spending in the first year increases the depreciable base in subsequent years. These kinds of logical flaws plague the existing FSR suite and it is noted that even TCorp recognised that there were significant problems with the benchmarks employed (TCorp 2012, p 22).

It is thus apparent that the existing FSR measures are not representative, reliable or relevant to the measurement of Australian local government financial sustainability. However, as noted earlier, they are the preferred metric of the ILGRP (2013) and hence it is not unreasonable to assess the SGS claims against them.

4.3 Long-run association between Financial Sustainability Ratios and Population Parameters

If combining a number of councils into a larger entity (as measured by population size) is claimed to enhance their financial state, then it is reasonable to expect that there should be an association between population size and FSRs. In order to assess this over the ILGRP identified time horizon of approximately 40 years, it is necessary to apply two complementary empirical techniques (ILGRP 2013, p.6). In the first instance, we apply cross sectional Ordinary Least Squares (OLS) regression analysis to identify long-run associations between population size and the FSR (see Table 4.1). However, to assess short-run associations it is necessary to employ fixed effects panel regression – in this case the panel is comprised of 2009-2011 data (see section 4.4). In economic analysis, the short-run is defined as the period in which at least one input is fixed and in the long-run all inputs are variable, which is essentially the rationale for the two empirical approaches.

Table 4.1 presents the results from the long-run analysis of the association between population size and FSR in the Greater Sydney group of councils. 2011 data is used for the regression estimations since it represents the most recent ABS data. Moreover, the TCorp assessments of 2012 data have not been made publicly available for many of the Greater Sydney councils. Only the Own Source and Asset Renewal ratios exhibit statistically

significant associations with population size. As noted in section 4.2, the association for Own Source ratio is completely unsurprising and of limited relevance. The Asset Renewal ratio on the other hand suggests that a 1% increase in population size will lead to a 1.06% increase in this ratio, in the long run. This suggests that there will be no improvement in the other eight ratios should amalgamations based on population size be allowed to proceed.

Table 4.1: Greater Sydney Stratification of Linear Cross Section Regression, 2011 (n = 38)

	Operating Ratio	**Own Source Revenue Ratio**	**Unrestricted Current Ratio (ln)**
Population (ln)	13.517	12.913*	-0.064
	(6.612)	(5.775)	(0.485)
Population Density	-4.799	-1.518	0.129
	(3.526)	(2.748)	(0.259)
Population Growth (ln)	1.216	-5.902**	-0.074
	(2.246)	(1.750)	(0.165)
Exogenous Controls	Yes	Yes	Yes
Coefficient of Determination	0.44	0.80	0.16

	Interest Cover Ratio (ln)	**Infrastructure Backlog Ratio (sqrt)**	**Debt Service Cover Ratio (ln)**
Population (ln)	-2.740	-0.161	-1.779
	(2.015)	(0.155)	(2.154)
Population Density	0.161	-0.967	0.555
	(1.103)	(0.083)	(1.210)
Population Growth (ln)	-0.189	0.066	-0.105
	(0.511)	(0.053)	(0.562)
Exogenous Controls	Yes	Yes	Yes
Coefficient of Determination	0.52	0.26	0.44

	Capital Expenditure Ratio (ln)	**Cash Expense Ratio (ln)**	**Asset Renewal Ratio (ln)**	**Asset Maintenance Ratio**
Population (ln)	0.881	-1.741	1.060*	-0.018
	(0.466)	(1.275)	(0.463)	(0.258)
Population Density	0.008	-0.318	-0.194	0.036
	(0.249)	(0.618)	(0.247)	(0.137)
Population Growth (ln)	0.083	0.109	0.011	0.003
	(0.158)	(0.416)	(0.157)	(0.088)
Exogenous Controls	Yes	Yes	Yes	Yes
Coefficient of Determination	0.42	0.37	0.45	0.28

Source: T Corp and the Australian Bureau of Statistics.
* p<0.05, ** p<0.01. Standard errors in parentheses.

4.4 Short-run association between Financial Sustainability Ratios and Population Parameters

The long-run may take many years to eventuate, given that employment contracts and equipment leases will be substantially transferred to any amalgamated entity. Moreover, given the significant one-off and ongoing amalgamation costs, not included in the regression data, the long-run improvement to the Asset Renewal ratio may never eventuate (Drew and Dollery, 2013). Accordingly, it is important to also consider short-run associations. Table 4.2 presents the fixed effects panel regression of FSR data from 2009-2011.

Table 4.2: Greater Sydney Stratification of Linear Panel Regression, 2011 (n = 38)

	Operating Ratio	**Own Source Revenue Ratio**	**Unrestricted Current Ratio (ln)**
Population (ln)	-4.219	9.876	1.051
	(50.262)	(62.797)	(2.668)
Population Density	22.905	38.530	1.272
	(35.457)	(41.750)	(1.882)
Population Growth (ln)	-4.271	1.820	-0.143
	(3.091)	(3.535)	(0.164)
Exogenous Controls	Yes	Yes	Yes
Coefficient of Determination	0.18	0.07	0.12

	Interest Cover Ratio (ln)	**Infrastructure Backlog Ratio (sqrt)**	**Debt Service Cover Ratio (ln)**
Population (ln)	5.689	-1.732	3.489
	(9.270)	(1.182)	(7.632)
Population Density	-1.059	0.408	3.943
	(7.256)	(0.834)	(5.974)
Population Growth (ln)	-1.180*	-0.022	-0.587
	(0.524)	(0.073)	(0.432)
Exogenous Controls	Yes	Yes	Yes
Coefficient of Determination	0.15	0.07	0.11

	Capital Expenditure Ratio (ln)	**Cash Expense Ratio (ln)**	**Asset Renewal Ratio (ln)**	**Asset Maintenance Ratio**
Population (ln)	-2.442	6.335	-12.709	4.976
	(4.692)	(11.876)	(8.721)	(3.019)
Population Density	-4.903	-5.744	8.827	-7.017**
	(3.310)	(7.763)	(6.152)	(2.130)
Population Growth (ln)	-0.113	0.089	0.205	-0.287
	(0.289)	(0.656)	(0.536)	(0.186)
Exogenous Controls	Yes	Yes	Yes	Yes
Coefficient of Determination	0.38	0.12	0.18	0.20

Source: T Corp and the Australian Bureau of Statistics.
* p<0.05, ** p<0.01. Standard errors in parentheses.

As we can see, there are no statistically significant associations between population size and any of the ten FSRs. It is thus clear that there is no firm empirical basis for claims that increased population size will improve the financial sustainability of Greater Sydney councils.

4.5 Re-estimation of Financial Sustainability Ratios

By first decomposing the TCorp data into its constituent parts, it is possible to re-estimate FSRs for the three options proposed by SGS Economics. It should be noted that some of the TCorp data in Appendix A and section 3.6(b) of the various documents was simply incorrect when compared to the audited financial statements - one example of the many errors is the stated figure for Mosman Council's required asset maintenance which differed from the audited financial statements by 64%. These errors, along with rounding error imbedded into many of the reported FSR, account for any differences in the figures presented below.

4.5.1 Option 2 – Manly, Pittwater and Warringah

Option 2 is reported by SGS Economics as the preferred ILGRP option (SGS 2013, p1). As Table 4.3 demonstrates, the amalgamation of these three councils would have a negligible impact on the FSR (over 2 years, 31 improve and 29 deteriorate). Moreover, three of the ten FSRs for Option 2 would still fail to achieve TCorp benchmarks. It should be borne in mind that these FSR re-estimates do not include the significant one-off and ongoing costs associated with amalgamation: in the 2008 Queensland amalgamations, the mean claimed one-off cost was $8.1m (QTC 2009). The average increase to real operating costs for the two years following amalgamation was 4.7%pa and this would seem a sound basis for estimating the short-run ongoing costs arising from wage parity requirements, reticence to lay off staff

and increased levels of bureaucracy (Queensland Government Department of Local Government and Planning 2010; Drew and Dollery 2013).

Table 4.3: 2010 Financial Sustainability Ratio Comparisons

Ratio	Amalgamated Estimate	Improve	Deteriorate	Meets Benchmark?
Operating ratio	0.913	1	2	yes
Own Source Revenue ratio	79.400	1	2	yes
Unrestricted Current ratio	2.762	1	2	yes
Interest Cover ratio	19.106	2	1	yes
Infrastructure Backlog ratio	0.030	1	2	no
Debt Service Cover ratio	3.600	2	1	yes
Capital Expenditure ratio	1.809	2	1	yes
Cash Expense ratio	1.523	2	1	no
Building and Infrastructure ratio	1.653	1	2	yes
Asset Maintenance ratio	0.831	2	1	no
TOTAL		15	15	

2011 Financial Sustainability Ratio Comparison

Ratio	Amalgamated Estimate	Improve	Deteriorate	Meets Benchmark?
Operating ratio	0.477	2	1	yes
Own Source Revenue ratio	78.551	2	1	yes
Unrestricted Current ratio	2.497	1	2	yes
Interest Cover ratio	21.988	2	1	yes
Infrastructure Backlog ratio	0.075	1	2	no
Debt Service Cover ratio	5.903	1	2	yes
Capital Expenditure ratio	1.705	2	1	yes
Cash Expense ratio	1.366	2	1	no
Building and Infrastructure ratio	1.488	1	2	yes
Asset Maintenance ratio	0.832	2	1	no
TOTAL		16	14	

Source: T Corp and the financial statements of Manly Council, Pittwater Council and Warringah Council.

4.5.2 Option 3 – Manly, Mosman, Pittwater and Warringah

Table 4.4 presents the re-estimate of FSR based on Option 3 in SGS Economics (2013). As we can see, there is a similarly negligible improvement in FSR for the amalgamated entity (41 improvements against 39 deteriorations). Once again, three of the benchmarks are not met by Option 3, which is the SGS preferred option (SGS 2013, p2). Amalgamation costs are also excluded from these re-estimates.

Table 4.4: 2010 Financial Sustainability Ratio Comparisons

Ratio	Amalgamated Estimate	Improve	Deteriorate	Meets Benchmark?
Operating ratio	0.930	1	3	Yes
Own Source Revenue ratio	78.710	2	2	Yes
Unrestricted Current ratio	2.589	2	2	Yes
Interest Cover ratio	17.179	3	1	Yes
Infrastructure Backlog ratio	0.038	2	2	No
Debt Service Cover ratio	3.264	2	2	Yes
Capital Expenditure ratio	1.848	2	2	Yes
Cash Expense ratio	1.642	2	2	No
Building and Infrastructure ratio	1.605	2	2	Yes
Asset Maintenance ratio	0.712	2	2	No
TOTAL		20	20	

2011 Financial Sustainability Ratio Comparison

Ratio	Amalgamated Estimate	Improve	Deteriorate	Meets Benchmark?
Operating ratio	-0.620	2	2	Yes
Own Source Revenue ratio	78.391	3	1	Yes
Unrestricted Current ratio	2.343	2	2	Yes
Interest Cover ratio	18.140	3	1	Yes
Infrastructure Backlog ratio	0.079	2	2	No
Debt Service Cover ratio	4.722	1	3	Yes
Capital Expenditure ratio	1.550	3	1	Yes
Cash Expense ratio	1.420	2	2	No
Building and Infrastructure ratio	1.281	2	2	Yes
Asset Maintenance ratio	0.776	1	3	No
TOTAL		21	19	

4.5.3 Option 4 – Manly, Pittwater, Warringah, Ku-ring-gai and Hornsby

Table 4.5 presents the re-estimates for Option 4 in SGS Economics (2013). The evidence suggests that this option would result in a net deterioration of the FSR. Benchmarks have not been met for three of the FSR and the presented data do not account for the very significant costs associated with amalgamation.

Table 4.5: 2010 Financial Sustainability Ratio Comparisons

Ratio	Amalgamated Estimate	Improve	Deteriorate	Meets Benchmark?
Operating ratio	0.961	2	3	Yes
Own Source Revenue ratio	76.212	2	3	Yes
Unrestricted Current ratio	2.340	3	2	Yes
Interest Cover ratio	17.331	3	2	Yes
Infrastructure Backlog ratio	0.095	1	4	No
Debt Service Cover ratio	4.080	3	2	Yes
Capital Expenditure ratio	1.555	2	3	Yes
Cash Expense ratio	1.424	3	2	No
Building and Infrastructure ratio	1.315	2	3	Yes
Asset Maintenance ratio	0.876	3	2	No
TOTAL		24	26	

2011 Financial Sustainability Ratio Comparisons

Ratio	Amalgamated Estimate	Improve	Deteriorate	Meets Benchmark?
Operating ratio	-0.905	2	3	Yes
Own Source Revenue ratio	75.794	1	4	Yes
Unrestricted Current ratio	2.186	3	2	Yes
Interest Cover ratio	19.847	3	2	Yes
Infrastructure Backlog ratio	0.118	2	3	No
Debt Service Cover ratio	5.411	2	3	Yes
Capital Expenditure ratio	1.465	3	2	Yes
Cash Expense ratio	1.378	3	2	No
Building and Infrastructure ratio	1.010	3	2	Yes
Asset Maintenance ratio	0.903	3	2	No
TOTAL		25	25	

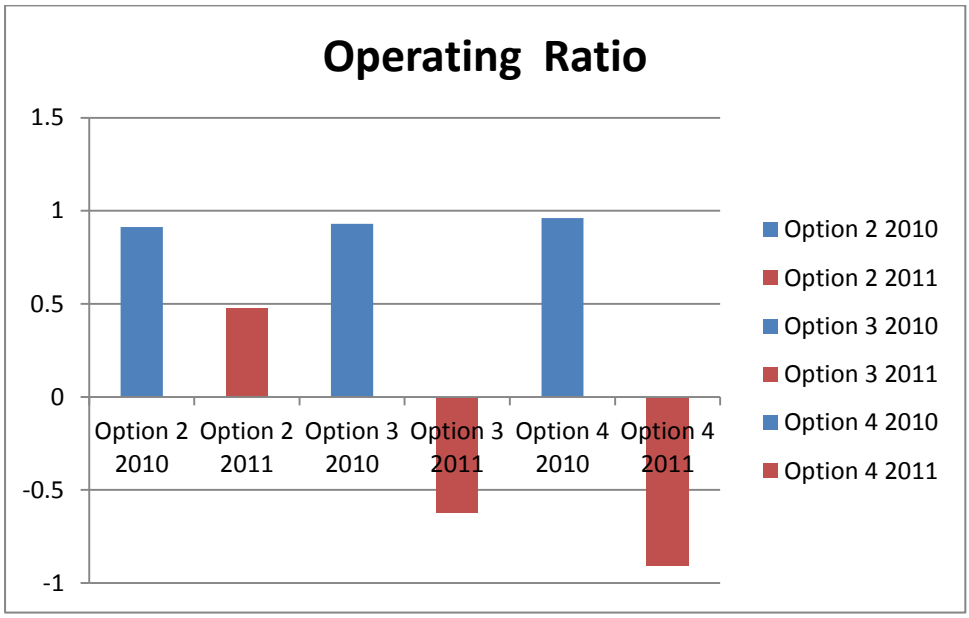
4.6. Amalgamation option comparisons

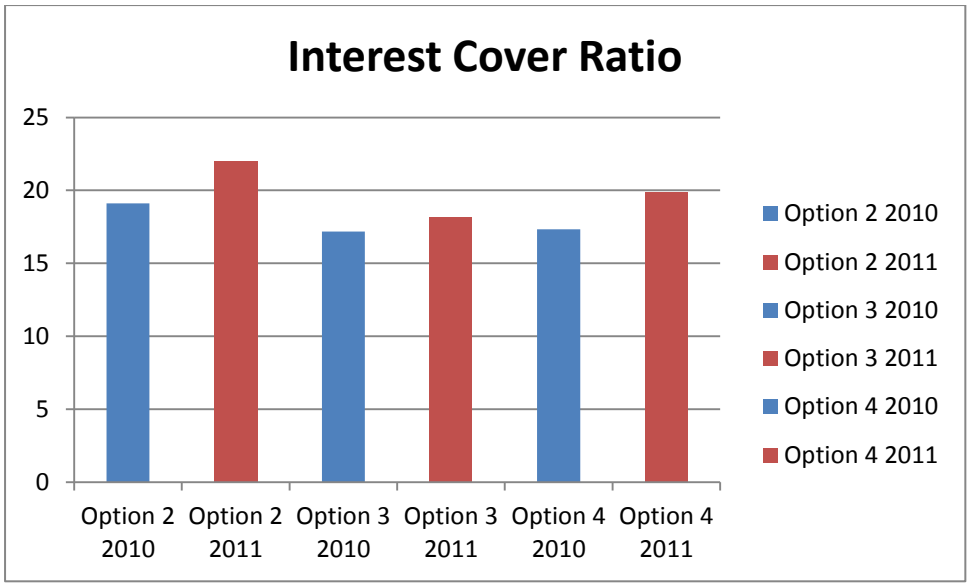
Section 4.5 presented the FSR re-estimates for each of the Options examined by SGS Economics (2013). In each case, there was no or negligible improvement indicated by the results, despite the fact that the very significant costs of amalgamation had been excluded from the calculations. However, the question remains as to how the three options compare to one another. Option 2 is ILGRP (2013) preferred option, whilst Option 3 is advocated by SGS (2013). Presumably, Option 4 seems to have been included to enhance the performance of the other two options.

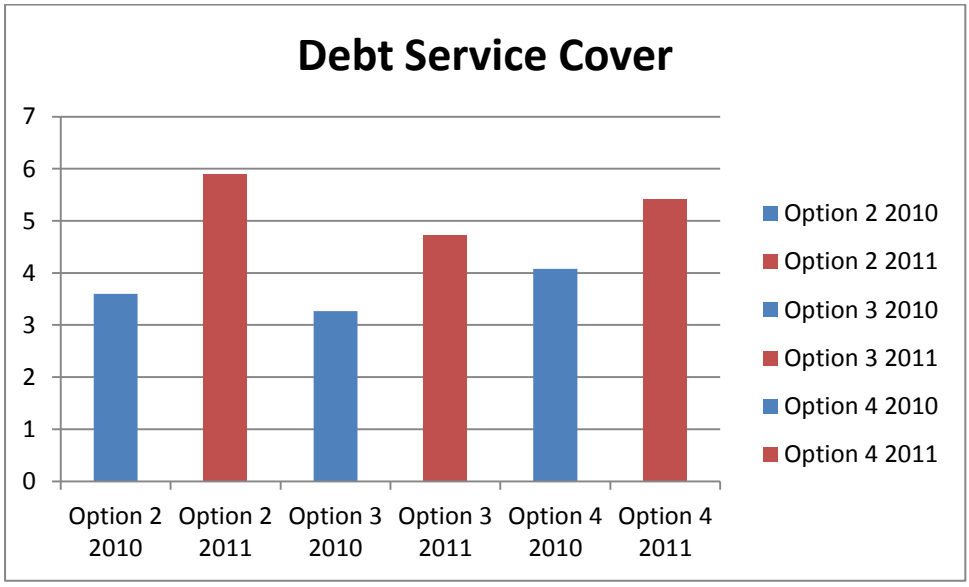
4.6.1 Financial Management Indicators

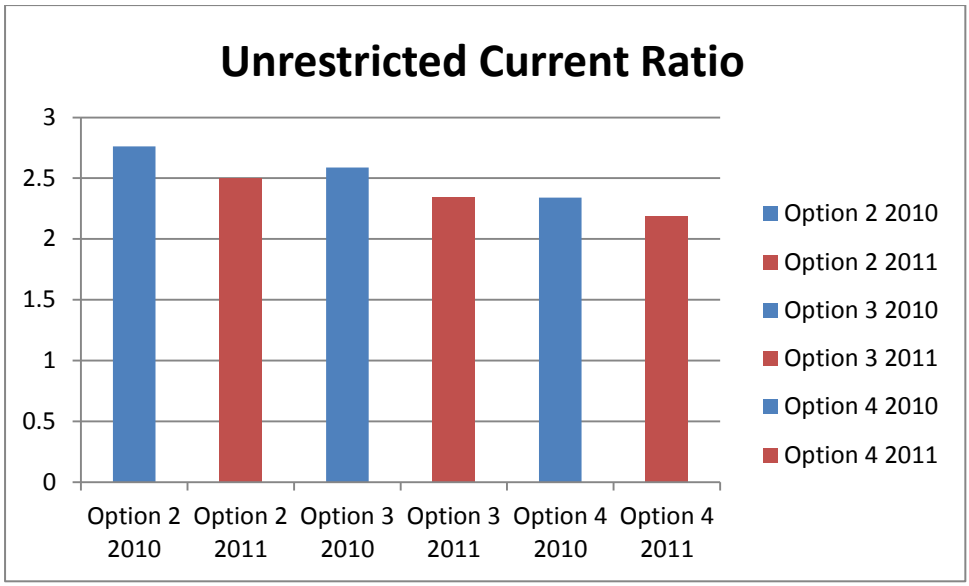
The six FSR which comprise the Financial Management Indicators have been presented in column graphs for easy comparison. Each option is presented in numerical order and both annual re-estimates have been included – 2010 is represented in blue whilst 2011 is in red. Option 2 (ILGRP preferred) is clearly superior to the other two options for the Operating, Interest Cover, Unrestricted Current, and Own Source ratios. Option 4 (preferred by neither the ILGRP nor SGS) performs best for the 2010 Debt Service Cover re-estimate, but lower than option 2 for the 2011 data. Option 3 represents a very slight improvement for the Cash Expense ratio only.

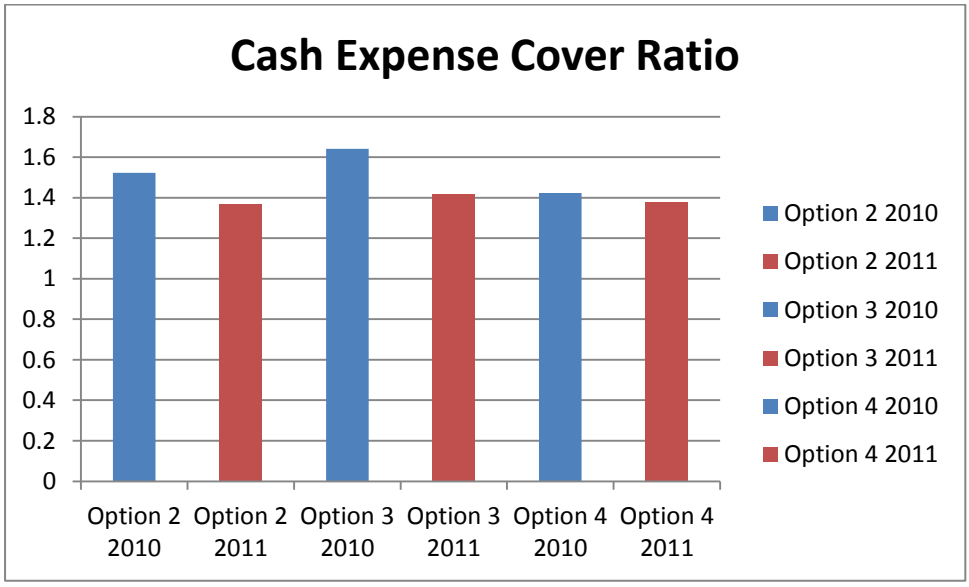
It is clear that Option 2 represents the best alternative with respect to the Financial Management Indicators, excluding the *status quo*. This would seem to contradict the principal argument advanced by SGS Economics (2013).

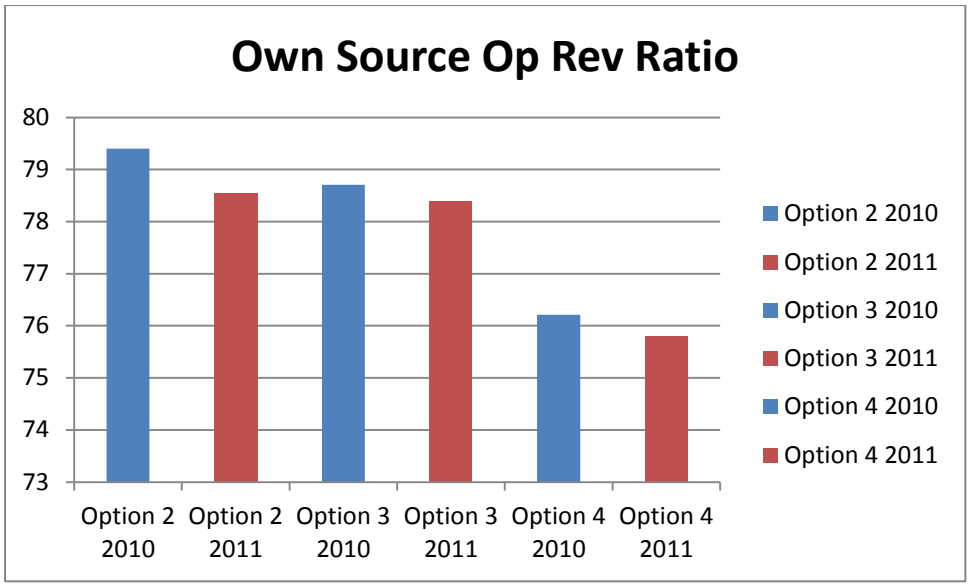



Interest Cover Ratio
25
20
15
10
5
0
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011


Debt Service Cover
7
6
5
4
3
2
1
0
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011

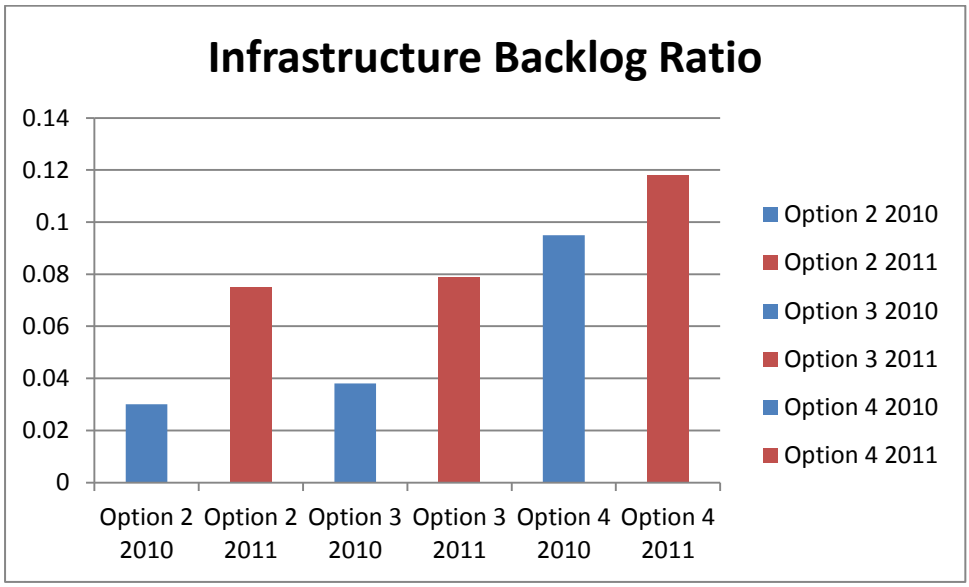

Unrestricted Current Ratio
3
2.5
2
1.5
1
0.5
0
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011

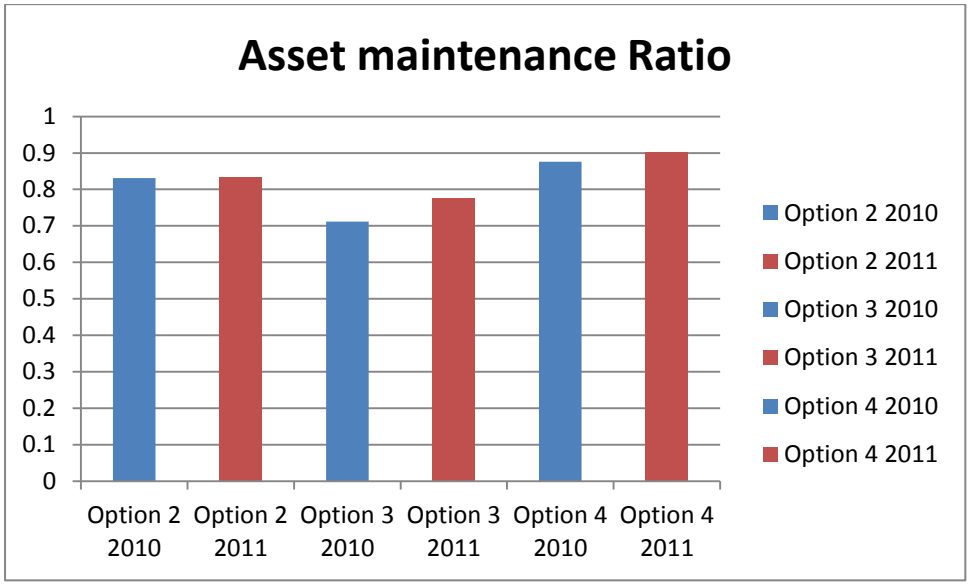

Cash Expense Cover Ratio
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011

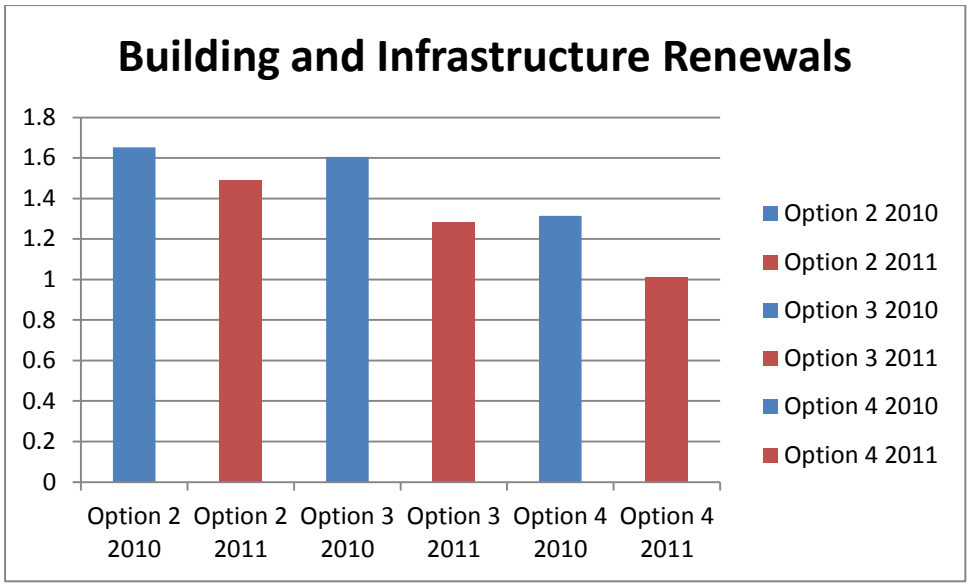


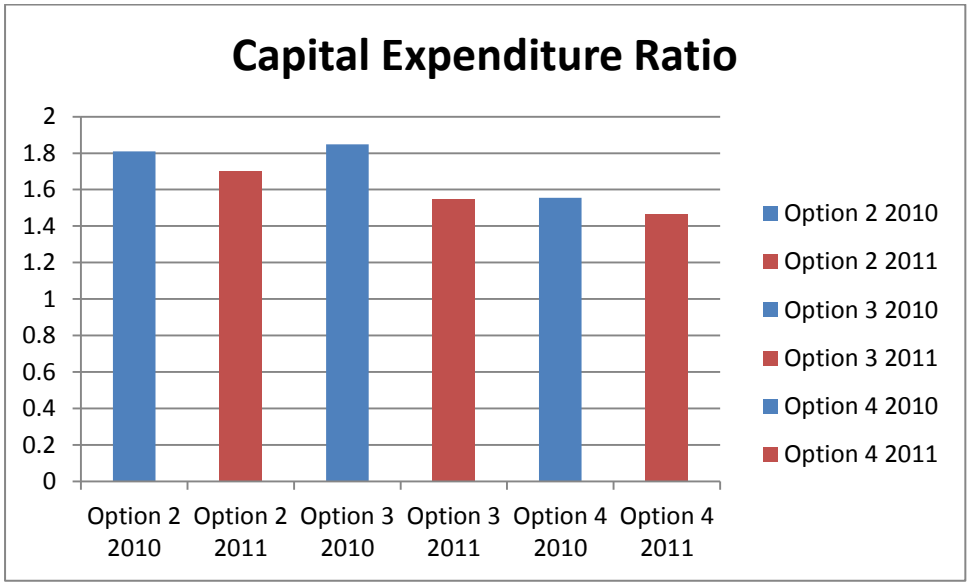
4.6.2 Infrastructure Indicators

Option 2 is clearly the superior choice (excluding the *status quo*) with respect to the Infrastructure Backlog Ratio and Building and Infrastructure Renewals ratios. Option 4 provides evidence of better performance for the Asset Maintenance ratio, whilst the data for the re-estimated Capital Expenditure ratio is inconclusive. Evidence from the re-estimate Infrastructure Indicator ratios would thus suggest that Option 2 would produce superior results, once again, to the other two options. Significantly, the evidence in favour of the SGS preferred alternative (Option 3) pales compared to that of Option 2 and even Option 4 (which is preferred by neither SGS nor the ILGRP).


Infrastructure Backlog Ratio
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011


Asset maintenance Ratio
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011


Building and Infrastructure Renewals
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011


Capital Expenditure Ratio
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011
Option 2 2010
Option 2 2011
Option 3 2010
Option 3 2011
Option 4 2010
Option 4 2011

4.7 Concluding remarks

There is considerable cause to doubt whether the TCorp/QTC FSR are relevant, representative or reliable indicators of local government performance. As we have demonstrated, they largely ignore the scholarly evidence and are plagued by logical flaws. However, they remain the preferred metric of the ILGRP for council evaluation and, as such, are thus a reasonable basis for assessing the merit of the SGS Report (2013).

If amalgamated councils are to be more financially sustainable, then this implies an empirically contestable claim. To this end, we estimated two separate and complementary regressions to determine whether there were any statistically significant associations between population size and the ten FSRs. Our analysis of long-run associations suggests that there could be an increase to just one of the *relevant* FSRs. However, this excludes the very significant one-off and ongoing amalgamation costs. The analysis of short-run associations produced no statistically significant results.

We then re-estimated the FSR for the three putative amalgamated entities. The evidence suggested that Options 2 and 3 may result in a negligible net improvement in FSR, whereas Option 4 would result in a net deterioration in FSR. However, all the re-estimates excluded one-off costs (for which the mean 2008 Queensland claim was $8.1m) and ongoing costs (which the Queensland evidence suggests might be in the order of 4.7% pa).

Finally, we compared the 3 alternatives proposed in the SGS Economics (2013) report. Option 2 (preferred by ILGRP) was clearly superior to the other two options, including the SGS Economics preferred alternative.

In sum, the empirical evidence would suggest that there is little likelihood that any of the three Options examined by SGS Economics (2013) will result in enhanced local government sustainability (as measured by the TCorp FSR).

CHAPTER 5: CRITIQUE OF THE ECONOMETRIC ANALYSIS

5.1 Introduction

In Chapter 5 a critique of the econometric analysis conducted by SGS is undertaken. The econometric analysis employed by SGS examined the relationship between population size and per capita expenditure categories for the councils of Manly, Pittwater, Warringah, Mosman, Ku-ring-gai, and Hornsby for 2011. The SGS analysis reveals that the following six categories are "likely to be subject to economies of scale" (SGS, 2013, p.52): (i) governance, (ii) administration, (iii) public order, (iv) environment, (v) recreation and culture, and (vi) transport and communication. Based on this "high-level analysis" it is argued in the SGS Report (2013, p.52) that "these efficiencies – generated from the larger size of the amalgamated council – are expected to result in lower average costs per capita as experienced in the larger council".

Given that the results from the SGS econometric analysis are used to estimate the potential cost-savings associated with council amalgamations, it is critically important to assess the veracity and robustness of these claims. Against this background, we forensically examine the relationship between population size and per capita expenditure for the councils of Manly, Pittwater, Warringah, Mosman, Ku-ring-gai, and Hornsby using a six year panel dataset covering the period 2005 to 2010.

In conducting our econometric analysis we explicitly assess the three merger options proposed in the SGS Report (SGS, 2013, p.1). In sum, our econometric analysis reveals that there is no statistically significant relationship between population size and per capita

expenditure. Thus, from a policy perspective, there is no empirical reason to believe that the proposed mergers as canvassed in the SGS Report – i.e., Option 2, Option 3, and Option 4 – will result in any significant cost-savings.

Chapter 5 is comprised of six main parts. Section 5.2 will provide a brief critique of the econometric analysis conducted by SGS. Section 5.3 will provide a synoptic review of the concept and measurement of economies of scale. Section 5.4 will describe the data source, econometric model, and the empirical strategy employed. The results along with the discussion are presented in section 5.5. Chapter 5 concludes with some brief remarks in section 5.6.

5.2 A Critique of the SGS Econometric Analysis

While the econometric analysis undertaken by SGS is technically correct, it is nevertheless simplistic and misleading. In particular:

i. The econometric analysis **does not** account for differences in population density, 'council fixed effects' and 'time fixed effects'. Failure to control for these omitted variables not only introduces 'omitted variable bias', but also calls into question the robustness of the SGS estimates; and
ii. The "high-level regression" analysis on the relationship between population size and the eleven different types of per capita expenditure categories (SGS, 2013, pp.54-55) is based on only **six** observations over a **one** year period. This is far too small a sample to draw any meaningful – or robust – conclusions.

Given the major limitations evident in the SGS econometric analysis, there is absolutely no compelling evidence for the presence of scale economies and, as such, the associated cost-savings canvassed in *Local Government Structural Change* are far from plausible.

To account for the limitations in the SGS analysis, we use a panel data set covering the period 2005 to 2010 to explicitly control for population density, 'council fixed effects' and 'time fixed effects'. More specifically, our econometric analysis is explicitly devoted to determining whether there is evidence of scale economies to support the three merger options canvassed in the SGS Report.

5.3 Economies of Scale in Local Government

Economies of scale play a central role in the debate on structural reform in local government. Put differently, structural reform is predicated on the notion that larger councils are more efficient than smaller councils (Faulk and Hicks, 2011). Claims of 'bigger is cheaper' rest squarely on the assumption that the delivery of local government services is characterised by substantial economies of scale (Dollery, Crase and Johnson, 2006).

Supporters of council amalgamations typically argue that larger councils servicing a larger population will benefit from, among other things, lower administrative costs and improved use of equipment (Andrews and Boyne, 2009; Dollery, Byrnes and Crase, 2008). On the other hand, opponents of council amalgamations argue that smaller councils are less bureaucratic, compete enthusiastically with each other and, as a result, usually display a lower cost profile (Boyne, 1995).

In general, it would appear that labour-intensive services, such as health inspection, would generate few economies of scale because an increased volume of services will require a larger number of health inspectors. On the other hand, capital-intensive services, such sewage networks, may yield substantial economies of scale since the fixed costs can be spread across a larger number of residents (Dollery, Crase and Johnson, 2006).

Nevertheless, it is important to note that the current body of research on economies of scale in the context of Australian local government is inconclusive (Byrnes and Dollery 2002; Dollery, Grant, and Kortt, 2012). Although the evidence is inconclusive it does suggest that while amalgamations may enhance the administrative and technical capacity of municipalities, it is not only costly but has other adverse consequences, such as the loss of 'local identity' and 'local voice' (Andrews and Boyne, 2009; Dollery, Crase and Johnson, 2006).

To determine whether economies of scale exist, the empirical literature typically estimates the association between output (measured in terms of population size) and the cost of local government service provision (measured in terms of per capita expenditure). However, population size has been criticised as being a poor proxy for output because local government areas with similar sized populations may exhibit quite distinct economic and social characteristics. Although population size may be a crude proxy for output, finding precise measures of local government outputs is fraught with difficulty (Andrews and Boyne, 2009). Even in the event that separate output measure were readily available, it is far from clear whether these measures could be combined to produce a meaningful local government output index. Nevertheless, population size is often used in empirical studies because:

- It provides a simple and transparent proxy for total output; and
- It is typically the focus in policy debates about local government consolidation.

Thus, in the present context, economies of scale refer to the impact of population size on per capita expenditure. If a larger population size is associated with lower per capita expenditure, then scale economies are said to exist. On the other hand, if a larger population is associated with high per capita expenditure, then diseconomies of scale are said to exist.

5.4 Data and Empirical Strategy

The data used in this report was sourced from the *Comparative Information on NSW Local Government Councils – Time Series of Comparative Information* dataset, which was prepared by the Division of Local Government, Department of Premier and Cabinet (DPC, 2010). This dataset contains an extensive range of data on all NSW councils, including details on expenditure, population size, and population density.

The data from the DPC (2010) was used to create a panel dataset consisting of the councils of Manly, Pittwater, Warringah, Mosman, Ku-ring-gai, and Hornsby ($n = 6$) covering the six-year period from 2005 to 2010 ($T = 6$). Thus, our analytical sample is 36 observations (i.e., $nT = 36$). The six year time period was selected due to data availability and, more importantly, as it represents a period of stability in recent NSW local government history since the last program of forced amalgamation in 2004. This dataset was used to assess the proposed mergers – Option 2, Options 3, and Option 4 – that are canvassed in the SGS Report.

5.4.1 Dependent Variables

We used the following measures of expenditure:

- The log of total per capita expenditure net of water and sewerage expenses and capital expenditure (DPC, 2010);
- The log of community expenditure per capita, which includes expenditure on aged care centres, community halls, and senior citizen groups (DPC, 2010);
- The log of recreational expenditure per capita, which includes net expenditure on local parks and sporting facilities (after deducting revenues received from users) (DPC, 2010);
- The log of environmental and health expenditure per capita, which includes expenditure related to upkeep of natural resources and the maintenance of public health (DPC, 2010); and
- The log of residual expenditure per capita, which was calculated as total expenditure per capital net of per capita expenditure on community, recreation, environmental and health expenditure. By design, this residual measure is intended to capture largely non-discretionary expenditure such as expenditure on local roads.

All expenditure variables were converted into 2010 constant dollars using the GDP deflator to remove the effects of inflation.

5.4.2 Independent Variables

The independent variables used in our econometric analysis were:

- Population size
- Population density
- Councils
- Time.

Population size was measured as the number of people residing in each local government area, while population density was measured as the number of people per kilometres squared. Dummy variables were used to classify councils into relevant groups (with Pittwater council selected as the excluded reference group). Finally, time was divided into six categories (1 = 2005; 2 = 2006; 3 = 2007; 4 = 2008; 5 = 2009; and 6 = 2010), with the year 2005 selected as the excluded reference group.

Inclusion of the council and time dummy variables is particularly important in the current context because the:

- Council dummy variables capture the effects of omitted variables like 'cultural norms' that are constant over time but vary across local government areas; and
- Time dummy variables capture the effects of omitted variables, such as 'state-based regulations', which are constant across councils but vary over time.

In other words, these 'council fixed effects' and 'time fixed effects' allow us to reduce the bias arising from both unobserved variables that are constant over time and across local government areas.

5.4.3 Empirical Strategy

To estimate the relationship between local government expenditure and population size, we adopted a conventional multiple linear regression framework:

$$Y_{it} = \beta_1 \mathbf{P}_{it} + \beta_2 \mathbf{C}_{it} + \beta_3 \mathbf{T}_{it} + \mu_{it} \quad (1)$$

In Equation (1), $\mathbf{Y_{it}}$ is the log of per capita expenditure and the subscripts *i* and *t* are for council and year, respectively. $\mathbf{P_{it}}$ is a vector of population variables (i.e., population and population density), $\mathbf{C_{it}}$ are council dummy variables, $\mathbf{T_{it}}$ are time dummy variables, and $\boldsymbol{\mu_{it}}$ is the error term.

With respect to the dummy variables, it is important to note that they measure the influence on the dependent variable of a subject being in one category rather than being in the excluded reference category. All results were estimated using ordinary least squares (OLS). Given that we observed the same councils over multiple waves, our standard errors are clustered at the council-level so as to account for within-council serial correlation.

Our econometric approach was divided into two main parts:

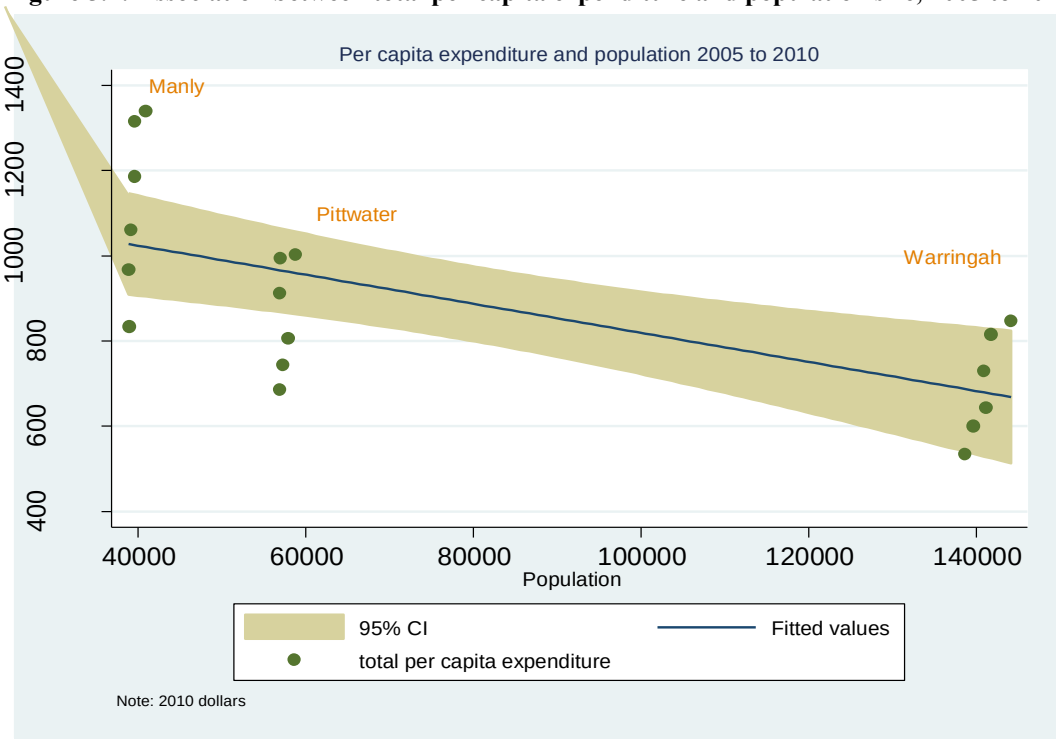
- First, we examined the impact of population size on the log of total per capita expenditure; and
- Second, we then 'split' the log of total per capita expenditure (into community, recreational, environmental and health, and residual expenditure per capita) to determine whether scale economies were present for different types of local government services.

5.5. Discussion of Results

5.5.1 Assessment of Option 2 – Proposed merger of Manly, Pittwater and Warringah

In Figure 5.1 we graph the relationship between total per capita expenditure and population size for Manly, Pittwater and Warringah councils between 2005 and 2010. In reviewing Figure 5.1, it is worth noting that there appears to be weak negative association between total per capita expenditure and population size. However, it is important to stress that this relationship does not take into account omitted variable bias arising from 'council fixed effects' and 'time fixed effects'.

Figure 5.1: Association between total per capita expenditure and population size, 2005 to 2010 (Option 2)



To gain further insight into this relationship, we report our regression results in Table 5.2. To aid interpretation of the results, we divided population by 10,000 so that the estimated coefficients represent the marginal effect of a 10,000 person increase in population size.

Model 1 in Table 5.1 reports the OLS results of population size on the log of total per capita expenditure **without** controlling for 'council fixed effects' and 'time fixed effects'. According to this estimate ($\beta = -0.0395$; $p < 0.05$), which is statistically significant at the 5% level, a 10,000 increase in the population is associated with a 4% decline in total per capita expenditure.

Table 5.1: Effect of population size on council expenditure, 2005 to 2010 (Option 2)

Independent variable	Model (1)	Model (2)	Model (3)
Population	-0.0395* (0.0092)	0.0713	0.0835
		(0.1156)	(0.0872)
Councils			
Pittwater (ref.)			
Manly		0.3891 (0.2074)	-0.0723 (0.2598)
Warringah		-0.8084 (0.9654)	-0.9809 (0.7515)
Time			
2005 (ref.)			
2006		0.1115 (0.0335)	0.1112 (0.0359)
2007		0.1860 (0.0502)	0.1796 (0.0494)
2008		0.3087* (0.0374)	0.3011* (0.0320)
2009		0.4072* (0.0464)	0.3988* (0.0410)
2010		0.4158* (0.0726)	0.3956* (0.0598)
Population Density			0.0002 (0.0001)
Constant	7.0725** (0.1264)	6.0953* (0.6251)	5.8864** (0.5176)
N	18	18	18
R^2	0.48	0.99	0.99

Standard errors in parentheses. * p<0.05, ** p<0.01

However, Model 2 in Table 5.1, which now includes the council and time dummy variables, suggests that the association in Model 1 is affected by omitted variable bias. More importantly, our estimated population size coefficient ($\beta = 0.0713$) is now **statistically insignificant**. In other words:

- **There is no statistically significant relationship between population size and the log of total per capita expenditure for the councils of Manly, Pittwater and Warringah (Option 2).**

Clearly, our 'council fixed effects' and 'time fixed effects' account for a relatively large amount of variation in the data as indicated in the substantial increase in the R^2 value from 0.48 to 0.99.

To account for different population densities among councils, we extended Model 2 in Table 5.1 to include our population density variable (Model 3). However, the inclusion of our population density variable is statistically insignificant and does not change our principal finding.

While our initial analysis fails to find a statistically significant relationship between population size and total per capita expenditure, it is important to examine whether certain components of local government expenditure may exhibit scale economies. Thus, we disaggregated total per capita expenditure into community, recreational, environmental and health, and residual expenditure per capita and, using our full specification (Model 3 in Table 5.1), ran separate regressions to estimate the relationship between population size and each component of per capita local government expenditure (Table 5.2).

Table 5.2: Effect of population size on expenditure by type of council expenditure, 2005 to 2010 (Option 2)

Independent variable	**Environment (1)**	**Community (2)**	**Recreation (3)**	**Residual (4)**
Population	0.8102 (0.9624)	-0.4560 (0.1066)	0.6102 (1.2111)	0.1040* (0.0207)
Population Density	0.0057 (0.0043)	0.0001 (0.0001)	-0.0011 (0.0027)	0.0002 (0.0001)
Councils				
Pittwater (ref.)				
Manly	-9.7478 (10.0448)	-0.0343 (0.0267)	3.5986 (4.4001)	-0.0842 (0.1967)
Warringah	-8.4677 (7.4205)	3.8477 (0.9156)	-5.4847 (10.7154)	-1.1428* (0.1834)
Time				
2005 (ref.)				
2006	-0.0872 (0.4207)	0.0591 (0.0452)	-0.1619 (0.4254)	0.1348 (0.0376)
2007	0.0255 (0.3757)	0.1434** (0.0127)	-0.0509 (0.4998)	0.1918* (0.0260)
2008	-0.2161 (0.4237)	0.2315* (0.0518)	0.3492 (0.2258)	0.3144** (0.0183)
2009	-0.1315 (0.5509)	0.3324** (0.0224)	0.3374 (0.2809)	0.4191** (0.0331)
2010	-0.5670 (0.8306)	0.3874** (0.0306)	0.3962 (0.7076)	0.4023** (0.0112)
Constant	-5.1747 (4.4021)	6.0467* (0.6789)	1.2400 (7.9893)	5.5983** (0.1459)
N	18	18	18	18
R^2	0.54	0.99	0.88	0.99

Standard errors in parentheses. * p<0.05, ** p<0.01

Looking across Table 5.2, we find no evidence of economies of scale for environmental and health (Model 1), community (Model 2), and recreational expenditure (Model 3) among our sample of councils (i.e., there is no relationship between these per capita expenditures and population size). Conversely, we do find evidence of a positive relationship between population size and residual expenditure (Model 4) at the 5% level of significance. This suggests that our residual expenditure category is subject to diseconomies of scale (i.e., per capita residual expenditure rise as population size increases).

5.5.2 Assessment of Option 3 – Merger of Manly, Mosman, Pittwater and Warringah

In Figure 5.2 we graph the relationship between total per capita expenditure and population size for Manly, Mosman, Pittwater and Warringah councils between 2005 and 2010. In interpreting Figure 5.2, it is worth noting that there appears to be a negative association between total per capita expenditure and population size. However, it is important to note that this relationship does not take into account omitted variable bias arising from 'council fixed effects' and 'time fixed effects'.

To gain further insight into this relationship, we report our regression results in Table 5.3. Once again to aid interpretation of the results, we divided population by 10,000 so that the estimated coefficients represent the marginal effect of a 10,000 person increase in population size.

Figure 5.2: Association between total per capita expenditure and population size, 2005 to 2010 (Option 3)

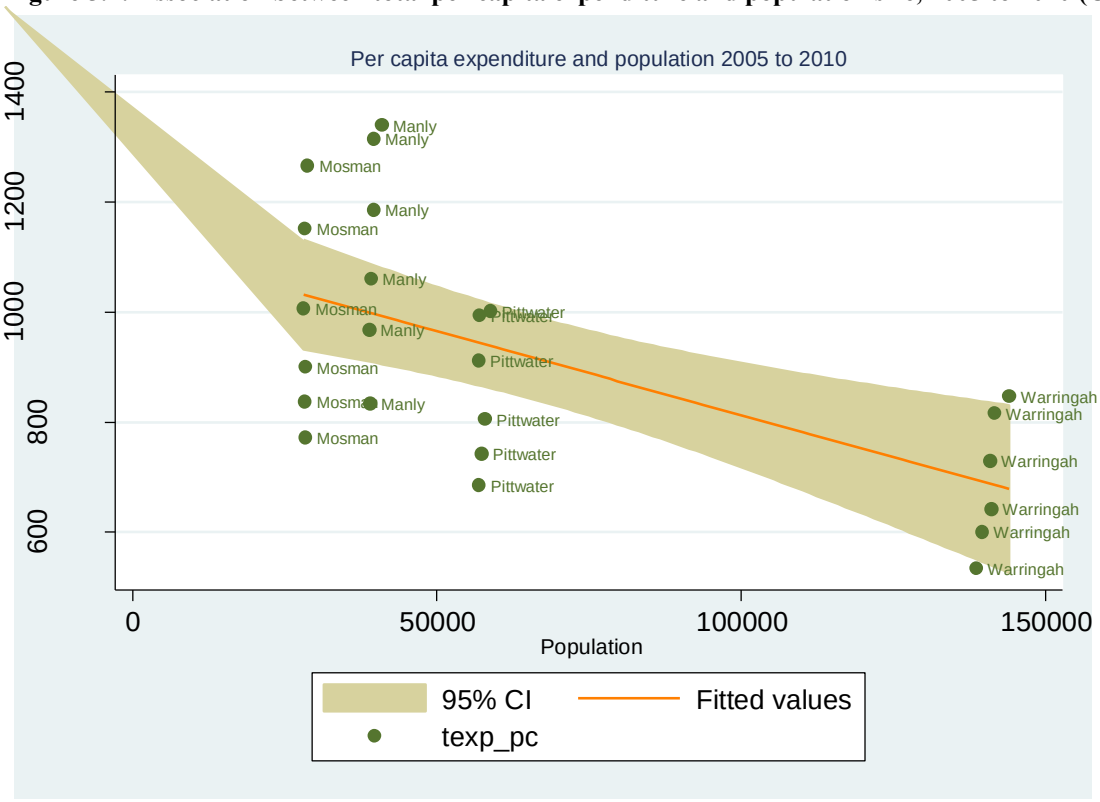


Table 5.3: Effect of population size on council expenditure, 2005 to 2010 (Option 3)

Independent variable	Model (1)	Model (2)	Model (3)
Population	-0.0356** (0.0056)	-0.0345 (0.1036)	-0.0351 (0.1225)
Councils			
Pittwater (ref.)			
Manly		0.1994 (0.1858)	-0.3164 (0.7168)
Warringah		0.0747 (0.8649)	0.0050 (1.0315)
Mosman		0.0379 (0.3013)	-0.6066 (0.9207)
Time			
2005 (ref.)			
2006		0.1071* (0.0206)	0.1085* (0.0198)
2007		0.1875** (0.0257)	0.1837** (0.0290)
2008		0.3051** (0.0243)	0.3019** (0.0226)
2009		0.4150** (0.0267)	0.4100** (0.0294)
2010		0.4601** (0.0508)	0.4447** (0.0604)
Population Density			0.0002 (0.0003)
Constant	7.0270** (0.0793)	6.6957** (0.5858)	6.5485** (0.7261)
N	24	24	24
R^2	0.43	0.99	0.99

Standard errors in parentheses. * p<0.05, ** p<0.01

Model 1 in Table 5.3 reports the OLS results of population size on the log of total per capita expenditure **without** controlling for 'council fixed effects' and 'time fixed effects'. According to this estimate ($\beta = -0.0356$; $p < 0.01$), which is statistically significant at the 1% level, a 10,000 increase in the population is associated with a 3.6% decline in total per capita expenditure.

However, Model 2 in Table 5.3, which now includes the council and time dummy variables, suggests that the association in Model 1 is affected by omitted variable bias. More importantly, our estimated population size coefficient ($\beta = -0.0345$) is now **statistically insignificant**. In other words:

- **There is no statistically significant relationship between population size and the log of total per capita expenditure for the councils of Manly, Mosman, Pittwater and Warringah (Option 3).**

To account for different population densities among councils, we extended Model 2 in Table 5.3 to include our population density variable (Model 3). However, the inclusion of our population density variable is statistically insignificant and does not change our principal finding.

While our initial analysis fails to find a statistically significant relationship between population size and total per capita expenditure, we examine whether certain components of local government expenditure may exhibit scale economies. Thus, we disaggregated total per capita expenditure into community, recreational, environmental and health, and residual expenditure per capita and, using our full specification (Model 3 in Table 5.3), ran separate

regressions to estimate the relationship between population size and each component of per capita local government expenditure (Table 5.4).

Table 5.4: Effect of population size on expenditure by type of council expenditure, 2005 to 2010 (Option 3)

Independent variable	Environment (1)	Community (2)	Recreation (3)	Residual (4)
Population	0.5505 (0.9919)	-0.2967 (0.1424)	-0.0234 (0.7056)	-0.0342 (0.1273)
Population Density	0.0050 (0.0047)	0.0003 (0.0003)	-0.0015 (0.0023)	0.0002 (0.0003)
Councils				
Pittwater (ref.)				
Manly	-8.7264 (11.4033)	-0.2363 (0.5431)	3.2305 (4.4621)	-0.3321 (0.6769)
Warringah	-6.0807 (7.0347)	2.4457 (1.2711)	-0.0809 (6.2017)	0.0111 (1.0771)
Mosman	-10.6600 (14.8532)	-1.1120 (0.6322)	3.6912 (5.5267)	-0.5830 (0.8693)
Time				
2005 (ref.)				
2006	-0.0207 (0.2867)	0.0480 (0.0365)	-0.0539 (0.2817)	0.1264* (0.0294)
2007	0.0371 (0.1999)	0.0954 (0.0486)	0.1782 (0.3561)	0.1931** (0.0243)
2008	-0.1138 (0.3033)	0.1950* (0.0513)	0.4470* (0.1325)	0.3163** (0.0228)
2009	-0.0590 (0.3527)	0.2844* (0.0547)	0.5209 (0.2197)	0.4301** (0.0346)
2010	-0.3854 (0.5185)	0.3041* (0.0804)	0.7179 (0.4475)	0.4587** (0.0534)
Constant	-3.3043 (3.1857)	5.0211* (0.9690)	4.9586 (4.6162)	6.3824** (0.7715)
N	24	24	24	24
R^2	0.62	0.99	0.85	0.99

Standard errors in parentheses. * p<0.05, ** p<0.01

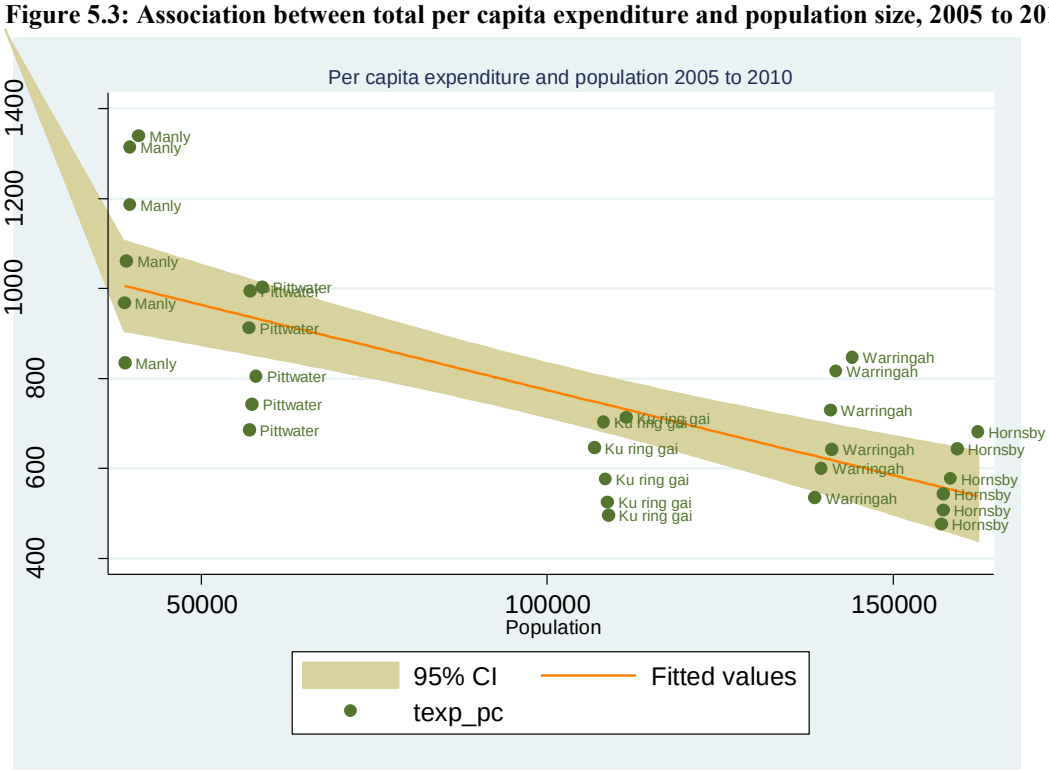
Looking across Table 5.4, we find no evidence of economies of scale for environmental and health (Model 1), community (Model 2), recreational expenditure (Model 3) and residual expenditure (Model 4) among our sample of councils (i.e., there is no relationship between these per capita expenditures and population size).

5.5.3 Assessment of Option 4 – Merger of Manly, Pittwater Warringah, Ku-ring-gai, and Hornsby

In Figure 5.3 we graph the relationship between total per capita expenditure and population size for Manly, Pittwater, Warringah, Ku-ring-gai and Hornsby councils between 2005 and 2010. In reviewing Figure 5.4, there appears to be weak negative association between total per capita expenditure and population size. However, it needs to be borne in mind that this

relationship does not take into account omitted variable bias arising from 'council fixed effects' and 'time fixed effects'.

Figure 5.3: Association between total per capita expenditure and population size, 2005 to 2010 (Option 4)



To gain further insight into this relationship, we report our regression results in Table 5.5. To aid interpretation of the results, we divided population by 10,000 so that the estimated coefficients represent the marginal effect of a 10,000 person increase in population size.

Model 1 in Table 5.5 reports the OLS results of population size on the log of total per capita expenditure **without** controlling for 'council fixed effects' and 'time fixed effects'. According to this estimate ($\beta = -0.0467$; $p < 0.01$), which is statistically significant at the 1% level, a 10,000 increase in the population is associated with a 4.7% decline in total per capita expenditure.

Table 5.5: Effect of population size on council expenditure, 2005 to 2010 (Option 4)

Independent variable	Model (1)	Model (2)	Model (3)
Population	-0.0467** (0.0095)	-0.0111 (0.0920)	-0.0050 (0.0802)
Councils			
Pittwater (ref.)			
Manly		0.2413 (0.1650)	-0.4411 (0.2639)
Warringah		-0.1202 (0.7681)	-0.2731 (0.6539)
Ku-ring-gai		-0.2833 (0.4710)	-0.5247 (0.3781)
Hornsby		-0.2912 (0.9290)	-0.2569 (0.8257)
Time			
2005 (ref.)			
2006		0.0933* (0.0208)	0.0933* (0.0214)
2007		0.1747** (0.0225)	0.1702** (0.0188)
2008		0.2817** (0.0304)	0.2772** (0.0270)
2009		0.3815** (0.0295)	0.3751** (0.0240)
2010		0.4110**(0.0346)	0.3919** (0.0147)
Population Density			0.0003** (0.0001)
Constant	7.0764** (0.1153)	6.5836** (0.5293)	6.3445** (0.4364)
N	30	30	30
R^2	0.57	0.99	0.99

Standard errors in parentheses. * p<0.05, ** p<0.01

However, Model 2 in Table 5.5, which now includes the council and time dummy variables, suggests that the association in Model 1 is affected by omitted variable bias. More importantly, our estimated population size coefficient (β = -0.0111) is now **statistically insignificant**. In other words:

- **There is no statistically significant relationship between population size and the log of total per capita expenditure for the councils of Manly, Pittwater, Warringah, Ku-ring-gai and Hornsby (Option 4).**

To account for different population densities among councils, we extended Model 2 in Table 5.5 to include our population density variable (Model 3). According to Model 3, there is a positive and statistically significant relationship between population density and per capita

council expenditure. Thus, in the current context, an increase in population density is associated with an increase in local government expenditure.

While we fail to find a statistically significant relationship between population size and total per capita expenditure, it is important to examine whether certain components of local government expenditure may exhibit scale economies. Thus, we disaggregated total per capita expenditure into community, recreational, environmental and health, and residual expenditure per capita and, using our full specification (Model 3 in Table 5.5), ran separate regressions to estimate the relationship between population size and each component of per capita local government expenditure (Table 5.6).

Table 5.6: Effect of population size on expenditure by type of council expenditure, 2005 to 2010 (Option 4)

Independent variable	Environment (1)	Community (2)	Recreation (3)	Residual (4)
Population	-0.6380 (1.8058)	-0.1693 (0.2839)	0.3825 (0.4520)	0.0098 (0.1360)
Population Density	0.0012 (0.0047)	-0.0008 (0.0005)	-0.0003 (0.0010)	0.0005* (0.0002)
Councils				
Pittwater (ref.)				
Manly	-2.9563 (8.1445)	2.2862 (1.2978)	1.5259 (1.9814)	-0.8244 (0.4591)
Warringah	5.0012 (16.0891)	1.7173 (2.3508)	-3.8270 (3.9041)	-0.4401 (1.1270)
Ku-ring-gai	2.5829 (11.4772)	1.1930 (1.4398)	-2.1835 (2.6284)	-0.7248 (0.6840)
Hornsby	7.1346 (17.3487)	1.4206 (2.8965)	-4.0756 (4.4627)	-0.4393 (1.3835)
Time				
2005 (ref.)				
2006	0.1149 (0.2642)	0.0554 (0.0485)	-0.1355 (0.2240)	0.1104* (0.0261)
2007	0.4656 (0.4477)	0.1519* (0.0520)	-0.0098 (0.2494)	0.1676** (0.0217)
2008	0.3227 (0.4147)	0.2480** (0.0454)	0.2954* (0.0912)	0.2744** (0.0353)
2009	0.4235 (0.4652)	0.3539** (0.0479)	0.3415 (0.1258)	0.3739** (0.0360)
2010	0.4035 (1.1790)	0.4701* (0.1097)	0.3487 (0.2847)	0.3761** (0.0314)
Constant	5.5375 (12.1908)	4.9225* (1.6171)	2.0513 (2.7802)	5.9938** (0.7796)
N	30	30	30	30
R^2	0.48	0.98	0.86	0.99

Standard errors in parentheses. * p<0.05, ** p<0.01

Looking across Table 5.6, we find no evidence of economies of scale for environmental and health (Model 1), community (Model 2), recreational expenditure (Model 3) and residual expenditure (Model 4) among our sample of councils (i.e., there is no relationship between these per capita expenditures and population size). We do, however, find some evidence of a positive association between population density and residual per capita expenditure (Model 4).

5.5.4 Robustness checks

As a robustness check we also ran econometric models for:

i. All six councils (i.e., Manly, Pittwater, Warringah, Mosman, Ku-ring-gai, and Hornsby) covering the period 2005 to 2010; and
ii. All 38 metropolitan NSW councils covering the period 2005 to 2010.

The regression results for our first robustness check are presented in Table 5.7. Model 1 in Table 5.7 reports the OLS results of population size on the log of total per capita expenditure **without** controlling for 'council fixed effects' and 'time fixed effects'. According to this estimate ($\beta = -0.0442$; $p < 0.01$), which is statistically significant at the 1% level, a 10,000 increase in the population is associated with a 4.4% decline in total per capita expenditure.

Table 5.7: Effect of population size on council expenditure, 2005 to 2010 (all six councils)

Independent variable	Model (1)	Model (2)	Model (3)
Population	-0.0442** (0.0073)	-0.0901 (0.1081)	-0.0851 (0.1048)
Councils			
Pittwater (ref.)			
Manly		0.0995 (0.1940)	-0.6090 (0.3859)
Warringah		0.5396 (0.9030)	0.3926 (0.8744)
Mosman		-0.1240 (0.3145)	-1.0054 (0.5223)
Ku-ring-gai		0.1213 (0.5537)	-0.1216 (0.5412)
Hornsby		0.5070 (1.0923)	0.5559 (1.0621)
Time			
2005 (ref.)			
2006		0.0929** (0.0166)	0.0941** (0.0168)
2007		0.1758** (0.0176)	0.1720** (0.0166)
2008		0.2814** (0.0256)	0.2793** (0.0225)
2009		0.3913** (0.0251)	0.3863** (0.0235)
2010		0.4478** (0.0413)	0.4295** (0.0408)
Population Density			0.0003 (0.0002)
Constant	7.0437** (0.0771)	7.0301** (0.6208)	6.7891** (0.6033)
N	36	36	36
R^2	0.59	0.99	0.99

Standard errors in parentheses. * p<0.05, ** p<0.01

However, Model 2 in Table 5.7, which now includes the council and time dummy variables, suggests that the association in Model 1 is affected by omitted variable bias. More importantly, our estimated population size coefficient ($\beta = -0.0901$) is now **statistically insignificant**. In other words:

- **There is no statistically significant relationship between population size and the log of total per capita expenditure for the councils of Manly, Pittwater, Warringah, Mosman, Ku-ring-gai, and Hornsby.**

To account for different population densities among councils, we extended Model 2 in Table 5.7 to include our population density variable (Model 3). However, the inclusion of our population density variable is statistically insignificant and does not change our main finding.

As a final check, we also ran an econometric model for all 38 metropolitan NSW councils covering the period 2005 to 2010. Our 'Greater Sydney' models not only includes population, population squared, population density, 'council fixed effects' and 'council time effects' but also include the following variables that could affect local government expenditure:

- Population growth
- Percentage of Aboriginal and Torres Strait Islander (ATSI) population
- Percentage of non-English speaking background (NESB) population
- Number of aged pensioners
- Number of persons identifying as single parents
- Number of unemployed persons
- Average taxable income.

The results from our 'Greater Sydney' model are reported Table 5.8. The results indicate that there is no statistical association between population size and council expenditure. These findings are consistent with our previous results.

Table 5.8: Effect of population size on council expenditure, 2005 to 2010

Independent variable	**Model 1**	**Model 2**
Population	0.0105 (0.0210)	-0.0553 (0.0425)
Population^2	--	0.0017 (0.0009)
Density	-0.0001 (0.0001)	-0.0001 (0.0001)
Additional controls		
Pop. Growth (%)	0.0037 (0.0088)	0.0051 (0.0094)
Average Wage	-0.0000 (0.0000)	-0.0000 (0.0000)
Aged Pensioners	-0.0000+ (0.0000)	-0.0000 (0.0000)
Single Parents	0.0000 (0.0000)	0.0000 (0.0000)
ATSI (%)	0.0810 (0.0690)	0.0630 (0.0731)
NESB (%)	0.0044 (0.0036)	0.0041 (0.0034)
Unemployed (logarithm)	0.0265 (0.0313)	0.0324 (0.0312)
Years	2005-10	2005-10
Council effects	yes	yes
Time effects	yes	yes

Standard errors in parentheses. * p<0.05, ** p<0.01

5.6 Conclusion

In sum, our econometric analysis finds **no evidence** of economies of scale with respect to the possible merger options canvassed in the SGS Report. Since economies of scale are not present this undermines the case for forced amalgamation. Thus, from a policy perspective, there is no reason to believe that the proposed savings – as advanced in the SGS Report – will be realised.

The econometric analysis undertaken by SGS is not only simplistic, but highly misleading. No control variables were used at all, which stands in stark contrast to the vast empirical literature on the estimation of scale economies. Moreover, the "high-level regression" analysis on the relationship between population size and the eleven different types of per capita expenditure categories is based on only **six** observations over a **one** year period!

As previously noted this is far too small a sample to draw any meaningful conclusions, let alone mount yet another program of forced council amalgamations across NSW. Taken together, the SGS Report econometric analysis provides no compelling evidence for scale economies and, consequently, the associated cost-savings are not plausible.

CHAPTER 6: CONCLUSIONS

6.1 Introduction

This report has provided a detailed critical evaluation of *Local Government Structural Change – Options Analysis* which was undertaken by commercial consultants SGS Economics and Planning at the behest of the Warringah Council. As we have seen, SGS considered four alternative structural configurations involving Warringah Council under three different sets of assumptions (Scenario 1, Scenario 2 and Scenario 3):

The four alternative structural formations were as follows:

- **Option 1** (Base case): current boundaries remain unchanged.
- **Option 2** (ILGRP recommendation): Manly, Pittwater and Warringah merger.
- **Option 3** (Shore Regional Organisation of Councils (SHOROC) option): amalgamation of Manly, Mosman, Pittwater and Warringah.
- **Option 4** ('sub-region' option): amalgamation of Manly, Pittwater, Warringah, Ku-ring-gai and Hornsby.

On the basis of its analysis, *Local Government Structural Change* concluded that Option 3 – a forced amalgamation of Manly, Mosman, Pittwater and Warringah – represented its 'preferred outcome'.

In this report we have shown that the analysis conducted in *Local Government Structural Change* is seriously deficient in numerous respects and its conclusions on Option 3 are thereby rendered unreliable.

In this respect, we found *Local Government Structural Change* especially badly flawed in four main respects:

6.2.1 No Community of Interest

In Chapter 2, we considered the analysis presented by SGS in its Chapter 3: Strategic Context in *Local Government Structural Change*. Chapter 3 sought to place Hornsby, Ku-ring-gai, Manly, Mosman, Pittwater and Warringah in the context of Sydney metropolitan region planning, sub-regional planning and other state government regional boundaries, provide population and employment growth projections, tackle the critical matter of 'communities of interest', examine 'journey to work patterns' and 'household travel patterns' and compare 'strategic plans for Hornsby, Ku-ring-gai, Manly, Mosman, Pittwater and Warringah'. Although Chapter 3 of *Local Government Structural Change* expended immense effort on reproducing maps depicting various relationships between different parts of the Sydney metropolitan region, this had very little bearing on the question of structural reform through forced amalgamation.

On the critical question of community of interest, which plays a pivotal role in the success or otherwise failure of compulsory consolidation, Chapter 3 had almost nothing to say about community of interest in the specific cases of Option 2, Option 3, and Option 4, apart from a desultory four paragraphs in a 20 page chapter! In particular, *Local Government Structural Change* completely ignored the importance of socio-economic factors in determining whether

real community of interest exists. Had the SGS bothered to conduct a conventional socio-economic profiling exercise, it would have realised that no 'community of interest' existed and hence amalgamation could not be justified on grounds of 'community of interest'.

In order to remedy this fatal error, in Chapter 2 of this report we conducted a thorough examination of the socio-economic profiles of Manly, Pittwater, Warringah, Ku-ring-gai and Hornsby. Chapter 2 demonstrated that stark differences existed between Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman, especially in terms of 'human service' needs. This necessarily implied that the proposed merger options canvassed in the SGS Report could not be advanced on 'community of interest' grounds.

Chapter 2 found that sharp contrasts in socio-economic profiles existed between the six councils. In particular, Manly has the highest proportion of people between the age of 20 and 24, Ku-ring-gai has the highest proportion of people between the age of 5 and 19 and the lowest proportion of people between the age of 20 and 44, Pittwater has the highest fertility rate, Ku-ring-gai has the lowest unemployment rate, Pittwater has the highest proportion of people participating in vocational education and training, Pittwater has the highest rate of 'high risk' alcohol consumption, and Pittwater the highest rate of annual health assessment by GPs for persons aged 75 and over.

It is especially important to stress that when Pittwater, Warringah, Hornsby, and Ku-ring-gai (outer Sydney councils) are compared to Manly and Mosman (high density inner Sydney councils), the outer Sydney councils have a higher number of people on the Age pension, as well as a higher number of people in receipt of Single Parenting Payments.

It follows that these observed differences in the socio-economic profiles of Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman mean that differing planning and service delivery strategies will have to be employed for each of these local government areas. In sum, given the substantial differences between Manly, Pittwater, Warringah, Hornsby, Ku-ring-gai and Mosman, no empirical 'community of interest' argument can be advanced to justify the merger options as canvassed in the SGS Report. Indeed, forced mergers may well lead to a widening of these socio-economic differences if 'inner-Sydney' local government strategies are pursued at the expense of 'outer-Sydney' councils.

6.2.2 'Local Boards' both Expensive and Inappropriate for NSW Local Government

In *Future Directions for NSW Local Government,* the Panel proposed wholesale council mergers across the Greater Sydney metropolitan region. However, the Panel recognised that the resultant larger populations of newly merged councils could render the current governance model ineffective and it argued that changes to existing governance arrangements must be made to retain the 'local' in NSW local government.

To mitigate the impact of forced mergers on local democracy, the Panel recommended the establishment of local boards to enable 'community-level governance'. For metropolitan NSW, the Panel proposed New Zealand-style local boards which would provide delegated service provision and/or political representation in large amalgamated metropolitan councils. The Panel held that these local boards would have from five to seven elected members and they would perform the functions delegated to them by their respective metropolitan local council. In particular, in large metropolitan councils local boards would provide local representation and limited local delegated service delivery at suburb or district level.

In Chapter 4 of *Local Government Structural Change*, SGS attempted to make a case for sub-council representation through New Zealand-style local boards as exemplified in the newly amalgamated Auckland City Council. In making this case, Chapter 4 of *Local Government Structural Change* provided a summary of the operation of such boards in New Zealand, selected examples of the operations of local boards, and a cost estimate for the establishment of local boards in an amalgamated constellation of SHOROC councils under its preferred Option 3. Unfortunately, the analysis presented in Chapter was seriously deficient in several respects.

Chapter 3 in this report considered the question of establishing an additional layer of local government in NSW in the form of New Zealand-style local boards, as advocated by the Panel in its *Future Directions* and endorsed by SGS in its *Local Government Structural Change.* Chapter 3 drew three main conclusions.

In the first place, notwithstanding argumentation by the Panel and SGS, the operation of local boards in New Zealand has been far from satisfactory. As demonstrated by Richardson (2008), in New Zealand local boards have been used much less frequently and now make fewer decisions than when they were first established in 1989.

Secondly, both the Panel and *Local Government Structural Change* appear unaware the current NSW Local Government Act already allows for effective 'co-governance' structures, such as Section 355 Committees. There is thus no need for new legislation and an expensive additional tier of government comprised of local boards.

Thirdly, the estimated cost of $156,000 per local board per annum by SGS in *Local Government Structural Change* badly understates the true costs of establishing local boards in an amalgamated greater Warringah council. Chapter 3 showed that (on the basis of documented experience in Auckland) local boards in a merged greater Warringah council would cost $507,631 per board per annum in direct remuneration costs alone. Under Option 3 (Manly, Mosman, Pittwater and Warringah merger), this would imply approximately 4 boards at $507,631 per board for an annual remuneration cost of $2,030,524.

6.2.3 Amalgamation Options Do Not Improve Financial Sustainability

Future Directions for NSW Local Government in large part advanced its drastic council amalgamation program, centred mostly in the Greater Sydney metropolitan region, on the argument that somehow councils with a larger population size would be more fiscally viable. Unfortunately, the Panel offered no empirical evidence in support of this claim. In common with *Future Directions, Local Government Structural Change* also entirely ignored the question of whether empirical evidence existed to back the claim that larger councils would be more financially sustainable.

By contrast, in its *Financial Sustainability of the New South Wales Local Government Sector,* TCorp (2013) conducted a detailed analysis of the financial viability of NSW local authorities. However, TCorp made no recommendations on any of the proposed mergers nor did it comment on amalgamation as a means of improving the financial sustainability of local government.

In order to address the complete absence of any empirical analysis of the proposed Manly/Pittwater/Warringah merger, Chapter 4 of this report employed the data presented in

Financial Sustainability of the New South Wales Local Government Sector to conduct a financial analysis of Option 2, Option 3 and Option 4 in SGS (2013).

Chapter 4 considered various elements of financial sustainability:

- It assessed the relevance, representativeness and reliability of the existing set of FSR in TCorp (2013).
- It examined the long-run association between population size and FSR.
- It employed alternative empirical techniques to examine the short-run relationship between FSR and council size.
- It re-estimated the FSR for the three proposed options and tested whether Option 2, Option 3 and Option 4 in SGS (2013) represented an improvement on the existing council structure FSRs and it compared the FSRs for each of the three options.

Chapter 4 concluded that there is considerable cause to doubt whether the TCorp/QTC FSR are relevant, representative or reliable indicators of local government performance, especially since they largely ignored the scholarly literature and possessed serious logical flaws. However, because the TCorp FSR remains the preferred metric of the Panel, Chapter 4 nevertheless employed these FSRs to assess the merit of the SGS (2013) analysis.

In its estimation of two separate and complementary regressions to determine whether there were any statistically significant associations between population size and the ten TCorp FSRs, Chapter 4 found that there could be an improvement to just one of the relevant FSRs. However, this excluded substantial one-off and ongoing amalgamation costs. Similarly, the analysis of short-run associations produced no statistically significant results.

In its estimation the TCorp FSR for Option 2, Option 3 and Option 4 in SGS (2013), Chapter 4 found that Options 2 and 3 may result in a negligible net improvement in FSR, whereas Option 4 would result in a net deterioration in FSR. However, all the re-estimates excluded one-off merger costs (which in Queensland were $8.1 million per amalgamation) and ongoing costs (which in Queensland were about 4.7% per annum).

Chapter 4 concluded the empirical evidence it had generated showed that there is little likelihood that any of the three Options examined by SGS (2013) would result in enhanced local government financial sustainability (as measured by the TCorp FSR).

6.2.4 No Economies of Scale in Proposed Amalgamation Options

In Chapter 6: Financial Analysis, SGS (2013) examined the financial consequences of Option 2, Option 3 and Option 4 using an extremely simplistic econometric modelling technique. It came up with astonishing results. For example, it claimed that Option 3 has the 'potential to generate the most cost savings'. Moreover, under Scenario 1 cost savings 'over the next 10 years would equate to around $344 million'! Similarly astounding claims were made with respect to Option 2, which was said to generate '$257 million under Scenario 1 and $377 million - $12 million under Scenarios 2 and 3'! However, a hint of realism was appended to these fanciful claims when *Local Government Structural Change* (2013, p.3) added the critical caveat that 'achieving the potential costs savings would require a focused implementation process and ongoing effective management and systems'.

In Chapter 5 of this report we provided a critical assessment of the econometric analysis conducted by SGS. In its analysis, SGS had examined the relationship between population

size and per capita expenditure categories for the councils of Manly, Pittwater, Warringah, Mosman, Ku-ring-gai, and Hornsby for 2011 data only. The SGS analysis revealed that six categories are 'likely to be subject to economies of scale': governance, administration, public order, environment, recreation and culture, as well as transport and communication.

In order to test the robustness of the SGS analysis, Chapter 5 examined the relationship between population size and per capita expenditure for Manly, Pittwater, Warringah, Mosman, Ku-ring-gai and Hornsby using a six year panel dataset covering the period 2005 to 2010. Chapter 5 explicitly assessed the three merger options proposed in the SGS Report. It found that there is no statistically significant relationship between population size and per capita expenditure. Thus, from a policy perspective, there is no empirical reason to believe that Option 2, Option 3, and Option 4 will result in any significant cost-savings.

It is thus apparent that since the analysis in *Local Government Structural Change* is fatally flawed in respect of 'community of interest', the cost and operation of local boards, the impact of amalgamation on financial sustainability, and the potential for cost savings through scale economies, public policy makers would be well advised to ignore its recommendation that Option 3 be adopted.

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