Costing Constitutional Change: Estimating the Costs of Five Variations on Australia's Federal System

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Australia's system of government is by far the most centralised of the four 'classic' federations, hosting extremely centralised states, exceptionally weak local governments, and little of the substantive decentralisation and subsidiarity often presumed to derive from a federal structure. Five variations on the present structure are examined to estimate the costs of improved decentralisation, including New States models as traditionally advocated, Regional States models based on the ACT combined state–local prototype, and a National–Local model comprising a strengthened national government and local governments in essentially their present form.[1] Results indicate that the Regional States or National–Local models could deliver greater decentralisation while saving over $20 billion per annum compared to the present system. Generally, the analysis suggests that coherent modelling of alternative government structures may be more feasible than previously thought.

> At the very outset … in considering whether federal government is appropriate, the question of adequate economic resources arises … federalism is expensive and it is always a question whether the independence it gives is worth the price that must be paid for it (Wheare 1963:51).

The effectiveness of a country's governmental arrangements, in achieving subnational, national and international public goods, depends largely upon the compatibility of such arrangements with the human and general geography of that country. Australia is one of four 'genuine' or 'classic' federations (Wheare 1963:20; Watts 1966:7). But, whereas the other three — the USA, Switzerland and Canada — derive social, economic and strategic spillover benefits via their land borders and proximity to other affluent democracies, Australia is a lightly populated and uniquely isolated island continent. And in the US, Swiss and Canadian federations local government assumes a far more prominent and diverse role than in Australia (Self 1987:123; Jones 1993:7–12), providing these other countries with significant degrees of freedom — conspicuously lacking in Australia — to foster subnational democracy and community, and gainfully exploit subnational scale economies in the provision of public goods and services.

Table 1 presents a Centralisation Index (CI) which exposes Australia as by far the most centralised First World federation, and also the most centralised First World democracy.[2] Highly centralised mainland states further underline Australia's unique 'duplicated centralism'. Symbols f_C, f_S and f_L denote central, state (or equivalent) and local government own-purpose spending as a fraction of total government spending, while N_S and N_L denote the numbers of state (or equivalent) governments and local governments respectively (so $f_S = N_S = 0$ for unitary countries and the Australian states and territories considered as unitary polities). Australia's extremely high CI derives from its very large political size (PS) and its local governments being so weak and few in number.

The current federal government inquiry into local government and cost shifting provides a timely opportunity to explore structural reform alternatives at the federal–state interface as well as the federal–local and state–local interfaces. Five government structure options are intro-

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duced herein, to be referred to as the *National–Local, New States, Regional States, Simplified New States* and *Simplified Regional States* models.[3] The following sections provide descriptions of the five models and estimations of their financial costs, relative to those incurred in the present system.

The Five Alternative Models

The National–Local Model

The *National–Local* model would result if present federal, state and territory governments coalesced, through a combination of horizontal and vertical amalgamation processes, into a single *new national government*, leaving local governments in more or less their present form (Figure 1).

In the *horizontal amalgamation* process, the eight state and territory governments are assumed to integrate into a single Australia-wide state–territory type government, the *new single state government*, which would operate parallel to the present federal government in what is hence called the *Dual National* model. The *vertical amalgamation* stage then sees the coal-

Table 1: Centralisation Index for Selected Countries and Australia's Federal Units

Country[a]	f_C	f_S	f_L	N_S	N_L	PS[b]	CI[b]
Classic Federations							
Australia	0.544	0.392	0.064	8	726	100.0	100.0
Canada	0.402	0.421	0.177	13	3,867	149.5	7.65
Switzerland	0.508	0.280	0.212	26	2,903	9.11	0.032
United States	0.515	0.223	0.262	51	70,500	632.6	2.76
Other Federations							
Austria	0.677	0.160	0.163	9	2,350	12.5	0.33
Brazil	0.554	0.286	0.159	27	5,508	444.2	50.55
Germany	0.652	0.202	0.146	16	15,000	94.9	1.91
Malaysia	0.809	0.147	0.045	15	143	38.6	124.10
Decentralised Unitary Countries							
Denmark	0.435	0.000	0.565	0	289	7.57	0.69
Finland	0.611	0.000	0.389	0	455	14.8	2.40
Italy	0.730	0.000	0.270	0	8,220	70.4	4.39
Japan	0.258	0.000	0.742	0	3,276	128.5	13.34
Netherlands	0.739	0.000	0.261	0	645	15.4	2.76
Norway	0.615	0.000	0.385	0	453	13.2	1.96
Sweden	0.619	0.000	0.381	0	2,856	23.2	0.97
Centralised Unitary Countries							
France	0.817	0.000	0.183	0	36,000	87.5	2.27
Singapore	1.000	0.000	0.000	0	0	1.53	4.57
New Zealand	0.896	0.000	0.104	0	86	11.2	24.55
Australian Federal Units as Unitary Polities							
NSW	0.855	0.000	0.145	0	176	22.78	38.41
QLD	0.818	0.000	0.182	0	157	19.90	26.25
WA	0.875	0.000	0.125	0	142	14.72	22.73
VIC	0.866	0.000	0.134	0	79	12.24	25.45
SA	0.895	0.000	0.105	0	74	9.16	18.77
NT	0.895	0.000	0.105	0	70	2.63	1.63
TAS	0.847	0.000	0.153	0	29	1.74	1.09
ACT	1.000	0.000	0.000	0	0	0.44	0.37

a. Classifications as decentralised and centralised unitary systems are as typically used, for example, by Lijphart (1999:189).

b. PS and CI are normalised relative to Australia = 100.

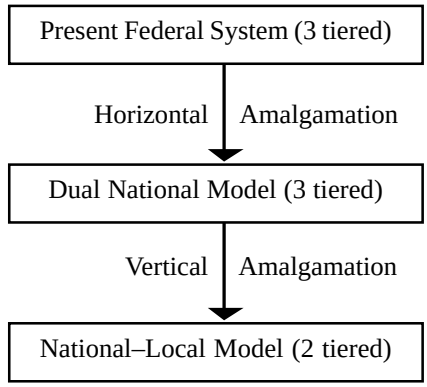

Figure 1: Horizontal and Vertical Amalgamation Processes Leading to the National–Local Model

Table 2: Functional Transfers to Commonwealth Government in Simplified New States and Simplified Regional States Models

Functions and Transfer Schemes	Expenditure by all State, Territory and Local Governments in 2000—2001 ($b and % of total expenditure)[a]
1. Public Order & Safety	9.34 (8.4%)
2. Education	24.90 (22.3%)
3. Health	22.36 (20.1%)
Total 3 Function Transfer (1 + 2 + 3)	56.59 (50.8%)
4. General Public Services	9.47 (8.5%)
5. Social Security & Welfare	6.39 (5.7%)
6. Transport & Communications	14.40 (12.9%)
Total 6 Function Transfer (1 + 2 + 3 + 4 + 5 + 6)	86.86 (77.9%)

a. Functions and expenditures are from Table 31 of ABS Cat. 5512.0.

escence of the federal government and the new single state government into the one new national government.

The Dual National model would never be seriously considered for actual implementation, but is assessed along with the other five alternative models as it assumes a pivotal role in the cost estimation process.

The New States, Regional States, Simplified New States and Simplified Regional States Models

The *New States* model would result if new states were formed in accordance with Chapter VI of Australia's federal Constitution, and so would generally be assumed to comprise state governments in their present form, but smaller in size and greater in number, leaving local governments in essentially their present form. The *Regional States* model would arise if, through a process of vertical amalgamation, or *state–local integration*, local governments were absorbed into the states of the New States model. So the Regional States model would emerge if regional governments, based on the ACT combined state–local model, were formed throughout Australia. The *Simplified Regional States* model would result if a further process of *functional transfer* shifted some state–territory-level powers and responsibilities from regional states to an *expanded federal government*. The *Simplified New States* model would arise if new states were subject to a similar functional transfer process. Two functional transfer options will be considered for illustrative purposes: the '3 function transfer' and '6 function transfer' schemes, described in Table 2.

Figure 2 illustrates the common lineage extending from the present federal system to the New States model, and eventually the

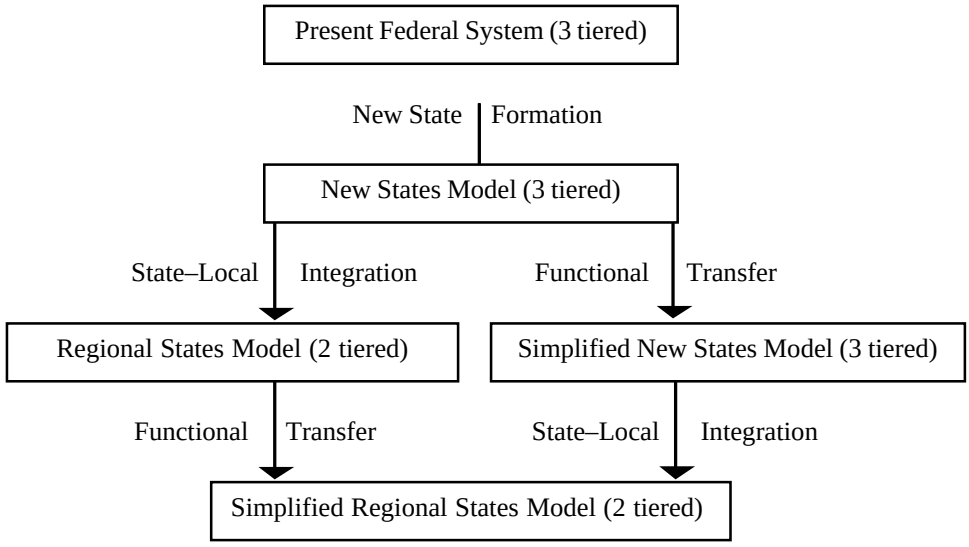

Figure 2: Processes Leading to the New States, Regional States, Simplified New States and Simplified Regional States Models

Simplified Regional States model, via either the Regional States or Simplified New States models.

The five models represent a continuum of possible systems comprising two or three principal levels of democratic government. If only a small number of new states were to form, and little or no functional transfer eventuated, the resultant New States or Simplified New States models would depart little from Australia's present system. At the other extreme, if a very large number of regional governments formed in a Simplified Regional States system, and there were significant functional transfers (as with the 6 function transfer described in Table 2), regional governments hence formed would resemble strengthened local governments as generally conceived, so the Simplified Regional States model would approach the National–Local model. Significantly, all models considered could remain towards the federal end of the federal–unitary continuum, provided that sufficient general autonomy and constitutional recognition is guaranteed to subnational governments.

Relative Annual Cost Estimations

The symbol C represents estimations of the annual financial cost of the respective models relative to Australia's present federal system. A positive value of C indicates a model more costly than the present system, and a negative value a less expensive model. Relative costs will have public and private sector components, but the bulk of this paper deals with the public sector components as listed in Table 3.

Estimations of the relative costs of each model are graphically illustrated in Figure 3, and now described in turn.[4]

Relative Annual Cost of the Dual National and National–Local Models

The annual cost of the Dual National model, relative to the present system, is assessed by attempting to describe the expenditure of state and territory public sectors (including of local governments within their bounds) by a linear cost function as follows:

$$E = FC + MC \times P \qquad [1]$$

where

P = population of state and territory units (the independent variable)

E = total public sector expenses of states and territories (the dependent variable)

FC = fixed or overhead cost of state and territory public sectors

Table 3: Relative Annual Costs

Model	Relative Cost[a]
Dual National	$C_{DN}[L]$
National–Local	$C_{NL}[L]$
New States	$C_{NS}[N]$
Regional States	$C_{RS}[N]$
Simplified New States under 3 Function Transfer	$C_{SNS-3}[N]$
Simplified New States under 6 Function Transfer	$C_{SNS-6}[N]$
Simplified Regional States under 3 Function Transfer	$C_{SRS-3}[N]$
Simplified Regional States under 6 Function Transfer	$C_{SRS-6}[N]$

a. N is the number of state-territory type governments and L the number of local governments in the respective models

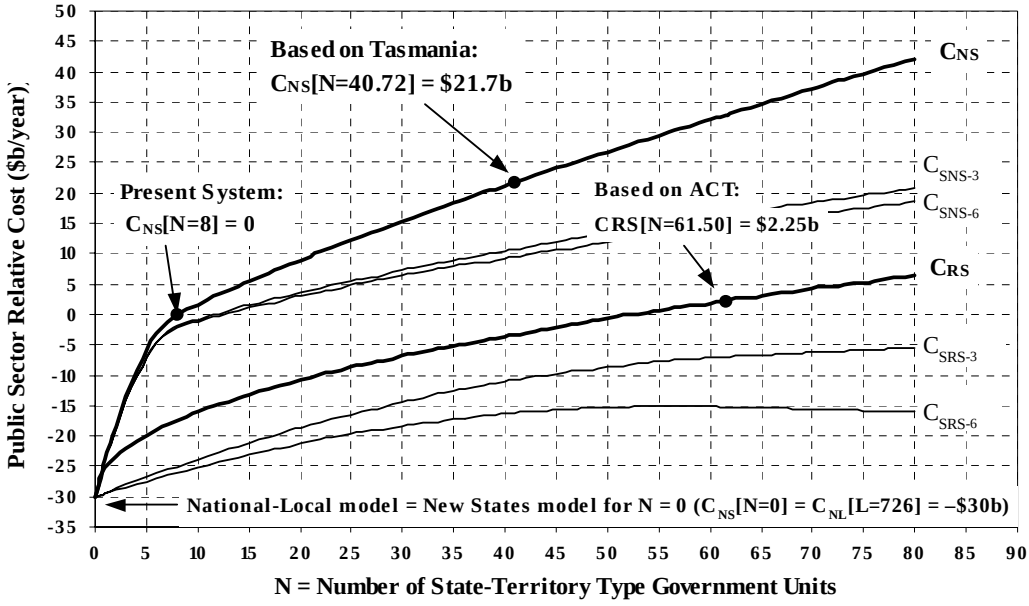

Figure 3: Comparison of Model Costs

and

MC = marginal per capita cost of state and territory public sectors

According to [1], all state and territory governments host equal fixed or overhead costs (FC) and equal marginal per capita costs (MC), so each amalgamation of two such units into one should liberate cost savings equal to one quantum of FC. Least squares regression methods can test the validity of this linear cost model and derive estimates for FC and MC. Figure 4 below shows a plot of total public sector expenditure versus population for the eight states and territories, for each of the three years from 1998–99 to 2000–01, and the least squares regression line for these data.

As shown in Figure 4:

FC = $1.5883 billion [2]

and

MC = $6615 [3]

The coefficient of determination (r^2) value of 0.9904 obtained shows that equations [1]-[3] fit and describe the state and territory public sector expenditure versus population relationship extremely well indeed.[5]

If the linear model given by [1]–[3] is assumed to apply to the new single state

government, the resultant Dual National model will be less costly than the present federal system by the seven lots of FC that would become surplus when the eight state–territory type governments horizontally amalgamate into one. So, assuming a continuation of the 726 local governments of the present system (National Office of Local Government 2001:Table F.2), one estimation of $C_{DN}[L \approx 726]$ is:

$$C_{DN}[L \approx 726] \approx -7 \times FC \approx -\$11.12b \qquad [4]$$

Equation [4] is accurate to the extent that state and territory FC values are well approximated by [2]. Modest departures from the regression line are evident in Figure 3, however, which could be due to relatively low or high fixed or overhead costs (FC) or relatively low or high marginal per capita costs (MC), or a combination of these. But, whereas marginal per capita costs — of schools, hospitals, teachers, nurses and so on — could be expected to accrue at more or less equal levels in both larger and smaller federal units, fixed or overhead costs can be expected to be higher in centralised political units which govern larger areas and hence need to exercise functional command, control and communication more remotely from communities, through more levels of delegation and with greater coordination burdens (Oates 1972:35; Boyne 1998:53–54). Accordingly, it shall be assumed that regression line departures are accounted for by higher or lower FC values.

Subsequent estimations rely upon FC estimates for the ACT and Tasmanian public sectors. In percentage terms, the ACT data points deviate most from the regression line (see Figure 4), being on average $1.3453 billion, or 37 percent, below the line, so, to account for this deviation, the ACT's FC value is reduced this $1.3453b amount below that in [2] to:

$$FC_{ACT} \approx \$0.2430b \qquad [5]$$

Similarly accounting for the Tasmanian data gives:

$$FC_{TAS} \approx \$0.8442b \qquad [6]$$

Such departures can be systematically, if not fully, addressed by an algorithm that estimates the cost savings likely to be achieved through each of the seven horizontal amalgamations of two state–territory units into one that will transform from the present system into the Dual National model. Significantly, the removal of each state–territory through amalgamation can be viewed as the reverse of adding a new state. So, whereas the relative cost estimate $C_{NS}[N]$ applies to the New States model for N values of 9 or more, this expression can also apply for N

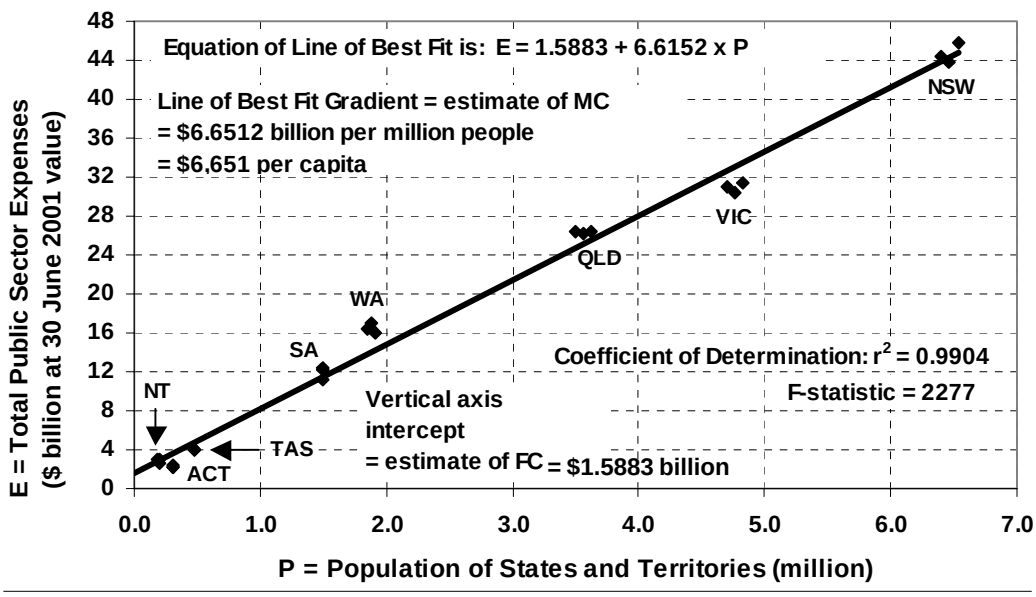

Figure 4: State and Territory Total Public Sector Expenses versus Population and Least Squares Line of Best Fit

values of 7 or less, and will coincide with the Dual National model and the National–Local model for N = 1 and N = 0 respectively:

$$C_{DN}[L \approx 726] = C_{NS}[N = 1] \quad [7]$$

and

$$C_{NL}[L \approx 726] = C_{NS}[N = 0] \quad [8]$$

And for N = 8, representing the status quo with the present eight states and territories, the following known 'initial value' applies:

$$C_{NS}[N = 8] = 0 \quad [9]$$

The estimation algorithm employed herein can be described by the following recursion formula which is applied for all N values from 8 down to 2:

$$C_{NS}[N - 1] = C_{NS}[N] - S_A[N] \quad [10]$$

where

N = number of state or territory type government units yet to be amalgamated, such that amalgamations occur in ascending order of *political size*

$S_A[N]$ = estimated savings achieved through the horizontal amalgamation that reduces the number of state–territory type governments from N to (N – 1)

= FC value, being [5] and [6] for N = 8 and 7 respectively, and that obtained in the regression analysis involving the N yet to be amalgamated political units, for N = 6 to N = 2 only, as presented in Table 4.

Results [7], [9] and [10] hence provide that:

$$C_{DN}[L \approx 726] = C_{NS}[N = 1] = -[S_A(8) + S_A(7) + S_A(6) + S_A(5) + S_A(4) + S_A(3) + S_A(2)] \quad [11]$$

The algorithm starts with the present eight states and territories and *converges* towards the whole-of-Australia-sized new single state government in the Dual National model, and hence $C_{DN}[L \approx 726]$, one horizontal amalgamation at a time, in ascending order of *political size* (see Table 1). So as N steps down one at a time, the remaining political units increasingly display the large population and land area characteristics of the Australia-wide new single state. For the first two amalgamations, in which the ACT and then TAS would be absorbed into the remaining system, the FC estimates in [5] and [6] are employed:

$$S_A[8] = FC_{ACT} \approx \$0.2430b \quad [12]$$

and

$$S_A[7] = FC_{TAS} \approx \$0.8442b \quad [13]$$

For subsequent amalgamations, for N = 6 down to N = 2, results based on the regression analysis of all eight states and territories (such as [12] and [13]) would no longer be adequate, being biased by the ACT and TAS data. Table 4 summarises the regression analyses of the public sector expenditure and population data of the N largest states and territories, in terms of political size (as in Table 1), for N = 6 down to N = 2.

With results [12] and [13] and the $S_A[N]$ figures in Table 4, for N = 6 down to N = 2, [11] becomes:[6]

$$C_{DN}[L \approx 726] = C_{NS}[N = 1] \approx -\$20.22b \quad [14]$$

Result [14] estimates the savings achievable *at the state and territory level* through the elimination of horizontally duplicated fixed or overhead costs among state and territory governments, but further *coordination cost* savings are likely to be achieved by the new single state government and also by the federal government. In the present system, many federal public sector activities involve *coordinating vertically with* the states and territories, and also, separately, *facilitating coordination horizontally across* the states and territories, in respect of laws, regulations, standards, policies and practices generally, in the interests of national cooperation, harmonisation, compatibility, uniformity,

Table 4: Results from Regression Analyses for N = 6 Down to N = 2

Number of Political Units = N	6	5	4	3	2
$S_A[N]$ = FC ($b)	2.5798	3.4805	4.5881	4.6730	3.8085
r^2	0.9896	0.9852	0.9806	0.9979	0.9973

clarity, safety, efficiency, consistency and so on. Federal, state and territory governments alike devote significant resources in the initiation of coordination efforts and also in response to the coordination initiatives of other governments.

If $S_{DN\text{-}CF}$ represents the coordination cost savings achievable at the *federal level* through the move to the Dual National model, in addition to those already captured in [14], and $S_{DN\text{-}CST}$ represents the additional coordination cost savings achievable at the *state–territory level*, then an improvement on [14] would be:

$$C_{DN}[L \approx 726] = C_{NS}[N = 1] \approx -\$20b - [S_{DN\text{-}CF} + S_{DN\text{-}CST}] \quad [15]$$

The relative cost of the National–Local model ($C_{NL}[L]$) will then be that of the Dual National model ($C_{DN}[L]$) less further savings possible through the vertical amalgamation of the new single state and federal governments (of the Dual National model) into the single new national government (of the National–Local model). Such additional savings would be of two general categories. First, *vertical duplication cost savings* ($S_{NL\text{-}VD}$) could be expected following the vertical amalgamation process, through the elimination of fixed or overhead costs duplicated vertically in the federal and new single state governments. Second, additional *vertical coordination cost savings* ($S_{NL\text{-}VC}$) can also be expected to accrue, because in the National–Local model there are no separate federal and state–territory-level governments requiring coordination. So, if it is assumed that the present 726 local governments will remain in the National–Local model as well as the Dual National model, then:

$$C_{NL}[L \approx 726] \approx C_{DN}[L \approx 726] - [S_{NL\text{-}VC} + S_{NL\text{-}VD}] \quad [16]$$

And substituting [15] into [16] gives:

$$C_{NL}[L \approx 726] \approx -\$20b - [S_{NL\text{-}VD} + S_{NL\text{-}VC} + S_{DN\text{-}CF} + S_{DN\text{-}CST}] \quad [17]$$

The $S_{DN\text{-}CST}$ value, representing savings achievable in the Dual National model because the new single state government has no other state–territory level counterparts to horizontally coordinate with, is likely to be relatively modest, probably in the order of:

$$S_{DN\text{-}CST} \sim \$5 \text{ million} \quad [18]$$

But the other three components within the brackets in [17] are all likely to be in the order of at least $1 billion per annum each in view of several observations (see also Davis 1951).

First, the $S_A[N]$ values in Table 4 settle at around $4b as N reduces, suggesting that the fixed or overhead costs of the new single state public sector, in the Dual National model, would total approximately $4b.

Second, if the Commonwealth public sector in the present system did nothing but duplicate the efforts of state and territory public sectors, and coordinate with and across the states and territories, then the sum of

$$S_{NL\text{-}VD} + S_{NL\text{-}VC} + S_{DN\text{-}CF}$$

in [17] could amount to the full extent of the Commonwealth government's own-purpose public sector expenditures of $156 billion in 2000–01. The federal public sector obviously does much more than merely duplicate and coordinate with and across states and territories. Nevertheless, the Commonwealth's own-purpose expenditures in health, education and general public services were $18.1b, $9.8b and $8.9b respectively, despite the Commonwealth not running a single hospital or school.

Third, Australia's Constitution leaves considerable residual powers to the state level. According to an OECD (1997:77) survey of 26 countries, the Australian states:

> are among the most powerful intermediate governments in the world because of the breadth of their functions and their substantial role in service delivery (in large part a function of the centralisation at the sub-national level, which occurs at the expense of local government).

The new national government in the National–Local model would be a hybrid of the present federal and state type governments, but would be more like a substantive state government (with additional functions in defence, customs, etc) than a largely overlaying federal government.

Fourth, Renfrow *et al.* (1998:337) found that the numbers of Senior Executive Service (SES) managers in state, territory and Commonwealth public services in 1995 were as in Table 5.

While additional clarifying research is needed, the figures and reflections presented

Table 5: Senior Executive Service Numbers

Political Unit	Number of SES Managers
NSW	1,217
VIC	641
QLD	510
WA	368
SA	202
TAS	97
ACT	127
NT	163
State–Territory Subtotal	3,325
Commonwealth	1,727
Australia-wide Total	5,052

above support the following tentative estimations:

$$S_{NL\text{-}VD} \approx \$2b \qquad [19]$$

and

$$S_{NL\text{-}VC} \approx S_{DN\text{-}CF} \approx \$4b \qquad [20]$$

So, with [18]–[20], [15] and [17] can be updated to:

$$C_{DN}[L \approx 726] = C_{NS}[N=1] \approx -\$24b \qquad [21]$$

and

$$C_{NL}[L \approx 726] = C_{NS}[N=0] \approx -\$30b \qquad [22]$$

Relative Annual Cost of the New States Model

Given its population and land area, Tasmania provides a straightforward basis for estimating that a New States model comprising some 41 units in total (of Tasmania's population on average) would be approximately $21.7b per annum more expensive than the present system, as shown in Table 6.

Significantly, 41 lots of Tasmania's land area of 68,400 square kilometres amounts to about 36 percent of Australia's total land area. So, taking into account the vast uninhabited sections of the continent, Tasmania's size and population density make it a highly suitable basis for estimating the costs of the New States model. Furthermore, it is likely that new states would approximate Tasmania in political size (see Table 1), in which case the cost of their establishment is likely to be well approximated by [13]. So, for one or two additional (or fewer) states, the relative cost of the New States model is likely to be more or less as follows, noting the status quo condition [9]:

$$C_{NS}[N \approx 8] \approx \$(N-8) \times 0.8442b \qquad [23]$$

The average figures in Table 6 also provide that:

$$C_{NS}[N \approx 40.72] \approx \$21.7b \qquad [24]$$

Results [22], [21], [9] and [24] provide 'known point' estimations for the N values of 0, 1, 8 and 40.72 respectively, and [23] provides a 'known gradient' (of $0.8442b per government unit for $N \approx 8$) from which the C_{NS} curve in Figure 3 is derived.[7]

Relative Annual Cost of the Regional States Model

As Australia's only combined state–local government, the ACT model provides the obvious basis for estimating the costs of the Regional States model. Table 7 provides details for this model as Table 6 does for the New States model.

Table 6: Relative Cost of New States Model Based on Tasmania

Financial Year	1998–99	1999–2000	2000–01	Average[a]
Australia's population divided by Tasmania's = N_{TAS}	40.22	40.73	41.22	40.72
Tasmania's Total Public Sector Expenses (including local governments) = E_{TAS} ($b)	3.947	3.943	3.979	-
Estimated Total Public Sector Expenses of N_{TAS} states with Tasmania's population (on average) = $E_{N\times TAS}$ = $N_{TAS} \times E_{TAS}$ ($b)	158.74	160.58	164.00	-
Sum Total Public Sector Expenses (including local governments) of all states and territories = E_{STL} ($b)	139.57	139.00	139.74	-
Relative Cost Estimate = $C_{NS(=41\times TAS)} = E_{N\times TAS} - E_{STL}$ ($b)	+19.2	+21.6	+24.3	+21.7

a. These average figures provide the N = 40.72 'known point' in Figure 3.

Result [12] and the average figures in Table 7 combine to give:

$$C_{RS}\,[N \approx 61.50] \approx \$[(N - 61.50) \times 0.2430 + 2.25]b \qquad [25]$$

To estimate the relative cost of Regional State models hosting less than 60 regional state governments, it is tentatively assumed that a Regional States model with no regional governments (comprising just a single national government and no subnational governments at all, though other subnational regional administrative and governance structures could remain in place) would have the same relative cost as the National–Local model, as given by [22], so that:

$$C_{RS}\,[N=0] \approx C_{NS}\,[N=0] \approx C_{NL}\,[L \approx 726] \approx -\$30b \qquad [26]$$

The C_{RS} curve in Figure 4 is hence obtained using [25] and [26].[8]

Relative Annual Cost of the Simplified New States and Simplified Regional States Models

The cost curves in Figure 3 for the Simplified New States and Simplified Regional States models are derived as adjustments to the corresponding New States and Regional States curves reflecting the reduction in the fixed or overhead costs of the state–territory type public sectors following the respective functional transfers.[9]

The $C_{SRS\text{-}6}$ curve in Figure 3 actually 'peaks' at N = 57, for which the Simplified Regional States model (under the 6 function transfer) is an estimated $15b less expensive than the present system. Perhaps most significantly, it is found that for N = 726 (the present number of local governments in Australia):

$$C_{SRS\text{-}6}[N = 726] \approx -\$30.6b \qquad [27]$$

As discussed when introducing the various models, with sufficient functional transfers, and for sufficiently large N, the Simplified Regional States model should approach the National–Local model. The equality of [22] and [27] powerfully demonstrates this convergence. Whereas [27] is largely based upon the ACT government model, [22] was derived largely independently of the ACT model, so these results provide two quite independent confirmations of this $30b or so figure, although the significance and closeness of this match should not be overstated in view of the limitations inherent in the estimation processes.

The negative slope of the $C_{SRS\text{-}6}$ curve for N > 57 derives from the following result obtained in the analysis, which reflects a negative FC of approximately $46 million for N = 61.50, albeit a far from decisively negative value in view of the imprecision of the analysis:[10]

$$C_{SRS\text{-}6}[N \approx 61.50] \approx \$[(N - 61.50) \times (-0.0462) - 15.25]b \qquad [28]$$

Because the Regional States and Simplified Regional States models are based primarily on the ACT government model, and its population of just over 300,000 (hence N ≈ 61.5 as in Table 7), the negative slope of the $C_{SRS\text{-}6}$ curve indicates that political units the size of the ACT exceed the size at which scale economies are achieved for the functions that remain with the Simplified Regional States following the 6 function transfer as defined here. Smaller units, implying a larger value of N, would, in that case, become necessary to achieve improved scale economies, and associated cost savings. It would always be expected, however, that beyond a certain value of N, any such scale economies would be exhausted. Theory and empirical studies (for example, ACIR 1974; Boyne 1995, 1998; Council of Europe 1995; Inman and Rubinfeld 1997; Oates 1972, 1985; Soul 2000), while far from settled, generally support the idea that the optimal size of subnational government units, on the basis of social, economic and democratic criteria alike, are likely to be of some intermediate size rather than a small or large extreme. As Table 1 highlights, Australia has very few local governments compared to most

Table 7: Relative Cost of Regional States Model Based on the ACT

Financial Year	1998–99	1999–2000	2000–01	Average[a]
Australia's population divided by ACT's = N_{ACT}	61.22	61.59	61.70	61.50
Relative cost estimate = $SNS_{(\approx 41xACT)} = E_{NxACT} - E_{STL}$ ($b)	-2.74	+1.33	+8.15	+2.25

a. these average figures provide the N = 61.50 'known point' in Figure 3.

other First World federations and democracies. The findings here hence indicate that the pursuit of efficiency savings through local council amalgamations may be misguided (Vince 1997), and that the state–federal interface is where the vast majority of waste and inefficiency resides within the Australian system of government.

Total Relative Costs

Applying an improved version of a methodology briefly demonstrated previously (Drummond 1998:107–9; see also Business Regulation Review Unit 1986:3–5), it is estimated that the private sector component of the relative cost of all models is approximately half of the corresponding public sector costs, so that, for all models:

$$C_{TOT} \approx 1.5 \times C_{PUB} \approx 3 \times C_{PRI} \qquad [29]$$

Result [29] is indicative only; however, the estimation that the private sector relative cost component is approximately half that of the public sector seems intuitively plausible. Based on this result, the Figure 3 curves would need to be scaled up by a factor of 1.5 to reflect total relative cost figures, rather than just the public sector component thereof. Result [22] for the National–Local model, for example, would become:

$$C_{NL}[L \approx 726] = C_{NS}[N=0] \approx -\$45b \qquad [30]$$

Discussion

Current research (Brown 2002a) reveals varying levels of support for Australia's present federal system and various constitutional reform options, including the establishment of new states, the replacement of state and local governments by regional governments, and constitutional recognition of local government. Brown (2002b) finds that many Australians seem proud to live in a federation but nevertheless suspect that their federation could and should be operating in a more optimal form. The present analysis appears to validate some of these preferences, providing a complementary analysis of the financial viability of several such government system reform options.

Estimates suggest that Australia's 'duplicated centralism' harbours duplication and coordination costs amounting to more than $20b per annum, which could be saved and gainfully redeployed by moving to a system comprising two principal tiers of democratic government. Results are consistent with the assessment that Australia's large federal units provide many public goods and services less efficiently than could be achieved through a country-wide government and are much too large to achieve scale economies in the provision of subnational public goods and services (see also Business Council of Australia 1991).

Findings also seem to support Maddox's (1996:150) claim that 'the vested interest of the political class' is likely to be the 'real cause for [the] continued success' of the Australian federal system. By harbouring excessive numbers of public officials, especially in the capital cities, in extravagantly duplicated roles (especially at the more senior levels of the public sector hierarchies), Australia's political structure constantly reinforces the rich–poor gap as well as the urban–rural divide. Government system reform does, however, appear to have the potential to significantly redress such inequities and at the same time reduce unemployment, since several jobs at average income levels can be funded for the cost of a single senior public official. The liberation of over $20b per annum could easily fund the abolition of payroll tax — over $9.5b of which was collected by the states and territories in 2000–01 (ABS Cat. 5506.0) — and a host of other initiatives conferring significant social, environmental and economic benefits to individuals, communities, businesses and the country as a whole. Freed up moneys could comfortably fund, for example, the $6b per annum investment recently called for by the Australian Conservation Foundation and the National Farmers Federation (Madden *et al*. 2000), to facilitate a sustainable recovery and management of Australia's degraded land, water and vegetation assets. The dismantling of duplicated centralism could also fund a significant strengthening of local government and subnational governance generally, and could enable massive funding boosts for schools and hospitals, among numerous other constructive possibilities.

The New States and Simplified New States models appear incapable of facilitating affordable decentralisation on a comprehensive scale. And while the Regional States model is found to be less costly than the Simplified New States

model by at least $12 billion for all values of N > 5, and less costly than the present system up to N = 53, the centralisation index even for a regional states system with N = 50 would be approximately 800 in the absence of local government. Research could well establish that new states, simplified new states or regional state style governments can provide carefully tailored benefits that would justify their cost, perhaps especially for outlying regions such as Far North Queensland; however, the results here suggest that the Simplified Regional States and National–Local models show the greatest potential to significantly improve Australia's financial integrity and at the same time facilitate strong 'close to the people' democratic government, with significantly reduced levels of centralised bureaucracy, as has never been experienced.

The analysis herein offers insights into how cost-effective governmental decentralisation might be pursued, and suggests that the development of more detailed models for evaluating hypothetical constitutional reform opportunities is both possible and valuable. Priorities for further research include: the refinement of methodologies for estimating private sector components of the relative costs of the various models; extension beyond financial costs to the social and environmental costs and benefits of the various models; a focus on the special needs of rural and remote communities, and a dedicated examination of working models of government beyond the usual club of First World federations and English-speaking countries. The best system for Australia might well continue to guarantee subnational autonomies in the federal tradition, but at the same time draw on the many valuable lessons that can be gained from decentralised unitary countries such as those listed in Table1.

To realise potentials identified, it is imperative that Australians cooperatively engage in essential processes of institutional redesign and renewal.

Notes

1. This analysis extends on work carried out with Jim Snow (then federal MP for Eden-Monaro) in 1995, and for Rodney Hall's (1998) book *Abolish the States*. All details of the present analysis are available from the author: email *markld@ozemail.com.au*.
2. The Centralisation Index (CI) is defined as CI
$$\frac{PS^{\frac{1}{3}}}{(1+f_C \times N_S)(1+f_L \times N_L)}$$
Political Size (PS) is defined as $PS = (P^2A)^{1/3}$, where P = population and A = land area of the political unit (country, state or territory). Values for f_C, f_S, f_L, N_S and N_L are obtained from the IMF *Government Finance Statistics Yearbook*, 2001, supplemented by other sources. Population and land area statistics used in PS calculations are obtained from *The Statesman's Yearbook*, 2002, *Whitaker's Almanack 2002* and the ABS.
3. Berrigan Shire (NSW) Councillor Max Bradley and Professor (retired) Klaas Woldring have proposed a model like the National–Local model. They and the author believe there is merit in exploring strengthened regional organisation of council (ROC) type arrangements to facilitate effective regionalism and regional governance (for further information on ROCs see Norwood (1995) and via the Australian Local Government Association website at www.alga.com.au). The New States and Simplified New States models are largely as proposed in the past (see, for example, Blainey 2000; Ellis 1933; Page 1931, 1950; Drummond 1946). The Hon. Chris Hurford AO is presently working on a system resembling the Simplified Regional States model as described in this paper (see also Brown 2001). The late TNT Founder Ken Thomas (1994) proposed a similar 37 region model. See also Consandine's (1991) 50 regions plan and Macphee (1994).
4. Public sector cost estimations are based on ABS *Government Finance Statistics* (Cat. 5512.0), for the three financial years 1998–99 through to 2000–01, following the move to the accrual accounting method of presenting government finance statistics. Population figures used are from ABS Cat. 3201.0, and, using CPI figures (ABS Cat. 6401.0), all money values stated are in the Australian dollar value at 30 June 2001.
5. $r^2 = 1$ (exactly) would indicate that the relationship was perfectly described by expressions [1]–[3]. The F-statistic of 2277 indicates that the probability that the linear relationship here has arisen by chance is just 1.04×10^{-23}.
6. The $20.22b in [14] is based on Total Public Sector Expenses (using Table 12, ABS Cat. 5512.0); the figure becomes $17.86b if based on Total Public Sector Revenue.
7. Formula for C_{NS} curve is:
$C_{NS}[N] \approx (-0.369N^2 + 6.75N - 30)$ for $0 \leq N \leq 8$, and $(1.84N^{0.758} - 8.91)$ for $N \geq 8$.
8. Formula for C_{RS} curve is: $C_{RS}[N] \approx 4.78N^{0.463} - 30$ for all $N \geq 0$.
9. Formulas for curves are:
$C_{SNS\text{-}3}[N] \approx (-0.369N^2 + 6.47N - 30)$ for $0 \leq N \leq 8$ and $(2.11N^{0.607} - 9.41)$ for $N \geq 8$.

$C_{SNS\text{-}6}[N] \approx (-0.369N^2 + 6.44N - 30)$ for $0 \leq N \leq 8$ and $(2.13N^{0.588} - 9.39)$ for $N \geq 8$.
$C_{SRS\text{-}3}[N] \approx (-0.00462N^2 + 0.657N - 30)$ for $0 \leq N \leq 61.50$ and $(8.55N^{0.240} - 30)$ for $N \geq 61.50$.
$C_{SRS\text{-}6}[N] \approx (-0.00465N^2 + 0.526N - 30)$ for $0 \leq N \leq 61.50$ and $(0.0000347N^2 - 0.0504N - 12.3)$ for $N \geq 61.50$.

10. The 99 percent confidence interval estimated for this – \$0.0462b figure ranges from approximately – \$0.24b to +\$0.15b.

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