Chapter Five:
Fiscal Balance in the Australian Federation

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Since 1901, there has been a considerable, useful, but not determinative economic literature on federal financial arrangements in democratic systems. In this paper I will apply these economic ideas to the Australian case, using some ideas from public economics.

Economics is a normative discipline. My concern here is with utilitarian notions of economic efficiency, to the neglect of considerations of fairness or natural liberty. The economics thought-experiment is to design the efficient set of federal fiscal rules, against which to judge the record of federal fiscal balance.[2] These theoretical, economistic “constitutional provisions” are: the rules for the allocation of tax powers between the central government and the States; those for the allocation of expenditure responsibilities between the central government and the States; and rules for federal grants. A list of specified powers and responsibilities of the kind found in s.51 of the Constitution and elsewhere can be tested, as it were, against some general principles of the optimal assignment of fiscal powers and responsibilities.

To allay fears, I should state that I am not here canvassing changes to the Constitution, let alone a wholesale revision. Rather, my purpose is to discuss some economic standards against which the operation of the actual Constitution can be judged. As my subsequent argument makes clear, I will be defending the Constitution, not burying it.

I have a modest goal: using the economic theory of federalism to establish the case for grants from the Commonwealth to the State and local governments. I do not seek to rationalise the exact level of the grants in Australia, but merely to argue that federal grants are a component of a well-designed federal fiscal system.

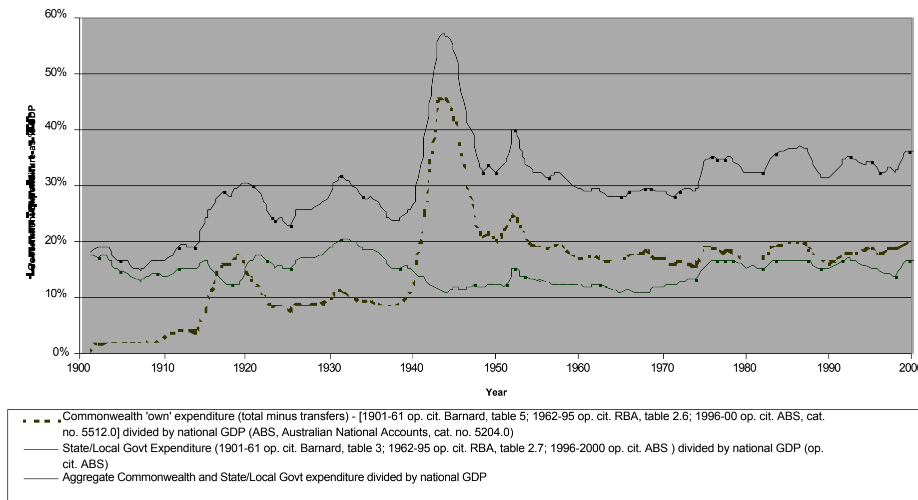
In devising arrangements concerning the economic powers of government, there is a tension to be resolved between the exercise of the coercive (or monopoly) power of government, and the operation of competition between governments. Federal constitutions offer a range of resolutions of that tension, with the Australian Constitution providing a specific combination of elements of inter-governmental tax cartel, with elements of inter-governmental competition.[3]

By “voting with their feet”, taxpayers can constrain the fiscally exploitative tendencies of government. That is, a state or jurisdiction can lose some of its tax base through inter-jurisdictional mobility, unless it provides mobile taxpayers with sufficiently valuable services. Federation increases taxpayer mobility when it lowers the costs of migration between the federated States. However, a federation also can, and the Australian federation did, institutionalise forms of inter-state tax agreements or cartels, limiting tax competition.

Although it made some transitional arrangements, the Constitution of 1901 left unresolved the ultimate fiscal shape of the Australian federation. The issue was determined by the working of everyday politics, by High Court interpretation and by constitutional referenda. The major political factors have been the adherence of voters to their States of residence, and their expectation that State and local government (rather than the Commonwealth) will continue to be responsible for a wide range of public services; and the increasing political demand for social security payments and spending (opened to the Commonwealth by the passage in 1946 of the "social welfare" referendum, s.51 (xxiiiA)). On the tax side, the major constitutional influences since 1901 have been the persistent invalidating by the High Court of indirect taxation imposed by the States; the assumption in 1928 by the Commonwealth of responsibility for all the debts of the States (s.105A); and the uniform income tax cases in the 1940s. Also, the Court has interpreted, liberally to the Commonwealth, the power of the federal Parliament to make grants to the States on such terms and conditions as the Parliament thinks fit (s.96) and allied powers.

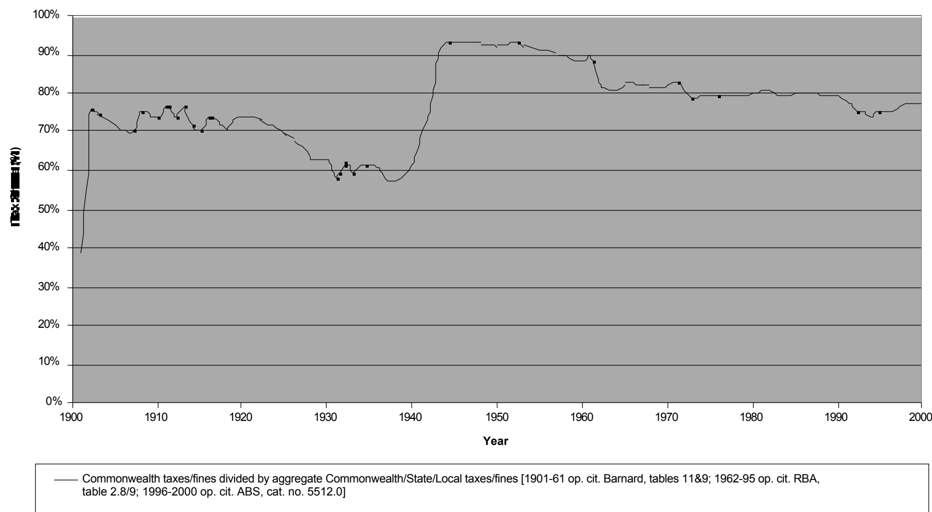
First, a sketch of the data is in order. Over the 20th Century, there were substantial rises in taxation and in public spending of the Commonwealth and of the State and local governments, as proportions of national income (Chart 1). To what extent did the Commonwealth invade or displace the States in taxing and spending, in course of the century? In taxation, at the end of the 20th Century the Commonwealth's share of the total of the taxes (and fines) of all Australian governments was about the same as it was shortly after federation. In contrast, the Commonwealth's share in public spending rose markedly over the hundred years' span. However, it is notable that the last fifty years of the 20th Century saw falls in the Commonwealth's shares of both taxation and public spending.

Chart 1



More detail of what happened over the whole century is shown in the charts. In 1902-03, when the transfer of customs and excise powers had been accomplished, the central government was responsible for a little over 75 per cent of total collections of taxes and fines, Commonwealth, State and local (Chart 2). The Commonwealth government's tax share fluctuated above 70 per cent until the onset of the 1930s depression, when it fell.

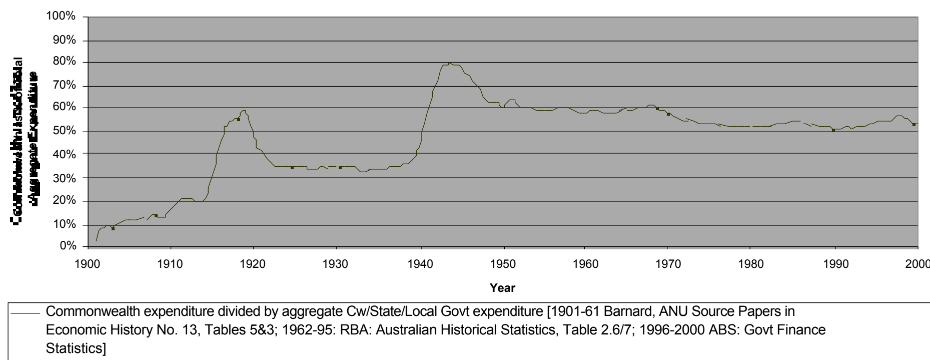
Chart 2



Assumption by the Commonwealth of exclusive income tax powers in 1942, and the rises in income tax rates for purposes originally related to war, led to the historical peak of Commonwealth tax dominance around 1950. Then followed fifty years of an inconstant, downward tendency, such that the tax share of the Commonwealth government returned by 2000 to its level of 1902-03, around three-quarters.

The third Chart shows the Commonwealth government's share of aggregate public spending. This remained low until 1910, around 10 per cent. Thereafter are two marked peaks, associated with the two World Wars. Since 1950, the central government's expenditure share has fluctuated, but overall has fallen a little,

Chart 3

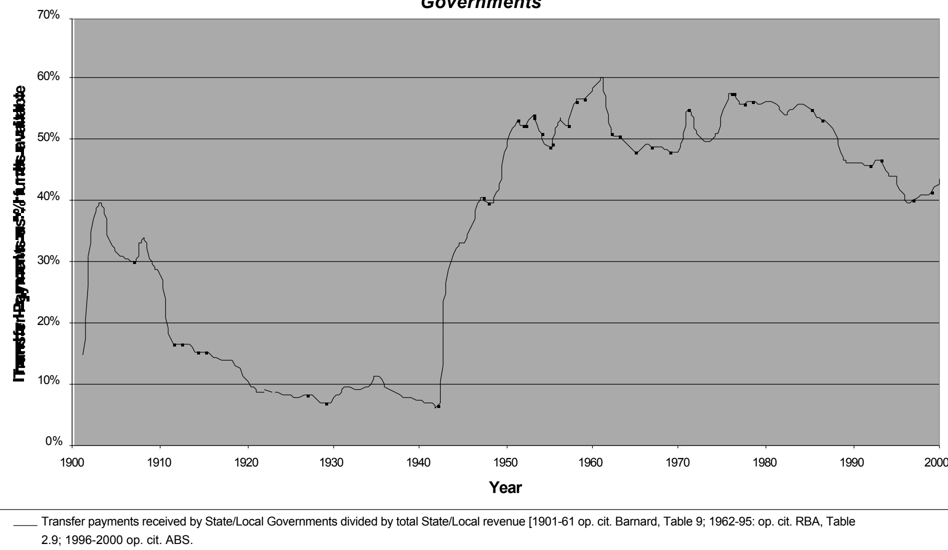


from over 60 per cent to about 55 per cent of all public expenditure. The rise of the Commonwealth's share of public spending from say one-tenth to over one-half is much greater than can be explained by the increase in its social security payments.

The difference between taxing and spending shares of the Commonwealth is reflected in Commonwealth grants to State and local governments, shown in the fourth Chart as the proportion of State and local expenditure financed by payments or assistance from the Commonwealth. Its record is more complicated, and comprises four main eras.

The first and shortest of these eras shows the influence of the temporary fiscal arrangements in the Constitution, limiting Commonwealth spending and requiring the Commonwealth to return most of its tax collections to the States. Next, with the validation of the *Surplus Revenue Act* of 1908 (whereby the Commonwealth put monies aside for future

Chart 4



payments of old-age pensions), for 30 years the Commonwealth funded about 10 per cent of State and local spending, or less. During the third era, after World War II, the Commonwealth channelled surplus revenue into the States in increasing amounts, so that in the 1970s almost 70 of every 100 dollars spent by the subsidiary levels of government were funded by Commonwealth grants of various kinds. Putting it in different terms: in the early 1970s, the Commonwealth distributed to the States and local governments grants amounting to over one-tenth of national income. Finally, by the end of the century, those proportions had halved, so that about one-third of State and local spending was financed by Commonwealth grants, which amounted to less than 6 per cent of national income.

This record can be interpreted as a triumph of the operation of a flexible and adaptive Constitution, or as a disaster reflecting deficiencies in the Constitution (e.g., in the method of appointment of High Court judges), or something in between. Three kinds of complaints have been made about the recent state of the federal fiscal balance, especially grants. Firstly, some State governments have objected to the system of so-called Horizontal Fiscal Equalisation (HFE) grants. These are Commonwealth grants designed to equalise the fiscal capacities of the States, and are made on the recommendations of the Commonwealth Grants Commission. I will argue that the Australian federation has got these grants about right, from an economic point of view.

The second and third criticisms of Australian fiscal federalism both rely on the claim that the States are all too dependent on grants from the Commonwealth. This dependence of the States on grants is prejudicially called Vertical Fiscal Imbalance (VFI). In the extreme version, enunciated by Cliff Walsh as "No Representation without Taxation", the solution would be for the States to rely solely on their own revenues. Arithmetically, this could be achieved either by the Commonwealth vacating some tax fields in whole or in part, making more room for the States (the option approved by Walsh, for example); or by the Commonwealth displacing some State spending and increasing its own spending so as to exhaust its tax collections.[4]

Grants are said to have two kinds of bad effects. Firstly, they permit the Commonwealth to impose on the State (and local) governments, the recipients of federal grants, conditions designed to deprive them of choice over how to spend public financial resources nominally at their disposal. I will concentrate on the third and more central criticism, which is that Commonwealth grants are economically bad in that they induce fiscal irresponsibility in the States.

Should Horizontal Fiscal Equalisation be zero?

It is useful to deal first with the Commonwealth grants designed to equalise the fiscal capabilities of the several States of the federation. These grants could be made without any transfer of Commonwealth public funds to the States (and Territories) taken as a whole. HFE grants, that is, do not require a degree of VFI between the Commonwealth and the States and Territories as a whole.

Specifically, the fiscal capabilities of the various States and Territories could be equalised by requiring some States or Territories to make fiscal grants to other States and Territories in the federation. In practice, in Australia the Commonwealth has made the grants to achieve HFE from its "surplus" tax revenues, so as to achieve equalisation at a higher level of fiscal capability of the States and Territories, rather than at a lower level.

The origin of these HFE grants was in the 1920s and 1930s, and had to do with the concern about the disaffection of outlying States, and the desire for secession from the federation, especially in Western Australia, to escape the economic costs of federation.[5] Grants for the fiscal assistance of poorer States were consistent with the Australian ethos of equality. Rather than examine those arguments, I will use what economists later in the 20th Century wrote about the economic efficiency consequences of HFE, and examine the effects of grants on economic productivity, via their consequences for the incentives for inter-State migration.

Federation made it easier for citizens to migrate from one Australian State to another. Some forms of economic migration add to national productivity; others detract, in that the migrating individuals gain by their choices of location, but at an overall economic cost. Properly designed inter-State grants can remove the incentives for inefficient migration, caused by State fiscal systems. The genius of the Australian federation is that it arrived at close to the perfect HFE arrangement, when judged from the point of view of economic efficiency: economic efficiency was served by the pursuit of economic equity.

The HFE grants are made so as to equalise the fiscal capability of the States. Such an equalization is achieved if, after spending its HFE grant, any State could provide a standard or average level of State public services, like schools and law and order and roads, while levying the standard or average rates of State taxation and fees, and balance the State public budget.[6]

HFE grants depend on a State's relative advantages or disadvantages on either side of the fiscal ledger, in revenue raising capacity or in the costs of providing State services. A State with few taxable natural resources per head of population would, at standard rates of State resource taxation, raise less State revenue per head than would a State with abundant taxable natural resources. Under HFE, the State with a poor tax base would receive a grant to compensate for this fiscal disadvantage (and for any other measurable difference in the State tax base). Turning to the cost side, a State with a large retired population would have to make larger expenditures, per head of population, on services for old folk to provide them with the standard or average level of services that would be experienced in States with relatively fewer retired folk. Under HFE, this State would receive a grant to compensate for this and other cost disadvantages.

The economic argument for HFE grants is that they discourage or eliminate those interstate migration or settlement decisions which, although they are economically motivated, are in fact economically inefficient. Central to the argument is the idea that, by settling in a State, a resident obtains a right to his or her share of the State fiscal pie. The attraction of this unpriced fiscal 'share bonus' can induce inefficient interstate migration or settlement decisions.

The main economic argument now follows. First, notice that federation made interstate migration easier than before. With federation, nationality or citizenship became Australian. In addition, certain things were made or kept uniform across the States – communications services, currency and paper money, weights and measures, marriage, laws relating to some commercial matters like bankruptcy and copyright, and so on. By and large, this uniformity was conducive to greater productivity for a variety of reasons; here I will focus on the effects on interstate migration, or the choice by immigrants of a State in which to settle. (The argument made here applies equally to immigrants attracted to Australia from other countries, a matter of great importance in Australian economic history).[7]

The second leg of the argument is that national production would be greatest if workers located where they were most productive (i.e., where they added most to national output).[8] The removal of some artificial barriers to interstate migration would assist in that regard. However, interstate economic migration can occur for unproductive fiscal reasons, as is explained below, to the detriment of national productivity. These reasons are removed by the Australian federal system of HFE grants.

The central task, therefore, is to show how some kinds of settlement decisions can benefit the individual but harm national productivity; and how HFE grants deter those inefficient decisions. I will attempt to do this by illustrating some cases that, in the fashion typical of economists, will be shorn of all but the essential ingredients. Two of these were signalled earlier, when I discussed how the HFE grants compensate for differences in taxable resources and costs of provision of State services. I will concentrate, for simplicity, on individuals who move for a better standard of living. I will also make a number of other simplifying assumptions, including that the individual's standard of living depends only on his or her wage rate and on State government taxing and spending; and that the only sources of State tax revenue are natural resource taxes and pay-roll taxes.[9]

As was mentioned, at the core of the argument is the idea that membership of a State polity allows an individual to share in the fiscal pool of the State, as well as be employed in a job in that State. The formation of a federation, to the extent that it lowers some barriers to interstate migration, makes it easier for tax-paying entities (or tax-consuming entities) to shift to another State if it offers a better fiscal deal (i.e., a larger excess of value of tax-funded benefits over taxes paid, or a smaller deficiency). States with relatively more taxable natural resources would, to that extent, be more attractive locations than would those with relatively less. The richer States could afford better State services or lower pay-roll taxes or both. An immigrant worker to the richer State would enjoy a higher standard of living, inclusive of taxes and State services, even if he or she would be more productive and earn a higher wage in the poorer State.[10] That is, without an HFE grant to offset the poorer State's disadvantage in tax base, economically inefficient settlement will be encouraged – some workers will be attracted away from more productive jobs by the opportunity to share (via the State fisc) in the benefits of natural resources that they do not own.[11]

A parallel case can be made for HFE grants to offset State government cost disadvantages. Assume one State has more retired folk per capita than another, the same level of taxable resources per capita – zero in both cases – but that a worker's productivity is higher in the State with more retirees.[12] If each State provides old folk with about the same level of services, then the State with relatively more retirees will be forced to levy higher pay-roll taxes. This tax difference distorts the pattern of settlement of mobile workers, and reduces national output. The distortion can be reduced or eliminated by an HFE grant to offset the differential State costs of providing old-aged services.[13]

So far, I have discussed the economic efficiency benefits of the Australian system. There are efficiency costs to be accounted. These include the excess burden of the taxation necessary to finance the grants, and the possibility that the HFE grants give States incentives to be poorer and more costly, in order to receive more grants. On balance, the evidence points to these being smaller than the advantages.[14]

Should Vertical Fiscal Imbalance be zero?[15]

The economic theory of federalism focuses attention on the spatial properties of public goods and taxes, to provide a theoretical grounding for the allocation of particular expenditure and taxing activities across a pre-determined set of geographical boundaries (which I take the States to have).[16] For example, in the illustration just given, I could have assumed that the State with relatively more retirees levied the same rate of pay-roll tax as in the other State, and afforded a lower level of services to the aged than in the other State. There would then be an incentive for the aged to move to the State offering better old-age services, driving up pay-roll tax rates there and inducing taxpayers to move to the States with lower tax rates. In the extreme, this kind of fiscal migration can lead to severe losses of mobile tax bases, and intense downward pressure on the level of welfare services provided from State funding.[17] It provides an argument for having the central government, rather than the States, primarily responsible for the funding of welfare. The underlying principle is that better economic decisions are made if the consequences of the decisions are sheeted home to the decision makers.

The economic argument about the appropriate locus of decisions on public spending is fairly well known, and now goes under the name of "the principle of subsidiarity".[18] It is that where the benefits are (mostly) confined to a particular State (or "locality", more generally), then decisions over the level and nature of the service supply should be made in that State (or "locality").

Consider a service which, once provided, costs nothing or very little to provide to more people rather than to fewer. A case in point could be weather prediction, in which the heavy cost is to arrive at a useful prediction, which can then be disseminated cheaply. Now say that the particular form of public spending provides benefits (mostly) to those residing in a "locality", and none (or few) to those residing outside the "locality" – i.e., a *local* weather prediction. The appropriate political decisions about how much to spend on local weather predictions are those made "locally", because they are more responsive to demand. In contrast, best decided by a national political mechanism are decisions about how much information to provide for the making of better weather predictions over the whole nation. Historically, this kind of argument was made for the inclusion of defence in the list of activities over which the Commonwealth would have exclusive responsibility.

There are similar if less familiar spatial considerations in deciding on the allocation of various tax instruments within a federal polity. Virtually all taxes fall on economic transactions. Therefore, there will be a spatial dimension to the incidence of taxation that corresponds to the spatial dimension of the transaction being taxed.

In particular, consider a tax levied on the importation of a product from one State into another. The economic burden imposed by the import tax, its incidence, could fall partly on the out-of-State producers, and partly on the in-State consumer-voters. The producers vote in one jurisdiction, the consumers in another and they alone decide on the level of the import tax. Similarly, a tax on the production of a good produced in one State may be borne predominantly by consumers who reside in other States – which is an argument for having political decisions about the level of such taxation made in the inclusive jurisdiction of all those (significantly) bearing the tax burden.

There is another more pragmatic consideration in taxation, which is that small jurisdictions will find it more difficult, than do larger jurisdictions, to impose taxes on highly mobile factors of production. If capital taxes are assigned to local governments, for example, we can confidently predict that the rate of tax will be lower than if it were assigned to the national level – tax competition will tend to drive the tax rate down. The classic tax base for small jurisdictions, then, is unimproved land values.[19]

An interpretation

In this short paper, I can do no more than to indicate in general terms the kind of arguments made in public economics about the optimal assignment of taxing powers and spending responsibilities to the various layers of government in a federation. What I want to infer from the foregoing discussion is that there is no reason why the tax-side considerations will generate a distribution of tax revenues, what we may call the *intergovernmental tax mix*, that corresponds exactly to the demands of citizens for public expenditures across those levels.

On the tax side, efficiency requires that the economic cost of an extra dollar of public revenue be the same for all taxes, independently of the level of government to which the tax applies.[20] Achieving the tax-side ideal will give rise to a distribution of tax revenues that is independent of the expenditure responsibilities. Federal grants, of the VFI type, permit the reconciliation of the claims of tax efficiency in the jurisdictional dimension with the claims of efficiency in the allocation of expenditure responsibilities across jurisdictions. In the absence of vertical transfers of tax revenues in the federation, one would have to re-allocate expenditure responsibilities according to the dictates of the efficient jurisdictional tax allocation; or to re-allocate tax powers according to expenditure responsibilities, rather than on the dictates of tax efficiency.

I am not making the claim that the level of Commonwealth revenue grants to the States is about right. I am making the claim that zero is the wrong level. More sophisticated arguments have to be mounted to arrive at the approximately correct level than merely to claim that any, positive, Commonwealth grant to the States distorts State decisions about how much to spend and on what.

An interpretative story can be told about the general course of the Australian fiscal balance. As State populations grew in numbers and in wealth, the political demands grew for more State spending in total.[21] In a well-balanced fiscal federation, a relatively efficient mix of taxes financed the increase in State spending, involving some additional State tax revenues, and some additional federal tax revenues, paid by way of additional grants. Federal revenue grants to the States responded to State voters' demands for State spending. The alternatives to federal grants, to repeat the earlier discussion, were the complete reliance on relatively costly State taxes; or the transfer of more State spending responsibilities to the Commonwealth.[22]

The "flypaper effect": grants stick where they hit?

"The only good tax is a Commonwealth tax", said a former Premier of Queensland. What he probably did *not* mean is that all Queensland taxes were hopelessly economically inefficient when compared with all Commonwealth taxes. Rather, I suspect he believed that it was politically easier for him to finance Queensland public spending from grants than from Queensland taxation itself. Federal grants seem to come at no or low political costs within the State; State taxes are resisted at State elections.

Does this point to the conclusion that States are less frugal in their spending of federal grants than they are in their spending of State tax revenues? For this is a crucial question: if federal grants give States an incentive to overspend, or to spend unwisely, then it speaks against such grants. I will argue that the case is hard to make.

Confine attention to general revenue grants ("FAGs without tags"). Upon the receipt of a federal grant, the Premier could choose either to spend the grant on State services, or to cut State taxes. At that time, as now, Queensland tax rates were not all zero, so if State taxation were then very expensive politically, the Premier had the opportunity to gain some political advantage by using the federal grant to finance a cut in State taxes. If the marginal, swinging voters valued a tax cut more than they valued State spending, on the margin of taxing and spending, then successful politicians would provide State tax cuts out of federal grants, rather than spend them.

What keeps politicians "honest", then, is political competition. A federal arrangement sharpens some forms of political competition, by increasing interstate mobility. But it weakens other forms, as the States pass over to the central government power to levy certain kinds of taxation. At the time of the drafting of the Constitution, all knew that the States were passing over the then major taxes, customs and excise. It later proved that they also, in effect, had transferred the income tax in circumstances when inter-State tax competition was detrimental to the national purpose of raising more income tax revenue. In the period of reconstruction after World War II, voters also passed over to the Commonwealth the power to make all kinds of social security payments to individuals. For reasons sketched earlier, these are the kind of payments that are susceptible to fiscal migration: it is to be expected that there will be a higher level of redistributional payments of this kind, if they are made by a more inclusive polity, than if by a less inclusive one (in terms of spatial spread).

Conclusion

The data provided stops before the implementation of the GST arrangements, which are not discussed in this paper (except by inference, in the section about the spatial characteristics of tax incidence).

The paper has argued the cases in favour of two kinds of Commonwealth grants to the States: those to equalise the fiscal capacities of the States (Horizontal Fiscal Equalization), and those to supplement the tax revenues of the States ("Vertical" grants). I argued that the Australian federal arrangements for HFE grants are beneficial to economic efficiency. As to so-called Vertical Fiscal Imbalance, with the Commonwealth taxing more than it spends and sending the surplus to the States to supplement their tax resources, my claim is less definite. It is merely that, in a well-functioning federation, revenue grants from the central government to the States are, in principle, consistent with economic efficiency in taxing and spending. What I did not attempt was a *quantitative* assessment of the degree of imbalance in the Australian fiscal federation, if any; the paper is concerned with qualitative judgments for the most part.

Endnotes:

1. This paper draws freely on joint work with Geoffrey Brennan. Thanks to Phil Killicoat for assistance.

2. There is a general proposition in economics that lists the circumstances in which competition produces the best of all possible outcomes. In this paper, the focus is on constitutional political economy, on the design of the rules, rather than the more usual focus of the economics profession on tinkering with policy. See JM Buchanan, *What Should Economists Do?* (Indianapolis, 1979).

3. There are two types of political competition in democratic systems: electoral competition to become the Government; and inter-governmental competition, which has two sub-types: "inter-national" or "inter-state" fiscal competition between nations or states; and federal fiscal competition between the States and the central government, within a nation.

4. Cliff Walsh, *Refocusing Commonwealth-State Financial Relations: Tax powers, microeconomic reforms and intergovernmental relations*, in *Business Council Bulletin* 126 (1995), pp.30-37.

5. In the 1930s, another inquiry was set up in response to complaints that federation had harmed the economic condition of smaller states, especially Western Australia. The economist Giblin and others argued that it was impossible, by the late date, to assess the costs of federal arrangements. The counterfactual, to use modern terminology, was too hard to construct and estimate. Instead, it was suggested, it would be better for the federation to make grants so as to affiliate citizens of those States more closely with the federation.

6. Purists may object to the idea that the grants permit the balancing of the standard budget. However, the argument applies to any standard budget deficit or surplus, and zero makes exposition easier.

7. See JJ Pincus, *Liberalism and Australian Economic and Industrial Development*, Chapter 16 in JR Nethercote (ed.), *Liberalism and the Australian Federation*, Annandale, NSW, 2001.

8. The basis of this argument is that if a worker adds more to output in one location than at another, then there is a loss in output if he or she settles into the latter job. For simplicity, I have assumed that workers are paid the value of their addition to production.

9. An additional factor in standard of living is environment, broadly conceived. The argument made here can be extended to include this factor, but at the cost of considerable complexity. Additional tax sources can easily be added to the argument.

10. The SA Centre for Economic Studies discusses these arguments in more detail in the paper entitled *Financing the Federation: A Centenary of Federation project carried out for the South Australian Department of Treasury and Finance* (June, 2001), Chapter 4 and its Appendices (by J. Hancock).

11. The argument does not change in substance if natural resources are owned publicly or privately.

12. My argument does not depend on there being a persistent difference in average productivity (due, for example, to climate), but does depend on differences that would vanish with sufficient relocation of workers.

13. A similar argument arises when there are fixed costs of State services that do not vary at all or proportionately with the number of State citizens being served. Hancock, in the work cited in Endnote 10 above (p.67) gives the example of State weather forecasting services, which are what economists call a public good.

14. There is a literature on these issues in Australia, which I do not intend to survey; references are in the SA Centre for Economic Studies paper referred to in Endnote 10 above.

15. This section draws freely on an unpublished paper with Geoffrey Brennan entitled *The Myth of Vertical Fiscal Imbalance?*.

16. It can also be used to design the optimal boundaries of jurisdictions.

17. More generally, there is a phenomenon, documented by George Borjas in the United States, of "welfare magnets".

18. The classic reference is WE Oates, *Fiscal Federalism* (New York, 1972); see also DC Mueller, *Public Choice II* (Cambridge, 1996).

19. In the literature of efficient taxation, the rule is that if it stands still, then tax it relatively highly; if it moves easily, then tax it lightly. In applying the rule, the notion of "movement" includes any method of avoiding the tax (e.g., "movement" from highly into more lightly-taxed activities). The rule is named Ramsay taxation, after an English mathematical economist of the 1920s. It is important to realise that the cost of a tax varies positively, and more than proportionately, with the tax rate. The Public Choice literature, especially Brennan and Buchanan in *The Power to Tax* (Cambridge, 1980), points out that there is a trade-off: if taxes are efficient, then the government can get away with imposing more of them than if taxes are inefficient. Some decades ago in Australia, this kind of Public Choice argument was used by the Australian Treasury to oppose what others called tax reform.

20. In terms of the previous footnote, the marginal "Ramsay price" of each tax is equal to one plus the marginal excess burden, which depends on the inverse of the elasticity of supply of the taxable activity. Efficiency requires equality of the marginal excess burdens.

21. Here I am not relying on Wagner's Law, which is that the demand for State public spending increases faster than income. Rather, I rely on the assumption that the effect of the rise in the number of heads of population was sufficient to ensure that the total demand increases (not demand per head): any loss of demand due to income-inferiority is small in relationship to the rise in population.

22. This argument is made at length in HG Brennan and JJ Pincus, *A minimalist model of federal grants and flypaper effects*, in *Journal of Public Economics,* 61 (1996), pp.229-246. The phenomena are of grants apparently "sticking" to the Treasury (i.e., being spent, not used for tax relief) and "sticking" to individual spending categories (e.g., school grants being spent on schools).