

# The economic implications of federal government specific purpose grants

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THE ECONOMIC IMPLICATIONS  
OF FEDERAL GOVERNMENT  
SPECIFIC PURPOSE GRANTS

A thesis submitted to the Economics Department within  
the Commerce Faculty

of

the University of New South Wales

by

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in fulfillment of the requirements

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### Abstract

Over the past fifteen years specific purpose payments, that is, grants to state governments which are tied to expenditure categories designated by the federal government, have become an increasingly important factor in inter-governmental financial relations in Australia. While many economists have observed this trend very little empirical work has been attempted to examine what implications these grants may have for resource allocation within the Australian federation.

This thesis analyses recent trends in specific purpose payments and examines the economic justification for their existence in a federal system. Following this an empirical study is undertaken to determine what effects specific purpose payments have on state government expenditure patterns. In particular, attention is focussed upon the question of whether specific grants cause state governments to increase spending from their own resources on aided functions or, alternatively, whether the states divert funds away from aided functions, expanding their provision of non-aided activities.



### Preface

The contents of this thesis represent research undertaken by the undersigned during the period 1974 to 1976. Furthermore, this thesis has not be submitted to any other University or institution for a degree or for any other purpose.

I wish to express my appreciation to my supervisor, Professor John Nevile, for his detailed readings of various drafts of this manuscript. Chapter 4 was considerably improved as a result of his comments. Naturally I alone am responsible for any errors which may remain.

Kevin Forde

1st October, 1976.

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### Introduction

One of the most important recent developments in Australia's fiscal federalism has been the rise to prominence of specific purpose payments, that is, federal grants which the states are obliged to spend in areas designated by the national government. Not only has the money offered to the states in the form of specific grants increased sixteen times over the period 1960-61 to 1975-76, but the scope of these payments has also widened considerably to encompass such diverse activities as legal aid, the national estate and aboriginal affairs.

The increased emphasis placed upon specific purpose as opposed to general purpose grants, and the distinct possibility that the emphasis may be reversed, has significant implications for resource allocation in the Australian public sector. In particular, this thesis will be concerned with the effects specific purpose payments have on the expenditure patterns of state governments. Do they stimulate state expenditure from the state's own revenue sources or do they alter the state's expenditure priorities, thus "distorting" the state budget?

## Outline of the Thesis

Chapter 1 sets the background for the thesis by examining the fiscal imbalance, or the discrepancy between expenditure responsibilities and revenue resources at different levels of government, which is apparent in the Australia federation. Specific purpose grants are then postulated as a possible remedy for this imbalance.

Chapter 2 outlines the economic rationale for the existence of specific grants in a federal system, the major justification rests upon the benefit spillover argument.

Chapter 3 analyses the theoretical reaction of state governments to different types of grants from the national government, endeavouring to isolate the factors which influence a particular state's expenditure response.

Chapter 4 investigates the empirical evidence to determine whether specific grants stimulate state expenditure on the designated services or whether the expenditure priorities of state governments are changed by these grants. Finally chapter 5 ties together the various results of the preceding chapters and summarises the major conclusions of the thesis.

## CHAPTER 1.

### Recent Trends in Australian

### Fiscal Federalism

#### 1.1 Introduction

From the beginning of the Australian Federation payments have been made from the national to the state governments. However, prior to World War II the financial resources open to the states were generally adequate to meet their expenditure commitments and consequently these payments were comparatively unimportant and directed principally towards assistance to the financially weaker states, and to specific purpose grants for roads and debt charges. Since World War II there has been a pronounced increase in both the magnitude and scope of payments to the states. This can be attributed, at least partially, to increased expenditure demands being placed on many areas of state government responsibility, especially education, health and urban development; the effects of the introduction and maintenance of uniform taxation; and finally the desire of the national government to involve itself, via specific purpose payments, in areas which previously were the sole province of the states.

The present chapter will analyse this expansion in inter-governmental financial transfers from the national to state governments paying particular attention to the fiscal imbalance evident in the Australian federation and to the proliferation of specific purpose payments as a possible solution to this imbalance.



## 1.2 Division of Responsibilities and Taxation Powers in the Australian Federation.

Technically speaking, a federation is a "method of dividing powers so that the general and regional governments are each, within a sphere, co-ordinate and independent."<sup>1</sup> In any federal system of government there are two basic and distinct powers which need to be divided: one concerns the distribution of legislative or regulatory power which determines which government is responsible for passing laws relating to particular functions in the economy; the second is the allocation of financial resources between different levels of government. Many economists advocate that these two distributions of power should be in close alignment so that each level of government is financially responsible for its expenditure. In other words, if a government has the legal authority to perform certain services then it should have sufficient revenue resources to enable it to provide those services.

Section 51 of the Australian Constitution sets out the principal expenditure functions of the Federal government as follows:

- (i) defence and external affairs;
- (ii) navigation, quarantine and meteorological services;
- (iii) immigration, citizenship, matrimonial status;

1. K.C. Wheare Federal Government, OXFORD, 1963, p.10.

Recently this concept has come under attack by advocates of "new federalism" which stresses interdependence and sharing of functions between governments. See for example M.D. Reagan The New Federalism, OXFORD, 1972.

- (iv) international and interstate trade and commerce;
- (v) currency, non-state banking and insurance;
- (vi) conciliation and arbitration of interstate industrial disputes;
- (vii) postal and telecommunication services, and conditional powers with regard to railways; and
- (viii) invalid and old age pensions.

State governments were assigned all other governmental functions which include the maintenance of law and order; the regulation of commerce and industry; the development of natural resources; the provision of transport services; provision of such essential services as water supply, sewerage, drainage, electricity and gas supply; and the responsibility for social services in the fields of education, health and housing.

On the revenue side, the federal government was given concurrent taxing powers with the States in all forms of taxation with the exception of customs and excise duties, where its powers are exclusive. In addition, federal government tax was given priority to that imposed by the state government. However, since 1 July 1942 the national government has become the sole income taxing authority.<sup>1</sup>

The situation prior to 1942 was that each state was collecting an income tax in conjunction with an Australian

1. Although this situation may change from 1 July 1977.

The following sections give greater detail. Most of the details relating to the uniform tax scheme were found in Payments to or for the states and local government authorities 1975 - 76. Budget Paper No. 7 Canberra 1976, pp 155 - 158.

government income tax, although the individual rates levied by the States varied considerably. In order to finance its war-time expenditure the Australian government proposed that it should be given the sole authority to levy taxes on income. This uniform tax scheme came into operation on 1 July 1942 and was initially intended to last for the duration of the war and one year thereafter. As compensation for vacating the income tax field the States were paid tax reimbursement grants based upon their average collections from taxes on income in the years 1939-40 and 1940-41, on the condition that the States refrained from levying income tax.<sup>1</sup>

In 1946 the Australian government announced its intention of continuing uniform taxation indefinitely. It was decided at the Premiers' Conference in that year that the tax reimbursement grants would be determined by a formula under which the base amount (\$80 million) would be increased in accordance with variations in population and half of the percentage increase in average wages per person employed in Australia as a whole. The condition that States refrained from levying their own income tax remained.

1. In 1942 four States challenged the validity of the uniform tax scheme in the High Court. The Court upheld the legality of the agreement finding that the Australian government was entitled to priority in the collection of income taxes and could also make grants to the States under Section 96 of the Constitution on the condition that they did not levy an income tax.

In addition to the Australian government being the sole income taxing authority since 1942, the High Court's interpretation of Section 86 of the Constitution relating to "duties of customs and excise" has prevented States from levying most forms of sales taxation. Consequently, it has become a historical trend in Australia for the collection of taxes to be concentrated in the hands of the national government. Table 1.1 illustrates this trend revealing that authorities of the Australian government raised over 80% of all taxes collected by public authorities between 1961-62 and 1974-75. During the same period the proportion collected by State government authorities ranged from 11.3 to 16.5 per cent.

Not only does the Australian government control the major avenues of taxation revenue but it also has considerable power over another vital financial asset of government, namely the ability to borrow money from the private sector. Under the Financial Agreement of 1927, all borrowings for and on behalf of the state governments are, with limited exceptions, arranged by the Australian government. These borrowings are extremely important as they represent the major source of funds available to the states for capital works. Furthermore, when the contributions of the public are insufficient to finance the states' Loan programs, the Australian government makes up the deficit by subscribing to these loans from its own resources. The amounts made available in this way represent state debt. Table 1.2 shows that between 1961-62 and 1974-75 the contribution of the Australian government to these Loan programs has ranged

from nil in 1962-63, 1963-64 and 1973-74 to 47% in 1969-70.

Table 1.3 shows the effect of these borrowing arrangements on the debt position of the respective governments. In the period 1950 to 1974 the debt of the Australian government decreased from \$456.18 per head to \$306.93 per head while over the same time the states' debt increased from \$290.78 per head to \$860.70 per head. However, Boehm and Wade<sup>1</sup> in a recent article have argued that these figures are misleading if they are taken to be an indication of the net debt position of the different governments.

Boehm and Wade maintain that in order to obtain the "net public debt" position of the Australian and State governments the following items must be subtracted from these figures: (1) government securities purchased by the government or by certain of its trust funds, and (11) direct loans made by the Australian government to the States.<sup>2</sup> When this was done Table 1.4 was formulated. This Table reveals that "by the end of 1968-69 the net debt of the Commonwealth had disappeared, it had become a net creditor government, probably a unique position among the governments of developed western nations. The net debt of the States had, by contrast, grown to more than five - and - a - half times its size in 1945".<sup>3</sup> Thus since 1945 the States have been bearing the brunt of the public debt burden in Australia.

1. E.A. Boehm and P.B. Wade "The ANATOMY OF AUSTRALIA'S PUBLIC DEBT" Economic Record Sept. 1971, pp 315-337.

2. ibid p. 328

3. ibid p. 324

At the June 1970 Premiers' Conference the Australian government explicitly recognised this and initiated moves aimed at reducing the States' debt commitments. These new developments will be examined in a following section.

### 1.3 Recent Trends in Expenditures and Receipts

Whereas the federal government dominates the revenue raising activities of the public sector, the composition of public authority expenditure displays a vastly different pattern. Throughout the decade of the 1960's net expenditure on goods and services and total outlay by authorities of the Australian government grew at only a slightly more rapid rate than did their counterparts in the State sector. Table 1.5 gives the actual figures. In absolute terms, net expenditure on goods and services was greater in the State sector than in the federal sector, however the national government's pre-eminence in social security payments ensured that its total outlay would exceed that of the states.

Between 1970-71 and 1974-75 total expenditure on goods and services by the states grew more rapidly than those of the federal government, while in absolute terms state expenditure in this category was \$8379 million in 1974-75 compared to \$5130 million by the Australian government. There appears to be a number of factors which have caused this acceleration in the growth of State expenditures in the early 1970's. Firstly, rapid increases in wages and salaries during this period have given State current expenditure on goods and services a tremendous boost.

This is especially significant as the number of civilians employed in the State sector is far greater than in the Federal or local government sectors. For instance at April 1976 the number of civilians employed by different levels of government were as follows:

Federal government	390,000
State government	770,000
Local government	121,000

Secondly, the rapid expansion in State spending was in part the response to a considerable increase in the number of specific purpose grants given by the Federal government. That is, the States were in some areas, becoming spending agencies of the Australian government. Finally, part of this increased expenditure reflects inflation in the Australian economy over this period. The reduced rate of growth in Federal expenditures on goods and services can be partially attributed to a cut back in the defence allocation which is a major component of the Federal budget.

On the receipts side Table 1.6 shows that during the 1960's state authorities attained a rate of growth in taxation revenue in excess of that achieved by authorities of the Australian government. This pattern continued into the early 1970's with state taxation receipts increasing by 40% in 1971-72, 27% in 1972-73, 24% in 1973-74 and 25% in the following year. Undoubtedly the transfer of pay-roll tax to the states in 1971-72 contributed largely to these increases. However, receipts from other forms of state taxation have also increased substantially.

One important distinction that needs to be made is that the increased taxation collections by the Federal government, especially with reference to personal income tax, were generally the result of inflation acting upon a basically unaltered tax scale. In contrast, the states were forced to increase existing tax rates and exploit entirely new taxation areas to obtain additional revenue. For instance in Victoria in 1971-72 and 1973-74 the state government increased almost every major tax that was available to it. While in 1972 the Tasmanian government introduced a levy on the consumption of tobacco and more recently in 1975 the N.S.W. government legislated to introduce an additional tax on petrol, although, this legislation was subsequently repealed.<sup>1</sup>

#### 1.4 Fiscal Imbalance

While the previous section concentrated on recent trends in public sector receipts and expenditure, Table 1.7, illustrates the relative importance of state government authorities in these two categories. Between 1960-61 and 1974-75 state government authorities accounted for over 40% of the total outlays of all public authorities. In contrast total receipts of these state authorities from their own sources represented approximately 20% of total public authority receipts. Thus over this period the relative importance

1. The States were able to do this as the tax was on the consumption rather than the sale of the particular commodity.



of state authorities as public spending agencies was not matched by their relative significance as public revenue collecting bodies.

Indeed, a federation would be fortunate if the ability of a particular level of government to collect revenue coincided with its constitutional allocation of expenditure responsibilities. Even if the expenditure functions and revenue resources of different levels of government were initially in balance it would be unlikely that this balance would be maintained with the passage of time. Factors influencing expenditure trends do not necessarily affect revenue collections and vice versa. Consequently it would be anticipated that revenues and expenditures would grow at differing rates. This means that unless the particular government has access to revenue sources which are capable of being expanded in line with its new expenditure demands an imbalance will eventually emerge between its revenues and expenditures.

In the Australian context this fiscal mismatch or vertical imbalance between the national and state governments is as old as federation itself. It was anticipated by the framers of the Constitution that the Australian government would collect more revenue than it needed to discharge its expenditure responsibilities. To cope with this situation, Section 87 of the Constitution required the Australian government to pay to the states three-quarters of the customs and excise revenue collected during the first ten years of federation "and thereafter until the Parliament otherwise provides." In addition, Sections 89, 93 and 94 of the Constitution required that, for a

certain period, and thereafter until the Parliament otherwise provided, all surplus revenue not required by the Australian government was to be paid to the states.

Over the intervening years numerous formulas have been utilized in a further effort to redistribute the surplus funds of the national government to the states.<sup>1</sup> Despite this, the expenditure-revenue gap in the state sector remains. In fact since the uniform taxation scheme was introduced the states have become heavily financially dependent on the national government. Table 1.8 shows that between 1960-61 and 1974-75 grants from the Australian government to the states consistently provided close to 50% of the total receipts of all state government authorities.

Perhaps the vertical imbalance in the Australian federation would be more tolerable if the expenditure functions of the states were not numerous, expensive and important, or if the states possessed some revenue sources which could be easily expanded in line with expenditures. In reality, neither of these conditions is fulfilled, Table 1.9 reveals that spending by state authorities is still dominated by old, well-established and basic government functions such as health, education and transport. Furthermore, the demand for these services by the community is unlikely to abate in future years. Also state public services tend to be relatively labour-intensive which means

1. For a comprehensive treatment of these formulas see Payments to or for the States and Local Government Authorities 1975 - 76. op.cit pp 155-172

that in periods of rapidly increasing wages the states' budgetary position is likely to deteriorate substantially.

Do the states possess flexible revenue resources which could be swiftly and easily expanded? Table 1.10 sets out the revenue structure of state government authorities. Of the items listed in this table the states only have direct control over their own taxation and gross income from public enterprises. Of these, the relative contribution to total receipts of income from public enterprises has diminished dramatically from 20.1% in 1960-61 to 4.9% in 1974-75 and does not appear to hold the promise of any large scale growth potential.

Major sources of taxation utilized by the state sector appear in Table 1.11. This Table shows that the estimated per capita tax collections by state authorities in 1975-76 were almost eight times the corresponding figure in 1960-61, with substantial increases in all major tax categories. Despite this vast expansion in state sector tax collections the financial dependence of the states on the federal government has in fact increased. Grants from the Australian government accounted for 50.2% of total state authority receipts in 1960-61 and ~~on~~ estimated 60.9% in 1975-76.

Even if this rate of taxation increase was sustained, the absolute amount raised by these taxes would still not be sufficient to match the absolute expansion in the states' expenditure programs. Moreover, as Table 1.10 shows, the bulk of State taxation is in the form of indirect taxes. Consequently any further expansion is these taxes may not be socially desirable because of the adverse effects they would have on the distribution of income within the

community.

Apart from raising existing tax rates and looking for new tax fields the States' responses to this fiscal imbalance have included the deferring of desirable expenditure programs and seeking additional financial aid from the Federal government. However, unless there is a dramatic change in the financial position of the States there is a strong possibility of not obtaining anything close to an optimum allocation of public resources within Australia. It is becoming increasingly more likely that the nation may use up potential increases in national revenues for relatively lower priority programs of the Federal government while State governments are forced either to defer relatively more worthwhile projects for lack of funds or to increase taxes which have adverse effects on economic stability and growth, as well as on income distribution.

#### 1.5 Possible Remedies for the Fiscal Gap

The previous sections emphasized the financial impotence of the State sector in the Australian federal system. Not only are the States heavily dependent upon grants from the Australian government to carry out their expenditure responsibilities but they also bear the bulk of the burden of Australia's public debt. In addition they are in the unenviable position of having increasing demands for their expenditure functions coupled with access to limited and regressive revenue sources.

Four courses of action suggest themselves as being possible solutions to the states' financial dilemma, namely:

- (I) The Australian government could assume responsibility for some of the states' existing expenditure functions;
- (II) The Australian government could transfer some of its revenue sources to the States;
- (III) there could be an increase in the size of general purpose grants to the states; and
- (IV) there could be an increase in the number of specific purpose payments from the Australian government to the states;

These four measures are not mutually exclusive but could possibly be implemented simultaneously. In fact all of the above schemes have been implemented to a limited extent in Australia over the past few years. For example at the June 1973 Premiers' Conference the national government's offer to assume full financial responsibility for tertiary education from 1 January 1974 was accepted by the states. In addition, responsibility for certain Aboriginal affairs functions was transferred to the Australian government by all states except Queensland at various dates between 1973 and 1975. In May 1975 the Australian government finalised agreements with the South Australian<sup>1</sup> and Tasmanian

1. South Australia transferred its non-metropolitan railway system.

governments for the transfer of their railway systems to the Australian government to take effect from October 1976.

Although the states were relieved of these expenditure responsibilities, their overall financial position was not significantly altered as these transfers were accompanied by offsetting deductions from the Financial Assistance Grants which otherwise would have been payable to the states.<sup>1</sup> Thus an apparently attractive proposal may offer no real financial advantage to the states when these subsequent adjustments are taken into account. Whether this policy is to continue under the present Liberal-Country Party government is yet to be established.

As well as being relieved of some of their expenditure responsibilities the states have recently gained access to additional revenue resources. At the Premiers' Conference in June 1971 the Australian government agreed to transfer pay-roll tax to the states on the condition that the resulting losses to the Australian government budget, and gains to the states, would be offset by reductions in the Financial Assistance Grant.<sup>2</sup> However the deductions from the 1971-72 base of the Financial Assistance Grants were less than the amount of the pay-roll tax receivable in 1971-72.

1. Actual details are contained in ibid pp 11-13.

2. Further details in ibid pp 169-170.

Of much greater long term significance were the negotiations which took place between the federal and state governments on 9 April 1976, concerning the distribution of general purpose grants. One of the outcomes of this meeting was that the states will be permitted to impose a surcharge on personal income tax from 1 July 1977. The other major proposal endorsed related to the method of determining the size of the Financial Assistance Grants in 1976-77. Under the proposed scheme Financial Assistance Grants will be tied to a fixed percentage of total personal income tax revenues.<sup>1</sup> There will also be equalization provisions to take account of differences in the size and wealth of individual states.

Under the previous formula agreed to in June 1975 the states would have received as Financial Assistance Grants in 1976-77, the amount they received in 1975-76 increased by:

- (i) the percentage change in the population of the states during the year ending 31 December in the year of payment;
- (ii) increasing the amount so obtained by the percentage increase in average wages for Australia as a

1. In 1976-77 the states will receive 33.6% of personal income tax revenues as Financial Assistance Grants, this percentage represents the ratio of Financial Assistance Grants to total personal income tax in 1975-76.

whole for the year ending 31 March in the year of payment, and

(iii) increasing the amount so obtained by a betterment factor of three per cent.

One concession made by the federal government at the April 1976 meeting was that for the next three years the states will be paid no less under the new formula than they would have been under a continuation of the June 1975 formula. For the financial year 1976-77 it has been estimated that the new formula will provide the states with \$55 million more than they would have received under the old formula. This \$55 million represents 1.48% of the total amount the states will receive as Financial Assistance Grants in 1976-77.<sup>1</sup>

As this new agreement is concerned with approximately one-third of total payments to the states (there was no indication of the future trends in specific purpose payments and Loan Council borrowing programs), it is difficult to evaluate whether or not the states' financial position will be strengthened with their Financial Assistance Grants tied to the growth of personal income tax receipts. Certainly personal income tax collections have risen sharply in the last two years (34% in 1973-74 and 40% in 1974-75).<sup>2</sup>

1. AUSTRALIAN FINANCIAL REVIEW 11th June 1976 P. 10

2. This compares with a 13% increase in Financial Assistance Grants in 1973-74 and 28% in 1974-75. However these figures also reflect the offsetting deductions made for transferring responsibility for expenditure on tertiary education.



Yet there are indications that this sizeable growth rate may not continue in the future.

Firstly, the federal government has announced that it will introduce indexation of personal income tax at a rate of 13% in the 1976-77 Budget which will reduce the growth of personal income tax collections in the following years. Two other factors, the possibility of increased or prolonged unemployment and a smaller growth in wages than has occurred in the last two years would also result in slowing down the expansion of income tax revenues. Hence it is a matter of conjecture whether the states will be financially strengthened in the long-run under these alterations to the existing financial arrangements.

One issue which remains unresolved after the April 1976 meeting is the fate of the fourth possible remedy to the current fiscal imbalance, namely, specific purpose payments. While the Liberal-Country Party has made it clear that the rapid growth of these grants witnessed under the labour government is to be stemmed, the actual mechanism for the phasing out of some specific purpose payments and their subsequent incorporation into the new tax reimbursement scheme has not been finalised. Nor is a decision on this matter likely in the very near future as the Prime Minister<sup>1</sup> (Mr. Fraser) told the February Premiers' conference that "absorbing specific purpose payments is not essential to the scheme on July 1 1976. With the amount of work in front of us it would be better to look at this in detail at a little greater leisure over the next 12 months with

1. The National Times April 26 - May 1 1976, P. 26.

the object of achieving absorption of specific purpose payments at the end of the first 12 months."

This question of the role of specific purpose payments in the future development of Australia's fiscal federalism reveals a fundamental difference of opinion by the major Australian political parties. The Labour Party clearly favours an expansion in both the scope and volume of these grants. This policy was made explicit by the then Prime Minister (Mr. Whitlam) at the June 1973 Premiers' Conference when he stated:

"From now on, we will expect to be involved in the planning of the function in which we are financially involved. We believe that it would be irresponsible for the national government to content itself with simply providing funds without being involved in the process by which priorities are met and by which expenditures are planned and by which standards are met."<sup>1</sup>

Concrete evidence of the Labour Party's predilection for specific purpose payments can be seen from the fact that during the Party's term of office these grants increased from \$931 million (1972-73) to \$2966 million (1974-75).

On the other hand the Liberal-Country Party has indicated its intention of placing far less emphasis on specific purpose payments. Although actual details have not been released, the Premiers were informed at the June 1976 Premiers' Conference to expect severe cut backs in specific

1. HANSARD House of Representatives, 13 Nov. 1974, p. 3496

purpose grants.<sup>1</sup> This reveals an unmistakably different perception of the role of specific purpose payments in the future federal-state financial relations by the two principal Australian political parties.

Consequently the present study which examines the actual economic impact of specific purpose grants would appear to be of significant practical value in assessing the relative merits or demerits of these rival policies. Two questions which need to be answered are: firstly, what has been the impact of specific grants on state budgets, do they result in an imposition of federal priorities over state priorities? ; and secondly what implications does the expansion or contraction of specific grants have for future trends in the Australian federal system? In order to put these questions in perspective the following section will outline the main expenditure functions which receive specific purpose grants, their recent growth and their relative importance in inter-governmental financial relations.

#### 1.6 The Evolution of Specific Purpose Payments

Section 96 of the Australian Constitution provides that:  
 "During a period of ten years after the establishment of the Commonwealth and thereafter until the Parliament otherwise provides, the Parliament may grant financial

1. They were also told to prepare to take responsibility for a number of functions presently under the control of the Australian government. National Times op.cit. p.10

assistance to any State on such terms and conditions as the Parliament thinks fit"

This clause thus gives the Australian government two important powers: (i) that of providing grants to the States for a purpose specified by the Australian government and (ii) attaching conditions to these grants. The most common additional condition imposed requires the recipient government to provide funds from its own resources to match the grants they receive. However, High Court judgments have indicated that there are few, if any, limits to the conditions which the Australian government is capable of imposing on these grants and furthermore these grants may be made for a purpose not within the legislative powers of the Commonwealth Parliament.<sup>1</sup>

Table 1.12 gives the break-down of specific purpose payments by function, since 1961-62. During this period the bulk of these payments has been directed towards the areas of transport, assistance for state debt, education, housing and health.<sup>2</sup>

The Australian government first gave financial assistance to the states specifying the area in which the money

1. J.E. Richardson Patterns of Australian Federalism  
Centre for Research on Federal Financial Relations,  
A.N.U. Canberra, 1973 pp 60-61.

2. A detailed history of the evolution of specific purpose payments is given in Payments to or for the States and Local Authorities 1975-76 op.cit pp. 189-211.

was to be spent in 1923 for expenditure on roads. Until 1973-74 grants to this function provided over one-third of all specific purpose payments, although their relative importance has declined significantly since then. The initial Main Roads Development Act 1923 provided for a payment of \$1 million subject to a \$1 for \$1 contribution by the states. Five per cent of this grant went to Tasmania while the remainder was divided on the basis of a 2/5 area, 3/5 population formula which applied until 1959-60. This was then amended to include motor vehicle registrations in the distribution formula as an equal factor with area and population. Other conditions of the 1954, 1959 and 1964 legislation included the requirement that not less than 40% of funds provided in each year be spent on roads in rural areas other than highways, main roads and trunk roads.

In formulating the Commonwealth Aid Roads Act 1969 the Australian government relied heavily upon the advice of the Bureau of Roads which had completed a survey of the existing road system and an appraisal of future road requirements. An explicit aim of this legislation was to bring the distribution of financial assistance from the national government more closely into alignment with the relative needs of the various states for road expenditure.<sup>1</sup> A further feature of this Act was that direct assistance was given to the development of particular classes of roads, for example, urban arterial and sub-arterial roads, and rural arterial and non-arterial roads. On the basis of this

1. ibid p. 203.

advice from the Bureau of Roads grants totalling \$1252.05 million were paid to the States over the five year period 1969-70 to 1973-74, representing an increase of about 67 per cent on the amount provided in the previous five years.

Another long established specific purpose payment is the contribution of the Australian government towards the interest payments on State Debts under the Financial Agreement of 1927. Each year the total contribution is \$15,170,000 divided between the States as follows:

	\$ '000
N.S.W.	5835
VIC.	4254
QLD.	2192
S.A.	1408
W.A.	947
TAS.	534

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15,170

These payments are to continue until 1985. Sinking fund contributions on State debt are also made by the Australian government under the same Financial Agreement, varying according to the date and nature of the borrowings.

More recently the Australian government initiated moves at the June 1970 Premiers' Conference which also aimed at alleviating the size of the debt burden borne by the States. Grants were to be made to meet the interest and sinking fund contributions on \$200million of State debt in 1970-71 and on an additional \$200 million each year from 1971-72 to 1974-75. Thus over this period the Australian

government would assume responsibility for debt charges on \$1000 million of existing State debt. The amount payable to the States under this scheme amounted to \$57 million in 1974-75.

The Australian government also agreed to provide interest-free capital grants to the States to replace part of the moneys previously obtained by the States from borrowings. These grants were designed to help the States finance capital works from which debt charges are not usually recovered, for example schools. However, the grants were not subject to conditions as to the purposes for which they might be spent. Debt charges saving by the States from the operation of this scheme is estimated at \$59.7 million in 1974-75. Although both these measures provide significant short term assistance to the States it is doubtful whether they provide the solution to their long-run debt burden.

Education is the third major category receiving specific purpose payments. Initially, grants for education began in 1951-52 and were confined to recurrent expenditures of universities. Since then the scope of these grants has widened considerably to include:

- (a) capital expenditures of universities (from 1957-58);
- (b) technical training and science laboratories  
(from 1964-65);
- (c) colleges of advanced education (from 1965-66);
- (d) teachers' colleges (from 1967-68);
- (e) pre-school teachers' colleges (from 1968-69);
- (f) secondary school libraries (from 1968-69);
- (g) recurrent grants for non-government schools  
(from 1969-70)

- (h) educational research (from 1970-71);
- (i) capital grants for government schools (from 1971-72);
- (j) recurrent grants for government schools (from 1973-74); and
- (k) capital grants for non-government schools (from 1973-74);

The federal government has subsequently caused a major change in the provision of finance for education assuming full financial responsibility for tertiary education from 1 January 1974. Previously this responsibility had been shared with the States. Consequently some of the specific purpose payments listed above, notably those for universities, ceased to exist from that date.

Health has been another area where specific purpose payments have expanded enormously. The Australian government first began providing assistance to the states for health services in 1949-50 with grants for the treatment and control of tuberculosis. Until 1972 total grants to health were of relatively minor importance. In 1973-74 four new programs of assistance to the states were initiated: for the development of public hospitals, for community health services, for a school dental scheme and for health planning agencies. As a result payments to the states for health rose from \$20.9m in 1972-73 to \$107.7m in 1974-75 to an estimated \$932.5m in 1975-76.

The major component in the 1975-76 grant is attributable to Medibank whereby the Australian government entered into arrangements with the states relating to the provision of



hospital services by the states. Under these agreements the states are to provide free standard ward public hospital treatment without means test and free public hospital out-patient services. There are also other agreements covering charges in wards other than standard wards.<sup>1</sup> It was estimated that such payments would total around \$700m in 1975-76 although this was subject to a considerable degree of uncertainty. In fact the Medibank agreement has still to resolve two important questions: the method of payment of doctors in standard hospital wards and the costs to be shared equally between the federal and state governments. Until these two issues are settled no accurate figure can be placed on the eventual size of specific purpose payments under this scheme.

Although Table 1.12 shows that the specific purpose payments to housing make up a significant portion of total specific grants, it was not until 1973-74 that they were actually re-classified and placed in the specific purpose category. Between 1945-46 and 1970-71 advances from the Australian government for housing were part of the Loan Council program. Each state nominated from its total Loan Council program the amount it would receive as advances (at concessional interest rates) under successive Commonwealth-State Housing Agreements. The Housing Agreement was not renewed when it expired in 1970-71 and this practice was <sup>NOT</sup> continued. While this meant the withdrawal of the former

1. For further details ibid pp 49-50.

interest rate concessions, specific revenue grants were introduced in lieu of that concession in 1971-72 and 1972-73. At the June 1973 Premiers' Conference/Loan Council meeting arrangements for housing finance were once again altered. Beginning in 1973-74 the Australian government decided to provide advances for housing outside the Loan Council structure and consequently these payments were classified as specific purpose. As a result state government Loan Council programs since 1973-74 have been correspondingly lower.

While the five expenditure functions, transport, education, debt assistance, housing and health have, and still do, dominate the funds received by the states in the form of specific grants, their combined proportion of total specific purpose payments has diminished from 97% in 1961-62 to 80% in 1974-75. Thus the scope of activities encompassed by specific purpose payments has broadened considerably during this period to the point where the Australian government now makes over 100 grants to the states for specific purposes.

Such diverse schemes as unemployment relief, Aboriginal advancement, finance for growth centres, assistance for land acquisition by Land Commissions, the National Estate, and legal aid centres are now the recipients of specific grants. There also exist other specific grants which tend to be on an ad hoc basis such as those for natural disasters, for instance, flood and bush fire relief.

### 1.7 The significance and growth of specific purpose payments.

Apart from the rapid expansion in the scope and number of specific purpose payments since 1960-61, their growth in absolute size has been one of the most striking developments in inter-governmental financial relations in Australia. Table 1.13 reveals that total specific grants in 1974-75 were more than eleven times the amount granted in 1960-61. In addition, specific grants in 1974-75 comprised 33% of total state authority receipts (compared to 17% in 1960-61) and 16% of total outlays of Australian government authority (7% in 1960-61).

The significance of specific grants to state government outlays is illustrated in Table 1.14. Specific purpose funds for current purposes were nearly 8% of current expenditure on goods and services by state authorities in 1960-61. By 1974-75 this proportion has risen to 23%. Specific purpose capital payments made up 26% of capital outlay by state authorities on goods and services in 1960-61, increasing to contribute 54% in 1974-75. These figures clearly demonstrate the increasing financial reliance of the states on these particular types of grants.

Not only has there been a considerable increase in the absolute amount granted in the form of specific purpose payments but there has also been a switch in emphasis from general purpose to specific purpose grants. In 1960-61 general purpose funds accounted for 79% of total payments to the states, by 1974-75 they represented 54% of total payments. Simultaneously, specific purpose payments

increased their proportion of total payments from 20% to 45% (Table 1.15).

This movement towards specific grants has accelerated since 1972-73. Table 1.16 shows that total specific purpose grants increased by 31% in 1972-73, 68% in 1973-74 and 89% in 1974-75. This compares with an average 14% increase between 1960-61 and 1969-70. The corresponding increases in general purpose funds was 11% in 1972-73, 13% in 1973-74 and 31% in 1974-75.

This chapter has clearly demonstrated the important and expanding role in inter-governmental financial relations in Australia played by specific purpose payments over the last fifteen years. It has also been pointed out that there is a fundamental difference of opinion between the major Australian political parties as to their future role in our federal system. One question which must be answered is whether these grants are merely political instruments used to centralise decision-making in the hands of the national government or whether their existence has any justification on economic grounds. The following chapter examines this question, giving the economic arguments for the existence of specific purpose grants in a federal system.

TABLE 1.1

All Public Authorities - Taxation by Level  
of Government: Percentage of Total

	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75
Federal Authorities	82.6	81.5	81.7	82.6	83.0	82.3	82.0	81.9	82.6	83.5	81.0	78.8	79.8	80.2
State Authorities	11.4	12.3	12.5	11.9	11.6	12.2	12.5	12.8	12.4	11.7	14.4	16.5	16.1	15.8
Local Authorities	6.0	6.2	5.9	5.5	5.4	5.6	5.5	5.3	4.9	4.8	4.6	4.6	4.1	4.0

Source: Public Authority Finance: Taxation

TABLE 1.2Summary of the Financing of StateGovernment Loan Council Programs1951-52 to 1974-75

Year	Total Programs	Percentage met from Public Loan Raising	Percentage met from Australian Government Consolidated Revenue Fund
	\$'000	per cent	per cent
1951-52	454,120	45	55
1952-53	380,364	48	52
1953-54	400,000	75	25
1954-55	360,000	91	9
1955-56	380,000	67	33
1956-57	384,000	54	46
1957-58	400,000	63	37
1958-59	420,000	98	2
1959-60	440,000	86	14
1960-61	460,000	62	38
1961-62	495,000	97	3
1962-63	510,000	100	0
1963-64	544,000	100	0
1964-65	580,000	77	23
1965-66	605,000	72	28
1966-67	645,000	86	14
1967-68	677,000	72	28
1968-69	710,000	84	16
1969-70	758,000	53	47
1970-71	823,000	62	38
1971-72	892,000	96	4
1972-73	982,000	87	13
1973-74	867,000	100	0
1974-75	1,087,419	73	27

Source: Payments to or for the States and Local Government Authorities  
1975-76 Table 126.

TABLE 1.3Securities on Issue Per Head of Populationat June 1950 to 1974

At 30 June	Total Securities on Issue per Head of Population	
	Australian Govt. \$	States (a) \$
1950	456.18	290.78
1951	448.49	312.45
1952	444.35	348.20
1953	441.60	374.85
1954	441.12	399.63
1955	434.52	420.42
1956	427.62	439.73
1957	410.42	458.85
1958	372.89	479.16
1959	349.20	499.43
1960	324.45	519.88
1961	304.76	539.06
1962	290.38	561.92
1963	284.98	583.05
1964	284.09	606.31
1965	275.21	630.53
1966	271.09	654.73
1967	277.33	681.20
1968	299.26	701.60
1969	299.45	729.41
1970	309.51	754.83
1971	298.61	775.34
1972	293.84	804.76
1973	301.64	837.78
1974	306.93	860.70

(a) Based on aggregate population of the six States at  
30 June each year.

Source: Hansard, House of Representatives, 13 November, 1974.

TABLE 1.4  
Changes in Net Debt of Commonwealth  
and States, Selected Years, 1945-1970

30 June	Commonwealth			States		
	Net Debt(a)	Change from previous date		Net Debt(b)	Change from previous date	
	\$m	\$m	%	\$m	\$m	%
1945	3,154			2,004		
1950	3,183	+29	+0.9	2,484	+480	+24.0
1955	2,427	-756	-23.8	4,231	+1,747	+70.3
1960	1,391	-1,036	-42.7	6,008	+2,777	+65.6
1965	370	-1,021	-73.4	8,349	+2,341	+39.0
1970	-665	-1,035	-279.7	11,335	+2,986	+35.8

Source: Boehm and Wade op.cit. p.329.



TABLE 1.5

## Australian and State Government Authorities:

Trends in Expenditure on Goods and Services andTotal Outlay

	1960-61		1970-71		1971-72		1972-73		1973-74		1974-75		1975-76	
	\$m	\$m	\$m	%	\$m	%	\$m	%	\$m	%	\$m	%	\$m	%
Aver. %														
Incr. p.a.														
(1) net expenditure on goods & services														
(a) current	643	1,815	12.3		1,945	9.0	2,147	10.4	2,337	8.8	2,684	14.8	3,470	29.3
(b) capital	253	660	11.2		746	14.7	813	9.0	763	-6.2	1,039	36.2	1,660	59.8
(c) total	896	2,475	12.0		2,691	10.5	2,960	10.0	3,099	4.7	3,723	20.1	5,130	37.8
(2) total outlay	3,321	7,540	9.5		8,308	9.7	9,260	11.5	10,382	12.1	12,499	20.4	17,891	43.1

## B. STATE

## GOVERNMENT

## (1) Net expenditure on goods &amp; services

(a) current	693	1,711	10.6		2,034	20.3	2,395	17.7	2,815	17.5	3,641	29.3	5,199	42.8	6,706	29.0
(b) capital	748	1,624	9.0		1,737	6.3	1,920	10.5	2,047	6.6	2,255	9.2	3,180	42.3	3,874	21.8
(c) total	1,441	3,335	9.8		3,771	13.4	4,315	14.4	4,862	12.7	5,876	20.9	8,379	42.6	10,580	26.3
(2) total outlay	1,909	4,278	9.4		4,886	12.9	5,593	14.5	6,260	11.9	7,308	16.7	10,320	41.2	12,659	22.7
(3) Gross Domestic Product	14,553	29,894	8.3		32,877	10.0	36,560	11.2	41,686	14.0	50,433	21.0	n.a.	n.a.	n.a.	n.a.

Source: Public Authority Finance: Authorities of the Australian Govt. Public Authority Finance: Public Authority Estimates

TABLE 1.6

## Authorities of the Australian and

## State Governments: Increases in Receipts

Receipts	1960-61		1969-70		Aver. %	1970-71		1971-72		1972-73		1973-74		1974-75		1975-76	
	\$m	\$m	\$m	p.a.		\$m	%	\$m	%	\$m	%	\$m	%	\$m	%	\$m	%
<b>A. AUSTRALIAN GOVERNMENT</b>																	
1. Income Tax																	
(a) individuals	1,037	2,855	11.9			3,178	11.2	3,769	18.6	4,090	8.5	5,490	34.2	7,714	40.5	10,340	34.0
(b) companies	575	1,188	8.4			1,428	20.2	1,519	6.3	1,616	6.3	2,015	24.7	2,432	20.7	2,237	-8.0
(c) total	1,612	4,043	10.8			4,606	13.9	5,288	14.8	5,706	7.9	7,505	31.5	10,146	35.2	12,577	24.0
2. Other Taxation	1,236	2,374	7.5			2,599	10.4	2,630	1.2	2,727	3.7	3,350	22.8	3,923	17.1	5,018	27.9
3. Total Taxation	2,848	6,417	9.5			7,205	12.9	7,918	9.9	8,433	6.5	10,850	28.7	14,069	29.7	17,595	25.1
4. Other Receipts	458	963	9.0			1,050	9.0	1,205	14.8	1,283	6.5	1,300	1.3	1,286	-1.0	1,666	29.5
5. Total	3,306	7,448	9.5			8,255	12.4	9,122	10.5	9,716	6.5	12,154	25.1	15,356	26.3	19,262	25.4
<b>B. STATE GOVERNMENT</b>																	
1. Payroll Tax	-	-	-			-	-	305	-	461	51.1	670	45.3	1,032	54.0	1,294	25.4
2. Other Taxation	369	961	11.2			1,009	5.0	1,108	9.8	1,334	20.4	1,563	17.2	1,770	13.2	2,156	21.8
3. Total Taxation	369	961	11.2			1,009	5.0	1,413	40.0	1,795	27.0	2,233	24.4	2,802	25.5	3,450	23.1
4. Federal Grants	714	1,631	9.6			2,217	35.9	2,382	7.4	2,764	16.0	3,430	24.1	5,129	49.5	6,946	35.4
5. Other Receipts	338	788	9.9			814	1.7	834	2.5	851	2.0	836	-2.5	893	6.8	1,007	12.8
6. Total	1,421	3,380	10.2			4,045	19.1	4,639	14.7	5,409	16.6	6,499	20.2	8,824	35.8	11,403	29.2

Source: As for Table 1.5

TABLE 1.7

The Fiscal Imbalance

	Outlays of all Public Authorities (1) \$m	Outlays of all State Authorities (2) \$m	Column (2) as % of (1) %	Receipts of all Public Authorities (4) \$m	Receipts of all State Authorities (5) \$m	Column (5) as % of (4)
1960-61	4,171	1,909	45.8	3,984	709	17.8
1961-62	4,542	2,095	46.1	4,026	745	18.5
1962-63	4,752	2,216	46.6	4,220	836	19.8
1963-64	5,436	2,483	45.7	4,552	977	21.5
1964-65	6,051	2,754	45.5	5,235	1,080	20.6
1965-66	6,719	3,044	45.3	5,729	1,173	20.5
1966-67	7,449	3,255	43.7	6,124	1,281	20.9
1967-68	8,227	3,528	42.9	6,754	1,403	20.8
1968-69	8,744	3,875	44.3	7,562	1,601	21.2
1969-70	9,733	4,300	44.2	8,636	1,791	20.7
1970-71	10,575	4,886	46.2	9,565	1,820	19.0
1971-72	12,011	5,593	46.6	10,894	2,245	20.6
1972-73	13,370	6,307	47.2	11,856	2,627	22.2
1973-74	16,147	7,308	45.3	14,795	3,069	20.7
1974-75	22,345	10,320	46.2	19,363	3,651	18.9
(Est) 1975-76	27,147	12,659	46.6	24,090	4,457	18.5

Source: As for Table 1.5

TABLE 1.8

The Significance of Payments to the States

	Australian Authorities Total Outlay (1) \$m	State Authorities Total Receipts (2) \$m	Payments to the States (3) \$m	Column (3) as % of (1)	Column (3) as % of (2)
1960-61	3,321	1,424	715	21.5	50.2
1961-62	3,639	1,545	800	22.0	51.8
1962-63	3,798	1,688	852	22.4	50.5
1963-64	4,204	1,883	906	21.6	48.1
1964-65	4,656	2,049	968	20.8	47.2
1965-66	5,135	2,264	1,089	21.2	48.1
1966-67	5,716	2,477	1,194	20.9	48.2
1967-68	6,324	2,788	1,325	21.0	48.6
1968-69	6,734	3,035	1,434	21.3	47.2
1969-70	7,540	3,426	1,635	21.7	47.7
1970-71	8,308	4,045	2,225	26.8	55.0
1971-72	9,260	4,639	2,394	25.9	51.6
1972-73	10,382	5,409	2,782	26.8	51.4
1973-74	12,499	6,499	3,430	27.4	52.8
1974-75	17,891	8,824	5,129	28.7	58.1
(Est) 1975-76	22,224	11,403	6,946	31.3	60.9

Source: As for Table 1.5  
 Plus Payments to or for the States and Local Government Authorities 1975-76.

TABLE 1.9

State Authorities: Final Consumption Expenditure and Expenditure

on New Fixed Assets: Classified by Purpose (%)

Purpose	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74
Law, Order and Public Safety	6.9	6.8	6.7	6.4	6.6	6.6	6.8	6.8	7.0	7.2	7.4	7.3
General Administration	4.5	4.5	4.8	5.1	4.4	4.7	4.4	4.5	4.9	4.5	4.9	4.4
Education	27.4	27.5	28.2	28.2	28.7	29.3	29.9	31.3	31.6	32.8	34.1	35.9
Health	13.8	13.1	12.9	12.7	12.6	12.5	12.8	13.0	13.8	13.9	14.0	15.5
Social Security and Welfare	1.6	1.5	1.5	1.5	1.5	1.6	1.5	1.5	1.2	1.4	1.4	1.3
Housing and Community Services	5.2	6.0	5.7	5.7	5.8	5.6	5.2	5.5	6.4	6.6	6.7	6.7
Recreation and Cultural Services	1.0	1.0	1.0	1.0	0.9	1.0	0.9	1.0	1.1	1.2	1.3	1.1
Agriculture, Fishing, Forestry	6.3	6.2	6.3	5.6	5.7	5.6	5.6	5.5	5.4	5.3	5.1	4.8
Electricity, Gas and Water Supply	14.6	13.5	13.5	14.0	14.4	14.1	13.4	12.6	8.2	7.3	6.5	5.7
Transport and Communication	16.6	17.7	17.3	17.3	16.9	16.5	17.2	16.0	14.7	14.6	13.2	11.8
All Other	2.1	2.2	2.1	2.5	2.5	2.5	2.3	2.3	5.7	5.2	5.4	5.5

Source: Public Authority Finance: State and Local Authorities 1973-74.

TABLE 1.10  
Receipts of All State Government Authorities  
as a Percentage of Total Receipts

Receipts	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
																Est.
Taxation																
- indirect	18.1	17.7	17.9	18.2	18.8	18.5	19.0	19.8	20.4	20.8	18.0	23.9	26.5	27.8	26.8	n.a.
- direct	7.8	7.8	8.0	8.2	8.1	7.8	7.9	8.0	8.2	7.6	6.8	6.4	6.4	6.5	5.0	n.a.
- total	25.9	25.5	25.9	26.4	26.9	26.3	26.9	27.8	28.6	28.4	24.8	30.3	32.9	34.3	31.8	30.3
Interest, rent, dividends	3.7	3.5	3.5	5.6	6.4	6.7	6.1	5.6	5.8	6.1	6.6	5.9	5.8	6.2	4.5	3.8
Gross income from public enterprises	20.1	19.2	21.1	20.0	19.5	18.4	18.5	17.8	17.7	17.5	14.5	13.8	10.9	8.6	5.4	4.9
Grants from the Australian Govt.	50.2	51.8	50.5	48.1	47.5	48.4	48.5	48.8	47.5	48.3	55.0	51.6	51.4	52.8	58.1	60.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Public Authority Finance: Public Authority Estimates

TABLE 1.11

State Authorities: Net Taxation per Head of Population,  
by Nature of Tax (\$)

Tax	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	Est.
Probate and Succession Duties	6.57	7.13	7.46	8.31	8.20	8.32	9.20	10.09	11.07	11.07	11.80	11.21	12.55	13.93	14.71	15.38	
Land Taxes	3.86	4.30	4.60	5.04	5.63	6.12	6.30	6.47	6.98	7.09	8.08	8.81	8.26	9.08	12.51	13.73	
Liquor Taxes	1.76	1.87	2.07	2.18	2.35	2.41	2.70	2.92	3.16	3.30	3.51	3.71	4.05	4.38	5.69	6.52	
Gambling Taxes	2.61	2.69	3.22	3.76	4.29	4.80	5.62	6.26	8.81	9.66	10.36	11.58	12.41	12.74	14.93	17.78	
Taxes on the Ownership of Motor Vehicles	9.17	9.43	10.50	12.11	13.32	14.72	15.75	16.95	18.18	19.57	20.40	23.34	29.16	31.24	34.79	39.77	
Stamp Duties n.e.1.	7.36	6.96	7.54	8.52	9.37	9.69	10.86	13.48	17.01	20.71	18.95	19.33	27.36	33.17	29.39	36.92	
Payroll Tax	-	-	-	-	-	-	-	-	-	-	-	23.72	35.16	51.56	78.22	97.10	
Total State Authority Taxation	32.44	33.49	36.45	40.93	44.24	47.17	52.12	58.11	70.80	77.41	79.63	109.67	134.41	164.84	206.94	252.43	

Source: As for Table 1.10.

TABLE 1.12

## Specific Purpose Payments by Function (%)

Category	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	Est.
Education	9.5	9.9	10.1	15.6	13.9	16.0	17.6	18.8	23.0	24.0	28.9	27.8	39.6	44.7	36.5	
Health	3.8	4.0	3.9	3.6	4.2	3.7	3.1	3.4	3.0	2.4	2.5	2.2	3.3	3.6	23.0	
Welfare	-	-	-	-	-	-	-	-	-	1.3	6.0	13.6	1.9	2.4	2.0	
Housing	34.0	30.8	29.9	26.3	25.7	25.0	21.8	22.9	21.5	20.1	1.3	2.6	15.3	13.8	9.5	
Transport	39.9	42.7	43.5	40.2	38.7	38.1	35.7	37.3	35.0	32.6	37.2	31.6	20.9	14.3	12.5	
Industry Assistance	1.7	1.8	1.9	2.6	3.1	3.2	7.4	4.4	4.9	7.3	11.7	10.5	4.8	3.0	3.2	
Assistance for State Debt	9.7	9.4	9.2	8.1	7.2	7.1	6.3	6.6	6.1	7.0	9.1	8.3	5.8	3.5	1.1	
Natural Disasters	-	-	-	-	4.8	4.4	5.0	4.0	2.2	2.7	1.0	-	1.8	1.8	-	
All Other	1.4	1.4	1.5	3.6	2.4	2.5	3.1	2.6	4.3	2.6	2.3	3.4	6.6	13.5	12.2	

Source: Payments To or For the States and Local Government Authorities 1975-76.



TABLE 1.13Specific Purpose Payments as a% of State Authority Receipts

	Specific Purpose Payments	State Authority Receipts	Australian Government Authority Outlay	Column (1) as % of (2)	Column (1) as % of (3)
	(1) \$m	(2) \$m	(3) \$m	%	%
1960-61	248.0	1,424	3,321	17.4	7.5
1961-62	297.8	1,545	3,639	19.3	8.2
1962-63	316.1	1,688	3,798	18.7	8.3
1963-64	336.0	1,883	4,204	17.8	8.0
1964-65	391.0	2,049	4,656	19.1	8.4
1965-66	455.7	2,264	5,135	20.1	8.9
1966-67	481.0	2,477	5,716	19.4	8.4
1967-68	562.5	2,728	6,324	20.6	8.9
1968-69	559.9	3,035	6,734	18.4	8.3
1969-70	631.0	3,426	7,540	18.4	8.4
1970-71	728.3	4,045	8,308	18.0	8.8
1971-72	708.0	4,639	9,260	15.2	7.6
1972-73	931.5	5,409	10,382	17.2	9.0
1973-74	1,570.1	6,499	12,499	24.2	12.6
1974-75	2,966.5	8,824	17,891	33.6	16.6
(Est) 1975-76	4,051.6	11,403	22,224	35.5	18.2

Source: Payments To or For the States and  
Local Government Authorities 1975-76.

Public Authority Finance: Public Authority Estimates

TABLE 1.14Specific Purpose Payments and State Outlays

	Specific Grants (Current) (1) \$m	State Outlay (Current) (2) \$m	(1) % of (2) %	Specific Grants (Capital) (4) \$m	State Outlay (Capital) (5) \$m	(4) as % of (5)
1960-61	53.8	693	7.8	194.1	748	25.9
1961-62	57.5	758	7.6	240.3	827	29.1
1962-63	61.3	817	7.5	254.7	859	29.7
1963-64	66.0	883	7.5	269.9	969	27.9
1964-65	74.1	989	7.5	317.4	1,090	29.1
1965-66	92.4	1,064	8.7	363.3	1,250	29.1
1966-67	100.9	1,176	8.6	380.1	1,298	29.3
1967-68	113.6	1,303	8.8	448.9	1,352	33.2
1968-69	120.5	1,466	8.2	439.4	1,502	29.9
1969-70	144.9	1,693	8.6	486.0	1,605	30.3
1970-71	191.0	2,034	9.4	537.3	1,707	31.5
1971-72	249.1	2,397	10.4	458.9	1,888	24.3
1972-73	390.0	2,838	13.7	541.5	2,017	26.8
1973-74	609.9	3,620	16.9	960.2	2,287	42.0
1974-75	1,220.9	5,199	23.5	1,745.6	3,180	54.9
(Est) 1975-76	2,156.3	6,706	32.2	1,895.3	3,874	48.9

Source: As for Table 1.13.

TABLE 1.15  
Payments To or For the States  
Main Categories as % of Total

	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76
General Purpose Funds	79.2	77.4	77.3	77.3	75.2	73.9	74.5	72.9	74.5	74.2	74.8	77.4	74.2	64.0	54.8	52.7
Specific Purpose Payments																
(a) Current	4.5	4.3	4.4	4.5	4.7	5.3	5.4	5.5	5.5	5.9	6.6	7.9	10.8	14.0	18.6	25.2
(b) Capital	16.3	18.2	18.3	18.3	20.1	20.8	20.2	21.6	20.0	19.9	18.6	14.6	15.0	22.0	26.6	22.1
(c) Total	20.8	22.6	22.7	22.8	24.8	26.1	25.6	27.1	25.5	25.8	25.2	22.6	25.8	36.0	45.2	47.3

Source: Payments To or For the States  
and Local Government Authorities 1975-76

TABLE 1.16

## Payments To or For the States

Trends 1960-61 to 1975-76

	1960-61		1969-70		Aver.		1970-71		1971-72		1972-73		1973-74		1974-75		Est.	
	\$m	%	\$m	%	\$m	%	\$m	%	\$m	%	\$m	%	\$m	%	\$m	%	\$m	%
1. General Revenue Assistance	557.2		1,189.2	8.8			1,480.2	24.4	1,537.2	3.9	1,700.9	10.6	1,923.4	13.1	2,513.5	30.7	3,222.4	28.2
2. Specific Purpose Payments																		
(i) Revenue	52.8		144.8	11.9			191.1	32.0	249.1	30.4	390.0	56.6	609.9	56.4	1,220.9	100.0	2,156.3	76.6
(ii) Capital	116.9		486.0	15.4			537.2	10.5	458.9	-14.6	541.5	18.0	960.2	77.3	1,745.6	81.8	1,895.3	8.6
(iii) Total	169.7		630.9	13.7			728.3	15.4	707.9	-2.8	931.5	31.6	1,570.1	68.6	2,966.5	88.9	4,051.6	36.6
3. Total Payments	726.9		1,820.0	10.2			2,208.5	21.3	2,245.2	1.7	2,632.4	17.2	3,493.5	32.7	5,480.0	56.9	7,274	32.7

Source: As for Table 1.15.

## Chapter 2

### The Economic Rationale for Specific Purpose Payments

#### 2.1 Introduction

The previous chapter gave some indication of the relative importance and recent rapid growth of specific purpose payments without attempting to justify their existence in economic terms. This will be the principal task of this chapter. Basically the economic rationale of specific grants is related to the concept of "spillover effects" i.e. some governmental programs produce benefits (and costs) which accrue to residents of other states in the federation, often at little or no cost. What problems these spillovers give rise to and the nature of their possible solution by specific purpose grants will be the central theme of this chapter.

#### 2.2 Benefit Spillovers

The previous chapter examined one aspect of the non-coincidence of political units and economic units in a federation, namely the divergence between expenditure responsibilities and revenue resources assigned to different levels of government. A further problem confronting a federation's aim of achieving an efficient allocation of resources is that state boundaries are historical in origin and do not coincide with a regional structure designed to yield an optimum resource allocation.

Basically the reason for this is that increased urbanization and geographic mobility, along with improvements in

transportation and communication have reduced the independence and isolation of individual states. Consequently the provision of a public amenity for members of a particular state may alter (favourably or adversely) the welfare of individuals not belonging to that state. Such phenomena are usually referred to as "benefit spillovers" or "external benefits".

The existence of benefit spillovers between two or more states in a federation poses two major problems. The first complication arises because the authority of state governments to tax is generally limited to persons within its boundaries. Yet there are persons living outside their boundaries who reap some benefit from the public services provided by that state. Yet equity considerations suggest that the cost of supplying such public goods should be borne by those who receive the benefits of those services. Just how this "free-rider" problem is to be resolved is the first problem caused by benefit spillovers in a federation.

The second problem associated with spillover effects appears to be more complex and important and as such will be the central concern of this chapter. It revolves around the question as to whether or not the existence of spillovers hinders the achievement of an optimum allocation of resources within the public sector of a federation. The immediately following sections will analyse two possible situations. Firstly, where State governments act in isolation of one another, that is, where the provision of a particular public service within one State does not

depend upon the provision of the same good in a neighbouring State. Secondly, the reverse case will be examined where the level of expenditure on a public good in one State is a function of the level of expenditure on the same good in a neighbouring State.

### 2.3 Resource Allocation when States Act in Isolation.

From the viewpoint of the individual State the efficient level of output of a particular public service is where the marginal State benefit equals the marginal State cost. However if some benefits spillover into other States the marginal State benefit would be less than the marginal national benefit, i.e. the benefit to the nation as a whole. Thus if each State is unconcerned about the benefits of its actions which fall outside its boundaries it will stop short of the socially optimum level of production. The extent of the undersupply of a particular State government service will depend upon the magnitude of the spillover benefits produced by the State program. The larger the benefit spillovers arising from the program the greater would be the divergence between State and national benefits.

Moreover, Burton Weisbrod<sup>1</sup> considers that this would still be the case even if the State received equally valued "spillin" benefits from another State, since "the spillins (or imports) of benefits to a community from education

1. B. Weisbrod, External Benefits of Public Education: An Economic Analysis. Princeton. N.J., Princeton University Industrial Relations Centre. 1964. pp. 6-7.

provided elsewhere may be largely independent of its own education expenditures. To the extent that they are, the spillins constitute fixed benefits, as such they will have no influence on decisions at the margin..... We conclude that the tendency of benefit spillouts to cause under-expenditure in education does not have its counterpart in a tendency of benefit spillins to cause over-expenditure. Total spending on education may thus tend to fall short or optimum."

In other words each State adjusts its expenditure decisions according to the direct benefits it receives, not the total benefits that accrue to society. As a result the allocation of resources to these public amenities is non-optimal from society's viewpoint. The case cited by Weisbrod where spillins are regarded as fixed benefits would appear to apply to services such as primary and secondary education where each state will provide a minimum level of expenditure regardless of the expenditure of other States. Yet there are public goods where the success of one state's expenditure programs depend on the response of neighbouring States.<sup>1</sup>

A crucial distinction which needs to be made is whether the public good itself spills over or whether the spillover depends upon the individual who consumes or possesses the good migrating. An example of the latter case would be education where most spillover benefits are associated with migration. In contrast the complementarity of some public services may result in the benefits of one State's program

1. Examples of such programs would be control of agricultural pests e.g. fruit fly and community immunization



directly reinforcing the benefits derived from a similar program in another State. For instance, the effectiveness of a vaccination campaign increases as the number of people inoculated in the community increases. Thus the success of such a program in one State would be enhanced by a similar program undertaken in a neighbouring State. In this case the spillover is not dependent on the migration of the immunized person but rather it is the good itself that "spills over".

The effect of these two different classes of public goods can be seen in the following example. Suppose State A produces an amount of public good  $X_p$ . If the good itself spills over then a neighbouring State B receives an immediate and direct benefit at no cost. In this situation State B's own provision of the good is likely to be influenced by the actions of State A. On the other hand if the spillover of  $X_p$  to State B depends on the migration of the person possessing the good, as is the case with education, then, unless State B can influence migration, it will determine its level of expenditure on  $X_p$  independently of State A.

#### 2.4 Resource Allocation with Two Inter-acting States.

The previous section analyzed the circumstances in which a State's expenditure decisions were likely to be determined independently of, or influenced by, the decisions of other States. This section deals more fully with the case where the output of a public good by one State is a function of the output of the same public good in another State.

The following example<sup>1</sup> deals with 2-States and 2-goods where both States produce only two goods, one of which is purely public good ( $X_1$ ) both within and between the two regions while the other good ( $X_2$ ) is a purely private good both within and between the two regions. Both the private and public goods are assumed to be normal goods within both States. Production functions employed in the production of both goods are linearly homogeneous. It is further assumed that there is no trade between the two States and that factor endowments in the two regions are unequal.

In figures 2.1(a) and 2.1(b) the horizontal axis measures the amount of the pure public good produced within each State while the vertical axis measures the amount of the purely private good. The curved line AB in figure 2.1(a) represents State I's production possibility and (because no trade is allowed) also its consumption possibility frontier;  $C_{11}$  and  $C_{12}$  depict community indifference curves for State I. Similarly in figure 2.1(b), F.G. represents State II's production and consumption frontiers while  $C_{21}$  and  $C_{22}$  depict two of its community indifference curves.

If there were no public good spillovers, equilibrium in both States would occur at the point of tangency between the consumption = production possibility curve and a community indifference curve such as point h in State I and point

1. This example appears in M.V. Pauly "Optimality, Public Goods, and Local Governments : A General Theoretical Analysis" Journal of Political Economy May 1970 pp 572-85.

Figure 2.1(a)

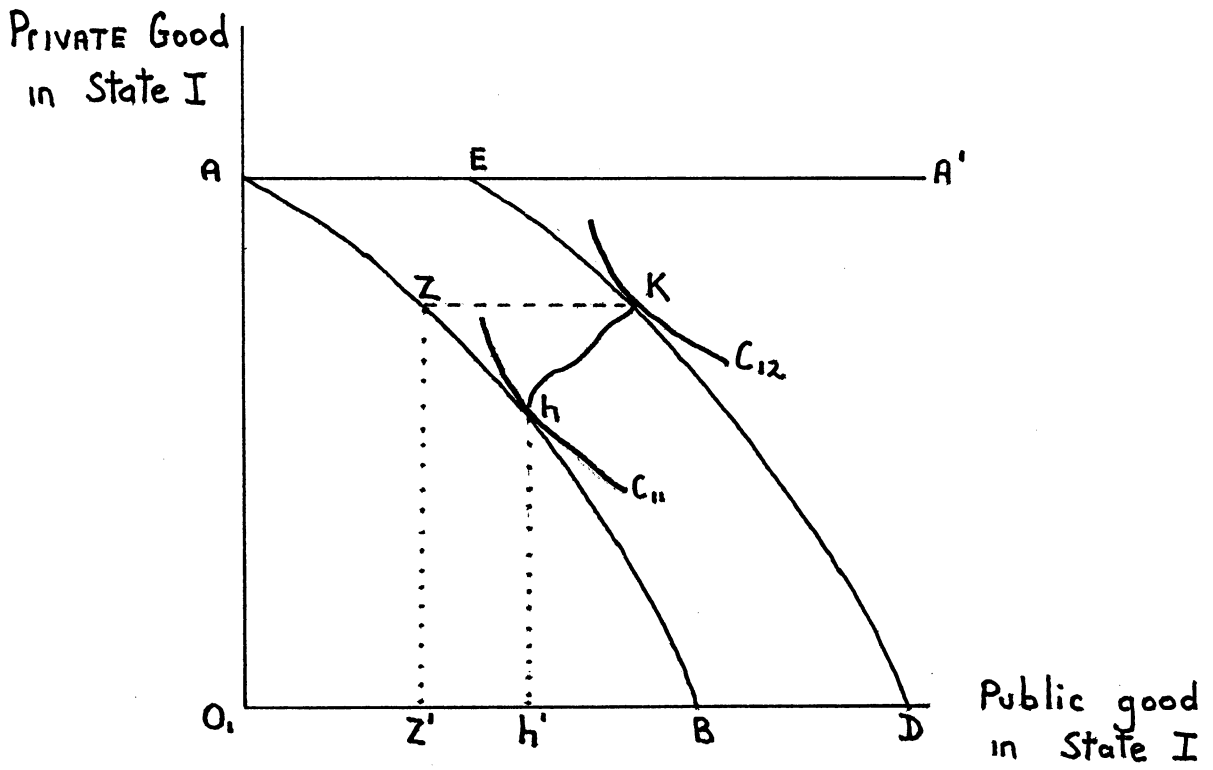
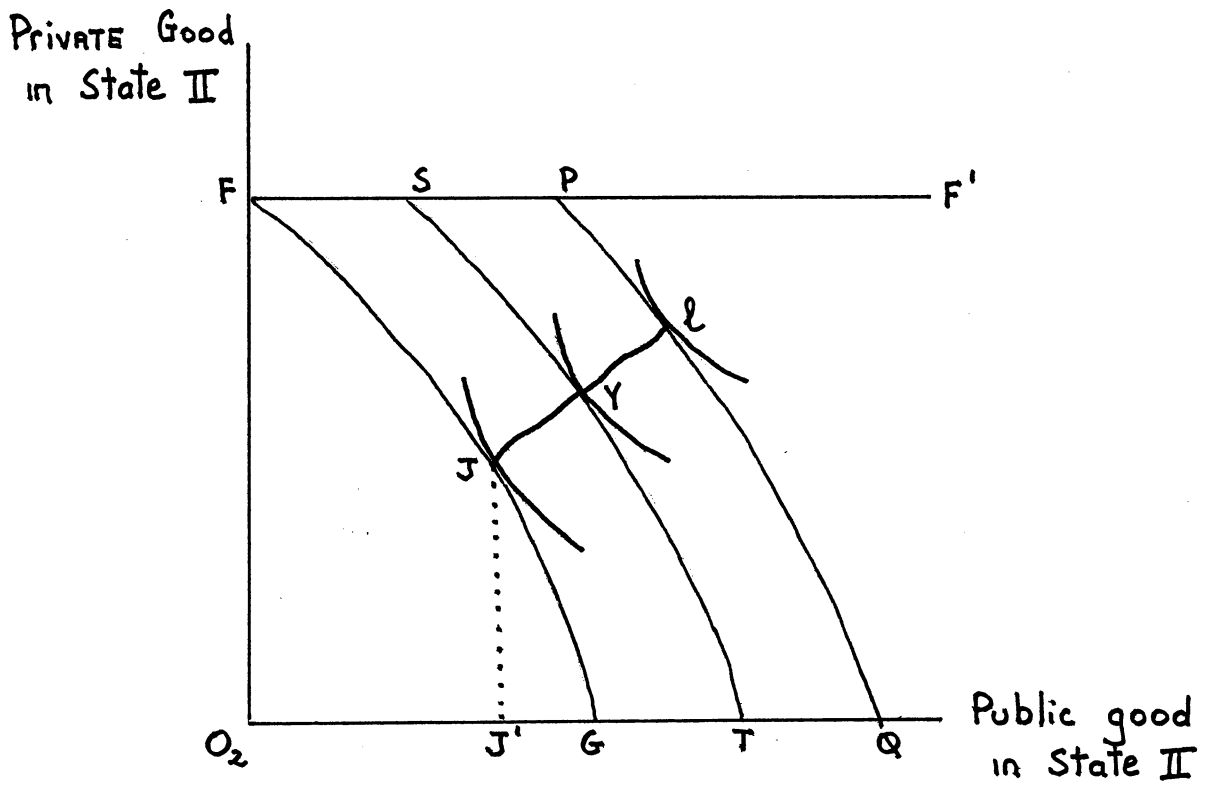


Figure 2.1(b)



J in State II<sup>1</sup>. Introducing the existence of spillovers enlarges the consumption possibilities (but not the productive capacity) for each State. Each level of the private good is now associated with an enlarged amount of the public good, equal to the quantity of the public good produced in the other State.

State I's consumption possibility curve moves outward to AED where it receives  $BD = AE = O_2 J^1$  units of spillover. A possible equilibrium point is point K where a community indifference curve is tangent to the new consumption possibility frontier. In the same way, State II receives  $FP = GQ = O_1 h^1$  units of spillover and attains a possible equilibrium position at point  $\ell$ .

However the points K and  $\ell$  will not be general equilibrium points. At point K State I is actually producing at point Z and receiving  $ZK = AE$  spillovers from State II. But at point Z State I is producing less of the public good than at point h ( $O_1 Z^1$  as against  $O_1 h^1$ ). This will result in State II's consumption possibility shifting leftwards from PQ to one such as ST (where  $FS = O_1 Z^1$ ). State II would then be at equilibrium at Y.

Similarly State II is now producing a smaller amount of the public good at point Y than it did at point J. This in turn will decrease the consumption possibilities in State I. By allowing each State's production of the public good,

1. At these points the marginal rate of transformation in production is equal to the sum of the consumers' marginal rate of substitution between the private and public good.

and hence the amount of spillovers it generates, to vary, production reaction paths can be obtained which show the level of public good production in one State for different public good outputs in the other State. These are shown as hK and JY $\ell$  in figures 2.1(a) and 2.1(b).

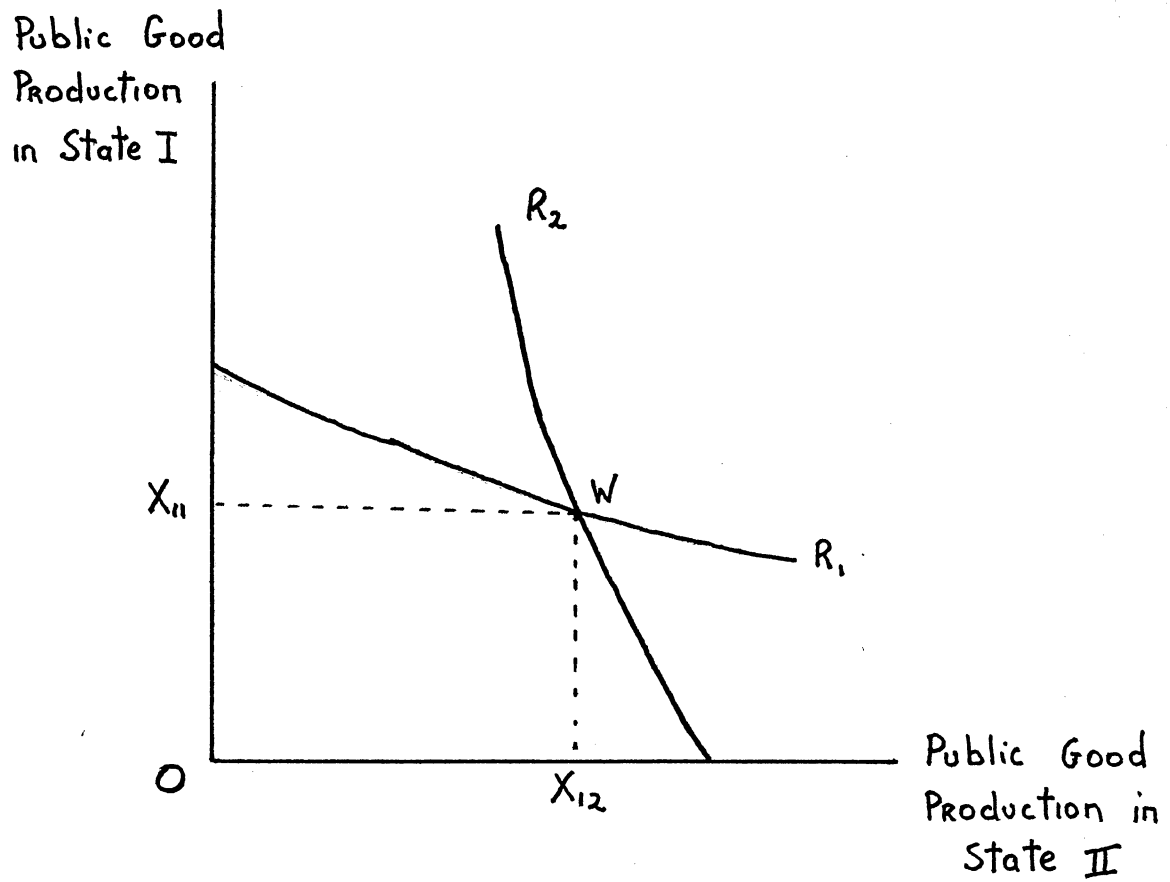
In order to find the General equilibrium solution these production reaction functions are mapped as  $R_1$  (State I's reaction function) and  $R_2$  (State II's reaction function) in figure 2.2. Equilibrium occurs at point W in figure 2.2 with State I producing  $X_{11}$  and State II producing  $X_{12}$  of the public good. At this point the marginal rates of substitution of the public for the private good in each community is equal to their marginal rate of transformation. That is at point W the following conditions would be satisfied:

$$\sum_{i \text{ in I}} \frac{U_c^i}{U_p^i} = \frac{f_c}{f_p}$$

$$\sum_{i \text{ in II}} \frac{U_c^i}{U_p^i} = \frac{f_c}{f_p}$$

$$X_{11} + X_{21} = X_1$$

where  $U_c^i$  is the marginal utility of the public good for the  $i^{\text{th}}$  individual;  $U_p^i$  is the marginal utility of the private good for the  $i^{\text{th}}$  individual;  $f_c/f_p$  is the marginal rate of transformation of the public good into the private good;  $X_{11}$  the amount of the public good produced in State I;  $X_{12}$  the amount produced in State II and  $X_1$  the amount consumed in either State. This situation is not optimal as it does not conform to the Samuelson optimality condition that the sum of both marginal rates of substitution must equal the

Figure 2.2

marginal rate of transformation. Symbolically the Samuelson condition is:

$$\sum_{i \text{ in I}} \frac{U^i_c}{U^i_p} + \sum_{i \text{ in II}} \frac{U^i_c}{U^i_p} = \frac{f_c}{f_p}$$

Furthermore Pauly<sup>1</sup> has shown that this quality is less than the optimum amount.

This analysis could be extended to encompass a free-rider situation. An equilibrium with one State as a free-rider would occur as a corner solution along the line AA<sup>1</sup> in figure 2.1(a) with State I producing only the private good. State I's reaction function would then become the vertical axis in diagram 2.2.

Like its counterpart in duopoly theory this analysis supposes no co-operation between the States and perhaps more importantly no learning on their part. More complex models of behaviour would incorporate co-operation between the States as they realized that such collaboration would be to their mutual benefit. The analysis could also be extended to incorporate a multitude of public goods. This would increase the number of strategies open to the States as they could co-operate in the production of some public goods and not in others. Impure public goods, where one additional person's consumption reduces the quantity available to existing consumers but not by the same amount, could also be included in the model. Thereby implicitly dealing with the costs of congestion with public goods. Finally

1. op cit P. 576

trade between the two States could be permitted which would encourage specialization in the production of public and private goods<sup>1</sup>.

## 2.5 Taxation Spillovers

Obviously just as the benefits of public amenities may spillover State boundaries it is conceivable that a State could reduce the cost of a particular public good by partially shifting its tax burden onto members of other States. If this is the case then by equating marginal State benefits with marginal State costs to its own residents the State may extend production of the public good past the point where the marginal social benefit equals the sum of the marginal costs to all residents of the country. In Australia this does not appear to be a significant consideration. The previous chapter has shown that the ability of the States to tax their own residents is somewhat limited, consequently their ability to tax the residents of other States appears also to be correspondingly restricted.<sup>2</sup>

1. Some of these extensions to the basic model are treated in Todd Sandler "Pareto Optimality, Pure Public Goods, Impure Public Goods and Multi regional Spillovers" Scottish Journal of Political Economy Vol XXII No.1 Feb. 1975
2. The effects of inter-regional exporting of taxes in America has been examined by Charles McLure "Interstate Exporting of State and Local Taxes: Estimates for 1962", National Tax Journal March 1967, pp. 49-77.



## 2.6 Internalizing the Spillovers

One method of overcoming the under supply of some public amenities would be for the National government to subsidize the production of those public goods which produce significant spillover effects. The amount of the subsidy being equal to the size of the benefits received by consumers outside the State producing the service. In this way the marginal cost of the particular public service can be equated with its corresponding marginal social benefits. Thereby "internalizing" the spillover. George Break<sup>1</sup> has specified four criteria in the design of these subsidies or grants from the National to the State governments, namely:

- (I) That since the benefit spillovers are related to a particular program the grants should also be tied to that program i.e. they should be conditional or specific purpose grants. In this way a conditional grant encourages the recipient State to consider the interests of the entire nation when it makes decisions.
- (II) They should be matching grants with the national governments contribution equal to the ratio of the spillovers to the total benefits derived from the additional expenditure. Since the ratio of external to total benefits is likely to differ between different programs the appropriate matching provisions

1. G.F. Break Intergovernmental Fiscal Relations in the United States. Brookings Institution, Washington D.C. 1967

of the conditional grant will change from program to program. Purely pecuniary spillovers which merely vary the value of existing resources or alter the distribution of a given amount of national income should be excluded. In other words the individual States will pay for the direct benefits accruing from the program while the national government subsidises the external benefits arising from the project;

(III) As the national government is paying for some of the benefits arising from the aided - program it is entitled to exercise some control over the State's operation of the program; and

(IV) the grants should be open-ended rather than closed-ended, i.e., the national government should match the State's funds without specifying an upper limit to its financial assistance. If the matching conditions correctly reflect the ratio of external to total benefits then the recipient government would not expand its expenditure level beyond the point where its marginal contribution, in the form of the matching requirement, was greater than its marginal return from the program. Consequently open-ended grants would be more conducive to the optimum amount of the service being provided.

A question which obviously arises is whether there are State expenditure programs which do have significant spillover effects. Although no quantitative studies have been done on this subject in Australia, American experience has shown that significant national spillovers are derived from

such State services as inter-state railways and highways, port and harbour construction and improvements, flood mitigation, health and education expenditure, all of which are State responsibilities in Australia. For example, Weisbrod<sup>1</sup> has conducted an extensive analysis into the spillovers arising from public expenditure on education in America. The most obvious educational spillovers occur as a result of interstate migration. One State, for example, may lose through out-migration individuals it has educated, but gains through the in-migration of well-educated individuals. Consequently there are both benefit spill-ins and spill-outs but no close balance between them could be expected. Other advantages identified by Weisbrod of in-migration of well educated individuals were a more enlightened electorate, a decrease in the crime rate, an increase in labour productivity and an increase in the taxation capacity of the community as the better educated person usually earns an above-average income.

Once the national government establishes that a particular State expenditure program does have important benefit spillovers it is then faced with the task of designing the matching conditions of the grant in order to reflect the amount of external benefits generated by the program. In so doing the national government would be faced with all the problems associated with the valuation of benefits

1. B. Weisbrod op cit also W.Z. Hirsch, E.W. Segelhorst and M.J. Marcus Spillover of Public Education Cost and Benefits, Institute of Government and Public Affairs, University of California, 1964.

which has been extensively dealt with in the literature on cost-benefit analysis. Naturally there are some programs such as inter-state highways and railways where many of the spillover effects are valued by the market system and are therefore relatively easy to estimate. But the problem really centres on benefits which are not valued in the market place. For instance what monetary value should be placed on a more enlightened electorate or an increase in the general physical or mental health of a community?

An additional problem that confronts the national government is that different States may evaluate the benefits received from the same service at a different rate both in relation to one another and to the national government itself. Indeed this is often claimed as one of the advantages of a federal system in that it provides the States with local autonomy allowing them to more accurately reflect the tastes and preferences of their citizens. For instance, one State may value the benefits derived from expenditure on parks, libraries and museums more highly than another State. Moreover we would expect that different communities would have different preferences regarding both the absolute magnitude of the public sector vis-a-vis the private sector as well as the relative distribution of resources within the public sector. Consequently, what is an optimum allocation of resources for one State may not necessarily coincide with the optimum as viewed by another State. Once this is recognized how can a national government objectively designate a particular allocation of resources as being "optimum" or "non-optimum"?

Another approach has been suggested which avoids some of the difficulties of objectively identifying the optimum allocation of resources and overcomes, at least theoretically possible differences in benefit evaluation.<sup>1</sup> Basically this approach is linked with the concept of compensating variations<sup>2</sup> and requires the national and state governments to independently calculate the benefits they would receive from a proposed expansion of a State government amenity. The National government would be concerned solely with estimating the external benefits of the proposal while the State government would concentrate on the internal benefits. The figure that the respective governments arrived at would be interpreted as the maximum amount they would be prepared to pay for the contemplated expansion to take place, or their compensating variation.

For example, suppose that the intention is to increase the expenditure of a certain State function from \$1 million to \$2 million. The external benefits as estimated by the national government (say \$½ million) would be the maximum

1. S.J. Mushkin et alia Sharing Federal Funds for State and Local Needs. Praeger Publishers N.Y. 1969
2. A compensating variation being defined as "a measure of the money transfer necessary, following some economic change, to maintain the individual's welfare at his original level". E.J. Mishan "Pareto Optimality and the Law" OXFORD ECONOMIC PAPERS June 1967 p. 256.

amount that the national government would be willing to contribute towards the additional expenditure. Similarly the State government would be asked to determine the benefits it would receive by increasing the expenditure on the function by \$1 million. This figure (say \$1.5 million) would be interpreted as the maximum amount the State would be willing to spend on the proposed project. Total benefits would then be defined as the sum of these two amounts (i.e. the sum of the maximum amounts that both governments would be willing to pay, in this example  $\$1m + \$1.5m = \$2m$ ). The share of the actual cost (\$1 million) that the national government would offer is equal to the ratio of the estimated marginal external benefits to the estimated total marginal benefits (in this case  $\$1m/\$2m = 25\%$  of \$1m). This process would be continued for further additions to the program until national benefits equalled national costs and State benefits equalled State costs. One crucial assumption of this approach is that both the national and State governments actually reveal their true preferences for the proposed change and do not engage in a form of market strategy. If this assumption is relaxed it would again appear possible to apply game theory and duopoly theory to this situation.

## 2.7 Demonstration Grants

Two particular types of programs in which the benefit spillover approach is especially applicable is where the program is either a completely new project or is concerned with innovation and experimentation into ways of improving

the efficiency of existing public services. In these circumstances the other States benefit from viewing the effectiveness (or ineffectiveness) of the new program or could use the results of the research program. Thus both these types of programs would be of national concern. Consequently a single State should not be asked to provide the finance for an unproven program which, if successful, would entail benefits for the entire nation. In fact projects designed for demonstration or research purposes should be heavily underwritten by the national government with the qualification that their results should be of widespread value and not simply related to the specific conditions in a particular State.

## 2.8 Minimum Standards

As the previous sections have emphasized, the existence of benefit spillovers presents a plausible case for the economic efficiency of specific grants in a federal system. But are spillovers the only rationale for conditional grants? Could they be justified for expenditure programs which exhibited negligible external benefits?

One possible justification for conditional grants in the absence of significant spillover effects is where society desires to have a minimum standard of certain governmental activities throughout the nation. These could be classified as "birthright programs" which insured that all Australian citizens have adequate opportunity for individual development and a decent standard of living without paying excessively high rates of taxation. In fact

it has been stated that "equality is clearly a major objective of the Australian Government. In this context equality is taken to imply that all persons regardless of sex, race, age and family background should have equal rights to live a full and satisfying life and in particular have equal access to education, jobs, health services, justice and social security."<sup>1</sup>

If conditional grants are given to provide a minimum standard of some public services and to compensate for differences in fiscal capacities among the States, then the matching provisions should be weighted according to the taxation effort of the recipient State. Thus the matching formula would be a variable one, the amount of the subsidy increasing with the increase in the tax effort of the State, until the State reached the national tax average whereafter the National government would fully subsidize the program up to the minimum standard required.

Unfortunately no objective basis suggests itself for selecting those public services which would qualify for inclusion in this birthright programs argument. Some services such as education and health would probably be generally agreed upon but others such as pre-school kindergartens, museums and art galleries would be more contentious. Furthermore as the level of income increased and the aspirations of the community changed it would be expected that the number and composition of "birthright programs" would also vary.

1. Interim Report on Goals and Strategies, Priorities Review Staff, Parliamentary Paper No. 26, 1974 p.4.



## 2.9 The Growth of Specific Purpose Payments - an alternative view.

The previous sections of this chapter have postulated that the increasing use of specific grants in the Australian federal system could be attributed to the national government's desire to attain a number of objectives, namely:

- (i) to achieve a minimum standard in some public amenities;
- (ii) to bear the risk in research and demonstration projects which may have widespread benefits for the nation; and
- (iii) to overcome a possible under-supply of some public services caused by the States' neglect of benefit spillovers.

An alternative explanation has been put forward by Mushkin and Adams<sup>1</sup> who suggest that specific grants are partially the result of consumers being dissatisfied with the quality of public services provided at a particular level of government. The consumers' reaction is to request that the public good in question be supplemented by expenditure from another level of government. Thus Mushkin and Adams propose a consumer-oriented approach which emphasizes the political pressure exercised by the voter-consumer in achieving a desired level of public services and the subsequent responsiveness of different levels of

1. S.J. Mushkin and R.F. Adams "Emerging Patterns of Federalism" National Tax Journal Volume XIX No. 3 September 1966.

governments in providing these services. As a result of this process the expenditure responsibilities of the different levels of government will shift as the consumer alters his judgement concerning which combination of governments can best provide him with the public services he seeks. Consequently if one government does not respond to the demands of consumers they will endeavour to obtain a more favourable response from another government.

If, for instance, consumers are dissatisfied with the standard of public transport within the metropolitan areas of their State they would, as a first resort, petition the State government to improve the service. If these appeals are rejected they could then request assistance from the federal government with the solution taking the form of direct national participation or a specific purpose grant. Specific grants would then be given for programs whose benefits fell wholly within State boundaries but where the State legislature may not adequately reflect the preferences of some groups of its citizens.

Clearly the mix of governments chosen by the consumer will be influenced by the responsiveness of the governments who are potential suppliers of public services. In Australia, revenue inflexibility makes the response of the States to new demands slow and cumbersome so this could provide a partial explanation of the recent expansion of specific grants which was examined in the previous chapter. One interesting aspect of this question is why the national response to some expenditure functions such as education and health has been rapid and immediate while its response to

other requests such as national estate, legal aid and the protection of the environment has been a more gradual process.

One advantage of the approach suggested by Mushkin and Adams is that it implies that a federal system is subject to change rather than the more conventional approach which would indicate that the governments in a federation are restrained by the rigid definition of their responsibilities which appears in the Constitution. It also introduces consumer behaviour as an important determinant in the development of the federal system. However, one vital question remains unanswered. Is this resulting mix of government participation efficient?

In order to resolve this question we would need to determine which level of government could most efficiently provide a particular service according to such criteria as minimising cost, economies of scale and the spatial nature of the benefits (i.e. whether they are principally regional or national) and comparing this "ideal" distribution of functions with that actually observed in the federal system.

## 2.10 The Distortion Thesis

Although there appears to be general consensus on the usefulness of specific purpose grants in providing minimum standards in some public amenities and in internalizing external benefits, they have been criticized on the basis

that they "distort" State budgets. Mathews and Jay<sup>1</sup>, for example, claim that

"(there) is the possibility that the restrictive conditions attached to specific purpose grants may induce revenue and expenditure substitution effects which distort rather than improve the allocation of resources by the recipient governments. This might happen, for example, if matching conditions force the latter to raise additional taxes or switch expenditures from other functions when, given both superior knowledge and complete financial autonomy, they would choose a different course of action"

Hence although the existence of specific purpose grants in a federal system can be justified on several economic grounds the national government must be aware of the effects these grants will have on the expenditure decisions of the recipient governments, and the subsequent implications for resource allocation within the federation. Consequently the following two chapters will endeavour to analyse the theoretical and empirical response of state governments to specific purpose payments.

1. Mathews, R.L. and Jay, W.R.C., Federal Finance, Nelson 1972. p. 261.

## Chapter 3

### The Response of the States to Federal Grants.

#### 3.1 Introduction

The previous chapters have shown that specific purpose payments have been an important feature of intergovernmental financial relations within Australia, and are a significant factor in the revenue sources of all the States. In fact, these grants could now be regarded as significant policy instruments of the Australian government for the purpose of influencing the allocation of resources in the public sector in Australia. Accordingly it will be of especial interest to examine the effects of Federal specific grants on the expenditure decisions of the State governments.

The manner in which State decisions may be affected by Federal grants can be examined with the aid of traditional microeconomic theory. Specifically an analogy will be drawn between the expenditure decisions of the State government and those of the individual consumer. Basically, the analysis will concentrate on specific purpose grants but some attention will also be given to general purpose grants as in Australia these are often assumed to be substitutes for the former.

#### 3.2 A Model of the Effects of Grants

The most obvious effect of a particular grant is to alter the budget constraint under which the State government is operating. When attempting to draw a parallel

between an individual consumer's spending decisions and that of State governments it is assumed that the State governments will exhibit the same rational response to price and income changes as that displayed by a consumer. In particular the State is assumed to be rational in the following senses: (1) it can consistently rank various programs in order of utility: (2) it moves to maximise this utility subject to its resource constraints.<sup>1</sup> In addition, the indifference curves of the state governments are assumed to reflect the community preference for public goods so that a movement onto a higher indifference curve entails greater satisfaction not only for the government unit but also for the community in general.

Several additional assumptions underlying the forthcoming analysis need also to be stated<sup>2</sup>:

- (1) The expenditure response of the state constitutes a true preference so that problems of political strategy can be neglected;
- (2) The receipt of a grant does not alter the indifference map owing to redistributional effects on the community; and

1. S.J. Mushkin et alia Sharing Federal Funds for State and Local Needs, op cit p. 32

2. J. A. Wilde "The Expenditure Effects of Grant-in-Aid Programs" National Tax Journal Vol.23 March, 1970.

- (3) the receipt of a grant does not have a "demonstration effect" which causes the indifference map to shift. That is, the receipt of a grant does not increase the State's appreciation of a particular service.

Within the context of these assumptions the response of State governments to four different types of Federal government grants will be examined. As previously mentioned, the immediate effect of a particular grant is to change the State government's budget constraint. In the case of a specific matching grant this has the effect of lowering the price of the supported program. This could be further sub-divided into: (1) a substitution effect in which purchases of the aided function will be increased as it is now relatively more price-attractive than initially and (2) an income effect leading to an increase in total State expenditure owing to the rise in real income brought about by the fall in the price of the aided-function. On the other hand, a general purpose grant only increases revenue leaving relative prices unchanged and consequently only has an income effect.

The four types of federal grants to be examined in this section are:

(i) open-ended specific matching grants:

this type of grant requires the state to match a fraction of the grant and to spend it on a specified program with no upper limit on the grant, for example, grants provided under the

School Dental Scheme.<sup>1</sup>

(ii) closed-ended matching grants:

same as the above with the exception that the federal government sets an upper limit on the size of the grant, for instance, grants to nursing homes.<sup>2</sup>

(iii) specific non-matching grants:

the only condition attached to this grant is that it must be spent on a particular function, for example, Educational Research Grants.<sup>3</sup>

(iv) Unconditional Grants

A grant which has neither matching requirements nor is there any restrictions on what functions the State may spend it on, for example, the Financial Assistance Grant.

In diagrams 3.1, 3.2, 3.3, and 3.4 that follow PP' represents the budget line of the State government before any federal grant is received, and G is the original expenditure combination. The horizontal axis represents expenditure of program X while the vertical axis depicts spending on all other state government functions (program Y). The effect on the State's budget constraint of the four above-mentioned grants will now be examined. In the first

1. Payments to or for the States and Local Authorities

1975-76 op. cit. p. 55 gives the actual conditions of this grant.

2. ibid p. 52

3. ibid p. 48



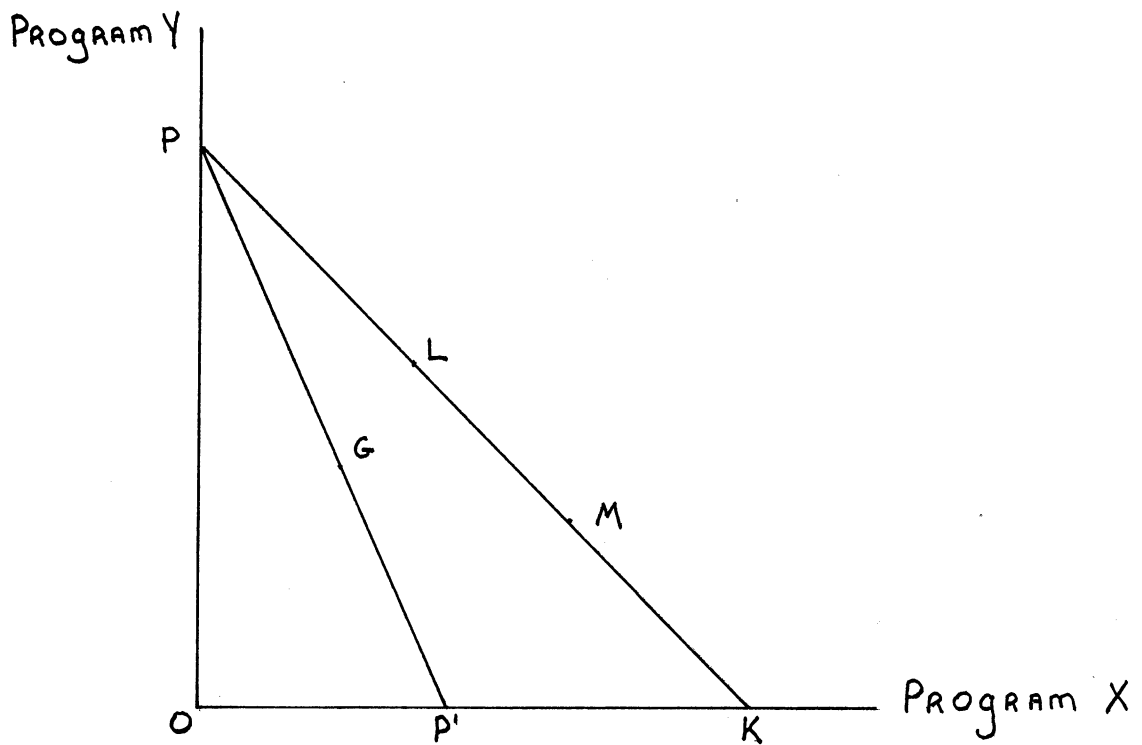
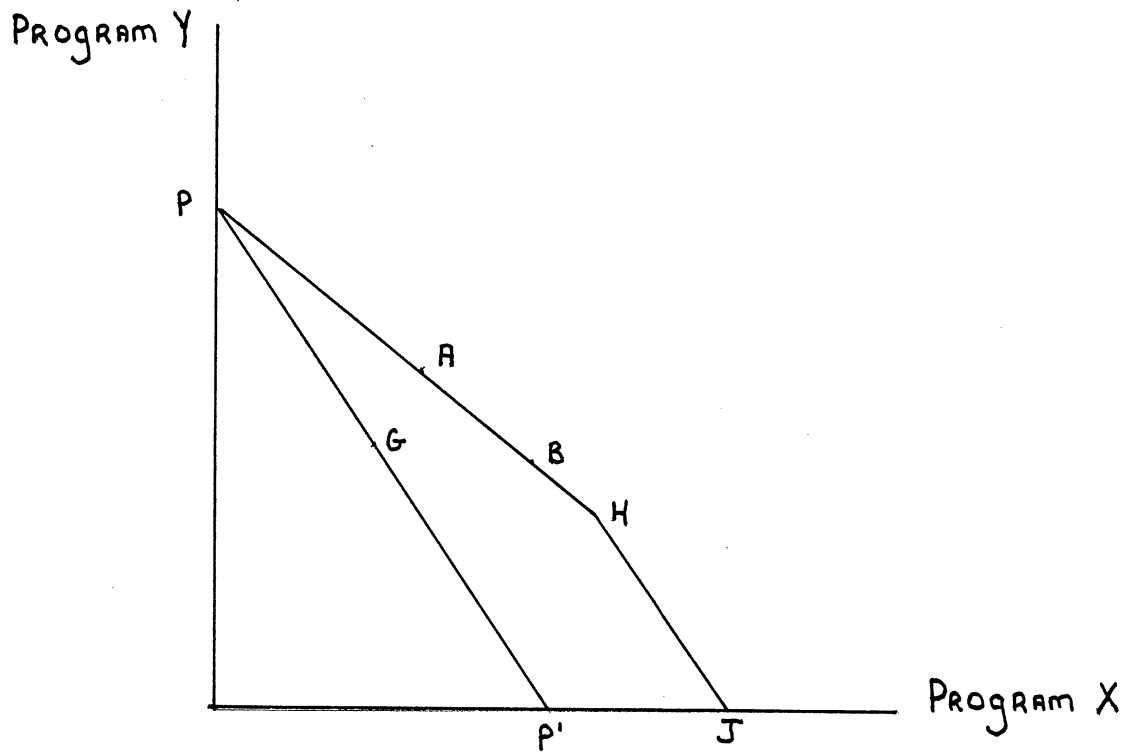
three cases it will be supposed that program X is the only function to receive a federal grant.

(a) open-ended specific matching grants

In figure 3.1 an open-ended specific matching grant to program X changes the state's budget constraint to PK, where  $PK/OK$  is the percentage of expenditures on program X which will be borne by the federal government. In effect this grant has altered the relative price ratio making program X relatively cheaper and program Y relatively more expensive.

If the state is a welfare maximiser the new equilibrium will occur where the new budget line PK is tangential to one of the state's indifference curves. The actual response of the state will depend upon the precise matching formula attached to the grant and its price elasticity of demand for the particular goods. For instance it is conceivable that the new equilibrium could be at a point such as  $L^1$  (where expenditure on both programs has increased) or point M (where expenditure on the aided program has increased, but spending on non-aided functions has decreased). The uncertainty surrounding the direction of change in program Y occurs because the income and substitution effects are acting in opposition. Program Y is now relatively more expensive so the substitution effect will be negative, on the other hand, the income effect, brought about by the

1. The state's indifference curves have been omitted on all the diagrams.

Figure 3.1Figure 3.2

lower relative price for program X, will be positive.<sup>1</sup>

(b) Closed-ended specific matching grants

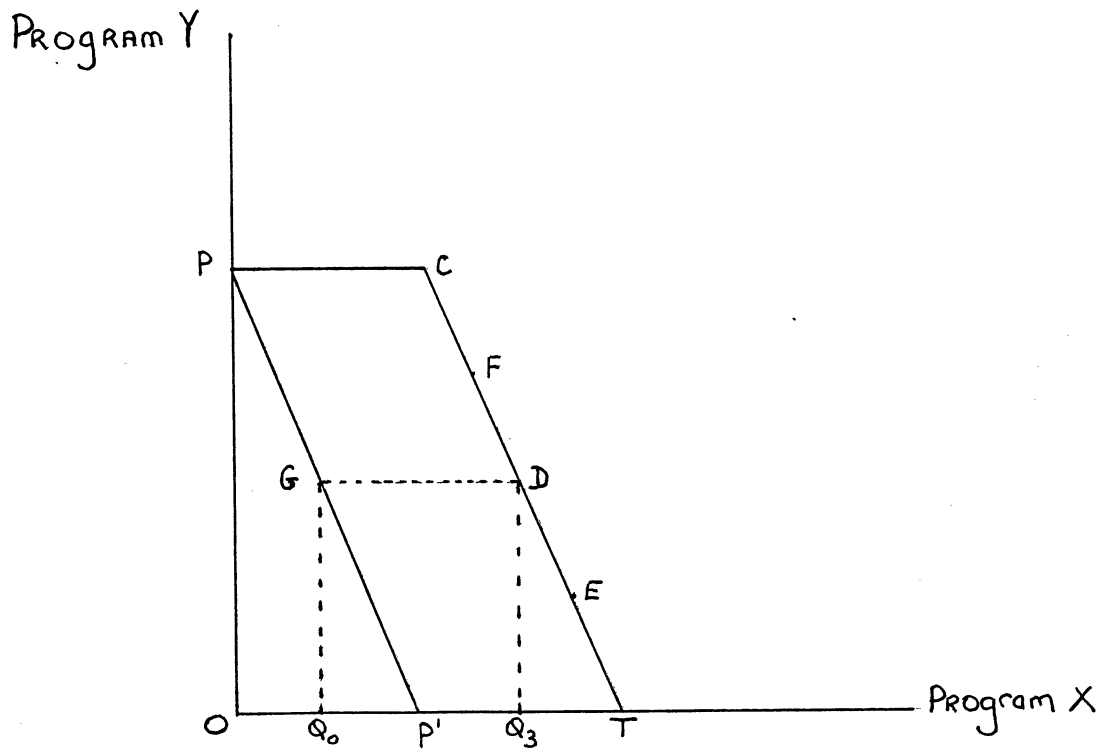
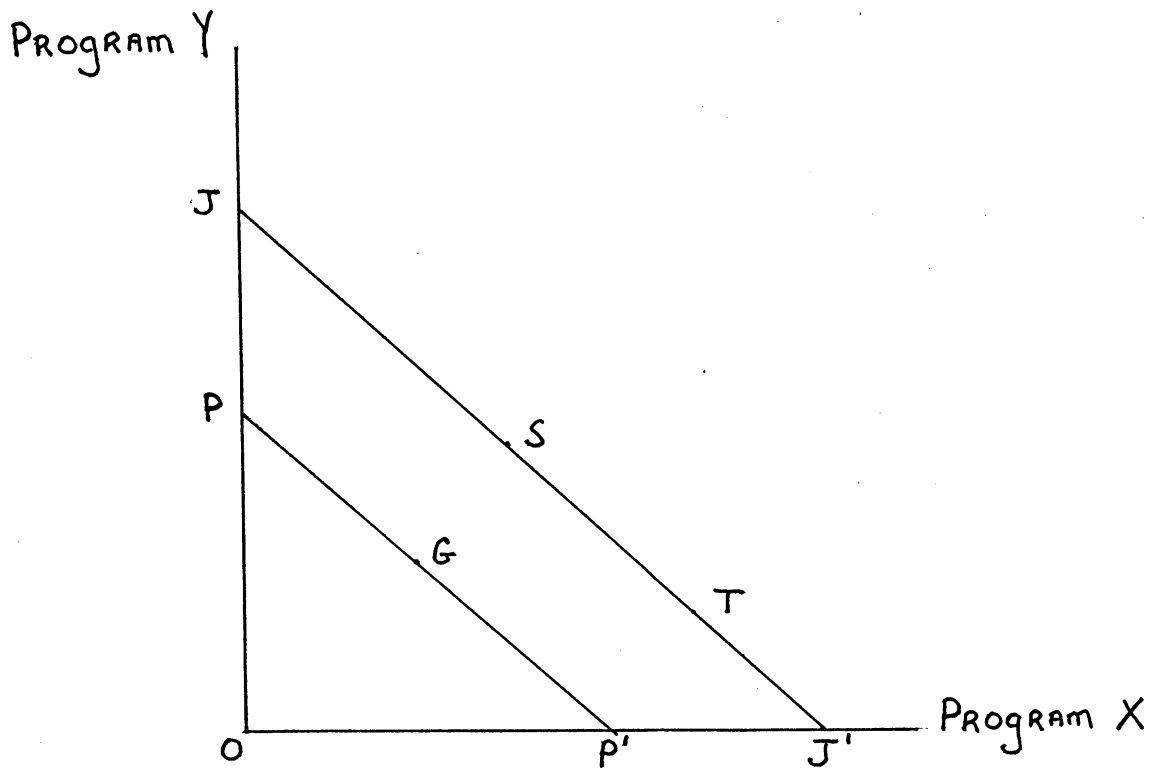
This particular type of grant is illustrated by the Kinked budget line PHJ in figure 3.2. The upper limit placed on this grant by the Federal government occurs at point H. After this point has been reached the Federal government will not contribute to the State's purchase of program X and as a result the original price ratio takes effect. Up to point H the changes in the purchases of programs X and Y would be determined by both income and substitution effects with similar results to those obtained with an open-ended grant. However, if an expenditure combination was chosen beyond point H there would only be an income effect similar to that produced by a general purpose grant.

Again it is possible for the new equilibrium position to incorporate increased spending on both programs (point A) or an expansion of program X and a contraction of program Y (point B).

(c) Specific non-matching Grants.

If the federal government gave a specific non-matching grant of PC to program X the state's new budget constraint would be PCT as illustrated in figure 3.3. With no matching conditions relative prices remain unaltered and there would be no substitution effect. As the increase in expenditure

1. Assuming program X is a "normal" good a decrease in its relative price will always result in an increase in quantity demanded.

Figure 3.3Figure 3.4

on program X from  $Q_0$  to  $Q_3$  does not involve the state in any extra cost it is quite likely that point D could be the new equilibrium position. If the state chose a new equilibrium such as point F, this would indicate that the state had decreased its initial expenditure on program X and had transferred these funds to program Y. The reverse situation would be inferred by a new equilibrium at point E.

(d) General Purpose Grants

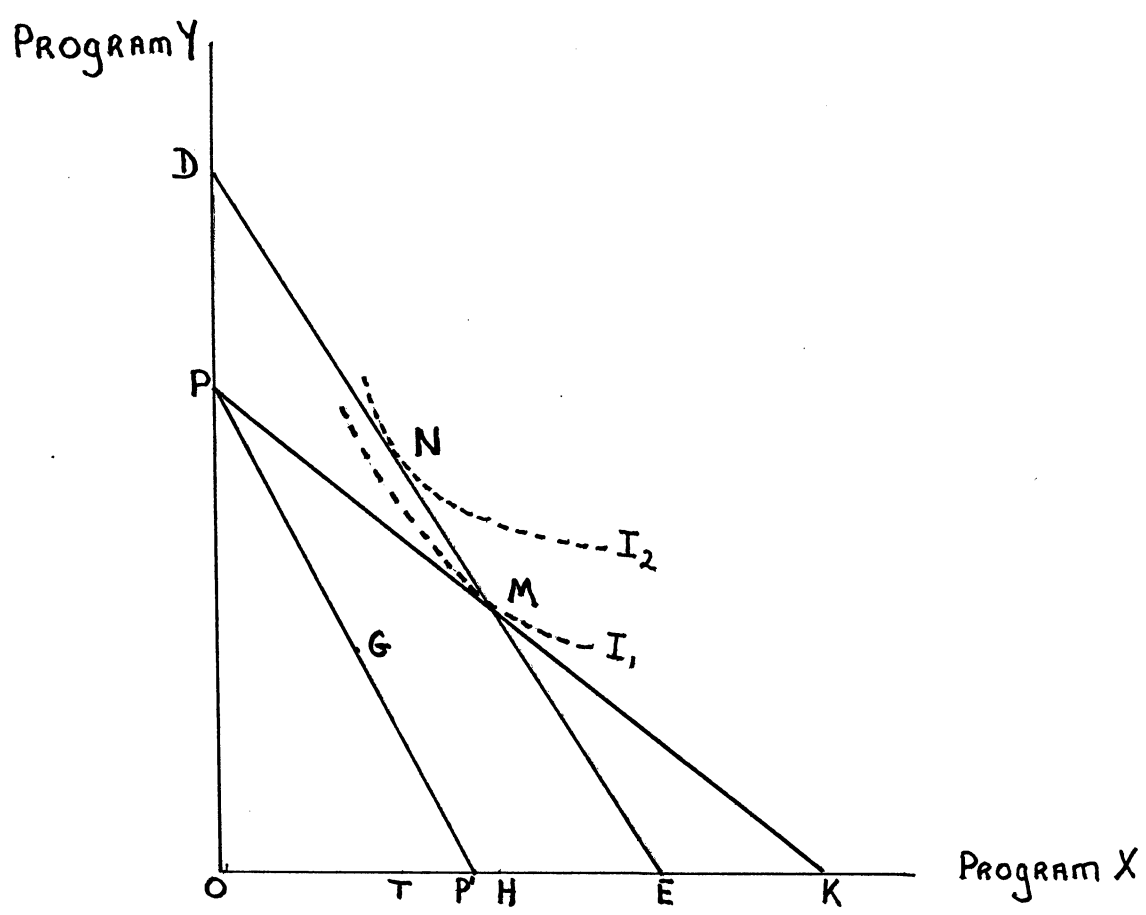
A general purpose grant increases total revenue available to the state without affecting relative prices. Hence an unconditional grant shifts the state's budget constraint outwards and parallel to the original constraint. In figure 3.4 the new budget line is shown as JJ'. Once more the new equilibrium point is where one of the state's indifference curves is tangent to JJ'. Again expenditure on program Y may either rise (e.g. point S) or fall (e.g. point T).

(e) A Comparison of Specific and General Purpose Grants<sup>1</sup>

The basic difference between specific and general purpose grants is that the former are generally associated with both an income and substitution effect while the latter imply only an income effect. This is illustrated in figure 3.5.

1. This is strictly a comparison between general purpose grants and open-ended matching grants. Other varieties of specific grants (i.e. closed-ended matching and non-matching) give similar results to general purpose grants after certain expenditure levels have been reached. See figures 3.2 and 3.3.

Figure 3.5



Initially equilibrium is at point G. As before a specific purpose matching grant shifts the state's original budget line from PP' to PK. Suppose that the new equilibrium position is M on indifference curve  $I_1$ . In order to compare this with a general purpose grant capable of attaining point M, a budget line ED is constructed through M parallel to PP'. With budget constraint ED the state achieves an equilibrium at point N on the higher indifference curve  $I_2$ . Obviously, then if the objective is to improve the state's welfare position a general purpose grant is superior to a specific grant.

On the other hand, the specific matching grant results in a greater expenditure on program X than the general purpose grant (OH as against OT in figure 3.5). Hence, if the primary objective is to increase the state's outlay on a particular service, then, for a given cost, the most efficient means is via a specific grant. This emphasises that there is a fundamental conflict between a cost minimising donor and a welfare maximising recipient when they are evaluating the relative merits of specific and general purpose grants. This implies that the national government would be more likely to display a preference for specific grants while state governments would opt for the general purpose variety.

### 3.3 Are Federal Funds substituted for State Funds?<sup>1</sup>

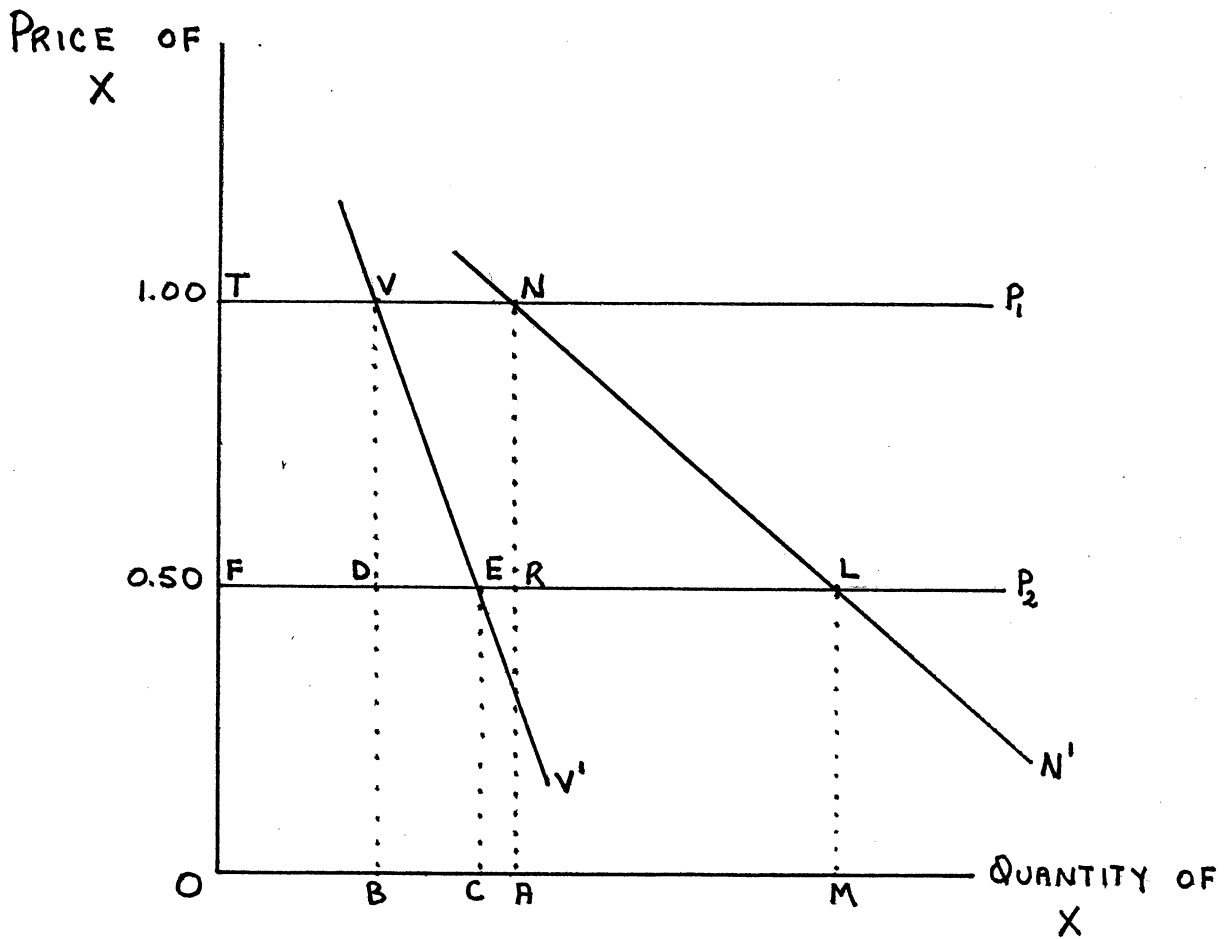
The previous section showed that if it was assumed that the aided-function was a "normal" good then a specific grant would cause total outlay on that service to be increased. However, it is conceivable that while total outlay expanded the state's expenditure from its own revenue sources could contract. In other words the state government could replace its own spending on the aided function with federal funds, which would enable the state to augment its spending on other non-aided services. The federal government has explicitly realized this on a number of occasions and has in some instances attached the condition that the states would not reduce their own expenditure on the aided-function after the specific grant has been received.<sup>2</sup>

Figure 3.6 illustrates the factors which determine whether a state's expenditure from its own resources on the aided function increases, decreases or remains constant after it has received a federal specific purpose grant. The quantity of program X (the aided function) is measured

1. The diagrammatic analysis in this section follows that by Mark A. Haskell "Federal GRANTS-IN-AID: Their influence on State and Local Expenditures" Canadian Journal of Economics and Political Science November 1964, pp585-591

2. For example payments for housekeeper services, Payments to or for the States and Local Authorities 1975-76 op. cit.



Figure 3.6

on the horizontal axis; the price of X, measured in terms of the percentage of the cost borne by the state government is shown on the vertical axis. NN' represents state N's demand schedule of X, VV' is the demand schedule for state V.

Suppose that initially both States are funding 100% of their respective expenditures on program X. Thus the area OTVB would be the total expenditure of State V on the unsubsidised service X, while OTNA would be the total expenditure of State N. If the Federal government decides to take over 50% of the cost of State expenditure on X it has the effect of reducing the unit cost of X from OT to OF.

State V will respond to this move by spending a total of OFEC on program X. In effect, the area BDEC is substituted for FTVD, causing a reduction in the State's outlay on X, but an increase in total outlay of X. In other words, federal funds are now being substituted for some of the State's funds previously spent on program X, which can now be diverted into other areas.

In contrast, State N will respond to the federal government's offer by spending OFLM on program X. In this case the area ARLM has been substituted for the area FTNR, causing an increase in the state's outlay on program X from its own resources. This implies that money has been taken away from some non-aided functions and directed towards program X.<sup>1</sup> This could also lead to the conclusion

1. That is, specific grants have distorted the state's budget - see section 2.10.

that federal priorities have been imposed upon state expenditure priorities.

What figure 3.6 in fact has illustrated is that it is the state's price elasticity of demand for X which determines whether its expenditure from its own sources increases or decreases. If the state's demand for commodity X is elastic, a decrease in price will increase state expenditure; if demand is inelastic, a decrease in price will decrease state expenditure; if demand is of unit elasticity, changes in price will not affect state expenditure. Without doubt this question of whether specific grants are accompanied by a ~~substitution~~ of federal for state funds has important implications for determining the effectiveness of this type of grant and consequently this issue will be examined in much greater detail in the following chapter.

### 3.4 Determinants of Elasticity.

Figure 3.6 emphasised the importance of the state's price elasticity of demand in determining whether a Federal grant had a stimulation or substitution effect on State funds. However, what determines whether a State's demand for a particular service is price elastic or price inelastic in a certain price range? Of the numerous possible influences, the following four seem to be the most important

Firstly, continuing the analogy with a consumer's behaviour, it is often asserted that the demand for a commodity which constitutes a large portion of a consumer's budget is likely to be more <sup>elastic</sup> than the demand for services which are

relatively unimportant.<sup>1</sup> Thus it would be anticipated that a state's demand schedule for services such as education and health which form a large percentage of the budget, would be relatively elastic.

Secondly, "the price elasticity of demand for a commodity depends on the number and closeness of the substitutes that are available"<sup>2</sup> Thus if a particular state expenditure function has a number of close substitutes, which are also expenditure responsibilities of the state, a price increase in this particular function would very likely induce the state to re-direct its expenditure to the substitutes which are available. Conversely, a price reduction would encourage the state to release money formerly spent on these substitutes and direct these funds towards the aided function. Consequently it would be expected that a state's expenditure on primary education which has several close substitutes in secondary education, colleges of advanced education, technical colleges, would most likely be price elastic.

Thirdly there is evidence, particularly in America, that the demand for government services is positively related to the total and per capita incomes of the residents in the state.<sup>3</sup> Furthermore, the expansion in the relative

1. Edwin Mansfield Microeconomics: Theory and Applications  
W.W. Norton & Co. N.Y. 1970 p.89

2. ibid p.89

3. E. Kurnow "Determinants of State and Local Expenditures Re-examined" National Tax Journal September 1963.  
pp 252 - 55.

importance of the public sector of the economy at the expense of the private sector of the economy in most advanced countries indicates that as their income level rises, people desire to spend a larger proportion of that income on services provided by the government. In Australia this has been especially true in the areas of education and health. Thus the price elasticity of some government services may increase when the income of the population increases.

Finally the expenditure pattern and response to price changes of public goods may partially reflect the particular state's political and philosophical viewpoints regarding the optimal amount of government intervention in the economy. For instance, a socialist-oriented government would be more likely to increase the relative size of the public sector and would generally have a higher marginal propensity to spend on such services as health, social security and education than a government which was more inclined to support a basically free enterprise economy. For example, a state with an extensive public health system would respond to a fall in the price of public health in a different manner to a state which relied more heavily on private health schemes.

### Conclusions

The results of the analysis in this chapter indicate that in theory the expenditure response of state governments to federal grants depend primarily upon: (1) the precise nature and conditions of the grant and (2) the state's price

elasticity of demand for the aided function. As the response of state governments to federal grants has significant implications regarding the effectiveness of particular types of grants in achieving certain objectives and also the impact of these grants on resource allocation in the federal system, the following chapter will attempt to derive empirical estimates of the expenditure responses of state governments in a number of expenditure categories.

## Chapter 4.

THE EFFECT OF SPECIFIC GRANTS ON STATE BUDGETS4.1 Introduction

Having examined the economic rationale for the existence of specific purpose payments in a federal system of government and the theoretically anticipated expenditure responses to these grants by recipient States in the previous two chapters, the present chapter seeks to establish the actual impact of specific purpose payments upon State government expenditure patterns. Specifically, the question of whether specific purpose payments "stimulate" or "distort" State budgets will be analysed.

4.2 Stimulation or Distortion

The primary aim of the Federal government in giving conditional grants is to increase the amount of money being directed by the States into the expenditure categories for which the aid is provided. For example grants given by the Australian government for schools "are directed towards increasing expenditure in schools and are not in substitution for continuing efforts by the States and non-government schools authorities."

However, as the quotation explicitly recognises there is a possibility that the States could frustrate this objective by substituting the federally provided funds for their own money. State resources could then be released from the aided function and redirected towards other expenditure

1. Payments To or For the States and Local Government

Authorities 1975-76 op. cit. p. 49

programs. Consequently it appears to be a matter of considerable importance to determine the effectiveness of specific purpose grants in achieving the objective for which they are designed, namely, that of stimulating State expenditures from their own resources in the expenditure categories stipulated by the federal government.

Another issue related to the question of whether or not specific purpose payments stimulate state spending in certain areas, is the allegation that these grants "distort" State budgets. In order to clarify the issues involved the concept of budgetary distortion will be interpreted as describing a situation where specific purpose payments expand State expenditures on the aided function to such an extent that the State reduces the amount of resources devoted to non-aided functions to a level below that which would have existed in the absence of the federal grant. Put more simply, budgetary distortion implies that the expenditure priorities of the Federal government are being imposed upon the State's expenditure preferences.

There is substantial consensus among both economists and public officials that specific purpose payments distort State government budgets. For instance, Mr. W. Henry, Under-Secretary of the N.S.W. Treasury, has said that "in recent years there has been a considerable expansion of specific purpose grants, some of which greatly distort State priorities and expenditures." 1

1. Public Administration (Sydney) March, 1975 p. 170



A similar opinion was expressed by W. Lane when he observed "state and local government often complain that the conditions attaching to specific purpose payments distort their priorities and prevent them from making the best use of the money they receive"<sup>1</sup>

Despite this widespread a priori agreement there has been no work of an empirical nature which endeavours to determine the exact extent of distortion caused by specific purpose payments. Section 4.6 seeks to remedy this situation.

#### 4.3 A Diagrammatic Exposition

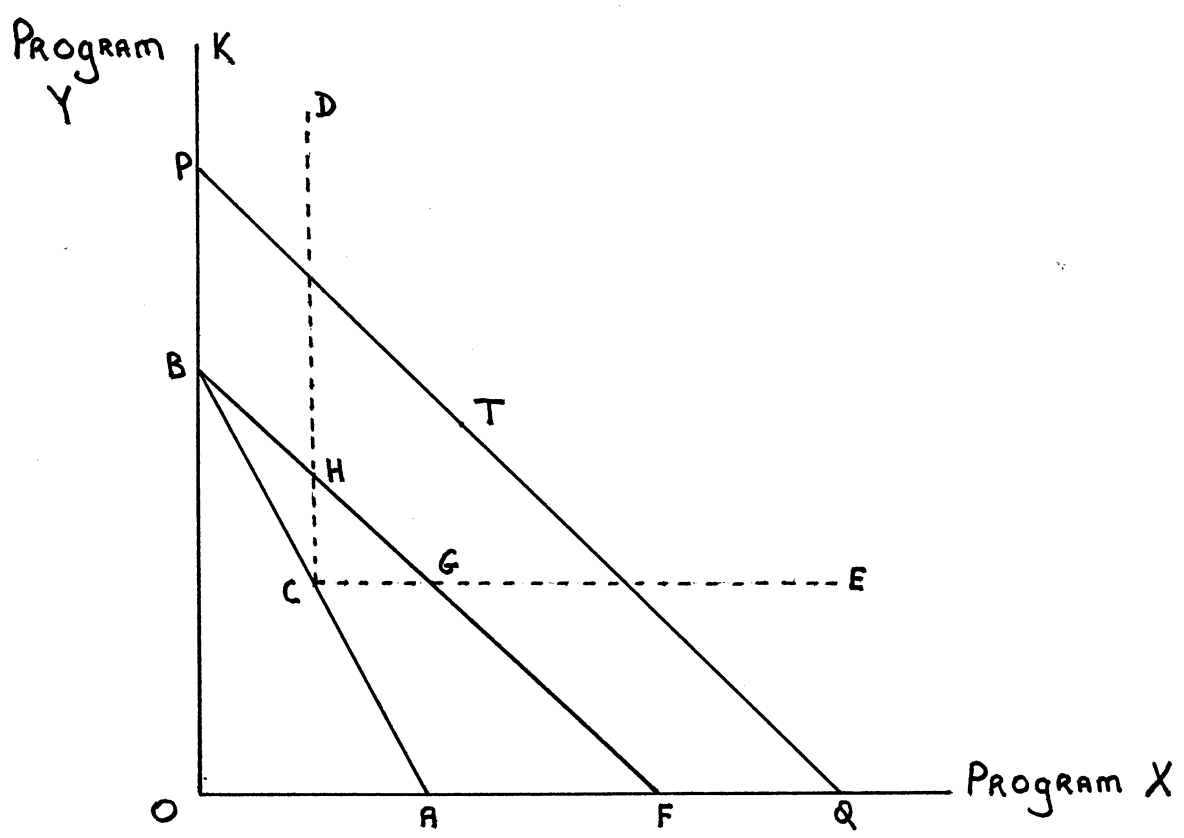
Section 4.2 verbally defined the concepts of stimulation, substitution and distortion in the context of specific purpose payments. Figure 4.1 utilizes the tools developed in the previous chapter to give a diagrammatic explanation of these phenomena.

The horizontal axis represents expenditure on program X, while the vertical axis depicts spending on all other state expenditure categories (program Y). The line AB is the state's budget constraint before a federal specific grant is received and the point C is the expenditure combination chosen by the state in the absence of the grant.

Suppose a specific purpose grant is offered to the state for program X and this shifts the state's budget line to BF. If the expenditure response of the state is to move to point H the grant would have a perfect substitutive effect

1. W. Lane "Financial Relationship and Section 96" ibid p.61

Figure 4.1



as state spending on program X remained unchanged. If the state responds by moving to a point between H and G the grant would be partially substitutive as some of the state's initial expenditure on program X would be diverted to other non-aided programs.

If the state moves to point G in figure 4.1 the grant neither results in a substitution of federal funds for state funds, nor an increase in the level of expenditure on Program X from the state's own revenue sources. In other words, the expenditure on program X increases by exactly the size of the specific grant. In this case it could be said that federal priorities have augmented state priorities. Finally, if the state moves to an expenditure combination between G and F the grant has caused a diversion of funds away from the non-aided activities and consequently altered state priorities, "distorting" its budget.

One limitation of this static analysis is that it shows only the initial impact of specific purpose payments on State budgets and not possible longer term trends. For example, specific grants may encourage State governments to raise more taxes in order to finance an increased level of spending on the aided function. In figure 4.1 this would result in the budget line moving out to a position such as PQ. If, as a result, the State selected an expenditure combination represented by point T then specific purpose payments could be said to have indirectly stimulated state expenditure on both the aided and non-aided functions in the long-run.

#### 4.4(a) A Model of State Expenditures

Having defined the concepts of stimulation and distortion, the remaining sections of this chapter will be devoted to determining whether those phenomena can be observed in a meaningful sense, and furthermore to examine the evidence of their existence in the Australian context.

A major difficulty in developing a model which attempts to "explain" the important determinants influencing State expenditures is the very nature of public goods themselves. Demand functions for private goods generally have quantity demanded of that commodity as the dependent variable and factors such as the price of the commodity, the price of substitutes and personal income as the main independent variables. In contrast, many publicly provided goods are not priced in the market, nor is there any satisfactory measure of the units produced. Even if an actual output measure is available there may be externalities in consumption which may cast doubt on the appropriateness of this measure.

Thus, whereas the previous chapters have considered theoretical models of the spending response of recipient governments to specific grants in terms of the traditional price-output relationship, the absence of a satisfactory output unit for public goods means that empirical models dealing with the determinants of state government expenditure on public commodities have as their dependent variables input measures, that is expenditure per capita, rather than output measures.

Despite this difference it is conceivable that there are broad parallels in the forces underlying the supply and demand conditions for most goods whether public or private. For instance, a rise in personal income presumably will increase the demand for public goods in much the same way as it does for private commodities.

To obtain estimates of the impact of specific purpose payments upon State expenditure patterns a linear multiple regression model of the form

$$Y = a + b_1X_1 + b_2X_2 + \dots + b_nX_n$$

was used. The dependent variable was in turn per capita State spending on roads, education, health and hospitals, and total budgetary expenditure, and one of the independent variables was per capita specific purpose payments for that function. The data consisted of 23 annual observations for each of the Australian States for the years 1951-52 to 1973-74 inclusive.

The particular specific State expenditure categories mentioned above were chosen firstly, because grants to these functions account for a major proportion of total specific purpose payments (see table 1.12) and secondly because consistent data on these functions was available over a number of years. Other independent variables tested in the regression analysis were per capita personal income, lagged per capita personal income, per capita general purpose grants, motor vehicle registrations and government school enrolments.

One difficulty in interpreting the expected influence of personal income on State expenditures is the possibility

that this variable incorporates both supply and demand forces. On the one hand it could be regarded as an indicator of fiscal capacity of government to provide public services. On the other hand, a rise in an individual's income will generally mean he desires to consume more of all goods including public goods. Thus, on both of these grounds it is reasonable to expect that this variable would have a positive effect on State expenditures.

Per capita general grants were included as an independent variable in the Total Expenditure equations as they represent such a large portion of State government revenue resources. Consequently it would also be anticipated that this factor would have a positive influence on State spending.

The inclusion of motor vehicle registrations in the Roads equation and government school enrolments in the Education equations, and the anticipation of positive regression co-efficients in both instances, appear to require little justification or explanation.

Obviously there are other variables depicting the particular characteristics of each State such as topography, climate, area, natural resources, size and age structure of the population, urbanization and income distribution which also influence the pattern of State expenditure.<sup>1</sup>

1. These are some of the factors considered by the Grants Commission in determining assistance to the "claimant" States. For a discussion of how these variables affect State expenditure see the GRANTS COMMISSION FORTY FIRST REPORT, 1974, Chapter 2.

However as these variables show little yearly variation they appear to be more appropriate to a cross-sectional rather than time-series analysis.<sup>1</sup>

Furthermore, it is evident that economic forces analyzed in econometric models can at best provide only a partial explanation of forces operating in the economy. In many instances public sector provision of public services is influenced by historical and political institutions as well as economic factors. Unfortunately there is, at present, no satisfactory method of incorporating such determinants into a regression equation.

Finally, the magnitude and statistical significance of the regression co-efficient on the specific purpose payments variable will indicate whether or not there is any support for the "stimulation" or "substitution" hypotheses. The possible values of these regression co-efficients and a summary of their implications are as follows:

b > 1 :            specific purpose grant of \$1 is  
                      associated with an increase in total  
                      per capita state expenditure on the  
                      aided function of more than \$1, hence  
                      stimulation is indicated.

1. In fact most American cross-sectional studies include many of these factors in their models, for example Jack Osman "on the use of intergovernmental aid as an expenditure determinant"

- $b = 0$  : A \$1 increase in specific purpose grants is associated with no change in State spending on the particular program and consequently no stimulation is apparent.
- $0 < b < 1$  : A specific purpose payment of \$1 is associated with an increase of less than one dollar in total per capita expenditure on the aided function indicating that Federal funds are being substituted for State funds.

The issue of budget distortion is analysed by means of a linear regression model in which the dependent variable is per capita state expenditure for all non-aided functions (defined as expenditure for all State functions minus spending on roads, health and hospitals and education). One of the independent variables being total per capita Federal aid to roads, health and hospitals, and education. Evidence to support the distortion hypothesis would be if the regression co-efficient for Federal grants was negative and statistically significant. This would indicate that an increase in Federal aid is associated with a reduction in State expenditure on those functions which do not receive Federal support. On the other hand, a significant and positive regression co-efficient for Federal aid would indicate that specific purpose payments stimulate spending on non-aided functions.



#### 4.5 Two Qualifications

Two substantial criticisms have been raised by American economists concerning the use of federal aid as a determinant of State expenditures. Firstly, it has been suggested that the conditional grants term in a multiple regression model may not be an "independent" variable. For instance Pogue and Sgontz claim that "the observed relationship between federal aid and state-local expenditures may reflect the influence of expenditures on aid as well as the effect of aid on expenditures" <sup>1</sup>

Secondly, E.R.Morss has questioned the validity of a model such as that employed in section 4.4 on the grounds that specific grants are incorporated in the model as an independent variable and also as a component of the dependant variable (i.e. state expenditures on particular functions are defined as spending by the states plus federal aid to that function). Consequently Morss argues that "studies that document the fact that changes in a particular variable are associated with changes in its components add little to our knowledge of the expenditure process..... little is to be gained from simply regressing the dependent variable on itself or on parts of itself" <sup>2</sup>.

1. Thomas F. Pogue and L.G. Sgontz "The Effects of Grants-In-Aid on State-Local Spending" NATIONAL TAX JOURNAL Volume XXL No. 2 June, 1968, p. 191.
2. Elliot R. Morss "Some Thoughts on the Determinants of State and Local Expenditures" NATIONAL TAX JOURNAL XIX, March 1966, p.97.

Since both these criticisms have serious implications for the legitimacy of the conclusions to be derived from the model in the previous section they require more detailed attention.

#### 4.5. Are Specific Grants Independent?

When examining the evidence for stimulation and distortion in the previous section it was implicitly assumed that the direction of causation was that a change in specific purpose payments resulted in a change in state expenditures. However, it may be argued that as most federal grant programs require the states to match federal funds, the level of state expenditures influences the amount of aid received and consequently this chain of causation is reversed.

In order to judge the merits of this criticism in the Australian context the factors affecting the allocation of specific purpose payments must be analysed. Attention will be directed to grants for roads and education as these account for the majority of grants-in-aid programs.

Federal aid to roads is based primarily on programs without matching. For example the Commonwealth Aid Roads Act 1959 provided \$500m for expenditure on roads. Of this amount only \$60m was subject to matching requirements. The distribution of the remaining \$440m was on the basis of a formula giving equal weight to area, population and motor vehicle registrations in the particular state. Other road programs in previous years explicitly related

allocations to the yield from petrol tax.<sup>1</sup> All of these factors are largely outside the control of the individual states.

For example funds allocated to the various states in 1959-60 were determined by the moneys made available under the Commonwealth Aid Roads Act 1959 and the allocation formula. Funds could then be requested by the states up to the amount determined by this formula. There would appear to be strong pressures on the states to utilize all the funds which were apportioned to it. If this is the case then the amount available to the state determines the amount of aid received by the state. Since the amount allocated is determined largely by forces outside the State's sphere of influence the amount of aid received will also be largely independent of state influences. That is, it can validity be treated as an "independent" variable.

Available statistics support this argument. Since 1958-59 the amounts allocated under Aid Roads legislation, have coincided with payments under such legislation.<sup>2</sup>

Although federal grants for education (and most other functions) contain matching provisions, this does not mean that federal aid to those functions is not an independent variable. In fact the situation with these grants is very

1. For more details see Payments to or for the States and Local Government Authorities 1974-75 op cit pp 185-188. This relative distribution of roads funds to the states has also been maintained in subsequent legislation.

2. ibid p. 197

similar to the grants for roads. In general, specific purpose payments on education are authorised by Parliament on the basis of recommendations by especially appointed committees, for example the Australian Universities Commission. Again the states would be eager to take full advantage of their allocation and since this apportionment has generally been determined by committees of inquiry outside the control of the states, the amount of specific grants received by each state can be validity regarded as exogenous to the state budget.

These arguments lead to the conclusion that specific grants are in general determined by factors largely outside the control of the individual states and consequently aid may be used as an independent variable as it is relatively free of reaction from state expenditures.<sup>1</sup>

#### 4.5.2 Are specific grants regressed on themselves?

As previously mentioned, Elliott Morss has objected to regressing total expenditure on a particular function on the amount of specific grants received for that function.

1. Even so it must be remembered that very few variables could be classified as entirely independent because of interdependencies existing in the economy. The important consideration is whether simultaneous relationships between the dependent and independent variables are strong enough to bias the results.

Since federal funds are a component of total spending, one is to some extent regressing aid on itself and the explanatory power of the equation ( $R^2$ ) would be overstated. To overcome this problem Morss suggests that the amount of spending on the function from the state's own funds should be regressed on aid received.

However if this was done the regression coefficients for specific purpose payments in equations relating aid to expenditures from state sources would be exactly one less than the coefficients obtained from the model developed in the section 4.4. In order to illustrate this point suppose total expenditures on a particular category, financed by federal aid and state funds, are given by:

$$SE_j = a_0 + a_1 X_{1j} + a_2 X_{2j} + \dots + a_k A_j \quad (1)$$

where  $SE_j$  is state expenditure on the  $J^{th}$  function and  $A_j$  is specific purpose payments to the  $J^{th}$  function; then expenditures from own funds will be given by

$$SE_j - A_j = a_0 + a_1 X_{1j} + a_2 X_{2j} + \dots + (a_k - 1) A_j \quad (2)$$

Thus the coefficient of  $A_j$  in equation (2) will be one less than the corresponding coefficient in equation (1). Furthermore the standard errors of the  $A_j$  would not be changed by using equation (2) instead of equation (1). However the coefficient of multiple determination ( $R^2$ ) may be greater for equation (1) than for equation (2)<sup>1</sup>.

1. For an empirical test of these statements see Jack Osman  
op cit. p.444

#### 4.6 The Results

Regression equations for per capita State government expenditure on the four selected categories of Roads, Education, Health and Total Expenditure were estimated between the years 1951-52 and 1973-74 by the technique of ordinary least squares. As the previous section 4.4 demonstrated, the hypothesis that specific purpose payments stimulate State spending is tested by observing whether the coefficient on this variable is significantly greater than one. Table 4.6 gives the key to all the regression tables which are reported in this chapter

Table 4.6

##### Key to Regression Tables

- \* significantly greater than one, at 5% level
- \* significantly greater than zero, at 1% level
- \*\* significantly greater than zero, at 5% level
- \*\*\* significantly greater than zero, at 10% level

Standard errors in parentheses below beta coefficients.

##### 4.6.1 Roads

The equations attempting to explain spending on Roads in the various States are presented in Tables R1 and R2. Table R1 used per capita income and per capita specific purpose payments as the independent variables. In three States, Victoria, Queensland and South Australia the federal aid coefficient was significantly greater than one indicating that in these States specific purpose payments stimulate State expenditures. In the remaining States the coefficients were statistically greater than zero implying some substitution of federal for state funds. However in all cases the

income term added little to "explaining" the expenditure and in the case of Victoria and Tasmania the coefficient did not have the anticipated (i.e. positive) sign.

Furthermore it would be anticipated that these coefficients on specific purpose payments would be positively biased. This comes about simply because road grants are given by a formula which is weighted by the individual state's area, population and number of motor vehicles on register. Thus the coefficient of the federal aid variable in Table R1 would to a large extent measure the influence of these other factors on road expenditure. If these factors would influence per capita spending on roads by states even in the absence of federal specific purpose grants then the coefficient on the specific purpose grants will be biased upwards. Some evidence of this is provided in Table R2 which reworks the equations of Table R1 with motor vehicle registrations as an additional independent variable. Only Victoria still shows a coefficient for federal aid which is significantly greater than one while the corresponding coefficients for all other states are now not significantly greater than zero.

Overall while there is little reason on statistical grounds to prefer the R2 equations to the R1 equations, theoretical considerations indicate that those in Table R2 should be preferred. Hence, except in Victoria, the regressions provide little support for the stimulation hypothesis. One reason for this may be the difficulties encountered in actually specifying these equations owing to the formula constraint mentioned above. Another possibility is that other variables, which are inappropriate

for time series analysis, such as topography, land area and urbanization are more important than the variables employed in tables R1 and R2.<sup>1</sup>

#### 4.6.2 Education

Tables E1, E2 and E3 summarize the findings in the education category. Table E1 regresses education expenditure on income and specific grants. The coefficient on the specific grants variable is positive but not significant in three states (Qld., W.A. and Tasmania) while having a negative sign in the other states. Furthermore while the income term is significantly greater than zero in all states, it does not have much impact on spending.

When government primary and secondary school enrolments was included as an additional independent variable (Table E2) only Western Australia had a positive sign for specific grants while the impact of income remained minimal. When income was omitted and specific grants and government enrolments were combined as independent variables (Table E3), the coefficient on the grants variable was significantly greater than one for all states, while the coefficients on the government enrolment terms were all significantly greater than zero. On both statistical and a priori grounds

1. For some discussion of the influence of these, and other factors, on the state's per capita expenditure for roads, see the GRANTS COMMISSION 42nd Annual Report.



the equations in Table E3 can be taken as the preferred set. Hence the regression analysis provides strong evidence in support of the stimulation hypothesis.

Other factors which were tried in the education equations were government enrolments with a one year lag and income with a similar lag. Neither of these variables performed well enough to indicate that they are important determinants of education expenditure.

#### 4.6.3 Health

The results of the health education's report in Tables H1 and H2 gave the clearest outcome of all expenditure categories. Specific grants were combined with income (H1) and lagged income (H2) as the independent variables. It is difficult to choose between equations H1 and H2 on either statistical or theoretical grounds, however, both sets of equations lead to the same conclusion. In only three of the twelve cases were the grants coefficient significant (S.A. and W.A. in Table H1 and S.A. in Table H2) and in only one case (S.A. in Table H2) was the coefficient significantly greater than one.

This indicates that specific grants are generally not important in determining state expenditure on health. These results also imply that other factors such as population structure and urbanization, variables more suited to cross-sectional analysis, may be more influential on health spending.

#### 4.6.4 Total Expenditure

The equations containing total per capita state expenditure on all functions as their dependent variable are recorded in Tables T1, T2, T3, T4 and T5. Table T1 regresses total state expenditure on specific grants, income and general purpose grants. As it was anticipated that income and general purpose grants would themselves be correlated,<sup>1</sup> it was decided to omit in turn the general grants term (Table T2) and the income term (Table T3). In a further attempt to overcome this correlation between income and general purpose grants a lagged per capita income term was tried as an independent variable with specific grants (Table T4) and in combination with both specific purpose and general grants (Table T5).

On statistical grounds there appears to be little reason for choosing one set of these equations as superior to the others. However, theoretical considerations would indicate that Table T1 contains the preferred set of equations.

The coefficient on specific purpose payments is significantly greater than one for N.S.W. and Victoria in all five tables, giving confirmation that specific grants to these states stimulate additional spending from the state's own revenue resources. Only when lagged income and specific grants were used as independent

1. The size of general purpose grants in the period under analysis was determined by a formula which included, among other factors, the increase in average wages for Australia as a whole.

variables (Table T4) did all states show a coefficient for specific grants which was significantly greater than one. However, this result is somewhat suspect as adding general purpose grants as an independent variable (Table T5) nullifies this result except in N.S.W., Victoria and Tasmania.

Evidence in support of the importance of specific purpose payments on total state expenditure in states other than N.S.W. and Victoria is far from convincing. In Tables T1, T2, T3 and T5, only on state (Tasmania in T3 and T5) has a coefficient on specific grants which is significantly greater than one. In addition, of the remaining states, only Queensland in Table T3 possesses a coefficient on specific grants which has a positive sign and is statistically significant.

In conclusion, the evidence in this expenditure category supports the stimulation hypothesis for Victoria and N.S.W. but not for the remaining states. One interesting aspect of the results in the equations for N.S.W. and Victoria was that specific purpose grants seem far more important than general purpose grants in determining total per capita expenditure.

#### 4.6.5 The Distortion Thesis

Tables D1 and D2 document the evidence of the effect of specific grants on non-aided activities (defined as expenditure on all state functions minus spending on roads, health and hospitals, and education). The "distortion" thesis claims that specific grants reduce state expenditure on functions which do not receive federal government aid.

Hence evidence in support of this hypothesis would be regression coefficients for specific grants which are negative and statistically significant.

Table D1 regresses non-aided expenditure on income, specific purpose grants and general purpose grants. As income and general purpose grants are highly correlated it was decided also to run a regression omitting the general grants term (Table D2). Both sets of equations give similar results.<sup>1</sup>

In both Tables D1 and D2 all states except Victoria and Western Australia have negative coefficients on the specific grants variable, although in some instances they are not statistically significant. In the case of the N.S.W. equations little confidence can be placed in the results owing to the low Durban-Watson statistics. Of the remaining states, support for the distortion hypothesis is strongest in Queensland and South Australia which have negative and statistically significant coefficients for specific grants in both Tables D1 and D2.

In contrast, the regression coefficients for specific grants in Victoria and Western Australia were positive and significant (except for W.A. in Table D2 where it was positive but not significant) indicating that "stimulation" rather than "distortion" of the non-aided functions is associated with specific grants in these states.

1. Omitting the income term was also tried but this led to very low Durban-Watson statistics.

Another interesting outcome of the equations in Table D1 was the impact of general purpose grants on non-aided functions. In Victoria and Western Australia there is an unexpected result with a positive and significant coefficient for specific grants and a negative and significant coefficient for general purpose grants, indicating that in these two states general grants are also directed towards the already aided functions. Whereas in Queensland and South Australia, where there is support for the distortion thesis, general purpose grants stimulate expenditures on non-aided functions. In N.S.W. and Tasmania the coefficients on both specific and general purpose grants were not significant.

#### 4.7 Summary and Conclusions

As would be anticipated the empirical data reveals a diverse reaction on the part of individual states to specific purpose payments. Indeed it would be expected that individual state social preferences, differences in their fiscal capacity and flexibility, variations in their perception of the importance of the services involved and their price elasticity of demand for the particular public amenity would all play an important role in determining their expenditure response. However, the main purpose of this chapter was to investigate the effectiveness of specific purpose payments as a policy instrument of the national government in achieving the objective of expanding the expenditure of state governments, from their own sources, on certain public services.

Table S1 summarizes the empirical results in terms of whether there was evidence for stimulation or distortion. Unfortunately the outcome for some states and some expenditure categories proved to be inconclusive and consequently no reliable conclusions could be confidently derived from these equations.

Of all the expenditure categories examined specific grants for education proved to be the most successful in attaining the objective of stimulating expenditures on education in every state. As would be expected the absolute size of this stimulation varied from state to state. Yet it must be recalled that these payments were given to a wide range of educational activities encompassing primary, secondary, tertiary and technical education. Thus it is conceivable that specific purpose grants not only caused an expansion of total state expenditure on education but it may also have influenced the relative allocation of state monies to different levels of education.

For instance it is possible that the longest-standing specific grants to education, namely those going to universities, may have stimulated state expenditure in that sphere at the expense of primary or secondary education. To test whether or not this did happen would shed further light on the economic impact of specific grants. Unfortunately many of these educational grants have only been recently initiated and consequently the testing of this hypothesis is constrained by insufficient data. But it is conceivable that specific grants distort state priorities within education.

Whereas specific grants proved to be successful in stimulating state expenditures in education they proved to be singularly unsuccessful in the area of health. In no state was there positive evidence that specific grants to health caused an expansion of state expenditures in this category. Perhaps the reason for this is that until 1973 specific grants for health were largely confined to supplementary and peripheral programs, such as blood transfusion services, tuberculosis control and mental institutions, which the national government thought were not adequately covered by existing state health programs. Consequently these grants would be unlikely to have had much impact on the bulk of state health expenditure.

As previously mentioned the equations attempting to explain per capita state expenditure on roads were the most difficult to specify owing to the correlation among some of the "independent" variables because of the formula upon which specific grants are based, and also because other variables more appropriate to a cross-sectional study, for example population density and area, which appear a priori to influence expenditure on this function had to be excluded. Consequently the results for this category should be viewed with some suspicion. In fact evidence for stimulation was only found in Victoria with the remaining states either showing no stimulation or the outcome being inconclusive.

Turning to the Total Expenditure category specific purpose payments stimulated total state spending in the two most populous and wealthy states of N.S.W. and Victoria.

The reason for this may be that these states may be able to expand receipts from their own resources more rapidly than the other states because the average income, and therefore the taxable capacity, of their residents is higher. In contrast, the financially weaker states would find it much more difficult to expand the total size of their budgets. Other non-economic, factors such as the particular state's preferences for private as opposed to public goods and its perception of the optimum amount of government involvement in the economy may also influence the absolute size of a state budget.

Finally, evidence in support of the "distortion" thesis was found in Queensland and South Australia. Taken in conjunction with the no stimulation result for these states in the Total Expenditure category this implies that specific grants had an important effect of the expenditure pattern in both these states. Although specific grants did not affect the magnitude of total state sector spending it did have a marked influence on the relative distribution of financial resources between "aided" and "non-aided" functions. More precisely, specific purpose payments to both Queensland and South Australia encouraged the expansion of the federally aided functions at the expense of the non-aided functions. In this sense the expenditure patterns of these states were distorted and the priorities of the national government partially replaced those of the State governments.



In Victoria, specific purpose payments stimulated both aided and non-aided functions. Again the explanation for this is probably that Victoria's fiscal capacity and consequent ability to expand its total expenditure program is relatively greater than the states with a smaller and less wealthy population. The evidence in support of the distortion thesis in the remaining states of N.S.W., Western Australia and Tasmania is not as clear-cut as in the previous three cases and hence no definite conclusions can be drawn regarding the overall influence of specific grants on the expenditure patterns in these states.

TABLE R1

Per Capita Road Expenditure	Constant	Per Capita Income	Per Capita Specific Grants	D.W.	R <sup>2</sup>
N.S.W.	-2.163 (1.433)	.00668** (.003)	1.130* (.420)	.712	.985
Victoria	5.403 (.6333)	-.0057** (.0012)	2.692* (.180)	1.47	.985
Queensland	3.853 (1.407)	.0007 (.0035)	1.671* (.211)	1.79	.989
S.A.	1.975 (1.211)	.0038*** (.0028)	1.372* (.2166)	2.682	.976
W.A.	-8.196 (1.53)	.0225* (.0028)	.4774* (.1407)	1.827	.973
Tasmania	16.249 (2.551)	-.0061 (.0057)	1.446* (.3122)	.527	.863

TABLE R2

Per Capita Roads Expenditure	Constant	Per Capita Income	Motor Vehicle Registrations	Per Capita Specific Purpose Grants	D.W.	R <sup>2</sup>
N.S.W.	-6.777 (1.897)	.0088* (.0029)	.00925* (.0029)	.00156 (.5032)	1.29	.990
Victoria	2.3878 (1.339)	-.0083* (.0015)	.01216** (.0049)	2.0154* (.3166)	1.518	.989
Queensland	-4.753 (2.949)	-.000098 (.0029)	.05569* (.0175)	.4709 (.4162)	2.73	.992
S.A.	-3.03 (4.4)	.043*** (.002)	.0004 (.0003)	.5775 (.7097)	2.676	.978
W.A.	-8.01 (1.52)	.012*** (.011)	.058 (.072)	.2407 (.3219)	1.69	.974
Tasmania	11.1 (.004)	-.011*** (.007)	.00018 (.00015)	.8753*** (.5595)	.498	.8735

TABLE R3

Per Capita Road Expenditure	Constant	Per Capita Specific Grants	D.W.	R <sup>2</sup>
N.S.W.	.4737 (.4910)	1.942* (.0551)	.695	.983
Victoria	3.0829 (.5575)	1.883* (.0720)	.793	.970
Queensland	4.1060 (.637)	1.7131* .0394	1.92	.988
S.A.	3.231 (.783)	1.653* (.058)	2.61	.974
W.A.	-5.799 (2.942)	1.481* (.110)	.431	.894
Tasmania	14.258 (1.776)	1.1260* (.1009)	.463	.855

TABLE E1

Per Capita Education Expenditure	Constant	Per Capita Specific Purpose Payments	Per Capita Income	D.W.	R <sup>2</sup>
N.S.W.	-32.197 (1.750)	-.9886* (.11195)	.0627* (.0016)	1.64	.997
Victoria	-48.688 (2.966)	-.450* (.1429)	.0738* (.0025)	1.078	.995
Queensland	-28.899 (3.020)	.0106 (.2037)	.0557* (.0031)	.714	.992
S.A.	-60.292 (5.80)	-.810* (.274)	.1022* (.0057)	1.458	.988
W.A.	19.583 (2.907)	.0763 (.157)	.057* (.0029)	.894	.992
Tasmania	-37.059 (4.122)	.1780 (.260)	.0842* (.0047)	1.58	.994

TABLE E2

Per Capita Education Expenditure	Constant	Per Capita Specific Purpose Payments	Government School Enrolments	Per Capita Income	D.W.	R <sup>2</sup>
N.S.W.	-33.529 (2.9486)	-.9183* (.1683)	.00602 (.0106)	.0607* (.0038)	1.63	.997
Victoria	-45.6065 (2.411)	-.905* (.1607)	-.0517* (.0133)	.0897* (.0045)	1.713	.997
Queensland	-20.824 (4.415)	-.3145*** (.2313)	-.0791** (.0339)	.066* (.0053)	1.009	.993
S.A.	-63.796 (5.222)	-.3131 (.302)	.1318* (.0488)	.084* (.008)	1.436	.991
W.A.	-23.11 (3.401)	.3413*** (.210)	.1166** (.065)	.0474* (.0065)	.934	.993
Tasmania	-31.908 (5.670)	-.1150 (.341)	-.2077 (.1599)	.0928* (.008)	1.65	.994

TABLE E3

Per Capita Education Expenditure	Constant	Per Capita Specific Purpose Payments	Government School Enrolments	D.W.	R <sup>2</sup>
N.S.W.	-54.99 (9.608)	1.586* (.2105)	.15733* (0.0171)	1.242	.961
Victoria	-40.770 (10.814)	2.045* (.26126)	.18505* (.02629)	1.216	.946
Queensland	-39.0845 (12.284)	2.315* (.2777)	.27585* (.05461)	1.187	.944
S.A.	-44.818 (11.850)	2.494* (.270)	.522* (.071)	.944	.947
W.A.	-27.852 (6.339)	1.751* (.1586)	.5471* (.053)	.8711	.974
Tasmania	-43.144 (15.355)	3.629* (.2892)	1.296* (.252)	1.285	.959

TABLE H1

Per Capita Health Expenditure	Constant	Per Capita Income	Per Capita Specific Grants	D.W.	R <sup>2</sup>
N.S.W.	-3.1519 (1.131)	.0199* (.0006)	.28951 (.9045)	.784	.985
Victoria	-8.0734 (3.663)	.0211* (.0025)	-.4992 (3.768)	1.97	.867
Queensland	-8.8125 (1.243)	.02719* (.00068)	-.3054 (.7557)	1.35	.989
S.A.	-16.5714 (.7841)	.0312* (.00078)	1.24815* (.486)	1.34	.994
W.A.	-15.392 (1.663)	.0370* (.0009)	1.3013** (.6955)	.902	.988
Tasmania	-7.285 (1.097)	.03431* (.0010)	.00228 (.57811)	1.200	.989



TABLE H2

Per Capita Health Expenditure	Constant	Per Capita Lagged Income	Per Capita Specific Grants	D.W.	R <sup>2</sup>
N.S.W.	-.9859 (3.048)	.02100* (.0019)	-.2900 (2.5400)	.827	.892
Victoria	-8.9432 (4.756)	.0188* (.0032)	4.8872 (4.498)	1.63	.778
Queensland	-4.746 (3.531)	.02962* (.0022)	-2.3993 (2.2802)	1.016	.912
S.A.	-14.1002 (3.1789)	.0282* (.0032)	5.3598* (1.7668)	.854	.910
W.A.	-16.0145 (4.995)	.04006* (.0030)	2.5160 (2.0289)	.940	.9004
Tasmania	-6.1368 (2.749)	.03464* (.0027)	1.475 (1.407)	1.15	.931

TABLE TI

Per Capita Total Expenditure	Constant	Per Capita Specific Purpose Grants	Per Capita Income	Per Capita General Grants	D.W.	R <sup>2</sup>
N.S.W.	54.116 (10.365)	2.252* (.528)	.0793* (.028)	.1037 (.440)	1.10	.994
Victoria	29.283 (7.95)	2.027* (.368)	.0901* (.0137)	-.0364 (.1547)	2.49	.996
Queensland	29.140 (12.20)	.4552 (.426)	.097* (.027)	.891* (.338)	1.27	.995
S.A.	-22.659 (26.708)	-1.5941*** (1.020)	.2045* (.064)	1.230** (.623)	1.02	.985
W.A.	37.162 (10.078)	-.1154 (.404)	.1513* (.026)	.726** (.420)	1.09	.990
Tasmania	-.6564 (25.620)	.9160*** (.6119)	.2560* (.0541)	-.1499 (.3017)	1.050	.985

TABLE T2

Per Capita Total Expenditure	Constant	Per Capita Income	Per Capita Specific Purpose	D.W.	R <sup>2</sup>
N.S.W.	52.836 (8.6032)	.0851* (.0135)	2.2205* (.4874)	1.055	.994
Victoria	30.2614 (6.676)	.877* (.009)	2.0450* (.351)	2.45	.996
Queensland	17.698 (13.063)	.1487* (.0228)	.7267*** (.4736)	.767	.993
S.A.	-48.426 (25.022)	.3013* (.0445)	-1.5494*** (1.095)	.971	.981
W.A.	48.952 (7.801)	.1860* (.0175)	.3053 (.339)	.768	.988
Tasmania	5.301 (22.187)	.2364* (.0364)	.9221*** (.599)	1.01	.985

TABLE T3

Per Capita Total Expenditure	Constant	Per Capita General Grants	Per Capita Specific Purpose Grants	D.W.	R <sup>2</sup>
N.S.W.	79.147 (6.153)	1.180* (.252)	3.279* (.444)	1.936	.992
Victoria	66.978 (5.431)	1.153* (.228)	3.212* (.429)	2.46	.991
Queensland	67.5188 (6.616)	1.716* (.304)	1.222* (.459)	1.787	.992
S.A.	55.515 (12.798)	2.744* (.490)	.4218 (.974)	1.508	.976
W.A.	27.412 (16.382)	2.599* (.443)	-.049 (.666)	.836	.972
Tasmania	111.287 (14.254)	.8874* (.3018)	2.892* (.6513)	1.09	.966

TABLE T4

Per Capita Total Expenditure	Constant	Per Capita Specific Purpose Grants	Per Capita Lagged Income	D.W.	R <sup>2</sup>
N.S.W.	98.230 (7.211)	4.872* (.4098)	.0127 (.0113)	1.408	.985
Victoria	74.896 (6.573)	4.409* (.347)	.0258 * (.009)	1.94	.985
Queensland	88.155 (9.268)	3.301* (.322)	.0252*** (.0160)	1.89	.981
S.A.	97.7266 (19.171)	4.947* (.783)	.0361 (.0319)	.888	.942
W.A.	86.086 (13.13)	2.052* (.550)	.0955* (.028)	.540	.950
Tasmania	116.742 (21.689)	3.934* (.5940)	.0520*** (.0366)	1.37	.956

TABLE T5

Per Capita Total Expenditure	Constant	Per Capita Specific Purpose Grants	Per Capita Lagged Income	Per Capita General Grants	D.W.	R <sup>2</sup>
N.S.W.	80.620 (6.49)	3.33* (.454)	-.0072 (.0092)	1.293* (.292)	2.09	.992
Victoria	72.115 (5.848)	3.702* (.391)	.0149*** (.008)	.5384* (.2061)	1.98	.989
Queensland	64.433 (7.65)	1.165** (.468)	.009 (.010)	1.6403* (.320)	1.80	.992
S.A.	59.249 (14.376)	.457 (.992)	-.0138 (.0226)	2.885* (.549)	1.55	.977
W.A.	31.372 (17.18)	-.0116 (.673)	.0237 (.0284)	2.283* (.585)	.816	.973
Tasmania	113.975 (19.443)	2.9189* (.680)	-.00869 (.0414)	.9378** (.3918)	1.15	.967

TABLE D1

PER CAPITA NON-AIDED EXPENDITURE

State	Constant	Per Capita Personal Income	Per Capita Specific Purpose Payments on Aided Functions	Per Capita General Purpose Grants	R <sup>2</sup>	Durban-Watson
N.S.W.	37.214 (27.390)	.091** (.052)	-.7135 (2.546)	-.446 (.599)	.940	.370
Victoria	103.017 (20.47)	-.0094 (.0299)	5.271* (1.601)	-1.098* (.348)	.947	1.217
Queensland	23.509 (10.00)	.099* (.025)	-2.436* (.748)	.541** (.266)	.982	1.49
South Australia	-4.362 (23.596)	.1571* (.054)	-6.633* (1.718)	1.385* (.602)	.930	1.66
Western Australia	90.459 (4.108)	.079* (.011)	.814** (.399)	-.373*** (.221)	.986	1.54
Tasmania	-22.620 (24.937)	.234* (.056)	-2.636 (2.342)	-.022 (.464)	.931	.812

TABLE D2

PER CAPITA NON-AIDED EXPENDITURE

State	Constant	Per Capita Income	Per Capita Specific Purpose Payments on Aided Functions	R2	Durban-Watson
N.S.W.	38.409 (27.022)	.074*** (.046)	-.913 (2.502)	.938	.420
Victoria	95.098 (24.625)	-.031 (.035)	3.571** (1.826)	.919	1.12
Queensland	15.895 (10.02)	.130* (.021)	-2.133* (.792)	.977	1.21
South Australia	-17.01 (25.41)	.234* (.047)	-5.314* (1.793)	.910	1.36
Western Australia	85.45 (2.99)	.066* (.008)	.310 (.278)	.984	1.61
Tasmania	-22.68 (24.24)	.234* (.054)	-2.708*** (1.712)	.931	.81



TABLE SI

State	Roads	Education	Health	Total Expenditure	Distortion
N.S.W.	No Stimulation	Stimulation	No stimulation	Stimulation	Inconclusive
Victoria	Stimulation	Stimulation	No Stimulation	Stimulation	Stimulation
Queensland	No Stimulation	Stimulation	No Stimulation	No Stimulation	Distortion
S.A.	No Stimulation	Stimulation	Inconclusive	No Stimulation	Distortion
W.A.	Inconclusive	Stimulation	No Stimulation	No Stimulation	Weak support for stimulation.
Tasmania	Inconclusive	Stimulation	No Stimulation	Inconclusive	Weak support for distortion.

## Chapter 5

### Conclusions

The previous chapter verified that there is evidence that specific purpose grants can be important determinants of state expenditure, especially in the field of education, and in some instances could affect the overall allocation of resources in state budgets between "aided" and "non-aided" functions. Furthermore, interdependencies between the private and public sectors of the economy suggest that specific grants may have a wider range of effects than was indicated in the model in the previous chapter. Clearly, the national government has in its possession a potentially powerful tool of economic management and resource allocation and consequently it is imperative that public planners have a comprehensive knowledge of the impact of specific grants on state expenditure patterns and also circumstances in which the use of these grants is justified.

In the past too little attention has been paid to the scope and method of allocating many specific purpose grants and inefficient resource allocation has resulted. Mathews and Jay succinctly summarised much of the history of specific grants in Australia when they said that

"the criteria used to determine the scope for specific purpose grants are by no means clear. They seem to include a Commonwealth desire to further genuinely national interests which for one reason or another have been neglected by both Commonwealth and States, Commonwealth probings directed towards the usurpation of State powers, attempts to relieve State budgets

(e.g. in times of natural disasters) or to stimulate the States to improve the standard of services for disadvantaged groups in the community and, at times, sheer political opportunism aimed at securing short-run electoral advantages in particular areas"<sup>1</sup>

In this regard the conclusions of this thesis are that the scope of specific purpose payments should be limited: (1) to programs which exhibit significant spillover benefits; (2) to services which the community feels should be provided at a minimum standard to all citizens, i.e. "birthright programs"; and (3) to research programs where the results of the program give the promise of being useful to states other than the state originating the research project. Chapter 2 analyzed the economic arguments for specific grants in these situations.

In Australia at the present time there are specific purpose payments which do fit into the categories mentioned in the previous paragraph. However, there are many other grant programs which clearly do not, for example, assistance to the sugar and tobacco industries in certain states. Furthermore, there are areas which appear to justify the reception of specific grants but which have been neglected by the national government. Mathews is particularly critical of the federal government's lack of involvement in the construction of interstate highways<sup>2</sup>, an expenditure

1. Mathews and Jay op.cit. p.222

2. ibid p. 225. However this policy has been recently reversed.

item which appears to have significant benefit spillovers. A similar criticism could also be levelled at the national government for the small proportion of the financial burden it assumed in the field of education. Obviously there is a need for the federal government to clarify the aims and objectives of specific grants and to document precisely the criteria upon which they will be granted.

As well as there being inconsistencies in the application of criteria determining the scope of specific purpose payments, the formulae which determine the size of particular grants and the conditions which are attached to them appear less than ideal. While there is no legal constraint in the conditions that could accompany specific grants, the most common condition is that the state must match some proportion of the national government's funds. At present the actual matching requirements do not appear to be determined by any economic considerations. The conclusions of this thesis as outlined in Chapter 2 are that the matching provisions of a specific grant should be designed primarily to compensate the individual state for benefits which accrue to citizens outside its boundaries. The proportion of the project financed by the state should vary inversely with the size of the benefit spillovers.

Furthermore, the formulae upon which the size is decided frequently rely upon gross variables such as population, student numbers, and area, and consequently are not specially designed to produce information regarding the state's demand for the particular service. As Chapter 3 illustrated the response

of the states to specific grants will not be uniform but will vary according to the individual state's price elasticity of demand. Hence the national government should conduct research into the major determinants of each state's demand for a particular service with the ultimate aim of making the grant formula a function of these variables. In this way the national government, by taking into account the different conditions relevant in individual states, could more accurately anticipate the expenditure response of the states and could be more assured that the response was consistent with the objectives of the grant.

Chapter 4 supported the contention that the response to specific grants differs between expenditure categories and also from state to state. It was found that specific purpose payments were more likely to stimulate state expenditure from their own sources if the grants were relatively large in relation to the state's total spending program e.g. in the area of education. In contrast, if the grants were directed mainly at supplementary projects not adequately covered by existing state expenditure, the effect of the specific grant was likely to be minimal.

The other major finding of Chapter 4 was that the response of the financially weaker states of Queensland and South Australia differed from the reaction of the financially stronger states of N.S.W. and Victoria. In particular specific grants appeared more likely to distort budgets in the poorer states than in the richer states.

The principal reason for this is that a state with a low revenue base will generally have more difficulty in meeting its share of a matching grant than a state with more abundant revenue resources. Thus it would be expected that if the poorer states are to utilize specific matching grants they would need to shift expenditure away from non-aided functions. In contrast, richer states would be capable of increasing their revenue at the margin to match federal funds and consequently would not affect the resources devoted to non-aided functions.

The finding that Queensland and South Australia, and to some extent Tasmania, had their budgets "distorted" by specific purpose payments has associated with it the implication that in these states the expenditure priorities of the federal government were imposed upon state priorities. In cases where budget distortion was not evident it could be said that state priorities were augmented by federal priorities. The judgement as to whether budgetary distortion is desirable or undesirable really depends upon one's opinion as to which level of government possesses the best information regarding the preferences of the community it serves. Clearly if it is believed that individual states are the best assessors of community welfare then budget distortion will be judged to be undesirable.

To summarise, the conclusions of this thesis are that:

(I) the scope of specific purpose payments should be limited to projects which promote minimum standards in "birthright" programs, or exhibit significant benefit spillovers;

(II) specific grants stimulate state expenditure from their own sources where the grants constitute a relatively high proportion of total state expenditure;

(III) budgetary distortion is more likely to occur in the financially weaker states; and

(IV) the federal government should conduct more research into the effects of specific purpose payments so that they can be more efficiently incorporated into the Australian fiscal system.

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