Illusions in Fiscal Policy: A Case Study

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The paper examines government fiscal policy in a representative democracy under the conditions of fiscal illusion, i.e. the systematic misperception by voters of the public revenue burden they bear and the benefits they receive through government's spending policy. Empirical evidence is offered for Australia. The results indicate that voters seem to be rationally underinformed and, thus, subject to systematic misperception of fiscal variables and that government tries to exploit such fiscal illusions when working towards its re-election.

I. Information, Rational Ignorance and Fiscal Illusion

Traditional consumer theory implicitly assumes perfect information or, at least, a very short learning span. Some economists have modified this assumption and explicitly analyzed the cost of information to the consumer, thereby recognizing what may be called *rational ignorance* in consumer choice.[1] Due to the positive and increasing marginal costs of collecting information, consumers may not have incentives to acquire complete information.

There are differences in the costs of acquiring information which reflect differences in the nature of the goods involved. Some goods such as cars have the characteristics of "search" goods, i.e., it pays to invest in an information search *prior* to purchase to obtain a better idea of quality. Other goods, like brands of red wine or cheese, are "experience" goods for which information obtained through prior search is less appropriate than information derived from purchase and experience. For these goods quality becomes known after purchase.[2] There are also certain goods whose qualities are difficult to judge even after purchase, i.e., they have "credence" qualities and expertise is required in their evaluation. (Darby and Karni [1973]). Credence qualities are characteristic of goods and services that are utilized in combination with other goods and services composed of uncertain properties. However, it should be noted that emphasis is usually placed on the *complexity of the good or service itself* as the source of rational ignorance. The property rights in such a case may,

in principle, be well established permitting the existence of a competitive market.

Rational ignorance is not restricted to the marketplace, however, as was recognized very early by Anthony Downs (1957) and other economists in their analyses of the voting process under majority rule. Their basic argument is that the influence exerted by a single individual through his vote is insignificant in determining the outcome of a national election because the probability of his being the decisive vote may very quickly approach zero and he is, therefore, likely to invest little or no effort in obtaining information on public policy. It follows that he is rationally ignorant.[3] There are also positive information costs arising from the *nature* of publicly provided goods and services and their financing which are often much higher than in the case of marketed goods. Evaluation of publicly provided goods and services may require a greater degree of expertise. The main difference between the political and the market sphere lies, however, in the significance of political *institutions*. In the political sphere, property rights are *not* well defined in terms of the goods and services publicly provided. There may be major differences between political parties, but the common principle is that only one majority can exist at a time and, therefore, the winning political party has a *legal monopoly* over time.

Fiscal illusion can be seen as a special kind of rational ignorance. It is defined here as the *systematic* misperception by people of the fiscal burden they bear and the benefits they receive through public policy. It is due principally to the spe-

cific nature of the various public revenue items and public services and the associated information costs. Moreover, it is reinforced by the individual's limited influence on the political process and the weak incentives to acquire information about the policies under discussion. It should be noted that the term "illusion" is *not* intended to convey the idea that individuals are somehow behaving irrationally. The systematic misperception of the burden and benefits arises because it is not in the individual's narrow self-interest to invest in accurate information and knowledge about the public sector. Despite its somewhat unfortunate connotations, "illusion" is a term that has become widely used and, thus, will also be used here.

In this paper fiscal illusion will be analyzed by assuming that we have (i) a government which aims to maximize its utility subject to various constraints and (ii) an electorate that is also utility maximizing.[4] We will show in Part II that voters are rationally underinformed and, thus, subject to misperception of fiscal variables, and that when this is the case governments will try to exploit the situation in order to reach their ideological goals or to improve their re-election chances.

The first question considered is whether, taking into account the explicit preferences of the governing party for specific goals and instruments, the government will try to exploit fiscal illusions. If so, will this result in a predictable pattern of changes in the *structure* of the fiscal variables over a legislative period. This is examined in Part III in an empirical analysis of the behavior of the Australian federal government using monthly data for the period 1970–78.[5]

The second question is whether the economy is manipulated *cyclically* over the legislative period in such a way that the government makes a favorable impression on the voters, mainly to improve its re-election chances. This issue is examined in Part IV by extending the analysis back to 1960, using quarterly data, in order to cover a larger number of legislative periods. Part V presents a summary and a discussion of the general approach.

II. Voters' Behavior in a Representative Democracy

It is assumed that in evaluating the government's performance voters maximize their own utility, i.e., the degree of their support, as measured, for example, by current government popularity or by voting for the government at election time, de-

pends on how satisfied they are with its overall performance. Because of the high costs and low benefits involved for the individual there is little, or even no, incentive to become fully informed about overall performance. This is true with regard to obtaining information not only about one's present and future burden of government receipts and benefits received through public expenditures, but also about the past, which may be discounted by the voters.

1. Illusions about Taxing and Spending

As discussed above, individuals will generally have little incentive to become fully informed about the government sector. Besides, one can expect that the information absorbed on a day-to-day basis may be biased in a systematic way because of the different costs involved in acquiring information on different revenue items. These information costs are dependent on the varying degrees of visibility, the timing of the extraction items and the degree of hidden shifting of the revenue burden.[6] Thus, it appears to make little sense for the individual to secure complete information on the different parts of the fiscal burden borne since the marginal benefits of doing so quickly approach zero. From this we may conclude that the voter/taxpayer perceives certain public revenue items less comprehensively than others or not at all and that this opens up opportunities for the government to install revenue extraction institutions that will decrease the perceived cost of government, *ceteris paribus*, thereby favorably influencing the voters' evaluation of the government's performance.

Voters may also be subjected to systematic misperception of the benefits of public spending programs. However, it is very difficult to derive a hypothesis about systematic biases in individuals' perceptions of public services. This problem arises because of the difficulty in discriminating between the actual and the perceived benefits derived from publicly provided goods. The cost of the government's activities to a taxpayer via taxes and other forms of fiscal extraction is, to a large extent, identifiable so that if the perception of this cost can be reasonably determined the difference can be attributed to fiscal illusion. This does not hold for the spending side, however. For this reason we will not try to distinguish here between preferences and favorably biased perceptions when dealing with the government's spending.

We also assume that, as is shown in various

studies,[7] voters rarely draw a close connection between public services and their actual financing sources. This assumption may be valid as the principle of non-affection is used at the federal level.[8] The link between federal revenue and expenditure is further obscured by government borrowing.

When empirically examining misperceptions we also have to consider how the government's ability to steer the overall economy is evaluated by the voters. It can be expected that the individual's impression of this will be influenced by his perception of the current and past states of the economy, mainly represented by the most visible variables such as the rate of unemployment and the rate of inflation. A satisfactory state of the economy, i.e. a low rate of unemployment and/or inflation, will help create a favorable image. Again, because the marginal benefits very quickly approach zero for the individual trying to obtain full information, it is rational to limit oneself to what can be easily culled from day-to-day sources. This, in combination with the voters' short memory, results in the current economic situation being taken as the main indicator in evaluating the government's economic performance and in past events being discounted or even forgotten.

2. The Empirical Search for Fiscal Illusions

There are several ways to examine whether voters are subject to systematic misperceptions.[9] For reasons relating mainly to the availability of data, we have relied on the following procedure: first, we modelled the government's ability to steer the economy, primarily its ability to fight unemployment and inflation, as this is perceived by the voters; secondly, we tried to explain the voter's perception and evaluation of overall government activity by taking an indicator of the perceived economic performance and a series of structural variables representing the government's revenue and spending sides.

A monthly Gallup survey taken since January 1970 asking "Are you satisfied (or not) with the current economic performance of the government?" was used to measure how the voters perceive and evaluate the government's ability to steer the economy. This gives us our first dependent variable. As independent variables we have used the rates of unemployment and inflation and the degree of industrial unrest (measured by the number of working days lost because of strikes), the

last factor being included in order to capture major economic disturbances for which the government is held, at least partially, responsible by the Australian electorate. The second dependent variable is current government popularity,[10] taken as an indicator of the government's overall performance.

Turning to the independent variables, we have grouped the items on the government revenue side into: two classes of direct taxes, namely, pay-as-you-earn income tax and assessed income tax, and a tax on dividends and interest; one class of indirect taxes (sales tax, company taxes and license fees); one of customs and various duties; and increases in government debt.

The various spending items are also grouped into classes of expenditures: health, education, general and scientific research, culture and recreation; public administration, law and order, public safety, and legislative services; investments in transportation and communication, water and electricity supply, other public utilities, and investment grants to the states; defense expenditure; and various transfer payments (social security and welfare payments to individuals, payments to disabled people and retraining programs). All variables are measured as a share of total government revenue or expenditure respectively. The ratio of total federal revenue to GNP is introduced to take into account perceptions of the increase in the overall federal revenue burden that occurred during the 1970s.[11]

With regard to economic performance we expect negative signs for the coefficients of unemployment, inflation and industrial unrest. In the popularity function we expect a negative sign and a significant coefficient only for those revenue shares which are strongly perceived and a positive sign for those expenditures which are favorably perceived by a large part of the voters. All data are monthly and a three-month lag is taken for all independent variables as it is assumed that the citizen needs some time to notice a change in taxation and spending as well as in the economic situation.[12] With respect to the voter's memory, we assume for simplicity that this can be stated by lagged endogenous variables and that the same discount rate holds for all the independent factor in each equation, i.e., a Koyck transformation is used. The results of the simultaneous GLS (general least square) estimation of both equations for the overall period 1971:1 through 1977:9 are given in the following two equations:

(1) $\quad GEP_t = 12.47 + 0.48^{**}GEP_{t-1} - 1.65U_{t-3}^{**}$
$\qquad\qquad\qquad (10.56) \qquad (-4.45)$
$\qquad\qquad\qquad\qquad\qquad [-0.64]$

$\qquad\quad - 0.18^{**}\ I_{t-3} - 0.39^{*}\ InUn_{t-3}$
$\qquad\quad (-2.76) \qquad (-2.03)$
$\qquad\quad [-0.09] \qquad [-0.16]$

$\qquad\quad d.f. = 77,\ \bar{R}^2 = 0.88,\ h = 1.36$

List of symbols:

GEP = government's economic performance
 U   = rate of unemployment
 I   = inflation
InUn = industrial unrest

(2) $\quad POP_t = 0.43 + 0.48^{**}POP_{t-1} + 0.37^{**}GEP_t - 1.81^{**}TotRev_{t-3}$
$\qquad\qquad\qquad (9.36) \qquad\qquad (5.41) \qquad (-6.80)$
$\qquad\qquad\qquad\qquad\qquad\qquad [0.57] \qquad [-0.46]$

$\qquad\quad - 0.81^{**}TaxEaIn_{t-3} \quad - 0.36^{*}TaxInDiIn_{t-3} \quad + 0.21\ IndTax_{t-3} \quad + 0.82GovDept_{t-3}$
$\qquad\quad (-6.54) \qquad\qquad\quad (-2.61) \qquad\qquad\quad (1.30) \qquad\qquad (1.80)$
$\qquad\quad [-1.21] \qquad\qquad\quad [-0.47] \qquad\qquad\quad [0.27] \qquad\qquad [0.21]$

$\qquad\quad + 0.44^{**}TranPay_{t-3} \quad + 0.14^{*}ExpHeaEdRec_{t-3} \quad + 0.03\ InvTransWaElectr_{t-3}$
$\qquad\quad (4.43) \qquad\qquad\quad (2.23) \qquad\qquad\qquad (1.09)$
$\qquad\quad [0.68] \qquad\qquad\quad [0.13] \qquad\qquad\qquad [0.07]$

$\qquad\quad - 0.48\ ExpPubAdmLawPuSaf_{t-3}$
$\qquad\quad (-1.30)$
$\qquad\quad [-0.09]$

$\qquad\quad d.f. = 63,\ \bar{R}^2 = 0.96,\ h = 1.07$

List of symbols:

POP	= government's popularity
GEP	= government's performance
TotRev	= total revenue as a share of GNP
TaxEaIn	= tax on earned income as a share of total revenue
TaxInDiIn	= tax on income from dividends and interest as a share of total revenue
IndTax	= indirect taxes as a share of total revenue
GovDebt	= government debt incurred as a share of total revenue
TranPay	= transfer payments as a share of total expenditure
ExpHeaEdRe	= expenditure on health, education and recreation as a share of total expenditure
InvTransWaEl	= investment in transportation, water supply and electricity as a share of total expenditure
ExpPubAdmLawPuSaf	= expenditure on public administration, law and order, and public safety as a share of total expenditure.

The figures in parentheses below the parameter estimates indicate the t-values; one asterisk indicates statistical significance at the 95 % confidence level and two asterisks refer to the 99 % confidence level, using a two-tailed test. The figures in brackets are the elasticities for the variables (estimated under a double logarithmic specification of equations 1 and 2); d f shows the degree of freedom; $\bar{R}^2$ is the corrected coefficient of determination; and h indicates the Durbin test statistics for autocorrelation.

The results show that citizens do, indeed, discount economic events highly (eqns 1 and 2) as well as changes in the revenue and spending structures (eqn 2). The coefficients of the lagged endogenous dependent variables indicate that over 95 % of what happens is forgotten within the space of one year. This is an important factor in the voters' evaluation of the state of the economy and in their evaluation of the changes in the various revenue shares (as proxies for the actual fiscal burden) and in the spending shares (as proxies for preferences in and perceptions of expenditure benefits).

The results for equation 1 show that all three indicators have a significant negative impact on government economic performance, with the rate of unemployment by far the most significant. If the rate of unemployment rises by one percentage point, perceived government economic performance drops, *ceteris paribus*, by 1.65 percentage points. The same general results show up when a quarterly model is used and the time period is extended back to the late 1950s (see Schneider and Pommerehne, [1980]).

Equation 2 shows that the total revenue burden as well as two revenue and two spending shares have a strongly significant impact on the government's current popularity in addition to the highly significant influence of perceived economic performance. Surprisingly, the marginal influence of the variable for government's economic performance is quite small: a decrease of one percentage point in the perceived economic performance lowers current popularity, *ceteris paribus*, by only 0.37 percentage points. In contrast, the marginal impact of the total revenue burden is almost five

times as large.[14] The individual revenue items exhibit a highly significant negative influence on government's current popularity only in the case of direct taxes. The respective elasticities are - 1.21 for direct tax on earned income, and - 0.47 for direct tax on income from dividends and interest. This result is in line with the classic argument in the literature on *public finance* that direct taxes are most strongly felt whereas indirect taxes and most other revenue items, especially government debt, are much harder to detect.[15] Looking at the spending side, we find a significant positive marginal impact on government popularity only in the cases of transfer payments, which go mostly to private households, and of expenditure on health and education programs. The impact of the latter, however, is only one-third of the first. The relatively high marginal influence of transfer payments is not implausible as it may be argued that they strongly reduce uncertainty concerning future direct benefits and, thus, may be valued highly by voters. Even if not all voters/taxpayers will end up being public transfer beneficiaries, the great majority of them may still expect to do so. Comparing the influences of both sides of the government budget, the total marginal influence of the revenue items is five times as large in absolute terms as that of the spending items.[16]

In order to check our empirical results we made an *ex ante* forecast for the period 1977:10 through 1978:12 (15 observations), based on the GLS estimates for both equations over the period 1971:1 through 1977:9. The results are shown in Table 1.

Table 1: Ex ante forecast for Australian government economic performance (GEP) and government popularity (POP); 1977:10 to 1978:12[a]

Statistical measures	Government economic performance (GEP)	Government popularity (POP)
Average root mean squared-error-	1.07	0.62
Theil's inequality coefficient	0.11	0.05
Average mean error of deviation (in %)	2.10	0.63

[a] The theoretical values of the lagged endogenous variable and the actual for the exogenous variables were used for the calculations.

Table 1 shows that both ex ante predictions are clearly superior to naive forecast methods, (Theil's inequality coefficients being much smaller than 1), indicating that the most important variables determining the perceived government's economic performance and its popularity have been taken into account. For the popularity forecast the average root mean squared error is less than one percentage point, i.e., the predicted development comes very close to the actual outcome.

In summary, therefore, our empirical results show that changes in *certain* types of taxes and other public revenues are indeed harder for voters to detect than others and, therefore, a government which relies on hard-to-detect revenues can, *ceteris paribus*, expect to be more popular. Similarly on the spending side, additional transfer expenditure and, to a lesser extent, additional expenditure for certain services such as health and education seem to be more popular and more strongly felt than increases in other expenditure items. These effects on both sides of the budget and the fact that voters discount highly past government activities provide opportunities for the government to use its fiscal instruments in a systematic way to retain the popularity it needs to allow it to either achieve its ideological goals or to secure re-election.

III. Government's Policy I: The Strategic Use of Fiscal Structures

As shown in the previous section, there are possibilities for the government to take advantage of voters' misperceptions through the systematic use of fiscal policy instruments. The extent to which such strategic use will be made is heavily dependent on the constraints placed on the government.[17] Even if we assume that a government cannot be voted out of office in the middle of a legislative period it is still subject to various constraints in trying to achieve its ideological goals, of which the most important is the re-election constraint. Thus, the government faces a dynamic maximization problem of determining when to undertake whatever fiscal policy action is required to maximize its utility.

1. Government Behavior

We assume that the government regards the result of popularity surveys as the best current indicator of its re-election chances. If its current popularity is high and/or if there is plenty of time left until

the next election, the government will use its various fiscal instruments to pursue its ideological goals.[18] In comparison with a right-wing government, a left-wing government will generally increase public sector activity by introducing new programs and/or expanding existing programs. Looking at Australian governments in the 1970s, the Labor (left-wing) government explicitly stated preferences for more spending on education, improvements in welfare and health care systems and decreased outlays for national defense. The Country-Liberal (right-wing) governments stated preferences for a much smaller level of growth in current and future government activities and a strengthening of private sector activities. There were also major differences in preferences on the methods of financing public expenditures. Whereas a Country-Liberal government tended to favor tax financing, a Labor government relied more on incurring additional debt.

If re-election chances are indicated to be poor by a low popularity standing and/or the next election is close, the government will concentrate on securing re-election rather than on pursuing its ideological goals, which it can in any case only hope to put into effect by remaining in power. For this purpose, the government, regardless of who is in power, will try to create favorable fiscal illusion on the part of the voters by means of a systematic revenue and spending policy, counting on the voters' short memory to aid it in this. Before an election it will:

(i) reduce direct taxes, such as the personal income tax, and

(ii) increase harder-to-detect revenues especially public debt in order to finance additional popular spending or to cover the deficit caused by the lowering of strongly felt revenues.

We assume that in a state of low popularity, which dampens the chances of being re-elected, the government, when formulating the use of fiscal policy instruments, will react all the more strongly the greater is the ratio POP^*/POP_t (the critical level of current popularity POP^* has the value of 51 %). The second important factor, the amount of time since the last election, i e, the inverse of time left until the next election, is reflected in the discretionary variable TSLE (time since last election) which takes the values 1, 2, 3,....,36, starting with the beginning of each legislative period. This formulation implies that the government's reaction six months before an election will

be stronger than it is when the election is still far off. The government also has to take legal obligations and the behavior of the public administration into consideration when using its revenue and spending instruments. In most Western democracies it is realistic to assume that the public administration does not simply follow the wishes of the government but rather tries to maximize its own utility. Most members of the public administration show risk-averse behavior, tending to resist major changes because this may threaten their own position and preferring to make only small and incremental changes. As a consequence the government may be considerably handicapped in trying to carry out substantial and sudden changes in its spending and revenue policies. It would, therefore, seem to be useful to take past spending and revenue structures into consideration as these are the starting points for changes therein.

There are two economic constraints in addition to the legal and administrative ones: (1) The government has to take changes in the balance of payments into account. The importance of this outside restriction on economic policy has, of course, been noted by many other authors (e.g. Barry and Guille [1976]). (2) The size of the budget deficit (a positive sign in the case of deficit, and a negative sign for budget surplus), whose maximum equals the maximum incurrable additional debt, is set through the legal framework. To measure whether a budget deficit is really binding or not, its deviation from the long-term trend of the deficit is considered here. We assume that if the current deficit lies above this trend, the government has to consider it as a constraint; while if it is below, there is still some leeway for additional spending and/or tax cutting.

It is now possible to formulate the following equation for the i'th fiscal instrument ($INST^i$):

$$
(3) \quad INST^i_t =
\begin{cases}
\text{Administrative and economic constraints} &
\begin{cases}
a_1 \quad INST^i_{t-12} \\
+ a_2 \quad \text{(Change in balance of payments)}_{t-6} \\
+ a_3 \quad \text{(Budget deficit deviation from the long-term trend)}_{t-6}
\end{cases} \\[2em]
\text{Political constraints} &
\begin{cases}
+ a_4 \quad \text{(Current popularity standing)}_{t-6} \\
+ a_5 \quad \text{(Time since last election)}_t
\end{cases} \\[2em]
\text{Ideological preferences} &
\begin{cases}
+ a_6 \quad \text{(Ideological preferences of Country-Liberal governments)}_t \\
+ a_7 \quad \text{(Ideological preferences of Labor Governments)}_t
\end{cases}
\end{cases}
$$

for i = 1, 2, ..., 26 [19]

The 26 instruments refer to 10 federal revenue and 16 spending items and are calculated as shares of total revenue and total expenditure respectively in order to capture the changes in the structure and eliminate the typical time trend effects. The explanatory variables are lagged by six months as we assume that the Australian government needs at least half a year to react to political and economic changes. [20]

The theoretically expected signs of the administrative and economic constraints are $a_1 > 0$ for both revenue and spending sides, $a_2 < 0$ and $a_3 > 0$ for revenue items and $a_2 > 0$ and $a_3 < 0$ for expenditure items. In the cases of a_4 and a_5 we expect a decrease in share for those revenue items which are strongly felt as a burden by the voters and an increase for spending items which are popular. For the two ideological parameters a_6 and a_7 we

Table 3: Policy functions of the Australian government for the spending side under the assumption of pursuing ideological goals, GLS-estimates, 1971:1 to 1977:9, ex ante forecast 1977:10 to 1978:12[a]

Instruments on the spending side (as share of total expenditure)	Legal, administrative, and economic constraints				Re-election constraints		Ideological preferences		Test statistics		Ex ante forecast		Mean error (percent deviation)
	Lagged endogenous instrument	Change of balance of payments	Budget deficit deviated from long term trend	Payment of interest on govern debt	Current popularity standing	Time since last election	Country /Liberal	Labor	$\bar{R}^2$	h	Root mean squared error	Theil's inequality coefficient	
	(t- 12)	(t- 6)	(t- 6)	(t- 6)	(t- 6)	(t)							
Social security and welfare payments to individuals	0.91** (9.71)	-0.15 (-1.59)	-0.09* (-2.43)	-0.06* (-2.61)	0.26** (2.89)	0.30** (3.04)	0.59 (1.74)	3.16** (2.84)	0.78	1.03	0.90	0.13	1.03
Financial aid to disabled persons	0.78** (8.49)	0.21** (2.89)	-0.11** (-2.89)	-0.09* (-2.59)	0.11* (2.27)	0.15* (2.33)	2.41* (2.36)	1.40 (1.86)	0.69	1.21	1.43	0.37	1.45
Retraining programs	0.96** (9.43)	-0.12 (-1.31)	-0.09* (-2.54)	-0.06* (-2.16)	0.13* (2.54)	0.14** (2.86)	-0.84 (-0.98)	2.56* (2.36)	0.72	1.36	0.69	0.27	1.31
Foreign aid and overseas grants	0.63** (3.64)	0.09* (2.31)	0.31 (1.59)	0.07 (1.39)	-0.41 (-1.86)	-0.43 (-1.91)	1.32 (0.86)	2.49* (2.03)	0.49	1.58	1.71	1.29	1.96
Grants to the states	0.32** (2.89)	0.08* (2.11)	0.36 (1.39)	0.21 (1.39)	-0.32 (-1.58)	-0.29 (-1.89)	2.47 (1.86)	-1.54 (-1.64)	0.48	1.64	2.32	1.31	2.13
Education	0.86** (8.99)	0.09 (1.86)	-0.08* (-2.08)	-0.11** -2.81	0.39* (2.32)	0.36** (2.89)	2.13 (0.97)	8.47** (3.56)	0.76	1.09	1.36	0.33	1.21
General and scientific research	0.83** (7.59)	-0.23 (-1.51)	-0.09* (-2.59)	-0.05* (-2.64)	-0.21 (-1.39)	-0.13 (-1.47)	-0.47 (-0.56)	1.03 (1.84)	0.43	1.77	1.39	1.21	2.46
Culture and recreation	0.73** (5.91)	-0.20 (-1.27)	-0.12** (-2.80)	-0.09* (-2.51)	-0.03 (-0.98)	-0.17 (-1.04)	0.38 (0.96)	1.42 (1.84)	0.40	1.73	1.32	1.17	3.45
Health and hospital	0.89** (8.47)	0.29* (2.40)	-0.21** (-2.84)	-0.13** (-2.91)	0.20* (2.44)	0.21** (2.93)	0.86 (0.94)	6.58** (3.59)	0.72	1.13	1.29	0.36	1.36
Defence	0.91** (5.03)	0.28** (3.21)	-0.13* (-2.69)	-0.05* (-2.51)	-0.09 (-1.36)	-0.23 (-1.84)	10.47** (3.59)	-2.86* (-2.14)	0.72	1.09	0.80	0.27	1.33
Administrative services	0.93** (9.36)	-0.06 (-0.94)	0.11 (1.56)	0.21 (1.59)	0.09* (2.03)	0.10* (2.14)	-0.86* (-2.14)	3.89* (2.54)	0.71	1.22	1.29	0.47	1.39
Legislative services	0.98** (8.51)	-0.25 (-1.27)	0.18 (1.06)	-0.08* (-2.02)	0.09 (1.54)	0.08* (2.03)	-0.59 (-1.34)	1.13* (2.03)	0.60	1.49	1.09	0.51	1.84
Law and order, public safety	0.87** (8.35)	-0.15 (-1.12)	0.19 (1.31)	0.29 (1.65)	0.13* (2.06)	0.08* (2.32)	1.84** (2.77)	-0.74 (-0.86)	0.76	1.36	0.88	0.41	1.23

Transport and communication	0.81** (4.64)	0.18* (2.69)	-0.21* (-2.74)	-0.14** (-2.89)	0.06 (1.54)	0.12 (1.81)	7.45* (2.47)	0.38 (0.22)	0.68	1.27	1.21	0.36	1.49
Water supply and electricity	0.66** (5.51)	0.17* (2.51)	-0.09* (-2.61)	-0.10** (-2.79)	0.03 (1.66)	0.13* (2.06)	2.54* (2.57)	-0.86 (-0.39)	0.63	1.44	0.82	0.41	1.58
Other public utilities	0.86** (9.27)	0.24* (2.09)	-0.07* (-2.11)	-0.18* (-2.56)	-0.41 (-1.86)	-0.42 (-1.91)	-0.87 (-1.94)	6.54** (2.81)	0.51	1.62	0.99	0.94	1.89

a For notes see Table 2.

As with regard to the revenue side, the administrative and economic constraints have in most cases a highly significant effect on the government's use of its spending instruments. If we look at the ideological differences between the two types of government, we see that these result in very different spending behavior when they have leeway to exercise their ideological preferences. Country-Liberal governments favor additional expenditure on capital formation (mainly transportation, communication, and other infrastructure projects), defense and law and order. A Labor government prefers to decrease the last two and instead favors additional transfer programs (social security, foreign aid) and the expansion of education, health care and the remainder of the public service sector.

If the government is afraid that it will not be re-elected, the first three of the four transfer items will be further increased in addition to the most favorable perceived expenditures, i.e., on education and health. For the remaining spending items we find no statistically significant and quantitatively important evidence of their being specifically manipulated to help secure re-election. Only conservative governments deviate greatly from their ideological instrument preferences when running for re-election. For a Labor government, the instruments used to achieve their ideological goals are more similar to those needed to secure re-election.

The ex ante forecasts which have been made to test the model's predictive ability in an election year lead to superior results for 11 of the 16 spending items (evaluated by Theil's inequality coefficient, which is smaller than 1). The instruments for securing re-election again give the best forecast results, with an average percentage mean error of less than 1.5 %. If we compare these results to our finding for the revenue side, we see that the use of spending instruments is of less importance in securing re-election. This is not implausible and may simply reflect the often stated rigidity of the expenditure side as compared to the revenue side.[22]

IV. Government's Policy II: The Cyclical Use of Fiscal Instruments

Besides making systematic changes in the structure of the revenue and spending institutions, a government can use its fiscal instruments in a cyclical way to improve the economic situation before an election. As discussed in Part II, voters are in a state of rational ignorance when evaluating the government's performance in steering the economy. This gives the government an additional possibility to influence the voters' current perception of the state of the economy. As a low rate of unemployment has the greatest value in the voters' eyes (see eqn 1)[23] the government will adopt an expansionary fiscal policy before an election. This results in an increase in government expenditures in relation to the general trend,[24] and in smaller increases or even decreases in the strongly felt revenue items. The government will, in particular, prefer to increase its public debt to finance any additional deficit that arises. It is very difficult for the opposition party (or parties) to argue convincingly against such a policy that purports to having the fight against unemployment as its main goal.

If the government succeeds in stimulating the economy before an election, the automatic increase in the tax revenues that follows assures additional financial assets at a later point in time. Direct taxes will automatically increase because of the resulting real or inflationary economic growth or they may be discretionarily increased by the government after the election with the argument that this must be done to balance the spending and revenue accounts and/or to fight inflation.[25] Again the opposition will find it difficult to counter this policy convincingly. Even more important, the voters will forget these unpopular measures if the measures are manipulated properly and reversed as the next election approaches. This removes an incentive for the government not to act this way.

In order to test the hypothesis that the government will adopt an expansionary policy to create a favorable economic situation before an election a longer time period was considered: 1960:II through 1976:IV, using quarterly data. The growth rates for the fiscal instruments were considered to take into account the general trend of government fiscal activity over the last two decades,[26] with the equations for the use of revenue and spending instruments again being estimated simultaneously. The results are given in Table 4 which also includes the ex ante predictions for 1977:I through 1978:IV.

Table 4: Policy functions of the Austdralian government under the assumption of pursuing ideological goals; GLS-estimates, 1960:II to 1976:IV, ex ante forecast 1977:I to 1978:IVᵃ

Instruments on the revenue and spending side (growth rates)	Legal, administrative, and economic constraints			Re-election constraints		Ideological preferences		Test statistics		Ex ante forecast		
	Lagged endogenous instrument	Change of balance of payments	Percent of budget deficit deviated from long term trend	Current popularity standing	Time since last election	Country-/Liberal	Labor	$\bar{R}^2$	h	Root mean squared error	Theil's inequality coefficient	Mean error (percent deviation)
	(t−4)	t−2)	(t−2)	(t−2)	(t)							
Tax on earned income	0.36** (7.54)	−0.44** (−3.74)	0.36** (3.94)	−0.59** (−7.08)	−0.89** (−7.56)	5.49** (3.56)	2.49** (2.79)	0.84	1.17	1.92	0.74	1.32
Tax on income from dividends & interest	2.53** (5.68)	−0.57** (−4.22)	0.42** (3.12)	−0.27** (−3.58)	−0.61** (−4.12)	2.47* (2.57)	3.56* (2.56)	0.79	1.21	2.21	0.84	2.51
Indirect taxes	2.03** (6.89)	−0.36** (−3.99)	0.45** (3.56)	−0.19 (−1.21)	0.18 (0.59)	2.89* (2.21)	4.59* (2.56)	0.65	1.36	2.59	0.94	2.31
Government debt incurred	0.89** (4.07)	−0.18* (−2.21)	0.21* (2.36)	0.34 (0.98)	0.44 (1.08)	2.59* (2.36)	4.56** (2.88)	0.59	1.51	2.84	1.31	2.39
Transfer payments	4.79** (8.54)	0.17 (1.98)	−0.31** (−3.54)	0.38** (3.55)	0.47** (4.59)	2.57** (2.72)	4.50** (2.99)	0.81	1.13	1.87	0.80	1.27
Expenditure for health, education and recreation	3.59** (7.59)	0.37** (3.56)	−0.27** (−3.09)	0.27** (3.61)	0.49** (3.58)	3.59* (2.54)	3.84* (2.69)	0.82	1.21	1.80	0.83	1.35
Investment in transportation, water supply, electricity	0.75** (3.59)	0.49** (4.11)	−0.33** (−3.59)	0.19 (1.74)	0.21 (0.84)	2.57* (2.17)	0.89 (1.13)	0.74	1.33	2.13	0.91	2.13
Expenditure for public administration, law & order, public safety	1.21** (4.69)	0.22** (2.79)	−0.27* (−2.54)	0.08 (0.77)	0.06 (0.99)	3.40** (2.89)	3.99** (3.12)	0.72	1.41	2.54	0.89	2.21

ᵃ For notes see Table 2.

The results confirm our hypothesis on the cyclical use of fiscal instruments over a legislative period.[27] When trying to secure re-election, direct taxes are significantly reduced or at least not discretionarily increased and transfer payments, mostly to private households, are increased as expected. On the other hand, indirect taxes and public debt are used to finance the additional expenditures aimed at stimulating the economy. *After* an election the opposite use of fiscal instruments can be observed. Our additional check of these empirical results, the ex ante forecast for the period 1977:I through 1978:IV, indicates that, again with the exception of government debt, the predictions are far superior to naive forecasts.

V. Summary

Voters' illusions concerning the fiscal burden and benefits of public expenditures have been considered as a consequence of their reluctance to undertake a costly information search. This results in a discrepancy between the perceived and actual consequences of particular fiscal institutions. Our general hypothesis is that indirect and hidden revenues will result in individuals being systematically unaware of the full costs of government actions, including budgetary choices. The government in this case may strategically manipulate the fiscal institutions in order to strengthen its position, especially when it is trying to secure re-election. Our general framework is that of a monopoly held by the government, though one dependent on its having a minimum level of popular support. Such a monopolistic government will deviate from the median position, i.e., from the outcome that arises under perfect competition in a two-party system. It's rent consists of the hoped-for achievement of its ideological goals. The leeway for achieving such rent is restricted, however, as the government has to secure it re-election. One way to do this is to exploit fiscal illusions held by the voters.

We chose the federal government of Australia as our test case because the governing party, once elected, has a considerable amount of leeway to use fiscal policy instruments for its ideological purposes, which are very different for the two types of parties, and for exploiting fiscal misper-

ceptions when working towards its re-election.

Empirical evidence of systematic misperceptions of the cost of government is offered by the results of the government's popularity function. The findings indicate that voters are unaware of the full cost of government activities when indirect and more hidden revenue items are used for financing. There is also evidence that some spending items are favorably perceived, which accords with the findings of survey research. It remains open, however, to what degree this is due to preferences and to what degree it is due to misperceptions. This plus the fact that voters discount past government activities provide opportunities for the government to behave as if it had a monopoly position. As our empirical results show, significant differences between the two parties' use of fiscal instruments for ideological purposes do appear after an election when the winning party feels itself to be in a relatively secure position. However, when trying to secure re-election each government deviates from the pursuit of its ideological goals if necessary and uses fiscal instruments in a predictable fashion in order to exploit misperceptions. It is also shown that before an election a government will try to keep the fiscal burden as low as possible in the eyes of the voters and will undertake an expansionary spending policy in order to improve the general economic situation. After an election, changes are made in fiscal policy to create a less favorable perception on the voters' part so that the government can again have the opportunity to influence the voters' perception towards a more favorable view as the next election approaches.

Our starting point of a monopolistic government that uses its fiscal policy instruments in a strategic way seems to us to be important. Not only is the model's predictive ability quite good, we believe the whole approach to be worthy of further consideration. Monopoly government was, of course, already the framework for the debate concerning fiscal illusion in the classic continental European literature.[28] Such a framework, based on the idea of *dissimilarities* rather than similarities between politics and the perfect market, might serve to provide new and fruitful insights.

Footnotes

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1 Especially Stigler (1961), Telser (1966) and Nelson (1970).

2 See Nelson (1974), where the distinction is more fully elaborated.

3 This reasoning leads to a paradox in which voting appears not to be rational, but yet a considerable number of voters do vote. The problem we have set ourselves is to examine the rational ignorance argument and so the voting paradox is ignored here.

4 The general framework used here was developed by Frey and Lau (1968). Its usefulness for empirical research in the polito-economic context has been demonstrated by Frey and Schneider (1978a, 1978b) and Schneider (1978).

5 The Australian federal government is particularly suitable for our examination as it controls over 70 % of all public revenues and expenditures and also has the power to make rapid discretionary changes on the revenue side, i.e., changes in tax rate, tax deductions, tax base and tax rebates, and, to a lesser extent, in public expenditures. The Central Bank which in most Western democracies can restrict government policy does not play such an independent role here as it is part of the Ministry of Finance.

6 For a detailed discussion of the various cost arguments see Buchanan (1967, ch 10), Bartlett (1973, ch 8), and Pommerehne and Schneider (1978).

7 For the case of the United States see e.g. Katona (1975, pp 353 ff).

8 Even in the rare instances in which taxes are earmarked for specific public goods, such as highway construction and maintenance, the corresponding sales and excise taxes are often supplemented through a cross subsidization system which makes it almost impossible to derive even an accounting cost assignment of these expenditures to the individual.

9 Among the various possibilities for checking for voters' misperception are: (i) questionnaires on the awareness of the individuals marginal tax burden, which, however, are not taken on a continuous basis; (ii) analysis of actual-voters'-behavior at national elections, but as elections are held on only every 2 1/2 to 3 years, there are too few observations available to allow a quantitative analysis; (iii) analysis of surveys of the voters' evaluation of the government's economic performance and of their stated voting intentions. As there are monthly data available for these last two types of surveys going back to January 1970 we adopt this method.

10 Government popularity is measured by data series regularly collected by the Australian Gallup Poll showing the proportion of citizens "willing to vote for the Australian government at a federal election" at that point. These data and those for perceived government economic performance were given to us by Roger Douglas and Chris Goodrich to whom we would like to express our thanks.

11 All economic data and those for public revenues and expenditures were provided by Ernestine Gross and William S Hogan. We are especially grateful for their generous help, discussion and clarification of our questions on Australian institutional arrangements.

12 A three-month lag was chosen because the perception of a change in the economic situation is assumed to need about three months. However, when different lag structures, including weighted lags of up to one year, were used no major significant improvement occurred in the following simultaneously estimated equations.

13 As we used a unique constant term we had to drop one item share from the revenue and expenditure variables. In the case of the revenue side, we dropped the share of customs and duties and for the spending side, the share of defense expenditure. When these shares are included and others are dropped there is no significant change in our general results.

14 Similarly, Paldam and Schneider (1980) have shown for Denmark, and Pissarides (1980) has suggested for the United Kingdom, that, in explaining current government popularity, the variables that capture the voters' felt revenue burden should be considered with much more emphasis, in addition to the more classic macroeconomic variables.

15 See for instance Goetz (1977) and the literature quoted in footnote 6.

16 A similar result showing much bigger impact of the revenue side as compared to the spending side is also found for other countries, for example, for the United States see Niskanen (1979).

17 If the government is subject to a permanent, strongly binding re-election constraint, it must pursue a vote-maximizing policy in order to stay in power, i.e., it must behave in the same way as it would under a system of perfect party competition. In this case, as is well-known, government will use its various fiscal instruments to equalize the marginal vote gain of each individual instruments. Under simple majority voting and when there are only two parties this will lead to the median outcome.

18 As it is not possible in our framework to explicitly derive the ideological goals we have concentrated on the ideological preferences regarding fiscal policy goals and instruments as they are described in official party programs.

19 The method used here to measure the ideological preferences regarding fiscal instruments is rather simple. The constant term is broken into two dum-

my variables in order to capture the different uses of instruments by Country-Liberal and Labor governments with a shift parameter. We assume that the ceteris paribus conditions are fulfilled so that ideological differences can be measured by a broken intercept.

[20] When a longer or a more complex lag structure is applied the estimation and the forecast results do not improve significantly.

[21] If the two variables for securing re-election are split up for the two types of government both can be seen to undertake the same revenue policy. As the results do not differ significantly the variables for each revenue item are linked together.

[22] Additional empirical evidence for this argument is gained when we carry out a regression with the lagged endogenous variables of the various revenue and spending items (in billions of Australian dollars), thus capturing only the legal and administrative influences. The mean of the explained variance $(\bar{R}^2)$ is then 82.5 % for the revenue items but is 93.1 % for expenditure by categories.

[23] For a more detailed analysis of this relationship in Australia over the longer period 1959 through 1978 see Schneider and Pommerehne (1980). Related studies done for other democracies have come to the same result; for a survey see Pommerehne, Schneider and Lafay (1981).

[24] We will not hypothesize as to what kinds of government expenditure will actually be increased most. The reason is that in some cases it may suffice to only announce additional spending programs in order to gain marginal votes. Moreover, there is a trade-off between the impact of such an announcement and the effects of the actual spending policy in stimulating the economy.

[25] An additional reason for such a policy is that the actual rate of inflation can be made to be quite different from that the voters expect in the hope that inflationary expectations can be reduced before the next election. Moreover, as Sjaastad (1976) and Johnson (1977) have shown, the government will gain more "inflation tax revenue" if it deliberately decieves the public as to its inflationary intentions and systematically varies the inflation rate than if it were to install and maintain a steady rate of inflation at a rate that would maximize tax proceeds under the conditions of a correctly expected steady-state rate of inflation.

[26] The various revenue and spending items are grouped mainly for data reasons as in equation 2.

[27] As the empirical findings for the influence of administrative and legal constraints are very similar to those discussed in Part II, they are not discussed here. Moreover, due to the lack of observations for the Labor government, we cannot interpret the ideological use of fiscal instruments. But it can be seen from the results that the ideological use of instruments by a Country-Liberal government also held over the longer period considered here.

[28] Perhaps the best example is Puviani's work (1896). For further references to classic work see Buchanan (1967, ch 10) and Pommerehne and Schneider (1978). This framework could also be one that stresses, among other things, the cartel-like characteristics of the behavior of political parties over a view emphasizing intense competition. While it would seem to be natural to also apply other economic models than that of competitive duopoly for the theory of political process, only a few attempts at such extensions have been made so far, see e.g. Spindler (1978).

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