

# PUBLIC DEBT, INTEREST AND FISCAL INCIDENCE

BY DAVID L. HAMMES AND DOUGLAS T. WILLS\*

*Canada*

## 1. INTRODUCTION

Studies of fiscal incidence abound.<sup>1</sup> Feeding this growing literature has been the challenge to the orthodox view that central governments can and do undertake taxation and expenditure programs that make the distribution of income "more equal." As such, incidence studies are seen to be of more immediate and practical policy relevance than many other areas of economic research.

It would be unfair, indeed unwise, to assert that there is unanimity in the approaches taken and the results achieved to date. One recent contribution even carries the rather nihilistic title asking "Do Empirical Studies of Budget Incidence Make Sense?" There is, in short, a great demand by policy makers and evaluators for results which are considered by some academic researchers to be less than robust.<sup>2</sup>

It is our purpose to sharpen the focus on the treatment of one particular and fast growing component of government expenditures, interest paid on the national debt. We do this for two reasons: first, interest payments as a proportion of total federal government expenditures have risen dramatically across countries in this decade;<sup>3</sup> secondly, there is little explicit consideration, at a theoretical level, of their treatment. As a result, in practice, some researchers (Gillespie, 1980) include and distribute them as current expenditures while others (Ruggles and O'Higgins, 1981a and 1981b) do not.

## 2. THE THEORY OF INTEREST ON DEBT AS EXPENDITURE

Ruggles and O'Higgins (1981a and 1981b) exclude interest on the public debt as an allocable item on the grounds that it represents factor returns to lenders. There is nothing more said on the matter. This omission without comment is disquieting as interest payments are not the only government expenditure that represent factor incomes, yet interest payments are the only such expenditure omitted.

\*The authors are, respectively, Research Economist with The Fraser Institute, Vancouver, B.C., and with Pemberton, Houston, Willoughby, Bell, Gouinlock, Inc., Vancouver, B.C. This work was initiated while Wills was with The Fraser Institute.

<sup>1</sup>See the papers in Sandford *et al.* (1980), Ruggles and O'Higgins (1981b), Creedy and Gemmell (1984), Gemmell (1985) for an idea of quantity and quality of work done on this question in the United Kingdom. Ruggles and O'Higgins (1981a) quantify and survey the U.S. situation, while Dahlby (1985) presents a useful survey of studies on the Canadian economy. Meerman (1978) and De Wulf (1981) provide valuable insights into the difficulties inherent in such analysis.

<sup>2</sup>See Crane (1977); Reynolds and Smolensky (1977).

<sup>3</sup>For example, interest on the federal debt in Canada (as of March 31, 1986) was over 22 percent of total federal expenditures, up from levels around 7 percent in the late 1960s; in the U.S. the proportion was 13.8 percent in 1985, up from 9.4 percent in 1980.

Gillespie (1980, citing Musgrave, 1959) gives three ways of treating debt interest. First, interest payments on the debt could be treated as factor returns allocated to groups benefiting from the existence of public assets. Note, Gillespie's first option evaluates interest payments identically to Ruggles and O'Higgins, but argues that they should be allocated not omitted.

Second, the interest payments could be considered as a return to families benefitting from the absence of debt monetization and allocated according to some distribution representing households who benefit from this policy. Gillespie notes that the "multiplicity of plausible sub models . . . makes it difficult to deal adequately with the distributional effects of . . . stabilization policy" (1980, page 196).

Thirdly, the payments could be treated as transfer payments allocated to those families holding the public debt. Stating (1980, page 197) that he is following "recent practice" Gillespie allocates debt interest in the manner outlined in this option. There is nowhere in Gillespie consideration of a fourth option, chosen by Ruggles and O'Higgins, that of omitting altogether interest paid on the debt from allocable expenditures.

While these are certainly not the only two sets of researchers studying fiscal incidence (for example Sandford *et al.*, 1980, treat interest payments as part of a group of public goods which are unallocable; while Dodge, 1975, follows Gillespie) their positions on this issue give a good overview of the alternatives and current practice. These alternatives seem to be: omit interest payments from expenditure without comment or find a way, any way, to include them. To date, that choice appears to be arbitrary.

Let us consider a more firmly grounded case for omitting interest payments on the debt from government expenditures. To do this let us construct an example where the initial, period zero, position of the government is zero accumulated debt and the budget is in balance.

Now, in period one, let the government fund some—or all—of its current expenditures by debt financing (let us assume for simplicity that it issues a consol). These period one expenditures may be for anything, but note, they will not be for payment of interest as there is no accumulated debt. Incidence analysis would then allocate the expenditures according to one or more criteria.

In period two let us imagine that the government pays for all expenditures including interest on the debt by taxation and continues this fiscal prudence in every period thereafter. To make the story simpler assume the only expenditure in each successive period is interest payment on the consol.

Clearly, including interest payments on the debt and allocating them as government expenditures in the subsequent periods (ala Gillespie) results in the double counting of government expenditures.<sup>4</sup>

Government expenditures are double counted as both the original government expenditures in period one and the interest payments made in each successive period are allocated as government expenditures. In equilibrium it is the case that the net present value of the discounted stream of interest payments on the

<sup>4</sup>Barro's (1974) work is apposite here. If government bonds are not net wealth then the interest expenditures should be counted only once. These expenditures could be counted either in the original period government expenditure or in the periods interest payments are made.

consol will equal the current market value of the bond so the double counting is made transparently obvious.<sup>5</sup>

### 3. CONCLUSIONS

The above analysis is short and uncomplicated. However, its message is powerful. There is no theoretical case for the inclusion of interest payments on government debt in fiscal expenditure incidence studies.<sup>6</sup>

While a great deal of incidence analysis has been done excluding these interest payments a great deal has also been done including them. Until now the issue seems to have been left to the personal preferences of the researchers involved.

We hope our brief note provides a convincing theoretical rationale, until now missing in the literature, for the omission of interest payments on government debt from fiscal incidence studies.<sup>7</sup>

### BIBLIOGRAPHY

- Barro, R., (1974), Are Government Bonds Net Wealth?, *Journal of Political Economy*, Nov./Dec. 1974.
- Crane, S. E., Interpreting the Distribution of Government Expenditures in Budget Incidence Studies, *The National Tax Journal*, Vol. XXXVI, No. 2.
- Creeedy, J. and Gemmell, N., (1984), Income Redistribution Through Taxes and Transfers in Britain, *Scottish Journal of Political Economy*, Vol. 31, No. 1.
- Dahlby, B. G., (1985), The Incidence of Government Expenditures and Taxes in Canada, in Vaillancourt, F., (ed.), (1985), *Income Distribution and Economic Security in Canada*.
- De Wulf, L., (1981), Incidence of Budgetary Outlays: Where Do We Go From Here?, *Public Finance*, Vol. XXXVI, No. 1.
- Dodge, D., (1975), Impact of Tax, Transfer and Expenditure Policies of Government on the Distribution of Personal Incomes in Canada, *Review of Income and Wealth*, Vol. 21.
- Gemmell, N., (1985), The Incidence of Government Expenditure and Redistribution in the United Kingdom, *Economica*, Vol. (N.S.) 52.
- Gillespie, W. I., (1980), *The Redistribution of Income in Canada*, Ottawa: Carleton Library.
- Meerman, J., (1978), Do Empirical Studies of Budget Incidence Make Sense?, *Public Finance*, Vol. XXXIII, No. 3.
- Musgrave, R. A., (1959), *The Theory of Public Finance*, Toronto: McGraw-Hill Book Company.
- Reynolds, M. and Smolensky, E., (1977), *Public Expenditures, Taxes and the Distribution of Income*, New York: Academic Press.

<sup>5</sup>It should be made clear that the purpose of the government expenditure does not affect this result. Whether the government builds a capital project or uses the borrowed funds for present consumption makes no difference. First, it is impossible to discriminate which dollars (tax, borrowing, newly printed etc.) are going where. Secondly, due to money's inherent fungibility there must be perfect substitutability amongst expenditure dollars acquired from different sources.

What does indeed matter is how these expenditures are treated and how often. However, in a lifetime context, it might be argued that all "current" expenditures go towards capital of one type or another. This may be another reason to favour lifetime as opposed to annual incidence studies, but it is not our intention to enter that debate here.

<sup>6</sup>This conclusion is only altered if the original borrowing is not allocated as an expenditure in the period of borrowing (see footnote 4). However, there is no way to know from which government expenditures this borrowed amount should be subtracted (see footnote 5). Consequently, as a matter of practice, it seems preferable to exclude the interest payments and include the original borrowing as expenditure rather than vice versa.

<sup>7</sup>Clearly, in periods when the interest payments were minimal relative to the size of expenditures this issue was of little practical importance. However, as noted above, interest payments as a proportion of government expenditures have grown rapidly in this decade.

- Ruggles, P. and O'Higgins, M., (1981a), The Distribution of Public Expenditure Among Households in the United States, *Review of Income and Wealth*, Vol. 27.
- Ruggles, P. and O'Higgins, M., (1981b), The Distribution of Public Expenditures and Taxes Among Households in the UK, *Review of Income and Wealth*, Vol. 27.
- Sandford, C. T., Pond, C., and Walker, R. (eds.), (1980), *Taxation and Social Policy*, London: Heinemann.
- Vaillancourt, F. (ed.), (1985), *Income Distribution and Economic Security in Canada*, The Collected Research Studies/Royal Commission on the Economic Union and Development Prospects for Canada, Vol. 1. University of Toronto Press: Toronto.