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Decomposing Demand for Public Expenditure in Ireland

Liam Delaney¹ and Francis O'Toole²

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¹ Geary Institute
University College Dublin
Dublin 4
Email: liam.delaney@ucd.ie
Phone: 00-353-1-7164631

² Department of Economics
Trinity College Dublin
Dublin 2
Email: fotoole@tcd.ie
Phone: 00-353-1-6081520

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Abstract

This paper, via the analysis of stated preferences from a nationwide representative survey of 1,100 adults, examines the determinants of preferences for overall government expenditure and estimates a Seemingly Unrelated Regression (SUR) model of demand for the three major categories of public expenditures in Ireland, namely, social welfare, education and health. Those on higher incomes are less in favour of government expenditure overall. However, and consistent with the available evidence on the utilisation and financing of the three main categories of government expenditures, decomposing the preferences demonstrates that those on higher incomes are particularly less in favour of social welfare expenditure but more in favour of spending on health and education.

I - INTRODUCTION

Given that the government is the largest economic agent in most modern industrialised economies, it is not surprising that several recent papers have explored the relationship between preferences for government expenditure and the scale, composition and growth of government expenditure. For example, Feld and Matsusaka (2003) examine the effects of mandatory referendums in Swiss cantons on the scale of government expenditure, while Tarzwell (2003) examines the effects of diverse preferences (e.g. mother tongue and religion) on the level and growth of government expenditure.

In Ireland, total government expenditure (estimated at over €50 billion for 2005) is close to 40 per cent of GNP. However, attempts to directly canvass preferences for government expenditure are rare in Ireland (see McDowell 1991 and Delaney 2005). This paper, via the analysis of stated preferences from a nationwide representative survey, examines the determinants of preferences for overall government expenditure and estimates a Seemingly Unrelated Regression (SUR) model of demand for the three major categories of public expenditures in Ireland, namely, social welfare, education and health. The first aim of the paper is to examine the extent to which ideology and general attitudes to government expenditure predict specific preferences for the three major categories of government expenditure. The second aim of the paper is to examine the extent to which preferences for the three main categories of government expenditure are consistent with a hypothesised relationship between financing, utilisation and preferences.

II - UTILISATION AND FINANCING

From a rational choice perspective, demand for public expenditure, and its various components, is expected to be bound up in utilisation and financing considerations. For example, higher income households are likely to be particularly supportive of categories of public expenditures that benefit higher income households disproportionately and are financed by lower income households disproportionately.

While the utilisation of social welfare expenditure varies across different schemes, it seems reasonable to assume that overall social welfare utilisation is higher for lower-income households (e.g. unemployment assistance), older households (e.g. non-contributory state pension) and households with children (e.g. child benefit). The weight of evidence suggests that utilisation of education services tends to be geared toward higher income households in Ireland as (i) there is a significant level of social inequality in access to third-level education; (ii) free third-level tuition (for full time undergraduate EU students) was introduced in 1996; and, (iii) the level of state spending on the average Irish third level student is high by international standards while the level of state spending on the average primary level student is low by international standards; third-level education expenditure accounts for approximately 30% of total education expenditures in Ireland, which is also high by international standards.ⁱ With respect to the utilisation of health care in Ireland, Layte and Nolan (2004, p.132) summarise as follows, “After standardising the measures we found that, although

overall health expenditure was skewed toward the better off, this difference was not significantly different from zero.”ⁱⁱ

It is difficult to adequately address the financing of public expenditures from a distributional perspective, i.e. to assess tax incidence. In addition, the funding of health care in Ireland is a particularly complex issue because of the many complex interactions between the public and private health sectors. Although some studies have suggested that Ireland’s funding of health expenditures is progressive, these results appear dependent on the assumption that public health expenditures are financed exclusively from income taxation.ⁱⁱⁱ The reality is that Ireland’s tax system is disproportionately financed by (proportional or even regressive) expenditure taxes. As such, it is reasonable to suggest that the financing of health expenditures, and education and social welfare expenditures, is probably only slightly progressive.

In summary, incorporating both utilisation and financing considerations, it is reasonable to expect that higher-income households would be particularly supportive of education expenditures and somewhat supportive of health expenditures, while lower-income households would be particularly supportive of social welfare expenditures.

III - SURVEY DESIGN AND DATA

Lansdowne Market Research administered the Survey to a sample of 1,149 people in June 2004 employing quota controls to match the sample characteristics by

gender, social class, region and age to the 2002 Population Census.^{iv} The administration took the form of face-to-face interviews. The two sections relevant to this paper are described below.

1. Government Expenditures: Respondents were asked whether more or less money should be spent on the three categories of health, education and social welfare, subject to the important (and stated) caveat that more spending on any category would mean less on another and/or more taxes. Respondents were also asked the basic government spending question, i.e. *“Overall, would you be in favour of (a) more government spending and more taxes; (b) less government spending and less taxes; (c) an unchanged amount of government spending and taxes.”* Finally, respondents were asked to consider how efficiently they believed that the government used tax to provide public services in the areas of social welfare, health, education and overall. This question served an information-gathering purpose as well as priming respondents to consider relative efficiencies of different types of public expenditure in Ireland.

2. General Attitudes to Society: General attitudes to distribution in society as measured by the *World Values Survey* and the *ISSP* module on Social Inequality 1998 were assessed in order to compare them with the respondents’ specific attitudes to redistribution. Respondents were asked on a 10 point scale to choose between, *“A society with extensive social welfare but high taxes”* and *“A society where taxes and social welfare are low and people take responsibilities for themselves”* and between, *“An egalitarian society where the gap between rich and poor is small regardless of achievement”* and *“A competitive society where*

wealth is distributed according to one's achievement". Respondents were also asked to rate themselves on a 10-point political scale from left to right. Respondents were then asked on a 7-point scale to rate their level of agreement with the statements, "*The government should take steps to reduce differences in income inequality*" and "*Large numbers of people falsely claim social welfare benefits in Ireland these days*"

IV - RESULTS

Of the 1,040 respondents who answered the questions, 21.5% chose "more government spending and more taxation", 42.2% chose "same level of government spending and taxation" and 36.2% chose "less government spending and taxation". In addition, there was almost unanimous support for extra spending on health and education, with less support for increases in social welfare expenditure. This was despite the fact that respondents found health to be the lowest and social welfare the highest in terms of efficiency of expenditures. Respondents appeared to have interpreted the term "efficiency" as "effectiveness" and have responded to ineffectiveness with extra expenditure.

Table 1 displays the results of a multinomial logistic model of support for government expenditure with the status quo being the base category. The results indicate that there is not a substantial degree of demographic variation in preferences for the total level of public expenditure in Ireland. However, those on higher incomes (€60,000+) are more likely to support reducing public expenditure, while those with a competitive (as opposed to egalitarian)

ideological outlook are substantially less likely to support increasing public expenditure.

Table 2 displays the results of a SUR regression model (Zellner, 1962) of preferences for increased or decreased spending in the three areas of health, education and social welfare. A Breusch-Pagan test of serial independence between the residuals yielded a chi-squared coefficient of 329.5 indicating that the residuals are not independent and that therefore SUR as opposed to OLS is a more appropriate technique.

Those with dependent children show statistically significantly higher support for spending across all three areas. However, gender does not affect support in any of the three areas. The regressions include a number of attitudinal variables to assess the extent to which general attitudes are correlated with specific attitudes to decomposed expenditure items. A competitive (as opposed to an egalitarian) ideological outlook reduces support with respect to social welfare expenditure. We include perception of welfare fraud in the social welfare equation and as expected this is a statistically significant and substantial determinant of preferences for decreased social welfare expenditure. Preferences for a low tax economy significantly decrease demand for social expenditures but not for health or education expenditures. The coefficients on preferences for overall government expenditure indicate a high degree of correlation between overall government expenditure and preferences in each of the three sub-categories. In total, the results suggest that attitudinal/value based questions do predict preferences for specific expenditure categories, particularly so for social welfare

expenditures and that attitudes to overall government expenditure predict preferences for all three categories of government spending.

The results for income are particularly interesting from an economics perspective. While in general being less supportive of taxation and public expenditures, those on higher incomes display higher levels of support for spending on health and education; in the case of health, the effect is statistically significant. However, those on higher income show statistically significantly lower support for social welfare expenditures. These results for income are fairly consistent with the previous discussion on utilisation and financing, although future work could benefit from the further decomposition of education expenditures into primary level, secondary level and third level.

V - CONCLUSION

This paper has provided the first model of demand for categories of public expenditures in Ireland. To incorporate the potential additivity constraint, we have modelled demand for public expenditure on the three separate categories of health, education and social welfare spending simultaneously, employing a SUR framework. The results show that decomposing demand for government expenditure into its three main components yields similarities and differences in the composition of the demand functions. The presence of dependent children increases the demand for all three components while the presence of a competitive ideology decreases the demand for all three components. However, those on incomes above €60,000 are supportive of increased health expenditures,

and to a lesser extent increased education expenditures, but decreased social welfare expenditures.

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Table 1: Multinomial Logistic Model of Preferences for Government Expenditure

	Coefficient	t
More		
Dependent Children	-0.14	-0.51
Household Size	0.08	1.02
Age	-0.03	-0.72
Age Squared	0.00	0.87
Male	0.25	1.26
Married	0.03	0.12
Income > €60,000	-0.03	-0.09
Competitive Ideology	-0.20***	-4.60
Constant	0.61	0.75
Less		
Dependent Children	0.04	0.17
Household Size	0.02	0.29
Age	-0.03	-0.90
Age Squared	0.00	1.20
Male	0.08	0.50
Married	0.06	0.27
Income > \$60,000	0.56**	2.05
Competitive Ideology	0.01	0.40
Constant	0.10	0.14
Number of observations	759	
LR chi-squared (16)	40.13	
Prob > chi-squared	0.0007	
Pseudo R ²	0.0247	

***Indicates statistically significant at the 10% level. ** Indicates statistically significant at the 5% level. *** Indicates statistically significant at 1% level.**

Table 2: A Seemingly Unrelated Regression

	Social Welfare		Health		Education	
	Coefficient	Std. Err.	Coefficient	Std. Err.	Coefficient	Std. Err.
Gender	0.01	0.09	0.15	0.07	-0.02	0.08
Overall Preferences for Government Spending						
More	-	-	-	-	-	-
Same	-0.22**	0.11	-0.26***	0.10	-0.27***	0.11
Less	-0.61***	0.11	-0.85***	0.10	-0.91***	0.11
Dependent Children (1 = Yes)	0.40***	0.12	0.31***	0.10	0.35***	0.11
Household Size	-0.08**	0.04	-0.08***	0.03	-0.03	0.03
Age	0.00	0.02	0.01	0.01	0.03	0.02
Age Squared	0.00	0.00	0.00	0.00	0.00	0.00
Full-time Worker	-0.22**	0.10	-0.18**	0.09	-0.08	0.09
Education						
Third Level	-	-	-	-	-	-
Some College	-0.02	0.14	0.10	0.13	-0.13	0.13
Secondary	-0.25	0.18	0.16	0.16	0.17	0.17
Primary	0.23	0.25	0.17	0.22	0.39**	0.23
Perception of Welfare Cheating (1 to 10)	-0.14***	0.02	-	-	-	-
Preferences for Low Tax Economy (1 to 10)	-0.05***	0.02	0.05	0.02	0.01	0.02
Married	0.00	0.11	-0.20**	0.10	-0.15	0.10
Household Income						
<€30,000	-	-	-	-	-	-
€30,000 - €60,000	-0.34***	0.10	0.17*	0.09	0.03	0.10
€60,000+	-0.46***	0.15	0.43***	0.13	0.17	0.14
Competitive Ideology	-0.15***	0.02	-0.05**	0.02	-0.05**	0.02
Constant	7.44***	0.40	6.43***	0.35	5.80***	0.38

*Indicates statistically significant at the 10% level. ** Indicates statistically significant at the 5% level. *** Indicates statistically significant at 1% level.

Equation	Obs	Parameters	RMSE	"R-sq"	chi2	P
Social Welfare	730	16	1.114329	0.3266	348.61	0
Health	730	15	0.981774	0.1476	126.36	0
Education	730	15	1.0563	0.1535	132.41	0

ENDNOTES

ⁱ Irish education is predominantly (over 90%) funded by the public sector. See OECD, Education at a Glance, various years and Newman (2005) for further details on Irish education.

ⁱⁱ Layte and Nolan (2004, p.132) also note that, "Decomposing this overall measure of health utilisation we found that inpatient and outpatient services in hospitals were essentially neutral in their distribution across income groups whereas use of GPs and number of prescriptions filled were significantly skewed toward the lower end of the income distribution. Use of dental and optician services on the other hand were significantly skewed toward the more advantageous income groups after standardisation." Although increasing, Ireland's expenditure on health is relatively small. Public expenditure accounts for over 80% of total health expenditures in Ireland, with general taxation funding approximately three-quarters of health expenditures. See also Nolan (2005) for further details on Irish health.

ⁱⁱⁱ See Wagstaff et al (1999).

^{iv} Pre-testing took the form of an on-line survey of 298 respondents, mainly undergraduate and postgraduate students. Lansdowne Market Research also conducted a number of pilot-tests on the scales used in the survey in order to reduce unnecessary complexity and encourage interview completion.