

QAC SUMMER 2007

Motivation

There exists a large and growing literature documenting correlations between patterns of government expenditure and various structural and demographic variables in both cross-sectional and panel data.

Standard explanations for these correlations fall into one of two categories: a) heterogeneity in demand for public goods due to demographic factors thought to be correlated with preferences, accommodated by a black boxed supply process; and, b) heterogeneity in the political institutions that channel these preferences.

We are going to examine both (i) how individual preferences shift in response to demographic variables and (ii) whether public spending responds to aggregate shifts. This will allow us to separate out supply and demand effects and, provided adequate longitudinal data can be acquired, look at their interplay.



A few papers have looked at the extent to which country openness -(X+M)/GDP – affects workers' feelings of job security (Scheve and Slaughter 2001a, 2001b, 2004) or attitudes toward trade policy (Magda and Rodrik 2001, O'Rourke and Sinnot 2001).



Time

The problem is that these variables are all causally linked. So simply taking cross-sectional correlations runs the risk of misestimating the true marginal effects of certain variables by misattributing the accumulated heterogeneity to momentary correlates.

Data

One obstacle is the inherent difficulty of measuring preferences. Social surveys are generally run by sociologists and political scientists and this sort of data has not traditionally been on their wish list. A large part of this project has been finding, formatting, and thinking about the suitability of various sources of data. We've examined alternate data sets such as Latinobarometro and the World Values Survey. Unfortunately, the questions which directly ask for preferences over government expenditure tend to have sparser coverage than better known questions on trust, political affiliation, and so on.

International Social Survey Program (ISSP) Role of Government III Survey

Question: "Listed below are several areas of government spending. Please show whether you would like to see more or less government spending in each area. Remember that if you say "much more", it might require a tax increase to pay for it."

Spending Variables: Health, Law Enforcement, Education, Retirement, and Unemployment Benefits. Countries: Australia, Bulgaria, Canada, Cyprus, Czech Rep, France, Germany, Great Britain, Hungary, Ireland, Israel, Italy, Japan, Latvia, New Zealand, Norway, Philippines, Poland, Russia, Slovenia, Spain, Switzerland, Sweden, USA (23) Year. fieldwork 1996-7 Observations per country: 989-2518, average 1358

Other data sources: Government Financial Statistics, Penn World Tables, World Development Indicators.



DO GOVERNMENTS TAKE PEOPLE'S PREFERENCES INTO ACCOUNT?

Stage I Specification

We model an individual's preference over the change in spending, Z, as the difference between the current level, Y, and their preferred level. We further model an individual's preferred level of spending as a function of demographic characteristics of the individual as well as country-wide aggregate demographics.

 $Z_{i} = a_{1} + b_{11}Y_{c} + b_{12}X_{c}^{country} + b_{13}X_{i}^{individual}$

where Z_i is an individual's survey response about a given category, Y_c is spending as the fraction of GDP spent on that category during the five years prior to the survey, **X**_{country} is a set of country-level economic and demographic characteristics, and X_{individual} is a set of individual demographic characteristics. Because the dependent variable is a categorical variable, Stage I must be estimated using an ordered probit. The errors are clustered by country.

Stage I: Graphical Representation of the Results



Stage II Specification

The question is how the countrywide distribution of preferences translates into changes in spending via changes in fiscal policy. For the moment,

$$(Y_{c,t+1} - Y_{c,t}) = \mathbf{a}_{2} + \mathbf{b}_{2,1} (X_{c,t+1}^{country,select} - X_{c,t}^{country})$$

The dependent variable is the five-year change in the spending on a given category as a fraction of GDP. X is a vector of a subset of the country level demographic variables to control for direct effects of demographic change on spending given fixed fiscal policy rules. \overline{Z} is a vector of (quasi-)moments of the distribution of preferences over that category of spending (currently the median, and fractions responding in the highest and lowest categories. This regression is estimated using OLS.

Stage II: Graphical Representation of the Results



Preference for Spending on Unemployment

Preference for Spending on Retirement

Preference for Spending on Education

Preference for Spending on Law Enforcement

Preference for Spending on Healthcare

 $itry, select) + \boldsymbol{g}_{2,1} \overline{Z}_{c,t}$

Change in the fraction of GDP spent on Social Protection

Change in the fraction of GDP spent on Social Protection

Change in the fraction of GDP spent on Education

Change in the fraction of GDP spent on Public Order and Safety

Change in the fraction of GDP spent on Healthcare

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Interpretation of Results

Stage I: Higher levels of real per capita spending tend to lead to lower demands for spending. The sole exception is demands for unemployment insurance where higher absolute spending on social protection leads to stronger demand for spending on unemployment insurance. This may be due to the fact that existing spending here measures social protection which includes both unemployment assistance and retirement. Most of the variation in social protection is due to variation in pension plans so this measure isn't properly aligned to tell us whether spending is alleviating the demand or fueling it. \rightarrow Spending does seem to alleviate demand. • Richer countries demand less from their government. This effect is weakest in education and retirement and strongest in law enforcement and unemployment but true across the board. Similarly, richer people demand less from their government. The effect is strongest in unemployment, retirement, and healthcare. \rightarrow Many public goods seem to be necessities. (The set of necessities from a societal point of view may be different from the set of necessities for an individual.)

Effects of individual and national characteristics (Individual): • Women demand higher spending across the board. • The more educated people demand less spending on everything but

education. The Older people demand more spending on {retirement, health, law and order} but less on {education, unemployment}. • Rural residents demand less spending on everything compared to

urban and suburban residents. • Compared to suburban residents, urban residents care more about law and order, and unemployment.

(National): • Openness does correlate with greater demand for social protection. • Greater ethnic fragmentation leads to lower demand for spending on law and order.

• Countries with more retirees demand less of everything, though the effect is weakest in demand for retirement spending. • National and individual characteristics don't seem to account for much variation. While the signs are often in line with current theorizing and past results, the magnitudes are pretty small compared to those for income and current spending levels. Ultimately, whether these magnitudes are large or small depends on how sensitive spending is to changes in the distribution of preferences (stage II). However, the preliminary suggestion is that demand shifts may have difficulty explaining cross-sectional variation. Stage II: The biggest pattern is the lack of one: spending does not seem to

respond coherently to preferences. As an example, education and retirement spending seem to decline precisely in those countries with the highest fraction stating "much more" and increase in those countries with the highest fraction stating "much less". Clearly this begs further investigation to determine whether this is a true puzzle or a misspecification.

Implications and Future Inquiry

> Demographic heterogeneity seems to account for very little of the cross-sectional variation in preferences over government spending. This calls into question the role of such variation in explaining crosssectional differences in spending. This implies a stronger role for "supply side" effects: the manner in which political institutions aggregate these preferences, in determining cross-sectional patterns of spending.

> Our hope is to use longitudinal data to uncover the causal structure detailed in the diagram above and thereby estimate the speed with which public expenditures respond to changes in demographics via changes in preferences, given a certain institutional structure.

(ISSP is currently conducting a follow-up study which should provide us with longitudinal data.)

