Attribution Error in Economic Voting: Evidence From Trade Shocks

Rosa Hayes
Faculty Sponsor: Masami Imai, Economics Department
Quantitative Analysis Center
Summer 2011 Apprenticeship

Introduction

• The traditional literature on economic voting shows that the re-election prospects of incumbent governments depend on economic performance during election years (Lewis-Beck, 1988). More recently, some attempts have been made to examine the rationality of electoral choice in democratic countries, and the degree to which voters adequately understand and attribute responsibility for the economic policies pursued by their elected officials.

-Healy and Malhotra (2009): demonstrate that voters reward the incumbent presidential party for pursuing visibly beneficial policies (i.e. disaster relief), but are unaffected by less obvious, structurally beneficial policies (disaster prevention) .

-Wolfers (2007) shows that American voters in oil-producing states are more likely to reelect their governors when oil prices are high, and are similarly likely to vote them out of office when oil prices are low.

-Other research suggests that the electoral consequences of retrospective voting depend on the unique political and economic context of the election in question (Powell and Whitten, 1993; Rudolph, 2003) .

•These papers suggest that voters make attribution errors in a systematic way, and yet they do not attempt to measure the extent of attribution error.

•We contribute to this literature by measuring, through an instrumental variables (IV) approach, voter response to two types of changes in economic performance:

-general change in economic performance that could be attributed to domestic economic policies *or* some other shocks outside of the government's control

-exogenous change in economic performance induced by trade shocks which are outside the government's control.

• We find that voters respond to these two types of shocks in a quantitatively similar fashion, suggesting that the size of the attribution error is quite large.

Data

•Our main data source is the World Bank Database of Political Indicators 1975-1980. Following Alesina et al. 2010, we construct various measures of government turnover to use as our dependent variables:

PMCH: a change in the chief executive

IDEOCH: a change in the ideology of the cabinet

ALLCH: either a change in the cabinet ideology or chief executive

We restrict our observations to election years, and differentiate between countries with parliamentary versus presidential governments.

•We use annual GDP growth data from the World Development Indicators as our primary independent variable.

•We look for variation among high and low income countries, using current and historical countrywide income level classifications from the World Bank.

•We restrict our analysis to the years following the end of the Cold War (1990-2009); because our instrumental variable is export-based, this time period provides the most accurate and expansive coverage.

Methodology

• We restrict our regressions to election years, using executive election data from presidential countries and legislative election data from parliamentary countries.

• To quantify the relationship between government turnover and economic growth, we modify a model for CEO compensation that accounts for the impact of luck (i.e. growth across the entire economy) on firm performance (Bertrand and Mullainathan, 2001).

•In our model, "luck" comprises exogenous economic shocks, unlinked to a government's economic policies, that contribute to GDP growth.

• We estimate the effect of GDP change on government turnover using both OLS and an IV approach, which allows us to differentiate between the effects of domestic policy and the impact of prevailing global economic conditions on GDP growth:

•For IV, we construct an Export Weighted Growth Predictor Index. We look specifically at the time period following the end of the Cold War, at which point the global economy began to experience rapid trade integration.

$$s_{it} = b * O_{it} + g_i + c_t + a * X_{it} + e_{it} \quad (1)$$

$$y_{it} = \beta_{dEX} * \widehat{s_{it}} + \gamma_i + \chi_t + \alpha * X_{it} + \varepsilon_{it} \quad (2)$$

• y_{it} is a dichotomous variable that takes on the value 1 when there is a government turnover (as defined above).

• Our main independent variable is s_{it}, or GDP growth.

• $O_{it,\,our}$ instrumental variable, is an Export Weighted Growth Predictor index.

• γ_i, γ_t, and X_{it} are country-fixed effects, time-fixed effects, and time-varying control variables, respectively.

Instrumental Variables: Export Weighted Growth Predictor

• Our instrumental variable should be strongly correlated with changes in domestic economic performance while being uncorrelated with changes in domestic political conditions or economic policies.

• Recently, it has been found that trade can be a strong predictor of GDP growth (Acemoglu et al., 2008; Brückner and Ciccone, 2010).

• Following Acemoglu et al., we construct a measure of bilateral trade using data from the IMF Direction of Trade Statistics. We modify this indicator by multiplying it with the GDP growth rate of a country's trading partners to construct an Export Weighted Growth Predictor ($EWGP_{it}$):

$$EWGP_{it} = \sum_{j=1}^{J}\left[\left(\frac{1}{I}\right)\sum_{t=1}^{T}\frac{EXPORTS_{ijt}}{GDP_{it}}\right]\cdot\Delta GDP_{jt} \quad (3)$$

•Note that the weight (exports/GDP) is kept constant by taking the within-country average over time, so as to prevent changes in trade policy from driving our results.

• This is important as we want to make use of only the differential effects of global economic conditions which are outside domestic governments' control

Instrumental Variables: Results

Table 1: Presidential and Parliamentary Systems

VARIABLES	(1) Change in Prime Minister	(2) Change in Prime Minister	(3) Ideological Change	(4) Ideological Change	(5) All Changes	(6) All Changes
GDP Growth (Annual %)	-0.0110*	-0.0321*	-0.00948*	-0.0497**	-0.00808	-0.0306*
	(0.00659)	(0.0169)	(0.00553)	(0.0211)	(0.00637)	(0.0172)
Observations	365	348	365	348	365	348
R-squared	0.099	0.070	0.054	-0.059	0.075	0.042
Number of id	104	87	104	87	104	87
First Stage F Statistic		20.12		20.12		20.12

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1
Columns 1,3,5 are OLS; Columns 2,4,6 are IV: 2SLS (instrumenting GDP growth with $EWGP_{it}$)

Table 2: Parliamentary Systems Only

VARIABLES	(1) Change in Prime Minister	(2) Change in Prime Minister	(3) Ideological Change	(4) Ideological Change	(5) All Changes	(6) All Changes
GDP Growth (Annual %)	-0.0137	-0.0561**	-0.0153*	-0.0997***	-0.0120	-0.0582**
	(0.00955)	(0.0255)	(0.00832)	(0.0308)	(0.00921)	(0.0257)
Observations	236	227	236	227	236	227
R-squared	0.130	0.022	0.114	-0.326	0.111	-0.019
Number of Countries	61	52	61	52	61	52
First Stage F Statistic		25.85		25.85		25.85

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1
Columns 1,3,5 are OLS; Columns 2,4,6 are IV: 2SLS (instrumenting GDP growth with $EWGP_{it}$)

Table 3: Add Control Variables

VARIABLES	(1) Change in Prime Minister	(2) Change in Prime Minister	(3) Ideological Change	(4) Ideological Change	(5) All Changes	(6) All Changes
GDP Growth (Annual %)	-0.0126	-0.0454**	-0.0139*	-0.0809***	-0.00886	-0.0432**
	(0.00824)	(0.0207)	(0.00720)	(0.0245)	(0.00830)	(0.0215)
Low Income	0.437	0.187	0.338	-0.174	0.553*	0.291
	(0.304)	(0.390)	(0.259)	(0.410)	(0.311)	(0.395)
Lower Middle Income	0.460*	0.311	0.323	0.0173	0.490*	0.333
	(0.269)	(0.289)	(0.228)	(0.260)	(0.264)	(0.281)
Upper Middle Income	0.291	0.255	0.401**	0.326*	0.307	0.269
	(0.212)	(0.216)	(0.169)	(0.183)	(0.204)	(0.204)
Ruling Party Holds Majority	-0.0834	-0.123	-0.250**	-0.332***	-0.0846	-0.127
	(0.0874)	(0.0847)	(0.102)	(0.105)	(0.0863)	(0.0874)
Duration of Compulsory Primary Education	0.131	0.144	0.0941	0.122	0.111	0.125
	(0.171)	(0.177)	(0.130)	(0.158)	(0.177)	(0.184)
Observations	352	335	352	335	352	335
R-squared	0.112	0.054	0.097	-0.166	0.089	0.025
Number of Countries	101	84	101	84	101	84
First Stage F Statistic		14.19		14.19		14.19

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1
Columns 1,3,5 are OLS; Columns 2,4,6 are IV: 2SLS (instrumenting GDP growth with $EWGP_{it}$)

Interpretation

•In all specifications, GDP growth has a negative coefficient, confirming the general results in economic voting literature.

•In each of our IV equations, the coefficient of the effect of GDP growth on government termination is not only negative and significant, but is also quite large compared to OLS estimates, suggesting that voters may indeed incorrectly attribute exogenous growth effects to their government's economic policies.

•Our results are quite robust to controls.

Further Research

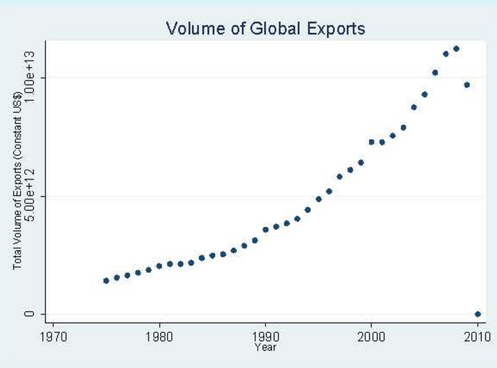
• Include additional control variables and interaction terms to account for potential nonlinearity in the dataset. Potential control variables include: measures of democracy and electoral competitiveness, central bank independence, and country level social indicators.

• Run more robustness tests with different exclusions.

• Be aware of the weak-instrument problem that can arise when using such a large panel dataset, which spans 35 years and 178 countries, particularly if we extend our analyses to an early time period.

• Check whether results remain consistent when using an alternative dependent variable, such as the rate of unemployment.

•Look into legislative election results in presidential countries that also hold legislative elections (e.g. United States) to see if a similar relationship emerges.



This graph shows how the global volume of exports has increased over time. Of particular interest to our research is the large and sustained spike in volume after 1990. Data from the World Bank, World Development Indicators.

References & Acknowledgments

Acemoglu et al. "Income and Democracy." *American Economic Review*, 98(3): 808–42. 2008

Alesina, Alberto, Dorian Carloni and Giampaolo Lecce. "The Electoral Consequences of Large Fiscal Adjustments." Working paper. 2010.

Alesina, Alberto and Nouriel Roubini. "Political Cycles in OECD Economies." *Review of Economic Studies*. 59: 663-88. 1992.

Bertrand, Marianne and Sendhil Mullainathan. "Are CEOS Rewarded for Luck? The Ones without Principals Are." *The Quarterly Journal of Economics*, 116(3): 901-932. 2001.

Brender, Adi, and Allan Drazen. "How Do Budget Deficits and Economic Growth Affect Reelection Prospects? Evidence from a Large Panel of Countries." *American Economic Review*, 98(5): 2203–20. 2008

Brückner, Markus and Antonio Ciccone. "International Commodity Prices, Growth and the Outbreak of Civil War in Sub-Saharan Africa." *The Economic Journal* 120(544): 519-534. 2010.

William D. Nordhaus. "The Political Business Cycle." *The Review of*

Healy, Andrew and Neil Malhotra. "Myopic Voters and Natural Disaster Policy." *American Political Science Review* 103(3), 387-406. 2009

Economic Studies 42(2): 169-190. 1975.

Lewis-Beck, Michael S. "Economics and the American Voter: Past, Present, Future." *Political Behavior* 10(1): 5-21, 1988.

Powell Jr., G. Bingham and Guy D. Whitten. "A Cross-National Analysis of Economic Voting: Taking Account of the Political Context" *American Journal of Political Science* 37(2): 391-414 . 1993.

Rudolph, Thomas J. "Who's Responsible for the Economy? The Formation and Consequences of Responsibility Attributions." *American Journal of Political Science, 47(4): 698–713. 2003*

Shi, Min and Jakob Svensson. "Political Budget Cycles In Developed and Developing Countries." *Nordic Journal of Political Economy, XXIX (2003), 67-76.* 2002.

Wolfers, Justin J. "Are Voters Rational? Evidence From Gubernatorial Elections" 2006

Thank you to Professor Imai, Manolis Kaparakis, and the rest of the QAC for all of their help and guidance.