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Does the World Economy Swing National Elections?

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CONTENTS

ABSTRACT

Do voters reward national leaders who are more competent economic managers, or merely those who happen to be in power when the world economy booms? According to rational voting models, electors should parse out the state of the world economy when deciding whether to re-elect their national leader. I test this theory using data from 268 democratic elections held between 1978 and 1999, comparing the effect of world growth ("luck") and national growth relative to world growth ("competence"). In the preferred specification, which allows for countries to have different degrees of global integration, an extra percentage point of world growth boosts incumbents' chances of re-election by 9 percent, while an extra percentage point of national growth relative to world growth only boosts an incumbent's chances of re-election by 4 percent. Voters are more likely to reward competence in countries that are richer and better educated. Controlling for income, higher rates of newspaper readership reduce the returns to luck, while higher rates of television viewing reduce the returns to competence.

1. <u>Introduction</u>

Are national leaders more likely to be re-elected when the world economy booms? This paper provides new evidence on whether voters behave according to a purely rational model by considering the impact of an exogenous factor – the state of the world economy – on the outcomes of 268 democratic national elections over the past three decades.

That the economy affects elections has been amply demonstrated, including in the US House of Representatives (Stigler 1973; Jacobson & Kernell 1983; Lewis-Beck & Rice 1984), the US Presidential race (Hibbs 1982; Markus 1988; Fair 2002), Canada (Nadeau & Blais 1993), Australia (Jackman and Marks 1994; Cameron and Crosby 2000; Wolfers and Leigh 2002), as well as across OECD countries (Alesina, Roubini and Cohen 1999), Latin American nations (Remmer 1991), and certain developing countries (Schuknecht 1996; Pacek and Radcliff 1995). However, this literature has principally focused on political business cycles and election forecasting, rather than on separating the effect of the world economy from the effect of national economic performance.

According to rational voting models, such as Alesina, Roubini and Cohen (1999), voters should make their decisions based purely on politicians' competence, and not on factors outside their control.[1] However, a literature since Downs (1957) argues that voters will be "rationally ignorant", since there is virtually zero chance that their vote will influence the outcome (for empirical evidence on this point, see Mulligan and Hunter 2001). In the context of US gubernatorial elections, Wolfers (2002) shows that a model of quasi-rationality may be more appropriate. Analyzing whether voters parse out the effect of the national economy, he finds that while voters make some attempt to evaluate their state's economy relative to the national economy, those in pro-cyclical states are consistently fooled into re-electing incumbents in national booms, and dumping them in national recessions.[2]

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[1] For example, Alesina, Roubini and Cohen state that: "Although important work in macro-political economics predates the rational expectations revolution in macroeconomics, a new literature emerged as a result of developments in the rational theory of economic policy. This literature emphasizes the constraints that the assumption of individual rationality imposes on the ability of policy-makers to systematically, predictably, and permanently influence the state of the economy along an inflation-unemployment trade-off; and policymakers' ability to systematically fool the electorate." (1999, 253)

[2] Achen and Bartels (2004) also cast doubt on a purely rational model, showing that voter behavior is affected by factors entirely beyond the control of politicians, including droughts, floods and shark attacks.

Here, I shift the analysis up one level – exploring whether voters in national elections attempt to evaluate their country's economic performance relative to the world economy. I find that voters in national elections are more likely to re-elect incumbents when the world economy booms. Indeed, world economic growth ("luck") has a greater effect on incumbents' re-election chances than the amount by which national economic growth exceeds world growth ("competence"). Voters are more likely to reward competence in countries that are richer or better educated. Voters are less likely to reward luck in countries that have a higher newspaper circulation rate. By contrast, in countries with more televisions, voters are less likely to reward competence.

The remainder of this paper is organized as follows. Section I outlines the data sources and variables of interest. Section II looks at the effect of the world and national economy on national elections, and finds little evidence that the effect is driven by oil prices. Section III explores whether voters' ability to parse out luck from competence differs systematically according to income, education or media penetration; and the final section concludes.

2. <u>Data</u>

Each of the specifications presented in this paper uses as the dependent variable whether the party of the country's "chief executive" (generally, the President or Prime Minister) is re-elected. Elections that are marred by fraud are excluded, as are elections taking place in the world's two largest economies – the United States (which accounts for 32 percent of world GDP), and Japan (14 percent of world GDP). For these two nations, world growth is not necessarily exogenous (the next largest economy, Germany, has only 6 percent of world GDP).

Political data is taken from the World Bank's Database of Political Institutions, which codes the party of the chief executive for the years 1975-2000. Because the key independent variable is growth since the last election, the first election for each country is excluded. In addition, because I code re-election based on the party of the chief executive in the year following the election, the last year of the sample is excluded. This leaves a sample of 58 countries and 268 elections, held between 1978 and 1999. The average term length is 3.4 years.

The two dependent variables are constructed from the average annual growth in real world GDP per capita since the last election, and that country's average annual growth in real GDP per capita (both from World Development Indicators 2004). Growth

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in real GDP per capita is used in preference to inflation or unemployment for two reasons. First, growth fluctuates more over short periods than either of the other two variables. Secondly, growth is a clearly measurable summary "of the average state of material well-being or prosperity in the electorate" (Goodman & Kramer 1975, 1260).

Data on oil prices is from IMF price indicators, adjusted for inflation with the US CPI-U. Education is the average number of years of education of the population aged 15 and over, from Barro and Lee (2000). Three measures of media penetration are used: the number of newspapers, the number of radios and the number of televisions per person, all from World Development Indicators 2004 (based on data originally collected by UNESCO). For each country, education and media penetration figures are averaged across the period 1975-2000.

Table 1 presents summary statistics.

Table 1: Summary Statistics			
Variable	**N**	**Mean**	**SD**
Whether party of national leader is re-elected	268	0.570	0.495
Growth in national real GDP per capita (%)	268	1.411	3.555
Growth in world real GDP per capita (%)	268	1.132	0.960
Log national real GDP per capita	268	8.365	1.520
Mean years of education of the population aged 15 or over	232	6.491	2.719
Daily newspaper circulation per person	258	0.163	0.149
Radios per person	268	0.510	0.319
Televisions per person	268	0.249	0.179

3. Separating Luck and Competence

At the outset, it is worth determining the extent to which national growth over the previous term (whether caused by world growth or not) affects election outcomes. Table 2 shows the results from the following fixed effects probit regression for country c in election term t:

(1) $\text{Re-elect}(0,1)_{c,t} = \beta \text{Growth}_{\text{National } c,t} + \zeta I^{\text{Country}}_c + \varepsilon_{c,t}$

and its random effects counterpart:

(2)   Re-elect$(0,1)_{c,t} = \alpha + \beta$Growth $_{National\ c,t} + u_c + \varepsilon_{c,t}$

where u_c is a group-specific random element.

To determine whether a fixed or random-effects model should be used, a Hausman test is used to compare the results from these two regressions. The test statistic is 5.46, which is above the critical value of $\chi^2(1)$ at the 5% level, suggesting that we should reject the hypothesis that country effects are uncorrelated with the other regressor. On this basis, only fixed effects models are presented for the remainder of the paper.

Table 2: Does growth help national leaders get re-elected?
Dependent variable: Whether the party of the national leader is re-elected

	(1) Fixed Effects	(2) Random Effects
National GDP growth (percentage points)	0.0463*** (0.0143)	0.0605** (0.0273)
Observed Prob.	0.570	-
Predicted Prob.	0.586	-
Pseudo R^2	0.16	-
Elections	268	268
Countries	58	58
Hausman Test	$\chi^2(1)= 5.46$ (Prob $> \chi^2 = 0.0195$)	

Notes: Coefficients are marginal probabilities from a probit model, with standard errors in parentheses. Random effects model includes only those elections in the fixed effects sample. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

Based on the above fixed effects regression, an incumbent national leader, or a successor from the same party, is 5 percent more likely to win re-election for every extra percentage point of GDP growth over the preceding electoral term.

Does world growth affect national elections? Figure 1 charts annual growth in real per-capita GDP against the fraction of democratic elections in which the party of the incumbent national leader is re-elected (excluding the US and Japan). There appears to be a strong relationship between the two, with re-election rates and growth both highest in 1978, the late-1980s, and 1999.

Figure 1: World Growth and National Elections
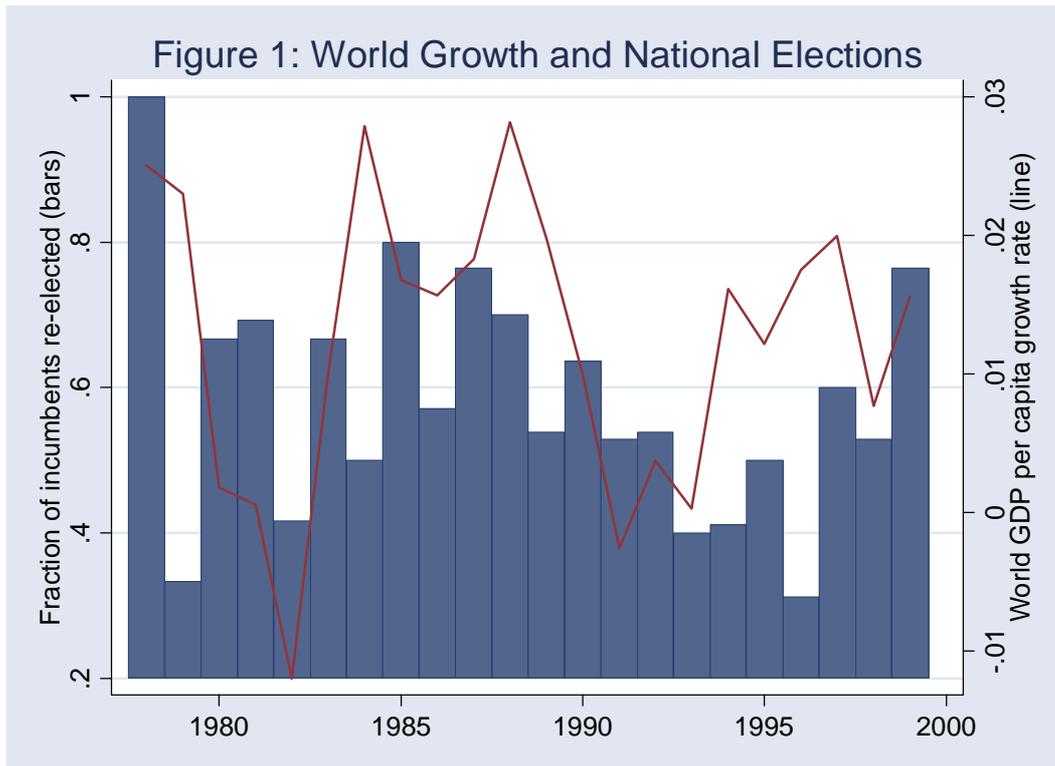
From Figure 1, it appears that voters may not be consistently separating the effects of the world economy from their national economic performance, as the rational voter model predicts. To test this in a more robust fashion, I separate growth into two components – world growth ("luck") and the gap between national growth and world growth ("competence").[3] I then estimate the following equation using a probit model:

(3) $\text{Re-elect}(0,1)_{c,t} = \beta(\text{Growth}_{\text{World } t}) + \gamma(\text{Growth}_{\text{National-World } c,t}) + \zeta I^{\text{Country}}_{c} + \varepsilon_{c,t}$

As the results in the first column of Table 3 indicate, the effects of luck and competence are both significant at the 1 percent level. However, the size of the luck coefficient is more than twice as large as the competence coefficient. An extra percentage point of world growth over the preceding electoral term raises an incumbent's chances of re-election by 14 percent. However, if that nation's growth has outpaced world growth by one percentage point over the preceding term, this only raises the incumbent's chances of re-election by 4 percent.

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[3] This approach follows Wolfers (2002).

Table 3: Which matters more, luck or competence?
Dependent variable: Whether the party of the national leader is re-elected

	(1) Assuming world growth has the same effect on national growth in all countries	(2) Taking account of different degrees of global integration
Luck (World growth)	0.140***	0.0898**
	(0.0451)	(0.0380)
Competence (National growth – world growth)	0.041***	0.0388**
	(0.0158)	(0.0171)
Country fixed effects	Yes	Yes
Observed Prob.	0.57	0.57
Predicted Prob.	0.58	0.58
Pseudo R^2	0.16	0.16
Elections	268	268
Countries	58	58

Notes: Coefficients are marginal probabilities from a probit model, with robust standard errors in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively.

However, in some sense equation (3) is unrealistic, since it assumes that world growth affects national growth in all countries equally. In an alternative (preferred) specification, I first determine the relationship between world growth and national growth for each country, and then to use this to calculate measures of luck and competence for each country. This more flexible specification allows for countries to be integrated with the world economy to a greater or lesser extent.

In order to determine the extent to which each country is integrated in the world economy, I first estimate the following equation using OLS, for all countries across the time span 1975-99. Note that in equation (4), the subscript t refers to a single year (whereas in other equations it refers to an election term):

(4) $\text{Growth}_{\text{National } c,t} = \alpha + \lambda \text{Growth}_{\text{World } t} * I^{\text{Country}}_c + \varepsilon_{c,t}$

From this, the fitted values ($\hat{\lambda}$) can be considered to be luck – since they are the amount of national growth in a given year that one would expect, given that year's world growth rate. For a country entirely disengaged from the world economy, $E(\hat{\lambda})=0$. The residuals (e) are competence – the amount by which a country's growth rate exceeds or lags behind what one would predict, given world growth, and that nation's degree of enmeshment in the global economy.

To determine the relationship between luck and competence, I then take the average of $\hat{\lambda}$ and e in each election cycle (call these $\overline{\hat{\lambda}}$ and ē), and estimate the following equation:

(5)   Re-elect (0,1) $_{c,t}$ = δ + β $\overline{\hat{\lambda}}$ $_{c,t}$ + γē$_{c,t}$ + ζI^{Country}$_c$ + υ $_{c,t}$

In a similar manner to equation (3), β in equation (5) is the coefficient on luck, and γ is the coefficient on competence. These results are presented in column (2) of Table 3. In this specification, the coefficients on luck and competence fall slightly, but an extra percentage point of world growth over the electoral term still boosts an incumbent's chances of re-election by 9 percent, while outpacing world growth by one percentage point only makes the leader 4 percent more likely to be re-elected (both significant at the 5 percent level). This is the opposite finding to Wolfers (2002), who looks at the effect of unemployment, house prices and real income on US gubernatorial elections, and finds there is a higher return to competence (ΔState-ΔNational) than luck (ΔNational). Perhaps unsurprisingly, voters in state elections are better at parsing out national effects than voters in national elections are at parsing out world effects.

Might this effect be driven by the price of the world's most traded commodity, oil? To answer this question, I look at the effect of the annualized percentage change in the real price of crude oil over the previous election term. This involves estimating the following equation:

(6)   Re-elect(0,1) $_{c,t}$ = β(ΔReal Oil Price $_t$) + ζI^{Country}$_c$ + ε $_{c,t}$

This regression is estimated separately for countries that are net energy importers, and those that are net energy exporters. Since a nation's status as a net importer or a net exporter could be endogenous to the oil price, countries are categorized based on data from 1971, well in advance of the first election in the sample, and ahead of the oil shocks of the 1970s.

Table 4: Do changes in the real price of oil affect national elections?
Dependent variable: Whether the party of the national leader is re-elected

	(1) Energy importing countries	(2) Energy exporting countries
Average annual increase	-0.282	-0.212
in the real price of oil	(0.213)	(0.728)
Country fixed effects	Yes	Yes
Observed Prob.	0.57	0.53
Predicted Prob.	0.58	0.53
Pseudo R^2	0.13	0.15
Elections	238	30
Countries	42	6

Notes: Coefficients are marginal probabilities from a probit model, with robust standard errors in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively. Oil price is the average annual change in the IMF oil price over the election cycle. Countries are categorized as net energy importers or exporters based on their status in 1971.

As Table 4 indicates, changes in the real oil price do not appear to have any statistically significant effect on national elections – either for energy importers or for energy exporters.

4. Does Development, Education or the Media Matter?

Is it possible to explain differing returns to luck and competence by a nation's level of economic development, average educational attainment, or media penetration? If the average voter is richer or better educated, it might be that he or she does a better job of parsing out the effect of the world economy when deciding whether to re-elect a national leader. Some insight into why the media might matter is given in Besley and Burgess (2002), who find that Indian state governments provide calamity relief in a more timely fashion when newspaper circulation is higher and there is more electoral competition.[4] In the US context, Gentzkow, Glaeser and Goldin (2004) find that the expansion and increasing independence of the media helped reduce corruption. Other studies have also shown that across US counties, radio ownership was positively correlated with New Deal spending in the 1930s (Strömberg 2004). Across countries, press freedom has been shown to be negatively correlated with corruption (Ahrend 2000;

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[4] Besley and Burgess (2002) theorize that newspaper circulation and political competitiveness should affect politicians' behavior because they increase the incentives for some politicians to signal that they are not of the "selfish" type.

Brunetti and Weder 2003), and with the political longevity of the national leader (Besley and Prat 2004).[5]

To test these theories, I again estimate equation (5), but this time interacting the returns to luck and competence with the level of log per-capita GDP, the mean number of years of schooling of the adult population, and three measures of media penetration: the number of newspapers, radios and televisions per person. For each country, these figures are averaged across the period 1975-2000 (since the model has a country-specific effect, it is therefore unnecessary to also include income and education as levels).

Table 5: Do income and education affect the returns to luck and competence?
Dependent variable: Whether the party of the national leader is re-elected

	(1) Income	(2) Education	(3) Income & Education
Luck	0.100	0.0906	0.388
	(0.214)	(0.124)	(0.382)
Competence	-0.231***	-0.0569	-0.152
	(0.0878)	(0.0439)	(0.136)
Luck*GDP	0.000036		-0.0580
	(0.0256)		(0.0656)
Competence*GDP	0.0358***		0.0185
	(0.0113)		(0.0262)
Luck*Education		0.00404	0.0339
		(0.0174)	(0.0362)
Competence*Education		0.0199**	0.0110
		(0.00798)	(0.0162)
Country fixed effects	Yes	Yes	Yes
Observed Prob.	0.57	0.56	0.56
Predicted Prob.	0.59	0.58	0.58
Pseudo R^2	0.19	0.19	0.20
Elections	268	232	232
Countries	58	47	47

Notes: Coefficients are marginal probabilities from a probit model, with robust standard errors in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively. GDP is the log of real per capita GDP. Education is the average number of years of education of the population aged 15 and over.

Table 5 shows the results from specifications interacting GDP and education. Both appear to increase the returns to competence. Recall from the second column of Table 3 that a 1 percent increase in national growth (relative to world growth) boosted an incumbent's chances of re-election by 4 percent. For every 10 percent increase in per-

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[5] In some sense, the exercise performed by Besley and Prat (2004) is most closely related to this one, with two caveats: their study looks only at political longevity at a single point in time (1997), and covers both democracies and non-democracies.

capita income, this effect rises by 0.4 percentage points. Likewise, for every 1 year increase in schooling, the effect of competence on re-election rises by 0.2 percentage points. Both income and education are associated with voters making fewer systematic attribution errors. Neither income nor education appears to have a significant impact on the "luck" coefficient (the effect of the world economy on national elections). When both the GDP and education interactions are included in the model, the coefficients on both competence interactions are positive, but insignificant.

Might the media also affect the returns to luck or competence? To test this hypothesis, I include a further set of interactions: the number of newspapers per person, radios per person, and televisions per person. In these specifications, I also control for the interaction of log real GDP per capita with competence and luck. This ensures that the (luck*media) and (competence*media) interactions are picking up the effect of the media on luck and competence, holding constant the effect of income on luck and competence. Again, since the model has a country-specific effect, it is therefore unnecessary to also include each country's average income and media penetration.

Table 6: Does the media affect the returns to luck or competence?
Dependent variable: Whether the party of the national leader is re-elected

	(1) Newspapers	(2) Radios	(3) Televisions
Luck	-0.166	0.0707	0.306
	(0.295)	(0.247)	(0.324)
Competence	-0.376***	-0.301***	-0.521***
	(0.132)	(0.112)	(0.159)
Luck*Media	-0.757*	-0.0524	0.157
	(0.432)	(0.187)	(0.405)
Competence*Media	-0.361	-0.0889	-0.550**
	(0.234)	(0.0919)	(0.246)
Luck*GDP	0.0472	0.00732	-0.0260
	(0.0394)	(0.0359)	(0.0479)
Competence*GDP	0.0593***	0.0496***	0.0858***
	(0.0203)	(0.0186)	(0.0256)
Country fixed effects	Yes	Yes	Yes
Observed Prob.	0.57	0.57	0.57
Predicted Prob.	0.57	0.58	0.58
Pseudo R^2	0.20	0.19	0.20
Elections	258	268	268
Countries	58	58	58

Notes: Coefficients are marginal probabilities from a probit model, with robust standard errors in parentheses. ***, ** and * denote statistical significance at the 1%, 5% and 10% levels respectively. GDP is the log of real per capita GDP. "Media" variable differs across columns: number of newspapers (column 1), radios (column 2) or televisions (column 3) per person.

Table 6 suggests that different types of media have quite different impacts on the returns to luck and competence. In countries with a higher newspaper circulation, the returns to luck are lower. However, in countries with higher television ownership, the returns to competence are lower. Radio ownership does not appear to affect the returns to luck or competence. Voters appear to make more systematic attribution errors in countries with more televisions, and fewer such errors in countries with more newspapers.[6]

5. <u>Conclusion</u>

This paper has provided evidence that voters commit systematic attribution errors when casting their ballots – tending to oust their national leaders when the world economy slumps, and retain them when it booms. In the preferred specification, a 1 percent increase in world GDP growth is associated with an 8 percent increase in the probability that an incumbent leader will be re-elected. To put this into perspective, national leaders are re-elected, on average, 57 percent of the time. An extra 1 percent of world growth raises this probability to 65 percent. In the late-1990s, there were approximately 17 democratic elections per year in my sample. Typically, 10/17 of these elections would see the incumbent leader returned – but an extra percentage point of world GDP growth would see 11/17 leaders returned.

Across a wide range of countries, voters appear to behave only quasi-rationally. If one regards voters as principals and politicians as agents, this finding is akin to Bertrand and Mullainathan's conclusion that CEO compensation tends to be as responsive to a "lucky dollar" as to an "earned dollar" (2001). In the case of voting, the problem is likely to be exacerbated by the fact that there is only a miniscule chance that any individual voter will affect the outcome. If shareholders make systematic attribution errors when the stakes are reasonably high, it is hardly surprising that voters do so when there is only an infinitesimal chance that their vote will turn out to be pivotal.

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[6] In the US, Blinder and Krueger (2004) find that television is the most popular source of information about economic policy. However, the measured knowledge of economic policy among those who primarily use newspapers is 0.4 standard deviations higher than among those who primarily use televisions. For a discussion of the factors affecting newspaper and television penetration across countries, see Islam (2002).

What factors are associated with voters rewarding competence more and luck less? Two factors are income and education. In richer and better educated countries, voters are better able to parse out competence from luck in deciding whether to re-elect their national leaders. A 10 percent increase in per-capita GDP has approximately the same effect as a two-year increase in average educational attainment. Lastly, the media matters, though not in a consistent fashion. Having more newspapers reduces the returns to luck, while higher rates of television viewing reduce the returns to competence.

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