Democracy and Globalization: Candidate Selection in Open Economies

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The impact of globalization on democratic governance is vigorously contested. This debate has largely failed to address the impact of integration on the signature institution of representative democracies—competitive elections. In this paper, I argue that globalization makes the voter's fundamental problem of selecting a desirable representative easier by increasing the revelation of information about incumbent governments. The analysis examines the effect of economic integration on the relationship between the vote and economic performance. The link between performance and incumbent support depends on the ability of voters to extract useful information about politicians from the economic outcomes that they observe. Employing a simple formal model of the voter's decision, I show that economic integration affects the voter's extraction problem if it has a systematic effect on the variance of economic growth. I show empirically that in advanced industrial democracies, trade openness is correlated with less volatile growth. This result implies that voters should weigh economic growth more heavily in more open economies. Thus the relationship between the economy and support for incumbent governments should be increasing in trade openness. Using aggregate data for elections in 19 advanced industrial democracies from 1966 to 1994, I find strong evidence consistent with this hypothesis.

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1 Introduction

The impact of globalization on democratic governance is vigorously contested. This debate has largely failed to address the impact of integration on the signature institution of representative democracies—competitive elections. In this paper, I argue that globalization makes the voter's fundamental problem of selecting a desirable representative easier by increasing the revelation of information about incumbent governments.

The premise of the argument is that the most persuasive way to think about the voter's decision problem in democratic elections is the selection of preferred types (Fearon 1999, Lohmann 1999). One criteria for selection is no doubt the policy positions of the competing candidates. This criteria, while important, is far from complete. Voters are unlikely to learn all the policy positions of rival candidates, and they cannot observe many of the activities of politicians in office that affect their welfare. Further, new unexpected issues will demand the government's attention during its term. Consequently, voters want to select competent leaders who will handle well the unexpected and/or unobserved tasks of government. In advanced industrial democracies, economic outcomes are often critical pieces of information for voters to discern incumbent competence and thus select the best candidate or party (Rogoff and Sibert 1988; Rogoff 1990; Persson and Tabellini 1990; Alesina, Londregan, and Rosenthal 1993). I argue in this paper that because integration with the world economy changes how the economy works, it alters how voters make inferences about the competence of incumbent governments when observing economic performance and thus how they vote. Consequently, the assessment of the effects of economic internationalization on the practice of democracy generally and mass political behavior in particular must include an account of the impact of integration on the relationship between economic performance and support for incumbent governments.

Specifically, I employ a simple formal decision model to develop the hypothesis that the relationship between performance and incumbent support depends on the ability of voters to extract useful information about politicians from the economic outcomes that they observe. Economic integration affects the voter's extraction problem if it has a systematic effect on the variance of economic performance. I show empirically that in advanced industrial democracies, trade openness is correlated with less volatile economic growth. Applying this empirical finding to the model generates the hypothesis that voters should weigh economic outcomes more heavily in more open economies. Thus, the relationship between the economy and support for incumbent governments should be increasing in trade openness. Using aggregate data for elections in 19 advanced industrial democracies from 1966 to 1994, I find strong evidence consistent with this hypothesis. The

results establish that the large variations in national exposure to the international economy—ignored by the vast literature on economic voting—have a substantial impact on the relationship between economic performance and electoral support for incumbent governments. Furthermore, the findings show that in a fundamental way, integration with the world economy can make the voter's problem of selecting a desirable candidate easier rather than harder—an informational effect of globalization not evident in previous analyses of the impact of globalization on democracy.

There are four additional sections to this paper. Section 2 develops a model of economic voting in order to assess the likely effects of integration on the relationship between economic performance and support for incumbent governments. The following section analyzes the determinants of the variance of economic growth in advanced industrial democracies to make an empirical determination of the relationship between trade openness and output fluctuations. This section concludes by combining these empirical results with the voting model to derive a hypothesis about the informational effects of openness on economic voting. Section 4 presents the empirical analysis of voting outcomes in advanced industrial democracies and Section 5 concludes.

2 A Model of Economic Voting

Selecting Competent Candidates

To assess the effects of economic integration on the relationship between the vote and economic performance, I first need to specify a model of economic voting in advanced industrial democracies. Suppose that the decision problem that voters face is to decide between two candidates A and B on the basis of how each is likely to affect their individual economic welfare. Voter i's utility for candidate J is then

$$U_{i,J} = \Theta(y_{i,J}) \tag{1}$$

where $y_{i,J}$ is the income of voter i if candidate J wins the election and Θ is a function for which $\Theta' > 0$ and $\Theta'' < 0$. The decision rule for voter i is simply to vote for candidate A if $U_{i,A} \geq U_{i,B}$.

The obvious shortcoming of such a view of economic voting is that individuals find it difficult to attach a specific income amount to a particular candidate. Voters are *uncertain* about the effects of either politician A's or politician B's assent to office on their economic welfare.

To understand the consequences of this uncertainty, it is useful first to make some simplifying assumptions about how governments and thus politicians affect

an individual's income under perfect information. The first consideration is the policies that they implement. Levels of taxation and spending, monetary policy, and international economic policies affect the economic prospects of individuals. The second impact that politicians may have on voter welfare is by providing competent management. This is, of course, related to the first because part of being a competent manager is setting good policies. However, in representative democracies, politicians are elected for terms that last a number of years. Consequently, voters do not simply consider policy positions alone in assessing the likely impact of a candidate on their welfare. Shocks to the economy will undoubtedly bring new policy decisions onto the agenda. Competent politicians can be relied upon to have superior responses to these shocks than incompetent ones. Further, non-policy characteristics of candidates can affect how government policies ultimately influence voter welfare. The most obvious such characteristic is honesty. For a given set of policies, a dishonest politician with a corrupt administration is likely to deliver less economic benefits than an honest type. Leadership ability, coalition-building skills, and other attributes may also influence the effectiveness of a particular politician's term in office (Rogoff and Sibert 1988; Rogoff 1990; Persson and Tabellini 1990; Alesina, Londregan, and Rosenthal 1993; Lohmann 1999).

Taken together these two arguments suggest that an individual's income is in part a function of $\mathbf{p}$, a vector of economic policies, and c, the competence of the politician in government.[1] To simplify, assume that there is only one policy area and thus p is a scalar. Then

$$y_{i,J} = \Pi_i(p_J, c_J) \tag{2}$$

where $y_{i,J}$ is again the income of voter i if candidate J wins the election and Π_i is a function for which $\partial\Pi_i/\partial c > 0$. The effect of p on y depends on the policy area and the characteristics of the individual.

Note that if the voter knows the competence (c_J) of each candidate, the policy position (p_J) of each candidate, and the mapping function (Π_i) from policy and competence to individual income, then we can substitute Equation 2 into Equation 1.

$$U_{i,J} = \Theta(\Pi_i(p_J, c_J)) \tag{3}$$

Substantively, Equation 3 is just a generalized version of standard voting models

[1] An individual's income is, of course, mostly a function of factors not directly determined by the government (endowments of human and physical capital being the most obvious). The discussion here focuses on that portion of income affected by the government.

(Downs 1957, Enelow and Hinich 1984, Hinich and Munger 1997). Voter utility for a candidate is a function of both a policy and non-policy evaluation.

Although the sources of voter uncertainty about how to relate a particular politician's candidacy to his or her income are varied, Equation 3 suggests three particular mechanisms: voter uncertainty about the issue positions of candidates (p_J), voter uncertainty over the effect of policy and competence on individual income (Π_i), and voter uncertainty about the competence of the politician (c_J). Although the first two sources of uncertainty are clearly of general interest for the study of elections, it is likely that uncertainty about candidate competence is the most pervasive and serious form of voter uncertainty. With a reasonable amount of information, it is at least possible for voters to arrive at fairly precise estimates of their own policy ideal points (determined by the form of Π_i) and those of the competing candidates (p_J). Competence, in contrast, is not directly observable and uncertainty about candidate competence characterizes the decision problem of even the most informed voter. Consequently, the economic voting model employed here will focus on uncertainty about candidate competence.[2]

To assess the effects of uncertainty about the competence of candidates, it is useful to specify a particular form of the compositional function $\Theta(\Pi_i(\cdot,\cdot))$. Let

$$U_{i,J} = c_J - (p_J - p_i^*)^2 \tag{4}$$

where $U_{i,J}$ is again the utility to voter i if candidate J takes office; c_J is candidate J's level of competence, which is assumed here to be a random variable; p_J is

[2]Voter uncertainty about the policy positions of candidates has been the subject of extensive analysis and debate in political science (Shepsle 1972; Enelow and Hinich 1984; Bartels 1986, 1996; Alvarez 1997). Michael Alvarez (1997) provides a particularly clear and cogent account of the effect of this type of uncertainty on voting behavior in U.S. presidential elections. He shows among other things that the greater a voter's uncertainty about the candidate's policy position, the lower is the expected utility from that candidate winning office and thus the less likely that the voter casts his or her ballot for that alternative. Further, the study demonstrates that as uncertainty about a candidate's policy position grows, the less heavily a voter is likely to weigh that policy domain in his or her voting decision. Uncertainty about the effect of a policy alternative on an individual's income is not as well understood. It is critical that it is clear exactly what it is about which the voter is uncertain. In particular, it is worth noting that the issue is not uncertainty about basic preferences. The voter has a well-defined utility function over personal income. The uncertainty is with respect to what various policies imply for personal income. For example, suppose the policy in question is international trade. Individuals have lots of low cost ways of gathering information about how trade policy affects their incomes. Their day-to-day working experiences, union or industry affiliations, and the media all provide data about how trade may affect their incomes. However, individuals may vary in how much of this information they collect. Consequently, two individuals for whom trade policy will have the same objective impact may have different expectations if they have different amounts of information. Studying the implications of this type of uncertainty for economic voting is left for future research.

candidate J's policy position, which is assumed to be known; and finally p_i^* is the ith voter's income maximizing policy position (p_i^* is determined by the function Π_i and I have assumed that this function has a maximum for any given level of competence). This specification of $U_{i,J}$ is the standard spatial voting model and assumes that voters use quadratic utility functions in evaluating departures from their income maximizing ideal points.[3]

Given that the motivation of the competence term follows that in Rogoff and Sibert (1988), Rogoff (1990), Persson and Tabellini (1990), and Alesina, Londregan, and Rosenthal (1993), I adopt key elements of their competence models. The remainder of this section rederives their treatment of the voter's signal extraction problem for inferring candidate competence while retaining the policy voting dimension expressed in Equation 4. First, assume that economic growth in the baseline model for a closed economy is described by an expectations-augmented Phillips supply curve

$$g_t = \overline{g} + \pi_t - \pi_t^e + \eta_t \tag{5}$$

where t indicates the time period, g_t is output growth, $\overline{g}$ is the natural rate of growth, π_t is the inflation rate, π_t^e is the expected inflation rate at time $t-1$, and η_t is the error term. This error is the sum of two components.

$$\eta_t = c_t + \gamma_t \tag{6}$$

where c_t is the competence of the incumbent politician and γ_t is a random exogenous shock to the economy. A key feature of this model is based on the assumption that competence has a simple dynamic structure

$$c_t = \mu_t + \mu_{t-1} \tag{7}$$

Importantly, voters are assumed to learn μ_t in the period following its realization. So at time t, voters know μ_{t-1}. Both random variables, μ_t and γ_t, have means equal to zero and variances denoted by σ_μ^2 and σ_γ^2.

I assume the election is between two candidates A and B and that candidate A is the incumbent politician while B is the challenger. The key question is how do individuals calculate expected utility in Equation 4. The statistic of interest is the random variable c_J. For the challenger, candidate B, the best forecast is simply the unconditional mean of competence in the population, 0. So

[3]This utility function implies voters are risk neutral with respect to candidate competence but risk averse with respect to policy positions. This section examines the effect of uncertainty about competence even when voters are risk neutral.

$$E[U_{i,B}] = E[c_B - (p_B - p_i^*)^2] \quad (8)$$
$$E[U_{i,B}] = -(p_B - p_i^*)^2 \quad (9)$$

For the incumbent, however, there is more information available for making a forecast about competence. It is necessary to add an extra subscript t for time to specify how this forecast is made. So $c_{A,t+1}$ denotes the competence of the politician A in the next period when he or she takes office after the election. Again the goal is to make the expected utility calculation

$$E[U_{i,A}] = E[c_{A,t+1} - (p_A - p_i^*)^2] \quad (10)$$
$$E[U_{i,A}] = E[c_{A,t+1}] - (p_A - p_i^*)^2 \quad (11)$$

The voter's problem is what is the best estimate of $c_{A,t+1}$. In the case of candidate B there is no additional information to condition on, so the best estimate is the mean. For the incumbent, however, the voter gets to observe how the economy performed in period t and use this information to help discern the incumbent's competence. Specifically, the voter's expectation of the value of the candidate's competence at time $t+1$ is conditional on observing growth in the previous period. Using this fact and Equation 7

$$E[c_{A,t+1}] = E[\mu_{t+1} + \mu_t | g_t] \quad (12)$$
$$E[c_{A,t+1}] = E[\mu_t | g_t] \quad (13)$$

As specified above, I assume that voters learn competence with a one period delay and therefore that they know μ_{t-1} at time t. Further, it is convenient to assume that inflation equals expected inflation. Equation 5 then becomes

$$g_t = \overline{g} + \eta_t \quad (14)$$

Rearranging

$$\eta_t = g_t - \overline{g} \quad (15)$$
$$c_t + \gamma_t = g_t - \overline{g} \quad (16)$$
$$\mu_t + \mu_{t-1} + \gamma_t = g_t - \overline{g} \quad (17)$$
$$\mu_t + \gamma_t = g_t - \overline{g} - \mu_{t-1} \quad (18)$$

Everything on the right hand side is known at time t. The voter's problem then is to forecast μ_t based on knowledge of the sum of μ_t and γ_t which I denote as λ_t ($\lambda_t = \mu_t + \gamma_t$).

Since λ_t is the sum of two normals, it is also normally distributed, and it follows that μ_t and λ_t have a joint normal distribution. The optimal forecast of μ_t is then

$$E[\mu_t|\lambda_t] = \rho_{\mu,\lambda}\frac{\lambda_t - E[\lambda]}{\sigma_\lambda}\sigma_\mu + E[\mu] \tag{19}$$

where $\rho_{\mu,\lambda}$ is the correlation between μ and λ. Because γ and μ are statistically independent

$$\sigma_\lambda = (\sigma_\mu^2 + \sigma_\gamma^2)^{\frac{1}{2}} \tag{20}$$

Then

$$\rho_{\mu,\lambda} = \frac{E[(\mu - E[\mu])(\lambda - E[\lambda])]}{(E[(\mu - E[\mu])^2 E[(\lambda - E[\lambda])^2)^{\frac{1}{2}}} \tag{21}$$

$$\rho_{\mu,\lambda} = \frac{\sigma_\mu^2}{\sigma_\mu(\sigma_\mu^2 + \sigma_\gamma^2)^{\frac{1}{2}}} \tag{22}$$

$$\rho_{\mu,\lambda} = \frac{\sigma_\mu}{(\sigma_\mu^2 + \sigma_\gamma^2)^{\frac{1}{2}}} \tag{23}$$

Substituting this expression into Equations 13 and 19

$$E[c_{A,t+1}] = E[\mu_t|g_t] = E[\mu_t|\lambda_t] \tag{24}$$

$$E[c_{A,t+1}] = \frac{\sigma_\mu}{(\sigma_\mu^2 + \sigma_\gamma^2)^{\frac{1}{2}}}\frac{g_t - \overline{g} - \mu_{t-1}}{(\sigma_\mu^2 + \sigma_\gamma^2)^{\frac{1}{2}}}\sigma_\mu \tag{25}$$

$$E[c_{A,t+1}] = \frac{\sigma_\mu^2}{\sigma_\mu^2 + \sigma_\gamma^2}(g_t - \overline{g} - \mu_{t-1}) \tag{26}$$

This expression indicates that an individual's optimal forecast of incumbent candidate A's competence is a weighted function of observed economic growth and past observed competence. This is the key result in the treatment of the signal extraction problem in Persson and Tabellini (1990) and Alesina, Londregan, and Rosenthal (1993). It is critical to understand the role of the weighting term $\frac{\sigma_\mu^2}{\sigma_\mu^2+\sigma_\gamma^2}$. This term indicates that voters weigh past economic performance more when the variance of the distribution of competence is large relative to the variance of exogenous shocks to the economy.

The decision rule for the voter choosing between candidates A and B remains a comparison of the expected utilities for each, voting for A if

$$E[U_{i,A}] \geq E[U_{i,B}] \tag{27}$$

$$\frac{\sigma_\mu^2}{\sigma_\mu^2 + \sigma_\gamma^2}(g_t - \overline{g} - \mu_{t-1}) - (p_A - p_i^*)^2 \geq -(p_B - p_i^*)^2 \tag{28}$$

Substantively, this derivation indicates that uncertainty about the competence of alternative candidates can induce a relationship between economic performance and support for incumbent politicians. Voters will, all else equal, be more likely to support incumbents when economic performance has been strong than when it has been weak. This relationship, however, depends on the relative variances of the distributions of competence and exogenous economic shocks.

Selecting Candidates in Open Economies

Economic output in the previous section is described by an expectations-augmented Phillips supply curve for a closed economy. This supply curve is consistent with a number of alternative microeconomic models for which output is driven by the effects of unanticipated inflation when there are nominal wage rigidities. There are probably limitless ways in which this framework for economic voting could be extended to open economies. In this section, I explore a particularly convenient one by reinterpreting the model for an open economy and considering the effect of openness on the sources of exogenous economic shocks.

It is possible to reinterpret the supply curve in Equation 5 for an open economy by making the simplifying assumption of purchasing power parity (PPP). PPP means that the exchange rate between two nation's currencies is equal to the ratio of their price levels. More specifically, let e equal country A's nominal exchange rate with the rest of the world. Further, let P_A equal the price level in country A and P_{ROW} equal the price level in the rest of the world. PPP implies that $e = P_A/P_{ROW}$. Under PPP, inflation in country A, π_A, is equal to the rate of currency appreciation/depreciation, $\frac{e_{A,t} - e_{A,t-1}}{e_{A,t-1}}$, less the inflation rate in the rest of the world, π_{ROW}. Normalizing π_{ROW} to zero, inflation in country A, π_A, is equal to the rate of currency appreciation/depreciation in any given period. Consequently, growth can still be described for a simple open economy by the expectations-augmented Phillips supply curve:

$$g_t = \overline{g} + \pi_t - \pi_t^e + \eta_t \tag{29}$$

The interpretation though is that output differs from the natural rate as a function of unexpected currency appreciation/depreciation and exogenous random shocks.

Under the assumption that currency appreciation/depreciation equals expected appreciation/depreciation, the voting model in the previous section can be replicated for open economies and the decision for the voter choosing between candidates A and B remains a comparison of expected utilities, with a vote for A if

$$E[U_{i,A}] \geq E[U_{i,B}] \tag{30}$$

$$\frac{\sigma_\mu^2}{\sigma_\mu^2 + \sigma_\gamma^2}(g_t - \overline{g} - \mu_{t-1}) - (p_A - p_i^*)^2 \geq -(p_B - p_i^*)^2 \tag{31}$$

The open economy framework, however, alters expectations about the sources and variance of exogenous economic shocks and, therefore, the parameter σ_γ^2. Economic theory emphasizes two conflicting effects of openness on output fluctuations. First, greater openness increases exposure to external risk. Terms of trade shocks generate fluctuations in small open economies in very much the same way as technology shocks in closed economies. This connection between economic integration and risk is central to a number of recent studies of the relationship between openness and the size of government (Garrett 1998a; Rodrik 1997, 1998). The second main theoretical expectation emphasizes that world economic performance is more stable than that of any one country. Trade diversifies risk across markets and leaves nations less exposed to domestic economic shocks. This effect has been highlighted by critics of the openness/size of government argument (Iversen and Cusack 1998). Given this theoretical ambiguity, specifying the relationship between openness and growth volatility is largely an empirical question.

The answer has decisive implications for expectations about the effect of openness on economic voting. If we let the variance of growth be a function of trade openness and denote the function $\sigma_\gamma^2(\delta)$ where δ indicates trade openness, then Equation 31 can be rewritten as

$$\frac{\sigma_\mu^2}{\sigma_\mu^2 + \sigma_\gamma^2(\delta)}(g_t - \overline{g} - \mu_{t-1}) - (p_A - p_i^*)^2 \geq -(p_B - p_i^*)^2 \tag{32}$$

If trade openness increases output volatility ($\partial\sigma_\gamma^2(\delta)/\partial\delta > 0$), then voters should weigh economic outcomes less heavily in more open economies. If alternatively, trade openness tends to decrease fluctuations ($\partial\sigma_\gamma^2(\delta)/\partial\delta < 0$), then the relationship between economic performance and support for incumbent governments should be stronger in more open economies. To specify a clear hypothesis about the effects of integration on economic voting, it is critical to assess the empirical relationship between openness and growth volatility. This is the task of the next section.

3 Trade Openness and Growth Volatility

Empirical Relationship

Despite the massive literature on economic growth, no studies of which I am aware provide a systematic estimate of the effect of trade openness on economic fluctuations in advanced industrial democracies.[4] In this section, I develop a series of empirical tests to determine the direction of the relationship.

In particular, the analysis estimates the determinants of the variance of growth in 18 countries from 1966 through 1994.[5] *Growth* is defined in terms of the logged difference in real GDP per capita. *Trade Openness* is defined as the sum of exports and imports as a percentage of GDP. The sources for these variables are the World Bank's *Global Development Finance* (various years) and its *World Development Indicators* (various years) publications.[6]

Let $y_{i,t}$ equal growth in country i in year t and assume $y_{i,t}$ is normally distributed with mean μ and variance σ^2. Further letting T be the total number of years, n be the number of countries, and assuming independence (an assumption

[4]Rodrik (1998) estimates the effect of external risk on the volatility of income and consumption. This analysis is a weak test because it averages external risk over a thirty-year plus period and uses a similarly aggregate estimate of volatility over the same period. At the very least, this approach ignores considerable time series variation in openness over this time period. Even more significantly for this analysis, he use a large cross-section of developed and developing countries. It is possible and, in fact, likely that the relationship between openness and volatility varies across groups of countries. This study addresses mass political behavior in advanced industrial democracies so it is critical that I identify the relationship between openness and growth in the relevant sample. Iversen and Cusack (1998) present descriptive evidence—using manufacturing data from 15 advanced industrial democracies—that there is either no or possibly a negative relationship between openness and output volatility. Although this study is suggestive because it examines a subset of advanced industrial democracies, it also is an aggregated analysis that does not generate a precise estimate of the relevant relationship.

[5]The 18 countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, United Kingdom, and United States. These countries include all the largest advanced industrial democracies except Germany, which is excluded from this analysis because of data availability. The same set of countries with the addition of Germany are included in the voting analysis below. The time period was chosen to overlap with the voting data in the next section. All the results presented in this section are robust to extending the time period to 1960 through 1997.

[6]The data are made available at the World Bank's Global Development Network Growth Database, `http://www.worldbank.org/research/growth/GDNdata.htm`.

that will be revisited below), the joint distribution of the data is

$$f(y|\mu,\sigma^2) = \prod_{t=1}^{T}\prod_{i=1}^{n} f_N(y_{i,t}|\mu_{i,t},\sigma^2_{i,t}) \quad (33)$$

Critically, I assume that both the mean, $\mu_{i,t}$, and the variance, $\sigma^2_{i,t}$, of growth vary across observations. The systematic component for $\mu_{i,t}$ is set equal to $x_{i,t}\beta$ while the systematic component for $\sigma^2_{i,t}$ is set equal to $exp(z_{i,t}\gamma)$, where x and z are conditioning variables for the mean and variance functions respectively. Given the above probability function and systematic components, the log-likelihood function, reduced to sufficient statistics, to be maximized is

$$lnL(\mu,\sigma^2|y) = lnL(\beta,\gamma|y) \quad (34)$$

$$= \sum_{t=1}^{T}\sum_{i=1}^{n} -\frac{1}{2}ln(exp(z_{i,t}\gamma)) - \frac{1}{2exp(z_{i,t}\gamma)}(y_{i,t}-x_{i,t}\beta)^2 \quad (35)$$

The key quantity of substantive interest is the relationship between trade openness and the variance of growth. If we include only a constant in the mean function, $x_{i,t}\beta$, while including *Trade Openness* and a constant in the variance function, $exp(z_{i,t}\gamma)$, we can estimate γ_1 the effect of trade openness on the unconditional variance of real GDP growth. Table 1 reports the maximum likelihood estimates for this linear regression with multiplicative heteroscedasticity. The negative estimate for γ_1 indicates that the variance of *Growth* decreases as *Trade Openness* increases. The absolute value of the estimated parameter is about three times as large as its standard error, so the negative effect is precisely estimated.

The estimate of γ_1 in Table 1 does not control for other possible determinants of the variance of economic growth. To verify that the relationship between trade openness and output volatility is robust, Table 2 reports an estimate of γ_1 controlling for a number of other plausible determinants of the variance of growth. Specifically, the model estimated controls for the size of the domestic financial system, capital market openness, and country size. *Private Sector Credit* is equal to financial resources provided to the private sector as a percentage of GDP and measures the size and depth of the domestic financial system.[7] *Capital Openness* is a quantitative measure of the restrictiveness of national laws governing current and capital account payment and receipts. Higher values of *Capital Openness* indi-

[7]Financial resources include loans, purchases of nonequity securities, and trade credits. The source for this variable is *The Word Development Indicators, 1997 CD-ROM.*

Parameter	Estimate	S.E.	p-value
Mean Function			
Constant, β_0	0.0227	0.0012	0.000
Variance Function			
Trade Openness, γ_1	-0.0063	0.0022	0.004
Constant, γ_0	-6.8934	0.1400	0.000
Log-likelihood		1153.532	
Observations		522	

Table 1: *Estimated Effect of Trade Openness on the Unconditional Variance of Growth.* These results are based on a multiplicative heteroscedastic regression of real GDP growth on a constant with trade openness and a constant as the explanatory variables in the variance function. The negative estimate for γ_1 indicates that the variance of *Growth* decreases as *Trade Openness* increases.

cate fewer exchange restrictions.[8] *Ln Population* is the natural log of the country's population and roughly measures country size.[9]

The estimate of γ_1 reported in Table 2 indicates that adding the controls increases the negative effect of trade openness on output fluctuations. The coefficient estimate is just over fifty percent larger in absolute value and its standard error is still relatively small. There is clear evidence in this data that for advanced industrial democracies trade openness tends to lower the unconditional variance of growth. The negative and relatively precisely estimated coefficient for γ_3 indicates that, all else equal, larger countries also have less volatile growth. This finding is consistent with a number of arguments in the growth literature including the emphasis on the size of domestic markets in consistently attracting investment.

The analyses presented in Tables 1 and 2 estimate the effect of openness on the unconditional variance of growth. Although this relationship seems theoretically the most relevant for using the model in Section 2 to specify the likely effect of openness on economic voting, it is also of interest to determine the relationship between trade openness and the conditional variance of growth. Tables 3 and 4 report estimates of this relationship based on two sets of conditioning variables.

In Table 3, the sole conditioning variable is *Lagged Growth*. This specification is interesting because it seems plausible that even voters with low amounts of information form expectations about growth conditional on the previous year's outcome.[10] If this is the case, then the relevant variance in the voter's forecast of competence is the variance of growth conditional on the lagged value of growth. The results in Table 3 indicate that the estimated effect of trade openness on output volatility is unchanged by including previous growth. The only important substantive change in the variance function is that the parameter estimate for *Private Sector Credit* is much larger in absolute value and is fairly precisely estimated. This is consistent with the claim that larger and more developed financial systems

[8]The *Annual Report on Exchange Restrictions* publishes the IMF's review of national laws. Dennis Quinn and Carla Inclán of Georgetown University have coded the IMF's review to generate measures of current and capital account openness as well as a combined measure of overall exchange restrictions (Quinn and Inclán 1997). This analysis uses the combined measure. Thanks to Dennis Quinn for generously sharing his data.

[9]This variable is taken from the World Bank's *Global Development Finance* (various years) and its *World Development Indicators* (various years) publications.

[10]There is also a technical reason to be interested in this specification. The likelihood function in equation 34 is based on the joint probability density function in equation 33 for which it is assumed that each observation is independent. If growth rates demonstrate some persistence, this assumption is violated. Including the lagged growth rate in the mean function corrects for this problem.

Parameter	Estimate	S.E.	p-value
Mean Function			
Constant, β_0	0.0201	0.0013	0.000
Variance Function			
Private Sector Credit, γ_4	0.0002	0.0023	0.944
Ln Population, γ_3	-0.1941	0.0691	0.005
Capital Openness, γ_2	-0.0038	0.0362	0.916
Trade Openness, γ_1	-0.0099	0.0032	0.002
Constant, γ_0	-3.4800	1.2239	0.004
Log-likelihood		965.279	
Observations		431	

Table 2: *Estimated Effect of Trade Openness on the Unconditional Variance of Growth with Controls.* These results are based on a multiplicative heteroscedastic regression of real GDP growth on a constant with trade openness, credit to the private sector, capital market openness, logged population, and a constant as the explanatory variables in the variance function. The negative estimate for γ_1 indicates that the variance of *Growth* decreases as *Trade Openness* increases.

may contribute to national output stability.

Table 4 also examines the relationship between trade openness and the conditional variance of growth but does so with a fuller set of conditioning variables in the mean function. In addition to *Lagged Growth*, the mean function includes measures of initial levels of development, initial levels of human capital, average investment rates, and average population growth. This specification employs the baseline variables that appear in nearly every growth study. *Initial GDP* is equal to gross domestic product in the initial year of the sample while *Initial Human Capital* is the percentage of secondary school enrollment again in the initial sample year. *Average Population Growth* is the average of annual growth over the sample period, and *Average Investment* is the average of investment as a percentage of GDP over the same years.[11] The key result reported in Table 4 is again that the estimate for γ_1, the effect of trade openness on the conditional variance of growth, is quite stable. The estimate and its standard error are virtually unchanged from those reported in Table 3. In fact, the results for all the variables included in the variance function are substantially the same. The estimates of the parameters for the mean function are all in the anticipated directions though only the estimates for *Lagged Growth* and *Initial GDP* are relatively precise. For the other parameters, we cannot be confident that the estimated effects are significantly different from zero. The negative parameter estimate for *Initial GDP* is, of course, consistent with convergence hypotheses. This analysis, along with the others in this section, suggests that the negative relationship between trade openness and output volatility is robust to a wide number of alternative specifications. It seems clear that any increased volatility due to exposure to terms of trade shocks is swamped by the relative stability of world versus domestic demand.

[11]The source for all four of these variables is again the World Bank's *Global Development Finance* (various years) and its *World Development Indicators* (various years) publications.

Parameter	Estimate	S.E.	p-value
Mean Function			
Lagged Growth, β_1	0.3623	0.0458	0.000
Constant, β_0	0.0118	0.0016	0.000
Variance Function			
Private Sector Credit, γ_4	-0.0041	0.0024	0.082
Ln Population, γ_3	-0.1308	0.0686	0.057
Capital Openness, γ_2	-0.0171	0.0374	0.649
Trade Openness, γ_1	-0.0099	0.0032	0.002
Constant, γ_0	-4.2222	1.2261	0.001
Log-likelihood		994.529	
Observations		431	

Table 3: *Estimated Effect of Trade Openness on the Variance of Growth Conditioned on Lagged Growth.* These results are based on a multiplicative heteroscedastic regression of real GDP growth on its lagged values and a constant with trade openness, credit to the private sector, capital market openness, logged population, and a constant as the explanatory variables in the variance function. The negative estimate for γ_1 indicates that the variance of *Growth* decreases as *Trade Openness* increases.

Parameter	Estimate	S.E.	p-value
Mean Function			
Initial Human Capital, β_5	0.0001	0.0001	0.506
Average Population Growth, β_4	0.0016	0.0034	0.636
Average Investment, β_3	0.0002	0.0003	0.410
Initial GDP, β_2	-0.0129	0.0042	0.002
Lagged Growth, β_1	0.3276	0.0463	0.000
Constant, β_0	0.1180	0.0378	0.002
Variance Function			
Private Sector Credit, γ_4	-0.0049	0.0024	0.043
Ln Population, γ_3	-0.1378	0.0686	0.045
Capital Openness, γ_2	-0.0093	0.0371	0.802
Trade Openness, γ_1	-0.0105	0.0032	0.001
Constant, γ_0	-4.1281	1.2266	0.001
Log-likelihood		1000.007	
Observations		431	

Table 4: *Estimated Effect of Trade Openness on the Conditional Variance of Growth.* These results are based on a multiplicative heteroscedastic regression of real GDP growth on its lagged values, initial GDP, average investment, initial endowment of human capital, average population growth, and a constant with trade openness, credit to the private sector, capital market openness, logged population, and a constant as the explanatory variables in the variance function. The negative estimate for γ_1 indicates that the variance of *Growth* decreases as *Trade Openness* increases.

Implications for Economic Voting

The robust negative empirical relationship between openness and the variance of growth has clear implications for the model of economic voting presented in Section 2. Given that the variance function $\sigma^2_\gamma(\delta)$ is decreasing in trade openness (δ) in advanced industrial democracies, voters in these countries should weigh economic growth in their expected utility comparison in Equation 32 more as openness increases. The effect of integration with the world economy on economic voting is an informational one. Economic outcomes reveal more about the incumbent's competence in more open economies, so voters pay more attention to them when casting their ballots. The next section evaluates this prediction empirically.

4 Trade Openness and the Economic Vote

To test the hypothesis about the impact of trade openness on economic voting, I examine the determinants of support for incumbent governments in elections in 19 advanced industrial democracies from 1966 to 1994. There is a substantial literature on cross-national economic voting that informs the analysis in this section.

The economic voting literature primarily addresses questions about whether and how economic performance affects voting decisions generally and the evaluation of incumbents in particular. The model of economic voting presented in Section 2 emphasizes several of the elements of economic voting highlighted in this literature. Most importantly, it adopts the view that the relationship between the economy and an incumbent's electoral fortunes is primarily about the voter's problem of selecting a desirable type of politician. As noted above, this approach follows the rational-retrospective models in Persson and Tabellini (1990) and Alesina, Londregan, and Rosenthal (1993). Moreover, it differs from the emphasis in much of the economic voting literature that portrays the relationship in terms of voters rewarding and punishing incumbents for strong or weak economic performance. Fearon's evaluation of elections as sanctioning versus selection devices (1999) convincingly argues that the selection perspective is typically a more useful framework. Given both the length of time for which leaders are elected and the unobservability of many of their actions, selecting the right type of politician seems to be the voter's foremost problem.

The most important recent contributions in cross-national studies of economic voting can also be interpreted in the context of the voter's selection problem. A number of innovative studies have argued that the relationship between performance and incumbent support varies across countries in predictable ways according to political context (Powell and Whitten 1993; Anderson 1995; Palmer and

Whitten 1999; Whitten and Palmer 1999). Perhaps the key lesson of this research is that national political institutions can affect both how responsible incumbent politicians actually are for economic performance and certainly how clear it is to voters who is responsible. The argument implies that the economy is only a useful indicator of the incumbent's competence if it is clear to voters that the incumbent is in control of government. The empirical work in this research demonstrates how such factors as weak parties, opposition control of legislative committees, opposition control of upper legislative chambers, and minority governments can systematically attenuate the link between economic performance and incumbent government electoral support. These studies, in fact, are able to document a robust relationship for cross-national analyses only after taking into account political context.

Although much has been learned by the current literature on cross-national economic voting, there is little theoretical or empirical evaluation of the effect of integration with the world economy on economic voting.[12] I have provided one plausible theoretical treatment in the previous two sections and in this section evaluate the hypothesis that trade openness strengthens the relationship between economic performance and support for incumbent governments.

Data Description and Empirical Specification

The data used to test this hypothesis is aggregate election results from 19 advanced industrial democracies from 1966 to 1994. This data set, with the exception of the trade openness measure, was constructed by Guy Whitten and Harvey Palmer (Whitten and Palmer 1999).[13] The dependent variable for the analyses in this section is electoral support for incumbent governments. *Incumbent Vote* is defined

[12] One consideration that could be linked to integration that is evident in some of the literature is the idea of comparative economic assessments. Specifically, voters (or at least competing politicians) interpret economic performance based on comparisons with other countries (Alt 1985; Powell and Whitten 1993; Palmer and Whitten 1999). For these comparative assessments to be linked explicitly to integration, further theoretical and empirical work is required. I have extended the formal decision model in Section 2 to two countries and shown that the effect of comparisons on the selection problem depends on the covariances of economic shocks between the two countries. In the limiting case when covariances are perfect, growth becomes a powerful predictor of incumbent competence. In future research, it may be useful to pursue the implications of this model by first studying the relationship between openness and the covariances of growth between countries—again economic theory provides ambiguous predictions about the relationship—and secondly examining the extent to which comparative economic assessments may vary accordingly.

[13] Thanks to Guy Whitten for generously providing the data set.

as the percentage of the total vote received by the parties currently in government. The key independent variables are measures of economic growth and trade openness. The variable *Growth* in this section is defined as the percentage change in real GDP.[14] *Trade Openness* is defined, as in the previous section, as the sum of exports and imports as a percentage of GDP. The primary prediction to be evaluated is whether the effect of growth on the vote increases with higher levels of openness. To evaluate this conditional hypothesis, I construct the interaction term *Growth * Trade Openness*.

A number of analysts and commentators have contended that elections in advanced industrial democracies have become more volatile over the last thirty years. Palmer and Whitten (1999) note that this trend in volatility has clear implications for model choice when analyzing the determinants of support for incumbents. They show that inclusion of a time trend measure in the variance function of a linear regression with multiplicative heteroscedasticity substantially improves the fit of the model. I use the same econometric model in the analyses below. Note that unlike the previous section, the variance function is not of primary substantive interest. Including the time trend improves each specification's fit and, as argued by Palmer and Whitten, indicates that election results have indeed become more volatile over time.[15]

Empirical Results

The first test of the effect of trade openness on the relationship between economic performance and support for incumbent governments is a regression with multiplicative heteroscedasticity of *Incumbent Vote* on its lagged values (*Lagged Incumbent Vote*), *Growth*, *Trade Openness*, and the interaction term *Growth * Trade Openness* with a time trend included in the variance function. The analysis includes the full 144 elections in the data set.

Table 5 reports the estimates from this regression. Although it is difficult to interpret the key results from inspecting the table, two findings are immediately obvious. First, the effect of growth on voting for the incumbent becomes more positive as trade openness increases as indicated by the positive coefficient on the interaction term. Second, this estimate is relatively imprecise. The probability that the coefficient on the interaction term is different from zero is 0.15. So al-

[14]For some cases, real GNP or deflated nominal GDP/GNP was used to calculate growth.

[15]The variable *Time Period* indicates the quarter in which the election occurred. Though elections have become more volatile over time, the results presented here actually indicate only that the conditional variance is greater over time. Palmer and Whitten (1999) discuss some possible reasons for this result.

Parameter	Estimate	S.E.	p-value
Mean Function			
Lagged Incumbent Vote	0.8932	0.0384	0.000
Growth	-0.4991	0.3661	0.173
Trade Openness	-0.0278	0.0249	0.264
Growth * Trade Openness	0.0089	0.0062	0.150
Constant	4.2771	2.2819	0.061
Variance Function			
Time Period	0.0139	0.0035	0.000
Constant	2.4673	0.2490	0.000
Log-likelihood		-445.293	
Observations		144	

Table 5: *Estimated Effect of Trade Openness on the Relationship between Growth and the Incumbent Vote.* These results are based on a multiplicative heteroscedastic regression of the incumbent vote on its lagged values, growth, trade openness, the interaction between trade openness and growth, and a constant with a time period measure and a constant as the explanatory variables in the variance function. The positive estimate on the interaction term suggests that the effect of growth on the vote for the incumbent may be more positive at higher levels of trade openness. Given its standard error, this estimate, however, is somewhat imprecise.

though there is some evidence in this analysis consistent with the hypothesized effect of trade openness on the relationship between growth and the incumbent vote, it is neither very convincing or likely very robust to alternative specifications.

Given the previous literature on cross-national economic voting discussed above, this weak finding should not be surprising. The most important insight of this literature is that political institutional context significantly influences the relationship between the economy and the electoral fortunes of incumbent governments. Under certain institutional arrangements, it makes little sense to make inferences about the competence of incumbent governments. If the government does not actually have control of the relevant policy levers, voters should not attribute positive eco-

nomic outcomes to them.

The second test uses the criteria suggested by this literature to select those elections in which voters can reasonably be expected to draw inferences about incumbents based on economic performance. This subset of 42 elections includes those cases for which a country's major parties have a reasonable degree of legislative voting cohesion, for which a country's committee system does not require the sharing of committee chairs with the opposition, for which the incumbent is not a minority government, and for which a country's governing parties also control the seats in the second chamber if one exists. If all four of these conditions are met, there is clear responsibility for policy and reasonable inferences can be made based on performance (see Powell and Whitten (1993) and Whitten and Palmer (1999) for detailed discussion of the criteria). In addition to selecting the cases based on political context, the second test also controls for two political variables that are likely to have a direct effect on the incumbent's vote total. First, the *Number of Government Parties* is expected to be positively correlated with the incumbent vote as voters can more effectively voice their displeasure with some government policies by switching votes within the governing coalition as the number of parties in government increases (Powell and Whitten 1993; Palmer and Whitten 1999). Second, the *Previous Vote Swing* is equal to the difference in the incumbent government's vote percentage in the previous two elections—that is the vote gain or loss from $t-2$ to $t-1$. The expectation is that the larger this swing is the lower is the expected vote controlling for the lagged vote as voter support levels for the incumbent government return to normal (Powell and Whitten 1993). The specification then for the second test is a multiplicative heteroscedastic regression of the incumbent vote on its lagged values, growth, trade openness, the interaction between trade openness and growth, the number of political parties in government, and the previous vote swing with the time period as the explanatory variable in the variance function.

Table 6 reports the results from this regression. Again the positive coefficient estimate for the interaction term is consistent with the hypothesis that in more open economies, the relationship between growth and the incumbent vote is more positive. Once the sample is limited to "clear responsibility" elections, this estimate is quite precise as the coefficient is over six times as large as its standard error. It is, however, very difficult to evaluate the key hypothesis by inspecting Table 6. Although it is clear that the effect of growth on the vote is "more positive" in more trade-open economies, what we really want to know is how growth affects the vote over the range of openness in advanced industrial democracies.

To do this, I simulated the consequences of increasing *Growth* from one standard deviation below its mean to one standard deviation above its mean on the incumbent government's vote percentage at different levels of trade openness while

Parameter	Estimate	S.E.	p-value
Mean Function			
Lagged Incumbent Vote	0.5642	0.0704	0.000
Growth	-2.6491	0.3711	0.000
Trade Openness	-0.1911	0.0343	0.000
Growth * Trade Openness	0.0473	0.0073	0.000
Number of Government Parties	1.6603	0.5411	0.002
Previous Vote Swing	-0.4549	0.0917	0.000
Constant	24.9079	2.1143	0.000
Variance Function			
Time Period	0.0523	0.0090	0.000
Constant	-0.6719	0.5962	0.260
Log-likelihood		-113.026	
Observations		42	

Table 6: *Estimated Effect of Trade Openness on the Relationship between Growth and the Incumbent Vote, Clear Responsibility Elections.* These results are based on a multiplicative heteroscedastic regression of the incumbent vote on its lagged values, growth, trade openness, the interaction between trade openness and growth, the number of political parties in government, the previous vote swing, and a constant with the time period and a constant as the explanatory variables in the variance function. The positive estimate on the interaction term suggests that the effect of growth on the vote is more positive at higher levels of trade openness.

holding the other independent variables constant. The simulation procedure works as follows. Recognizing that the parameters are estimated with uncertainty, I drew 1000 simulated sets of parameters from their sampling distribution defined as a multivariate normal distribution with mean equal to the maximum likelihood parameter estimates and variance equal to the variance-covariance matrix of these estimates. For each of the 1000 simulated sets of coefficients, I then calculated two sets of expected values at a number of assumed levels of trade openness. For the first set, *Growth* was equal to one standard deviation below its mean while in the second, it was equal to one standard deviation above its mean value. The difference between these two expected values is the expected value of the difference between the incumbent vote when growth is low and when it is high. I calculated this difference 1000 times and repeated the algorithm at different levels of trade openness.

Figure 1 reports the results of this simulation. The horizontal axis indicates the degree of openness to trade as measured by the *Trade Openness* variable. The vertical axis measures the change in vote for the incumbent party due to a two standard deviation increase in growth. The solid line indicates the median simulation while the dashed lines indicate a 90% confidence interval. The positive slope is consistent with growth having a more positive effect on the incumbent's electoral fortunes at higher levels of trade openness. For the sample of "clear responsibility" elections, the mean of *Trade Openness* is about 53. As the graph indicates, the effect of growth on the incumbent vote is indistiguishable from zero at this level of openness. However, at a higher level of trade openness, say one standard deviation above the mean (about 72), growth increases the incumbent government's vote percentage by about five percentage points. This is a substantial effect that would almost certainly change the identity of the governing coalition.[16]

The analysis in Table 6 and Figure 1 suggests that the relationship between economic performance and the incumbent vote is increasing in trade openness for "clear responsibility" elections in advanced industrial democracies. The definition of "clear responsibility" relies on four indicators some of which may be more important than others for voters to be able to use economic outcomes as a useful indicator of incumbent competence. In particular, since parties are voters' most important connection to the government, cohesive parties may be the key necessary condition for voters to use the economy to assess incumbents. The set of

[16]The results reported in Table 6 and Figure 1 are robust to alternative specifications. For example, inclusion of additional indicators of economic performance such as inflation and unemployment does not significantly alter the findings (and neither unemployment nor inflation is a statistically significant predictor in these specifications). The estimates are also robust to dropping the elections of any one country from the sample.

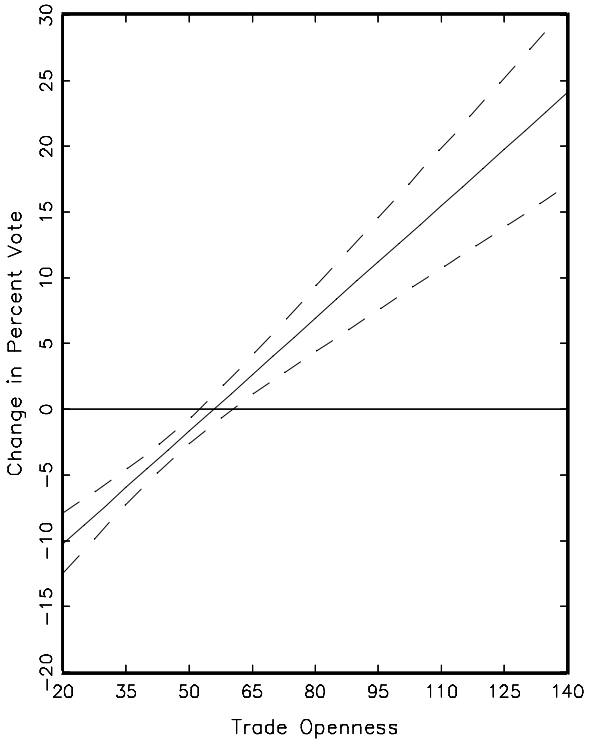

Figure 1: *Estimated Effect of Growth on the Vote at Different Levels of Trade Openness, Clear Responsibility Elections.* I simulated the consequence of increasing *Growth* from one standard below its mean to one standard deviation above its mean on the incumbent government's vote percentage. The solid line indicates the median simulation while the dashed lines indicate a 90% confidence interval.

"strong party" elections then includes all the elections for which the country's major parties had a reasonable degree of cohesion in their legislative voting behavior (this of course includes all the observations in the "clear responsibility" sample). There are 114 elections included in this sample. The specification then for this third and final test is a multiplicative heteroscedastic regression with the same regressors as in the second test but including a much larger set of elections.

Table 7 reports the results of this analysis. Again the positive coefficient estimate for the interaction term is consistent with the hypothesis that in more open economies, the relationship between growth and the incumbent vote is more positive. The estimate has a relatively small standard error that is statistically significant at the five percent level.

As before, it is difficult to assess the effects of growth on the incumbent vote at different levels of trade openness from inspecting Table 7. Figure 2 reports the results of a simulation procedure identical to that for Figure 1 but based on the model estimated for "strong party" elections. For the sample of "strong party" elections, the mean of *Trade Openness* is about 66. While the estimated effect of growth at this level of openness is positive, it is not significantly different from zero. At a level of openness one standard deviation above the mean in this sample (93), growth increases the incumbent government's vote percentage by about three percentage points. This is again a substantial effect that would likely influence significantly the outcome of an election. The key point for purposes of this analysis is that the relationship between growth and the incumbent vote is strengthened in more open economies in both the "clear responsibility" sample and in the "strong party" sample. This result is consistent with model presented in Section 2 while also confirming the literature's emphasis on the importance of political institutional context for voters to be able to use the economy to make inferences about the competence of incumbent governments.

5 Conclusion

By examining the effect of trade openness on the relationship between the vote and economic performance, this paper demonstrates a powerful mechanism through which globalization changes why voters cast the ballots that they do. The premise of the argument is that the most persuasive way to think about the voter's decision problem in democratic elections is the selection of preferred types. Critically, voters want to select competent leaders who will handle well the unexpected and/or unobserved tasks of government. In advanced industrial democracies, economic outcomes are often critical pieces of information for voters to discern incumbent competence and thus select the best candidate or party. I argue in this paper that

Parameter	Estimate	S.E.	p-value
Mean Function			
Lagged Incumbent Vote	0.7605	0.0554	0.000
Growth	-1.0063	0.4699	0.032
Trade Openness	-0.0406	0.0273	0.138
Growth * Trade Openness	0.0165	0.0077	0.032
Number of Government Parties	0.8416	0.4644	0.070
Previous Vote Swing	-0.2113	0.0849	0.013
Constant	9.7562	2.7617	0.000
Variance Function			
Time Period	0.0177	0.0039	0.000
Constant	2.2056	0.2822	0.000
Log-likelihood		-351.797	
Observations		114	

Table 7: *Estimated Effect of Trade Openness on the Relationship between Growth and the Incumbent Vote, Strong Party Elections.* These results are based on a multiplicative heteroscedastic regression of the incumbent vote on its lagged values, growth, trade openness, the interaction between trade openness and growth, the number of political parties in government, the previous vote swing, and a constant with the time period and a constant as the explanatory variables in the variance function. The positive estimate on the interaction term suggests that the effect of growth on the vote is more positive at higher levels of trade openness.

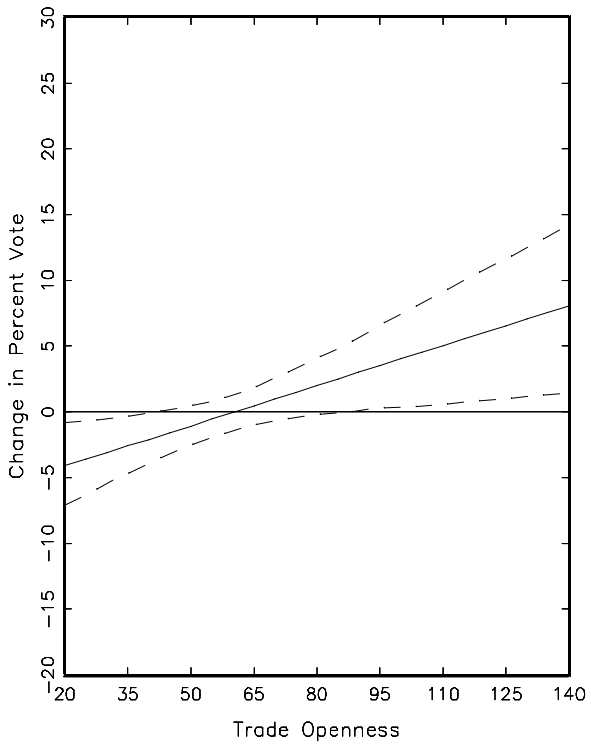

Figure 2: *Estimated Effect of Growth on the Vote at Different Levels of Trade Openness, Strong Party Elections.* I simulated the consequence of increasing *Growth* from one standard below its mean to one standard deviation above its mean on the incumbent government's vote percentage. The solid line indicates the median simulation while the dashed lines indicate a 90% confidence interval.

because integration with the world economy changes how the economy works, it alters how voters make inferences about the competence of incumbent governments when observing economic performance and thus how they vote. Consequently, the assessment of the effects of economic internationalization on the practice of democracy generally and mass political behavior in particular must include an account of the impact of integration on the relationship between economic performance and support for incumbent governments.

In this paper, I employ a simple, formal decision model to develop the hypothesis that the relationship between performance and incumbent support depends on the ability of voters to extract useful information about politicians from the economic outcomes that they observe. Economic integration affects the voter's extraction problem if it has a systematic effect on the variance of economic performance. I show empirically that in advanced industrial democracies, trade openness is robustly correlated with less volatile economic growth. Applying this empirical finding to the model generates the hypothesis that voters should weigh economic performance more heavily in more open economies. Thus, the relationship between the economy and support for incumbent governments should be increasing in trade openness. Using aggregate data for elections in 19 advanced industrial democracies from 1966 to 1994, I find strong evidence consistent with this hypothesis. Integration with the world economy has a dramatic effect on one of the most studied aspects of voting behavior by increasing the information available to voters in casting their ballots. Moreover, this increase in information suggests a substantial mechanism by which globalization enhances democratic governance.

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