The Global Economy, Competency, and the Economic Vote

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Working within a selection model of economic voting we propose explanations for the cross-national and dynamic variations in the magnitude of the vote that have puzzled students of comparative voting behavior. Our theory suggests that unexpected shocks to the economy inform the economic vote which implies that voters are able to resolve a signal extraction problem: determine the extent to which these shocks are the result of incumbent competency as opposed to exogenous shocks to the economy. We assume that voters have information on the overall variance in shocks to the macroeconomy and that they use this signal to weight the importance of economic shocks in their vote decision. Voters are also hypothesized to recognize that higher exposure to global trade influences reduces the magnitude of the incumbent competency signal. We provide empirical evidence demonstrating that voters are able to discern significant variation in macroeconomic outcomes in order to perform this signal extraction task: We analyze a six-nation survey conducted by the authors that was designed to assess whether voters are attentive to variance in economic outcomes and whether these in fact conditioned their economic vote. Secondly we examine economic time series from 19 countries over the 1979–2005 period, demonstrating that variances in the macroeconomic series explain contextual variations in the economic vote as our theory hypothesizes. Finally, the essay demonstrates that open economies, which are more subject to exogenous economic shocks, have a smaller economic vote than countries with economies less dependent on global trade.

Is it rational for voters to ignore economic outcomes in making a vote decisions? That they frequently do has been established by many students of both U.S. and comparative economic voting. Based on an extensive analysis of voter preference studies in the developed democracies, Duch and Stevenson (2008) have established that there is considerable variation in the economic vote from one country to the next and even from one election to the next. Some have argued that the evidence is so variable as to call in question the notion of an economic vote (Cheibub and Przeworski 1999). Others have been much more sanguine suggesting that this instability results from institutional or political contexts that vary in terms of the clarity with which voters can determine responsibility for economic policy making (Hibbs 2006; Powell and Whitten 1993). Neither of these perspectives suggests this variation in the economic vote results from rational calculations on the part of voters. In this essay we propose an explanation for this contextual instability in the economic vote that explicitly builds on a model of instrumentally rational voting decisions.

While we are certainly not alone in drawing attention to this cross-national instability in the economic vote, we believe we have a persuasive explanation for this variation. Our contribution is to derive explanations for this contextual instability from a competency theory of the economic vote.[1] This theory identifies political and economic contexts in which we would not expect rational voters to hold incumbents responsible for shocks to the macroeconomy. Working within a selection model of economic voting we propose explanations for the cross-national and dynamic variations in the magnitude of the vote that has puzzled students of comparative voting behavior. This essay begins with an overview of our selection or competency theory of economic voting.

Our theory builds on rational expectations theory and suggests that unexpected shocks to the economy inform the economic vote but in addition that voters are confronted with a signal extraction problem—to

[1]We do not review the extensive literature on economic voting in this essay. For an excellent review see Lewis-Beck and Stegmaier (2000) and Lewis-Beck (1988).

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what extent are these shocks the result of incumbent competency as opposed to exogenous shocks to the economy. We assume that voters have information on the overall variance in shocks to the macroeconomy and that they use this signal to weight the importance of economic shocks in their vote decision. Voters also recognize that higher exposure to global trade reduces the magnitude of the incumbent competency signal.

Two critical empirical implications of this theory are explored in this essay employing quite distinct data sources. One assumption is that voters are able to discern significant variation in macroeconomic outcomes in order to perform this signal extraction task. Hence one of our empirical goals is establishing whether voters have the information necessary for this signal extraction task. Our theory suggests that these variations in shocks to the macroeconomy condition the economic vote. Testing this argument constitutes the second empirical focus of the essay. We organize the empirical test into two different sections, one employing microlevel data and the other macro or aggregate-level data. The empirical section begins by analyzing a six-nation survey that the authors designed to assess whether voters are attentive to variance in economic outcomes and whether these conditioned their economic vote. Secondly our analysis of economic time series from 19 countries between 1979 and 2005 confirms our hypothesis that variances in the macroeconomic series explain contextual variations in the economic vote. Finally, the essay demonstrates that open economies, which are more subject to exogenous economic shocks, have a smaller economic vote than countries with economies less dependent on global trade.

Competency Theory of the Economic Vote

Competency, or selection, models of economic voting stipulate that the vote decision entails more than a simple reward-punishment response to economic outcomes. They suggest that instrumentally rational voters are motivated by the desire to select the most competent candidates: voters use information about economic outcomes to assess the future competencies of competing candidates. An incumbent who is not perceived by the voter as having competency for economic outcomes should neither be rewarded for a good economy, nor punished for poor economic outcomes. Selection models were not unfamiliar to the early economic voting scholars. For example, voters in Downs' model are future oriented and compare the platforms of contending candidates; logic which more closely resembles a selection as opposed to a sanctioning model. Likewise, Kramer (1971) viewed voters as future oriented but unwilling to spend the resources to assess future promises. While this early work clearly pointed the way toward a rational model of economic voting based on the selection of competent politicians, informal models left many questions unanswered, e.g., could it be rational for voters to use the previous economy to infer competence, if politicians had incentives to manipulate the economy for electoral gain? Answers to these kinds of questions had to await the development of the rational expectations literature in economics; and it is this tradition that informs our selection model of the economic vote.

How do voters with rational expectations about economic outcomes use economic performance to make their vote choice? Since a voter's future utility will depend on choices she makes today, she must forecast the likely economic future under different possible incumbents. Our assumption is that these expectations are formed rationally based on all the information available at the time of the election. Politicians in our model all care only about being in office and understand that voters will vote to maximize their expected utility.[2] The model, closely based on Alesina and Rosenthal (1995), assumes that an incumbent competes for control of the executive and that this executive can choose, for example, an inflation rate (π_{it}) directly (i.e., their economic policy) that determines growth (y_{it}) in the following expectations augmented Phillips curve:

$$y_{it} = \bar{y} + \pi_{it} - \pi^{e}_{it} + \eta_{it} \tag{1.1}$$

The equilibrium level, or average rate, of growth is represented by $\bar{y}$. The economic shock consists of two parts as follows:

$$\eta_{it} = \varepsilon_{it} + \xi_{t} \tag{1.2}$$

One part, ε_{it}, is simply an increment to growth that depends on the identity of the incumbent but not on her economic policy (which is captured in π_{it}). This increment to economic performance captures the economic impact of the incumbent administration's managerial competence. More specifically, this shock

[2]We could allow politicians to differ in their policy preferences, for example leftist politicians might prefer a nonzero inflation rate. As we will see, however, economic voting in the model does not in any way depend on the policy choices of politicians and so we ignore this complication.

includes any unobserved economic impact of the behavior of the incumbent administration that is not constant over time or administration.[3] We refer to this impact as a ''competency shock.'' The other part of the total shock to economic growth, ξ_t, though also unobserved and not constant over time, does not depend on the identity of the administration. We refer to it as an ''exogenous'' shock or sometimes as a ''nonpolitical'' shock.

Voters cannot observe competence shocks or nonpolitical shocks directly but can glean some information about incumbent competence from the fact that the observed economy is partially dependent on it. Of course, to be useful in forecasting the future economy, the level of competence inferred from observed economic performance must provide some guide to the incumbent's future level of competence. Consequently, we assume that competence is persistent over time in the following way:[4]

$$\varepsilon_{it} = \mu_{it} + \mu_{it-1} \tag{1.3}$$

Thus, current competence is just a first-order moving average from a sequence of competency shocks. Each of these competency shocks is drawn from an identical distribution, with mean zero and finite variance σ_μ^2. Likewise, we assume that the nonpolitical shocks, ξ_t, are drawn from identical distributions each with zero mean and finite variance σ_ξ^2. We assume voters know the expected values and variances of these distributions.

All voters in the model are identical and care about achieving the highest possible economic growth and lowest possible inflation in the next period. Specifically, we will write the utility of a typical voter in period *t+1* as a function of which party is elected, what policy that party pursues, and what the resulting level of economic growth will be. Given some governing party, *i*, that pursues a particular economic policy (a choice of π_{it+1}), the voter's utility in period $t+1$ is in part:[5]

$$u(\pi_{it+1}, y_{it+1}) = -\frac{1}{2}\pi_{it+1}^2 + by_{it+1}, b > 0 \tag{1.4}$$

where b indexes the voter's preference for growth relative to inflation. The particular functional form of utility for inflation and growth is quite flexible: as we will see, any choice that has the voter's utility increasing in growth will produce the same substantive implications for rational economic voting given the other assumptions in the model. The one provided above is a common formulation in the literature and so was chosen for its familiarity. Since utility is increasing in y and is maximized, for a given y, when inflation equals zero, this expression says that the voter prefers more growth and price stability and that she would be willing to trade price increases for growth at a rate governed by the size of b.

Since a voter's future utility will depend on choices she makes today, she must forecast the likely economic future under different possible incumbents. Our assumption is that these expectations are formed rationally based on all the information available at the time of the election. Politicians in the model all care only about being in office and understand that voters will vote to maximize their expected utility.

Since voters form expectations about inflation and growth rationally they know that incumbent politicians will pick the level of inflation (and correspondingly growth) that will maximize the incumbent's expected utility. Voters know current inflation and are never surprised by the government's inflation policy. Consequently, politicians have nothing to gain from doing anything but choosing the voter's optimal inflation rate (zero). Thus, in this simple version of the model, all politicians, no matter how competent, will choose the same economic policy and differences in growth associated with different politicians can only result from differences in their types (which are exogenous to the model). Clearly, then, the decisions of the politicians play no real role in the model and so it is equivalent to a reduced form, decision-theoretic version of the usual formulation that has been used to explore political business cycles. Since our focus is on the decision of voters given the observed economy and not on the decisions of politicians about policy, this seems an appropriate simplification.

With this, the growth rate from equation (1.1) is just the natural rate plus any shock. Further, voters can actually observe the total shock, since they can calculate it via equation (1.1). However, they cannot use that equation to parse out how much of the

[3]If voters observe the impact of this behavior it cannot be part of the shock but is part of the observed policy represented by π_{it}. Likewise, any unobserved impact of behavior on growth that is constant is subsumed in the natural rate of economic growth.

[4]One can also discount the impact of past competence as long as it is at least partially persistent.

[5]It is possible to state the voter's preferences more generally to include the whole sequence of time discounted future periods, e.g., $U = E\{\sum_{t=0}^{\infty}\delta_t u(\pi_{i,t}, y_{i,t})\}; 0$. However, the usual assumption restricts the discount factors to make this equivalent to a voter who looks into the future only so far as the next period of incumbency. For our purposes, then, the simpler formulation given in the text is adequate.

observed shock is due to the incumbent's competence, since they do not observe the two shock terms separately, but only overall growth.

The voters in the model form their expectations about the competence of the incumbent rationally and because of the moving average structure of the error term in equation (1.3), growth rates at time t that differ from $\bar{y}$ will provide voters with information regarding the competence of an incumbent reelected for period $t+1$. This follows from taking expectations in equation (1.3) (recall that the unconditional expectation of μ_{it+1} is zero).

$$\begin{aligned} E[\varepsilon_{it+1}] &= E\left[\mu_{it+1}\right] + E[\mu_{it} \mid y_{it}] \\ &= E[\mu_{it} \mid y_{it}] \end{aligned} \tag{1.5}$$

Voters form their expectations about the competence of an incumbent reelected in period t+1 by evaluating μ_{it} or, more precisely, the noisy signal provided by y_{it}. A key assumption of Alesina and Rosenthal's (1995) model is that voters learn the value of competency with a one-period delay—that is, in period t they know μ_{it-1} but not μ_{it}. Hence voters base their forecast of the economic competence of the incumbent on both y_{it} and μ_{it-1}. Specifically, in the current period voters know the competency of the incumbent in the last period, the natural rate of growth, the current realization of growth, and the current economic shock (which is composed of some unknown mix of the current competence of the incumbent and the nonpolitical shock). Growth in the current period is thus:

$$\begin{aligned} y_{it} &= \bar{y} + \eta_{it} \\ &= \bar{y} + \mu_{it} + \mu_{it-1} + \xi_t \end{aligned} \tag{1.6}$$

Rearranging this gives:

$$\mu_{it} + \xi_t = y_{it} - \bar{y} - \mu_{it-1} \tag{1.7}$$

Where everything on the right-hand side of this equality is observed and so the sum of the terms on the left is also observed, though not the individual components. Denote the sum on the left hand side as $k_{it} = \mu_{it} + \xi_t$. Since k_{it} is observed, the voter can compute her expectation about μ_{it} given k_{it} (i.e., her expectation about the incumbent's current level of competence, given the observed level of growth and the incumbent's competence in the last period). To calculate this conditional expectation, we need to know the distribution of both k_{it} and μ_{it}. k_{it} is the sum of two normally distributed random variables, both with zero means and variances σ_μ^2 and σ_ξ^2, respectively. The distribution of k_{it} is thus:

$$k_{it} = (\mu_{it} + \xi_t) \sim N\left(0, \sigma_\mu^2 + \sigma_\xi^2\right) \tag{1.8}$$

Given that both, k_{it} and μ_{it} are distributed normally, their joint distribution is bivariate normal and the optimal forecast of μ_{it} given k_{it} is just the conditional expectation, which is computed from the appropriate conditional distribution of the bivariate normal. Using standard results, this conditional expectation is (Greene 2003):[6]

$$\begin{aligned} E[\mu_{it} \mid k_{it}] &= E[\mu_{it}] + \frac{\sigma_{\mu,k}}{\sigma_k^2}(y_{it} - \bar{y} - \mu_{it-1}) - E[k_{it}] \\ &= \left(\frac{\sigma_\mu^2}{\sigma_\mu^2 + \sigma_\xi^2}\right)(y_{it} - \bar{y} - \mu_{it-1}) \end{aligned} \tag{1.9}$$

Since $E[\mu_{it} \mid k_{it}] = E[\mu_{it} \mid y_{it}]$, this expression is the rational voter's assessment of the current competence of the incumbent given the observed economy.[7] Further, from equation (1.5), we have $E[\mu_{it} \mid y_{it}] = E[\varepsilon_{it+1}]$, so we now have what we need to explore the implications of the model for economic voting by comparing the voter's expected utility for voting for the incumbent in this model to her expected utility for any challenger.

The voter will vote for the party that she expects to deliver the most utility in the next period. So we can write her expected utility for voting for incumbent party i as equal to the expected utility the voter will accrue in the next period if party i is in office.

$$\begin{aligned} E[u_{t+1} | v_i] &= E[u(\pi_{it+1}, y_{it+1})] \\ &= \frac{1}{2}E[\pi_{it+1}^2] + bE[y_{it+1}] \\ &= 0 + b\left(\bar{y} + E\left[\eta_{it+1}\right]\right)_i \\ &= 0 + b(\bar{y} + 0 + E[\varepsilon_{it+1}]) \\ &= b\left(\bar{y} + \frac{\sigma_\mu^2}{\sigma_\mu^2 + \sigma_\xi^2}(y_{it} - \bar{y} - \mu_{it-1})\right) \\ &= b\bar{y} + b\left(\frac{\sigma_\mu^2}{\sigma_\mu^2 + \sigma_\xi^2}\right)(y_{it} - \bar{y} - \mu_{it-1}) \end{aligned} \tag{1.10}$$

[6] In general, $E[x \mid y] = \rho_{xy}\frac{y - E[y]}{\sigma_y}\sigma_x + E[x]$, where ρ_{xy} is the correlation between x and y.

[7] $E[\mu_{it} \mid y_{it}] = \frac{\sigma_{\mu,y}}{\sigma_\mu^2 + \sigma_\xi^2}(y_{it} - y - \mu_{it-1})$ by applying the same signal extraction solution as above. Further, it is easy to show that $\sigma_{\mu,y} = \sigma_{\mu,k}$, so the claim in the text follows.

Lacking any information about the challenger's level of competency, the voter's expected utility for voting for any challenger, k, is just:

$$\begin{aligned} E[u_{t+1} \mid v_k] &= E[u(\pi_{kt+1}, y_{kt+1})] \\ &= \frac{1}{2}E[\pi^2_{kt+1}] + bE[y_k t + 1] \\ &= 0 + b\left(\bar{y} + E\left[\eta_{kt+1}\right]\right) \\ &= b(\bar{y} + E[\xi_{t+1}] + E[\varepsilon_{kt+1}]) \\ &= b\bar{y} \end{aligned} \tag{1.11}$$

Thus, the voter is more likely to vote for the incumbent when the expected utility in equation (1.10) is larger than that in equation (1.11). The difference is:

$$\begin{aligned} E[u_{t+1}|v_i] - E[u_{t+1}|v_k] &= b\bar{y} + b\left(\frac{\sigma^2_\mu}{\sigma^2_\mu + \sigma^2_\xi}\right) \\ &\quad \times (y_{it} - \bar{y} - \mu_{it-1})_i - b\bar{y} \\ &= b\left(\frac{\sigma^2_\mu}{\sigma^2_\mu + \sigma^2_\xi}\right)(y_{it} - \bar{y} - \mu_{it-1}) \end{aligned} \tag{1.12}$$

This result makes it clear when voters can and cannot extract information from fluctuations in the previous economy in order to access the current competence of an incumbent and cast an economic vote. The term $y_{it} - \bar{y} - \mu_{it-1}$ is simply observed economic performance less the parts of economic growth whose sources are known to the voter. The term captures what the incumbent has "done for the voter lately" (i.e., how the current period differs from the natural level of growth, discounted by the impact of the incumbent's known level of competence in the previous period). We can interpret the coefficient on this term, i.e., $\frac{\sigma^2_\mu}{\sigma^2_\mu+\sigma^2_\xi}$, as the "competency signal" that controls how much information about the competence of incumbents voters can extract from observed movements in the economy. This competency signal will always be positive and will approach one as the variance in the random (nonpolitical) shocks to the economy, σ^2_ξ, goes to zero. In that case, the voter knows that growth above or below the natural rate is completely due to competency shocks—consequently, deviations from the natural rate of growth will perfectly identify competent and incompetent administrations. More generally, if ${\sigma_\mu}^2$, the variation in the competence term μ_{it}, is large relative to variation in the nonpolitical component of growth, ${\sigma_\xi}^2$, then changes in the economy will provide a strong signal about the competency of the incumbent and the voter will weigh the retrospective economy more heavily in her utility function. Alternatively, growth that is above or below the natural rate is a poor signal of the incumbent's competence if observed growth is more likely to result from nonpolitical shocks than from competency shocks—i.e., if σ^2_ξ is high relative to σ^2_μ.

In our economic vote model, like many other models in the literature, voters focus on the most recent economic outcomes (Hibbs 2006; and for a critique, Achen and Bartels 2002).[8] The voter's assessment of economic performance is presumed to focus on most recent shocks to the economy $(y_{it} - \bar{y})$ which is similar to Hibbs (2006) although it is not a weighted sum of past outcomes (although Hibbs notes that the weight is typically very high on the most recent outcome). In this formulation our voter focuses only on recent unexpected shocks, so behaving in a decidedly more rational expectation fashion than Hibbs' economic voter. We go a step further than many of the economic voting models in that we try to characterize precisely how voters use this information, i.e., the most recent shock in the economy, in their vote preference function. Here we argue that voters do use historical information about the economy (hence they pay attention to more than just the most recent economic outcome). Based on historical fluctuation in these economic outcomes voters are able to construct a competency term that they use to weight current economic shocks. Voters pay attention to historical outcomes because they inform them of the economic competency of the incumbent.

Empirical Implications

In the rest of this essay we assess whether voters use global economic outcomes to inform themselves about the magnitude of the terms that make up this competency signal, $\frac{\sigma^2_\mu}{\sigma^2_\mu+\sigma^2_\xi}$. We examine two macroeconomic outcomes, related to the global economy, that inform voters of competency: (1) fluctuations in domestic and global economic outcomes; and (2) exposure of the domestic economy to global trade. While these do not represent the totality of

[8]Although since the periodicity in our abstract theoretical model is completely arbitrary—we refer to periods not months or years—the reader is free to interpret $(y_{it} - \bar{y} - \mu_{it-1})$ to apply to whatever period she thinks relevant.

information that informs voters of competency, they constitute two informative signals. Our goal is to provide empirical evidence that voters are informed about these signals and that this information conditions their economic vote.

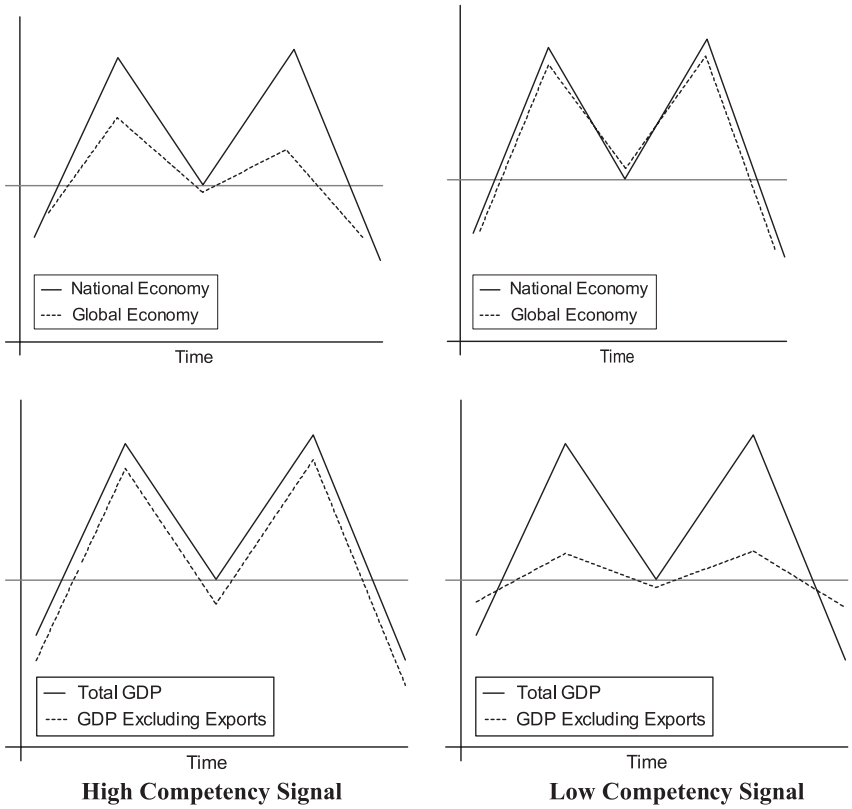
Figure 1 illustrates in a stylized fashion the concepts summarized in equations (1.1) and (1.12), in addition to introducing our two principal empirical hypotheses. In each of the four quadrants the plotted lines correspond to shocks to the macroeconomy—we can think of these shocks as deviations from expectations, $y_{it} - \bar{y}$ which are similar to the $y_{it} - \bar{y} - \mu_{it-1}$ term in equation (1.12). The first row of the stylized graphs illustrates the hypothesized impact of domestic versus global fluctuations in shocks to GDP growth while the second row illustrates the exposure to global trade effect. The first column represents a hypothetical high competency signal condition while the second column illustrates a hypothetical low-competency signal condition.

Recall that we define the economic vote as a function of a shock to the macroeconomy, $y_{it} - \bar{y} - \mu_{it-1}$, weighted by a competency term, $\frac{\sigma_\mu^2}{\sigma_\mu^2+\sigma_\xi^2}$. The competency signal, $\frac{\sigma_\mu^2}{\sigma_\mu^2+\sigma_\xi^2}$, differs in Column 1 versus 2 as a function of variation in shocks to the domestic versus global economies (Row 1) and as a function of exposure to global trade shocks (Row 2).

In Row 1, voters have two pieces of information on which to extract a competency signal: they know the historical variation in shocks to real GDP growth for other countries (summarized by the variation in the bold line), and they know the historical variation in shocks to domestic real GDP growth (captured by the dashed line). In Quadrant 1, the two variances are very different suggesting that variation in shocks to GDP growth in this country is quite distinct from those for other global economies. The fact that the shocks to the domestic economy vary quite distinctly from those for other economies signals to voters that the national government, rather than exogenous global economic shocks, is affecting domestic economic outcomes. These differences provide the voter with information that σ_μ^2 is high relative to σ_ξ^2 which suggests a high-competency signal.

Quadrant 2 suggests exactly the opposite: variation in shocks to the domestic economy's GDP growth is very similar to that of the global economies, suggesting that exogenous factors, rather than national government officials, are shaping domestic economic outcomes. Hence σ_ξ^2 is high relative to

FIGURE 1 Hypothetical Competency Signals from Domestic and International Economies



σ_μ^2 and the overall competency signal is low. Our operationalization of the voter's signal extraction efforts is similar to the signal extraction that occurs in the "benchmark competition" literature. In Besley and Case (1995) voters, motivated by selection concerns, use tax increases that are out of line with those in neighboring states to make vote choices. Their insight is that tax increases in general are not a signal of excessive rent seeking by incumbents but tax increases that are out line with neighboring tax increase do represent a signal to voters about "bad types."

In this essay we test two theoretical arguments summarized in Row 1: (1) Are voters knowledgeable about variations in shocks to the economy and can they discern whether variations in national shocks are distinct from those in other countries? (2) Do differences in these variations condition the vote as suggested by our theory?

Row 2 illustrates how variations in a country's exposure to global trade inform the competency signal that conditions the economic vote. In Quadrant 3 and 4 the bold lines represent total variation in the shocks to GDP growth while the dotted lines indicate that portion of the variance that is associated with goods and services produced and consumed domestically. The difference represents variation in that portion of GDP shocks associated with goods and services that are produced domestically but consumed by foreign markets. The distance between these two lines represent a signal regarding the magnitude of the competency variance σ_μ^2 in the competency signal. A narrow distance between these two lines, illustrated in Quadrant 3, suggests that σ_μ^2 is high relative to σ_ξ^2 which indicates a high competency signal. This would be a national context that has relatively less exposure to the effects of global trade and where we would predict high levels of economic voting. Quadrant 4 with a large difference suggests that σ_μ^2 is low relative to σ_ξ^2 which indicates a low competency signal case. This is a national context with high exposure to the global trade and where we predict low levels of economic voting.

We propose to test two aspects of the theoretical argument summarized in Row 2: (1) Are voters knowledgeable about the exposure of their domestic economies to shocks from global economic influences? (2) Do differences in exposure to global trade influences condition the economic vote as suggested by our theory?

In this essay we demonstrate how economic outcomes—seen from a competency perspective—can help us explain contextual variation in the economic vote. We make two empirical points: voters have information about the economy that allows them to engage in the hypothesized signal extraction, and the magnitude of the economic vote responds to these economic competency signals as hypothesized.

Microfoundations: Evidence from a Six-Nation Survey

Our competency theory assumes that voters have information on the overall variance in shocks to the macroeconomy, $\sigma_\mu^2 + \sigma_\xi^2$, and have strategies for distinguishing between σ_μ^2 and σ_ξ^2. We first examine whether voters really have well-formed beliefs about the variance in competence shocks to the economy? Or even about the total variation in shocks to the economy? Given the often-touted ignorance of voters when it comes to political and economic matters, some skepticism is surely warranted. Still, little direct evidence on these questions is available in the existing literature, and so we explore a variety of original evidence that we have collected that will help us answer them. This evidence includes a survey that we conducted that quizzes voters on their knowledge of economic variation and its sources.

The Availability of Information about Variance in the Macroeconomy

Do the voters get much information about the variance in economic outcomes? There is extensive evidence that the media plays an integral role in shaping economic evaluations, which of course are critical to the economic voting model (De Boef and Kellstedt 2004; Duch and Stevenson 2004; Erikson, Mackuen and Stimson 2002). An important portion of the information regarding the economy that is transmitted by the media helps voters assess overall variance in shocks to the macroeconomy. Media reports of economic performance typically include extensive references to how the economy has changed and what most often captures the attention of media outlets are unexpected changes in macroeconomic outcomes.

Voter Attention to Information about Variance in the Macroeconomy

Is there any reason to believe that the average voter in developed democracies pays any attention to

information regarding variance in economic outcomes?[9] Some have argued that in fact *fluctuations* in economic outcomes attract an equal, if not higher, amount of attention than *levels* of economic performance from the voter. Quinn and Woolley (2001) argue that voters pay considerable attention to volatility in addition to rates of change in the macroeconomy, although they draw different conclusions regarding its implication for the economic votes.

There is little data on whether the media message about variance in the economy registers with the typical voter. As a result, in the spring of 2005, we conducted a six-nation survey that explored voters' beliefs about the variation in their national economies and its sources.[10] One of the questions in this survey asked respondents the following question: ''Over the last four years would you say that the economy in [*country*] has experienced very stable growth, somewhat stable growth, somewhat unstable growth, or very unstable growth?''

Of initial interest is whether responses to this question show any systematic variation or whether they are just random. We assess this by examining whether there is significant agreement among respondents in their answers. Random answers would show no such clustering but should be distributed relatively uniformly. Further, if voters have well-formed beliefs about variation in the economy, then the proportion of ''don't know'' responses should be similar to their proportion in other surveys that collect other kinds of economic information.

Results from each of the six countries clearly suggest that the question is meaningful. Figure 2 indicates that in each of the countries we see a clear modal response and relatively small variances around the modal response. In Denmark, for example, over half the respondents choose the ''somewhat stable growth'' response. In no case is the modal response less than 40% of the sample. Furthermore, the number of ''don't know'' responses compare favorably with levels in other surveys soliciting more standard types of economic beliefs. The highest level of ''don't know'' responses was 8.7% of the Danish sample and the lowest was 1.1% of the France sample. These compare quite favorably, for example, to the range of ''don't know'' responses to the standard question concerning retrospective evaluations of the national economy: the highest level, again, was 7.5% of the Danish sample and the lowest level was 1% of the French sample.

We are also interested in whether there is significant cross-national variation in the average perceptions of economic volatility—again, this variation is part of the competency weight that conditions the magnitude of the economic vote. The left-hand graph in Figure 3 shows that average citizen perceptions of the stability of economic outcomes in their country vary quite significantly across European nations. Danish and British respondents clearly perceive their national economies as turning in very stable growth over the previous four years. By contrast the Germans and Italian report high levels of instability in growth outcomes. In short, these individual-level data support the idea that contextual variation in the economic vote could come, in part, from differences in the competency signal (or at least voters' beliefs about this signal).

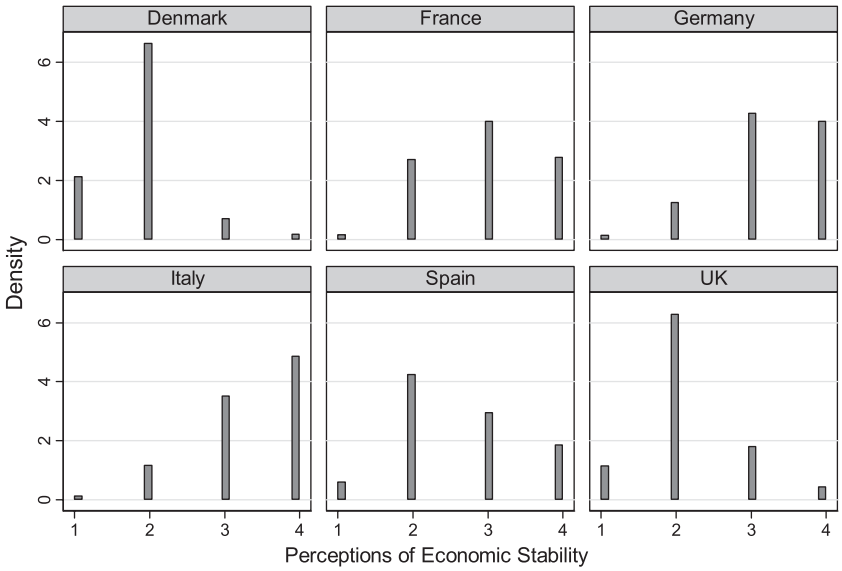
Of particular interest is whether cross-national variation in perceptions of economic stability is grounded in real variation in the economies of the different countries. We expect citizens in contexts with highly variable economic outcomes to perceive economic outcomes to be highly unstable. This is confirmed by the data in the right hand graph in Figure 4: citizens in contexts where the fluctuations in real GDP growth were highly unstable over the 2000–05 period have perceptions of economic instability that are higher than citizens in contexts with more stable economic outcomes. The exception here is Denmark where citizens, in spite of high fluctuations in real GDP, perceived their economy as being stable. Note though that the relationship including Denmark (the dashed regression line) is quite strong although without Denmark (the solid regression line) is extremely strong.

One explanation for the Danish exception, directly related to the empirical findings presented in the next section, is that Denmark is a relatively small economy that is highly exposed to global trade influences. We argue that voters recognize the impact of these exogenous global factors on variations in national economic outcomes. What we may be seeing in Figure 3 is Danish responses about the national economy that discount fluctuations related to global economic shocks. And, since Denmark is highly affected by these global shocks, its citizens may have

[9]Our focus on the developed democracies excludes, for the most part, countries that have experienced dramatic variances in macroeconomic outcomes and where there is no question that citizens have been concerned with variance in addition to growth.

[10]The survey was pretested in the United States in the early spring. The actual survey was conducted in Great Britain, Spain, Denmark, France, Italy, and Germany. The items were included on an Omnibus telephone survey administered in each country and supervised by IFOP, France.

FIGURE 2 **Histogram of Volatility of Economic Perceptions, Europe**



perceptions of fluctuations that are relatively modest compared to citizens in the other five sample countries which have quite large and more insulated economies.

Our evidence, though based only on six countries, is unique in its focus on economic variation and suggests that voters have well-formed beliefs about variation in their national economies and that these beliefs on balance are grounded in economic reality.

Distinguishing Domestic and International Economic Fluctuation

In the competency theory, we assume that, in addition to knowing the overall variance in macroeconomic shocks, voters also know the relative contributions of σ_{μ}^2 and σ_{ξ}^2 to that total. While political economy models often make this assumption (for example, Cukierman and Meltzer 1989; Rogoff and Sibert 1988), there is little effort to explore empirically whether citizens have perceptions consistent with this characterization.

If voters have a sense of the total variation in economic shocks (i.e., σ_{μ}^2 and σ_{ξ}^2), then they can distinguish between the relative contributions of the different components of this total variation if they have well-formed beliefs about either one. So, for example, if they know how important exogenous shocks are in their national economy (at a particular time) and they know how much the economy varies in general, they should have a sense of how much "room" there is for the competence of the elected government to impact the economy.

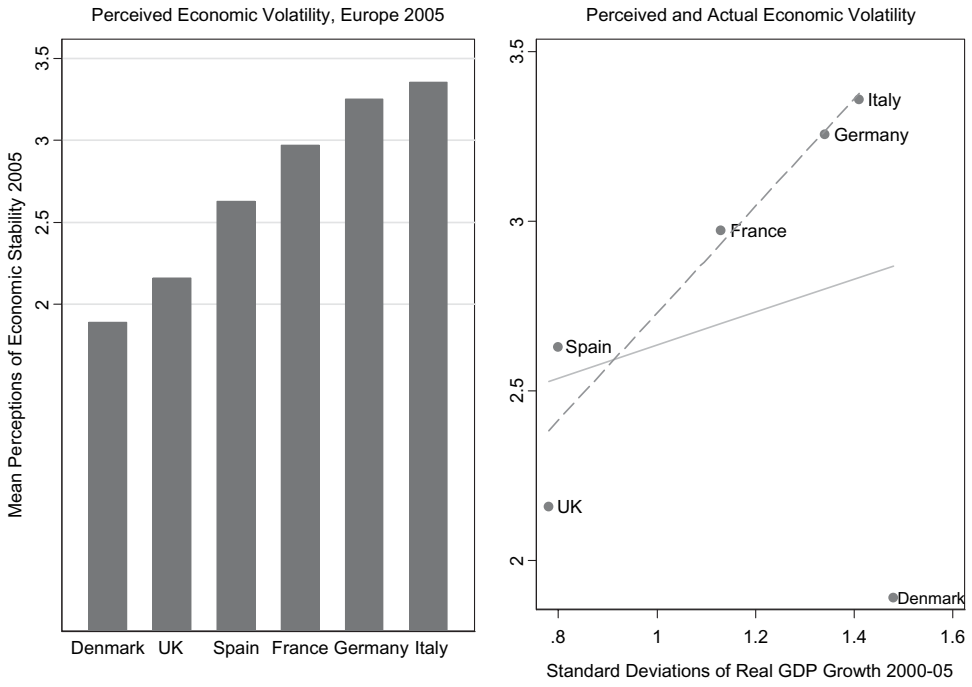
Row 1 of Figure 1 illustrated one signal extraction strategy that builds on voters' knowledge about stability in the domestic and international macroeconomies. Voters can inform themselves of the relative importance of exogenous versus competency shocks in national economic outcomes by benchmarking fluctuations in domestic macroeconomic outcomes against those in the overall global economy. An interesting example here are the recent findings of Ebeid and Rodden (2006): they establish that voters in U.S. state elections condition their economic vote by making comparisons between state and national economic outcomes.[11] This, of course, is consistent with Besley and Case (1995) who find that voters, motivated by selection concerns, use tax increases that are out of line with those in neighboring states to make vote choices.

We hypothesize that voters know whether to attribute shocks to the macroeconomy to competence rather than exogenous factors by observing how fluctuations in the domestic economy deviate significantly from those in the broader global economy.[12] Our reasoning, illustrated in Row 1 of Figure 1, is that if fluctuations in the domestic economic closely track fluctuations in the global economy voters are less likely to attribute fluctuations in macroeconomic shocks to incumbent government policy makers.

[11]Wolfers (2006) makes the opposite case using state-level election data. He suggests that voters reward/punish incumbents for economic outcomes beyond their control (such as oil price shocks in oil producing states).

[12]This assumes that a significant portion of the exogenous shocks to an economy comes from the global economy.

FIGURE 3 Volatility of Real GDP and Economic Perceptions, Europe



On the other hand, if the fluctuations in the domestic economy differ significantly from the global economy voters are more likely to attribute shocks to the macroeconomy to incumbent policy makers. We can use our six-nation European survey to illustrate what we mean here and test whether, in fact, these deviations in perceptions result in higher levels of economic voting.

We begin by using our six-nation survey results to explore how perceptions regarding fluctuations in the domestic economy deviate from those regarding the overall global economy—here we focus on Europe and treat the overall European economy as the global referent. The survey asked respondents to assess the stability of both their national economies and the overall European economy.[13] Table 1 presents a cross-tabulation of responses to these two questions. The entries are the numbers of respondents falling in each cell. Respondents falling along the diagonal had identical responses for both their domestic economy and the European economy. Off-diagonal respondents perceived domestic fluctuations as deviating from those of the overall European economy. Approximately 50% fall on the diagonal with the other 50% falling on the off-diagonal cells.

One strategy that voters may employ for distinguishing competency shocks from exogenous shocks to the macroeconomy is examining whether fluctuations in the domestic economy differ significantly from those in the overall global economy—or, in this case, the overall European economy. To the extent that domestic fluctuations are distinct from broader global fluctuations, voters may attribute domestic macroeconomic shocks to political initiatives, i.e., competency, and have a higher propensity to cast an economic vote. This implies that respondents falling in the off-diagonal cells of Table 1 are more likely to engage in economic voting.

We evaluate this argument empirically by again employing the six-nation survey data. Respondents were asked to report their likely vote choice if an election were held in the coming days.[14] Responses to this question were used to create a dichotomous incumbent vote variable (respondents preferring parties in the governing coalition were coded as 1 with the remaining respondents coded as 0). The first column of Table 2 reports the probit estimates for this simple vote equation (country dummies are

[13]The Europe economy question was worded as follows: "Over the last four years would you say that the European economies have experienced very stable growth, somewhat stable growth, somewhat unstable growth, or very unstable growth?"

[14]The British questioning wording is as follows: "If a general election were held next Sunday which political party would you vote for?"

TABLE 1 Perceptions of Stability of National and European Economies

	European Economy				
National Economy	**Very Stable**	**Somewhat Stable**	**Somewhat Unstable**	**Very Unstable**	**Total**
Very Stable	86	143	116	27	372
Somewhat Stable	105	1114	596	90	1905
Somewhat Unstable	35	543	836	131	1545
Very Unstable	27	286	446	484	1243
Total	253	2086	1994	732	5065

included in the regression). As we would expect, retrospective national economic evaluations are strongly correlated with incumbent vote intention.

To test the notion that the off-diagonal respondents have a higher propensity to cast an economic vote we created a dummy variable (*deviation*) that has a value of 1 for all those respondents falling in the off-diagonal cells. This variable, interacted with the economic evaluation variable, indicates whether the off-diagonal respondents have in fact higher levels of economic voting as we hypothesis. The second column of Table 2 reports these results. As we hypothesized respondents who perceive distinct differences in the fluctuations of their national economies are more likely to exercise an economic vote.

In this essay we do not pretend to provide a complete account of how voters acquire this information about variations in shocks to the global and domestic economy. But our intuition, supported by some preliminary analysis, suggests that voters live in a media context that informs them about the domestic and international economies.[15] Our argument implies that the media respond to variations in macroeconomic outcomes as opposed to simply focusing on the magnitude of economic indicators. And we find, for example, that the count of U.S. media stories concerning inflation or unemployment is higher during periods in which the standard deviations of actual inflation or unemployment outcomes are high (Duch and Stevenson 2008).

This suggests that the costs to voters of informing themselves about exogenous and competency shocks to the macroeconomy are not high. The data (not shown here) suggest that in general this appears to be the case. For each country we estimated bivariate probit equations with *deviation* as the dependent variable (0 for those on the diagonal and 1 for those off the diagonal) and education as the explanatory variable. With one exception, Italy, the coefficients on education were statistically insignificant. These results suggest that the costs to voters of informing themselves about exogenous and competency shocks to the macroeconomy are not particularly high.

A second issue is whether the conditioning of the economic vote based on the competency signal varies by levels of sophistication. There is some evidence that more highly educated respondents are more likely to condition their economic vote on information regarding competency shocks to the macroeconomy. In Table 2 we estimate the interaction models for high- versus low-education groups in the population. The interaction term remains just barely significant for the highly educated groups but is not statistically significant for the low-educated groups. It may be the case—although this evidence is only suggestive—that more sophisticated voters are more likely to learn about candidate competency.

One assumption of our competency theory is that voters know about the variance in exogenous shocks (relative to the variance in competency shocks) to the macroeconomy. Our evidence suggests that voters are informed about how much the domestic economy is subject to exogenous shocks from the global economy.[16]

Competency and Exposure to Global Trade

Row 2 of Figure 1 suggests a second signal extraction strategy that voters can employ: In economies exposed to global trade shocks voters are hypothesized

[15]This is similar to the argument made by Besley and Case (1995) regarding benchmark competition regarding tax rates amongst neighboring states. They argue that the media provides voters with benchmarked information about tax rates from neighboring states.

[16]We realize, of course, that not all exogenous shocks to the economy arise from nondomestic sources. Indeed, the theory only distinguishes between governmental and nongovernmental shocks, where the nongovernmental category includes shocks arising from the behavior of any economic actor who voters do not include in the government whose competency they wish to evaluate.

TABLE 2 Perceived Variation in National and International Economic Variations and the Economic Vote

	Baseline Model	*Model with Deviation*	*High Education*	*Low Education*
Retrospective National Economic Evaluations	.33 (.02)	.29 (.03)	.30 (.04)	.28 (.05)
*Retrospective * Deviation*		.08 (.04)	.09 (.05)	.07 (.06)
Deviation (Off Diagonal in Table 1=1)		−.33 (12)	−.33 (16)	−.33 (.18)
Constant	−1.59 (.07)	−1.39 (.10)	−1.42 (.15)	−1.33 (.17)
Number of Observations	5,834	5,021	2,788	2233
Log Likelihood	−3123	−2700	−1516	−1176

Note: Country dummies included in both equations. Standard errors in parentheses.

to recognize that the exogenous component of the competency signal is large relative to that of the domestic political component. They infer this from the fact that a smaller portion of economic activity is related to domestic production and consumption.

We can first gauge whether citizens have beliefs about the extent the economy is subject to exogenous shocks by asking the respondents in our six countries the following question: ''To what extent is growth in the economy in [COUNTRY] dependent on growth in the other European economies? Would you say extremely dependent, very dependent, moderately dependent, a little dependent or not at all dependent?'' Respondents in each country were in substantial agreement regarding the extent of global influences on the domestic economy. In each case, more than 45% of respondents chose the modal category and no more than 11% indicated they could not answer. While we have no direct information to show it, this pattern of beliefs likely suggests that voters are getting consistent information from the media about their countries' position in the global economy.

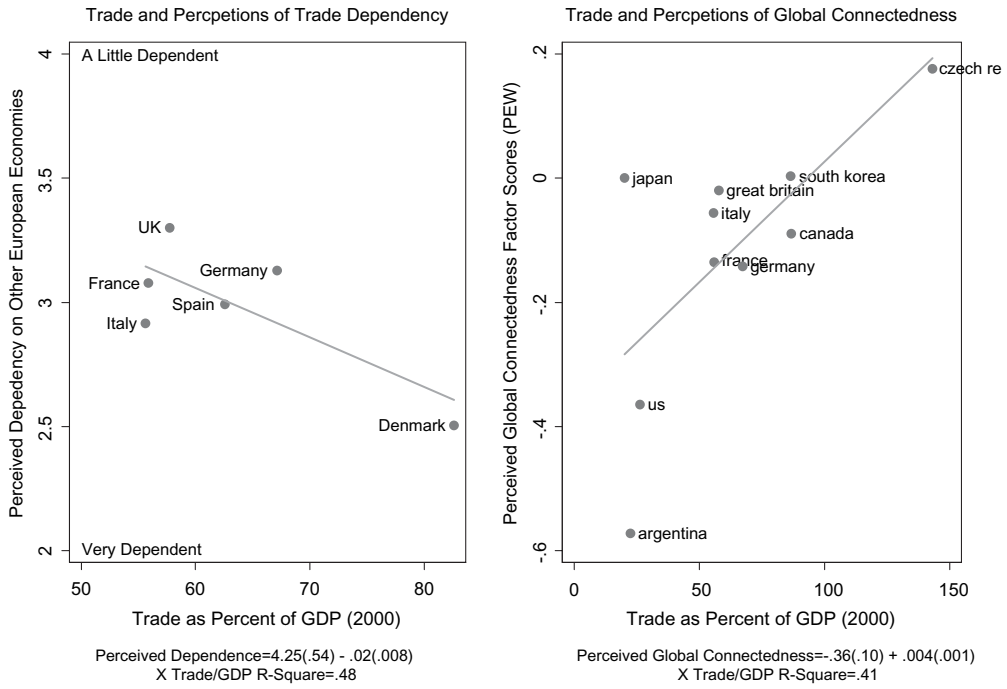
We can provide some empirical insight into whether voters in economies with more exposure to global trade perceive their economies as being more influenced by exogenous shocks. The first panel of Figure 4 plots average responses to the economic dependency question for each country against our measure of trade exposure. Three countries with relatively low levels of trade exposure—the United Kingdom and France in particular—have average responses in the middle category (i.e., indicating that their economy is ''moderately dependent'' on growth in other economies). Spain with slightly higher trade exposure has an average response that is slightly more ''dependent'' than the U.K. and France values. Finally, Denmark, which is the one country in our sample with a very high trade exposure, also is the only country with an average response at the ''very dependent'' end of the continuum. The simple bivariate regression results in a statistically significant negative slope coefficient as our theory predicts; however, given the limited variation in trade exposure in this set of cases, this evidence is at best suggestive.

To examine a larger set of cases, with greater variation in trade exposure, we must compromise somewhat on the measurement of the dependent variable. We could not locate another survey asking as specific a question as we asked. In the second panel of Figure 4, we assess voter recognition of the extent global trade influences on their domestic economy with a sample of countries from the PEW Global Attitudes Project that asked more general questions about global consecutiveness. PEW asked the following series of questions: ''Do you think change in [*insert each item below*] is the result of global connectedness: the availability of good-paying jobs; the working conditions for ordinary workers; the availability of modern medicines and treatments; the availability of food in stores; the gap between rich and poor people?'' Respondents provided yes or no answers to each question. We factor analyzed these items and created a single factor score measuring the extent to which citizens perceived their overall economy to be ''globally connected.'' All of the items loaded quite highly on a single factor with high values indicating global connectedness.[17] Our argument suggests that populations with particularly heavy exposure to global economic influences should register high levels of ''global connectedness.''

We provide the relevant data in the second panel of Figure 4, which plots each country's global connectedness score against the country's trade exposure (total trade—exports and imports—as a percentage of total GDP). The evidence from this measure is much more convincing than the evidence from our

[17]Only developed countries from this sample were included in the analysis—countries with GDP per capita in the year 2000 of more than $5000 1995 USD.

FIGURE 4 Trade and Perceptions of Global Dependency



more limited sample. Countries with high levels of trade exposure tend to be those in which their population recognizes the extent to which the domestic economy is subject to global economic influences. That said, the fact that this measure of our dependent variable captures perceptions of global connectedness broadly defined, rather than the more specific notion of economic connectedness, means we should not expect its relationship with trade dependence to be perfectly linear. Specifically, since the measure includes perceptions of global influences on both economic outcomes and social outcomes, trade (a decidedly economic form of connectedness) may be sufficient to engender perceptions of connectedness using this measure, but is unlikely to be necessary. Even when trade is low, a given population might be connected to the rest of the world in other ways—reflecting, perhaps, a particular cultural and social orientation—that would be reflected in this broad ''perceptions of global connectedness'' measure. The placement of Japan in the second panel of Figure 4 may be a case in point. Japanese perceptions of global connectedness are much higher than their trade exposure would predict and so is an outlier from the point of view of this paper. However, this result would hardly surprise to students of Japanese society, some of whom have demonstrated the existence of specific perceptual biases (resulting from social institutions and norms) that encourage the view that society and the world more generally should be understood as highly interconnected (e.g., Nisbett 2003).

A Summary of the Microevidence and Some Caveats

The competency model of rational retrospective economic voting makes two assumptions regarding voter knowledge about the economy. First, the theory assumes that voters know the total variance in shocks to the macroeconomy. Our six-nation survey results suggest that individual perceptions about the volatility of the macroeconomy are reasonably well informed: cross-national perceptions of macroeconomic variability correlate quite highly with the magnitudes of actual variations in real GDP.

Second, the theory assumes that voters are able to distinguish variations in competency shocks from variations in exogenous shocks to the macroeconomy. If we assume that a large part of the exogenous shocks in the economy originate in global fluctuations and that a large part of domestic shocks are attributable to the competence of politicians, the results of both our six-nation study and the PEW GAP suggest that voters do have the information to make such distinctions. Specifically, voters appear to understand the extent to which their economies are subject to shocks from the international economy.

Our individual-level analysis of differences in beliefs (and economic voting) among voters adds further support to the plausibility of our contextual hypotheses, which is based on an individual-level relationship: voters who perceive that the variation in the national economy differs from variation in the global economy seem to use the economy more in their vote choice. This is certainly consistent with the idea that these voters attribute a larger share of the variance in the economy to the actions of domestic politicians rather than to exogenous shocks and so glean a relatively stronger signal about the competence of the incumbent government from perceived fluctuations in the economy. Finally, with respect to information costs: we find very little evidence that variations in education levels affect the ability of voters to distinguish exogenous from competency shocks to the macroeconomy. On the other hand, we do find some evidence that the extent to which voters use this information to condition their economic vote is more prevalent amongst the more highly educated voters.

Macrolevel Findings from 163 Election Studies

The previous section provided encouraging empirical support for the microfoundations of our competency theory of the economic vote. We now focus on the empirical evidence indicating that voters use this information about the macroeconomy and structural features of the domestic economy to condition their economic vote. Again, we have two principal hypotheses here: (1) economic voting will be higher in domestic contexts in which variations in shocks to the domestic economy deviate from those for the global economy; and (2) exposure of the domestic economy to global trade will reduce the magnitude of the economic vote.

The Data: Cross-National Mapping of the Economic Vote

The dependent variable in our macrolevel empirical analysis is the estimate of the Chief Executive economic vote for each of 163 voter preference surveys conducted in 19 countries during the 1979–2005 period. A detailed description of how these estimates are derived and a discussion of our two-stage multi-level analysis approach are available in Duch and Stevenson (2005 and 2008) and at www.raymondduch.com/economicvoting. Hence, in this essay we only provide a brief overview of how these estimates were derived. For each of the 163 voter preference studies in our sample we estimate the *economic vote of the Chief Executive* defined as any decrease (increase) in support for the party of the incumbent Chief Executive that is caused by worsening (improving) economic perceptions. Each of these 163 studies includes a vote preference question and the respondent's retrospective evaluation of the overall economy. These are the core questions for our analysis, and they are roughly similar across all of the 163 studies. In addition, we include control variables in the estimation that reflect the types of variables typically included in the specification of vote choice equations: socioeconomic cleavages, policy measures, left-right self-placement, and partisanship where appropriate. In each country's logit model specification, we include the appropriate set of control variables that are necessary to ensure consistent estimates for the economic evaluation variable.[18]

We then use these estimated coefficients to generate predicted changes in each individual's vote probabilities associated with a change in the individual's economic perceptions. We define a ''meaningful change'' as a change in opinion that results from moving each respondent's economic perception one unit in the direction of a worsening economy. This represents a reasonable shift in economic perceptions based on our assessment of the distribution of economic perceptions in the 163 surveys. The control variables are held constant at the values they take on for each individual in the sample.[19] This gives us estimates of the change in the Chief Executive party's vote probabilities associated with a unit deterioration in economic perceptions.

Competency Signals from Variations in Shocks to the Domestic and Global Macroeconomies

Recall from Row 1 of Figure 1 that our theory suggests that variation in shocks to the domestic economy that deviate from variations in global economic shocks inform voters about the economic

[18]The models and the parameter estimates for each of these elections studies are available at www.raymondduch.com/economicvoting.

[19]Our estimates of the impact of a change in economic perceptions on vote probabilities is generated in a fashion that also produces estimates of uncertainty about the economic vote measure for each case. We accomplish this by sequentially applying the simulation procedure detailed in King, Tomz, and Wittenberg (2000) to each respondent in each sample. We provide details of this estimation in Duch and Stevenson (2008).

competency of incumbent governments. At any point in time the voter observes that an economic indicator is high, low, or possibly in line with expectations. The overall global average outcome provides the voter with two important pieces of information. First, the country may always experience higher (or lower) economic shocks and hence some of the difference between the global economic outcome and the country outcome can be attributed to a country effect. This typical country deviation from the global mean constitutes the voters' expectations regarding economic outcomes (it is constant and hence is factored into the long term equilibrium component, $\bar{y}$, of equation (1.1)). But at any point in time variation in economic shocks will deviate from this expectation, or country effect. Hence some of the deviation between the global mean and country outcome will be associated with a time or period effect—unique to that particular time point (but shared by all the countries). A period effect is variation in economic shocks that is shared by all countries and hence in our theory is attributed to σ_{ξ}^2, the nonpolitical, or random, shocks to the macroeconomy. It is a shock to the domestic economy that results from global economic factors that are not attributable to elected political decision makers.

But not all of the variation between the global mean and the country outcome can be accounted for by a country effect (part of the voters' long-term expectations and hence uninformative about the competency signal) or by a time effect (variations in economic shocks associated with random, nonpolitical factors). There will be a residual component—after accounting for the country and period effects—which we associate with σ_{μ}^2 the competency, or political, term in the competency signal. This is unexpected variation in shocks to the macroeconomy that are neither associated with the country's general relative performance compared to the global mean nor with a period shock that is experienced by all countries in the global economy.

Estimates of these three quantities—the country effect, period effect, and residual component—can be obtained from a variance components model in which the dependent variable is the particular economic indicator (CPI, real GDP growth, and the unemployment rate); there are no covariates in the model and the grouping of observations is by country and by time.[20] Specifically, we estimate the following equation:

$$y_{it} = \alpha + \mu_i + \tau_t + \nu_{it} \qquad (1.13)$$

where α is the mean of y_{it}, μ_i is a random effect for country i, τ_t is a random effect for time t, and ν_{it} is the remaining variation that is neither associated with a country effect (some countries are typically more volatile than the overall global economy) or with a time effect (for example, all countries in 1992 might have experienced a shock). In the case of each of our three indicators we estimate a simple random effects model that associates variation in the indicators with each of the four components in equation (1.13).

As we pointed out earlier, the portion of the variance that is time specific is not informative of political competency—this is essentially a period shock effect that is experienced by all countries and hence is not associated with domestic political decision makers (a classic example is the impact of oil prices on inflation rates). It is the residual portion of the variance that is neither associated with a country nor a time effect that is informative of political competency.[21] In the case of CPI, real GDP growth and unemployment there is in fact a relatively large portion of the variance accounted for by the residual term (15%, 27%, and 30%, respectively).

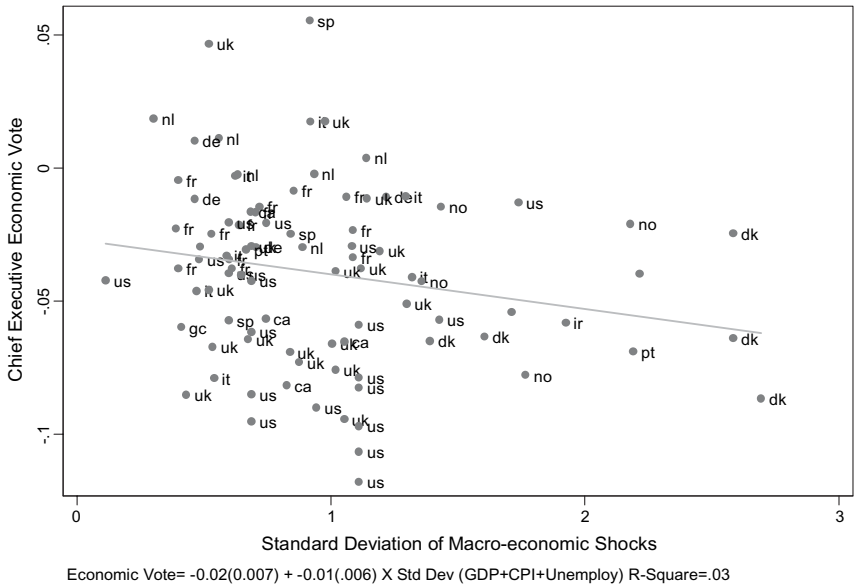
Recall from our theoretical proposition in equation (1.12), that the political competency term is the variation in shocks to the macroeconomy associated with the incumbent government. Hence it is not simply the magnitude of the residual term, ν_{it}, for a particular country i at time t, but rather σ_{ν}^2 for a particular country i evaluated over some time period t. In order to explore the impact of the variations in these economic shocks on the economic vote for each of the three economic indicators we calculate the standard deviation of the residual terms over 12-month time periods for each of the countries in our sample.[22] As a result, a country that has a residual term that is relatively constant over these 12-month periods—regardless of its magnitude—would have a

[20]The model is estimated using Stata 10.0's xtmixed function.

[21]We say informative because we recognize that this residual is a noisy measure of the competency signal. One could, for example, imagine overstating the extent of government competency because it characterizes what we label as domestic shocks as being indicators of governmental influence over the economy. We do not deny that some of the residual shocks will be nongovernmental. We believe that, while noisy, the signal as we have measured it is compelling because it approximates the competency signal term that is found in the formal model.

[22]We obtain these residuals from the model in equation . For each observation of the macroeconomic indicator in the data set (recall that the observations are monthly for CPI and unemployment and quarterly for GDP growth), this model will apportion the observed value amongst four components: a constant term (or grand mean); a country effect; a period effect; and the residual. We then estimate how much this residual effect varies over each 12-month period in our data set.

FIGURE 5 **Economic Vote and Fluctuations in Macro-economic Shocks**



small standard deviation. In contrast, a country that had a residual term that was sometimes high and sometimes low would have a high standard deviation. Our theoretical expectations is that in the first case (a small standard deviation) voters would conclude that the policies of the incumbent have little impact because national outcomes, once controlling for the global mean and for country and period effects, always essentially remain the same. We believe this constitutes one signal regarding the size of the variance in economic shocks attributable to the incumbent government (σ_μ^2) relative to the overall variance in economic shocks to the economy $\left(\sigma_\mu^2 + \sigma_\xi^2\right)$.

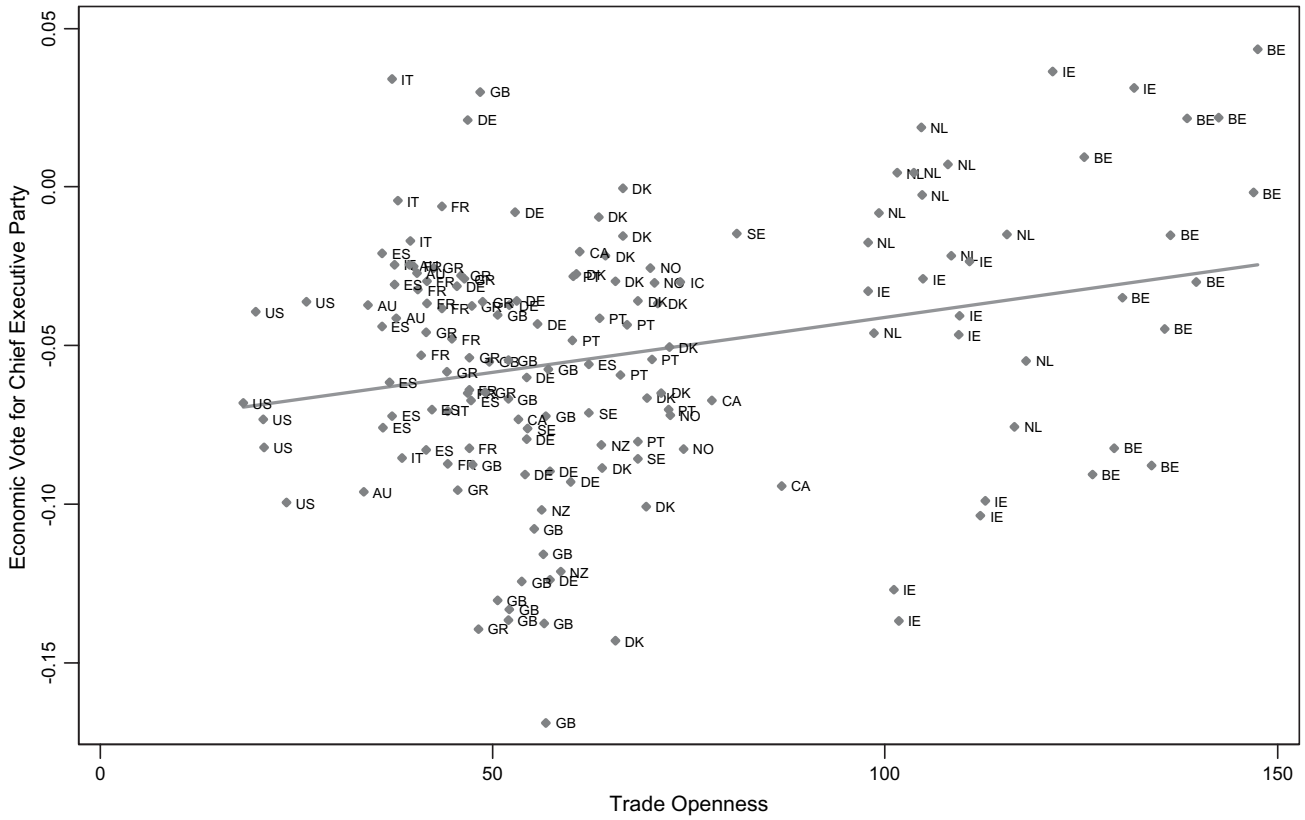
We hypothesize that the magnitudes of these variances—our measure of the magnitude of the incumbent's competence signal—are correlated with the strength of economic voting in our sample of democracies. In order to test this hypothesis we define the dependent variable as the *economic vote of the Chief Executive* measure described earlier that is based on a total of 163 election studies in 19 countries for the period 1979–2005. Our independent variable is the sum of the standard deviations of the three macroeconomic residual terms defined above (for CPI, unemployment, and real GDP Growth). The plot in Figure 5 of *economic vote of the Chief Executive* against our composite measure of variation in macroeconomic shocks supports our hypothesis—note the slope coefficient in the bivariate regression is statistically significant at the 0.05 level with a t-statistic of 1.98. Variation in shocks to the macroeconomy that are neither associated with a country or period effect provide voters with a signal about competency of domestic decision makers and hence result in higher levels of economic voting.

Competency Signals from Variations in Exposure to Global Trade

Our theoretical argument summarized in Row 2 of Figure 1 suggests that exposure of the domestic economy to global trade has a negative impact on the competency signal and reduces the magnitude of the economic vote. To evaluate this argument we employ a measure of Trade Openness from the World Bank which is a ratio of total trade to gross domestic product (GDP; World Bank 2004). Figure 6 presents a plot of the *economic vote of the Chief Executive* against our measure of Trade Openness. First, there clearly is no evidence that the economic vote is higher in open economies as some have claimed (Scheve 2001). In fact, openness of the economy leads to a significantly smaller economic vote (the t-statistic for trade openness is 2.37 (significant at the 0.05 level).[23] This lends support to our argument that the competency signal in open

[23]We have estimated a hierarchical model in which the dependent variable is individual vote for or against the incumbent party and the independent variables are economic evaluations along with a number of controls (left-right identification in particular). In a random coefficients specification the coefficients on economic evaluations are modelled as a function of trade openness. The estimated trade-openness effects on economic evaluations are statistically significant and in the expected direction, as are a number of the control variables in these models. This suggests that while the relationship in Figure 6 appears fragile, in fact the hierarchical model suggests it is quite robust.

FIGURE 6 Trade Openness and Economic Vote



Source: Total Trade as Percent of GDP; World Bank, 2004
Equation: Chief Executive Economic Vote = -.07 (.01) + .0003 (.0001) * Trade Openness. Standard errors are in parentheses. The adjusted R-square is .04. N=151.

economies is weaker than in closed economies which in turn leads to lower levels of economic voting.

In this section we have addressed two macrolevel empirical implication of our competency theory of the economic vote: first, the theory presumes that fluctuations in the macroeconomy provide the average voter with signals regarding incumbent competence and that our measure of the economic vote is correlated with these fluctuations in a fashion consistent with our theory. One operationalization of the competency signal is variation in macroeconomic shocks that is neither associated with unique country factors nor with temporal trends—essentially the variation in the residuals of a variance decomposition model that controls for country and temporal effects. We demonstrate that in fact this variable (variation in the residuals of GDP growth, CPI, and unemployment) is correlated with the magnitude of the economic vote.

Second, our theory suggests that in an open economy the exogenous term in our competency signal is high—more of the variation in shocks to the macroeconomy result from factors unrelated to actions by elected decision makers—and hence economic outcomes should get less weight in the vote utility function. The empirical results support this contention also: economic voting is more subdued in economies with more exposure to global trade.

Conclusion

Economic voting is an important phenomenon in mature democracies. At the same time though the magnitude of the economic vote varies quite dramatically, and there are contexts and periods in which there is no economic voting or a very weak economic vote. We summarize a competency theory of rational economic voting that identifies the circumstances in which we would expect high levels of economic voting and those in which we would expect low levels. If variation in what we are calling the competent, or political, component of economic

performance signals is large relative to variation in the non-political component of these signals, then changes in the economy will provide a strong signal about the competency of the incumbent and the voter will weigh the retrospective economy more heavily in her utility function. Alternatively, perceived economic outcomes that are above or below the natural rate are a poor signal of the incumbent's competence if observed outcomes are more likely to result from nonpolitical shocks than from competency shocks. In this essay we focus on demonstrating empirically how economic contexts provide voters with information that allows them to assess the competency of incumbents for shocks to the macroeconomy (unexpected growth in the economy, for example).

First, we present a body of individual-level data suggesting that individual voters are informed about the economy in a fashion consistent with the competency argument, and they use this information to inform their economic vote as our theory predicts: individual perceptions about the volatility of the macroeconomy are reasonably well informed; voters appear to understand the extent to which their economies are subject to shocks from the international economy; and voters who perceive that the variation in the national economy differs from variation in the global economy seem more inclined to exercise an economic vote.

Secondly, we demonstrate that fluctuations in the domestic and global economies provide the average voter with information necessary to distinguish exogenous from political shocks to the macroeconomy and hence to establish the competence of the incumbent policy maker. Two empirical findings make this case: We show that variations in shocks to the macroeconomy are correlated with the magnitude of the economic vote in a fashion consistent with our theory. And we demonstrate that the economic vote is more subdued in economies with higher exposure to global trade.

The puzzle motivating this essay is the absence of economic voting in some contexts. In our opinion selection theories gives us the most traction for identify circumstances in which voters will minimize the importance of economic evaluations in their vote decision. In this essay we summarize our competency theory of economic voting; demonstrated that individual voters have the information necessary to determine competency; and provided empirical evidence of the predicted relationship between our measures of the competency signal and economic voting. We believe this is a strong endorsement of a competency theory of the economic vote.

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