# Benchmarking across Borders
## Electoral Accountability and the Necessity of Comparison

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# Online Appendix

# 1 Online Appendix

## 1.1 Additional Robustness Checks

In this appendix, we report a number of additional robustness checks not reported in the paper due to space constraints. In the paper, we argued that the US case did not fit well with our theory of benchmarking and we dropped it from our analysis. In Table 1, we report results with U.S. elections included and find substantially similar results.

| Decomposition Method | (1) | (2) *Median* | (3) *PC* | (4) *Trade* |
|---|---|---|---|---|
| **Independent Variables** | | | | |
| Constant | 34.443 | 37.631 | 35.450 | 33.369 |
| | (1.696)*** | (3.962)*** | (1.992)*** | (4.373)*** |
| Growth | 0.660 | | | |
| | (0.267)* | | | |
| Local Growth | | 0.853 | 1.332 | 0.869 |
| | | (0.334)* | (0.347)*** | (0.406)* |
| Global Growth | | 0.210 | -0.024 | 1.023 |
| | | (0.483) | (0.364) | (0.608)+ |
| Unemployment | -0.255 | | | |
| | (0.204) | | | |
| Local Unemployment | | -0.214 | -0.352 | -0.002 |
| | | (0.208) | (0.228) | (0.212) |
| Global Unemployment | -0.593 | -0.131 | -0.351 | |
| | (0.522) | (0.263) | | (0.541) |
| **p-Value from Wald Test** | | | | |
| Local Growth = Global Growth | | 0.285 | 0.003** | 0.824 |
| Local Unem. = Global Unem. | | 0.470 | 0.385 | 0.520 |
| Number of Elections | 222 | 222 | 222 | 151 |
| Number of Countries | 23 | 23 | 23 | 23 |
| $R^2$ | 0.032 | 0.037 | 0.066 | 0.040 |

Table 1: Aggregate Level Results for Benchmarking in the Economic Vote with U.S. Included. *Heteroskedasticity robust standard errors in parentheses. One star indicates statistical significance at the 5% level, two stars indicates statistical significance at the 1% level, three stars indicates statistical significance at the 0.1% level, and a plus sign indicates statistical significance at the 10% level. All results are restricted to OECD countries.*

In Tables 2 and 3, we explore the effect of growth and unemployment separately. In column (1) of each table, we see that growth remains statistically significant when unemployment is omitted from the specification and that unemployment is statistically significant when growth is omitted from the specification. Since unemployment is significant on its own, but loses significance once growth is included in the model, it could be that growth has an effect on incumbent voting and unemployment is an intervening variable, or it could be that unemployment only

has an indirect effect on incumbent voting that operates through growth (the causal chain between growth and unemployment cannot be ascertained based on these regressions). For the benchmarked results given in columns (2)-(4) of Table 2, we see that evidence of benchmarking in economic growth using the Median, Principle Components and Trade decompositions. In columns (2)-(4) of Table 3, we do not see any evidence of benchmarking in unemployment, and inconsistent evidence of economic voting on unemployment.

| Decomposition Method | (1) | (2) *Median* | (3) *PC* | (4) *Trade* |
|---|---|---|---|---|
| **Independent Variables** | | | | |
| Constant | 32.828 | 34.036 | 34.428 | 31.308 |
| | (0.877)*** | (1.187)*** | (1.059)*** | (1.445)*** |
| Growth | 0.431 | | | |
| | (0.211)* | | | |
| Local Growth | | 0.660 | 0.878 | 0.662 |
| | | (0.270)* | (0.278)** | (0.324)* |
| Global Growth | | -0.039 | -0.193 | 0.815 |
| | | (0.410) | (0.329) | (0.481)+ |
| | 267 | 267 | 267 | 194 |
| | 0.011 | 0.017 | 0.032 | 0.024 |

Table 2: Aggregate Level Results for Benchmarking in Growth. *Heteroskedasticity robust standard errors in parentheses. One star indicates statistical significance at the 5% level, two stars indicates statistical significance at the 1% level, three stars indicates statistical significance at the 0.1% level, and a plus sign indicates statistical significance at the 10% level. All results are restricted to OECD countries.*

In Table 4, we explore interactions between growth and unemployment. We report results for growth and unemployment, as well as benchmarked growth and benchmarked unemployment. We find no evidence of an interaction effect and, in fact, we find no evidence for a significant effect of unemployment on the incumbent party's vote share. The interaction terms between growth and unemployment were not significant perhaps for one of the two reasons indicated earlier—either unemployment is an intervening variable, or unemployment effects incumbent voting only through its' effect on growth.

In Table 5, we explore asymmetric benchmarking. Specifically, we consider the possibility that incumbent parties are punished for under-preforming the benchmark at a different rate than they are rewarded for over-preforming the benchmark. Some evidence of asymmetric effects from non-benchmarked economic measures exists in the literature (Bloom and Price, 1975; Nannestad and Paldam, 1997; Soroka, 2006). We did not find any evidence for asymmetric benchmarking,

|                          | (1)          | (2) *Median*  | (3) *PC*     | (4) *Trade*  |
|--------------------------|--------------|---------------|--------------|--------------|
| **Decomposition Method** |              |               |              |              |
| **Independent Variables**|              |               |              |              |
| Constant                 | 38.190       | 42.084        | 37.750       | 35.188       |
|                          | (1.331)***   | (2.483)***    | (1.692)***   | (3.658)***   |
| Unemployment             | -0.506       |               |              |              |
|                          | (0.195)**    |               |              |              |
| Local Unemployment       |              | -0.305        | -0.554       | -0.058       |
|                          |              | (0.204)       | (0.211)**    | (0.213)      |
| Global Unemployment      |              | -1.194        | -0.429       | -0.290       |
|                          |              | (0.405)**     | (0.258)+     | (0.508)      |
|                          | 243          | 243           | 243          | 151          |
|                          | 0.036        | 0.049         | 0.037        | 0.003        |

Table 3: Aggregate Level Results for Benchmarking in Unemployment. *Heteroskedasticity robust standard errors in parentheses. One star indicates statistical significance at the 5% level, two stars indicates statistical significance at the 1% level, three stars indicates statistical significance at the 0.1% level, and a plus sign indicates statistical significance at the 10% level. All results are restricted to OECD countries.*

however, either when growth was considered alone or when both growth and unemployment were considered.

## 1.2 Voting by Information Level

To the extent that the results we have presented provide convincing evidence that voters benchmark on cross-national economic growth, we can describe two possible mechanisms. Either voters (a) are made aware of both local economic conditions as well as international economic conditions separately and form benchmarked growth by comparing the two, or (b) they receive "pre-benchmarked" information on economic conditions, from the media or other sources such as rival politicians. We have presented some media evidence in favor of (b) in the paper. Here, we present some evidence against (a). If voters benchmark by collecting the relevant information themselves, voters must acquire both a sense of current economic conditions and a sense of global economic conditions to benchmark their vote, and the informational requirements are thus rather high. If this is the case, we would expect benchmarking behavior to be prevalent only among high information voters. If (b) is the case, however, the information provided by the media would already be benchmarked and the informational requirements for benchmarking would be minimal. Hence, we would expect benchmarking to be prevalent among all voters, regardless of their information level. Here, we attempt to differentiate between these two mechanisms by

| | **(1)** | **(2)** | **(3)** | **(4)** |
| --- | --- | --- | --- | --- |
| **Decomposition Method** | | *Median* | *PC* | *Trade* |
| **Independent Variables** | | | | |
| Constant | 34.725 | 34.211 | 34.150 | 33.278 |
| | (2.386)*** | (0.726)*** | (0.711)*** | (0.890)*** |
| Growth | 0.398 | | | |
| | (0.587) | | | |
| Local Growth | | 0.788 | 1.306 | 0.638 |
| | | (0.340)* | (0.337)*** | (0.410) |
| Unemployment | -0.345 | | | |
| | (0.335) | | | |
| Local Unemployment | | -0.262 | -0.276 | 0.025 |
| | | (0.217) | (0.202) | (0.227) |
| Growth * Unem. | 0.033 | | | |
| | (0.083) | | | |
| Growth * Local Unem. | | 0.100 | -0.041 | 0.033 |
| | | (0.118) | (0.121) | (0.107) |
| Number of Elections | 213 | 213 | 213 | 146 |
| Number of Countries | 22 | 22 | 22 | 22 |
| $R^2$ | 0.030 | 0.029 | 0.060 | 0.015 |

Table 4: Aggregate Level Results for Benchmarking in the Economic Vote with Growth-Unemployment Interactions. *Heteroskedasticity robust standard errors in parentheses. One star indicates statistical significance at the 5% level, two stars indicates statistical significance at the 1% level, three stars indicates statistical significance at the 0.1% level, and a plus sign indicates statistical significance at the 10% level. All results are restricted to OECD countries.*

adding information interactions to the specifications considered in Table 5 in the paper.

Information was more difficult to compare reliably across countries than the other measures in our individual level study. We constructed an information item based on three factual questions posed to the respondents.[1] The factual questions were not common across countries, nor could they be. We created an information index by summing the number of correct responses. We treated instances in which the questions were posed to respondents, but the respondents did not answer as "incorrect" responses. The raw index was not comparable across election studies because the different questions asked differed in both their difficulty and discrimination (Elff, 2009). To adjust the index to account for this, we subtracted the election study mean from the respondent's raw index, and divided by the election study standard deviation. Once this transformation was made, the information measure became a Z-score for the relative information level of a respondent in a given election study.

Following Hellwig (2010), we constructed a second measure of political information based on the accuracy of the respondents placements of the parties. The information level for each

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[1]The respondent would be asked to report the prime minister's party, the term length of a legislator, etc.

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|  | **(1)** | **(2)** |
|---|---|---|
| **Decomposition Method** | *PC* | *PC* |
| | | |
| **Independent Variables** | | |
| Constant | 33.962 | 35.096 |
| | (1.026)*** | (1.549)*** |
| Local Growth, Above Benchmark | 0.862 | 1.526 |
| | (0.471)+ | (0.698)* |
| Local Growth, Below Benchmark | 0.958 | 1.140 |
| | (0.626) | (0.713) |
| Local Unem., Above Benchmark | | -0.577 |
| | | (0.321)+ |
| Local Unem., Below Benchmark | | 0.340 |
| | | (0.506) |
| | | |
| Number of Elections | 267 | 213 |
| Number of Countries | 22 | 22 |
| $R^2$ | 0.031 | 0.067 |

Table 5: Asymmetric Benchmarking in the Economic Vote. *Heteroskedasticity robust standard errors in parentheses. One star indicates statistical significance at the 5% level, two stars indicates statistical significance at the 1% level, three stars indicates statistical significance at the 0.1% level, and a plus sign indicates statistical significance at the 10% level. All results are restricted to OECD countries.*

respondent is the negative of the absolute value of the placement error, averaged across parties, measured relative to the expert placements. We once again adjusted the information measure– we subtracted the election study mean from the respondent's raw score and divided by the election study standard deviation. We do not claim that this is a perfect way to introduce comparability (in particular, by construction, the average information level is not allowed to vary across countries), but instead claim that it is the best approach we can take when pooling survey data across multiple elections because any information items we choose will inherently differ in their "difficulty" and "discrimination".[2]

We report the results for benchmarking by information level in Table 6. We first consider the results based on the factual item information measure. In column (1), we report results where the economic variables are not decomposed. Note that information has a mean of zero by construction, so the effects of the leader party and economic interactions can be interpreted as effects when the information level is held at zero. We find that growth has a positive and statistically significant coefficient, while the coefficient on unemployment is not statistically significant. Policy distance once again has a negative effect. The interaction between policy distance and information is negative and statistically significant, indicating that high information

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[2]We later report some evidence on the validity of these measures.

voters place a higher weight on policy distance in their voting decisions. This is consistent with expectations, because high information voters are more likely to be aware of the parties positions and are more likely to be ideological. Interestingly, we find that the interaction terms between growth and information and unemployment and information are not statistically significant and are small in magnitude.[3] The point estimates suggest that high information voters place slightly less weight on economic growth. High and low information voters potentially differ in the level of information they have about economic growth and how much economic growth effects their well being. We might expect these effects to work in different directions — high information voters may have more ability to vote based on growth and unemployment, but may suffer less during poor economic times than low information voters (who are likely to be lower income, lower education, younger, etc.). One could potentially attempt to differentiate information from interest by including additional interactions terms, but we leave this to future work.

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[3]The use of clustered standard errors here can be considered conservative, from the perspective of rejecting the null hypothesis of no information effects, because clustering by election study allows for any possible correlation pattern between respondents to the same election study, while we envision a more restrictive patterns, where individual responses are uncorrelated after accounting for the election study random effect. We therefore replicated the results using non-clustered standard errors. The interactions between the economic variables and information were not statistically significant in this case either.

| **Decomposition Method** | (1) | (2) Median | (3) PC | (4) Trade | (5) | (6) Median | (7) PC | (8) Trade |
|---|---|---|---|---|---|---|---|---|
| **Information Measure** | | *Factual Items* | *Factual Items* | | | *Party Placements* | *Party Placements* | |
| **Party Utility Parameters** | | | | | | | | |
| Outside Option | -1.872 | -1.875 | -1.870 | -1.834 | -1.896 | -1.898 | -1.896 | -1.870 |
| | (0.203)*** | (0.203)*** | (0.204)*** | (0.209)*** | (0.200)*** | (0.199)*** | (0.201)*** | (0.205)*** |
| Outside Option * Info. | -0.118 | -0.115 | -0.118 | -0.139 | -0.262 | -0.260 | -0.263 | -0.267 |
| | (0.051)* | (0.050)* | (0.050)* | (0.049)** | (0.056)*** | (0.056)*** | (0.056)*** | (0.058)*** |
| Leader Party | 0.346 | 1.559 | 0.339 | 0.787 | 0.712 | 0.557 | 0.739 | 1.453 |
| | (0.203)+ | (1.671) | (0.231) | (0.511) | (0.213)*** | (1.763) | (0.233)** | (0.371)*** |
| Leader Party * Info. | 0.035 | -1.075 | 0.035 | 0.267 | -0.063 | -0.368 | -0.057 | 0.046 |
| | (0.076) | (0.555)+ | (0.077) | (0.153)+ | (0.086) | (0.714) | (0.088) | (0.162) |
| Policy Distance | -0.478 | -0.480 | -0.478 | -0.481 | -0.488 | -0.488 | -0.488 | -0.493 |
| | (0.028)*** | (0.027)*** | (0.028)*** | (0.029)*** | (0.025)*** | (0.024)*** | (0.025)*** | (0.025)*** |
| Policy Distance * Info. | -0.058 | -0.057 | -0.058 | -0.059 | -0.190 | -0.190 | -0.190 | -0.189 |
| | (0.008)*** | (0.007)*** | (0.008)*** | (0.008)*** | (0.013)*** | (0.013)*** | (0.013)*** | (0.013)*** |
| Growth * Leader Party | 0.162 | | | | 0.096 | | | |
| | (0.036)*** | | | | (0.043)* | | | |
| Growth * Leader Party * Info. | -0.012 | | | | -0.004 | | | |
| | (0.014) | | | | (0.013) | | | |
| Local Growth * Leader Party | | 0.156 | 0.190 | 0.174 | | 0.115 | 0.114 | 0.118 |
| | | (0.039)*** | (0.044)*** | (0.053)*** | | (0.041)** | (0.051)* | (0.048)* |
| Local Growth * Leader Party * Info. | | -0.008 | -0.008 | -0.025 | | -0.015 | 0.000 | -0.032 |
| | | (0.011) | (0.019) | (0.017) | | (0.010) | (0.017) | (0.016)* |
| Global Growth * Leader Party | | 0.131 | 0.133 | 0.089 | | -0.014 | 0.064 | 0.000 |
| | | (0.107) | (0.061)* | (0.063) | | (0.105) | (0.058) | (0.052) |
| Global Growth * Leader Party * Info. | | 0.037 | -0.019 | -0.031 | | 0.050 | -0.013 | 0.004 |
| | | (0.035) | (0.020) | (0.027) | | (0.037) | (0.023) | (0.023) |
| Unem. * Leader Party | 0.007 | | | | -0.005 | | | |
| | (0.027) | | | | (0.026) | | | |
| Unem. * Leader Party * Info. | -0.004 | | | | 0.000 | | | |
| | (0.009) | | | | (0.009) | | | |
| Local Unem. * Leader Party | | 0.012 | 0.016 | 0.019 | | -0.001 | -0.001 | 0.013 |
| | | (0.025) | (0.026) | (0.024) | | (0.025) | (0.027) | (0.024) |
| Local Unem. * Leader Party * Info. | | -0.008 | -0.002 | 0.000 | | -0.002 | 0.002 | -0.001 |
| | | (0.006) | (0.009) | (0.009) | | (0.011) | (0.009) | (0.011) |
| Global Unem. * Leader Party | | -0.151 | 0.015 | -0.027 | | 0.072 | 0.003 | -0.073 |
| | | (0.259) | (0.027) | (0.060) | | (0.279) | (0.026) | (0.049) |
| Global Unem. * Leader Party * Info. | | 0.131 | -0.001 | -0.030 | | 0.016 | 0.002 | -0.022 |
| | | (0.081) | (0.011) | (0.016)+ | | (0.117) | (0.010) | (0.019) |
| Number of Voters | 33511 | 33511 | 33511 | 31499 | 38557 | 38557 | 38557 | 36545 |
| Number of Elections | 26 | 26 | 26 | 25 | 30 | 30 | 30 | 29 |
| Number of Countries | 15 | 15 | 15 | 15 | 17 | 17 | 17 | 17 |

Table 6: Benchmarking in the Economic Vote and Information Level. *Standard errors clustered by elections study in parentheses. One star indicates statistical significance at the 5% level, two stars indicates statistical significance at the 1% level, three stars indicates statistical significance at the 0.1% level, and a plus sign indicates statistical significance at the 10% level. All results are restricted to OECD countries.*

In columns (2), (3), and (4), we report the results for the benchmarked economic variables. As before, policy distance has a negative and statistically significant effect and high information voters are more sensitive to policy distance. Local growth is positive and statistically significant for all three specifications. Critically, we find that none of the interactions between information and the economic variables are statistically significant. These results suggest there is little difference in the economic voting behavior of low information and high information voters, which in turn suggests that the information voters use to benchmark comes packaged together rather than assembled by the voters. In columns (5) through (8), we report results for the second information measure. As can be seen, the results are similar– voters do not differ in the extent to which they benchmark their economic voting.

It is worth considering alternative explanations for our finding of no interactions between the information variables and economic conditions. As we have already explained, the information measures we have are not perfect. The first measure is based on only three items, which may not be enough to capture information levels accurately. Both measures represent relative information levels within each election, whereas absolute information levels are suggested by the theory. One could suppose that our finding of small and statistically insignificant interactions is simply due to having poor measures of information. There are two reasons why we believe that this is unlikely to be the case. First, we can provide some validity for our measures. Using the first measure, we were able to compare respondents placements of political parties with expert placements by the election study PIs. We found that high information voters provided placements that were closer on average to the expert placements. In addition, the highly statistically significant interaction between policy distance and information again suggests the validity of our measures. If political information were subject to a very high degree of measurement error, we would not be able to detect an interaction effect for policy distance either.

In summary, the evidence suggest that low information and high information voters do not differ in the extent to which they benchmark their economic voting. This indirect evidence of a media mechanism in cross-national benchmarking is more suggestive than definitive. Nevertheless, the absence of an information interaction with benchmarked growth provides indirect evidence of the most plausible alternative mechanism: that the media and other information sources provide information to voters in an international context. This does not necessarily

mean that media reports explicitly compare growth across countries when reporting economic news; it could simply be the case that the media describe the economy as strong or weak when it outstrips or underperforms that of some comparison countries.

## 2    The Green Island

We are aware that concrete examples often help non-specialists, so we have also added a footnote with an example of how a politician (successfully) employed the power of comparison in setting media expectations. Donald Tusk, the incumbent prime minister of Poland, appeared in front of a giant map of Europe in multiple news conferences in 2009 that colored in all countries with negative growth in red and the only country with positive growth – Poland – in bright green. Donald Tusk is also the only Polish prime minister since the fall of communism to be reelected.



Figure 1: Polish premier Donald Tusk discussing his "green island."

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