# Compare to What? Relative Economy and a Vote Choice

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**Abstract**

While voters tend to select competent incumbents by extracting the competence signal from the observed economy, it is cognitively demanding because the observed economy contains noisy exogenous shocks that are irrelevant to incumbent competence. One way voters overcome the cognitive complexities is to make comparisons with other countries. However, the choice of spatial reference points is underspecified, especially in cross-national and time-series studies. I argue that the selection process should be guided by theory suggesting that voters benchmark countries that are *similar, familiar, and connected*, and that media assist guiding voters to appropriate reference points. Using domestic media from 33 democracies in *Lexis-Nexis* with 22 languages, I construct the unique reference points. Based on original dataset, this research finds that voters strongly react to relative economy more than the national economy. Institutional context such as *clarity of responsibility* does not affect the role of relative economy in a vote choice.

How do voters evaluate the state of the economy when making a choice at the polls? Conventional economic voting literature suggests a simple answer: A good economy helps incumbents in a given election but a bad economy hurts them. How then do voters differentiate a 'good' economy from a 'bad' economy? Are all positive numbers in growth rates (i.e. 0.1%, 2%, 5% etc. ) understood as 'good' while negative ones are 'bad'?

Since the data do not speak for itself, it is imperative that we clarify "how citizens map these absolute numbers onto a subjective scale of good and poor performance from which they make informed decisions" (Olen 2017: 2). To answer this question, scholars of social comparison theory suggest that people are more likely to base their assessments on the comparison between their own absolute performance and reference points (Hansen et al. 2015).

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In the conventional economic voting literature, voters tend to define a good or poor economy by comparing the current state of economy to the economy of years gone by, which is known as retrospective economic voting. Indeed, for the past three decades, scholars in economic voting have predominantly used this temporal reference point for economic performance comparisons. However, recent scholarship has begun to question the dominant use of temporal reference points in comparing performance data. Instead, scholars investigate 'across-borders' yardsticks as an alternative source of comparisons (Kayser and Peress 2012; Hansen et al. 2015; Jerome et al. 2001; Olsen 2017). Theoretically, the idea is rooted in social comparison theory (Festinger 1954), suggesting that individuals tend to evaluate their own economic conditions by comparing them with the economy of a similar nation.

Then, how important are relative performance evaluations? How do we find the appropriate reference points for comparisons? Do voters use one type of reference point more than the other? These are the guiding questions that form the basic structure of this research.

Given that comparison tends to be guided by reference points, finding appropriate reference points, especially spatial ones, is crucial to ensuring empirical accuracy. However, identifying a proper spatial yardstick is a daunting task for a large $N$ analysis. Indeed, in part due to this difficulty, scholars have applied a common reference point such as the median or average economic indicator as international yardsticks (Powell and Whitten 1993; Kayser and Peress 2012). However, as Kayser and Peress (2012) indicate, the application of the universal reference point requires a strong assumption that all countries tend to be equally affected by common reference points.

In an effort to uncover unique reference points for each country and election, I suggest a systematic way of finding the spatial reference points by looking at domestic media coverage. Not only does the media *prime* public opinion but it also *reflects* their interests. Thus, media coverage will provide useful information in identifying possibly the most relevant spatial reference points, particularly for cross-national time-series analysis.

With the help of appropriate reference points, this research contributes to the economic voting literature. More specifically, sanctioning models of economic voting require that voters acquire retrospective information about the health of the macro-economy and posit that they punish or reward governments. However, comparative economic voting studies have found great instability in this model across countries and over time. Regarding one source of this instability, Duch and Stevenson (2008) pointed out Hibbs' (2006) demonstration on potential errors in the conception of economic evaluations. According to Hibbs (2006), higher levels of error in the measure of economic evaluations tends to cause a downward bias on its coefficient in a vote function. If the economic variables contain considerable limitations in inducing accurate economic evaluations, it will cause a low correlation between economic evaluations and vote choice (Duch and Stevenson 2008). The use of proper macro-economic variables, which are the correctly spatially benchmarked economy, and thus capture voters' assessments of economic performance, will reduce the noise in the error term.

## Relative Economy and a Vote Choice

Duch and Stevenson (2010) argue that voters tend to cast ballots based on their confidence in an incumbent's ability to handle the economy. Regarding the ability of voters to select the most competent candidates, Duch and Stevenson (2008) highlight the 'competence signal' that captures the extent to which shocks to the economy are a result of the competence of governments. More specifically, they explain that an economic shock consists of two parts:

$$\text{Random shock to the Economy} = \epsilon_{it} + \lambda_t$$

Duch and Stevenson (2008: 133) refer to the first component, $\epsilon_{it}$, as 'competency shock' and note that it is meant to capture the economic impact of the incumbent administration's managerial competence. By evaluating these shocks, voters should know to select the most competent candidate. The other component, $\lambda_t$, represents 'exogenous shock', which has nothing to do with incumbent managerial skill. Because voters want to hold in-

cumbents accountable for policy outcomes (based on the incumbent's competence), they must base their decisions on 'competence shocks' rather than 'exogenous shocks.' To do this, voters should be able to extract the 'competence signal' by parsing out how much of the random shock is a result of incumbent competence. Signal-extraction, however, is a daunting task because they cannot observe the two shock terms separately. In addition, although voters are faced with a substantial amount of economic performance indicators (such as the GDP, GNP, unemployment, inflation rate, etc.), it is cognitively demanding to compile that information.

To this regard, I argue that one important way for voters to extract competence signals and overcome cognitive difficulties is to look across borders for a benchmark for comparison (Hansen et al. 2015; Kayser and Peress 2012). The relative economy can play a useful role in helping voters extract the competence signal from the observed economy. Suppose that voters in country A observe a sharp decline in economic growth rate. Without a cross-national comparison, voters in country A cannot tell to what extent the poor performance is a sign of managerial incompetence. It is possible that the poor economy is a reaction to global economic shocks or that their incumbent's economic policy was not able to be implemented properly due to other political constraints, such as being a minority government (Powell and Whitten 1993). When voters compare a decline in growth rate with other countries (e.g., neighboring countries), they can assess the way elected officials handle the economy regardless of political and international constraints. If the decline aligns with global GDP or the economies of neighboring countries, voters will not emphasize competence shocks. If, however, they see their own economy deviating from the global standard, they are more likely to question incumbent economic competency. In other words, the relative economy functions as a heuristic shortcut in voters' minds to help distinguish competence signal from random exogenous shock.

Using small *N* cases, scholars have examined benchmarking with a specific reference point per case. For instance, studying benchmarking in the Danish context, Hansen et al. (2015) show that Danish voters do care strongly about how the Danish economy evolves relative to Sweden. Similarly, Jerome et al. (2001) also test how relative economic

performance affects citizen vote choice. They show that when French economic growth outperforms German growth, the ruling coalitions in the French National Assembly obtain more votes (i.e. each percentage point increase in GDP will increase a vote share by about 4% points). On the other hand, incumbents gain more votes in Bundestag elections when German growth rates are greater than those of the French. In forecasting the German Bundestag election in 2013, Kayser and Leininger (2015) use the relative economic performance of Germany in comparison to the three other most important economies in Europe such as France, the UK and Italy. Specifically, they use the deviation of German growth rates from the reference points- the average of British, French and Italian growth.

In their cross-national analysis, Powell and Whitten (1993) test the idea of comparative economic voting using international average levels of economic indicators (growth, inflation and unemployment). From 19 western democracies between 1969 and 1988, they find that relative economic growth is statistically significant. If a countries' GDP growth is higher than the international average, incumbents tend to receive more votes. More recently, Kayser and Peress (2012) have shown—using aggregate as well as individual level data—evidence of voters benchmarking national economic conditions against the state of the economy abroad. Making use of objective economic indicators and decomposing the economic variation into a relative and an international component, they show that only the relative component explains the vote significantly, suggesting benchmarking.

## Compare to what? Spatial Reference Points and the Media

Selecting the proper reference points for benchmarking is vital to understanding how voters make use of performance data. Having appropriate reference points is also crucial for conducting accurate empirical tests because using inappropriate reference points will result in model misspecification, which induces omitted variable bias.

Fundamental questions about the reference points, however, remain unanswered. Temporal reference points are not difficult to construct because it is a matter of selecting a particular time point in the past to compare the current performance with. Although scholars

argue that different lags of the economy variables (3-month, 6-month, 12-month) should be considered because voters respond to the changes in the economy at a different speed (Conover et al. 1986), it is still the matter of selecting an appropriate cut-off point within the country.

Choosing the spatial reference point, however, is not as simple because it is not always clear where voters look when they make a comparison. The asymmetric coefficient size in Jerome et al. 's (2001) finding is a good example that shows how the selection of a reference point yields different results. In their sample, Germany and France, each chosen for their mutual reference points based on the assumption that the two are rival countries in the region and they would work best as reference points for each other. The results show that the French are more concerned with German growth rate than vice versa. This implies that perhaps Germany works well as the reference point for French voters as they tend to compare their economy with German performance when making their vote choice. The French economy, however, might be a good, but might not be the best benchmark for the German voters. Instead, citizens in Germany tend to look at other countries such as the US or the UK for the comparative assessment on their incumbents' economic performance.

The problem of finding an appropriate reference point becomes more salient in a cross-sectional time-series analysis because it becomes more complicated to assign a particular reference point for each country and election in a large sample. Perhaps, in part due to this limitation, scholars have applied the average or median value of international economic growth as the reference point for all countries in the sample (Powell and Whitten 1993; Kayser and Peress 2012). However, applying the universal reference point is problematic. As Kayser and Peress (2012) acknowledge, the use of the median or average as international benchmark is based on two strong assumptions.

First, the measure assumes that there is a single and common global component that drives the correlation in economic performance across countries. Second, the measure assumes that all countries are equally affected by this global component (Kayser and Peress 2012: 665). As this assumption disregards numerous factors such as size of the economy,

level of economic integration to the world market, geographical distance, political and economic similarity, cultural and historical relationships, etc., application of a common reference point does not seem to reflect dynamics of reference points in the real world.

As an alternative way, Kayser and Peress (2012) have used 'principal components', that they argue, because voters across different countries may place different weights on global components, the composition of global components should not be based on using the median value of economic performance. Yet the way they construct the 'principal components' is to account for a country's integration into the international and regional economies. By doing so, the authors argue that the measure has the advantage of capturing international and regional economic covariation with other economies depending solely on their integration into the world economy. However, rather than capturing the sensitivity of a country toward the global economy, it is doubtful whether 'principal components' can function as the best reference point because it still leaves out important factors such as social, political, historical and cultural elements that may affect the process of constructing reference points.

Acknowledging the complexity of choosing the specific reference points for spatial comparison, Kayser and Peress (2012) leave some important questions open for further scrutiny. For instance, "do countries use more specific sets of comparison countries than those identified in their analysis? Do countries with cultural, linguistic, and historical similarities benchmark against each other more? Might larger countries benchmark less than smaller countries?" (Kayser and Peress 2012: 681).

Given that selecting a spatial reference point is fundamental to testing the benchmarking hypothesis properly, the first goal of this research is to find the appropriate spatial reference points for each country and elections within each country in a time-series cross-national sample by using domestic media coverage. Before I illustrate why the media is useful sources to find appropriate spatial reference points, I briefly discuss some theory-driven criteria for choosing spatial reference points based on Yocke and Kruml (2009).

## Criteria for Spatial Reference Points

Reference points are central in benchmarking or comparison theory. In spite of their ubiquitous use in descriptions and evaluations, the question of what determines the choice of reference points remains relatively unexplored in the relative economic voting literature. Yocke and Kruml (2009) investigate and propose a general theory of reference points by identifying several dimensions thereof: familiarity, connectivity, and similarity. [1]

First, people must be *familiar* with some aspects of a stimulus to use it as a reference point. This does not mean that people need to know everything about the reference point, but at least they need to be aware of specific characteristics about the reference point. In case of relative economic voting, for instance, it is necessary for voters to know about economic conditions of other countries, if they tend to benchmark those countries. Thus the more *familiar* people are with a stimulus, the more likely they are to use is as a reference point.

The second dimension, *connectivity*, suggests that the reference point must share a common attribute with the stimulus. According to Yocke and Kruml (2009), people are likely to categorize an object into multiple domains based on various attributions. For instance, people tend to categorize an apple by its size, shape, color, or food category. In this sense, a shared feature (connectivity) facilitates the categorization process. In relative economic voting, voters tend to select a reference point from the same category tree. A country in the European Union block is likely to be compared with other countries in the EU and so on.

In a similar vein, the third dimension of reference points focuses on *similarity*, which makes comparison more meaningful and appropriate. Similar to the categorical connection, further similarities increase the perceived appropriateness of the reference point

[1] Yocke and Kruml (2009) actually propose five dimensions including either internal or external *Locus* and *Temporal* dimensions. *Locus* refers to the originating source of the reference point. This dimension is more relevant at organizational or individual level. The *Temporal* dimensions refers to whether the reference point is based on past, present, or future criteria. A large volume of studies in economic voting has reveal that voters tend to compare current economic conditions against that of the past, so called 'retrospective economic voting'. As stated above, the first goal of this research is to identify the appropriate spatial reference points at a country-level, the *Locus* and *Temporal* dimensions are not include in this analysis.

(Yocke and Kruml 2009). For instance, even if countries are in the same EU block, Latvia will look to Estonia and Lithuania for relative comparisons more than Germany and France due to the similar size of the economy, the similar political/historical context, and a geographical vicinity. Put differently, the greater *similarity* it is, the more likely that it will serve as a reference points (Yocke and Kruml 2009). In fact, Fortunato et al. (2018) argue that voters are more sensitive to economic performance of a states which have similar structures of economic production. For instance, voters in agriculture-heavy states tend to look at the economy of other agriculture-heavy states for comparisons while voters in finance-heavy states tend to use other finance-heavy states' economic conditions as yardsticks.

Following Yocke and Kruml's (2009) sources of reference points, I argue that citizens tend to care more about countries that are familiar, connected, and similar to their own. I also argue that familiarity, connectivity, and similarity may be deeply rooted in political, cultural, geographical, and historical backgrounds. How then do we know which countries are more familiar, connected, and similar to a particular country? Unless there is a survey asking individuals directly about which country or countries they care more about, it is hard to know what countries the average citizens in a country are likely to pay attention to.

## Media and Spatial Reference

Answering the above question, I argue that media coverage can assist in finding where citizens are looking. There is ample evidence showing that the media plays an integral role in affecting economic evaluations (Hetherington 1996; De Boef and Kellstedt 2004; Duch and Stevenson 2007, 2008; Erikson et al. 2002; Nadeau et al. 1999). Hetherington (1996) suggests two main channels of media, *priming* and *framing*, in forming voters' evaluations.

First, the media can prime the public to evaluate incumbents on the basis of what the media emphasizes. Given that electorates are known to be fairly low in political sophis-

tication (Converse 2000), they must rely on what is readily accessible in memory (Hetherington 1996). Because the media is a primary source of information, it can influence opinion formation. Second, if the media presents a series of news on broader societal concerns in a thematic framework, this may cause media consumers to assign blame to elected officials or institutions. For instance, thematic framing of the poor economy may lead media viewers to attribute its condition to incumbents.

Scholars have also found the media as a useful source of benchmarking activity. For instance, Kayser and Peress (2012) show that media actually provided with pre-benchmarked information such that the tone of economic news in *The Times* becomes positive when the UK economy is outperforming other countries. In their follow up research, Kayser and Peress (2015), using a dataset of 32 newspapers from 16 countries in six languages, show that the effect of economic growth on the vote is heavily mediated by media reporting. Similarly, Fortunato et al. (2018) also use media coverage to construct a weights matrix ($W$) for a spatial analysis. They incorporate news media as a means of providing economic information in a comparative context, and calculate portions of economic news articles about other states. The greater the portion of a particular state, the bigger the role of that state as a reference point.

Following this line of research, I believe that media disseminates information that helps citizens evaluate overall variance in shocks to the economy. Said differently, the media increases public awareness on other countries' economy. The way the media assigns a portion of its coverage to a particular country depends on to what extent the countries have familiarity, connectivity, and similarity. Thus, there is a high probability that a country or countries that share a great deal of historical, political, cultural, and economic/trade relationships will be reported frequently by domestic news agencies. In contrast, a country or countries that lack common ground with a particular country would receive less media attention. Therefore, the proportion/frequency of media coverage in country A on a particular country or countries tells us to what extent that country is familiar, connected, and similar to country A.

Second, given that media coverage is also a reflection of public opinion, I expect that there is large overlap between what the media sees and where the public sees. If Germany is the country that appears most frequently in French media, this implies that the French citizens tend to care about what is going on in Germany. In this case, it is reasonable to assume that French voters would compare their state of economy with German economic conditions. Put differently, Germany is the appropriate spatial reference point for French voters. In contrast, if French media do no cover much about Germany but more about other countries like the UK, the US or the EU, this means that the French would find themselves more familiar, connected, similar or rival to the US, the UK or the EU. Again, this implies that the French voters would tend to use the UK, the US, or the EU as the means of yardstick when they evaluate the domestic economic conditions. In sum, the media coverage is useful because not only it is the reflection of public attention, but also it creates public awareness by disseminating information about a country or countries.

## Data Collection

To identify appropriate spatial reference points across countries and across elections, I count the frequency of news reports of other countries by using content analysis of economic news items obtained from Lexis-Nexis. The Lexis-Nexis, to the best of my knowledge, contains the most comprehensive news reports (more than 15,000 news, business and legal sources) from more than 120 countries in about fifty languages since the 1970s.

First, I find all available domestic news media sources per country in the sample. There are great variations in the number of available news media sources across countries in Lexis-Nexis. In case of France, there are over 50 news media sources in French and English, whereas there are only four news media sources for Malta. In most cases, there is at least one media source per country available in its own language, except the Baltic countries (Latvia, Estonia, and Lithuania)[2]. On average, there are about 15 news media sources per country[3].

[2]For these three countries, I only obtained domestic news articles, but written in English.
[3]The list of new media source per country is available in Table 7 in online appendix.

Based on these selected news media sources, I use a country's name as a keyword to search any new items reporting about that country. For instance, once I select news media sources from Italy, I want to see how often these Italian news media speak about Greece, Spain, Germany, France, the UK, the US, Netherlands, Belgium, Switzerland, Austria, and so on[4]. Selecting the group of countries is based on the theory-driven criteria: similarity, connectivity, and familiarity, so I attempt to include countries that share borders, have similar size and composition of the economy, share historical and political background and so on. I also include the EU as a potential candidate for a spatial reference point. Although the EU may not be compatible with other countries because it is not a single country, it is reasonable to believe that regional economic community such as the EU would be frequently benchmarked by Media. Turning to the Italian example, if the Italian news media provide comprehensive coverage about the EU's economy, Italian voters are likely to place their own economy against the EU's as a means of comparison. Given that the basic idea of identifying the most appropriate spatial reference points is to 'let the media choose', omitting the EU from the candidate list will violate this fundamental idea, and eventually will force voters to use inappropriate yardstick for comparative assessment.

Once I select a list of country names as potential candidates for a spatial reference point, I limit the scope of news topics to economy-related news. The media delivers news on numerous topics such as politics, culture, sports, security, the environment and so on. The economy is usually always one of them. If Spain appears in Italian news media frequently, but the topic is almost always about sports, such as soccer, then it is rather questionable to conclude that Italian voters use Spanish economy as a yardstick in comparing their own economic performance. In order to assist voters in conducting a relative economic comparison, the reference points will function best if they are attached to the economy. Put simply, Spanish economic information will help Italian voters evaluate their own economy rather than Spanish sports stories.

[4]I type the name of each country in English and Italian such as Greece (Grecia), Spain (Spagna), Germany (Germania), France (Francia), the United Kingdom/Great Britain (Regnao Unito/ Gran Breganga),the United States/ America (Stati Uniti/ America), Netherlands (Olanda), Belgium (Belgio), Switzerland (Svizzera), Austria (Austria).

For this reason, I take into consideration various economy-related key words such as *economy, economic, growth, inflation, unemployment, job, jobless, income, interest rate, trade, spending, investment, credit, consumer price, money, productivity, business, output, wage, price, finance, consumption, expenditure, debt, industry, goods and services*. I translate these words into a country's official languages[5]. If countries use multiple official languages, such as Netherlanders, I use the economy-related key words in all of its official languages. All in all, the key words for the economy have been searched in 22 languages[6].

The time period of this news search begins one year prior to an election day. This strategy allows spatial reference points vary across elections, so Spain does not have to be the spatial reference point for Italian voters regardless of different time zones. Spain could be a salient/important country to Italy in the 1990s, but it also would not be as important as the EU in 2015. Although I assume there is a strong path-dependent tendency in spatial reference points, I can verify if this assumption holds by allowing time to vary based on election day.

For each election in a country, I obtain the frequency of economic news reports, and then rank them according to the quantity of media reports. Based on this ranking, I select the top three countries for the source of constructing spatial reference points. I use only three because it seems more realistic that voters will only use a couple of references. More specifically, I argue that the reference points function to give a heuristic short cut for voters to make comparisons, and thus it is reasonable to assume that they tend to make a small number of comparisons rather than many. In addition, I posit that it is also cognitively demanding for voters to make such a large number of comparisons because multiple comparisons require more information. Table 9 in online appendix presents the list of countries that appeared in each country's domestic news media regarding the economy.

[5]For instance, they would be in Italian: *economia, economico, crescita, inflazione, disoccupazione, lavoro, senza lavoro, reddito, tasso d'interesse, commercio, la spesa, investimento, credito, prezzo al consumo, i soldi, produttività, attività commerciale, produzione, salario, prezzo, finanza, consumo, debito, debito, beni e servizi*

[6]Table 8 in online appendix presents the list of economy-related key words in 22 different languages.

## Model Specification and Variables

To test the effect of relative economy on aggregate-level support for incumbent parties by using a unique spatial reference point, I replicate Kayser and Peress (2012). In their aggregate-level analysis in equation (1), they include Local economic indicators (growth and unemployment, hereafter, *Relative Economy*, *Relative GDP*, *Relative Unemployment*), which is the difference between one's own economy and the international component (benchmarked growth and unemployment), and the Global economic indicator, which is the international component.

$$Government\ Vote_{it} = \alpha + \beta_1 RelativeEconomy_{it-1} + \beta_2 GlobalEconomy_{it-1} + \varepsilon_{it} \qquad (1)$$

With this model, Kayser and Peress (2012: 668) propose several expectations: 1) If the coefficient of *Relative Economy* ($\beta_1$) is positive and the coefficient of *Global Economy* ($\beta_2$) is zero, this means that voters fully benchmark, 2) if both the coefficients of *Relative Economy* ($\beta_1$) and *Global Economy* ($\beta_2$) are zero, this indicates that voters do not benchmark, and 3) if the coefficient of *Relative Economy* ($\beta_1$) is greater than that of *Global Economy* ($\beta_2$), this suggests a partial benchmark, meaning that some people benchmark and others do not.

Previous studies suggest that people tend to use spatial reference points if temporal reference points are not available (James and John 2007; Kayser and Peress 2012; Hibbs et al. 1982). However, recent scholarship finds that, regardless of availability of the temporal referenced-based information, spatial reference points offer useful information for comparative assessments (Moore 2007; Olsen 2017; Kayser and Peress 2012). For example, Salmon (1987) argues that temporal comparisons are likely to be biased by a noisy temporal reference because exogenous disturbances such as business cycles, shocks, and long-run trends weaken the stability of temporal comparison (cited in Olsen 2017). In his experimental research, Olsen (2017) demonstrates the stronger tendency of using spatial comparisons in citizen performance evaluation mechanism. Similarly, Hansen et al. (2015)

find that people tend to rely on spatial reference points as a means for comparison even though temporal reference-based information was given to them.

Following this logic, I, based on Olsen (2017), test to see if voters rely on temporal reference points ('historical' reference point in Olsen (2017)) or if they tend to use spatial reference points ('social' reference point in Olsen (2017)). To do this, I use two separate models—equation (2) tests the effect of economy using the temporal reference point (*National Economy*), whereas equation (3) tests the effect of the economy using the spatial reference point (*Relative Economy*). From these models, I expect to see a bigger coefficient in *Relative Economy* than *National Economy*. When $\beta_2$ is greater than $\beta_1$, we conclude that the spatial comparison is more pronounced than the temporal comparison in voters minds.

$$Government\,Vote_{it} = \alpha + \beta_1 NationalEconomy_{it-1} + \varepsilon_{it} \tag{2}$$

$$Government\,Vote_{it} = \alpha + \beta_2 RelativeEconomy_{it-1} + \varepsilon_{it} \tag{3}$$

Finally, the literature on the economic vote is replete with studies that find that institutional and political contexts affect the influence of the economy on vote choice. For instance, Powell and Whitten (1993) show that clarity of responsibility conditions economic voting. Voters cannot hold their governments accountable according to national economic policy performance if responsibility for policy making is not clearly linked to the incumbents.

To verify this conditional hypothesis, I test equations by including an interaction term between *Clarity of Responsibility* and the economy. To further test whether the conditional effect of *Clarity of Responsibility (COR)* varies across different types of comparisons (either spatial- or temporal-based), I use two separate models using the non-benchmarked economy (temporal, equation(4)) and the benchmarked economy (spatial, equation(5)). I further account for serial dynamic of the vote share function by including LDVs and other rival explanations by adding several control variables. To deal with the threat of unit specific error in the composite error term, I use Fixed Effects except models with LDVs due

to the exogenous assumption (Wooldridge 2013).

$$Government\ Vote_{it} = \alpha + \beta_0 LDV + \beta_1 NationalEconomy_{it-1} + \beta_2 COR_{it-1} + \beta_3 NationalEconomy_{it-1} \times COR_{it-1} + Controls + \varepsilon_{it} \quad (4)$$

$$Government\ Vote_{it} = \alpha + \beta_0 LDV + \beta_1 RelativeEconomy_{it-1} + \beta_2 COR_{it-1} + \beta_3 RelativeEconomy_{it-1} \times COR_{it-1} + Controls + \varepsilon_{it} \quad (5)$$

To test above-stated equations, I assembled information on the electoral outcome of governments in 30 democracies, mostly the member of Ogranization for Economic Co-operation and Development (OECD) except Bulgaria, Romania, and Cyprus . The scope of the data restricts itself to the countries for which electoral results and media information is available in the ParlGov dataset (Döring and Manow 2012).

The geographical focus is on the European democracies, with the addition of Australia, New Zealand, and Japan. Because one of the main goals of this research is to test relative economic voting using the media-coverage-based spatial reference points, the time dimension of the dataset is heavily restricted to data availability in the Lexis-Nexis database. All in all, the data contains information on 179 elections in 30 countries since the 1980s.

**Outcome Variables**

The main outcome variable, government vote, is measured as the percentage of votes received by the incumbent party. In case of a coalition government, I use the percentage of votes earned by the executive party as the dependent variable. The choice of using an executive parity's vote share is guided by previous studies.

Scholars argue that citizens do not reward or punish all parties in a government in the same way (Anderson 1995), but they tend to hold the executive party accountable

(Lewis-beck 1997). This is because voters perceive competence to make a decision of party support, and to do so they consider each party's amount of responsibility and role in economic policy performance (Nadeau 1996). Consequently, they are likely to blame or praise the prime minister's party for economic conditions in parliamentary systems (Lewis-Beck 1997). For robustness, however, I also use the government parties' vote share by summing the vote share of all parties that were part of the government coalition before the election.

**Explanatory Variables**

The main explanatory variables are GDP growth rate and unemployment rate[7] For temporal comparisons, I use one year lagged values of these economic indicators. For spatial comparisons, I follow Kayser and Peress' (2012) basic idea of creating a relative (*Local* in Kayser and Peress (2012)) and global component. Based on the information in Table 9 in online appendix, I construct spatial reference points for each election in each country. For robustness purposes, I create three spatial reference points. The first spatial reference point is the one which appears the most in one's own domestic media. It is also possible that two or three countries, such as X, Y, and Z, mostly appear in country A's domestic media. In this case, they are jointly considered as reference points for country A. Regarding joint spatial reference points, I used the average of economic indicators from rank 1 and rank 2 for the second reference point, and the average values of economic indicators from all countries in ranks 1, 2, and 3 from Table 9 in online appendix.

Based on these spatial reference points, I construct *Relative Economy*, which is the difference between a country's own economy and that of its reference points. The global component refers to the international economy, which is the economic conditions of the spatial points. More specifically, *Global GDP1* is the GDP growth rate of the first spatial reference point (which has the highest frequency in one's domestic news reports), the *Global GDP2* is the average GDP growth rate of the first two spatial reference points out

[7] I obtained information on the GDP growth rate from Conference Board (2014), and information of unemployment rate from IMF. The Conference Board dataset allows us to go back further in time than the World Bank data, and has previously been used to examine the impact of the economy on electoral outcomes (Dassonneville and Lewis-Beck 2017). It is strongly correlated with the Bank data (Pearson correlation is about 0.96.).

of the 6-scaled ranking, and finally, the *Global GDP3* is the average GDP growth of the first three spatial reference points[8]. I then generate three versions of *Relative Economy* by calculating the difference between one's own economy and that of the global component. For instance, country A's *Relative Economy* in a given election is calculated as follow: *Relative GDP1* = A's Growth rate – A's Global GDP1, *Relative GDP2* = A's Growth rate – A's Global GDP2, and *Relative GDP3* = A's Growth rate – A's Global GDP3.

To control for *Clarity of Responsibility*, I follow Dassonneville and Lewis-Beck (2017). They propose two dimensions of clarity of responsibility and come up with two different measures of it—*Institutional Rules and Power Rules*. The former captures static institutional settings, whereas the latter focuses on dynamic political settings. Because several studies find that the static Institutional Rule has no conditioning effects to the economy on vote choice (Hobelt et al. 2013, Dassonneville and Lewis-Beck 2017; Park et al. forthcoming), I only include the dynamic variable of clarity of responsibility, the *Power Rules*[9].

Following Kayser and Peress (2012), I also control for coalition size, the population of the country, and a time trend. Larger governing coalitions are expected to lead to smaller vote shares for the government. I gather information on *Coalition Size* from Gallagher (2015). The *Population* variable controls for the size of a country. The larger the country is, the more challenges to opposition groups, and thus a larger vote share for the incumbent (Kayser and Peress 2012). I collect data on the size of *Population* (in 1000's and logged) from Gleditsch (2002). The *Year* dummy variables allow for a time trend.

# Results and Analysis

### Relative Economy in Vote Choice Models

Based on Kayser and Peress' (2012) identification strategy in their aggregate-level analysis, I first test whether voters respond to economic outcomes relative to those of their

[8]The global components for unemployment (*Global UNE1, Global UNE2, Global UNE3*) are constructed based on the same rule.

[9]*See* Dassonneville and Lewis-Beck (2017: 537-543) for further information such as the specific elements (i.e., single-party government, majority government, limited number of parties, closed economy, stable cabinet) and the source of information

spatial reference points. In case the relative economic outcomes matters for electoral fortunes of incumbents, I also examine whether voters' evaluations are based on full or partial benchmarking by including both relative and global components. Based on proposed hypotheses, I expect to see positive and statistically significant relationships between the relative economy and incumbent vote share.

Table 1 presents the effect of benchmarking on economic voting using the executive party's vote share as the dependent variable. The *Relative GDP* and *Relative Unemployment* are the benchmarked GDP growth and unemployment rate against each of three spatial Reference Points (PR1, RP2, RP3). *Global GDP* and *Global Unemployment* are the GDP and unemployment rate of the three spatial reference points. Each column in the table employs each of the RPs to test my benchmarking hypotheses.

Table 1: The Effect of Benchmarking in the Economic Vote using Executive Party Vote Share

| | (1) Reference Point 1 | (2) Reference Point 2 | (3) Reference Point 3 |
|---|---|---|---|
| Relative GDP | 0.549** | 0.560** | 0.344 |
| | (0.271) | (0.277) | (0.340) |
| Global GDP | -0.166 | -0.163 | -0.082 |
| | (0.402) | (0.406) | (0.472) |
| Relative Unemployment | -0.744*** | -0.820*** | -0.807*** |
| | (0.218) | (0.277) | (0.253) |
| Global Unemployment | -0.195 | -0.329 | -0.395 |
| | (0.243) | (0.444) | (0.529) |
| Constant | 30.92*** | 32.07*** | 32.33*** |
| | (2.613) | (4.223) | (4.863) |
| $R^2$ | 0.154 | 0.133 | 0.102 |
| Elections | 158 | 157 | 155 |
| Countries | 29 | 29 | 29 |
| Fixed Effects | √ | √ | √ |

Robust standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The results in the first two models (1 and 2) indicate that voters do benchmark on economic growth. Based on the first two reference points (RP1 and RP2), I find that benchmarked growth has a positive and statistically significant effect, whereas the global

growth does not reach the conventional significance level. This finding is in line with Kayser and Peress (2012) in that the significant coefficient of *Relative GDP* and the insignificant coefficient of *Global* support the 'full' benchmarking story. In other words, voters hold their incumbent accountable according to their country's deviation from the their spatial reference points, but not according to the spatial reference points themselves.

Table 1 also demonstrates that voters benchmark on unemployment. In all three models, the relative component of unemployment appears to have a statistically significant and negative effect on an executive party's vote share. However, the effects of the global component of unemployment are not statistically different from zero in all models. The results suggest that voters tend to punish their elected officers if their countries' unemployment conditions worse than those of other countries, but they do not respond to other countries' unemployment information itself. They also fully, not partially, benchmark on unemployment rate. Surprisingly, this finding is not consistent with Kayser and Peress' (2012) outcome. In their aggregate-level analysis, both the relative and global components of unemployment fail to reach the conventional significance levels, which led them to conclude that voters do not seem to benchmark on unemployment (669).

Using all parties' vote share in the government, Table 2 presents similar results. *Relative GDP* has a positive and statistically significant effect on the governing parties' electoral performance, whereas *Global GDP* has statistically insignificant effect. The relationships between *Relative Unemployment* and governing parties' vote share are negative, as expected, and they are statistically significant across all three models. However, there is no similar effect of *Global Unemployment* on incumbents' vote share. In general, the findings in both Table 1 and Table 2 are consistent with benchmarking, and are clearly inconsistent with no benchmarking.

Since the models in the previous tables are fairly naive specifications, I account for several rival explanations based on previous studies. I add previous vote shares (LDVs), rendering the models dynamic. This is based on the belief that today's vote share is not independent from previous vote shares, instead it is highly likely that today's votes are heavily contingent upon those of the previous election. As explained in the model

Table 2: The Effect of Benchmarking in the Economic Vote using Government Parties' Vote Share

| | (1) Reference Point 1 | (2) Reference Point 2 | (3) Reference Point 3 |
|---|---|---|---|
| Relative GDP | 0.615* | 0.560* | 0.427 |
| | (0.240) | (0.288) | (0.345) |
| Global GDP | -0.374 | -0.430 | -0.397 |
| | (0.406) | (0.354) | (0.462) |
| Relative Unemployment | -0.439* | -0.642** | -0.635** |
| | (0.220) | (0.243) | (0.245) |
| Global Unemployment | -0.384 | -0.271 | -0.206 |
| | (0.304) | (0.545) | (0.771) |
| Constant | 44.52*** | 43.63*** | 43.00*** |
| | (2.659) | (4.674) | (6.637) |
| $R^2$ | 0.071 | 0.078 | 0.053 |
| Elections | 174 | 173 | 171 |
| Countries | 30 | 30 | 30 |
| Fixed Effects | √ | √ | √ |

Roust standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

specification section, I add the number of parties, coalition size, population, and a time trend dummy. The selection of these variables are guided by Kayser and Peress (2012: 670).

Table 3 presents the results of the full models. In first three models (1, 2, and 3), I use executive party's vote share as the DV, and all governing parties' for the last three models (4, 5, and 6). Due to the presence of LDV, I did not use Fixed Effects because this violates strict exogeneity, which produces a biased estimation (Wooldridge 2013)[10].

In all three models (1, 2, and 3), *Relative GDP* has a positive and statistically significant effect, whereas *Global GDP* has no effect. It seems that voters do fully benchmark on growth when they decide a vote choice for the executive party even after controlling for other variables. However, this finding is not robust in the models with government

[10]For robustness, I estimate the full models using Fixed Effects without LDVs. Table 6 in appendix presents the results. The results of *Relative GDP* and *Global GDP* are consistent with the main findings in the basic models (Table 1 and Table 2). Incumbents (both executive party and all governing parties) tend to be not punished if their growth performed less abysmally than their reference countries.

Table 3: The Effect of Benchmarking in the Economic Vote with controls

| | Executive Party | | | Government Parties | | |
|---|---|---|---|---|---|---|
| | (1) RP 1 | (2) RP 2 | (3) RP 3 | (4) RP 1 | (5) RP 2 | (6) RP 3 |
| LDV | 0.156*** | 0.097*** | 0.096*** | 0.619*** | 0.589*** | 0.606*** |
| | (0.139) | (0.035) | (0.032) | (0.010) | (0.106) | (0.106) |
| Relative GDP | 0.531*** | 0.591*** | 0.523** | 0.292 | 0.303 | 0.263 |
| | (0.194) | (0.162) | (0.207) | (0.287) | (0.273) | (0.327) |
| Global GDP | -0.182 | -0.296 | -0.325 | -0.187 | -0.234 | -0.197 |
| | (0.234) | (0.246) | (0.324) | (0.282) | (0.250) | (0.331) |
| Relative Unemployment | -0.570*** | -0.547*** | -0.575*** | -0.547** | -0.616** | -0.616** |
| | (0.184) | (0.187) | (0.183) | (0.264) | (0.254) | (0.259) |
| Global Unemployment | -0.589*** | -0.837*** | -0.783*** | 0.0531 | 0.0771 | (0.259) |
| | (0.199) | (0.208) | (0.208) | (0.301) | (0.388) | (0.471) |
| Effective Number of Party | -4.080*** | -3.893*** | -4.048*** | -3.528*** | -3.551*** | -3.670*** |
| | (0.500) | (0.522) | (0.522) | (0.549) | (0.506) | (0.534) |
| Population(log) | 0.524 | 0.319 | 0.353 | -0.778 | -0.945 | -1.126* |
| | (0.488) | (0.500) | (0.482) | (0.534) | (0.585) | (0.637) |
| Coalition Size | 0.257 | -0.373 | -0.221 | 5.250*** | 5.155*** | 5.081*** |
| | (0.979) | (0.946) | (0.941) | (1.166) | (1.139) | (1.128) |
| Year | -0.178 | -0.224** | -0.242* | -0.171 | -0.234** | -0.197 |
| | (0.121) | (0.106) | (0.125) | (0.123) | (0.108) | (0.128) |
| Constant | 399.6 | 497.8** | 534.4** | 366.0 | 495.2** | 422.0 |
| | (243.6) | (214.0) | (252.2) | (247.1) | (215.7) | (257.8) |
| $R^2$ | 0.478 | 0.491 | 0.480 | 0.463 | 0.461 | 0.453 |
| Elections | 139 | 138 | 136 | 152 | 151 | 149 |
| Countries | 29 | 29 | 29 | 30 | 30 | 30 |
| Fixed Effects | - | - | - | - | - | - |

RP represents Reference Point. Robust standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

parties' vote share (4, 5, and 6). Although the signs of the relative growth component are positive as expected, their effects are not statistically different from zero. This finding suggests that voters do not always reward/punish all parties in a coalition in the same way. Instead, voters consider each party's degree of responsibility, so they tend to blame or praise the prime minister' party (Lewis-Beck 1997) or party which the minister of economy and finance belongs to (Williams et al. 2016).

The results of the relative unemployment components are robust. The coefficients of *Relative Unemployment* are negative, and have a statistically significant effect across all models. But surprisingly, the global components of unemployment appear to have a statistically significant effect on executive party's vote share, but not on the government parties as a whole. Thus the main findings are partially robust when I control for the rival factors.

Regarding the control variables, the *Effective Number of Party* shows a negative and statistically significant effect in all six models, whereas other variables reach the conventional significance levels across different models. One noticeable point is that the effect of *Coalition Size* is statistically significant but the sign is positive, contrary to theory.

**Relative Economy vs. National Economy**

Conventional wisdom on the economic vote predicts that a good economy, measured relative to the prior year or period, helps incumbents whereas a bad one hurts them. However, my benchmarking hypothesis predicts that voters do not react to their economy regardless of whether their economy out- or under-performed those abroad, but they do so according to the deviation of their own economies from their spatial references. To which measures of the economy are voters sensitive? It is obvious that voters do compare their economy, but we have been less informed abut "where to look for comparisons?"

Olsen (2017) develops an experimental research design and tests whether respondents rely on one reference point more than the other. Although his novel approach confirms that voters are more sensitive to spatial comparisons (comparing one's own performance

with others) than temporal comparisons (comparing one's own performance to that of previous period), a cross-national verification, especially in the economic voting literature, has not been made to conclude that, in general, voters tend to look to other countries more than previous years in their own for comparisons on economic performance. To that end, I estimate models using (spatial-) benchmarking and models using (temporal-) benchmarking. After that, I compare the size of the effect of each of the measures to answer above questions of 'where to look between time and space?' The proposed expectation is that the spatially benchmarked economy will have stronger effect on incumbent vote share than the temporally benchmarked economy.

Table 4: The Effect of Benchmarked vs Non-Benchmarked Economy

| | Spatial Comparison | | Temporal Comparison | |
|---|---|---|---|---|
| | (1) Executive party | (2) Government | (3) Executive party | (4) Government |
| Relative GDP | 0.583** | 0.693** | | |
| | (0.247) | (0.305) | | |
| Relative Unemployment | -0.669*** | -0.272 | | |
| | (0.209) | (0.224) | | |
| National GDP | | | 0.229 | 0.151 |
| | | | (0.385) | (0.386) |
| National Unemployment | | | -0.584** | -0.316 |
| | | | (0.225) | (0.262) |
| Constant | 28.89*** | 40.40*** | 33.34*** | 42.76*** |
| | (0.0430) | (0.0538) | (2.047) | (2.179) |
| $R^2$ | 0.149 | 0.057 | 0.070 | 0.014 |
| Elections | 158 | 174 | 159 | 175 |
| Countries | 29 | 30 | 29 | 30 |
| Fixed Effects | √ | √ | √ | √ |

Relative GDP and Relative Unemployment are calculated by using Reference Point 1 (RP1).
Robust standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4 presents the effect of spatial and temporal comparisons of the economy. Again the *Relative* components are spatially benchmarked measures of the economy (using the first reference point, RP1), whereas the *National* components are temporally compared economic indicators. Model 1 and 3 use executive party's vote share and Model 2 and 4 use government parties' vote share as their DV. Spatially benchmarked economies (*Rela-*

*tive GDP* and *Relative Unemployment*) have a statistically significant effect on both of the DVs. Spatially benchmarked economic growth increases incumbent vote share by about 6% to 7%. Spatially compared unemployment reduces incumbent vote share by about 6.5% and 2.7%, albeit the latter is statistically insignificant.

Surprisingly, the temporally compared economy growth, contrary to conventional wisdom, appear to have no effect on incumbents' vote share although the signs meet our expectation. If one's unemployment rate increases as compared to that of previous period, then it seems that the executive party loses their votes by about 5.8%, but not for the government parties as a whole. Indeed the results are consistent with Olsen (2017), suggesting that voters are likely look to how other countries' economies are doing rather than look to how their own economy was doing to make an informed decision at the polls.

**Relative Economy and Clarity of Responsibility**

In order for voters to reward or punish based on economic outcomes, they should be able to tell who is responsible. Previous studies found that institutional and political arrangements affect a voter's ability to identify who is responsible, and as a result, affect the economic vote. In countries where policymaking responsibility is clear, the economy has a stronger effect on a vote choice, whereas in countries where the responsibility is burred, the economy has a weak or no effect to voters' decision (Powell and Whitten 1993).

Following this line of logic, I test whether the benchmarking hypothesis is affected by the level of clarity of responsibility. And, if so, how its impact differs from non-benchmarked (national economy) cases. To test this conditioning hypothesis, I include an interaction term of *Relative GDP* and *Clarity of Responsibility (COR)*. I also test the traditional clarity of responsibility argument by interacting the *COR* with *National GDP*. Following Kayser and Peress (2012), I also control for non-benchmarked unemployment in all models to strengthen the comparison of benchmarked and non-benchmarked growth[11].

[11] For more discussion, see Kayser and Peress (2012: 670).

Table 5: The Effect of Benchmarked vs Non-Benchmarked Economy conditioned by Clarity of Responsibility

| | Benchmarked | | | Non-Benchmarked |
|---|---|---|---|---|
| | (1) RP 1 | (2) RP 2 | (3) RP 3 | (4) National |
| LDV | 0.125*** | 0.126*** | 0.123*** | 0.099*** |
| | (0.041) | (0.038) | (0.039) | (0.035) |
| Relative GDP | 0.396 | 0.379 | 0.157 | |
| | (0.303) | (0.276) | (0.404) | |
| Clarity of Responsibility (COR) | 0.111 | 0.075 | -0.022 | -0.523 |
| | (0.635) | (0.645) | (0.645) | (0.617) |
| Relative GDP × COR | 0.047 | 0.107 | 0.176 | |
| | (0.121) | (0.114) | (0.143) | |
| National GDP | | | | -0.326** |
| | | | | (0.139) |
| National GDP × COR | | | | 0.285*** |
| | | | | (0.089) |
| National Unemployment | -0.538*** | -0.544*** | -0.533*** | -0.558*** |
| | (0.148) | (0.152) | (0.147) | (0.149) |
| Effective Number of Party | -4.058*** | -3.976*** | -4.044*** | -3.853*** |
| | (0.583) | (0.590) | (0.595) | (0.556) |
| Population(log) | 0.313 | 0.326 | 0.275 | 0.201 |
| | (0.513) | (0.541) | (0.527) | (0.554) |
| Coalition Size | 0.053 | -0.040 | -0.006 | -0.248 |
| | (0.882) | (0.892) | (0.911) | (0.901) |
| Year | -0.205* | -0.211** | -0.233** | -0.201* |
| | (0.110) | (0.101) | (0.110) | (0.110) |
| Constant | 457.0* | 468.1** | 513.9** | 452.2* |
| | (224.9) | (207.1) | (223.3) | (222.1) |
| $R^2$ | 0.492 | 0.459 | 0.490 | 0.496 |
| Elections | 137 | 137 | 137 | 137 |
| Countries | 29 | 29 | 29 | 20 |
| Fixed Effects | - | - | - | - |

RP represents Reference Point, and National represents one's own economy.
DV is the executive party's vote share. Robust standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5 demonstrates the results of the effect of benchmarked and non-benchmarked economy across clarity of responsibility. The interaction coefficients of benchmarked from model 1 – 3 are statistically insignificant, but that of non-benchmarked reaches 95% significance levels. Thus there is no statistically significant interactive effect with benchmarked economy, whereas there is a statistically significant interactive effect with non-benchmarked ($p$-value $< .001$).

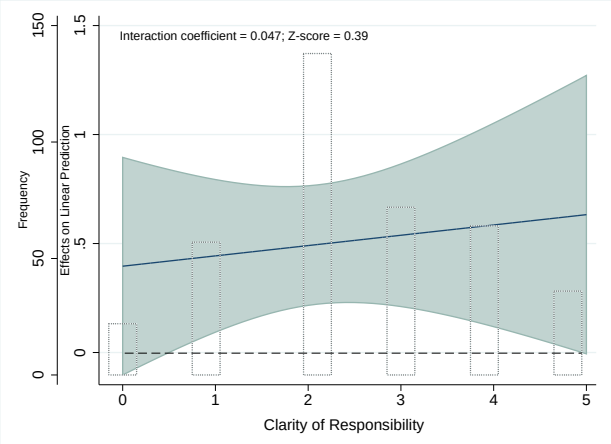
It is hard, however, to draw a direct interpretation of the impact of the economy on vote share conditional on clarity of responsibility. This is because the significance level of coefficients does not reveal anything when interpreting interaction terms between continuous variables (Berry et al. 2012; Brambor et al. 2006). For better interpretation of the effect of two continuous variables, it is suggested to use marginal effects graph merely with the coefficients and significance of the interaction terms (Berry et al. 2012; Brambor et al. 2006).

Figure 1 presents the marginal effects graph showing the degree to which the level of clarity of responsibility conditions the effect of benchmarked and non-benchmarked growth on executive party's election outcomes. The shaded area shows the $90\%$ confidence intervals. The sub-figures (a), (b), and (c) are the marginal effect graphs of benchmarked growth using RP1, RP2, and RP3 respectively. The sub-figure (d) shows the marginal effect graph of non-benchmarked growth. In each sub-figure, the $x$-axis present the levels of clarity of responsibility, ranging from $0$ (low level of COR) to $5$ (high level of COR), and the $y$-axis the marginal effect of growth on DV. The outer $y$-axis and the bar graph in sub-figure (a) present the distribution of *Clarity of Responsibility*[12].

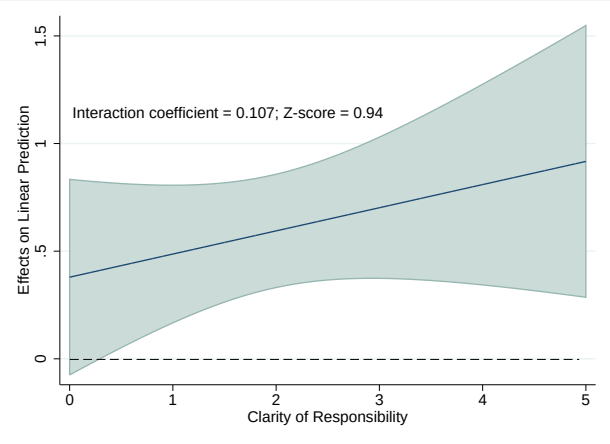
One noticeable point is that in all sub-figures, we observe the upward slopes, suggesting there tends to be a larger effect of the growth on vote share as the level of clarity of increases. This general pattern is consistent with conventional wisdom in that voters hold incumbents accountable where clarity of responsibility is high. Comparing the magnitude of COR's conditioning effect, it is obvious that the effect of non-benchmarked growth is strongly influenced by the clarity of responsibility (sub-figure (d)). Its marginal

[12]For simplicity, I include the distribution of *Clarity of Responsibility* in sub-figure (a) only.

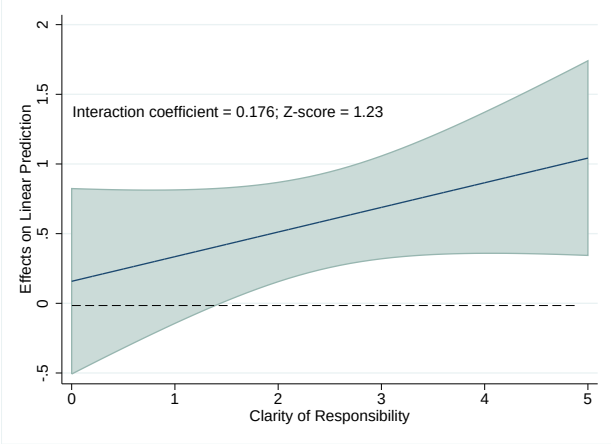
Figure 1: The Effect of Economic Growth on Executive Party's Vote Share (90% CI)



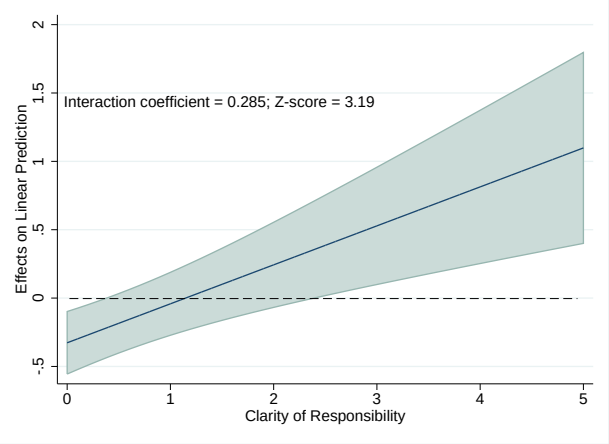

(a) Benchmarked (RP1)




(b) Benchmarked (RP2)




(c) Benchmarked (RP3)




(d) Non-Benchmarked

effect of growth has the steepest slope among all sub-figures and their $90\%$ confidence intervals (CIs) do not overlap each other at their lower and higher bound. As shown in sub-figure (d), non-benchmarked economic growth will have a positive effect when the level of the clarity of responsibility exceeds around 2.5 point, and its positive effect tends to be stronger when the responsibility becomes more clearer. So if one's economic growth rate is good compared to previous years', it will help the executive party's electoral fortune. This is only possible when voters can discern who is responsible for the policy making.

The conditioning effect of the clarity of responsibility, however, is rather inconclusive for the benchmarked growth measure, although the upward slopes are apparent. In par-

ticular, most of the $90\%$ CIs do not contain $zero$ with small exceptions at the left-end of $x$-axis in sub-figure (a) and (b). Unlike the null effect of non-benchmarked growth under lower levels of COR (below $2.5$), this implies that the positive marginal effects of benchmarked growth still exists even at the lower levels of COR.

Indeed, the role of clarity of responsibility is strong enough in making the slopes upward heading, but it is not strong as to make the effect of benchmarked growth vanish. Thus if your economic growth is better than other countries', you are likely to reward the executive party at the polls regardless of whether you can tell who is responsible for policy making. The sub-figure (c) is somewhat in between these two cases. It shows that clarity of responsibility makes the effect of non-benchmarked economy pronounced at its higher levels and makes the effect disappear below $1.5$. Overall, the conditioning effect of the clarity of responsibility was weak for spatially benchmarked economy, suggesting voters tend to reward/punish their incumbent according to relative economic performance regardless the levels of clarity of responsibility.

# Discussion

This research explores the role that relative economy plays in vote choice. Vote choice in an election is heavily predicated on selecting competent incumbents based on their job performance in handling the economy. To do so, voters should extract the 'competence signal' from the observed economy (Duch and Stevenson 2008), but signal-extraction is not an easy task; the observed economy contains noisy exogenous shocks which are irrelevant to incumbent managerial competence. Moreover, it is cognitively demanding to comprehend economic conditions because the data do not speak for themselves. What passes for strong growth in one period or place might be considered weak in another. To address these concerns, I argue that one important way for voters to extract the competence signal and overcome these cognitive complexities is to make comparisons with other countries. Simply put, a relatively strong economy signals incumbent competence whereas a relatively poor economy signals their incompetence.

However, the choice of spatial reference points is rather underspecified and mostly based on common intuitions such as that the Swedish will benchmark the Danish economy and vice versa. The task of selecting spatial reference points within cross-national time-series data is more sophisticated. Since each country and each election is likely to have its own unique reference points according to political, cultural, geographical, and historical background as well as economical/trade relationships, the assumption of equal reference points across all countries and elections is unrealistic, and as a result, an empirical analysis relying on common reference points will yield a biased estimation. Unless substantial information guides the choice of spatial reference points, *ad hoc* decisions are likely to be made.

In order to make accurate relative economic evaluations, I emphasize the importance of selecting the appropriate spatial reference point across elections and countries. To that end, I argue that the selection process should be guided by theory suggesting that voters will benchmark countries that are *similar, familiar, and connected*, and that media can assist guiding voters to appropriate reference points. Based domestic media sources from 33 democracies in Lexis-Nexis, and the specific economy-related key words in 22 different languages, I construct the unique spatial reference points.

Using the media-guided spatial reference points, this research tests the effects of relative economy on incumbent vote share. To make a comparison about the effects of the national economy and relative economy on vote choice, I also include separate models using different measures of the economy. The empirical evidence supports my expectation that voters reward/punish their governing officials based on spatially benchmarked economic growth. Incumbents tend to be rewarded with increasing vote shares for outperforming growth and are punished for the opposite. Regarding the magnitude of the effect of national economy and relative economy, the results show statistically significant and robust effects of the relative economy. However, the coefficients of *National Economy* are smaller than *Relative Economy*, and its effects show instability, failing to reach conventional statistically significant levels across different models. More to the point, I show that clarity of responsibility mediates the link between the economy and incumbent vote

share in general but its conditioning effect appears to be weaker with the *Relative Economy*, suggesting that voters strongly react to relative economic performance regardless of the institutional context.

This research speaks to the issue of measurement of economic conditions. Aggregate studies have used objective macroeconomic measures such as economic growth, the inflation rate, the unemployment rate, or income change. Studies using survey data use perceived measures of the economy, commonly sociotropic or egotropic ones. One concern arises about how well the perceived measures of the economy reflect the object one and vice versa. Scholars have found gap between these two types of measures. Markus (1988) argues that the survey measures of the economy are contaminated by errors, thus one should substitute national objective economic measures for individual subjective ones. His argument is based on Kramer's (1983) famous 'ecological fallacy', which argues that variation in subjective measures in survey research indicates errors because there should be no variation in the economy in any cross-sectional survey (Kramer 1983). However, Nadeau and Lewis-Beck (2001) suggest that the aggregate subjective measures better performs because they captures perceptions of multiple objective national indicators.

This research shows that voters respond to the economy differently in that they are more sensitive to the relative economy than the absolute one. That being said, one reason for the gap between the objective economy and the perceived economy may come from that voters use different reference points to form the perceived economy when they look at the objective economic indicators. This research exhibits that voters have a strong tendency to make comparisons, so they tend to look at not only their absolute performance but the relative economic performance. However, previous studies have principally employed the absolute economic measures in both aggregate and individual levels of studies, and hence, they have ignored the important way for citizens to form their attitude on the incumbent job performance. Although further studies should verify this, I argue that there is a good reason to believe that using relative economic indicators will considerably reduce the gap between the objective and perceived economy.

This paper also implies that policymakers have to pay particular attention to how their national economic performance compares to that of other yardstick countries. In this regard, some argue that policymakers are incentivized to make downward comparisons by pointing to the performance of countries doing worse than their own. For instance, Olsen (2017) writes that "figures don't lie, but liars do figure, and the citizen has very little defense in this field, and in other realms of reporting and adverting" (Olsen 2017: 28).

From a campaign perspective, this downward comparison can be a re-electing strategy as it is a heuristic that voters tend to weigh strongly relative to traditional absolute economic performance indicators. Although this downward strategy is not implausible, the findings of this research cast doubt on its usefulness. If this strategy is in place and is reflected in the domestic media as incumbents hope it is, then we should only see the positive values of *Relative Growth*, which is the difference between the national economy and reference point economy. That is, at least the domestic media in my sample do not reveal any cue of downward comparisons. Even if my economy is better than country A, if A is not connected, familiar, and similar to my country, there is no reason for the media (or the public) to look at A to make a comparison. Thus comparisons must be based on relevancy, and irrelevant downward comparisons will not appeal to the media or their consumers.

# References

Anderson, Christopher. 1995. *Blaming the Government: Citizens and the Economy in Five European Democracies*. New York: Sharpe: Armonk.

Berry, William D, Matt Golder and Daniel Milton. 2012. "Improving tests of theories positing interaction." *The Journal of Politics* 74(3):653–671.

Brambor, Thomas, William Roberts Clark and Matt Golder. 2006. "Understanding interaction models: Improving empirical analyses." *Political analysis* 14(1):63–82.

Conover, F. Johnston, Stanley Feldman and Katheleen knight. 1986. "Judging infllation and unemployment: The origins of retrospective evaluations." *The Journal of Politics* 48(3):565–588.

Converse, Philip E. 2000. "Assessing the capacity of mass electorates." *Annual review of political science* 3(1):331–353.

Dassonneville, Ruth and Michael S Lewis-Beck. 2017. "Rules, institutions and the economic vote: clarifying clarity of responsibility." *West European Politics* 40(3):534–559.

De Boef, Suzanna and Paul M Kellstedt. 2004. "The political (and economic) origins of consumer confidence." *American Journal of Political Science* 48(4):633–649.

Döring, Holger and Philip Manow. 2012. "Parliament and government composition database (ParlGov)." *An infrastructure for empirical information on parties, elections and governments in modern democracies. Version* 12(10).

Duch, Raymond M and Randy Stevenson. 2007. Context and Strategic Economic Voting: An Alternative to Clarity of Responsibility? Technical report Working Paper.

Duch, Raymond M and Randy Stevenson. 2008. "Voting in context: How political and economic institutions condition the economic vote." *Draft Book Manuscript* .

Duch, Raymond M and Randy Stevenson. 2010. "The global economy, competency, and the economic vote." *The Journal of Politics* 72(1):105–123.

Erikson, Robert S, Michael B MacKuen and James A Stimson. 2002. *The macro polity*. Cambridge University Press.

Festinger, Leon. 1954. "A theory of social comparison processes." *Human relations* 7(2):117–140.

Fortunato, David, Clint S Swift and Laron K. Williams. 2018. "All Economic is Local: Spatial Aggregations of Economic Information." *Political Science and Research Methods* 6(3):467–487.

Hansen, Kasper M, Asmus L Olsen and Mickael Bech. 2015. "Cross-national yardstick comparisons: A choice experiment on a forgotten voter heuristic." *Political Behavior* 37(4):767–789.

Hetherington, Marc J. 1996. "The media's role in forming voters' national economic evaluations in 1992." *American Journal of Political Science* pp. 372–395.

Hibbs Jr, Douglas A. 2006. "Voting and the Macroeconomy." *rapport nr.: Working Papers in Economics* (144).

Hobolt, Sara, James Tilley and Susan Banducci. 2013. "Clarity of responsibility: How government cohesion conditions performance voting." *European journal of political research* 52(2):164–187.

Jérôme, Bruno, Véronique Jérôme-Speziari and Michael S Lewis-Beck. 2001. 5. Évaluation économique et vote en France et en Allemagne. In *L'opinion européenne 2001*. Presses de Sciences Po (PFNSP) pp. 101–122.

Kayser, Mark Andreas and Arndt Leininger. 2015. "Vintage errors: do real-time economic data improve election forecasts?" *Research & Politics* 2(3):2053168015589624.

Kayser, Mark Andreas and Michael Peress. 2012. "Benchmarking across borders: electoral accountability and the necessity of comparison." *American Political Science Review* 106(3):661–684.

Lewis-Beck, Michael S. 1997. "Who's the chef? Economic voting under a dual executive." *European Journal of Political Research* 31(3):315–325.

Moore, Don A. 2007. "Not so above average after all: When people believe they are worse than average and its implications for theories of bias in social comparison." *Organizational Behavior and Human Decision Processes* 102(1):42–58.

Nadeau, Richard, Richard G Niemi, David P Fan and Timothy Amato. 1999. "Elite economic forecasts, economic news, mass economic judgments, and presidential approval." *The Journal of Politics* 61(1):109–135.

Nadeau, Richard, Richard G. Niemi and Timothy Amato. 1996. "Prospective and Comparative or Retrospective and Individual? Party Leaders and Party Support in Great Britain." *British Journal of Political Science* 26(2):245–258.

Olsen, Asmus Leth. 2017. "Compared to what? How social and historical reference points affect citizens' performance evaluations." *Journal of Public Administration Research and Theory* 27(4):562–580.

Park B. Brandon, Nikolaos Frantzeskakis and Jungsub Shin. 2018. "Who is responsible? The effect of clarity of responsibility on voter turnout." *West European Politics* .

Powell Jr, G Bingham and Guy D Whitten. 1993. "A cross-national analysis of economic voting: taking account of the political context." *American Journal of Political Science* pp. 391–414.

Salmon, Pierre. 1987. "Decentralisation as an incentive scheme." *Oxford review of economic policy* 3(2):24–43.

Stegmaier, Mary, Michael S Lewis-Beck and Beomseob Park. 2017. "The VP-function: a review." *The SAGE Handbook of Electoral Behaviour* 2:584–605.

Williams, Laron K, Katsunori Seki and Guy D Whitten. 2016. "You've got some explaining to do: The influence of economic conditions and spatial competition on party strategy." *Political Science and Research Methods* 4(1):47–63.

Wooldridge, J. 2013. "Introductory econometrics: A modern.".

Yockey, Mark D and Susan M Kruml. 2009. "Everything is relative, but relative to what? Defining and identifying reference points." *Journal of Business and Management* 15(1):95.

# Online Appendix

## Additional Result

Table 6: The Effect of Benchmarking in the Economic Vote with FEs

| | Executive Party | | | Government Parties | | |
|---|---|---|---|---|---|---|
| | (1) RP 1 | (2) RP 2 | (3) RP 3 | (4) RP 1 | (5) RP 2 | (6) RP 3 |
| Relative GDP | 0.436* | 0.503*** | 0.411** | 0.603** | 0.573** | 0.523 |
| | (0.222) | (0.132) | (0.193) | (0.293) | (0.233) | (0.317) |
| Global GDP | -0.137 | -0.262 | -0.299 | -0.246 | -0.345 | -0.382 |
| | (0.225) | (0.239) | (0.308) | (0.243) | (0.234) | (0.310) |
| Relative Unemployment | -0.734*** | -0.790*** | -0.834*** | -0.274 | -0.463 | -0.516 |
| | (0.237) | (0.235) | (0.238) | (0.361) | (0.287) | (0.327) |
| Global Unemployment | -0.507* | -0.869** | -0.796* | 0.056 | -0.060 | 0.238 |
| | (0.283) | (0.345) | (0.406) | (0.353) | (0.538) | (0.652) |
| Effective Number of Party | -4.966*** | -5.027*** | -5.106*** | -4.922*** | -4.894*** | -5.124*** |
| | (0.656) | (0.575) | (0.550) | (1.072) | (0.972) | (0.997) |
| Population(log) | -8.228 | -1.966 | -3.822 | -15.16 | -8.457 | -11.97 |
| | (18.88) | (15.71) | (16.89) | (37.25) | (30.67) | (33.30) |
| Coalition Size | -0.419 | -0.851 | -0.875 | 6.483*** | 6.219*** | 6.173*** |
| | (0.967) | (0.993) | (0.983) | (1.472) | (1.424) | (1.427) |
| Year | -0.198 | -0.291* | -0.280 | -0.163 | -0.276 | -0.250 |
| | (0.183) | (0.154) | (0.183) | (0.274) | (0.230) | (0.264) |
| Constant | 533.0* | 664.3*** | 659.0** | 517.8* | 682.9*** | 663.4** |
| | (272.3) | (236.8) | (279.9) | (277.2) | (236.5) | (284.8) |
| $R^2$ | 0.477 | 0.496 | 0.482 | 0.370 | 0.375 | 0.364 |
| Elections | 139 | 138 | 136 | 152 | 151 | 149 |
| Countries | 29 | 29 | 29 | 30 | 30 | 30 |
| Fixed Effects | √ | √ | √ | √ | √ | √ |

RP represents Reference Point. Robust standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: The Sources of New Media

| Country | News Media |
|---|---|
| United Kingdom | The Daily Telegraph, The Sunday Telegraph, The Times, The Sunday Times, The Guardian, The Guardian Weekly, Gazeettelive, Get Hampshire, Get Reading, Get Surrey, Glasgow East News, The Independent , West Briton, The Journal, The Sunday Herald, Regional Newswire of the English Regions, Yorks and Humber, West Midlands, South West, South East, North East, North West, London, East Midlands, East Anglia, Wales, Scotland, Northern Ireland, Corporate Finance News, News Bites-UK |
| Germany | Aar Bote, Allgemeine Aeitung, Automotive News German Industry Newsletter, Burstadter Zeitung, Darmstadter Echo, Dpa International, EQS Newsfeed(German), Giessener Anzeiger, Hochheimer Zeitung, Hofheimer Zeitung, Kreis Anzeiber, Lampertheimer Zeitung, Lauterbacher Anzeiger, Main-Spitze, Main-Taunus-Kurier, News Bites-Germany, Oberhessische Zeitung, Wormser Zeitung, Welt Aktuell, Wiesbadener Tagblatt, Wiesbadener Kurier, Usinger Anzeiger, Sees News Germany, OTS-Deutschland |
| France | Abaca Press, Actu Labo, Afriki Presse, Agence France Press, Agence France Press-German Agence France Press-Portuguese, Agence France-Spanish, Agence France France-Arabic, Aujourdhuei en France, Aujourdhuei en France Economie, Banking in France, Bdulder.fr, El Paris, ESQ Newsfeed-French, France 24-English, France 24-French, Infolegale-Fiche Didentite Enterprise, L'Echo Charitois, L'Echo Republican, L'Eclaireur du Gatinais, L'Eveil de la Hauete Loire, L'Eveil Hebdo, L'Yonne Republicaine, La Gazette de la Haute-Loire, La Gazette de Thiers et dAmbert, La Montagne, L Republique du Centre, L Rauche, L Republique du Centre, L Ruche, La Voix du Sancerrois, Le Berry Republicain, Le Courrier du Loiret, Le Figaro Magazine, Le Havre-Libre, Le Journal de Gien, Le Maine Libre, Le Parisien Magazine, Le Pays Roannais, Le Popularie du Center, Le Progres de Fecamp, Le Regional de Cosne dt du Charitois, Le Reveil du Vivarais, Le Trombinoscope, News Bite-France, Ouest-France, Presse Ocean, Presse News France, RFP English, RFI French, Sees News France, Whos Who in France |

Table 7: The Sources of New Media (continued)

| Country | News Media |
|---|---|
| Denmark | Business Wire Dansk, Hugin-Danish, Cision Nordic Companies Press Releases, Danish Business Digest, M-Brain Denmark News, News Bites-Nordic, News Bites-Denmark, Nordic Daily, Politiken and Politiken |
| Norway | The Norwegian Business Digest, Nordic Daily, News Bites-Norway, News Bites-Nordic, Business Wire Norsk, Cision Nordic Companies Press Release, Hugin Norwegian, M-Brain Borway News |
| Sweden | Swedish Business Digest, Nordic Daily-Sweden, News Bites-Sweden, News Bite-Nordic, M-Brain Sweden News, Cision Nordic Companies Press, STT info Swedish, Hugin Swedish, Global Ad Source Swedish, Affarsvarlden Sweden |
| Finland | Kauppalehti.fi, Kauppalehti, Finnish Business Digest, Hugin Finish, STT info Finnish, Nordic Daily, News Bite Nordic Finland, Business Wire Suomen Kiele, M-Brain Finland News |
| Netherlands | TE Briefing Weg, TE Briefing Multi, See News Netherlands, NRC Handelsblad, Noordhollands Dagblad, Money-Dutch, Metro-Dutch, Investing-Dutch, BIZZ Dutch, Barbants Dagblad, Business Wire Netherlands, Cash Dutch, Company NewsGroup-Dutch, DeStentor/Zutphens Dagblad, The Dutch Economy, Harrems Dagblad, Algemeen Netherladns Persbureau ANP, AFX-NL, News Bites Benelux-Netherlands, Global Ad Source-Netherlands |
| Belgium | TE Briefing Weg, TE Brief Multi, See New Belgium, News Bites Benulux Belgium, Belgian Company info, Beleggers Belangen Bizz Dutch, De Telegraaf, De Volkskrant, Het Parool |
| Luxembourg | News Bie Benelus-Luxembourg,Luxembourg Business Digest, Luxembourg Wort, Luxembourg Wort English, Luxembourg Wort French, Luxembourg Wort Portuguese, Le Quotidien |

Table 7: The Sources of New Media (continued)

| Country | News Media |
|---|---|
| Spain | Spanish Newswire Service, See News Spain, PR Newswire Europe-Spain, News Bites-Spain, Expansion-Madrid, EFE-Vizcaya-Spain, EFE Valencia, EFE Tiurisom, EFE Toledo, EFE Madrid, EFE Empresas, EFE EfeArgo-Mas Importantes, EFE Economia de Espana, EFE Cultura, EFE Cuenca, EFE Coruna, EFE Ciencia Tecnologia, EFE Bienestar Social, Business Spain, Business Wire Espanol, Comunicae Spain, EFE Albacete, EFE Almeral, EFE Bcrelona, EFE Asturias |
| Italy | See News Italy, PR Europe-Italy, News Bites-Italy, La Stampa, La Nazione, La Gazzetta dello Sport, II Resto del Carlino, LL Giorno, Business Wire Italiano, ANSA Notiziario Generale in Italiano, ANSA med-Italian, Global Ad Source- Italian, Hugin-Italian |
| Portugal | Tendencias Weekly, Tendencias Monthly, Tendencias Data, Tendencias Daily, Tela Non, Tecnologia, See News Portugal, Saude, RFI-Portuguese, Responsabilidade Socio, Quardro Societarin, PR Newswire em Portuguese, Portuguese Independent News, Politica, Pan African News-Portuguese, iCrowd Newswire-Portuguese, Hugin Portuguese, Euro News Bersao em Portuguese, Central Bank Watch Portuguese, CE Noticias Financieras Portuguese, BBC Portuguese |
| Greece | Greek Business Digest, Infocredit Business Info Report-Greece, News Bites-Greece, EuroNews-Greek, Law Is Greek |
| Cyprus | Tala Aub Ghasaleh News, News Bite-Cyprus, Infocredit Business Cyprus, Financial Mirror, Cyprus main, Cypriot Business Digest, Government News, Banks and Brokers Reports |
| Malta | News Bites-Malta, Malta Today, The Malta Independent, The Malta Business Weekly |
| Switzerland | AFX-Swiss, Swiss Review of World Affairs, AWP Premium Swiss News French, AWP Premium News German, Worldbox Switzerland, Swiss Financial, Company Register Switzerland, See Nes Switzerland, News Bite Switzerland, News Aktuell Switzerland, ESQ Newsfeed German, ESQ Nessffed French, ESQ Newsfeed English |

Table 7: The Sources of New Media (continued)

| Country | News Media |
|---|---|
| Ireland | The Irish Post, The Irish Times, Newswire Ireland, News Bite Ireland, News Ross Standard, Irish Mirror, Wicklow People Ireland, Wexford People Ireland, Ballymena Times, Ballymony Times, Belfast News Letter, Belfast Telegraph, Belfast Telegraph Online, Bray People, D&B Financial Analysis Report Irish, Drogheda Independent Ireland, Evening Herald, Enniscorthy Guardian Ireland, Gorey Guardian Ireland, Irish Independent |
| Latvia | News Bites Baltic, The Baltic Times, Baltic News Service, M-Brain Latvia News |
| Estonia | Estbusiness, Baltic Legal Update, Baltic News Service, M-Brain Estonia News, Intellinews Baltic State Today, The Baltic Times, Emerging Market Broker Report Baltic |
| Lithuania | News Bite Baltic, M-Brain Lithuania News, Baltic States Today, Emerging Market Reports, East Business, The Baltic Times, Baltic News Services |
| Slovakia | Tsar, Slovak Spectator, News Slovakia, Newon Industry Digest Slovakia, Newton Macroeconomy Slovakia, News Bites Slovakia, Slovakia Today, Slovakia This Week, Slovakia Business Weekly, CTK National News Wire, M-Brain Slovak Republic News |
| Bulgaria | Dnevink Bulgaria, Dnevnik Zelen, Dnevnik Biznes, Dnevnik Analizi, Bulgarian Economic Statistic, Bulgarian Central Bank News, Capital, Bulgaria This Week, Bulgaria Today, M-Brain Bulgaria News, News Bites-Bulgaria, The Sofia Echo |
| Romania | Romanian Economic Statistic, Romanian Central Bank News, News Bite-Romania, Romania Today, Romania This Week, Infocredit Report Romania, Romanian Business Association News, Romanian Government News, Romanian Banks Report |

Table 7: The Sources of New Media (continued)

| Country | News Media |
|---|---|
| Czech | The Prague Post, Czech Business Weekly, CTK National News, CTK Business New, News Czech Republic, Newton Macroeconomy Czech Republic, Newton Business Digest Czech, News Bite-Czech, M-Brain Czech, Intellinews Czech, Central Europe News, Central Europe Banking and Finance Weekly |
| Hungary | See News Hungary, Hungary Today, Budapest Business, Faktor, Hungary Business Weekly, Hungarian Official News Digest, Euro News Hungarian, Hungary This Week, M-Brain Hungary, News Bite-Hungary, Central and Eastern Europe, Central Europe Banking and Finance Weekly |
| Poland | Gazeta Wyborcza in Polish, Gazea Wyborcza in English, Poland This Week, See News Poland, News Bite Poland, Intellinews Poland Today, Central Europe Bank and Finance Weekly, Polish News Bulletin, Poland Business Weekly, PAP News Wire, GzaetaPrawna, Polish Company Report, Business News Poland |
| Australia | ABC Premium News Australia, ABC Regional News Australia, The Advocate, The Sunday Mail, Canberra Times, Cannign Times, City North Times, The Daily Telegraph-Australia, Eastern Suburbs Reporter, Guardian Express Australia, Melville Times, NT Business Review, RWE Australian Business News, Stirling Times, Sunday Morning Herald, The Weekly Review Melbourne Times, Australian Financial Review, Business Review Australia, Illawarra Mercury Australia, Australian Burea of Statistics Economy Finance |
| New Zealand | The Wellington, Waitaki Herald, Wairarapa News, Waikato Times, The Tribune News Zealand, Taupo Times, The Tasman Leader, Taranaki Daily, The Sunday Star-Times Auckland, Sunday News, The Southland Times, South Cantebury Herald, Rotorua Review, Roedey Times, Hamilton Press, News Zealand Company News Bites, The New Zealand Herald, National Business Review New Zealand |
| Japan | Nikkei Asian Review, News Bites Japan, JCN Newswire, Japanese Business Digest, The Japan Times, The Japan News, Japan Economic Newswire, Japan Economic Foundation, Japan Corporate News Network, Business Wire Japanese, Japanese World |

Table 8: The Economy-related Key Words across Languages

| Language | Expressions related to the Economy |
|---|---|
| English | economy, economic, growth, inflation, unemployment, job, jobless, income, interest rate, trade, spending, investment, credit, consumer price, money, productivity, business, output, wage, price, finance, consumption, expenditure, debt, industry, goods and services |
| German | Wirtschaft, wirtschaftlich, Wachstum, Inflation, Arbeitslosigkeit, Job, arbeitslos, Einkommen, Zinsrate, Handel, Ausgaben, Investition, Kredit, Verbraucherpreis, Geld, Produktivität, Geschäft, Ausgabe, Lohn, Preis, Finanzen, Verbrauch, Ausgaben, Schuld, Industrie, Waren und Dienstleistungen |
| French | économie , économique, croissance, inflation, chômage, emploi, sans emploi, le revenu, taux d'intérêt, Commerce, dépenses, investissement, crédit, prix consommateur, argent, productivité, Entreprise, sortie, salaire, prix, la finance, consommation, dette, industrie, biens et services |
| Dutch | economie, economisch, groei, inflatie, werkloosheid, baan, werkloos, inkomen, rente, handel, uitgaven, investering, credit, consumentenprijs, geld, produktiviteit, bedrijf, uitgang, voeren, prijs, financiën, consumptie, schuld, industrie, goederen en diensten |
| Bulgarian | икономика, икономически, растеж, инфлация, безработица, работа, без работа, доход, търговия, разходи, инвестиция, кредит, потребителска цена, пари, продуктивност, бизнес, продукция, заплата, финанси, дълг, промишленост, стоки и услуги |
| Greek | οικονομία, οικονομικός, ανάπτυξη, πληθωρισμός, ανεργία, εισόδημα, επιτόκιο, δαπανών, επένδυση, πίστωση, καταναλωτή, χρήματα, παραγωγικότητα, επιχείρηση, παραγωγή, μισθός, χρηματοδότηση, κατανάλωση, χρέος, βιομηχανία, αγαθά και υπηρεσίες |
| Czech | ekonomika, hospodářský, růst, inflace, nezaměstnanost, práce, příjem, úroková sazba, výdaje, investice, kredit, ceny, peníze, produktivita, podnikání, výstup, mzda, cena, finance, dluh, průmysl, zboží a služeb |

Table 8: The Economy-related Key Words across Languages (continued)

| Language | Expressions related to the Economy |
|---|---|
| Danish | økonomi, økonomisk, vækst, inflation, arbejdsløshed, job, arbejdsløs, indkomst, rentesats, handle, udgifter, investering, kredit, forbrugerpris, penge, produktivitet, forretning, produktion, løn, pris, finansiere, forbrug, gæld, industri, varer og tjenesteydelser |
| Estonian | majandus, majanduslik, kasvu, inflatsioon, tööpuudus, töökoht, tulu, intress, kaubandus, kulutused, investeeringud, krediit, tarbijahind, raha, äri, tootlikkus, väljund, palk, hind, rahastada, tarbimine, võlg, tööstus, kaupu ja teenuseid |
| Finnish | talous, taloudellinen, kasvu, inflaatio, työttömyys, Job, työtön, tulo, korko, menot, investointi, luotto, kuluttajahinta, raha, tuottavuus, liiketoiminta, ulostulo, palkka, hinta, Rahoittaa, kulutus, velka, ala, tuotteet ja palvelut |
| Hungarian | gazdaság, gazdasági, növekedés, infláció, munkanélküliség, munka, jövedelem, kamatláb, kereskedelmi, kiadások, beruházás, hitel, fogyasztói ár, pénz, üzleti, kibocsátás, termelékenység, bér, pénzügy, fogyasztás, adósság, ipar, termékek és szolgáltatások |
| Italian | economia, economico, crescita, inflazione, disoccupazione, lavoro, senza lavoro, reddito, tasso d'interesse, commercio, la spesa, investimento, credito, prezzo al consumo, i soldi, produttività, attività commerciale, produzione, salario, prezzo, finanza, consumo, debito, debito, beni e servizi |
| Japanese | 経済, 経済的, 成長, インフレーション, 失業, ジョブ, 所得, 金利, トレード, 支出, 投資, クレジット, 消費者価格, お金, 生産性, ビジネス, 賃金, 価格, ファイナンス, 消費, 債務, 業界, 商品とサービス |
| Latvian | ekonomika, ekonomisks, izaugsme, inflācija, bez darbs, darbs, ienākumi, procentu likme, tirdzniecíba, izdevumi, ieguldíjumi, kredíts, patēriņa cena, nauda, produktivitāte, Bizness, alga, cena, parāds, nozare, preces un pakalpojumi, patēriņš |
| Lithuanian | ekonomika, ekonominis, augimas, infliacija, nedarbas, darbas, pajamos, palūkanų norma, prekyba, išlaidų, investicijos, kreditas, vartotojo kaina, pinigai, našumas, verslas, darbo užmokestis, kaina, finansuoti, vartojimas, skola, industrija, prekes ir paslaugos |

Table 8: The Economy-related Key Words across Languages (continued)

| Language | Expressions related to the Economy |
|---|---|
| Norwegian | økonomi, økonomisk, vekst, inflasjon, arbeidsledighet, jobb, arbeidsløs, inntekt, rentesats, handel, utgifter, investering, kreditt, forbrukerpris, penger, produktivitet, virksomhet, lønn, pris, finansiere, forbruk, gjeld, industri, varer og tjenester |
| Polish | gospodarka, gospodarczy, wzrost, inflacja, bezrobocie, praca, bezrobotny, dochód, oprocentowanie, handel, wydatki, wydatki, kredyt, Cena konsumenta, pieniądze, wydajność, biznes, gaża, Cena £, finanse, konsumpcja, dług, przemysł |
| Portuguese | economia, econômico, crescimento, inflação, desemprego, trabalho, renda, taxa de juro, comércio, gastar, investimento, crédito, preço ao consumidor, dinheiro, produtividade, o negócio, salário, preço, finança, consumo, dívida, indústria, bens e serviços |
| Romanian | economie, economic, creştere, umflare, şomaj, loc de munca, sursa de venit, rata dobânzii, comerț, cheltuire, investiție, credit, prețul de consum, bani, productivitate, Afaceri, salariu, Preț, finanţa, consum, creanţă, industrie, bunuri si servicii |
| Slovak | hospodárstvo, ekonomický, rast, inflácie, nezamestnanosť, zamestnania, príjem, úroková sadzba, obchod, výdavky, investície, úver, spotrebiteľská cena, peniaze, produktivita, obchodné, mzda, cena, financie, spotreba, dlh, priemysel, tovary a služby |
| Spanish | economía, económicom, crecimiento, inflación, desempleo, trabajo, ingresos, tasa de interés, gasto, inversión, crédito, precio al consumidor, dinero, productividad, negocio, salario, precio, financiar, consumo, deuda, industria, bienes y servicios |
| Swedish | ekonomi, ekonomisk, tillväxt, inflation, arbetslöshet, jobb, inkomst, ränta, handel, utgifterna, investering, kreditera, konsumentpris, pengar, produktivitet, företag, lön, pris, finansiera, konsumtion, skuld, industri, varor och tjänster |

## Overview of Data

One noticeable point in Table 9 is that there is a strong stability in the ranking, especially in the Rank 1 category. For instance, New Zealand has always been the most frequently named country in Australian news media for its economy since the late 1980s. Countries like Belgium, Bulgaria, Luxembourg, New Zealand, Romania, and Slovakia show no changes in their Rank 1 category, suggesting that media tend to focus on countries that have frequently made headlines in the past.

There are also ample cases that show variations in the rank across elections. For instance, in the Czech Republic, the French economy used to mostly appear in their news media between 1996 to 2002, but then it disappeared from the list of top three countries since 2006. Instead, Poland, which used to be in the Rank 3 category in 1992 and 1998, moved to a higher ranking (Rank 2 in 2002 and 2006), and finally became the mostly covered country since 2010. This suggests that there have been gradual changes in media coverage in the Czech Republic. More attention was given to developed economies such as France and Germany in the 1990s, but that attention has since shifted toward developing countries such as Poland and Hungary since mid of the 2000s.

Regarding variations in the rank across elections, Denmark and Japan draw particular attention. In both countries, the domestic media began to pay more attention to large economies such as the EU, Germany, France, and the UK in Danish media, and Germany and France in Japanese media. But this attention has moved toward regional economies such as Sweden, Finland, and Norway in Danish case, and South Korea in the Japanese case. This pattern matches well with the changes in trade volume. For instance, Germany used to be one of the largest trading partners to Japan in the 1980s and 1990s. However, as Korea has integrated into the world market with her rapidly growing economy since 1990s, it became the third largest trading partner to Japan, whereas Germany and France ranked as its 10th and 18th largest trading partner since the 2000s respectively.

Another noticeable observation is that each group looks to its own interests. For instance, the Scandinavian countries such as Norway, Finland, Sweden, and Denmark tend to look each other's economic news. The Baltic countries, Latvia, Lithuania, and Estonia show similar results in that the domestic media covers economic news more often among their neighbors.

There is also a unique but consistent pattern in the United Kingdom and France. In the UK, a great amount of attention was given to Germany and France (and Italy since the 2000s). The EU barely appeared in the UK news media in the top category (except in the early 1980s to the mid-1990s). This suggests that the EU is rather less relevant to the UK media compared to Germany and France. However, the French case shows a stark difference. Although the UK and Germany have received media attention from French media since 1993, the EU has appeared in the Rank 1 category since 1997. It seems that the two strong economies in the region, might be considered less important or relevant compared to the EU by the French media. When the UK tends to look at the German and French economy, France looks at the economy in the EU as a whole.

Table 9: The Media-based List of Spatial Reference Points across Countries and Elections

| Country | Election | Rank 1 | Rank 2 | Rank 3 |
|---|---|---|---|---|
| Australia | 1987 | New Zealand | Japan | Germany |
| | 1990 | New Zealand | Japan | Germany |
| | 1993 | New Zealand | Japan | Germany |
| | 1996 | New Zealand | Japan | EU |
| | 1998 | New Zealand | Japan | EU |
| | 2001 | New Zealand | Japan | EU |
| | 2004 | New Zealand | Japan | EU |
| | 2007 | New Zealand | Japan | EU |
| | 2010 | New Zealand | Japan | United Kingdom |
| | 2013 | New Zealand | Japan | EU |
| Austria | 1999 | EU | Germany | France |
| | 2002 | Italy | Germany | France |
| | 2006 | France | EU | United Kingdom |
| | 2008 | France | EU | United Kingdom |
| | 2013 | EU | France | United Kingdom |
| Belgium | 1995 | Germany | France | EU |
| | 1999 | Germany | France | EU |
| | 2003 | Germany | EU | France |
| | 2007 | Germany | France | EU |
| | 2010 | Germany | EU | France |
| | 2014 | Germany | EU | France |
| Bulgaria | 1994 | EU | Hungary | Romania |
| | 1997 | EU | Romania | Hungary |
| | 2001 | EU | Romania | Hungary |
| | 2005 | EU | Romania | Hungary |
| | 2009 | EU | Romania | Greece |
| | 2013 | EU | Romania | Hungary |
| Cyprus | 1998 | Greece | Germany | EU |
| | 2003 | Greece | EU | Germany |
| | 2008 | EU | Greece | Germany |

Table 9: The Media-based List of Spatial Reference Points across countries and elections (continued)

| Country | Election | Rank 1 | Rank 2 | Rank 3 |
|---|---|---|---|---|
| Czech Republic | 1992 | Hungary | Germany | Poland |
| | 1996 | France | Germany | EU |
| | 1998 | France | EU | Poland |
| | 2002 | France | Poland | EU |
| | 2006 | EU | Poland | Hungary |
| | 2010 | Poland | Hungary | EU |
| | 2013 | Poland | Hungary | EU |
| Denmark | 1998 | EU | Germany | France |
| | 2001 | EU | Germany | France |
| | 2005 | Sweden | EU | United Kingdom |
| | 2007 | Sweden | United Kingdom | EU |
| | 2011 | Sweden | Norway | Finland |
| | 2015 | Sweden | Finland | United Kingdom |
| Estonia | 1995 | Latvia | Lithuania | EU |
| | 1999 | Lithuania | Latvia | EU |
| | 2003 | Lithuania | Latvia | EU |
| | 2007 | Lithuania | EU | Latvia |
| | 2011 | Latvia | Lithuania | EU |
| | 2015 | Latvia | Lithuania | EU |
| Finland | 2003 | Norway | United Kingdom | EU |
| | 2007 | Sweden | Norway | Germany |
| | 2011 | Sweden | EU | Norway |
| | 2015 | Sweden | United Kingdom | Norway |
| Germany | 1998 | EU | France | United Kingdom |
| | 2002 | EU | United Kingdom | France |
| | 2005 | France | EU | United Kingdom |
| | 2013 | EU | France | United Kingdom |
| Greece | 2004 | EU | United Kingdom | Germany |
| | 2007 | EU | United Kingdom | Germany |
| | 2009 | EU | United Kingdom | France |
| | 2012 | United Kingdom | EU | France |
| | 2015 | France | EU | Germany |

Table 9: The Media-based List of Spatial Reference Points across countries and elections (continued)

| Country | Election | Rank 1 | Rank 2 | Rank 3 |
|---|---|---|---|---|
| Hungary | 1994 | Germany | Czech | Poland |
| | 1998 | Czech | Poland | Germany |
| | 2002 | EU | Germany | France |
| | 2006 | Poland | Czech | EU |
| | 2010 | Poland | Germany | Czech |
| | 2014 | EU | Poland | Germany |
| Ireland | 1992 | United Kingdom | Germany | France |
| | 1997 | EU | United Kingdom | Germany |
| | 2002 | United Kingdom | EU | Germany |
| | 2007 | United Kingdom | EU | Germany |
| | 2011 | United Kingdom | Germany | EU |
| Italy | 1992 | Germany | France | Spain |
| | 1994 | Germany | France | Spain |
| | 1996 | Germany | France | Spain |
| | 2001 | Germany | France | Spain |
| | 2006 | Germany | France | Spain |
| | 2008 | Germany | France | Spain |
| | 2013 | Spain | Germany | France |
| Japan | 1980 | Germany | France | S. Korea |
| | 1983 | France | Germany | S. Korea |
| | 1986 | Germany | France | S. Korea |
| | 1990 | Germany | S. Korea | France |
| | 1993 | Germany | S. Korea | France |
| | 1996 | S. Korea | Germany | France |
| | 2000 | S. Korea | Germany | France |
| | 2003 | S. Korea | Germany | France |
| | 2005 | Germany | S. Korea | France |
| | 2009 | S. Korea | Germany | France |
| | 2012 | S. Korea | France | France |

Table 9: The Media-based List of Spatial Reference Points across countries and elections (continued)

| Country | Election | Rank 1 | Rank 2 | Rank 3 |
|---|---|---|---|---|
| Latvia | 1995 | Estonia | Lithuania | EU |
| | 1998 | Lithuania | Estonia | EU |
| | 2002 | Lithuania | Estonia | EU |
| | 2006 | Lithuania | Estonia | EU |
| | 2010 | Lithuania | Estonia | EU |
| | 2011 | Lithuania | Estonia | EU |
| | 2014 | Lithuania | Estonia | EU |
| Lithuania | 1992 | Latvia | Estonia | EU |
| | 1996 | Latvia | Estonia | EU |
| | 2000 | Estonia | Latvia | EU |
| | 2004 | Estonia | Latvia | EU |
| | 2008 | Estonia | Latvia | EU |
| | 2012 | Latvia | Estonia | EU |
| Luxembourg | 1999 | France | Germany | United Kingdom |
| | 2004 | France | Germany | United Kingdom |
| | 2009 | France | EU | Germany |
| | 2013 | France | Germany | United Kingdom |
| Netherlands | 1994 | Denmark | Sweden | France |
| | 1998 | EU | Sweden | Denmark |
| | 2002 | EU | France | Germany |
| | 2003 | EU | France | Germany |
| | 2006 | EU | France | Sweden |
| | 2010 | EU | France | Sweden |
| | 2012 | EU | Finland | France |
| New Zealand | 1996 | Australia | Japan | United Kingdom |
| | 1999 | Australia | Japan | United Kingdom |
| | 2002 | Australia | Japan | United Kingdom |
| | 2005 | Australia | Japan | United Kingdom |
| | 2008 | Australia | United Kingdom | Japan |
| | 2011 | Australia | Japan | United Kingdom |
| | 2014 | Australia | Japan | United Kingdom |

Table 9: The Media-based List of Spatial Reference Points across countries and elections (continued)

| Country | Election | Rank 1 | Rank 2 | Rank 3 |
|---|---|---|---|---|
| Norway | 2001 | United Kingdom | Sweden | EU |
| | 2005 | Sweden | United Kingdom | EU |
| | 2009 | Sweden | EU | United Kingdom |
| | 2013 | Finland | Sweden | EU |
| Poland | 1993 | Germany | Hungary | France |
| | 1997 | EU | Germany | Czech |
| | 2001 | EU | Germany | France |
| | 2005 | EU | Germany | Czech |
| | 2007 | EU | Czech | Hungary |
| | 2011 | EU | Germany | Czech |
| | 2015 | EU | Germany | Czech |
| Portugal | 1999 | Spain | United Kingdom | Germany |
| | 2002 | Spain | United Kingdom | Germany |
| | 2005 | United Kingdom | Spain | EU |
| | 2009 | Spain | EU | United Kingdom |
| | 2011 | EU | Spain | United Kingdom |
| | 2015 | EU | Spain | United Kingdom |
| Romania | 2000 | EU | Hungary | Poland |
| | 2004 | EU | Hungary | Bulgaria |
| | 2008 | EU | Bulgaria | Hungary |
| | 2012 | EU | Poland | Hungary |
| Slovakia | 1994 | Czech | Germany | EU |
| | 1998 | Czech | EU | Hungary |
| | 2002 | Czech | EU | Germany |
| | 2006 | Czech | EU | Germany |
| | 2010 | Czech | EU | Germany |
| | 2012 | Czech | EU | Germany |
| Spain | 1996 | EU | Germany | Portugal |
| | 2000 | Germany | Italy | France |
| | 2004 | Germany | France | Italy |
| | 2008 | United Kingdom | EU | Portugal |
| | 2011 | Germany | Italy | Portugal |
| | 2015 | Germany | Italy | Portugal |

Table 9: The Media-based List of Spatial Reference Points across countries and elections (continued)

| Country | Election | Rank 1 | Rank 2 | Rank 3 |
|---|---|---|---|---|
| Sweden | 1998 | Denmark | Germany | EU |
| | 2002 | Denmark | EU | Germany |
| | 2006 | Denmark | Norway | Finland |
| | 2010 | Norway | Denmark | Finland |
| | 2014 | Finland | United Kingdom | Norway |
| Switzerland | 1995 | Germany | France | EU |
| | 1999 | EU | France | United Kingdom |
| | 2003 | EU | France | United Kingdom |
| | 2007 | EU | France | Germany |
| | 2011 | EU | Germany | France |
| | 2015 | EU | France | United Kingdom |
| United Kingdom | 1983 | France | Germany | EU |
| | 1987 | Germany | France | EU |
| | 1992 | Germany | France | Italy |
| | 1997 | Germany | France | EU |
| | 2001 | Germany | France | Italy |
| | 2005 | Germany | France | Italy |
| | 2010 | Germany | France | Italy |
| | 2014 | Germany | France | Italy |
| France | 1993 | United Kingdom | EU | Germany |
| | 1997 | EU | United Kingdom | Germany |
| | 2002 | EU | United Kingdom | Germany |
| | 2007 | EU | United Kingdom | Germany |
| | 2012 | EU | United Kingdom | Italy |