

Master thesis

The Economic Vote in Context:  
How does electoral accountability  
change in a globalized world?

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Master of Public Policy 2016

April 4, 2016

# Executive Summary

Political scientists as well as policy makers are interested in the determinants of elections. Several studies investigate elections under increased globalization with regard to how voters assign responsibility for economic outcomes, extract information about incumbents' competence from economic performance, and hold incumbents accountable. Results, however, remain inconclusive. Some studies highlight the ability of voters to adjust the extent to which they reward or punish incumbents to the amount to which the incumbent is (potentially) responsible for economic outcomes. Other studies show that voters do not adjust their assessment accordingly.

This master thesis investigates the relationship between the economic vote and globalization on an aggregate level with a sample of 23 OECD countries from 1970 onwards. It is shown that voters continue to apply a high standard for economic outcomes if the economy is globalized. Some assume that this is bad news for democracy, as it might distort the incentives for incumbents to act in the public's interest. This is not necessarily the case, because voters (or third parties) also engage in benchmarking with other countries and thereby provide incentives to outperform relevant reference countries.

This indicates that voters are not satisfied with the frame that economic policy is (mostly) out of reach of incumbent governments in a globalized context. This, in turn, increases the pressure for policy makers and incumbents to deliver on the economic agenda. However, in a context of strong institutions this might also lead to further political integration in order to retain the capacity of the government to deliver on the economic agenda. In addition, this might lead to the selection of (new) policy makers and politicians who are capable to provide these economic outcomes.

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# 1. Introduction

Political scientists as well as policy makers are interested in the determinants of elections. An empirical regularity is the relationship between economic performance and electoral success (“economic voting”). Nevertheless this relationship is continuously scrutinized and refined. Most recently the economic vote is assumed not to hold for globalized countries (Fernández-Albertos, 2006; Hellwig, 2001; Hellwig & Samuels, 2007): voters reward (punish) the incumbent less for strong (weak) economies when these countries are highly globalized.

If it were true that this relationship does not hold for globalized countries, then two consequences are discussed. First, this might adjust the amount of reward and punishment for the incumbent to the amount to which the incumbent can actually influence the economic outcome. This is deemed to be necessary in order to provide proper incentives for the incumbent to act in the interest of the public (Ashworth, 2012). Second, if the economic vote is insignificant in globalized countries - and most OECD countries have high levels of globalization -, then voters would lose a central mechanism to induce accountability and good governance in many advanced democracies.

At the same time potential remedies emerged in the literature to investigate whether the relationship holds for globalized countries and how this relationship might change (especially with a benchmarking model, see Kayser & Peress, 2012, 2016).

Nevertheless no thorough investigation has been undertaken to integrate the potential remedies into the models that predict a declining relationship for more globalized countries. This master thesis aims at closing this research gap. It is guided by the following research question: *To which extent does an improvement of economic performance affect the incumbent’s electoral performance in advanced democracies conditional on the countries’ degree of globalization?* Thereby the extent to which governments are held responsible for economic performances is reassessed. To this end a large country sample containing advanced economies is investigated on the aggregate level from 1970 onward.

The research is structured as follows. First, the relevant literature with regard to the economic vote and its relationship with globalization is reviewed. Second, the research question and hypotheses are developed. Third, the selection of cases is developed and

data sources are discussed. Fourth, aggregate-level and individual-level models are discussed for the analysis and the operationalization of the dependent, independent, conditional, and control variables are presented. Fifth, remaining methodological questions are addressed. Sixth, the results of the main regression models are presented. Seventh, the robustness of these findings with regard to another sample selection and other operationalizations of variables are evaluated. Next, the stability of the results is assessed with regard to two different sample splits. Finally, a conclusion of the main findings is presented.

The results indicate a different relationship between economic voting and globalization than previous findings in the literature. The substantial effect of the economic vote does not decrease for higher levels of globalization, nor does this effect become statistically indistinguishable from 0. The results rather point into the opposite direction: the substantial effect of the economic vote tends to increase for higher levels of globalization. These findings are robust to several changes and they have the predicted effect in smaller subsets.

This thesis has practical implications beyond filling this research gap. First, it provides insights into how the public perceives the effects of globalization. This becomes increasingly important, because in some countries the public frustration about globalization as a constraint for national politics increases (Murphy, 2014; Steiner, 2010). In order to politically engage with the alienation of voters from politics, more research is needed to understand the complex interactions between the national and international level.

Second, it informs policy makers how voters perceive the economy. Thereby it demonstrates which (economic) standards a government needs to attain in order to improve its chances of reelection. This is urgent due to continuous efforts to integrate the global economy through free trade agreements, such as the Transatlantic Trade and Investment Partnership (TTIP).

In a nutshell: voters continue to apply a high standard for economic outcomes if the economy is globalized. These are not necessarily bad news for democracy, because voters (or third parties) also engage in benchmarking with other countries and thereby provide incentives to outperform relevant reference countries. This indicates that voters are

not satisfied with the frame that economic policy is (mostly) out of reach of incumbent governments. This, in turn, increases the pressure for policy makers and incumbents to deliver on the economic agenda. Pessimists assume that this pressure for (unattainable) outcomes leads incumbents to divert their actions away from the public interest. However, in a context of strong institutions this might also lead to further political integration in order to retain the capacity of the government to deliver on the economic agenda. In addition, this might lead to the selection of (new) policy makers and politicians who are capable to provide these economic outcomes.

## 2. Literature overview

Political scientists are interested in the determinants of electoral success of parties in elections. These insights enable scholars to investigate the relationship between the government and the governed, e.g. regarding accountability. One research line investigates the effect of issue taking by parties over contested issues on electoral success (i.e. issue voting). Another line of research examines the effect of uncontested issues on parties electoral performance, e.g. security (i.e. salience voting). Among the salient issues relevant in elections the performance of the economy is a significant predictor of electoral performance. Consequently this was studied intensively as the “economic vote”.

Today several general propositions about the economic vote are established in the literature (Lewis-Beck & Stegmaier, 2013): the economic vote is identified for established and transitional democracies; voters respond to the overall economic performance stronger than to individual circumstances (sociotropic voting as compared to egotropic voting); voters tend to evaluate the economy retrospectively (compared to prospective voting); the economic vote is conditioned by institutional factors that mainly alter the (perceived) clarity of responsibility of political actors and the (institutional) ability of voters to hold the government to account (Hellwig & Samuels, 2008); the macro findings (the relationship between the aggregated variables “economic performance” and “electoral performance”) reflect the micro findings; voters respond strongly to changes in the economic variables economic growth and unemployment (whereas the importance of inflation has declined, Sattler, Brandt, & Freeman, 2010); voters are deemed to take into account economic variables of the last year (i.e. voters are myopic); and incumbents usually incur a cost of ruling.

Nevertheless, the economic vote is continuously challenged, e.g. by Sattler et al. (2010) who argue that voters monitor and act upon changes in government policies, but respond less to changes in macroeconomic outcomes. In addition, Hellwig & Samuels (2007) argue that the economic vote becomes substantially smaller and not statistically significant for globalized countries.

Moreover, different models are constructed to model the relationship between economic



and electoral performance. Three individual-level mechanisms are relevant that link the events on the aggregate level. The sanctioning model (Cheibub & Przeworski, 1999; Hellwig & Samuels, 2008) assumes that voters punish or reward incumbents merely based on the past economic performance. The selection model assumes that voters use past economic performance as an indicator to assess the competence of the incumbent and use this signal to select competent politicians (Duch & Stevenson, 2010; Kayser, 2009). The strategic parties model (Hellwig, 2012) is based on the selection model and allows for strategic position taking by parties to avoid blame or receive credit for economic performance (thereby introducing issue voting into the economic vote). Recently, an integrative perspective is advanced: voters use past information as the best means to assess the competency of the incumbent and reward or punish her accordingly in order to select competent politicians (Ashworth, 2012).

The study of the economic vote and globalization (especially economic integration) has attracted remarkable attention (Kayser, 2007). This gave rise to different lines of research and competing hypotheses about how globalization shapes the economic vote. More generally, if national economic performance is increasingly driven by the international or regional economy, how do voters evaluate the economic performance and interact with their (constrained) governments?

One line of research investigates how the voters' demands change due to globalization. The competing hypotheses are the government constraint hypothesis, compensation hypothesis and the balancing demands hypothesis. The government constraint hypothesis is an extension of the sanctioning model and contends that voters perceive their governments to be constrained by globalization (i.e. less "room to maneuver") and therefore lower their demands for economic policy (Fernández-Albertos, 2006; Hellwig, 2001; Hellwig & Samuels, 2007). An extension of the government constraint hypothesis investigates how economic integration changes the cost benefit analysis of voters to cast a ballot and thereby shapes electoral turnout (Steiner, 2010). The compensation hypothesis states that voters are only accepting an increase in risk due to the exposure to the global economy if the government provides some kind of compensatory scheme ("embedded liberalism"). While research finds a correlation between trade openness and the size of the welfare state, the empirical evidence of a micro level mechanism is almost

absent. Latest research (Murphy, 2014) attributes the lack of compensation to the intervening effect of mass media: the media replicates the (politically favored) dominant frame of blaming international forces for economic outcomes and thereby reduces the pressure on politicians to provide compensatory measures for losers of trade openness. The balancing demands hypothesis states that voters perceive their government to be constrained by globalization (especially in their economic policy). Therefore voters demand more in other policy fields not constrained by globalization (Hellwig, 2014).

Another line of research expands the selection model of the economic vote to economic globalization (Duch & Stevenson, 2010). This research maintains that both elected and non-elected decision makers influence the economy. Hence voters face increasing problems to attribute responsibility correctly for economic performance in an economically integrated context. Voters become aware that the international as compared to the domestic determinants of economic performance increases for globalized countries. Thereby voters find it increasingly difficult to infer the competency of the government, i.e. to learn about the distribution of shocks by monitoring economic performance over time and comparing it to the performance of similar countries (“signal extraction problem”). Hence the economic vote is deemed to be lower in countries that are economically integrated.

A further line of research highlights the role of international benchmarking for electoral performance (Kayser & Peress, 2012, 2016). This research maintains that voters (or the media) compare the economic performance of one country against the performance of other (neighboring) countries. This proposition is thereby not dependent on a certain level of voter sophistication: voters might benchmark the national economic performance themselves, or receive information processed accordingly by third parties. Furthermore highly integrated countries tend to have synchronized business cycles. Hence if economic indicators of integrated countries vary in concert, then the benchmarking effect (i.e. deviation from the international average) is smaller compared to non-integrated countries. Therefore the economic vote (in absolute terms) might be not as strong in globalized countries.

These theoretical claims are (mostly) based on the empirical finding that the economic vote becomes substantially smaller and not statistically significant for highly integrated

countries. This is investigated in different publications (Duch & Stevenson, 2010; Fernández-Albertos, 2006; Hellwig, 2001; Hellwig & Samuels, 2007). However, these findings are continuously challenged.

A study (Vowles, 2008) indicates that the micro mechanism (“who is in power can make a difference”) required for a decline of the substantial effect of the economic vote for higher levels of globalization cannot be identified to vary with regard to the level of globalization. In addition, a micro level analysis in an extreme case (Greece in 2014) challenges the micro mechanism underlying the findings (Kosmidis, 2015). Furthermore, studies indicate that voters in Latin America do not attribute responsibility “correctly”, i.e. do not discount the international component of economic performance. Surveys conducted in Latin American countries indicate that voters do not distinguish between domestic and international sources for economic outcomes when evaluating the incumbent’s performance based on economic outcomes (Campello & Zucco Jr., 2015a). These findings are supported on the aggregate level (Campello & Zucco Jr., 2015b): an indicator consisting of factors that are exogenous to domestic policy makers is a strong predictor of electoral success in Latin American “low-savings commodity-exporting” countries. While the authors maintain that these results might be idiosyncratic for the cases selected (i.e. “inward-looking development models”, “limited levels of economic or political integration”, and low “access to information”) as compared to European countries, these results cast doubts on the required voter sophistication.

In addition, this would require substantial sophistication of the voters: voters would need to be able to assess the level of globalization (the “Michigan school” criticized the sophistication of voters and maintained that voters hold ideological inconsistent views, e.g. for an early criticism compare Converse, 2006) and hold certain beliefs about the attribution of responsibility for economic outcomes: voters need to assume that the incumbent are not responsible for economic outcomes if a country is highly globalized. Moreover, the studies that find a substantially lower and less significant economic vote in higher globalized countries bear several deficiencies, especially regarding the statistical analysis, the operationalization of the variables, and the cases used.

### 3. Research question and hypotheses

Therefore the relationship between economic performance and the electoral performance of the incumbent (i.e. economic vote) is re-examined under different degrees of globalization. The guiding research question is: *To which extent does an improvement of economic performance affect the incumbent's electoral performance (in percent of the entire vote share) in advanced democracies conditional on the countries' degree of globalization?*

Shortcomings of former studies that investigate globalization and the economic vote are addressed by replicating the studies and addressing these challenges. Consequently the first hypothesis is tested: the substantial effect of the economic vote is conditioned by globalization. *An improvement (deterioration) in absolute economic indicators leads to a lower improvement (worsening) in the electoral performance of the incumbent, the higher the country's degree of globalization.*

If the first hypothesis is confirmed, then this would increase the confidence in the foundation of various studies mentioned above. However, if the first hypothesis is dismissed by alleviating the deficiencies of the studies or by using a different data set then this would encourage scholars of this field to re-examine their findings and re-evaluate their assumed micro mechanisms. Generally, dismissing the first hypothesis would align this line of research with the general assumptions about voter sophistication. Furthermore, this would strengthen the confidence in electoral accountability: voters would not discount (potential) increased challenges for politicians to strengthen the economic performance under globalization. Voters would rather demand politicians to be apt to maneuver in a globalized economic as well as political environment and deliver on the economic agenda. Others argue, however, that if reward or punishment are applied indiscriminately (i.e. if the outcome would actually be outside the control of the incumbent), then this would distort the incentives for the incumbent to act in the interest of the public.

In a second step the benchmarking model (i.e. relative measurements) of the economic vote is introduced. Here national economic performance is decomposed into a local and international component. Consequently the second hypothesis is tested: the

economic vote is not conditioned by globalization, if the national economic performance is decomposed. *An improvement (deterioration) in relative economic indicators leads to an improvement (worsening) in the electoral performance of the incumbent, regardless of the countries degree of globalization.*

A confirmation of the second hypothesis could occur in two contexts: before, the first hypothesis could be approved or rejected. If the first and second hypothesis would be approved, then prior research in this field would be confirmed and the micro mechanism proposed by Kayser & Peress (2016) would be supported. This would increase the understanding of the interaction between national politics and international developments as well as the understanding of democratic accountability. If, however, the first hypothesis would be rejected and the second hypothesis would be confirmed, then interpretations of the results would be mixed. First, it would be difficult to discern the two results: if the economic vote would not be substantially lower and less statistically significant in globalized countries, then it is difficult to decide whether there is an additional effect from introducing the decomposition of economic performance. Second and generally, this would challenge claims of reduced electoral accountability for economic outcomes in more globalized countries. Third, it would be an assuring indicator on the aggregate level that voters use past economic performance as a means to select competent politicians.

Regardless of the outcome with regard to hypothesis 1, if hypothesis 2 is confirmed, then alternative models to the standard approach to voters, who update their information about characteristics of politicians (e.g. competency) would gain support (Ashworth, 2012): either, voters would not use the absolute values of (economic) performance as a signal of a characteristic, but engage in benchmarking in order to evaluate the signal; or, the benchmarking is mainly done by third parties (e.g. the media), which would encourage further investigation into the electoral ramifications of different (media) institutions.

## 4. Case selection and data

This master thesis focuses on elections in developed democracies from 1975 until 2011. These countries are considered for the analysis in years with a minimum democracy score of +6 points on the Polity IV index (ranging from -10 to +10). The Freedom House indicator of Political Rights (FreedomHouse, 2015) is used in instances where no Polity IV index exists. Here a score of 3 or lower (ranging from 1 to 7) is required for an observation to be considered in the sample. Thereby these criteria follow Hellwig & Samuels (2007) as well as Hellwig & Samuels (2008).

The sample contains all long-term OECD member countries (excluding Switzerland and Turkey): Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, the United Kingdom, and the United States.

Switzerland is excluded due to its unique political system and Turkey due to its legacy of military interventions in politics (Kreiser, 2012). The United States is included in the sample contrary to Kayser & Peress (2012), where the United States is deemed to be capable to influence the international component of the relative economic measurement. This case selection follows mostly Hellwig (2012), Kayser & Peress (2012), and Steiner (2010). Thereby this selection contrasts Hellwig & Samuels (2007).

The restriction on advanced economies is based on theoretical and pragmatic reasons. First, cross-nation research on the economic vote is conducted mostly on developed democracies. The linkage to these studies is retained (especially to Hellwig & Samuels, 2007) by using a similar sample. Second, this restriction generates a more homogeneous sample (further heterogeneity is addressed with controls and robustness tests). Thereby it is more plausible to assume a similar explanatory model (i.e. causal mechanism) for all the observations. At the same time it provides substantial variation for all independent as well as the dependent variables, i.e. for a diverse case method following Seawright & Gerring (2008). Third, it increases the data availability and its reliability. This is of great importance, especially to obtain sufficient control variables across all observation. This restrictive selection is relaxed during robustness tests, where the sample is expanded and approximates the sample used in Hellwig & Samuels (2007).

Substantial variation of the key independent and conditional variable is required. The independent variables absolute economic performance varies substantially over time and across units. Moreover greater variance is created by transforming absolute to relative economic performance (see Appendix C). The conditional variable globalization varies across countries (between variation) and the level of globalization varies for each country (within variation). In addition, it is generally assumed that countries tend to become more globalized over time - nevertheless some countries lower their level of globalization (see Appendix C). Theoretically both variations should condition the economic vote.

Data can be obtained from the World Bank for electoral variables (Beck, Clarke, Groff, Keefer, & Walsh, 2001). Furthermore the World Bank provides economic data (WorldBank, 2012). The sources of further variables are listed in the Appendix B.

Table 1: Overview over parliamentary elections

Country	Elections	First Election
Austria	10	1979
Australia	12	1977
Belgium	8	1978
Canada	11	1979
Germany	9	1980
Denmark	14	1975
Spain	10	1979
Finland	9	1979
France	8	1978
United Kingdom	8	1979
Greece	9	1977
Ireland	10	1977
Israel	10	1977
Iceland	10	1978
Italy	8	1979
Japan	10	1979
Luxembourg	7	1979
Netherlands	12	1977
Norway	9	1977
New Zealand	12	1978
Portugal	11	1979
Sweden	11	1976
United States	14	1978

In addition, this panel is very unbalanced: each unit's observations start in different years either due to data constraints or by low democracy scores; each unit has values

for its dependent variable only in election years. In addition, the number of elections varies substantially between units ranging from 7 for Luxembourg to 14 for Denmark and the United States.



## 5. Models and operationalization

There are different approaches in the literature to study this research question. One possibility is to use survey data on the individual level (mostly from the Eurobarometer or Comparative Study of Electoral Systems CSES) with perceived economic performance as the independent variable and intention to vote as the dependent variable (Fernández-Albertos, 2006; Hellwig, 2001). This is a feasible way to get around the problem that economic performance needs to be transmitted to the voter (mostly by the media and political elites). Moreover it increases the number of observation for each case country (i.e. more surveys than elections). Nevertheless it might be problematic to assume that the intention to vote actually reflects the true preference - besides close to elections (see e.g. Gelman & King, 1993).

Hence a different type of research design can solve this problem. When investigating the actual behavior of voters in elections (i.e. aggregate-level election results) voters can be assumed to have sufficient information to vote according to their preferences. This approach is used by Hellwig & Samuels (2007). However this approach yields the danger of aggregation bias (ecological fallacy) that needs to be addressed with a careful model design and interpretation.

This master thesis applies an aggregate-level analysis for several reasons. First, it allows the observation of actual behavior. Second, it allows the inclusion of more countries. Third, it does not require statistical models with multi-level analyses nor does it require assessing the comparability of different surveys. Finally, this master thesis builds mainly on the work of Hellwig & Samuels (2007) and Kayser & Peress (2012) where the analysis is (also) conducted on the aggregate level.

This master thesis is compatible with a sanctioning model (i.e. voters' standards for punishment change) and a selection model of economic voting (i.e. voters' standards for what is considered good performance change).

## 5.1 Dependent variable

The dependent variable is the electoral performance of the largest party of the incumbent government in parliamentary elections. This is measured as the percentage of the entire vote share. The focus on parties instead of incumbent politicians alleviates three methodological concerns. First, term limits might prohibit the incumbent to run for office again. Parties, however, tend to persist beyond one particular incumbent. Second, incumbents might choose not to seek reelection in case of adverse election prospects. This endogenously determined selection out of the sample could bias the results upward. Third, incumbents might be inclined to call early elections when reelection prospects are favorable (Kayser, 2006; Schleiter & Tavits, 2014). This concern is partially addressed, because the strategic incentives of a particular incumbent and the largest party in parliament might not be aligned. This concern, however, remains to the extent that the particular incumbent exerts strong influence on the largest party in parliament.

Contrary, an operationalization with regard to the electoral performance of the prime minister's party is favored in many studies (e.g. Duch & Stevenson, 2013). This, however, cannot be computed consistently from the World Bank Database of Political Institutions (Beck et al., 2001), especially not in presidential systems and across a large sample that is required in the robustness section. In addition, there is a strong relationship between the prime minister's party and the largest government party in parliamentary and assembly-elected president systems: they are identical in 91% of the cases.

Furthermore, the elections considered in the following models are limited to parliamentary elections. This is attributed to constraints of the World Bank Database of Political Institutions (Beck et al., 2001): while it reports vote shares for presidential elections in presidential systems and executive elections in parliamentary and assembly-elected presidential systems, nevertheless merely the vote share for an incumbent who is reelected can be computed; in cases of a change in office, the vote share of an incumbent cannot be computed.

Generally, it is considered more difficult to find substantial and significant effects of the economic vote if presidential and executive elections are excluded from the sample. In Hellwig & Samuels (2008) the substantial effect of the economic vote for parliamentary

systems is estimated as 0.27 (standard error: 0.25). In addition, in presidential systems the effect is estimated as 0.51 (standard error: 0.21) for legislative elections as well as 1.18 (standard error: 0.23) in executive elections. Hence, if substantial and significant effects are estimated in the following while excluding executive elections, then the true effect (if executive elections were included) would be even stronger.

## 5.2 Independent variables

There are different absolute measures for the concept of economic performance introduced and used in the literature: growth in GDP, unemployment, and inflation. While growth in GDP and unemployment are considered to be salient indicators for the economic vote, inflation is deemed to be less salient (Lewis-Beck & Stegmaier, 2013; Sattler et al., 2010). Hence growth in GDP (at constant US dollars) is used for the main analysis, while the robustness of these findings with regard to the independent variable is shown with unemployment. Inflation is not considered as an independent variable in the following.

The absolute measure can be modified regarding the date of the election (i.e. adjusted economic performance). If the election occurs in the first half of a given year, then the economic performance during the previous year rather serves as a basis for the judgement of the government (e.g. in Hellwig & Samuels, 2007).

It needs to be assessed which measurement of GDP growth indicator of the World Bank Development Indicators (WorldBank, 2012) is the most consistent indicator with prior research in this field. To this end, these indicators are compared to the GDP growth indicator of Hellwig & Samuels (2007).

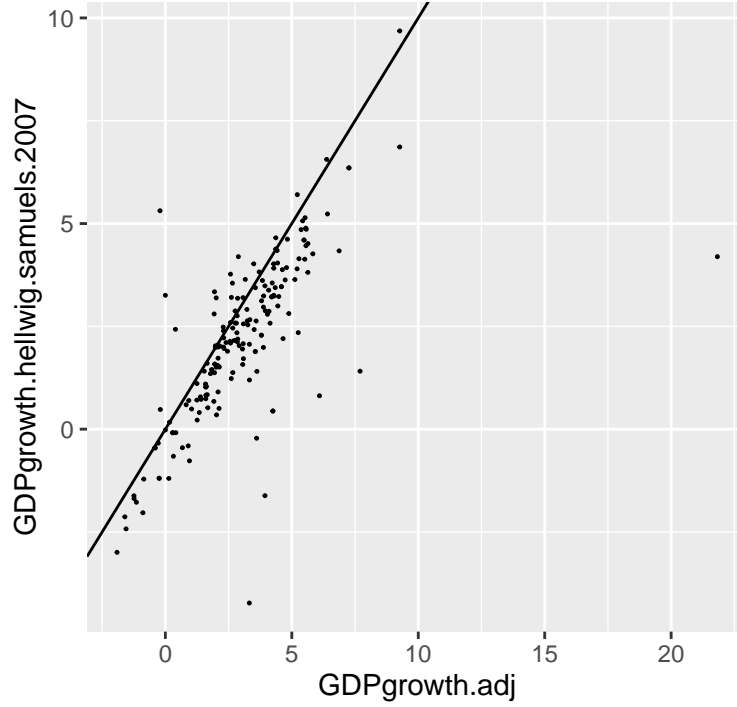
A scatter plot of the adjusted measure of GDP growth (*GDPgrowth.adj*) and the GDP growth of Hellwig & Samuels (2007) (*GDPgrowth.hellwig.samuels.2007*) reveals a clear pattern (figure 1, including a diagonal line): the economic indicator gathered in 2016 are structurally above the measures gathered by Hellwig & Samuels (2007). This is a general concern to the validity of findings (this issue is raised e.g. by Sattler et al., 2010), but this is in line with the general revision of economic indicators (WorldBank, 2016): the indicators tend to increase over time due to upward revisions with regard to improved data that cover more parts of the economy and a better integration of growing industries.

Table 2: World Bank Development Indicators and correlations with growth rates used by Hellwig and Samuels (2007)

code	description	correlation unadjusted	correlation adjusted
NY.GDP.MKTP.CD	GDP (current US\$)	0.25	0.24
NY.GDP.MKTP.CN	GDP (current LCU)	-0.33	-0.25
NY.GDP.MKTP.KD	GDP (constant 2005 US\$)	0.65	0.80
NY.GDP.MKTP.KN	GDP (constant LCU)	0.65	0.80
NY.GDP.MKTP.PP.CD	GDP, PPP (current international \$)	0.64	0.57
NY.GDP.MKTP.PP.KD	GDP, PPP (constant 2005 international \$)	0.64	0.70

Hence in the following, GDP growth indicators are based on constant local currencies (compare Appendix B) for three reasons. First, this provides the best compatibility with previous studies. Second, this indicator is most in line with assumptions about voters who infer the competency of incumbents from reported (or benchmarked) growth rates. Third, it is the easiest accessible indicator from the World Bank and therefore presumably most widely used, since the other growth indicators need to be computed from levels of GDP.

Figure 1: Scatterplot with GDP growth



A relative measure for economic performance is the deviation of a countries' economic performance from a certain benchmark (Kayser & Peress, 2012, 2016). Thereby the economic performance ( $y_{c,t}$ ) is split into an international ( $y_{c,t}^{global}$ ) and a local component ( $y_{c,t}^{local}$ ). The local component ( $y_{c,t}^{local}$ ) is calculated by subtracting the international component ( $y_{c,t}^{global}$ ) from the (time adjusted) national values for economic performance ( $y_{c,t}$ , for GDP growth and unemployment). This decomposition allows differentiating if voters reward the incumbent, when the economic performance exceeds the benchmark (e.g. the economic performance of their neighbors). Contrary, voters could punish the incumbent, if the economy performs below the benchmark.

Hence, if the election took place in the first half of year  $t$  in country  $c$ , then the following equation is used to calculate the local component for country  $c$  in year  $t$ :

$$y_{c,t}^{local} = y_{c,t-1} - y_{c,t-1}^{global}.$$

If, however, the election in year  $t$  in country  $c$  took place in the second half of the year (or no month is coded), then the following equation is used to calculate the local component for country  $c$  in year  $t$ :

$$y_{c,t}^{local} = y_{c,t} - y_{c,t}^{global}.$$

In the following the local and the international component of economic performance - GDP growth and unemployment - are included into the model. This is in line with previous research in this field, where both components are included into the model (Kayser & Peress, 2012, 2016). By including both terms into the model, it is possible to assess the explanatory power of the benchmarking approach as compared to conventional specifications in the literature about the economic vote. Furthermore, the following models remain comparable to previous studies, by including both components into the model.

By including both components into the model, it is assumed that the international component has a direct effect on the electoral outcome, while the local component remains equal (*ceteris paribus* assumption). Hence, according to the definition, an increase in the international component ( $y_{c,t}^{global}$ ) needs to be accompanied with an increase for the same magnitude of the national economic performance ( $y_{c,t}$ ).

At the same time, an increase in the local component ( $y_{c,t}^{local}$ ), while the international component ( $y_{c,t}^{global}$ ) remains constant, can merely be caused by an increase in the national economic performance ( $y_{c,t}$ ). Both interpretations include restrictions on the interpretation of the regression results that are not demanded by the theory.

For three reasons these restrictions could be relaxed by merely including the local component ( $y_{c,t}^{local}$ ) into the model. First, in such a model, an increase in the local component ( $y_{c,t}^{local}$ ) could be interpreted both by an increase of the national economic performance ( $y_{c,t}$ ), or a decline of the international component ( $y_{c,t}^{global}$ ) - *ceteris paribus*. Second, excluding the international component ( $y_{c,t}^{global}$ ) from the model would not bias the estimators, because it is deemed not to be correlated with any other variable in the model (potential correlations are discussed below and reported in table 3). Third, the findings presented in table 7 are robust to an exclusion of the international component (see Appendix F, table 22).

In some cases, the construction of the benchmarking categories to compute  $y_{c,t}^{global}$  is problematic. First, if the benchmarking category consists of a limited number of states

(e.g. *GDPgrowth.bordering.adj*). Second, if the economic performance of these states (i.e. international component) is correlated with the national economic performance. Then it is misleading to assume that the *ceteris paribus* assumption holds if both components are included into the model: e.g. if one country increases its growth in GDP with regard to its trading partners, then this has a direct impact on the growth in GDP of the trading partners (compare table 4).

### 5.2.1 Operationalizations of benchmarks

Voters might use different benchmarks  $y_{c,t}^{global}$  to assess the national economic performance. First, voters might use the average of the neighboring countries to create perceptions about the level of economic performance that is expected from the incumbent government (*GDPgrowth.bordering.adj*). While this might serve as a feasible proxy, several problems arise with this indicator. Island states (e.g. Japan) do not have a border with other countries. In addition, there might be countries close to the home country that are taken into account when forming the expectations about which benchmark should be attained, but that do not share a common border (e.g. the Netherlands and Luxembourg). Moreover, there might be countries in other parts of the world that are considered (e.g. trading partners, culturally similar countries), but are not captured by this measurement. Finally, this measurement gives equal weight to all neighboring countries (e.g. with regard to Germany, Belgium has the same weight as France).

Second, voters might use the regional median to assess a benchmark value (*GDPgrowth.regional.adj*). With regard to the first indicator the regional median alleviates the exclusion of close but not bordering countries. However the other shortcomings remain, especially with regard to equal weights. In addition, the national economic performance is used to assess the regional benchmark and thereby they are not independent from one another. This concern is addressed by taking the median instead of the mean of the countries in one region. Furthermore the grouping takes places at a high level of aggregation; the regional categories are: Europe, Asia, Americas, Africa, and Oceania.

Third, voters might use the international median to benchmark the national economic performance (*GDPgrowth.intern.adj*). The main shortcoming of this approach is the

absence of groups of countries. Voters might consider that the own country belongs to a category of countries that ought to be assessed against a certain standard (e.g. developed countries). Again, the local and international economic performances are not independent from each other, especially for large economies. Hence the median is preferred over the mean to measure the international component. This measure is useful due to the unbalanced structure of cross-country election panels, i.e. elections take place in different years. If this data set would be a balanced panel, then all country observations in each year would be lowered by the same number, leaving the cross-country variation in OLS regressions unchanged. Here, the unbalanced structure of this data set provides additional variation for this measure.

Fourth, voters might use the economic performance of their main trading partners as a benchmark for their national economic performance (*GDPgrowth.trade.adj*). One important improvement compared to other indicators is the possibility to weight the economic performance of the trading partners with their respective trade share. In additions it is likely that this measurement also captures geographic proximity, because close countries tend to engage into trade relations. Moreover it might also capture the political importance of other countries, assuming that trade relations and political relations are correlated. This measurement has three important limitations. Voters might lack the economic information of the trade relations and their economic performance. Moreover, many countries engage in elaborate trade relations with states that have other economic systems and therefore are deemed to be different (e.g. exporters of natural resources, or fast growing countries like China). Furthermore, assuming that the economic performance of the trading partners is not independent from the national economic performance, then the variation of the independent variable is lowered.

Fifth, voters might use geographic proximity to identify the relevant countries, against which the national economic performance is benchmarked against (*GDPgrowth.closest.adj*). This is approximated by calculating the distance between the countries capitals. Downsides include the sensitivity to the location of the capital, especially in big countries (e.g. the United States). Moreover voters might also benchmark against countries in other regions, due to trade relations or cultural proximity. Again, this measure gives equal weights to the countries identified.



Sixth, voters might benchmark the national economic performance against the performance of countries with a similar culture (*GDPgrowth.language.adj*). By assuming that cultural proximity and linguistic proximity are correlated, the 10 most similar countries are identified and benchmarked against. This assumption can be problematic in instances, where countries that are close culturally pursue different paths of economic development (e.g. Japan with regard to other countries in the region). Again, this measure weights the countries equally.

### 5.2.2 Correlation of components

In order to assess whether correlation of the components is a concern in the further analysis, the Pearson correlation is calculated for country-year observations that contained a legislative election, i.e. the observations relevant for the regression analysis. The international component ( $y_{c,t}$ ) is imputed as the x-value, while the national economic performance ( $y_{c,t}$ ) is considered as the y-value.

Table 3 indicates that most components are overall positively correlated - on average 0.38. The components of Germany, Italy, and the Netherlands are more strongly correlated than the other countries. Furthermore the components of New Zealand, Israel, Ireland, Finland, and Australia are not as strong correlated. The international component of *GDPgrowth.bordering.adj* for countries that do not border with another country is 0. Hence no correlation can be estimated for this measure.

This indicates, on the one hand, that an increase in the national economic performance might induce an increase in the international component. This is convincing for countries with strong economies, e.g. an increase in the national economic performance of Germany is likely to induce an improved economic performance of countries that trade with Germany, leading to an increase of the international component. On the other hand, an increase in the international component is likely to increase the national economic performance of a given country.

Two criteria can be used to assess the relevance of the different relative economic measures. The first criterion is the degree to which correlation might cause challenges during the statistical analyses. If the national economic performance and the international

Table 3: Pearson correlation of international component (x) and national economic performance (y)

country	GDPgrowth.bordering.adj	GDPgrowth.regional.adj	GDPgrowth.intern.adj	GDPgrowth.trade.adj	GDPgrowth.closest.adj	GDPgrowth.language.adj
Austria	0.48	0.51	0.14	0.62	0.35	0.30
Australia		0.29	0.62	0.21	0.04	0.39
Belgium	0.65	0.68	0.39	0.75	0.66	-0.53
Canada	0.76	0.33	0.29	0.81	0.53	0.09
Germany	0.94	0.81	0.83	0.90	0.89	0.33
Denmark	0.52	0.30	0.22	0.70	0.41	0.05
Spain	0.58	0.73	0.29	0.40	0.76	0.16
Finland	0.002	0.54	0.29	0.36	0.26	0.38
France	0.49	0.39	0.50	0.52	0.42	0.46
United Kingdom	0.76	0.91	0.85	0.79	0.83	0.32
Greece	0.64	0.89	0.79	0.74	0.52	0.52
Ireland	0.19	0.21	0.13	0.08	-0.14	0.17
Israel	0.06	-0.10	-0.13	-0.24	-0.11	-0.68
Italy	0.79	0.83	0.71	0.90	0.13	0.27
Japan		0.39	0.44	0.02	0.53	0.44
Luxembourg	0.67	0.44	0.26	0.77	0.59	-0.16
Netherlands	0.90	0.83	0.88	0.92	0.94	0.19
Norway	0.53	0.65	0.68	0.75	0.73	0.08
New Zealand		0.50	-0.38	0.04	0.07	-0.14
Portugal	0.61	0.71	0.60	0.81	0.48	0.59
Sweden	0.57	0.34	0.49	0.37	0.59	0.17
United States	0.50	0.70	0.64	0.74	0.45	-0.07
Iceland		0.46	0.50	0.67	0.70	0.40
overall	0.36	0.52	0.43	0.47	0.31	0.16

component are correlated, then the local and international components are (negatively) correlated by definition. This might introduce multicollinearity into the model. It can be shown in table 5, however, that multicollinearity due to decomposition is no concern - multicollinearity arises potentially from the inclusion of the interaction term. In addition, regression models excluding the international component are presented in Appendix F and indicate the robustness of the findings. The second criterion is the degree to which voters or the media actually might use the international component as a benchmark to evaluate the economic performance.

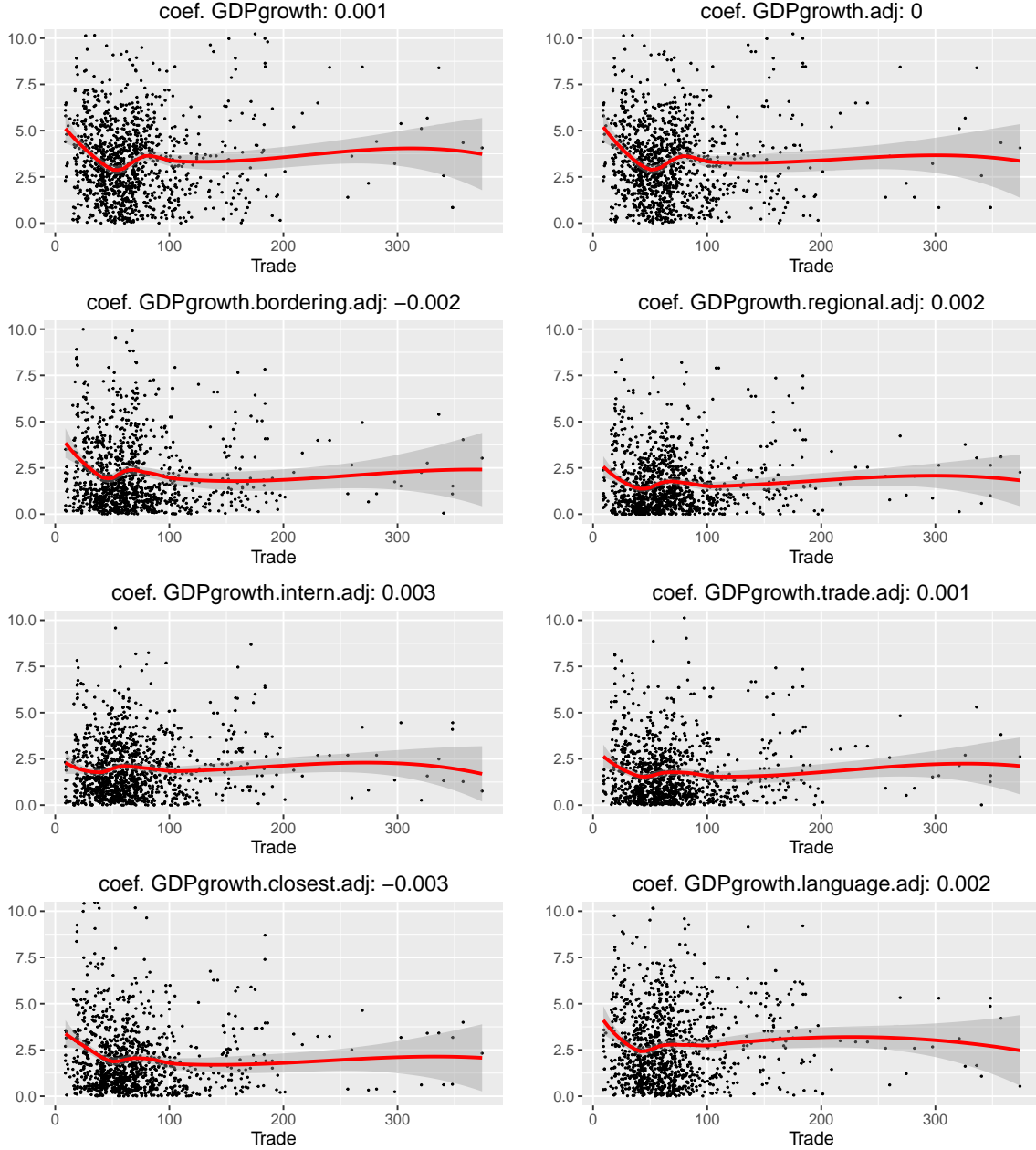
### 5.2.3 Convergence of local component

It is important to evaluate the argument relating to globalization and the economic vote proposed in Kayser & Peress (2016) : the authors claim that an increase in the level of globalization of countries increases the countries integration in an international (or regional) business cycle; this reduces the local component ( $y_{c,t}^{local}$ ) and increases the international component ( $y_{c,t}^{global}$ ) of the national economic performance; while voters respond to the local economic performance during elections, this component becomes smaller in globalized countries; hence the effect size of the economic vote ought to decline for globalized countries, if economic performance is not decomposed.

In figure 2 the deviations from 0 (i.e. the absolute values) of all absolute and relative measures of GDP growth are plotted for different levels of globalization measured as trade openness (*Trade*). Regression coefficients shown in the title of each plot are obtained from simple bivariate regressions with an absolute measure for GDP growth as the dependent variable (i.e. non-benchmarked and benchmarked) and *Trade* as the independent variable. Local regressions (*loess* regressions) are used to fit a non-linear line through the data points (red line). Values for GDP growth greater than 10 are excluded from the plot, but they remain in the sample to calculate the local regression and to compute the regression coefficient. Plots for other measures of globalization (*KOF.index*, *KOF.econ.global*, and *KOF.econ.global.flows*) are presented in Appendix E. *GDPgrowth* and *GDPgrowth.adj* are included to serve as a benchmark to better understand the findings for the relative measurements: if there is a declining relation-

ship for  $GDPgrowth$  and  $GDPgrowth.adj$  (i.e. GDP growth rates close to 0) which is mirrored exactly for the relative measurements (i.e.  $GDPgrowth.bordering.adj$ ,  $GDPgrowth.regional.adj$ ,  $GDPgrowth.intern.adj$ ,  $GDPgrowth.trade.adj$ ,  $GDPgrowth.closest.adj$ , and  $GDPgrowth.language.adj$ ), then this decline can be attributed to the decline in  $GDPgrowth$  and  $GDPgrowth.adj$ . If, however, the decline for the relative measures exceeds the decline of  $GDPgrowth$  and  $GDPgrowth.adj$ , then convergence is occurring.

Figure 2: Scatterplot of (absolute) GDP growth and Trade



The plots indicate that the measures containing international ( $GDPgrowth.intern.adj$ ) and regional benchmarks ( $GDPgrowth.regional.adj$ ) perform poorly with regard to

reduced deviations from international components ( $y_{c,t}^{global}$ ) - contrary to expectations in line with an increasing integration in international (regional) business cycles. However, the measures of benchmarking against the closest ( $GDPgrowth.closest.adj$ ) and bordering countries ( $GDPgrowth.bordering.adj$ ) indicate a greater conversion for higher globalized countries. This pattern is robust against excluding non-election years and observations with a trade openness greater than 100 (results not shown here). This pattern is consistent with other operationalizations of globalization (Appendix E).

This indicates that these operationalizations of the local component ( $y_{c,t}^{local}$ ) do not substantially converge for higher levels of globalization. Hence, if the local component is the important indicator in order to assess the incumbent's performance, then - contrary to previous findings - no decrease of the economic vote conditional on globalization ought to be found in the further statistical analyses: neither for absolute, nor for relative (benchmarked) economic measurements.

### 5.3 Conditional variables

There are different dimensions of the concept globalization, e.g. economic, cultural, and political integration. These dimensions have complex relationships among each other. For example with regard to economic integration, an increase in trade can lead to an increase in financial flows. At the same time an increase in financial flows (especially investments) can be a substitute for trade: a company may open a subsidiary in another country instead of exporting goods in that country.

These dimensions can be operationalized in various ways. First, globalization can be measured as trade (exports and imports) as a share of GDP. Second, it can be measured as the stock of international assets and liabilities as a share of GDP (i.e. international investment position). The measure of financial stocks has several advantages over the measure of financial flows: financial flows tend to fluctuate substantially without a change of the underlying concept of globalization and it is difficult to measure them reliably (further reasons are discussed in Appendix B). Third, globalization can be measured as restrictions to flows of goods and finance. Fourth and fifth, globalization can be measured as political and cultural globalization.

Data for all operationalizations are available (see Appendix B). In addition, there is a combined indicator for globalization (KOF index: Dreher, 2006; Dreher, Gaston, & Martens, 2008). The KOF index summarizes various aspects of globalization, especially economic, cultural, and political integration. The index for economic integration contains subindices for economic integration with regard to actual flows and restrictions to flows. Nevertheless the measure for financial integration (i.e. international investment position) is not used to check the robustness of the findings. The best data available for this variable merely covers about one or two decades - for some countries (compare Appendix C). In addition, it cannot be ruled out that the missing data is correlated with other variables in the model.

## 5.4 Control variables

A control variable for the number of parties in the parliament prior to the election is included. This is deemed an important control variable, because a greater number of parties tends to decrease the percentage received by each individual party. This variable counts the number of government and opposition parties in parliament prior to an election. The number of parties is transformed to an ordinal variable, ranging from 1 to 3, whereas 0 to 7 parties are coded as 1, 8 to 14 parties are coded as 2, and more than 15 parties are coded as 3.

In addition the previous vote for the incumbent is included into all models (*election.previous*, lagged dependent variable). First, this addressed the concern of auto correlation. Second, the results are robust against excluding *election.previous* from the regression models (results not included). Third, including *election.previous* into the models does not reduce the number of observations used in the regression models substantially. This is due to the fact that usually the first observation for each unit would be dropped from the regression. Here, however, the data set (Beck et al., 2001) provides the vote shares of the incumbent of the previous election for each election year.

Furthermore, a dummy variable for the political system is introduced into the model. The classification of Beck et al. (2001) is used, but *assembly-elected presidential* and *presidential* systems are grouped together, because of similarities between the

categories and a small number of observations per category. This control variable, however, is mostly relevant for the OLS regression models. As the political system is considered time-invariant, it will be dropped from the fixed-effects panel regression. However, in this sample, Greece, Israel, and Portugal change their political system in the period of time that is covered: Greece is coded as an *assembly-elected presidential* (i.e. *presidential*) system until 1986, but changes to a *parliamentary* system; Israel is coded as a *parliamentary* system until 1996, changes then to *presidential* until 2001 and returns to be a *parliamentary* system again; Portugal is coded as a *presidential* system until 1982 and is considered consequentially a *parliamentary* system. Hence, if the control variable for political systems were in the fixed-effects panel regression model, then this would only capture the effect of a change in these countries (i.e. sluggish variable), which could lead to misleading results, especially unreliable inferences (Clark & Linzer, 2015). Therefore *system* is excluded from fixed-effects models as a control variable.

In order to control for the level of economic development, a measure for GDP per capita is included (*GDPperCapita.ln*). The country sample is by definition fairly homogeneous with regard to income levels. This relationship changes, however, if the sample is enlarged and further countries are added. Hence this variable is included in all models in order to ensure consistency of the results. This income measure is transformed by taking its natural log, because it is strongly right-skewed.

Another potential control variable is simultaneity of legislative and executive elections. It can be assumed that a more personalized executive election focusses the attention on the legislative election. In this data set, however, there are only 13 observations where a legislative election takes place in the same month like an executive election - with most cases pertaining to the United States. Hence this control is not included. Thereby it is avoided to falsely attribute a country effect to this control variable.

## 6. Methodology

The statistical analysis can be conducted with pooled OLS regression and panel regression models. This master thesis starts with pooled OLS regressions and expands the analysis with panel regression models.

Furthermore potential outliers and influential observations are identified in order to avoid, that the results are driven by an unrepresentative subset of country-year observations.

In addition checks are performed to assess whether the models could be improved, especially with regard to heteroskedasticity and non-linearity.

In order to assess the robustness of the findings, an alternative independent variable for economic performance (unemployment) is used. In order to assess the robustness with regard to the conditional variable, alternative measures of globalization are used (KOF index of globalization).

Moreover there are concerns that statistical relationships are found in one set of countries, but when applied to a different data set do not hold any more. This concern of stability can be addressed by also conducting the analysis with different subsets of countries. Two sample splits are investigated. First, a sample split with regard to the degree of globalization is analyzed, where a similar pattern as in the result section should emerge. Second, the sample is split with regard to time. Here no significant difference between the samples ought to be found.

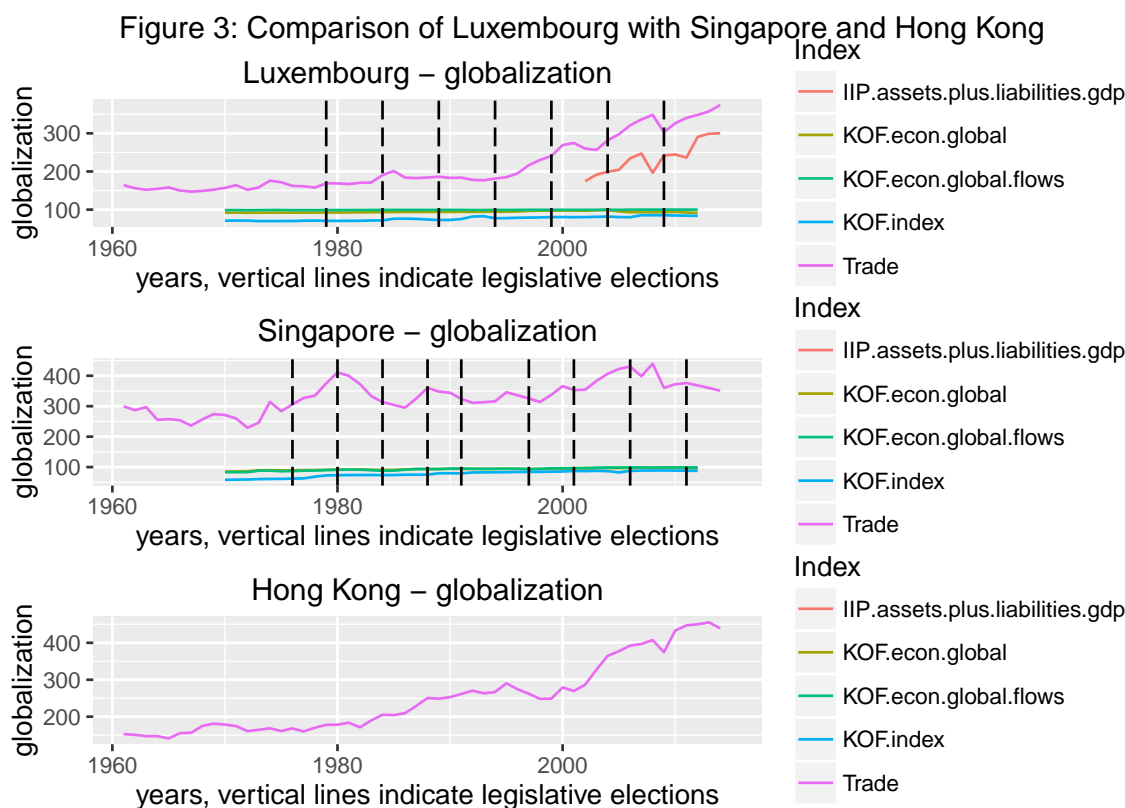
### 6.1 Outliers and influential observations

Several tests are performed in order to assure that the results are not driven by outliers or influential observations.

First, the measures for globalization are examined (conditional variables). Here, Luxembourg experiences trade openness (*Trade*) up to 374 % of GDP. This is due to the fact that Luxembourg experiences substantial transit trade. This means that goods that are imported and subsequently exported to other countries generate more trade than (twice) the amount of GDP. This can be illustrated by comparing the trade openness of



Luxembourg to two other countries that are associated with transit trade: Singapore and Hong Kong. Thereby the degree of trade openness of Luxembourg indicates that there are different underlying mechanisms driving trade openness as compared to other countries in this sample (compare Appendix C). Hence Luxembourg is excluded from models that interact economic performance with trade openness (*Trade*). This restriction is relaxed during robustness tests, where a composite indicator of economic globalization is used. This reduces the influence of the diverging pattern in one category of economic globalization.



Second, the main independent variables are examined in partial regression plots. Here one observation is especially influential: the elections in Israel in 1996 (the economic performance is adjusted for the previous year 1995). Here a great increase in economic performance (21.8 % growth in GDP) is matched with a change in the largest parliamentary party from the Labour party to Likud. Since this election took place in very unique circumstances (i.e. expansion of economy in the wake of peace-process but assassination of the prime minister), it is excluded from the sample. This constraint is relaxed when unemployment is used as the main independent variable.

## 6.2 Model selection and diagnostics

Several statistical models are available to analyze the data. It can be analyzed as pooled cross-section data with simple OLS regression. In addition the panel structure of the data can be used to improve the statistical analysis.

An F test indicates that a fixed-effects model is a more adequate regression model for the data than a pooled regression model (Kennedy, 2013, p. 290). The null hypothesis that a pooled regression model is a better choice can be rejected with a p-value of 0.003 for a comparison of model 1 in table 6 and model 1 in table 8 (comparing GDP growth), as well as with a p-value of 0.004 for a comparison of model 1 in table 15 and model 1 in table 17 (however non-interacted) comparing unemployment. By continuing to use a pooled regression model, e.g. in tables 6 and 7, then the estimators are biased if the independent variables are correlated with the unit effects (Clark & Linzer, 2015).

The Hausman test (Kennedy, 2013, p. 290) is used to determine whether a fixed-effects model or a random-effects model is more adequate for the data. The null hypothesis states that a random-effects model is more adequate than the fixed-effects model. The null hypothesis cannot be rejected for the specification of model 1 in table 8 with a p-value of 0.38 (using *GDPgrowth*) and for the specification of model 1 in table 17 (however, non-interacted) with a p-value of 0.077 (using unemployment *ue*).

Hausman tests for all fixed-effects models containing growth in GDP confirm this pattern. The first row of table 4 presents the p-values for the Hausman tests of models 1-8 in table 8 (i.e. no interaction), while the second row presents the p-values for the Hausman tests of models 1-8 in table 9 (i.e. with *Trade* interacted).

The Hausman test is challenged as the single test to decide between models. Clark & Linzer (2015) state that the “Hausman test is neither a necessary nor a sufficient metric for deciding between fixed and random effects.” They rather suggest that in cases with sufficient variation in the independent variables (compare Appendix C) and on average more than 5 observations per unit (compare table 1) the trade-off between biased estimators in random-effects models and unstable estimators in fixed-effects models cannot be decided in favor of one model. Rather the specific aim of a given research ought to determine whether to employ fixed or random effects. Here the problem of

Table 4: Hausman Tests comparing fixed and random effects for different models

model	GDP <sub>growth</sub>	GDP <sub>growth.adj</sub>	GDP <sub>growth.bordering.adj</sub>	GDP <sub>growth.regional.adj</sub>	GDP <sub>growth.intern.adj</sub>	GDP <sub>growth.trade.adj</sub>	GDP <sub>growth.closest.adj</sub>	GDP <sub>growth.language.adj</sub>
without interaction	0.38	0.34	0.64	0.53	0.41	0.50	0.40	0.39
with interaction	0.86	0.62	0.91	0.97	0.76	0.95	0.94	0.93

unstable estimators is also addressed with robustness checks. Contrary, biased estimators could not be detected with robustness checks. Furthermore, random-effects models are superior in making predictions about unobserved units (Clark & Linzer, 2015), which is not the aim of the research. Therefore, fixed-effects models are employed when the panel structure of the data is used.

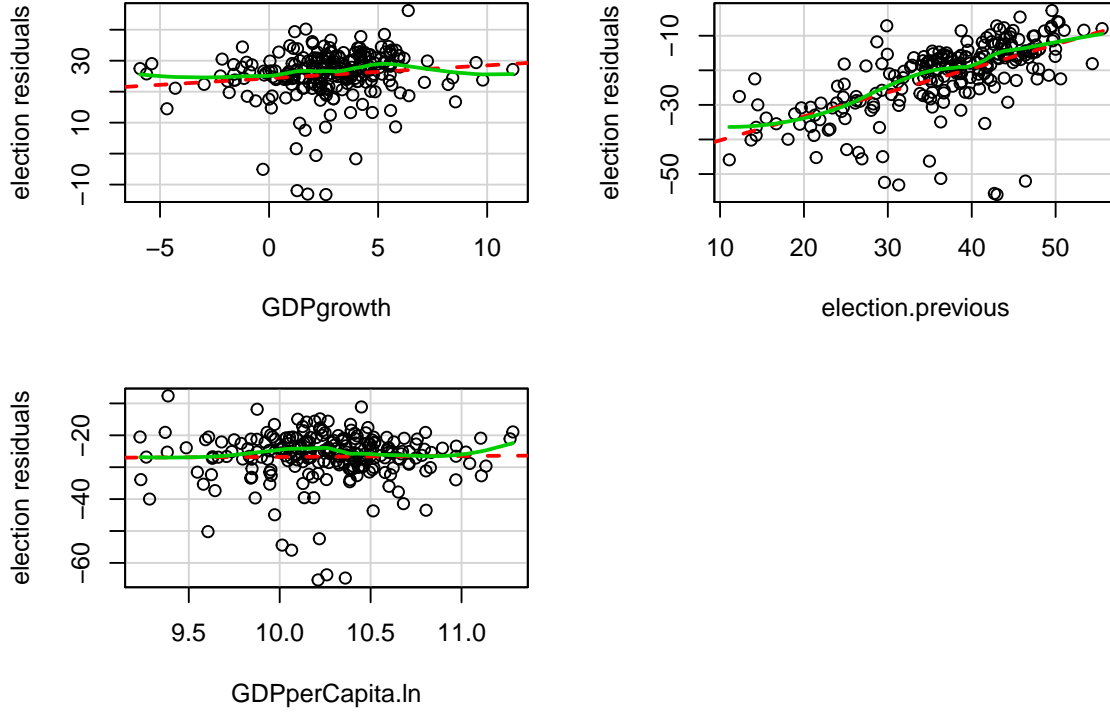
However, Clark & Linzer (2015) point out, that they have not tested models that include interaction terms. Hence their conclusions cannot be generalized to interaction models. However the Hausman test that indicates how significantly coefficients differ between the fixed-effects and random-effects approaches indicates that non-interacted and interacted models do not differ strongly: while the p-values for non-interaction model vary between 0.343 and 0.636, they vary between 0.622 and 0.969 for interaction models. This is taken as a further indicator that the fixed-effects model can also be used when growth in GDP is interacted with globalization.

A Breusch-Pagan test indicates that there is heteroscedasticity in the regression models. The null hypothesis, that there is homoskedasticity in the data, can be rejected with a p-value of 0.007 using GDP growth for the pooled OLS regression model 1 in table 6 (using unemployment, in table 15 model 1, with a p-value of 0), as well as with a p-value of 0 for the panel regression model 1 in table 8 (using unemployment, in table 17 model 1 excluding the interaction, with a p-value of 0). Hence, robust standard errors are estimated for all models using the variance-covariance matrix HC1 - for consistency of results obtained with R with results obtained in Stata using the robustness argument.

In panel regressions, standard errors are also clustered at the group level using the arellano method.

In order to avoid misspecification, the model needs to be tested for non-linearity. To this end, component plus residual plots (i.e. partial residual plots) are plotted for the continuous independent variables from model 1 in table 6.

Figure 4: ceres plots for continuous independent variables



It can be assessed, that the local regression line (green) does not deviate substantially from the OLS regression line (red) in a non-linear way (figure 4). Hence no non-linear relationships are estimated in the following.

The variance inflation factor (VIF) is calculated in order to assess whether multicollinearity of the independent variables is a concern (table 5). The first rows following “Regression without interaction” are based on models 1-8 of table 6. The rows following “Regression with interaction” are based on models 1-8 of table 7. The VIF increases to some degree from the interaction of *Trade* with the national economic performance (*GDPgrowth* and *GDPgrowth.adj*).

Friedrich (1982) and Brambor, Clark, & Goldner (2006) indicate that this increase in VIF due to an interaction term does not necessarily correspond to an increase in

Table 5: Variance inflation factors for independent variables

variable	GDP <sub>growth</sub>	GDP <sub>growth.adj</sub>	GDP <sub>growth.bordering.adj</sub>	GDP <sub>growth.regional.adj</sub>	GDP <sub>growth.intern.adj</sub>	GDP <sub>growth.trade.adj</sub>	GDP <sub>growth.closest.adj</sub>	GDP <sub>growth.language.adj</sub>
Regression without interaction								
election.previous	1.29	1.29	1.30	1.30	1.30	1.32	1.31	1.30
GDPperCapita.ln	1.11	1.11	1.19	1.11	1.12	1.11	1.12	1.11
GrowthInt			1.87	1.18	1.01	1.11	1.88	2.10
GrowthLoc			1.93	1.21	1.05	1.11	1.94	2.09
GrowthNat	1.02	1.04						
parties	1.24	1.27	1.33	1.33	1.28	1.29	1.33	1.28
system	1.12	1.12	1.14	1.13	1.12	1.13	1.13	1.12
Regression with interaction								
election.previous	1.42	1.42	1.42	1.42	1.43	1.43	1.43	1.42
GDPperCapita.ln	1.11	1.11	1.23	1.15	1.12	1.14	1.14	1.12
GrowthInt			1.99	1.19	1.02	1.13	1.97	2.17
GrowthLoc			6.96	5.89	5.59	5.12	6.10	6.81
GrowthLoc:Trade			6.53	5.76	5.74	4.97	4.88	5.30
GrowthNat	5.86	5.29						
GrowthNat:Trade	7.66	6.54						
parties	1.33	1.36	1.43	1.44	1.37	1.38	1.47	1.36
system	1.23	1.24	1.27	1.23	1.23	1.23	1.24	1.24
Trade	2.93	2.57	1.53	1.45	1.59	1.50	1.43	1.52

multicollinearity. First, the coefficients in interaction models do not indicate the average effect of an independent on the dependent variable. Hence, the coefficients change with the inclusion of the interaction term, regardless of potential multicollinearity between the variables. Second, the increase in standard errors reflects the deficiency of information to estimate the coefficients accurately. Nevertheless, in interaction models the statistical significance of the constitutive terms is not a concern in itself. Here the marginal effect of economic performance conditional on the level of globalization on the vote share of the incumbent is of interest. Hence the authors conclude that “problems associated with multicollinearity are often exaggerated in the context of multiplicative interaction models” (Brambor et al., 2006). In addition, the VIF remains in all specifications and for all variables under the cutoff of 10 (Wooldridge, 2012, p. 98). Finally, the coefficients of the main independent variables as well as the control variables remain fairly stable across all models.

Further multicollinearity is not introduced into the regression models by decomposing the economic performance into a local and an international component in columns *GDPgrowth.bordering.adj*, *GDPgrowth.regional.adj*, *GDPgrowth.intern.adj*, *GDPgrowth.trade.adj*, *GDPgrowth.closest.adj*, and *GDPgrowth.language.adj*.

## 7. Results

### 7.1 Pooled OLS regression

The simple OLS regression model confirms general expectations about the direction of the effects. All specifications of economic performance have positive signs and *GDPgrowth.adj*, *GDPgrowth.bordering.adj*, *GDPgrowth.intern.adj*, and *GDPgrowth.closest.adj* are significant at the 5% threshold. In addition, if an incumbent would receive a higher vote share in the past election, then this would increase her vote share in the consequent election (*election.previous*). An increase in the number of parties results in a lower vote share for the incumbent, whereas a large number of parties (as compared to 0 to 7 parties) does not significantly reduce the reelection prospects. Furthermore, the vote share for the incumbent in parliamentary systems is lower compared to presidential systems.

Figure 5: Partial regression plots for GDP growth

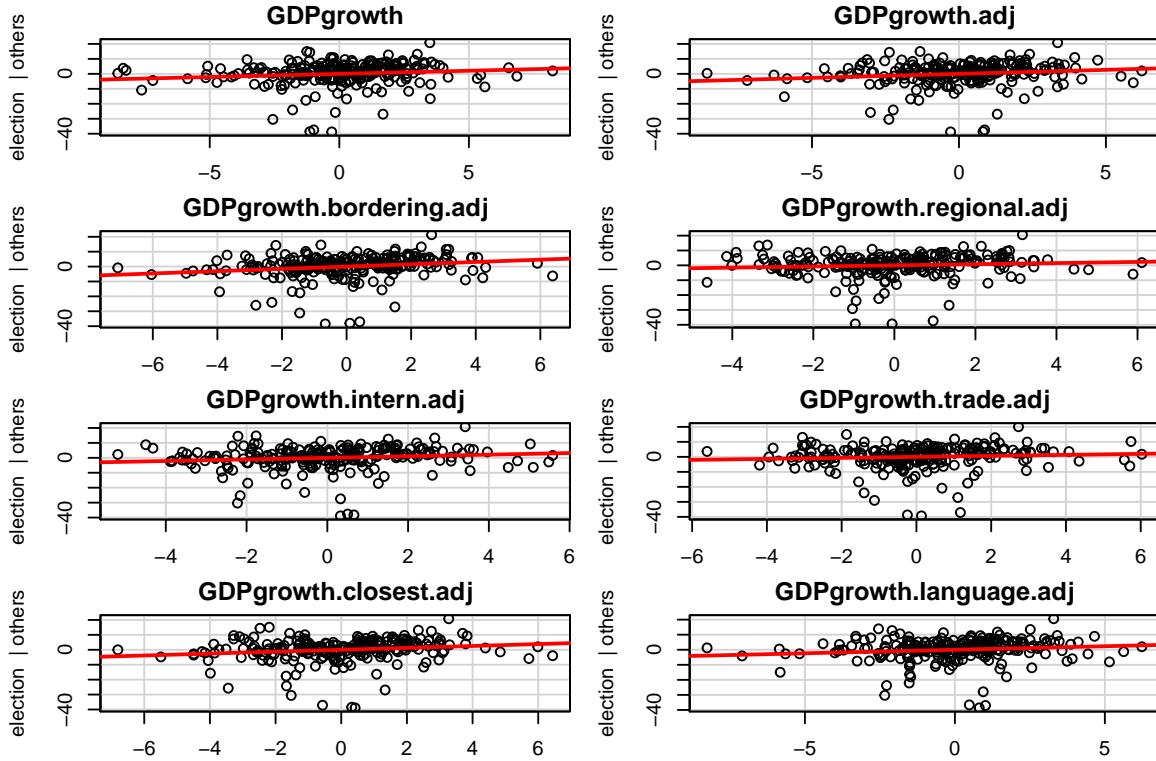


Table 6: Pooled OLS, GDP growth

	<i>Dependent variable:</i>							
	election							
	GDPgrowth	GDPgrowth.adj	GDPgrowth.bordering.adj	GDPgrowth.regional.adj	GDPgrowth.intern.adj	GDPgrowth.trade.adj	GDPgrowth.closest.adj	GDPgrowth.laguage.adj
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	0.4** (0.2)	0.5** (0.2)						
GrowthLoc			0.8*** (0.2)	0.4 (0.2)	0.5** (0.2)	0.3 (0.2)	0.6*** (0.2)	0.5** (0.2)
GrowthInt			0.2 (0.3)	0.7** (0.3)	0.6 (0.4)	0.9*** (0.3)	0.4 (0.3)	0.8*** (0.3)
election.previous	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)
system.parliamentary	-3.7*** (1.4)	-3.7*** (1.4)	-4.3*** (1.4)	-3.6*** (1.4)	-3.7*** (1.4)	-3.6** (1.4)	-3.9*** (1.3)	-3.7*** (1.4)
GDPperCapita.ln	0.3 (1.4)	0.3 (1.4)	-0.6 (1.4)	0.3 (1.4)	0.3 (1.4)	0.3 (1.4)	0.1 (1.4)	0.2 (1.4)
parties.L	-1.5 (2.4)	-1.7 (2.3)	-1.4 (2.2)	-2.0 (2.4)	-1.7 (2.4)	-1.9 (2.2)	-1.4 (2.4)	-1.8 (2.2)
parties.Q	1.9 (1.6)	1.7 (1.6)	1.3 (1.6)	1.6 (1.6)	1.7 (1.6)	1.7 (1.5)	1.6 (1.6)	1.5 (1.6)
Constant	7.0 (15.8)	6.1 (15.7)	17.2 (15.8)	5.1 (15.9)	6.1 (15.8)	5.7 (16.0)	8.2 (15.8)	6.2 (15.8)
Observations	231	231	231	231	231	231	231	231
R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Adjusted R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01



## 7.2 Pooled OLS regression with interactions

Table 7 shows the regression results for the 8 different measures of economic performance and their interaction with trade openness (*Trade*). The coefficients on the control variables maintain the same sign compared to the regular OLS regression (table 6). The coefficients of the interaction term are positive (with the exception of *GDPgrowth.bordering.adj*). The coefficients become mostly significant at about 60% of globalization measured by *Trade* (figure 6).

Thereby hypothesis 1 is rejected in models 1 and 2: the substantial effect of the economic vote does not decline for higher levels of globalization. It also remains statistically significant for high levels of globalization in model 2. In addition, this positive relationship between the substantial effect of the economic vote and globalization remains in models 4-8 (not for *GDPgrowth.bordering.adj*). Therefore hypothesis 2 is also rejected that stated there is no conditional relationship. Moreover, the fact that the relative measurements in models 3-8 do not indicate a steeper conditional relationship might be attributed to the finding that the local components do not converge in this data set (compare figure 2).

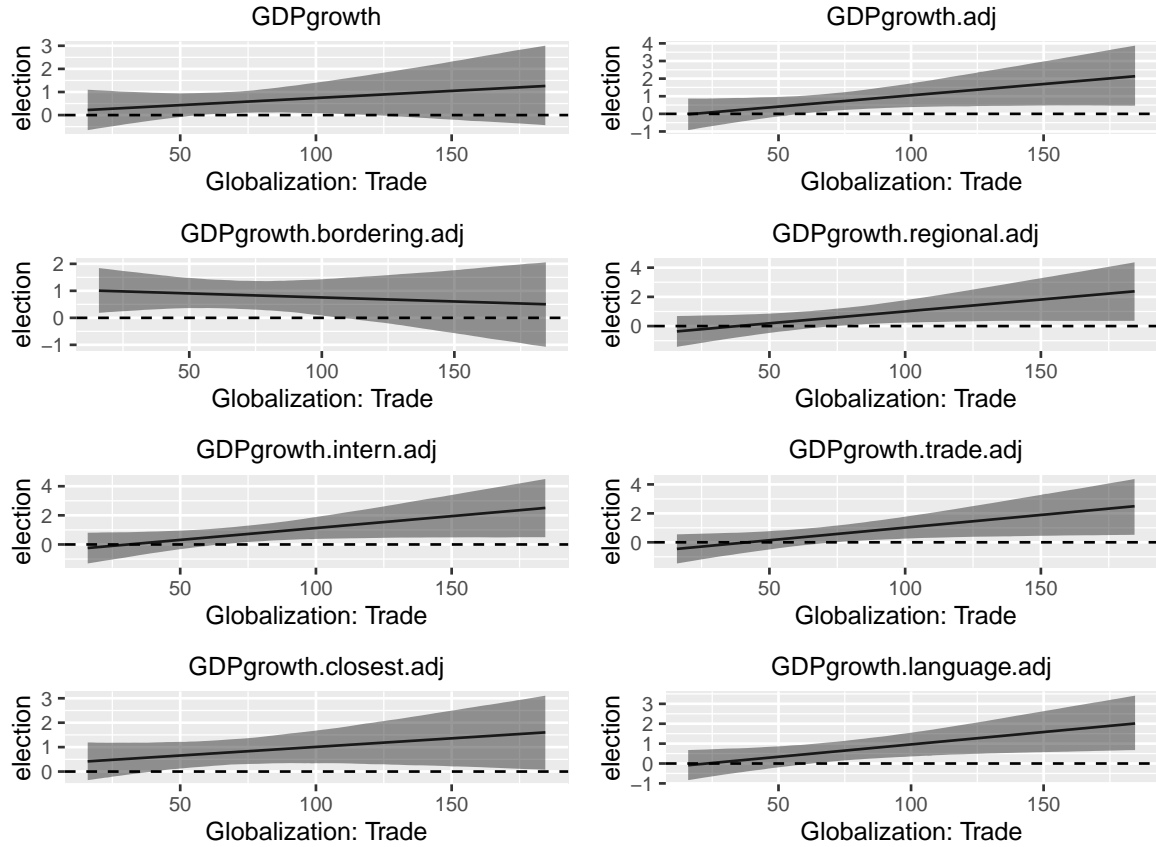
Table 7: Pooled OLS, economic performance with Trade interacted

	<i>Dependent variable:</i>							
	election							
	GDP <sub>growth</sub>	GDP <sub>growth.adj</sub>	GDP <sub>growth.bordering.adj</sub>	GDP <sub>growth.regional.adj</sub>	GDP <sub>growth.intern.adj</sub>	GDP <sub>growth.trade.adj</sub>	GDP <sub>growth.closest.adj</sub>	GDP <sub>growth.laguage.adj</sub>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	0.1 (0.4)	-0.2 (0.5)						
GrowthLoc			1.0** (0.4)	-0.6 (0.5)	-0.5 (0.5)	-0.7 (0.5)	0.3 (0.4)	-0.3 (0.3)
Trade	-0.1* (0.03)	-0.1** (0.03)	-0.03 (0.03)	-0.03 (0.02)	-0.02 (0.02)	-0.03 (0.02)	-0.03 (0.02)	-0.03 (0.02)
GrowthInt			0.4 (0.3)	0.8*** (0.3)	0.7* (0.4)	0.8** (0.3)	0.5* (0.3)	0.8*** (0.3)
election.previous	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.6*** (0.1)	0.7*** (0.1)	0.7*** (0.1)
system.parliamentary	-2.8* (1.5)	-3.0* (1.6)	-3.5** (1.7)	-2.9* (1.6)	-3.0* (1.6)	-2.9* (1.6)	-2.9* (1.5)	-3.0* (1.6)
GDPperCapita.ln	0.3 (1.4)	0.3 (1.4)	-0.6 (1.5)	-0.3 (1.5)	0.2 (1.4)	-0.3 (1.4)	-0.2 (1.4)	0.1 (1.4)
parties.L	-2.2 (2.4)	-2.1 (2.4)	-2.1 (2.2)	-3.0 (2.3)	-2.3 (2.4)	-2.7 (2.2)	-2.5 (2.5)	-2.7 (2.2)
parties.Q	1.3 (1.7)	1.1 (1.7)	0.9 (1.6)	0.7 (1.6)	1.0 (1.7)	0.8 (1.6)	0.7 (1.7)	0.7 (1.6)
GrowthNat:Trade	0.01 (0.01)	0.01** (0.01)						
GrowthLoc:Trade			-0.003 (0.005)	0.02*** (0.01)	0.02** (0.01)	0.02*** (0.01)	0.01* (0.004)	0.01*** (0.003)
Constant	10.7 (16.2)	11.1 (16.2)	18.2 (16.9)	13.6 (16.5)	8.0 (16.1)	14.1 (16.2)	13.6 (16.4)	8.4 (16.2)
Observations	224	224	224	224	224	224	224	224
R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Adjusted R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Figure 6: Pooled OLS, interaction between GDP growth and Trade



### 7.3 Fixed-effects regression

The coefficients of a fixed-effects model in table 8 confirm the findings of the simple OLS regression model (table 6). Again, the measures of economic performance *GDPgrowth.adj*, *GDPgrowth.bordering.adj*, *GDPgrowth.intern.adj*, and *GDPgrowth.closest.adj* are significant at the 5% threshold. In addition, the coefficients of the control variables have the same signs.

Table 8: Fixed-effects, GDP growth

	<i>Dependent variable:</i>							
	election							
	GDP <sub>growth</sub>	GDP <sub>growth.adj</sub>	GDP <sub>growth.bordering.adj</sub>	GDP <sub>growth.regional.adj</sub>	GDP <sub>growth.intern.adj</sub>	GDP <sub>growth.trade.adj</sub>	GDP <sub>growth.closest.adj</sub>	GDP <sub>growth.laguage.adj</sub>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	0.4** (0.2)	0.6** (0.2)						
GrowthLoc			0.8*** (0.3)	0.5* (0.3)	0.5** (0.3)	0.5** (0.2)	0.7*** (0.3)	0.5** (0.2)
GrowthInt			0.3 (0.3)	0.7** (0.3)	0.7 (0.5)	0.7* (0.4)	0.4 (0.3)	0.9*** (0.3)
election.previous	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)
GDPperCapita.ln	-3.1 (2.2)	-3.1 (2.3)	-3.4 (2.3)	-3.1 (2.3)	-3.2 (2.2)	-3.1 (2.3)	-3.2 (2.3)	-3.8* (2.3)
parties.L	-3.2* (1.9)	-3.3* (1.8)	-3.0* (1.6)	-3.2* (1.8)	-3.3* (1.8)	-3.2* (1.8)	-3.3** (1.7)	-3.2* (1.7)
parties.Q	0.002 (1.7)	-0.2 (1.6)	-0.4 (1.5)	-0.2 (1.6)	-0.2 (1.6)	-0.2 (1.6)	-0.6 (1.7)	-0.3 (1.6)
Observations	231	231	231	231	231	231	231	231
R <sup>2</sup>	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Adjusted R <sup>2</sup>	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

## 7.4 Fixed-effects regression with interactions

The results from the fixed-effects model in table 9 support the previous findings. The coefficients of the interaction term are mostly positive. In the conditional effect plots it can be assessed that the economic vote becomes positive for values higher than 60% of globalization measured as trade openness (*Trade*). Again, hypothesis 1 is rejected, since the substantial effect of the economic vote does not decrease for higher levels of globalization. Hypothesis 2 is also rejected, because the relationship remains conditioned by globalization.

The conditional effect plots for the fixed-effects regressions (in all sections) are not based on the panel regression model due to limitations of R and R packages. However, OLS regression models with country dummies are estimated and used for the conditional effect plots - without correcting the standard errors for heteroskedasticity, due to limitations of R and R packages.

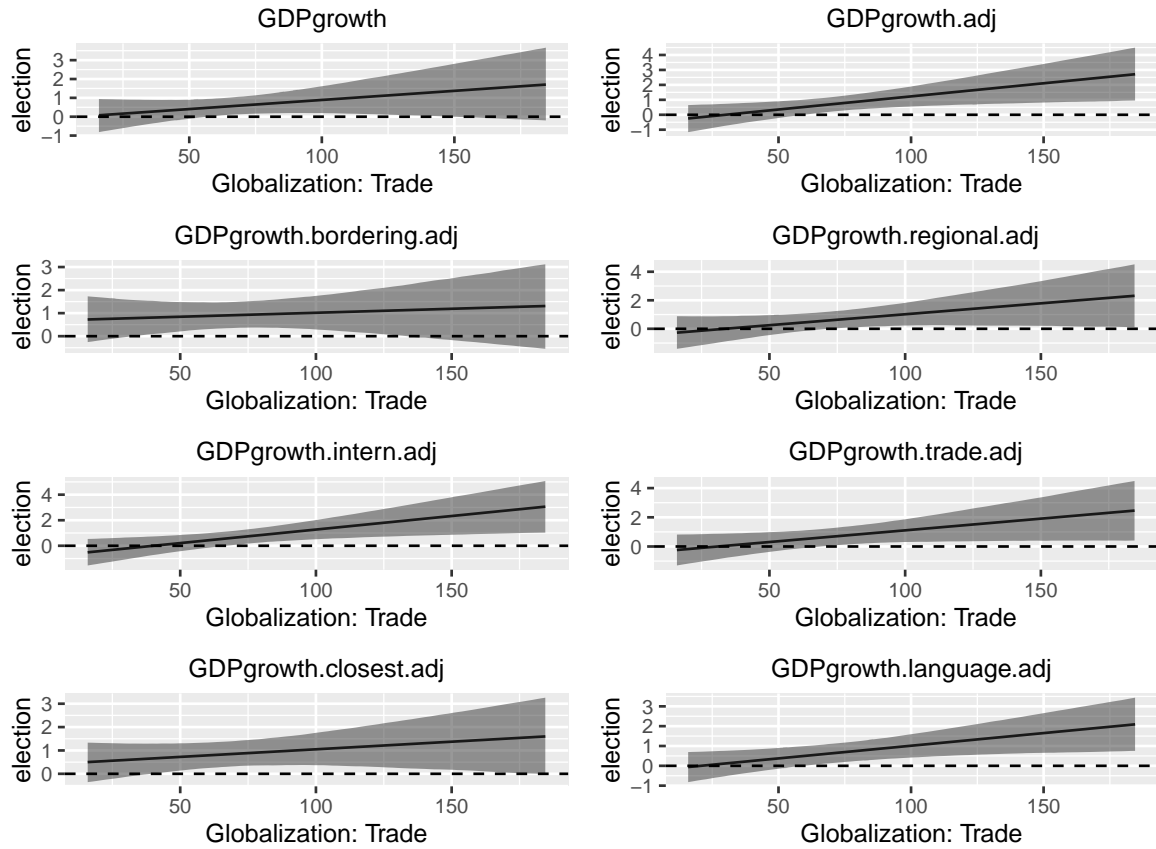
Table 9: Fixed-effects, GDP growth with Trade interacted

	<i>Dependent variable:</i>							
	election							
	GDP growth	GDP growth.adj	GDP growth.bordering.adj	GDP growth.regional.adj	GDP growth.intern.adj	GDP growth.trade.adj	GDP growth.closest.adj	GDP growth.laguage.adj
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	0.6** (0.3)	0.3 (0.5)						
GrowthLoc			0.8* (0.4)	0.3 (0.6)	0.2 (0.5)	-0.2 (0.5)	0.6 (0.5)	0.3 (0.3)
Trade	0.01 (0.04)	0.02 (0.05)	0.03 (0.05)	0.01 (0.04)	0.03 (0.03)	0.03 (0.05)	0.03 (0.04)	0.02 (0.04)
GrowthInt			0.3 (0.3)	0.7** (0.3)	0.6 (0.5)	0.6 (0.4)	0.3 (0.3)	0.8** (0.3)
election.previous	0.7*** (0.1)	0.6*** (0.1)	0.7*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.7*** (0.1)	0.6*** (0.1)
GDPperCapita.ln	-3.1 (2.6)	-4.1 (2.8)	-4.9 (3.2)	-3.8 (2.7)	-4.2 (2.6)	-4.6 (2.9)	-4.4 (2.8)	-4.2 (2.7)
parties.L	-4.6** (2.3)	-4.3** (2.2)	-3.7* (2.2)	-4.4* (2.2)	-4.3** (2.2)	-4.0* (2.1)	-4.7*** (1.6)	-4.1* (2.3)
parties.Q	-1.3 (1.5)	-1.5 (1.5)	-1.5 (1.3)	-1.4 (1.5)	-1.4 (1.5)	-1.5 (1.4)	-2.1 (1.4)	-1.2 (1.5)
GrowthNat:Trade	-0.002 (0.002)	0.004 (0.01)						
GrowthLoc:Trade			0.001 (0.004)	0.002 (0.01)	0.004 (0.01)	0.01 (0.01)	0.002 (0.005)	0.002 (0.004)
Observations	221	221	221	221	221	221	221	221
R <sup>2</sup>	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Adjusted R <sup>2</sup>	0.2	0.3	0.3	0.2	0.2	0.3	0.3	0.3

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Figure 7: Fixed-effects, interaction between GDP growth and Trade



These findings in OLS and fixed effects models indicate that the substantial effect of the economic vote increases as the level of globalization increases. Only two specifications indicate that the opposite could be true. Hence, in order to strengthen the confidence into these findings further robustness test are conducted.

## 8. Robustness

In the following the robustness of these findings is assessed. First, the sample is expanded to include more countries (following Hellwig & Samuels, 2007). Second, the conditional variable is replaced by another indicator for globalization. Third, unemployment is used as a different measure for economic performance.

### 8.1 Large country sample

Following the sample selection of Hellwig & Samuels (2007) the robustness of these findings can be shown with regard to sample selection. Due to general data constraints the Seychelles, Bangladesh, and Taiwan are not included in the sample. Lithuania, Madagascar, Mali, Mozambique, Romania, Russia, and Slovakia are not included due to constraints of the World Bank Database of Political Institutions. While Island is included in the previous sample, it is not included in Hellwig & Samuels (2007).

However it is problematic to include a wide range of heterogeneous countries into one sample. This is due to the fact that in heterogeneous countries there might be other mechanisms operating, especially with regard to globalization. This is shown for countries in Latin America (Lupu, 2014), where “brand dilution” diminished the role of traditional parties. This would indicate that there might be alternative mechanisms, assuming that the decline of these parties also relates to the engagement of parties with globalization, especially rising difficulties to maintain systems of political patronage (Kayser, 2007).

Furthermore, Hellwig & Samuels (2007) include control variables for regions. In order to maintain consistency with the other sections, these controls are not included into the model. Nevertheless, regional location is constant for all countries. Therefore any regional effect is controlled for in the fixed-effects model.



Table 10: Overview over parliamentary elections

Country	Elections	First	Country	Elections	First
Argentina	8	1987	Japan	10	1979
Austria	10	1979	Sri Lanka	1	2001
Australia	12	1977	Lesotho	1	2002
Belgium	8	1978	Latvia	3	1998
Bulgaria	3	2001	Moldova	3	2005
Benin	1	1999	Macedonia	1	2006
Bolivia	3	1989	Malawi	2	1994
Brazil	6	1986	Mexico	3	1997
Botswana	7	1979	Namibia	4	1994
Canada	11	1979	Nicaragua	4	1990
Switzerland	6	1983	Netherlands	12	1977
Chile	2	2005	Norway	9	1977
Colombia	7	1978	New Zealand	12	1978
Costa Rica	4	1998	Panama	2	2004
Czech Republic	5	1996	Peru	2	1985
Germany	9	1980	Philippines	2	1995
Denmark	14	1975	Poland	3	1997
Dominican Republic	2	1998	Portugal	11	1979
Ecuador	1	1998	Paraguay	3	1993
Estonia	5	1996	Sweden	11	1976
Spain	10	1979	Slovenia	4	1996
Finland	9	1979	Senegal	1	2007
France	8	1978	El Salvador	6	1985
United Kingdom	8	1979	Thailand	1	2001
Greece	9	1977	Turkey	7	1977
Honduras	4	1993	Trinidad and Tobago	9	1981
Hungary	2	1994	Ukraine	1	2007
Ireland	10	1977	United States	14	1978
Israel	10	1977	Uruguay	2	1999
India	2	1977	Venezuela	1	2000
Italy	8	1979	South Africa	9	1977
Jamaica	7	1980			

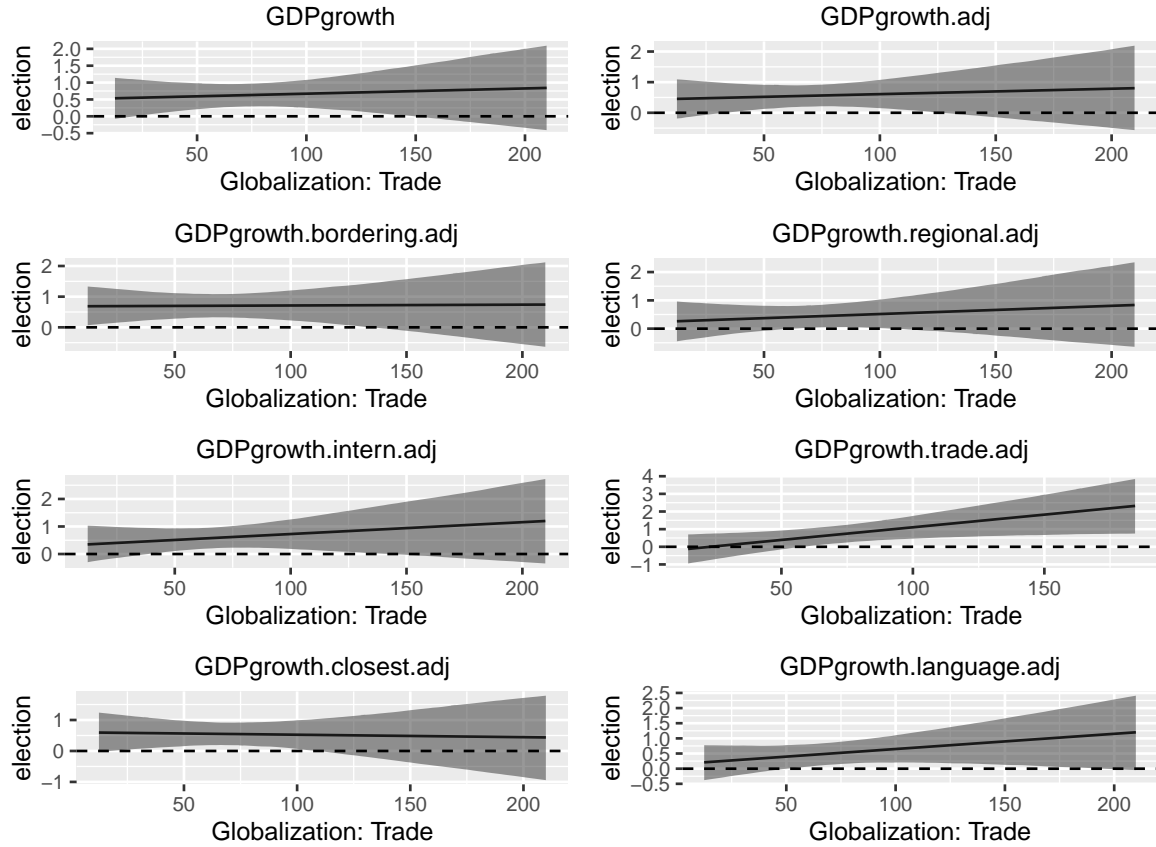
Table 11: Pooled OLS, economic performance with Trade interacted, large sample

	<i>Dependent variable:</i>							
	election							
	GDP <sub>growth</sub>	GDP <sub>growth.adj</sub>	GDP <sub>growth.bordering.adj</sub>	GDP <sub>growth.regional.adj</sub>	GDP <sub>growth.intern.adj</sub>	GDP <sub>growth.trade.adj</sub>	GDP <sub>growth.closest.adj</sub>	GDP <sub>growth.laguage.adj</sub>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	0.5* (0.3)	0.4 (0.3)						
GrowthLoc			0.7** (0.3)	0.2 (0.3)	0.3 (0.3)	-0.3 (0.5)	0.6** (0.3)	0.1 (0.3)
Trade	-0.02 (0.03)	-0.01 (0.03)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.04** (0.02)	-0.01 (0.02)	-0.01 (0.02)
GrowthInt			0.3 (0.2)	0.9*** (0.3)	0.4 (0.5)	1.0*** (0.3)	0.6** (0.2)	0.8*** (0.2)
election.previous	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)
system.parliamentary	-1.2 (1.5)	-1.5 (1.5)	-1.8 (1.5)	-1.6 (1.5)	-1.4 (1.5)	-2.4** (1.2)	-1.5 (1.5)	-1.6 (1.5)
GDPperCapita.ln	0.7 (0.7)	0.9 (0.7)	0.8 (0.7)	1.0 (0.7)	0.9 (0.7)	0.9 (0.9)	0.9 (0.7)	1.0 (0.7)
parties.L	-1.4 (1.8)	-1.2 (1.8)	-0.9 (1.7)	-1.6 (1.7)	-1.2 (1.8)	-2.3 (2.2)	-1.2 (1.8)	-1.3 (1.7)
parties.Q	0.8 (1.3)	1.0 (1.3)	0.9 (1.2)	0.9 (1.2)	1.0 (1.3)	0.6 (1.5)	1.0 (1.3)	0.9 (1.3)
GrowthNat:Trade	0.002 (0.004)	0.002 (0.004)						
GrowthLoc:Trade			0.000 (0.004)	0.003 (0.004)	0.004 (0.005)	0.01** (0.01)	-0.001 (0.004)	0.005 (0.004)
Constant	-0.9 (6.7)	-2.0 (6.7)	-0.4 (6.7)	-5.0 (6.8)	-1.9 (7.0)	0.7 (10.2)	-2.4 (6.6)	-3.9 (6.6)
Observations	364	364	364	364	364	251	364	363
R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Adjusted R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Figure 8: Pooled OLS, interaction between GDP growth and Trade, large sample



The OLS regression results of the large country sample indicate that the results from the previous section are robust to a larger sample. The control variables have the same sign: an increase in the number of parties leads to a lower vote share for the incumbent; the vote share is structurally lower in parliamentary systems; and a greater vote share in the previous election (all else equal) results in a larger vote share in the current election. The interaction term has merely a negative sign for *GDPgrowth.closest.adj*. All other interaction terms are positive. While this positive relationship between the economic vote and globalization remains statistical significant up to 150% of trade openness, it becomes indistinguishable from 0 for most operationalizations. Merely *GDPgrowth.trade.adj* and *GDPgrowth.language.adj* remain significant for higher values of globalization.

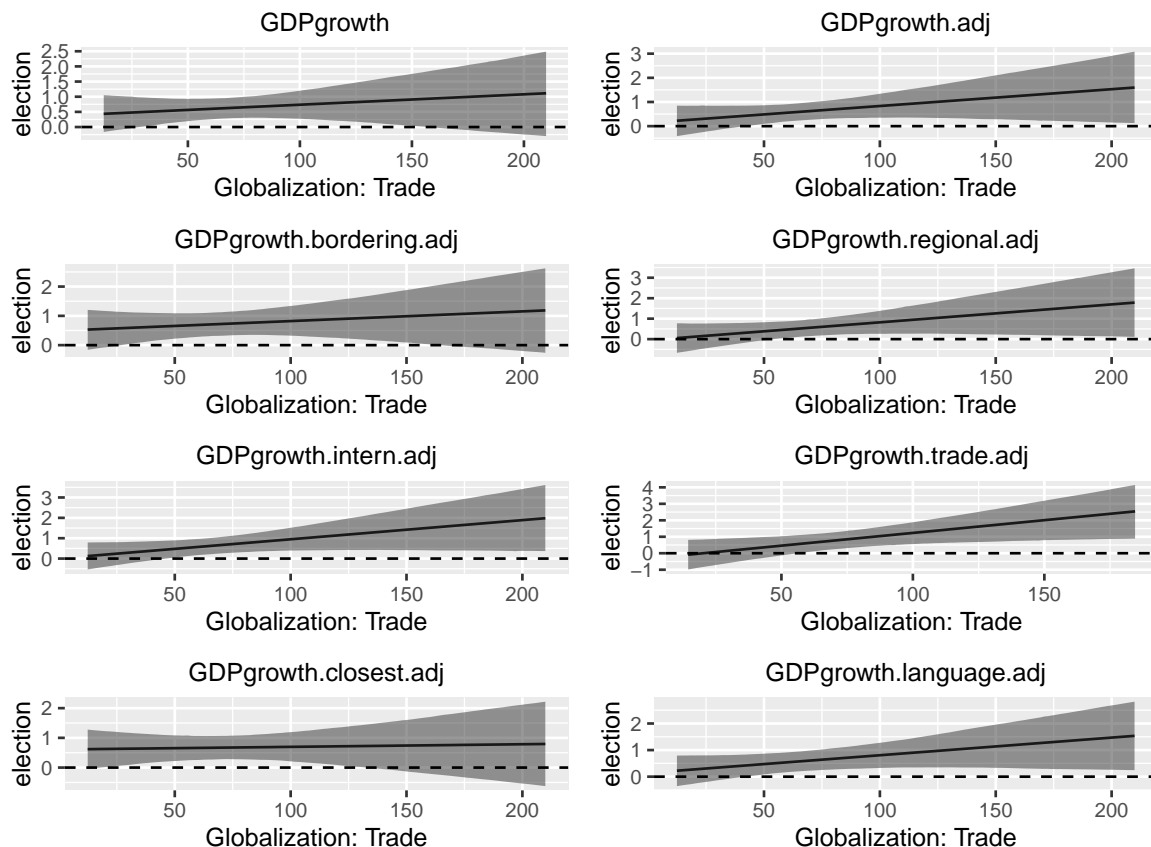
Table 12: Fixed-effects, GDP growth with Trade interacted, large sample

	<i>Dependent variable:</i>							
	election							
	GDP growth	GDP growth.adj	GDP growth.bordering.adj	GDP growth.regional.adj	GDP growth.intern.adj	GDP growth.trade.adj	GDP growth.closest.adj	GDP growth.laguage.adj
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	0.4 (0.3)	0.1 (0.4)						
GrowthLoc			0.5 (0.4)	−0.05 (0.4)	0.01 (0.4)	−0.3 (0.4)	0.6 (0.4)	0.1 (0.4)
Trade	−0.1 (0.1)	−0.1 (0.1)	−0.04 (0.1)	−0.1 (0.05)	−0.04 (0.05)	−0.03 (0.04)	−0.04 (0.05)	−0.1 (0.1)
GrowthInt			0.4* (0.2)	0.8*** (0.3)	0.5 (0.5)	1.0** (0.4)	0.4* (0.2)	0.7*** (0.3)
election.previous	0.5*** (0.1)	0.4*** (0.1)	0.4*** (0.1)	0.4*** (0.1)	0.4*** (0.1)	0.6*** (0.1)	0.4*** (0.1)	0.4*** (0.1)
GDPperCapita.ln	−0.9 (2.7)	−1.4 (2.6)	−1.7 (2.8)	−1.3 (2.7)	−1.4 (2.7)	−3.6 (2.6)	−1.8 (2.7)	−0.9 (2.8)
parties.L	−0.5 (1.8)	−0.4 (1.8)	−0.6 (1.8)	−0.5 (1.8)	−0.5 (1.8)	−2.2 (1.5)	−0.8 (1.7)	−0.5 (1.9)
parties.Q	−1.3 (1.3)	−1.2 (1.3)	−1.2 (1.2)	−1.1 (1.2)	−1.2 (1.3)	−0.8 (1.3)	−1.5 (1.2)	−1.1 (1.2)
GrowthNat:Trade	0.003 (0.004)	0.01 (0.005)						
GrowthLoc:Trade			0.003 (0.005)	0.01* (0.005)	0.01* (0.01)	0.02*** (0.01)	0.001 (0.004)	0.01 (0.004)
Observations	364	364	364	364	364	251	364	363
R <sup>2</sup>	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2
Adjusted R <sup>2</sup>	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2

*Note:*

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Figure 9: Fixed-effects, interaction between GDP growth and Trade, large sample



This pattern is confirmed by a panel regression using country fixed-effects. Here the control variables maintain the same sign. Furthermore, all interaction terms have a positive sign. At the same time, the conditional effect plots indicate that this positive relationship between the economic vote and globalization remains statistically significant for higher values of trade openness for most operationalizations of economic performance. Merely *GDPgrowth.closest.adj* becomes indistinguishable from 0 for trade openness greater than 150%.

## 8.2 Other measures of globalization

The further robustness of these findings can be shown with regard to alternative measures of globalization. The KOF index of globalization by Dreher (2006) and Dreher et al. (2008) allows replacing the current measurement of globalization. The KOF index of globalization is a composite indicator that combines three dimensions of globalization: economic, social, and political globalization. It is important to note, that this indicator

ranges from 0 to 100%, as compared to trade openness (*Trade*) that can exceed 100% and even 200% in some cases (compare Appendix C).

In this section the subindex for economic globalization is used (*KOF.econ.global*). It measures two aspects of economic globalization: first, trade and financial flows, and second, restrictions to trade and financial flows. The flows are measured as: trade as a share of GDP, foreign direct investments as a share of GDP, portfolio investments as a share of GDP and income payments to foreign nationals as a share of GDP. The restrictions are measured as: hidden import barriers, the mean tariff rate, taxes on international trade, and capital account restrictions. Regression results for the comprehensive KOF index, as well as results for the subindex for economic flows are reported in the Appendix D.

The OLS regression in table 13 shows that the coefficients of the interaction term are positive for all measures of economic performance. In addition, the control variables maintain the same sign compared to previous results. The conditional effect plots are shown in order to determine the statistical significance of the measures of economic performance for different levels of globalization (figure 10). It shows that the economic vote becomes and remains statistically significant for most measures of economic performance starting at around 70% of globalization according to the economic subindex of the KOF index (*KOF.econ.global*).

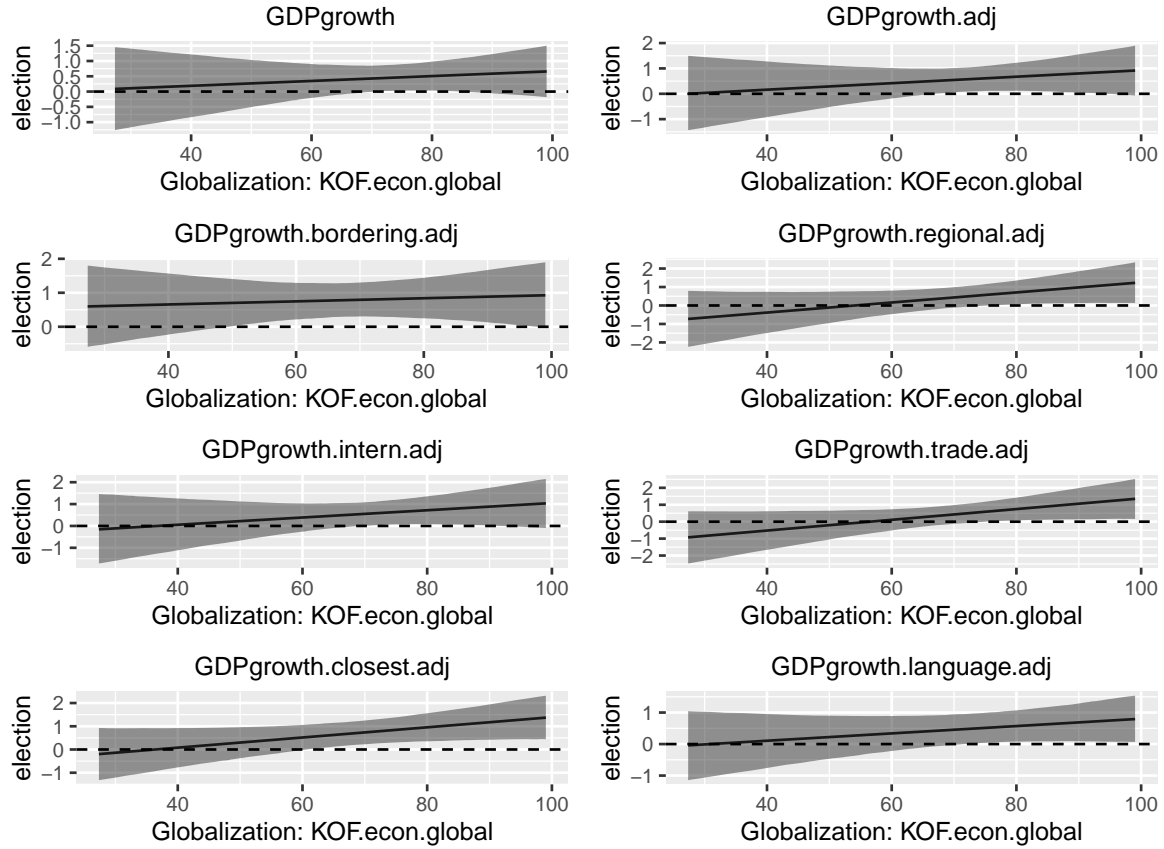
Table 13: Pooled OLS, economic performance with KOF.econ.global interacted

	<i>Dependent variable:</i>							
	election							
	GDP <sub>growth</sub>	GDP <sub>growth.adj</sub>	GDP <sub>growth.bordering.adj</sub>	GDP <sub>growth.regional.adj</sub>	GDP <sub>growth.intern.adj</sub>	GDP <sub>growth.trade.adj</sub>	GDP <sub>growth.closest.adj</sub>	GDP <sub>growth.laguage.adj</sub>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	−0.1 (0.9)	−0.3 (1.0)						
GrowthLoc			0.5 (0.9)	−1.5 (0.9)	−0.6 (1.0)	−1.8* (1.0)	−0.8 (0.7)	−0.4 (0.6)
KOF.econ.global	−0.1* (0.1)	−0.1* (0.1)	−0.1 (0.05)	−0.1 (0.04)	−0.1 (0.04)	−0.1 (0.04)	−0.1 (0.04)	−0.1 (0.04)
GrowthInt			0.3 (0.3)	0.7** (0.3)	0.6 (0.4)	0.7** (0.3)	0.3 (0.3)	0.8** (0.3)
election.previous	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)
system.parliamentary	−3.1** (1.4)	−3.1** (1.5)	−3.7** (1.4)	−3.2** (1.5)	−3.1** (1.5)	−3.2** (1.5)	−3.4** (1.4)	−3.1** (1.5)
GDPperCapita.ln	1.0 (1.5)	1.0 (1.5)	0.1 (1.5)	0.8 (1.5)	1.1 (1.5)	0.5 (1.5)	0.6 (1.5)	0.9 (1.5)
parties.L	−2.4 (2.4)	−2.3 (2.5)	−2.0 (2.4)	−3.1 (2.3)	−2.4 (2.4)	−2.9 (2.1)	−2.8 (2.4)	−2.7 (2.2)
parties.Q	1.3 (1.7)	1.1 (1.7)	0.9 (1.7)	0.8 (1.6)	1.1 (1.7)	0.8 (1.6)	0.5 (1.6)	0.9 (1.6)
GrowthNat:KOF.econ.global	0.01 (0.01)	0.01 (0.01)						
GrowthLoc:KOF.econ.global			0.005 (0.01)	0.03** (0.01)	0.02 (0.01)	0.03** (0.01)	0.02** (0.01)	0.01 (0.01)
Constant	5.1 (16.4)	5.2 (16.6)	13.6 (16.1)	3.5 (16.3)	1.4 (16.2)	7.5 (16.3)	7.6 (16.2)	2.2 (16.1)
Observations	231	231	231	231	231	231	231	231
R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Adjusted R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Figure 10: Pooled OLS, interaction between GDP growth and KOF.econ.global



This pattern is confirmed in a fixed-effects regression model (table 14, variable *system* excluded). All interaction coefficients are positive and attain statistical significance at around 70% of globalization measured by the economic subindex of the KOF index (figure 11). At the same time, the coefficients of the control variables maintain the same direction.



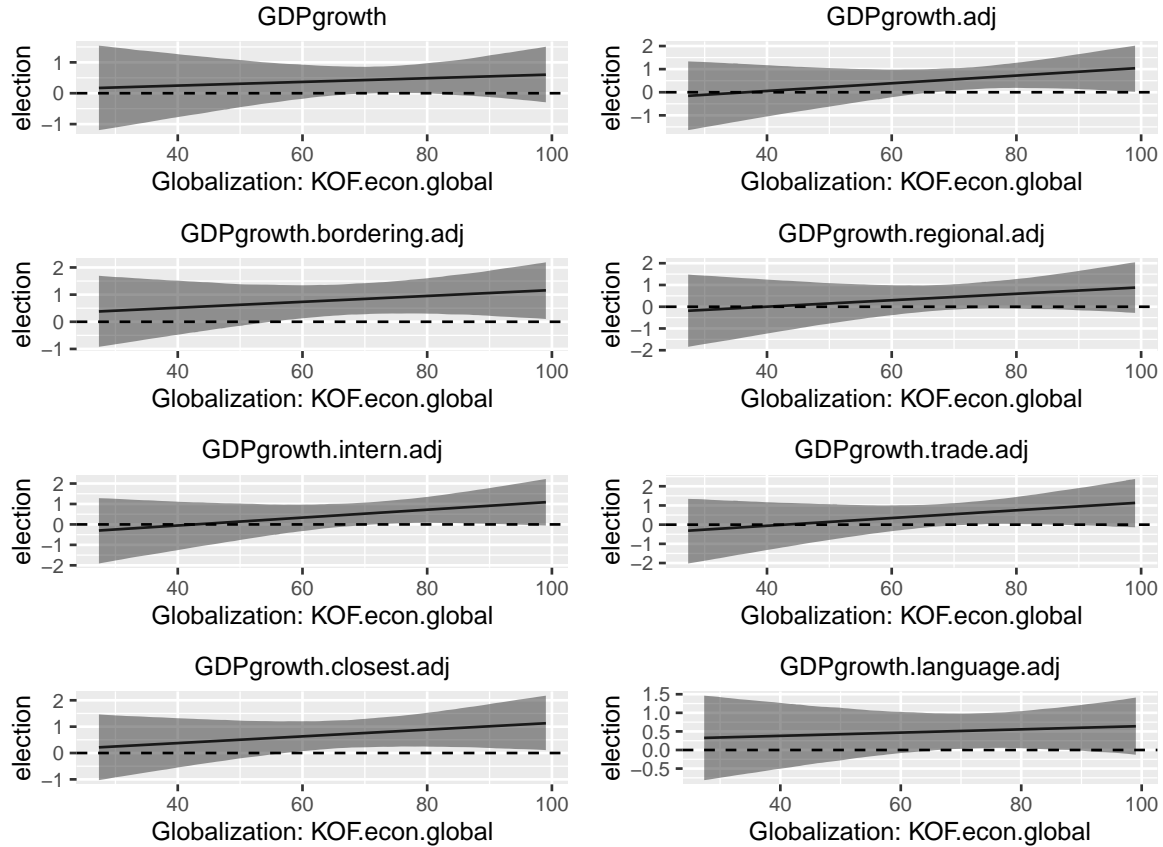
Table 14: Fixed-effects, GDP growth with KOF.econ.global interacted

	<i>Dependent variable:</i>							
	election							
	GDP growth	GDP growth.adj	GDP growth.bordering.adj	GDP growth.regional.adj	GDP growth.intern.adj	GDP growth.trade.adj	GDP growth.closest.adj	GDP growth.laguage.adj
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	0.03 (1.1)	-0.6 (1.3)						
GrowthLoc			0.1 (1.0)	-0.6 (1.1)	-0.8 (1.2)	-0.8 (1.3)	-0.1 (0.8)	0.2 (0.6)
KOF.econ.global	-0.1 (0.1)	-0.1 (0.1)	-0.1 (0.1)	-0.1 (0.1)	-0.1 (0.1)	-0.1 (0.1)	-0.05 (0.1)	-0.1 (0.1)
GrowthInt			0.3 (0.3)	0.8** (0.3)	0.7 (0.5)	0.6* (0.4)	0.4 (0.3)	0.8*** (0.3)
election.previous	0.7*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)
GDPperCapita.ln	-0.7 (4.0)	-0.8 (4.2)	-1.2 (4.0)	-0.6 (4.1)	-0.9 (4.1)	-1.2 (4.3)	-1.4 (4.1)	-1.6 (3.5)
parties.L	-3.3* (1.9)	-3.1 (1.9)	-3.0* (1.6)	-3.3* (1.8)	-3.2* (1.8)	-3.2** (1.6)	-3.4** (1.6)	-3.4** (1.6)
parties.Q	-0.2 (1.9)	-0.3 (1.9)	-0.5 (1.8)	-0.4 (1.9)	-0.3 (1.9)	-0.4 (1.9)	-0.9 (2.0)	-0.5 (1.8)
GrowthNat:KOF.econ.global	0.01 (0.02)	0.02 (0.02)						
GrowthLoc:KOF.econ.global			0.01 (0.01)	0.01 (0.02)	0.02 (0.02)	0.02 (0.02)	0.01 (0.01)	0.004 (0.01)
Observations	231	231	231	231	231	231	231	231
R <sup>2</sup>	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Adjusted R <sup>2</sup>	0.2	0.3	0.3	0.2	0.3	0.2	0.3	0.3

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Figure 11: Fixed-effects, interaction between GDP growth and KOF.econ.global



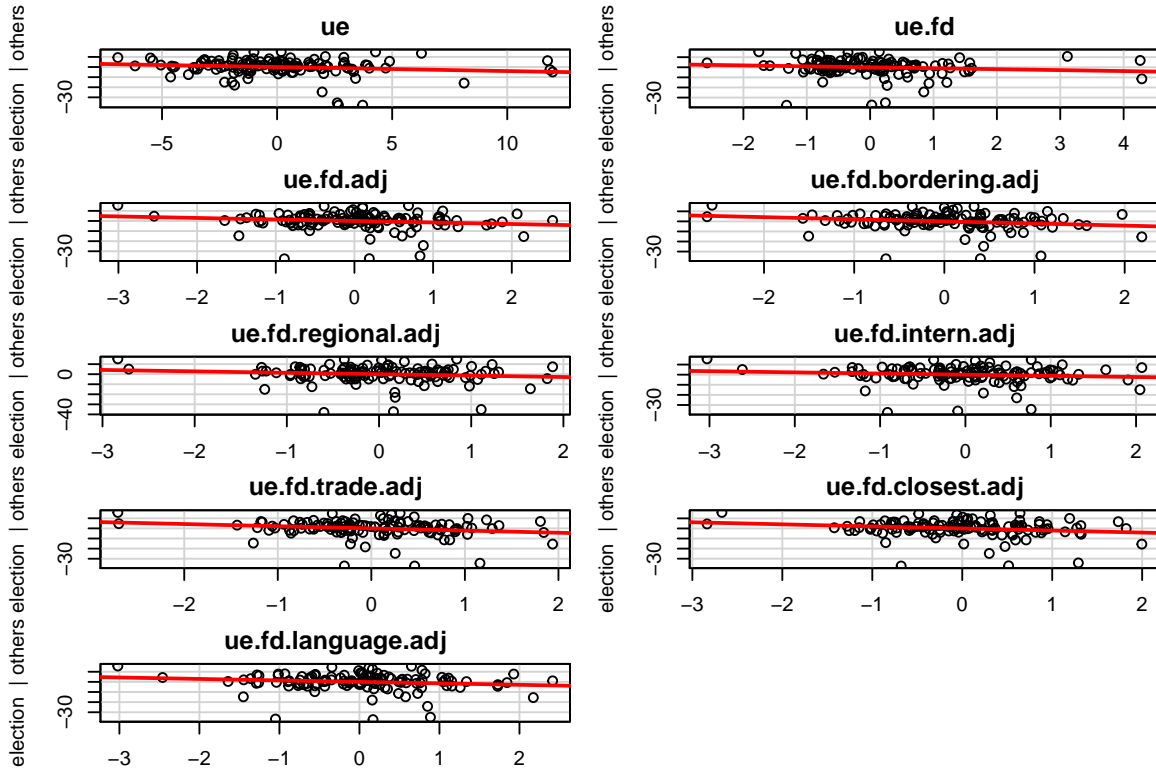
### 8.3 Unemployment

These findings are also robust with regard to a different measurement of economic performance. The unemployment rate is identified as a strong operationalization for the economic vote besides growth in GDP (Lewis-Beck & Stegmaier, 2013). Hence, in the following tables unemployment is included as a level variable in model 1. For models 2 to 9 unemployment is transformed to change in unemployment with regard to the previous year (first-difference). This transformation is useful to address the fact that if countries continuously experience high unemployment rates, then voters might accept them to be persistent and do not hold the government to account with regard to the unemployment rate. They might rather adjust their expectations in a way that deviations from the previous unemployment rate are a better indicator, e.g. for the competency of the government. Models 3 to 9 show the time-adjusted values for change in unemployment. This is implemented parallel to the adjustment of GDP growth. Models 4 to 9 yield the

relative measurements developed above for GDP growth, i.e. decomposition into local and international component.

By using unemployment as the independent variable, the sample size is reduced substantially. No country provides information on unemployment to the World Development Indicators prior to 1990 (compare Appendix C). This problem of missing data cannot be overcome by using an alternative source of data: the OECD unemployment rate (OECD, 2016). Some countries provide unemployment rates prior to 1990 to the OECD database on unemployment: Austria, Australia, Canada, Germany, Japan, New Zealand, and the United States. This additional data would allow supplementing the data from the World Bank Development Indicators with data from the OECD database. This, however, yields the risk of introducing a measurement bias into the model. This is due to the fact, that the willingness and capability of a country to report data on this indicator could be correlated with other variables in the model. Therefore, the unemployment rates are not supplemented by OECD data. Thereby a smaller sample for this robustness test is accepted.

Figure 12: Partial regression plots for unemployment



The regression results for this simple OLS regression model in table 15 support the

Table 15: Pooled OLS, unemployment

	<i>Dependent variable:</i>								
	election								
	ue	ue.fd	ue.fd.adj	ue.fd.bordering.adj	ue.fd.regional.adj	ue.fd.intern.adj	ue.fd.trade.adj	ue.fd.closest.adj	ue.fd.laguage.adj
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
UeNat	-0.4 (0.3)	-0.9 (0.9)	-1.5* (0.9)						
UeLoc				-2.1** (1.0)	-1.4 (1.0)	-1.2 (1.0)	-2.2** (1.0)	-2.0** (1.0)	-1.5 (0.9)
UeInt				-1.1 (0.8)	-1.7 (1.3)	-11.4* (6.9)	-0.3 (1.2)	-0.7 (1.0)	-2.3 (1.6)
election.previous	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)
system.parliamentary	-4.3* (2.4)	-4.7* (2.4)	-5.1** (2.4)	-5.5** (2.3)	-5.1** (2.4)	-5.1** (2.5)	-5.2** (2.3)	-5.1** (2.4)	-5.2** (2.5)
GDPperCapita.ln	-0.2 (2.2)	2.0 (2.0)	1.9 (2.1)	1.8 (2.1)	1.9 (2.1)	1.5 (2.1)	2.0 (2.1)	1.7 (2.0)	1.9 (2.1)
parties.L	-0.01 (1.6)	0.1 (1.8)	1.6 (1.6)	1.4 (1.8)	1.6 (1.6)	1.6 (1.6)	1.5 (1.8)	1.6 (1.7)	1.2 (1.5)
parties.Q	3.1** (1.4)	3.9** (1.6)	5.1*** (1.6)	5.3*** (1.7)	5.1*** (1.6)	5.2*** (1.6)	5.2*** (1.7)	5.3*** (1.6)	4.8*** (1.9)
Constant	17.7 (26.8)	-6.1 (23.5)	-3.1 (24.9)	-1.8 (24.6)	-2.8 (25.0)	0.7 (25.7)	-4.9 (24.5)	-0.6 (24.9)	-3.3 (25.2)
Observations	131	125	122	122	122	122	122	122	122
R <sup>2</sup>	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Adjusted R <sup>2</sup>	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

empirical findings that voters use the unemployment rate as a measure to hold the government accountable: the signs of the variables measuring unemployment are negative across all different measurements of absolute and relative unemployment. The coefficients reach statistical significance at the conventional 5% level in 3 cases, while most other measurements fail slightly to attain significance.

The number of parties has no effect on the vote share for the incumbent for low numbers of parties as compared to very few parties (0 to 7 parties is the benchmark category for the dummies); once a higher threshold is reached, then more parties have a negative effect on the vote share of the incumbent.

The robustness of the interaction effect with regard to the measurement of economic performance in a simple OLS model yields mixed results (table 16). On the one hand, the interaction effect is negative for all specifications (with the exception of *ue.fd.regional.adj*). On the other hand, the null hypothesis that this effect is different from 0 can be rejected in few cases for certain levels of globalization (compare figure 13). This effect becomes slightly stronger in a fixed-effects panel regression model. Results for a fixed-effects model without interactions confirm the findings of the pooled OLS regression model without interactions, but are not shown.

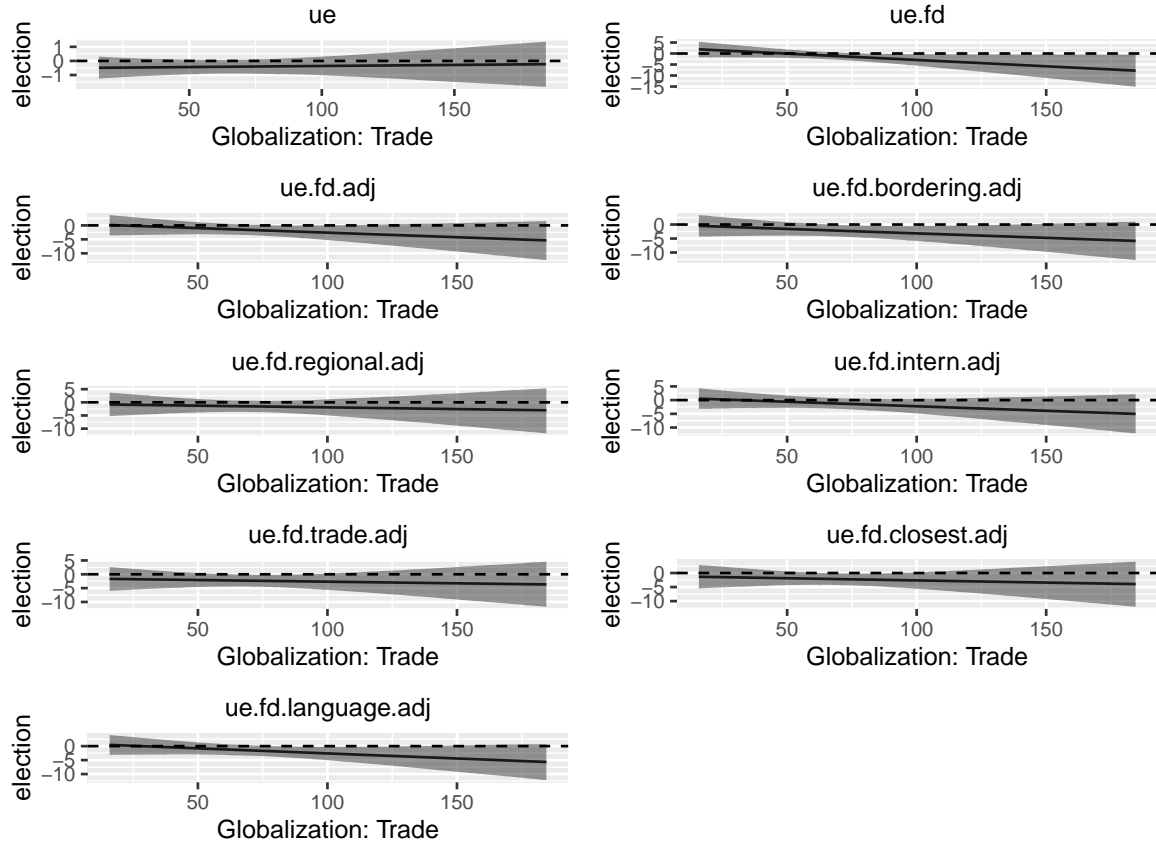
Table 16: Pooled OLS, unemployment with Trade interacted

	<i>Dependent variable:</i>								
	election								
	ue	ue.f.d	ue.f.d.adj	ue.f.d. bordering.adj	ue.f.d. regional.adj	ue.f.d. intern.adj	ue.f.d. trade.adj	ue.f.d. closest.adj	ue.f.d. language.adj
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
UeNat	−0.5 (0.5)	2.8 (1.9)	0.7 (1.9)						
UeLoc				0.05 (2.0)	−0.6 (2.9)	1.0 (2.0)	−1.5 (2.5)	−1.1 (2.9)	1.0 (2.1)
Trade	−0.05 (0.1)	−0.04 (0.03)	−0.03 (0.03)	−0.03 (0.03)	−0.04 (0.03)	−0.04 (0.03)	−0.04 (0.03)	−0.03 (0.03)	−0.03 (0.03)
UeInt				−1.0 (0.8)	−1.8 (1.3)	−12.5* (6.8)	−0.4 (1.3)	−0.8 (1.0)	−2.2 (1.6)
election.previous	0.6*** (0.1)	0.6*** (0.1)	0.5*** (0.1)	0.5*** (0.1)	0.5*** (0.1)	0.5*** (0.1)	0.5*** (0.1)	0.5*** (0.1)	0.6*** (0.1)
system.parliamentary	−3.0 (2.7)	−3.5 (2.5)	−4.2 (2.8)	−4.5* (2.7)	−3.9 (2.8)	−4.1 (2.8)	−4.1 (2.7)	−4.2 (2.8)	−4.5 (3.0)
GDPperCapita.ln	0.1 (2.4)	3.5* (2.1)	2.4 (2.3)	2.2 (2.3)	2.3 (2.3)	2.0 (2.4)	2.3 (2.2)	2.0 (2.3)	2.3 (2.3)
parties.L	−0.4 (1.4)	0.04 (1.3)	1.0 (1.4)	0.9 (1.5)	0.9 (1.4)	1.0 (1.4)	0.8 (1.6)	0.9 (1.5)	−0.1 (1.1)
parties.Q	2.7** (1.4)	3.9*** (1.4)	4.5*** (1.6)	4.8*** (1.6)	4.6*** (1.5)	4.6*** (1.6)	4.7*** (1.6)	4.8*** (1.6)	3.8* (2.0)
UeNat:Trade	0.001 (0.01)	−0.1*** (0.02)	−0.03* (0.02)						
UeLoc:Trade				−0.03* (0.02)	−0.01 (0.03)	−0.03 (0.02)	−0.01 (0.03)	−0.02 (0.03)	−0.04* (0.02)
Constant	18.5 (29.3)	−19.6 (24.6)	−5.8 (26.9)	−3.2 (26.6)	−4.6 (26.9)	−1.7 (28.2)	−4.9 (26.3)	−1.0 (27.0)	−6.1 (27.1)
Observations	127	121	118	118	118	118	118	118	118
R <sup>2</sup>	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Adjusted R <sup>2</sup>	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Figure 13: Pooled OLS, interaction between unemployment and Trade



The coefficients of the interaction terms in table 17 indicate a slightly stronger effect for fixed-effects regressions (variable *system* excluded). This leads to the fact that most coefficients of unemployment attain statistical significance for higher values than 60% of trade openness (figure 14).

Hence, it can be concluded that the effect, that the economic vote becomes substantially larger and attains higher statistical significance for higher levels of globalization, is robust for an alternative measure of economic performance.

Table 17: Fixed-effects, unemployment with Trade interacted

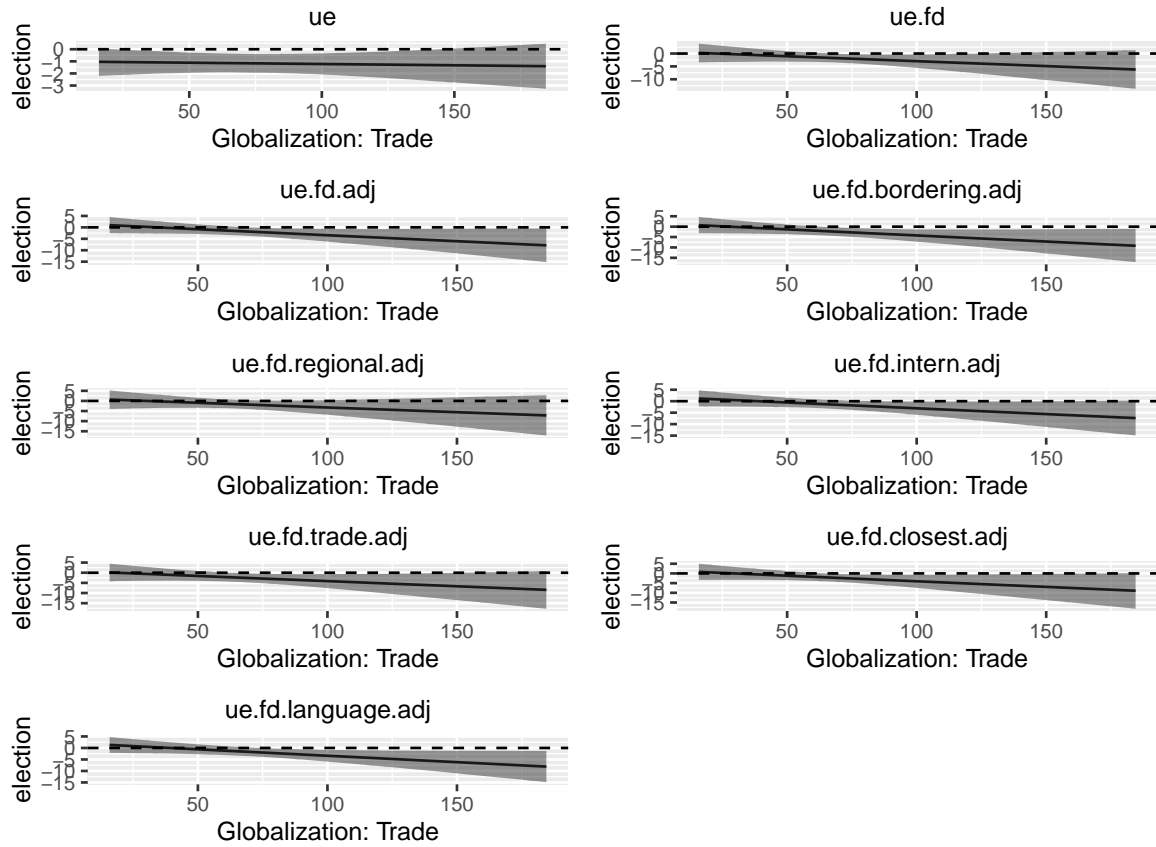
	<i>Dependent variable:</i>								
	election								
	ue	ue.fdl	ue.fdl.adj	ue.fdl.bordering.adj	ue.fdl.regional.adj	ue.fdl.intern.adj	ue.fdl.trade.adj	ue.fdl.closest.adj	ue.fdl.laguage.adj
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
UeNat	-1.2*	-0.6	1.4						
	(0.7)	(1.6)	(1.5)						
UeLoc				-0.1	-0.5	1.4	-0.7	-0.7	0.8
				(1.6)	(1.9)	(1.7)	(1.8)	(1.8)	(1.6)
Trade	0.1	-0.1	0.03	0.1	-0.01	0.03	0.04	0.02	0.03
	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)	(0.1)
UeInt				-1.1	-1.8	-9.5	-0.6	-1.0	-1.6
				(0.8)	(1.3)	(7.0)	(1.1)	(0.9)	(1.6)
election.previous	0.6***	0.5***	0.6***	0.5***	0.6***	0.6***	0.6***	0.5***	0.6***
	(0.1)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
GDPperCapita.ln	-13.8**	5.0	3.9	1.6	4.4	1.9	3.6	4.0	3.7
	(5.4)	(7.4)	(7.8)	(7.8)	(7.7)	(7.6)	(7.6)	(7.8)	(7.8)
parties.L	-4.4	-0.7	-1.2	-1.7	-1.4	-1.0	-2.0	-1.4	-1.8
	(3.0)	(3.6)	(1.9)	(1.8)	(2.1)	(2.2)	(1.7)	(2.0)	(1.9)
parties.Q	-1.2	0.9	0.2	0.3	0.5	0.6	0.1	0.3	0.2
	(2.1)	(1.7)	(1.4)	(1.5)	(1.6)	(1.3)	(1.6)	(1.5)	(1.6)
UeNat:Trade	-0.001	-0.01	-0.04*						
	(0.01)	(0.02)	(0.03)						
UeLoc:Trade				-0.03	-0.01	-0.04	-0.02	-0.02	-0.03
				(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Observations	126	120	117	117	117	117	117	117	117
R <sup>2</sup>	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Adjusted R <sup>2</sup>	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01



Figure 14: Fixed-effects, interaction between unemployment and Trade



## 9. Stability

In order to support the findings presented in the results section, additional hypotheses can be tested on subsets of the data. In the following two hypotheses are tested on subsets.

The subsets are constructed by splitting each unit of observation in observations that are above and below a threshold (the midpoint between the highest and the lowest value for each country). Then the country observations that are above the threshold are grouped into one sample and the country observations that are below the threshold are grouped into another sample. Thereby cross-country heterogeneity is maintained in each sample. This avoids getting a result that is mainly driven by differences in countries.

Alternatively, more extreme samples could be constructed (e.g. the highest 10% compared to the lowest 10%), in order to get clearer results. Here, however, the relatively small sample size sets limits to this approach: first, the standard errors are expected to increase; second, the construction of confidence intervals at the 5% threshold with 1.96 times the standard errors would be challenged.

All regressions are OLS regressions with the control variables that were also used for other OLS regressions and are based on the small sample.

### 9.1 High and low globalization

First, if the economic vote becomes stronger with higher degrees of globalization like the results above suggest, then a subset of more globalized countries would have a stronger economic vote, as compared to countries lower levels of globalization. Following the operationalizations in the previous results, globalization is measured as trade openness (*Trade*).

Figure 15: Sample split by globalization for each country

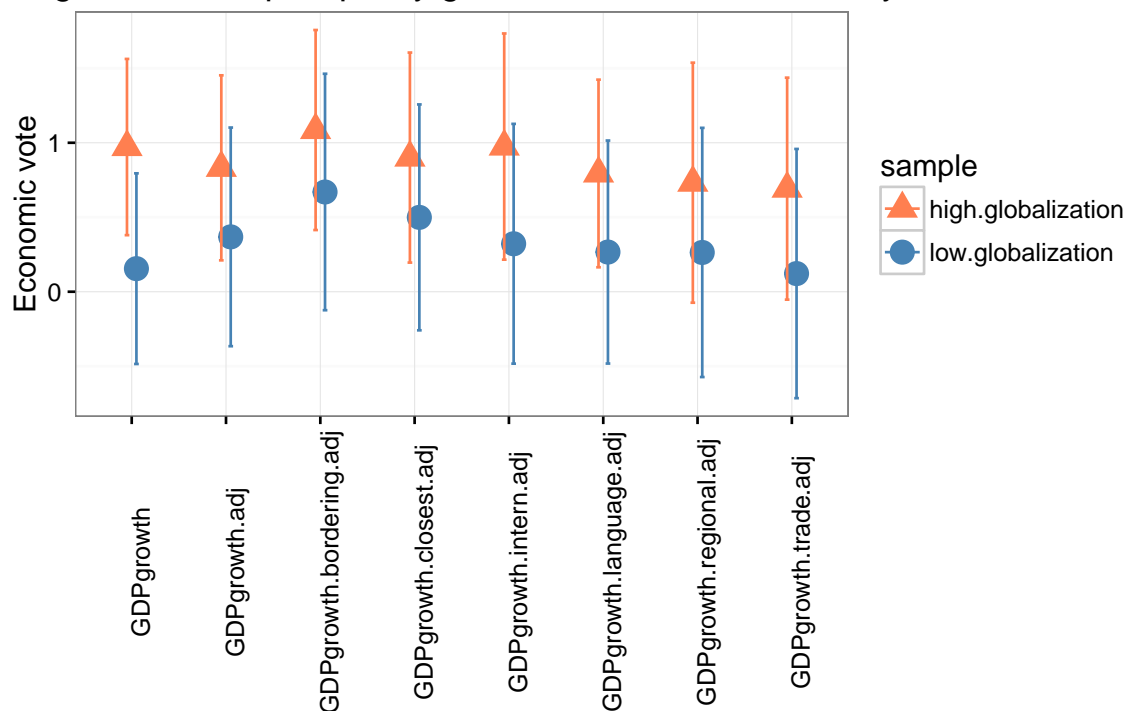


Figure 15 compares the coefficients with its confidence intervals (each interval indicates the 95% level of confidence) of the opposite samples for each operationalization of economic performance. The visual representation of the regression results does not clearly support the hypothesis at the 5% threshold that the two samples are different. On the one hand, the point estimates of the coefficients of the sample with higher globalized countries are consistently larger than the coefficients of the sample containing countries with lower degrees of globalization. On the other hand, this substantial difference of all operationalizations of economic performance does not attain statistical significance at the 5% threshold.

This could be explained by two characteristics of the samples. First, the small sample size might increase the standard errors. This would require a greater difference between coefficients of the samples in order to reject the null hypothesis that the samples are the same. Second, the moderate split in above and below the threshold, as compared to more extreme splits, allocate similar country-globalization observations in the one and the other sample (in order to receive sufficient observations in each sample). The similarity of observations in the one and the other sample, again, would require a greater

difference between coefficients of the samples.

Overall, this can be seen as an indicator that the economic vote is stronger in country-year observations that have higher levels of globalization and not the other way around (Duch & Stevenson, 2010; Fernández-Albertos, 2006; Hellwig, 2001; Hellwig & Samuels, 2007).

## 9.2 Early and late years

Second, most countries experience a steady increase in their respective level of globalization (compare Appendix C). If the substantial effect of the economic vote also increased over time, then finding different substantial effects conditional on different levels of globalization could be driven entirely by time (spurious relationship). It would be an indicator for an alternative explanation, if the degree of globalization and the economic vote were small in the beginning and consequentially increased over time due to other factors. In this case, a sample containing the first half of observations (with regard to time) would experience a significantly lower economic vote, as compared to a sample containing the later observations.

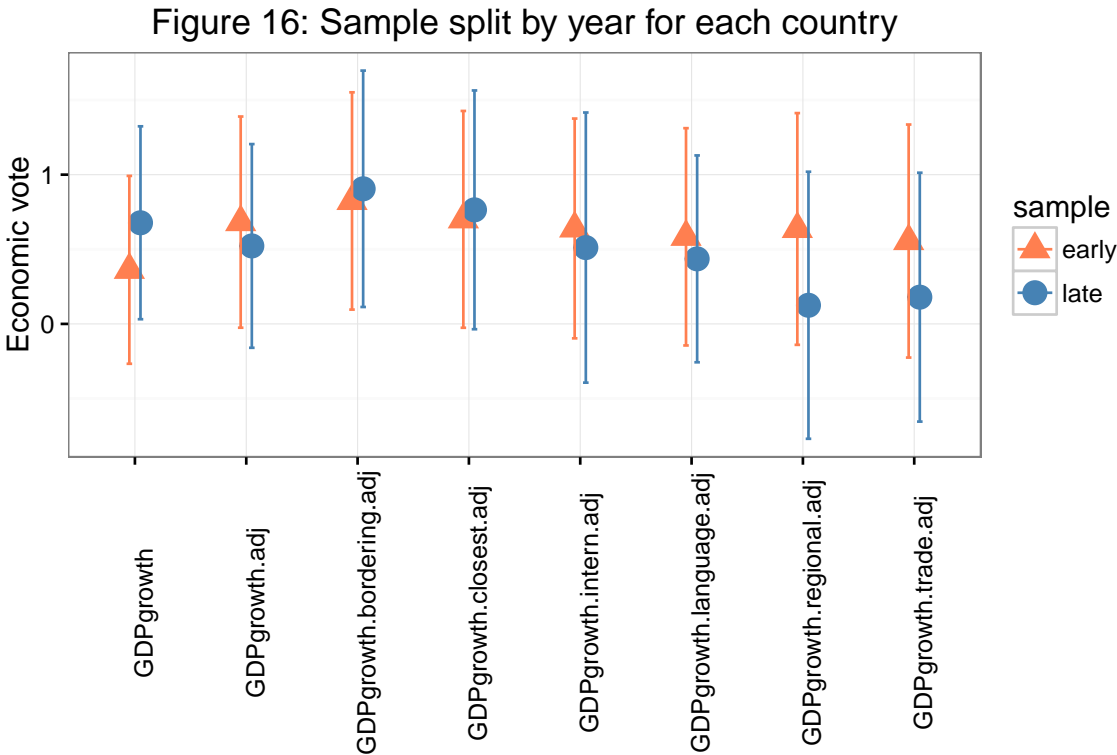


Figure 16 compares the coefficients with its confidence intervals of the opposite samples for each operationalization of economic performance. It can be assessed that there is no stronger economic vote depending on time: the coefficients can neither be distinguished from each other at the 5% threshold, nor is there a pattern indicating a direction.

This can be seen as an indicator, that the effect found in the result section is not driven by an increase of the level of globalization over time.

## 10. Conclusion

The results of the statistical analyses provide a contrast to previous findings in the literature (Duch & Stevenson, 2010; Fernández-Albertos, 2006; Hellwig, 2001; Hellwig & Samuels, 2007): the substantial effect of the economic vote does neither decrease for higher levels of globalization, nor does this effect become statistically indistinguishable from 0. The results rather point into the opposite direction: the substantial effect of the economic vote tends to increase for higher levels of globalization.

This finding is robust with regard to several aspects. First, enlarging the sample size to include democracies besides the old OECD members does not alternate the results. Second, alternative measurements of the level of globalization confirm the pattern. Third, changing the main independent variable to unemployment as a measure of economic performance confirms the findings, i.e. incumbents are punished more severely for high unemployment under higher levels of globalization. Furthermore, the stability of the findings is confirmed on smaller subsets: the economic vote is substantially stronger for country-year observations with higher levels of globalization; this pattern does not emerge if the sample is split with regard to time. However, the coefficients cannot be distinguished from each other at the 5% threshold.

The findings provide strong support for the benchmarking approach (Kayser & Peress, 2012, 2016). However, the central assumption that international economic integration influences the benchmark is not supported. The local components of economic performance do not converge strongly with higher levels of globalization (figure 2 and Appendix E) for the six operationalizations of the local component, that are estimated with regard to the bordering countries, the countries in a geographic region, all countries, the main trading partners, the closest countries, and the countries that share similar languages.

Hence the integration of the benchmarking approach into the context of the economic vote and globalization faces two important challenges. First, the substantial effect of the economic vote does not decline with regard to higher levels of globalization. Second, the local components of economic performance do not converge strongly with higher levels of globalization in this data set. These challenges are reflected in the conditional

effect plots (e.g. figure 6) that do not differ systematically between absolute (models 1-2) and relative (i.e. benchmarked or decomposed, models 3-8) measures. This can be interpreted as follows: voters benchmark regardless of the level of globalization, but since the substantial effect of the economic vote increases for higher levels of globalization (and the local component does not decrease), the benchmarking effect increases also for higher levels of globalization.

Further research in this field could address the shortcomings of the data set used for these statistical analyses. First, executive elections could be included into the data set. Second, earlier and later elections could be added to the data set. Third, the adjustment of economic performance with regard to the month in which an election occurs could be improved with monthly or quarterly data. Fourth, further operationalizations of benchmarking by voters could be implemented. An interesting variable for the grouping of countries would be the classification of economic development for each year.

Moreover, the micro mechanism of the benchmarking approach could be further investigated. So far, it is assumed that the level of globalization changes the composition of the economic performance. In addition, the extent to which voters benchmark could be a function of the level of globalization. This could help to explain why the local components of economic performance sometimes outperform the absolute measures of economic performance (i.e. have a steeper slope in the conditional effect plots) for high levels of globalization - despite the challenges mentioned above.

Finally, revision processes of economic indicators need to be taken into account more thoroughly (this issue is raised e.g. by Sattler et al., 2010). Previous studies might have underestimated the GDP growth for years prior to their data gathering. This is highly relevant for this analysis, because the level of globalization tends to increase over time. If the growth rates in recent years (i.e. with high levels of globalization) are underestimated, then this could strongly influence the results.

# Appendix

## Appendix A: R Studio and R packages

The statistical analysis as well as the layout of this master thesis has been conducted with R Studio (R Core Team, 2015a).

The data preparation process would not have been possible without the following packages: `countrycode` v. 0.18 (Arel-Bundock, 2014), `digest` v. 0.6.9 (Eddelbuettel, 2016), `XML` v. 3.98-1.3 (Temple Lang & CRAN Team, 2015), `RJSONIO` v. 1.3-0 (Temple Lang, 2014), `geosphere` v. 1.5-1 (Hijmans, 2015), `foreign` v. 0.8-66 (R Core Team, 2015b), `httr` v. 1.1.0 (Wickham, 2016a), `plyr` v. 1.8.3 (Wickham, 2015), `repmis` v. 0.5 (Gandrud, 2016), `tidyr` v. 0.4.1 (Wickham, 2016b), `WDI` v. 2.4 (Arel-Bundock, 2013), and `xlsx` v. 0.5.7 (Dragulescu, 2014).

The following packages have been used for the statistical analysis: `interplot` v. 0.1.1.1 (Solt & Hu, 2016), `lmtest` v. 0.9-34 (Hothorn, Zeileis, Farebrother, & Cummins, 2015), `zoo` v. 1.7-12 (Zeileis, Grothendieck, & Ryan, 2015), `sandwich` v. 2.3-4 (Lumley & Zeileis, 2015), and `plm` v. 1.5-12 (Croissant & Millo, 2015).

The graphical presentation of the results was made possible by the following packages: `rmarkdown` v. `rmarkdown` (???), `knitr` v. 1.11 (Xie, 2015), `stargazer` v. 5.2 (Hlavac, 2015), `png` v. 0.1-7 (Urbanek, 2013), `car` v. 2.1-1 (Fox & Weisberg, 2015), and `gridExtra` v. 2.2.1 (Auguie, 2016).

## Appendix B: Coding of variables

**Vote share for the incumbent (election):** Source: Beck et al. (2001). Downloaded: April 3, 2016. The dependent variable is the electoral performance of the largest party of the incumbent government in parliamentary elections. This is measured as the percentage of the entire vote share. For each year with a parliamentary election (LEGELEC) the incumbent has been identified (GOV1ME). Then the vote share of this party in the next year has been identified (GOV1VOTE, GOV2VOTE, GOV3VOTE, OPP1VOTE, OPP2VOTE, or OPP3VOTE). Some matches were performed manually,



in cases where party names have slightly changed. In cases where the incumbent party was not under the top 6 parties (3 government parties, 3 opposition parties), a vote share of 0 has been attributed.

**Vote share for the incumbent, previous election (election.previous)** Source: Beck et al. (2001) - GOV1VOTE. Downloaded: April 3, 2016. This data base indicates for each year the vote share of the government and opposition parties at the beginning of each year. Hence, the vote share of the largest government party (GOV1VOTE) constitutes the vote share of the incumbent party (as defined above) in the previous election.

**Absolute GDP growth (GDPgrowth)**: Source: WorldBank (2012) - NY.GDP.MKT.P.KD.ZG. Downloaded: April 3, 2016. This variable captures the annual percentage growth rate of GDP at market prices based on constant local currency. This measure also serves as a basis for all relative measurements of GDP growth.

**Absolute GDP growth, adjusted (GDPgrowth.adj)**: The World Bank Database of Political Institutions (Beck et al., 2001) has been used to identify, whether an election occurred in the first half of a year (LEGELEC). In case an election took place in the first half of the year, then the GDP growth of the previous year is used. This strategy is applied to all relative GDP growth measures (the national component  $y_{c,t}$  as well as the international component  $y_{c,t}^{global}$  are adjusted).

**Relative GDP growth, adjusted, bordering (GDPgrowth.bordering.adj)**: The database Geonames.org (Wick & Vatant, 2012) is used to identify the neighbors of each country. Consequentially, the average growth rate of all neighbors is calculated, where missing values for growth in GDP are excluded. The average neighboring growth rate is assumed to be 0 for island countries. Then the national growth rate ( $y_{c,t}$ ) is reduced by the neighboring average ( $y_{c,t}^{global}$ ,  $GDPgrowth.bordering.int.adj$ ).

**Relative GDP growth, adjusted, distance (GDPgrowth.closest.adj)**: The database Geonames.org (Wick & Vatant, 2012) has been used, in order to identify the capitals of each state and its coordinates (the coordinates of London and Jerusalem have been inserted manually). In the following the shortest distance between all capitals has been calculated. Consequentially the 10 closest countries (i.e. distance between their capitals) have been identified. Then the average GDP growth of these 10 countries

$(y_{c,t}^{global}, GDPgrowth.closest.int.adj)$  has been subtracted from the national growth rate  $(y_{c,t})$  - not including countries in years where growth rates of GDP are not available.

**Relative GDP growth, adjusted, trade (GDPgrowth.trade.adj):** The World Integrated Trade Solution (WITS) database (Bank, 2008) has been used, in order to identify the trade flows of each country for each year. The database only covers trade in goods and not in services. In order to assess the total trade flows, “total exports” and “total imports” have been selected from “total trade” (SITC1). The reporting countries include all OECD countries and the partner countries include all WTO countries. Belgium and Luxembourg have been treated as one entity for many years: for these years the trade shares have been attributed to both countries (thereby neglecting the bilateral trade); the GDP growth of Belgium has been used for the trading partner “Belgium-Luxembourg”, because the GDP of Belgium is several times larger than the GDP of Luxembourg. Consequentially, “total exports” and “total imports” have been added together. Each year the top 10 trading partners have been identified for all countries. These served as a basis to compute the trade weighted average growth rate of the main trading partners  $(y_{c,t}^{global}, GDPgrowth.trade.int.adj)$ , whereas missing values for growth in GDP are neglected. Then the national growth rate  $(y_{c,t})$  is reduced by this number.

**Relative GDP growth, adjusted, international (GDPgrowth.intern.adj):** The international median (containing all countries) has been computed for each year  $(y_{c,t}^{global}, GDPgrowth.intern.int.adj)$ , while neglecting missing values. Alternatively, only country observations with a certain population size (e.g. exceeding 1,000,000) could have been used to compute the median. Then the national growth rate  $(y_{c,t})$  is reduced by this number.

**Relative GDP growth, adjusted, region (GDPgrowth.regional.adj):** The regional median has been computed for each year  $(y_{c,t}^{global}, GDPgrowth.regional.int.adj)$  by including all countries in a given region, while neglecting missing values. Regions are defined by the “continents” in the countrycode package (Arel-Bundock, 2014): Europe, Asia, Americas, Africa, and Oceania. Then the national growth rate  $(y_{c,t})$  is reduced by this number.

**Relative GDP growth, adjusted, language (GDPgrowth.language.adj):**

Source Melitz & Toubal (2012) and Melitz & Toubal (2014) - lp1. This data set has been used to identify countries with the greatest linguistic proximity (lp1), whereas 0 indicates greatest proximity. Belgium and Luxembourg (BLX) have been treated as one entity in the data set, and therefore the values of BLX have been assigned to Belgium and Luxembourg respectively, whereas the linguistic proximity between the countries is set to 0. Then the 10 closest countries have been identified. Then the national growth rate ( $y_{c,t}$ ) has been lowered by the average growth rate of the 10 closest countries ( $y_{c,t}^{global}$ , *GDPgrowth.language.int.adj*), whereas missing values are excluded.

**Unemployment (ue):** Source: WorldBank (2012) - SL.UEM.TOTL.ZS. Downloaded: April 3, 2016. This indicator refers to the share of the labor force that is without work but available for and seeking employment. This indicator is used for calculate all consequent unemployment variables.

**Unemployment, first-difference (ue.fd):** Each year's level of unemployment is subtracted by the level of unemployment of the previous year. Thereby the first observation of each time series is lost. The transformed measure is used for all following unemployment measures.

**Unemployment, first-difference, adjusted (ue.fd.adj):** Unemployment variables are matched to the current or previous year in accordance with *GDPgrowth.adj*. This strategy is applied to all relative unemployment measures (the national component  $y_{c,t}$  as well as the international component  $y_{c,t}^{global}$  are adjusted).

**Relative unemployment, first-difference, adjusted, bordering (ue.fd.bordering.adj):** Following *GDPgrowth.bordering.adj*. International component: *ue.fd.bordering.int.adj*.

**Relative unemployment, first-difference, adjusted, distance (ue.fd.closest.adj):** Following *GDPgrowth.closest.adj*. International component: *ue.fd.closest.int.adj*.

**Relative unemployment, first-difference, adjusted, trade (ue.fd.trade.adj):** Following *GDPgrowth.trade.adj*. International component: *ue.fd.trade.int.adj*.

**Relative unemployment, first-difference, adjusted, international (ue.fd.intern.adj):** Following *GDPgrowth.intern.adj*. International component: *ue.fd.intern.int.adj*.

**Relative unemployment, first-difference, adjusted, regional (ue.fd.regional.adj):** Following *GDPgrowth.regional.adj*. International component: *ue.fd.regional.int.adj*.

**Relative unemployment, first-difference, adjusted, language (ue.fd.language.adj):** Following GDPgrowth.language.adj. International component: *ue.fd.language.int.adj*.

**Unemployment (OECD.unemployment):** Source: OECD (2016). Downloaded: March 17, 2016. This measure has been downloaded manually for the countries of the regular sample. Only the annual values are kept as compared to quarterly and monthly data. It is not used to substitute or supplement the unemployment indicator, because the years covered vary substantially.

**Globalization, trade (Trade):** Source: WorldBank (2012) - NE.TRD.GNFS.ZS. Downloaded: April 3, 2016. This indicator created by the World Bank measures the sum of exports and imports of goods and services as a share of GDP.

**Globalization, finance (IIP.assets.plus.liabilities.gdp):** Source: Fund (2007). Downloaded: January 19, 2016. This indicator measures the sum of the assets and liabilities of a country (international investment position) as a share of GDP. Observations are available from 1990 onwards. The stock variable is a better measurement than the flow variables, because the stock variable tends to fluctuate less over time. In addition, this variable is driven to a lesser extent by short-term shocks, but rather by macroeconomic developments. The World Bank indicators available for financial indicators cannot be used in this context. The indicators for foreign direct investment as a share of GDP (BN.KLT.DINV.CD.ZS) and for total private capital flows as a share of GDP (BN.KLT.PRVT.GD.ZS) are restricted to certain regions. Net flows of foreign direct investment as a share of GDP (BX.KLT.DINV.WD.GD.ZS) is not informative in this context, because the flow variable merely identifies the change over years instead of the level of globalization. In addition, a country can receive large amounts of foreign direct investment while attaining 0 net inflows, if the same amount is divested in the same period of time. This variable could be combined with the liabilities of the international investment position from the International Financial Statistics: earlier values of this stock variable could be computed by adding the flow variable of the World Bank Development Indicators. Two important downsides would, however, remain: neither the countries international assets (foreign direct investments into other countries) would not be captured, nor the portfolio investments (assets and liabilities). These severe data constraints lead to the decision not to include this

conditional variable. Financial globalization is, however, captured by the KOF index of globalization.

**Globalization, KOF, flows (KOF.econ.global.flows):** Source: Dreher (2006) and Dreher et al. (2008) - ai. Downloaded: April 3, 2016. This composite measure (“Actual Flows”) combines various aspects of economic globalization: trade as a share of GDP, Foreign Direct Investments as a share of GDP, Portfolio Investments as a share of GDP and Income Payments to Foreign Nationals as a share of GDP.

**Globalization, KOF, economy (KOF.econ.global):** Source: Dreher (2006) and Dreher et al. (2008) - a. Downloaded: April 3, 2016. This composite measure (“Economic Globalization”) two aspects of economic globalization: first, trade and financial flows (“Actual Flows”), and second, restrictions to trade and financial flows (“Restrictions”). The restrictions are measured as: hidden import barriers, the mean tariff rate, taxes on international trade (as percent of current revenue), and capital account restrictions.

**Globalization, KOF, comprehensive (KOF.index):** Source: Dreher (2006) and Dreher et al. (2008) - index. Downloaded: April 3, 2016. This composite measure combines three dimensions of globalization: economic, social, and political globalization.

**GDP (GDPinCurrentMioUSD):** Source: WorldBank (2012) - NY.GDP.MKTP.CD. Downloaded: April 3, 2016.

**GDP per capita (GDPperCapita.ln):** Source: WorldBank (2012) - NY.GDP.PCAP.KD. Downloaded: April 3, 2016. This variable has been transformed by taking the natural log.

**Number of parties (parties):** Source: Beck et al. (2001). Downloaded: April 3, 2016. This variable counts the number of government (GOV1ME, GOV2ME, GOV3ME) and opposition parties (OPP1ME, OPP2ME, OPP3ME, OPPOTH) in parliament prior to an election. Independent and non-aligned parliamentarians are not included into the measurement. The number of parties has been transformed to an ordinal variable, ranging from 1 to 3 in steps of 7 (8): 0 to 7 parties are coded as 1, 8 to 14 parties are coded as 2, and more than 15 parties are coded as 3. The values from 2011 have been extended linear to 2012, 2013, 2014, and 2015.

**Political system (system):** Source: Beck et al. (2001) - SYSTEM. Downloaded:

April 3, 2016. Originally, this dummy variable is coded 2 for parliamentary systems, 1 for assembly-elected presidential systems, and 0 for presidential (or autocratic) systems. Here the variable is transformed to a dichotomous variable indicating whether a political system is not a parliamentary system (i.e. category 0 and 1 are grouped).

**Democracy (polity.iv.democ)** Source: PolityIV (2012) - DEMOC. Downloaded: April 3, 2016. This indicator is an 11-point scale ranging from 0 to 10. It is computed from codings of the competitiveness of political participation, the openness and competitiveness of executive recruitment, and constraints on the chief executive. The value for the year 2014 has been extended to 2015.

**Political Freedom (FHdemocracy)** Source: FreedomHouse (2015) - Political Rights. Downloaded: March 7, 2016. This indicator is a 7-point scale ranging from 1 to 7, whereas 1 represents the highest degree of freedom and 7 the lowest. Analysts construct this measure with qualitative methods and establish consensus about the indicator. The Political Rights and the Civil Liberties indicator are constructed by assessing the electoral process, political pluralism and participation, the functioning of the government, freedom of expression and of belief, associational and organizational rights, the rule of law, and personal autonomy and individual rights.

## Appendix C: Time series of economic indicators

Figure 17: Indicators of Australia

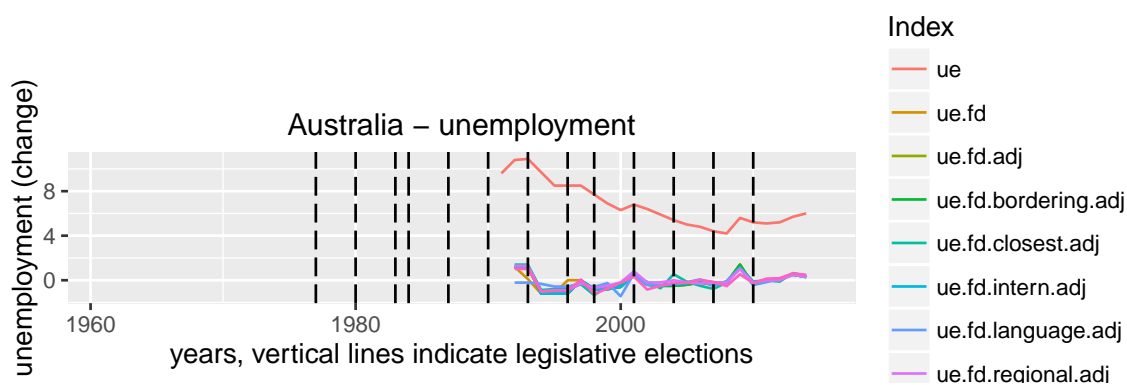
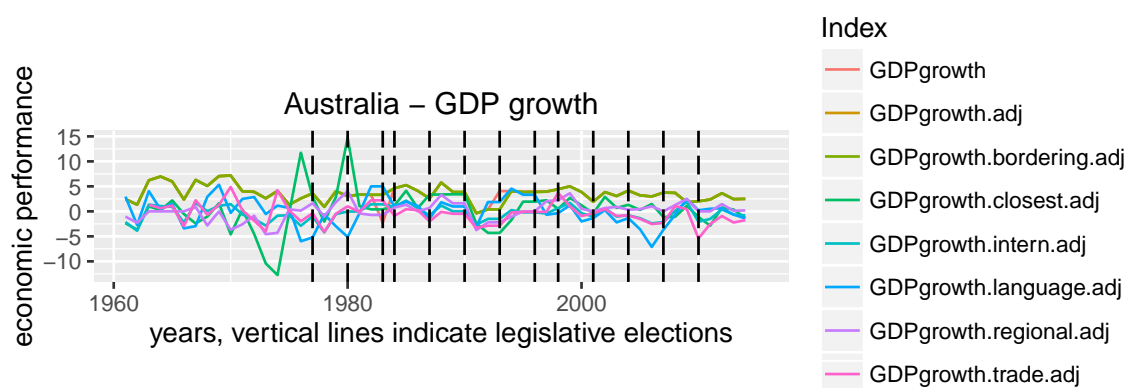
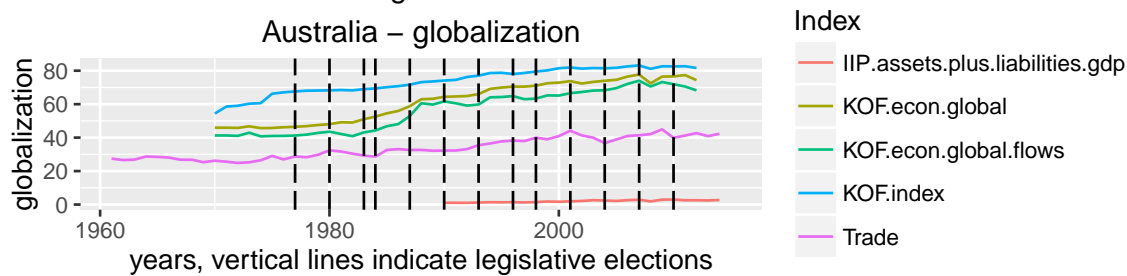


Figure 18: Indicators of Austria

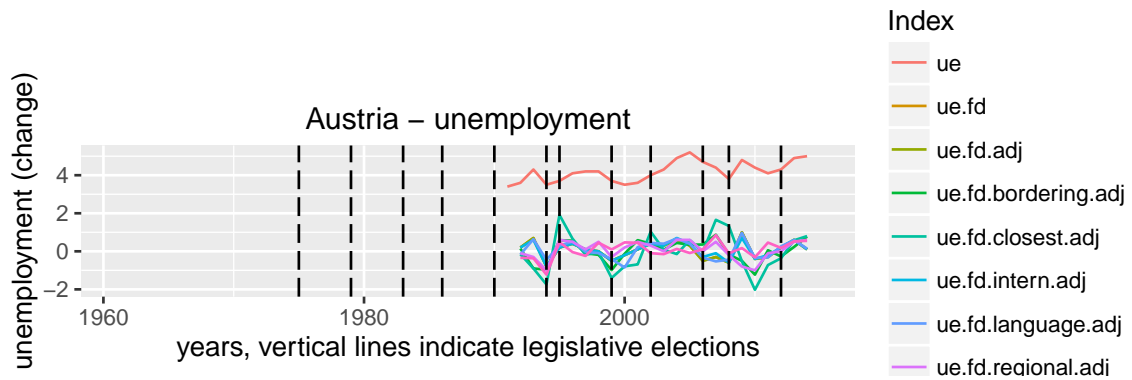
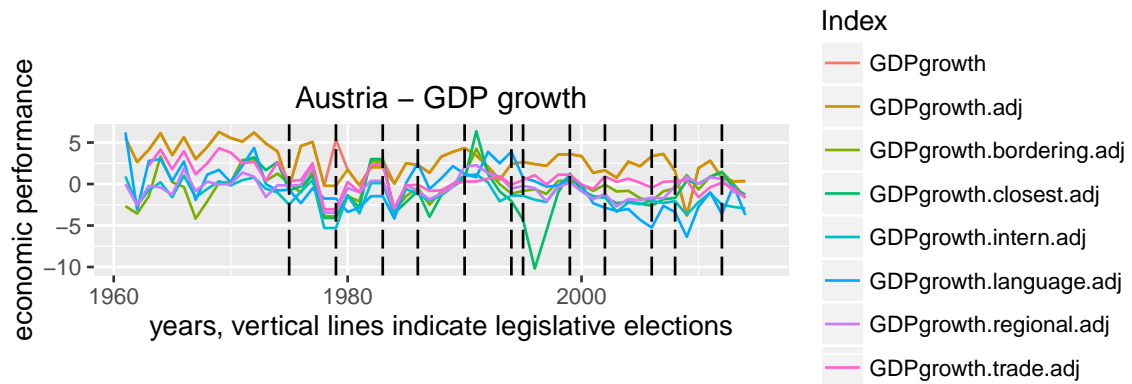
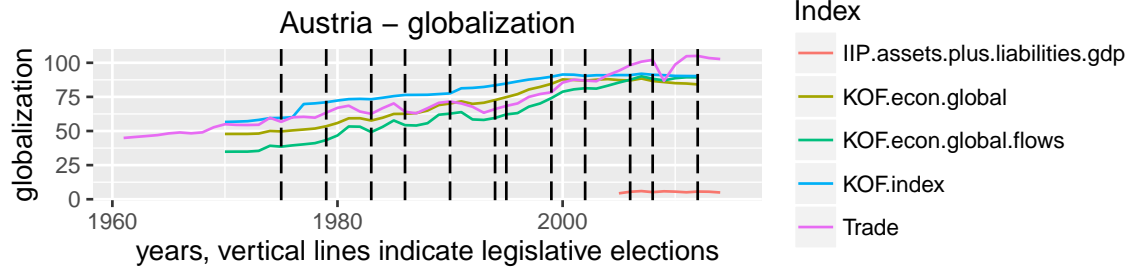




Figure 19: Indicators of Belgium

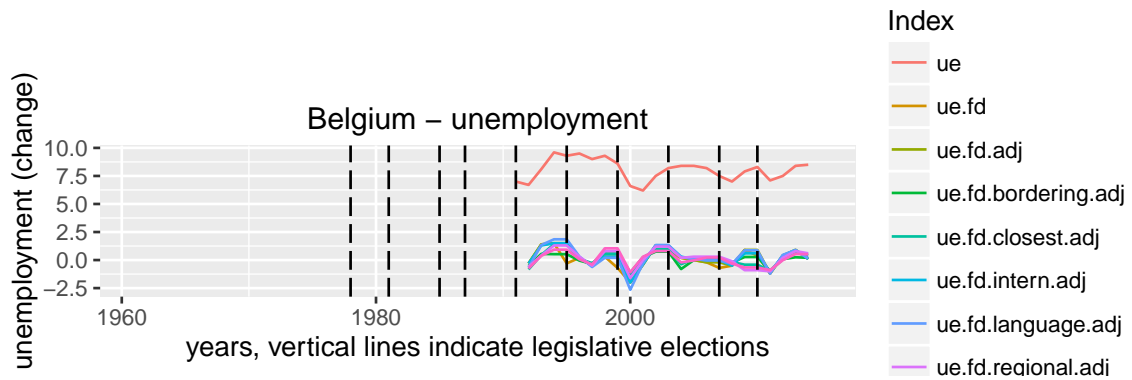
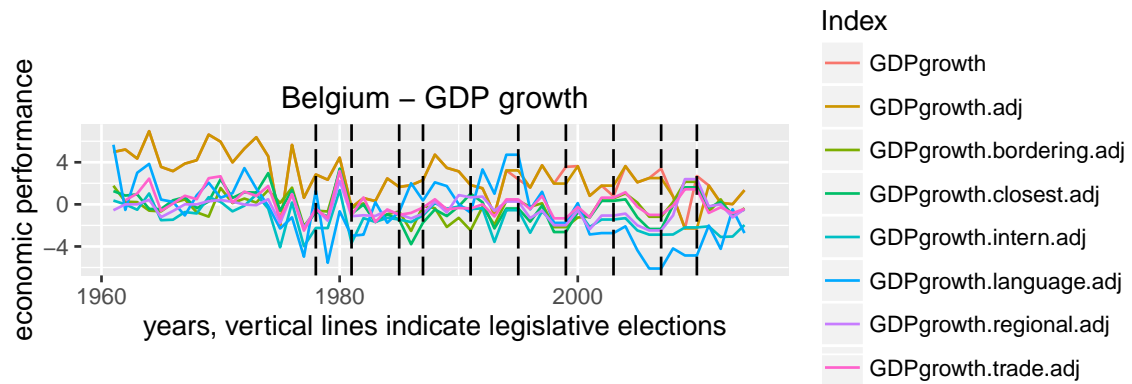
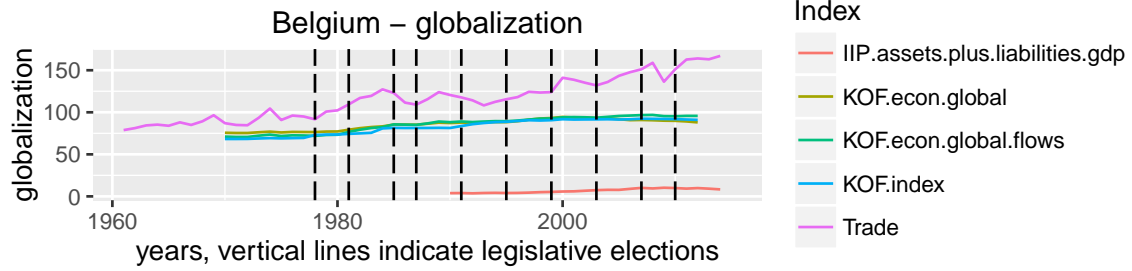


Figure 20: Indicators of Canada

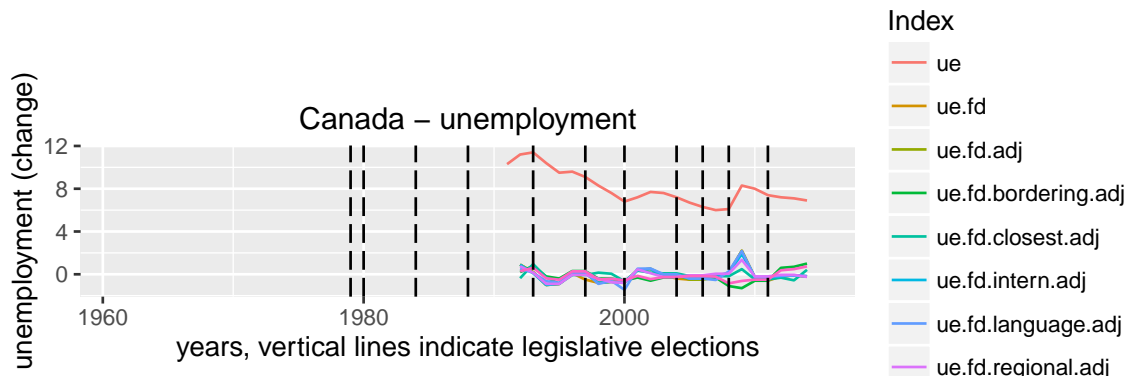
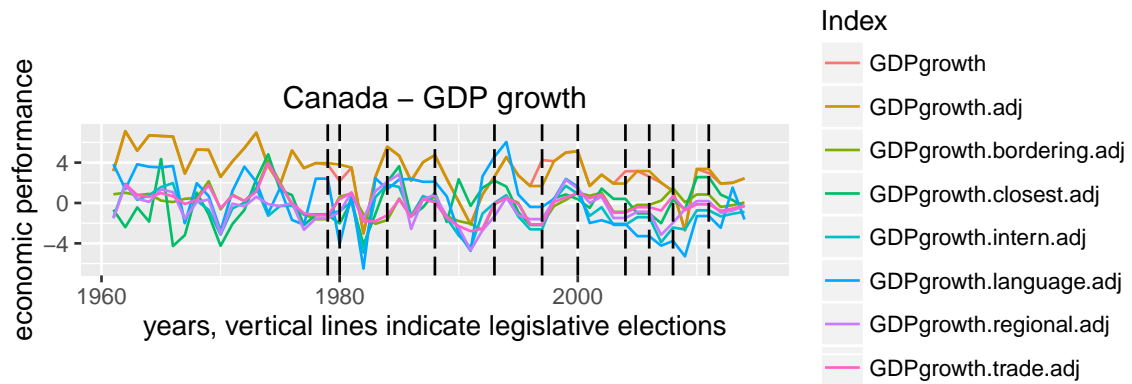
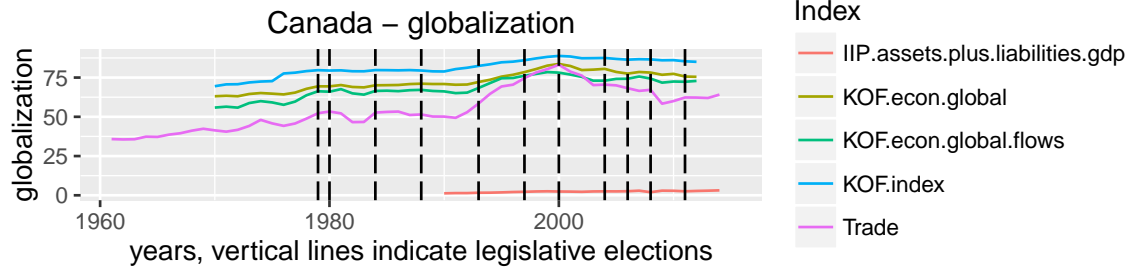


Figure 21: Indicators of Denmark

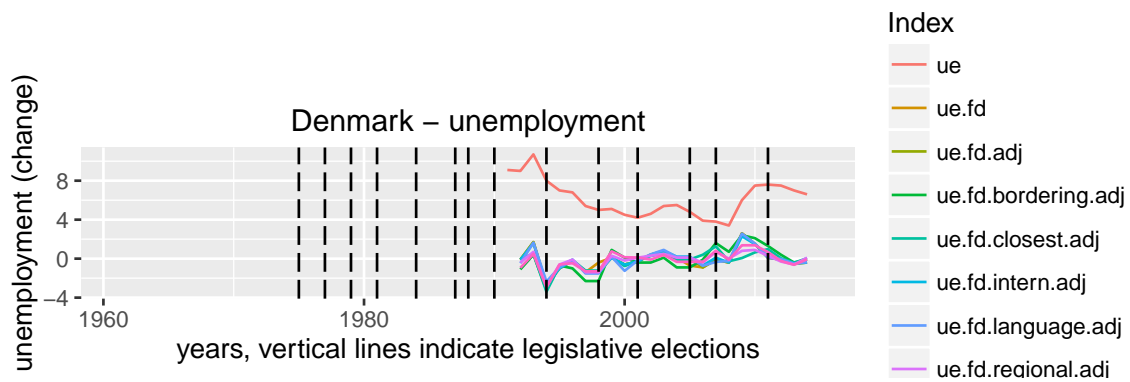
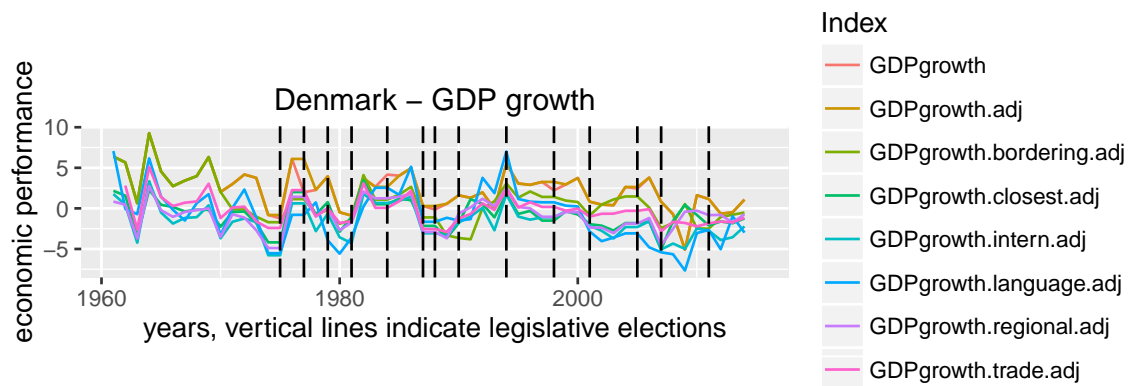
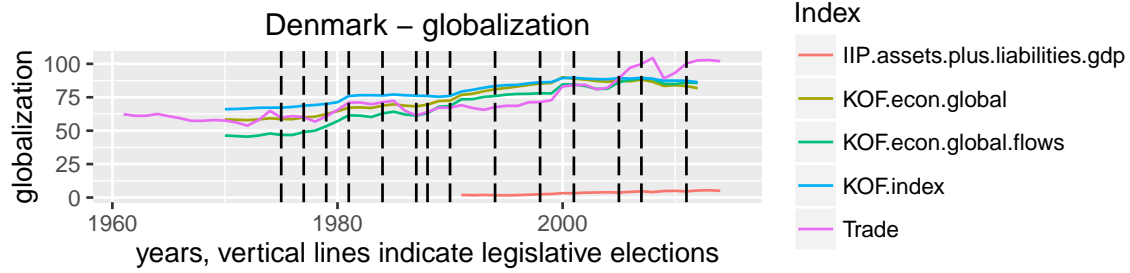


Figure 22: Indicators of Finland

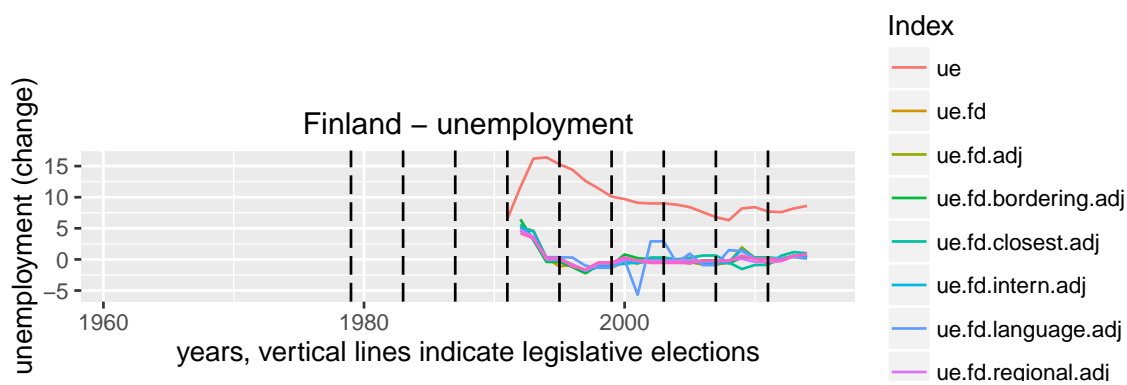
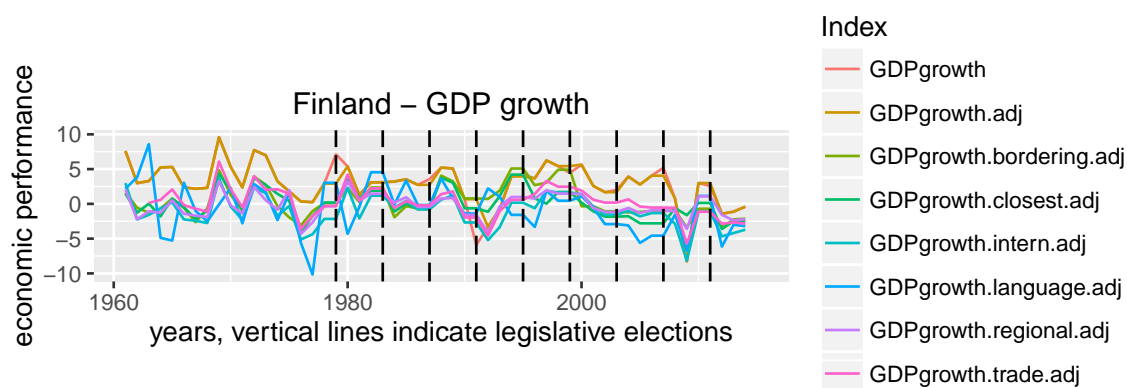
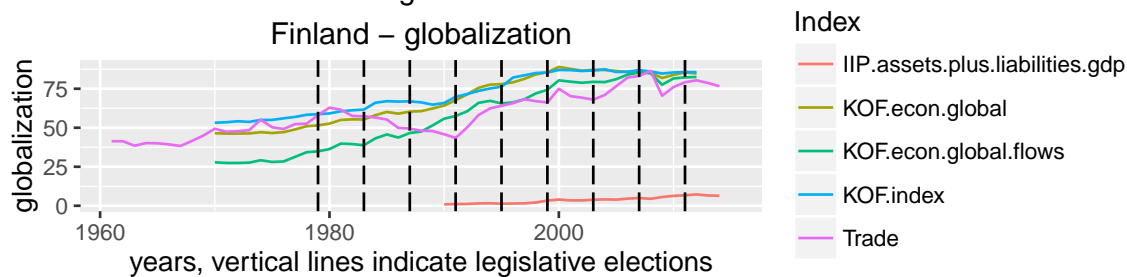


Figure 23: Indicators of France

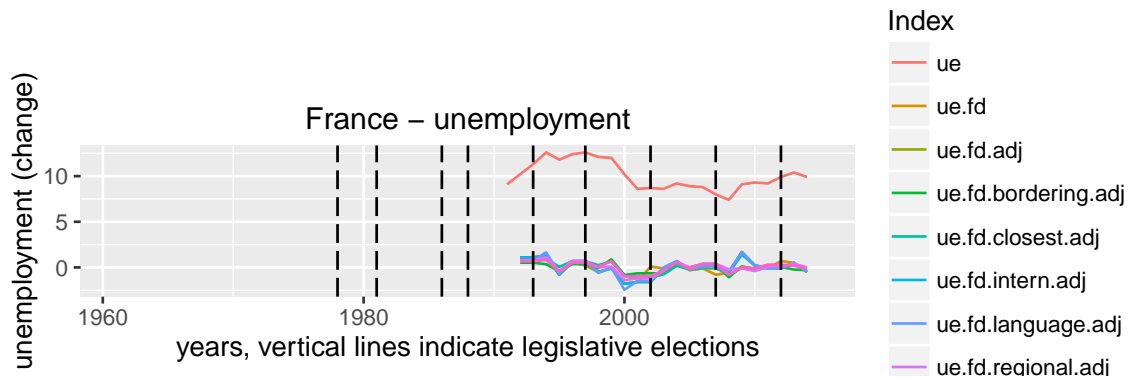
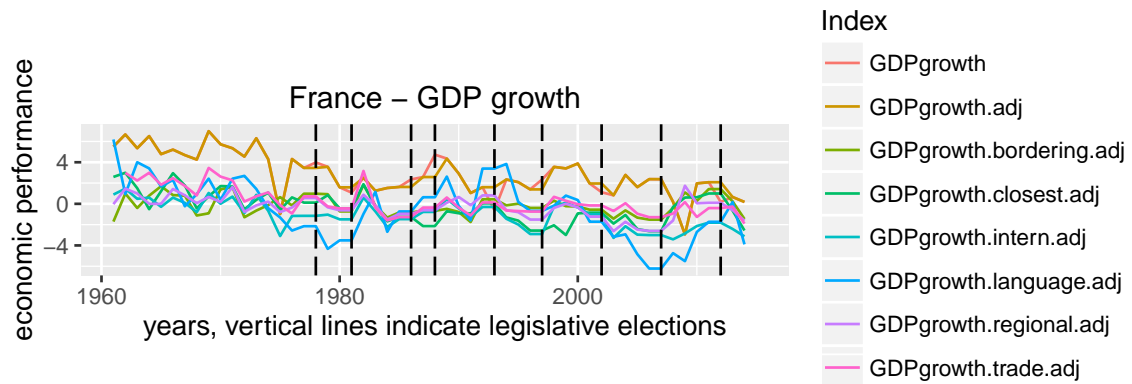
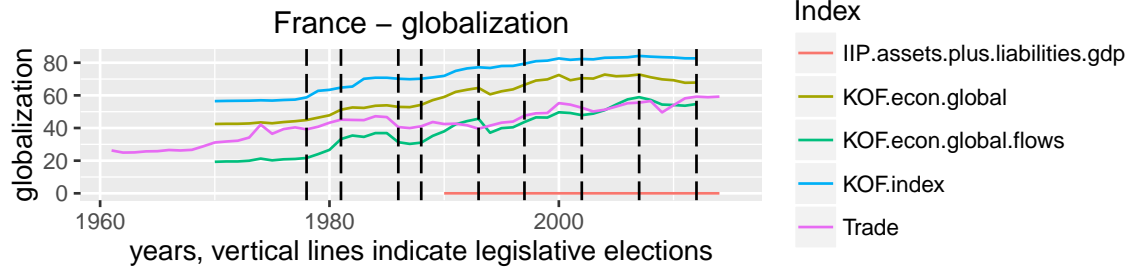


Figure 24: Indicators of Germany

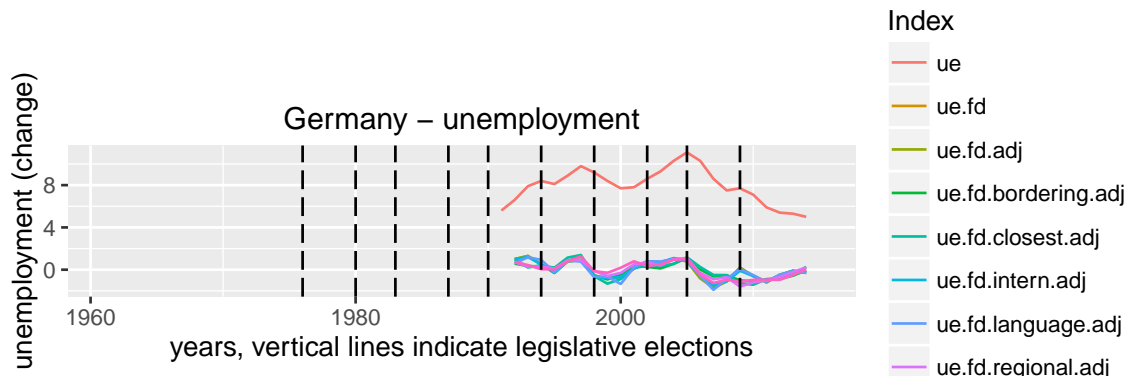
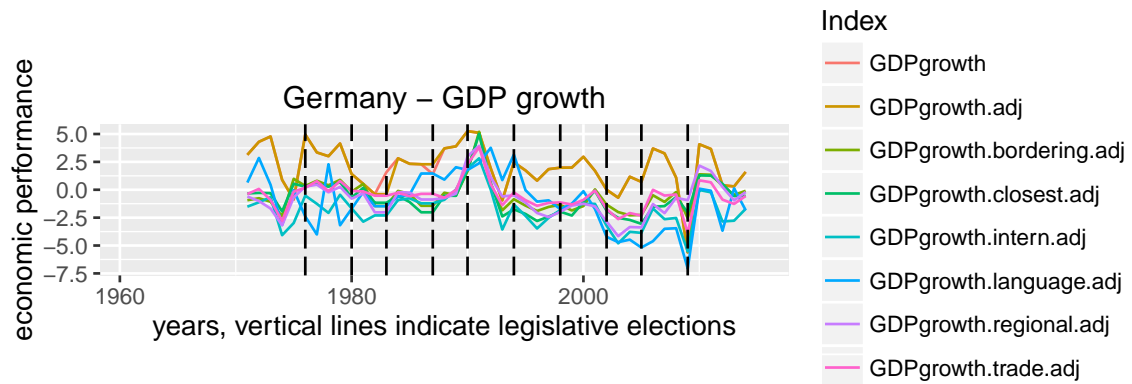
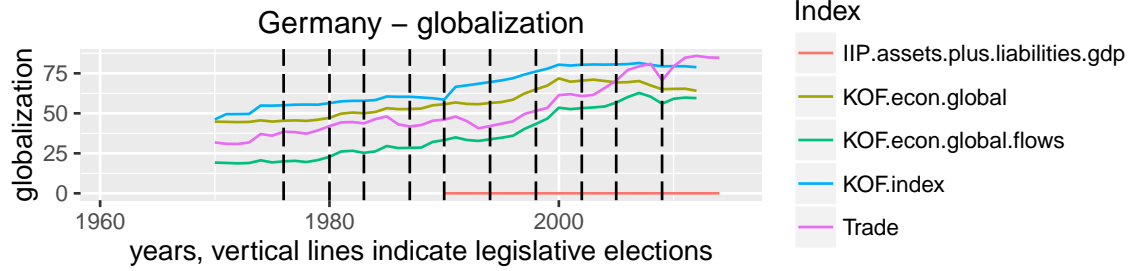


Figure 25: Indicators of Great Britain

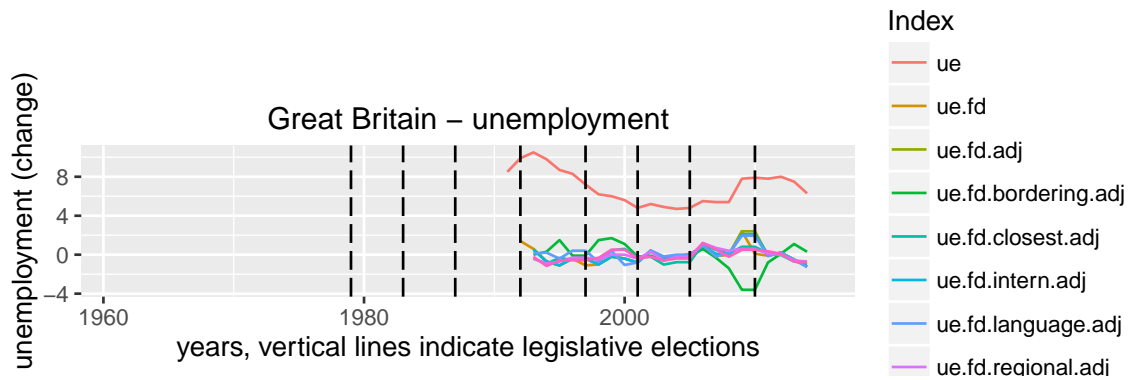
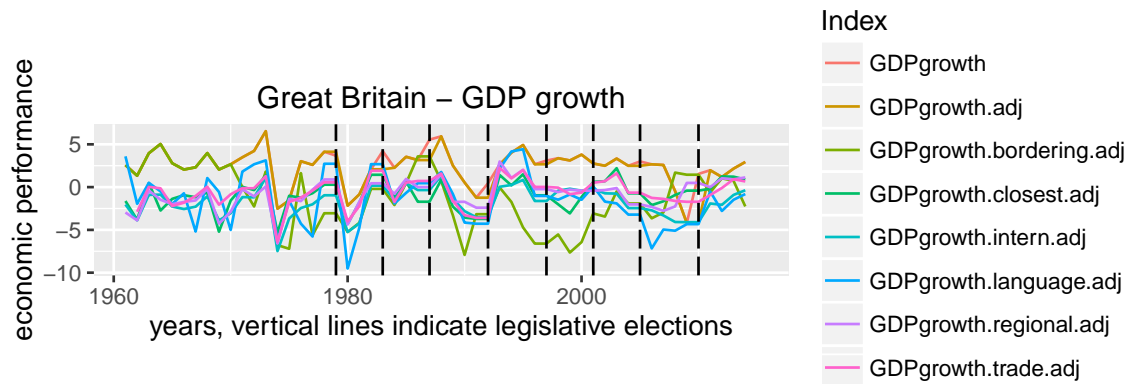
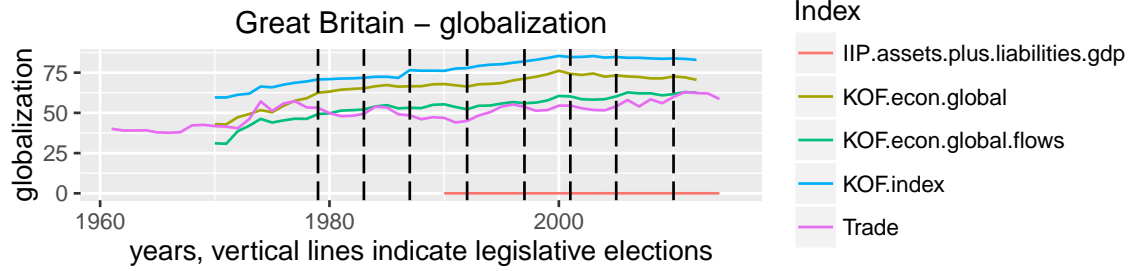


Figure 26: Indicators of Greece

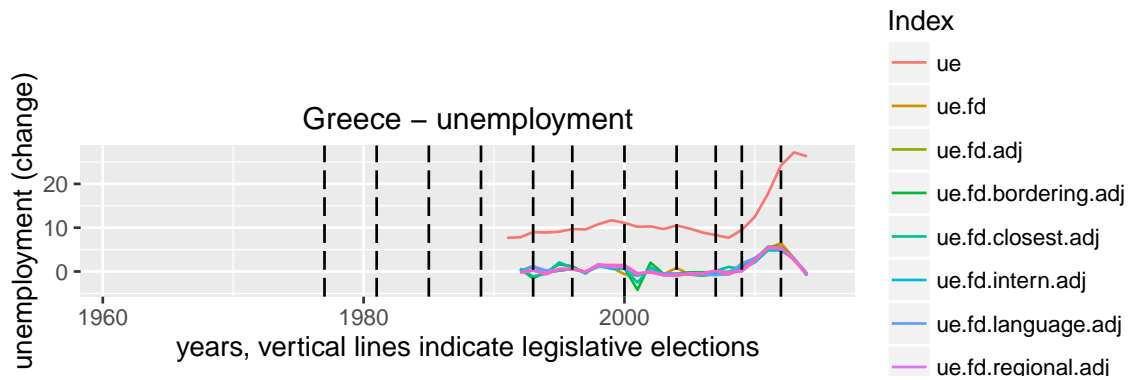
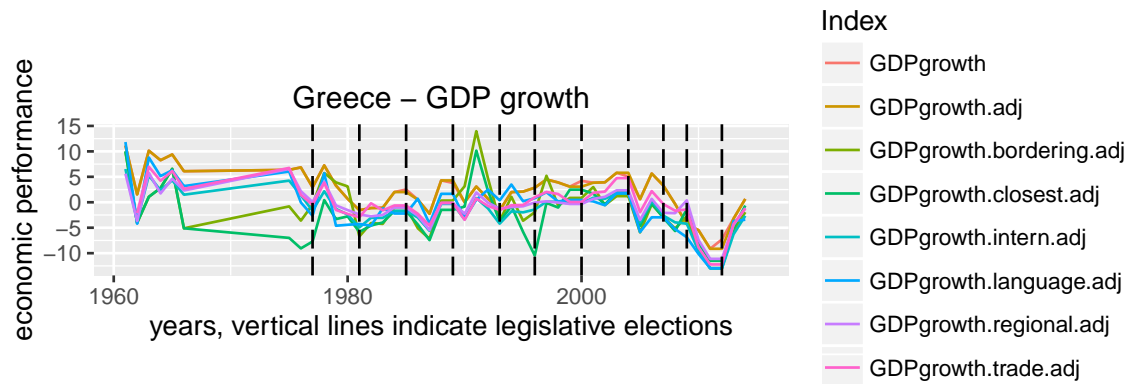
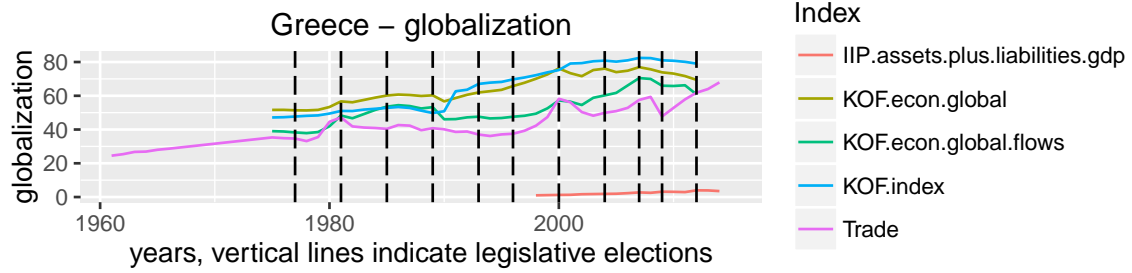




Figure 27: Indicators of Ireland

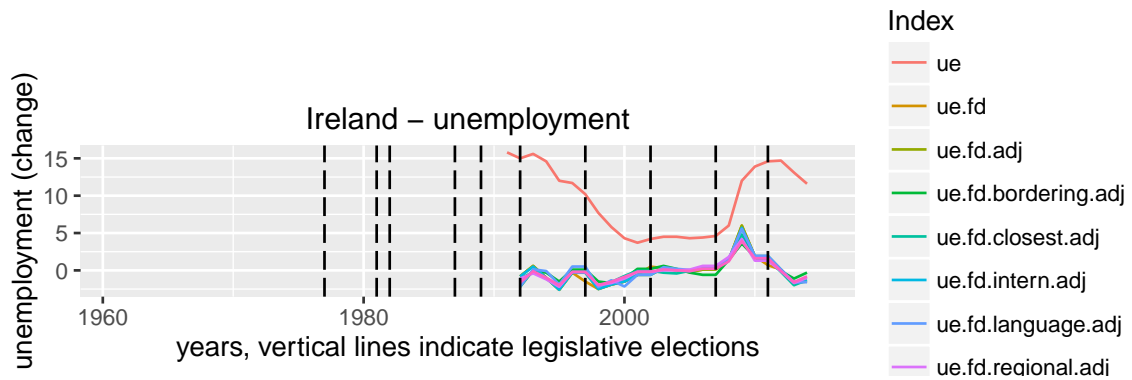
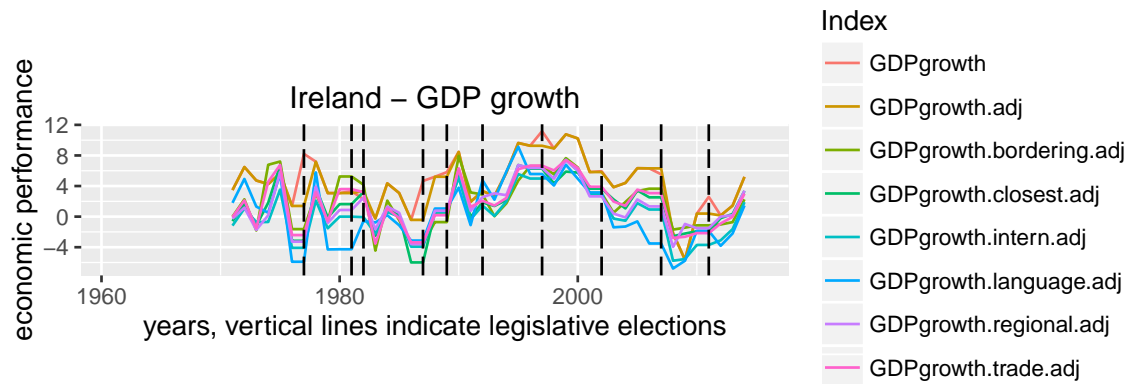
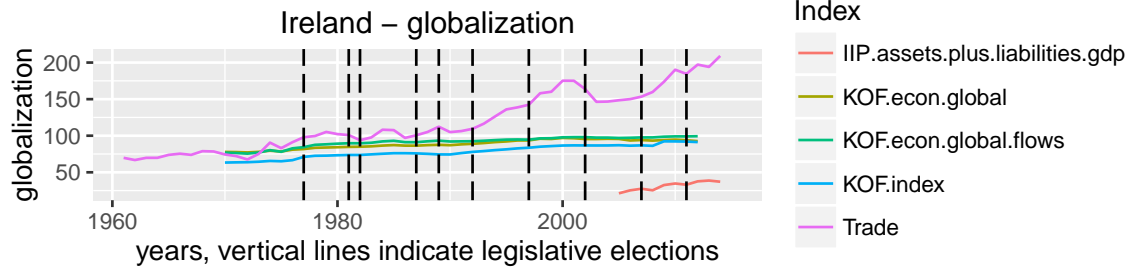


Figure 28: Indicators of Island

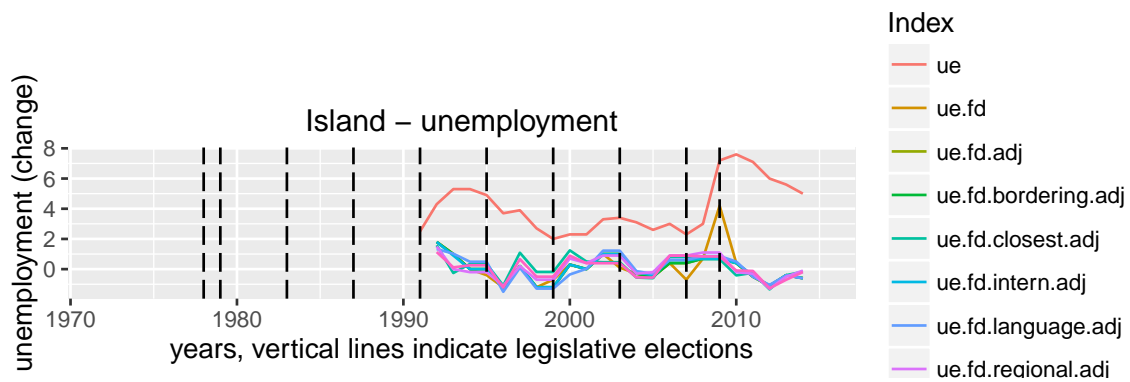
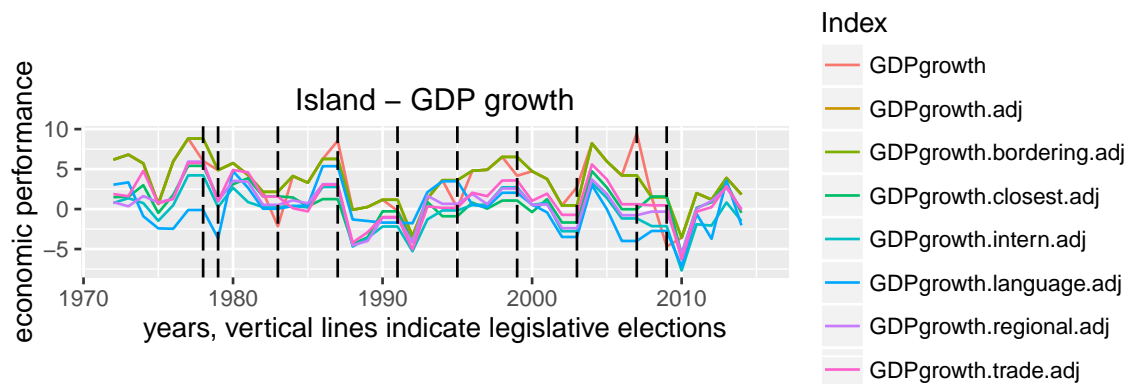
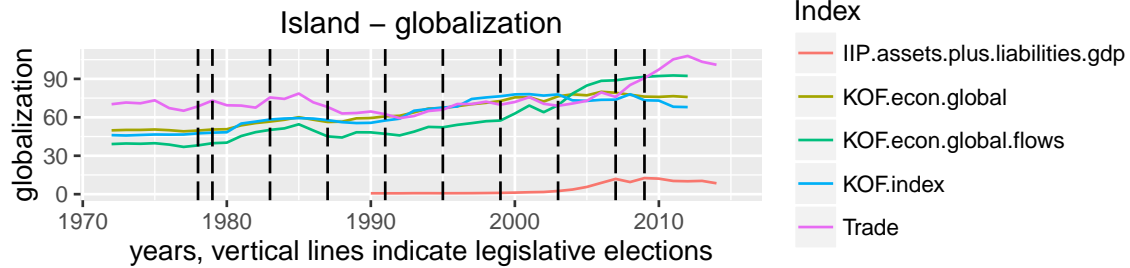


Figure 29: Indicators of Israel

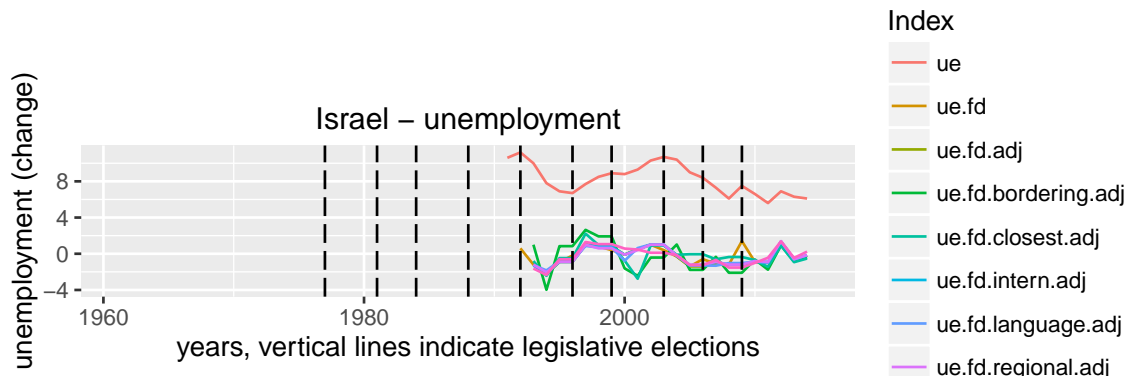
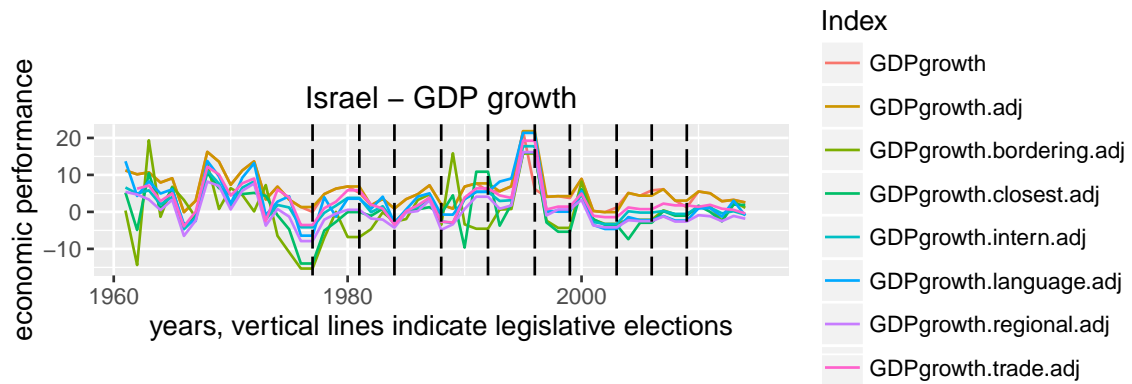
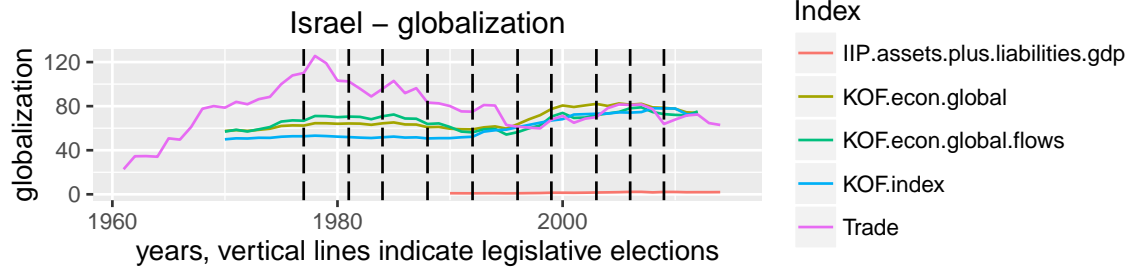


Figure 30: Indicators of Italy

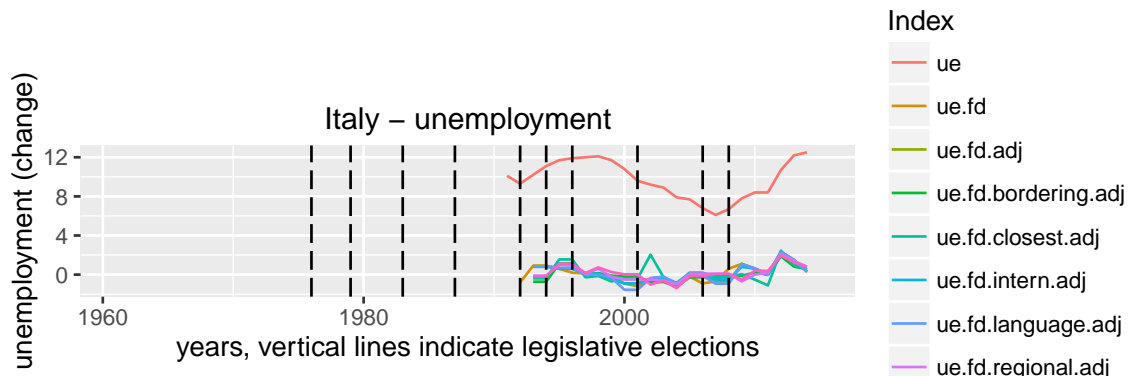
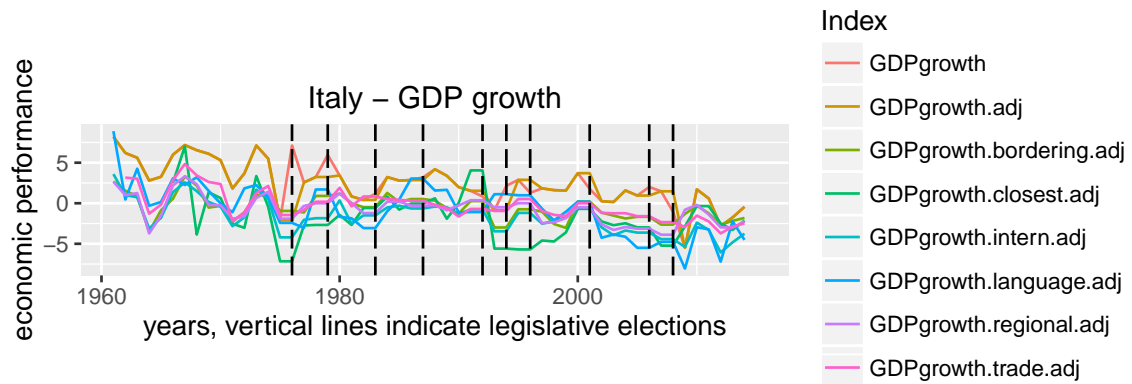
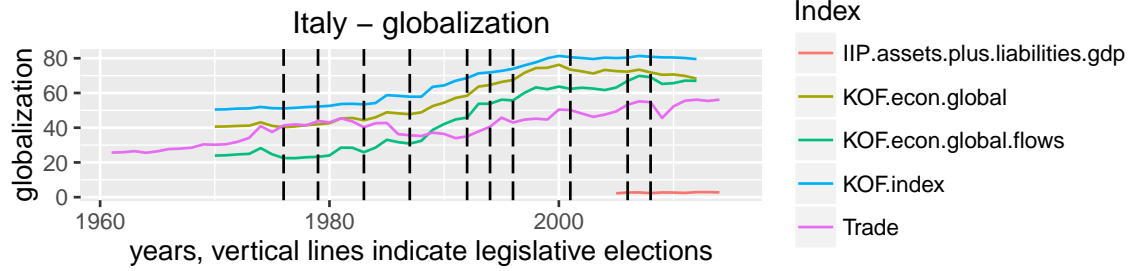


Figure 31: Indicators of Japan

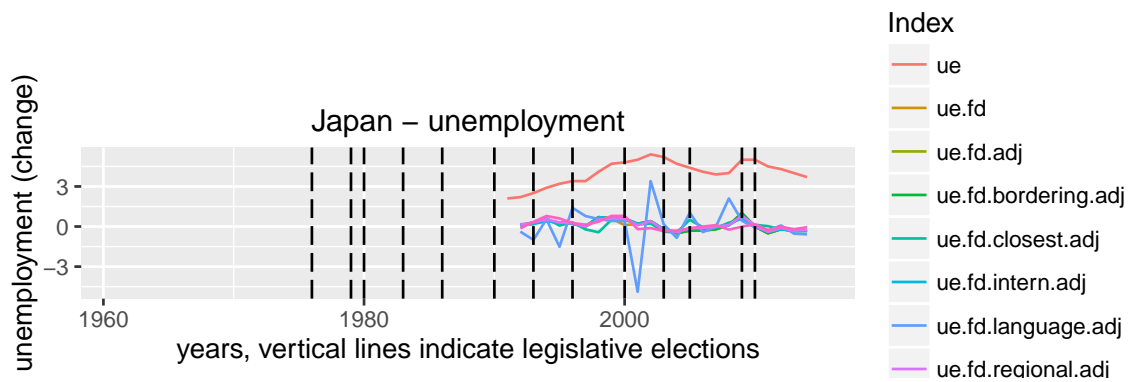
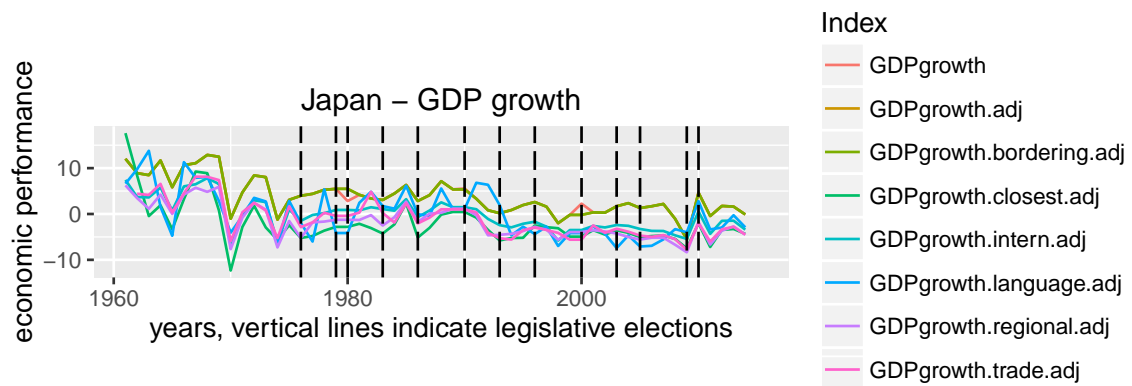
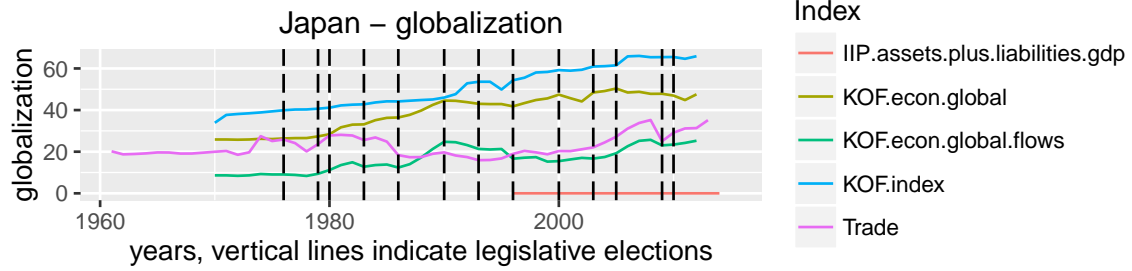


Figure 32: Indicators of Luxembourg

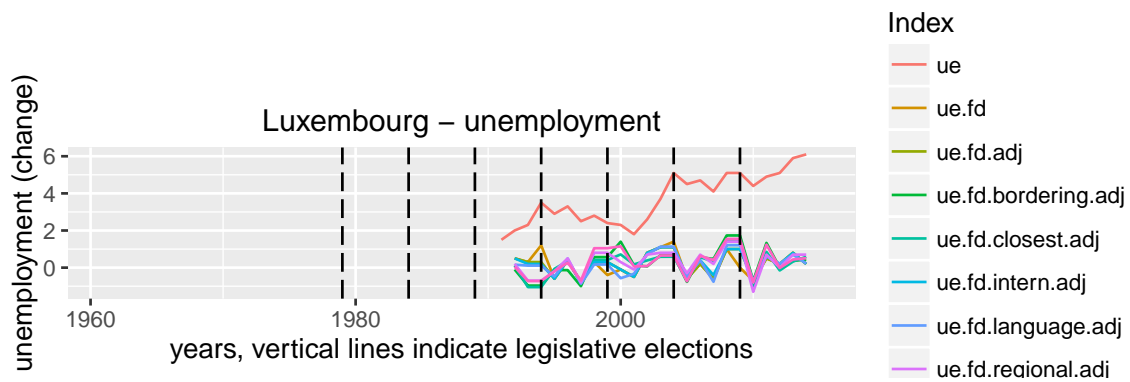
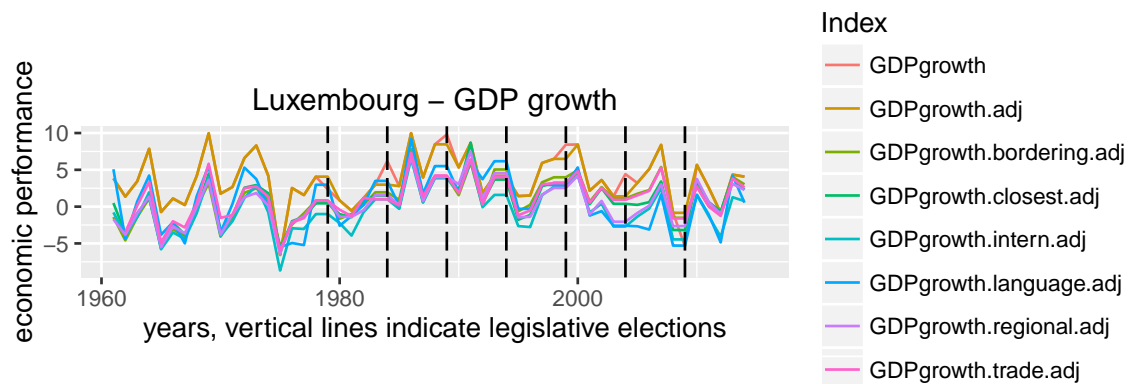
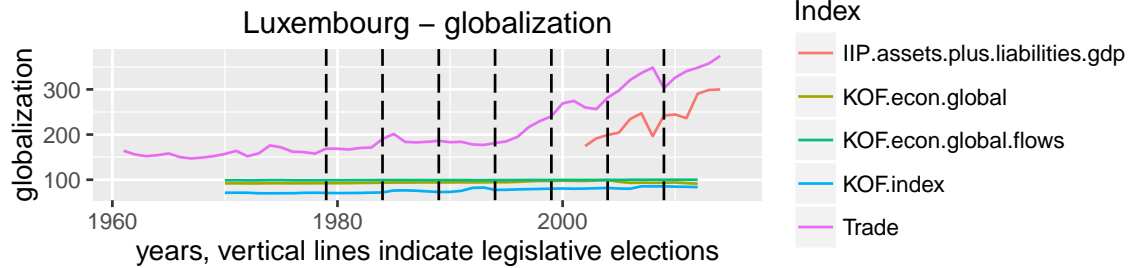


Figure 33: Indicators of the Netherlands

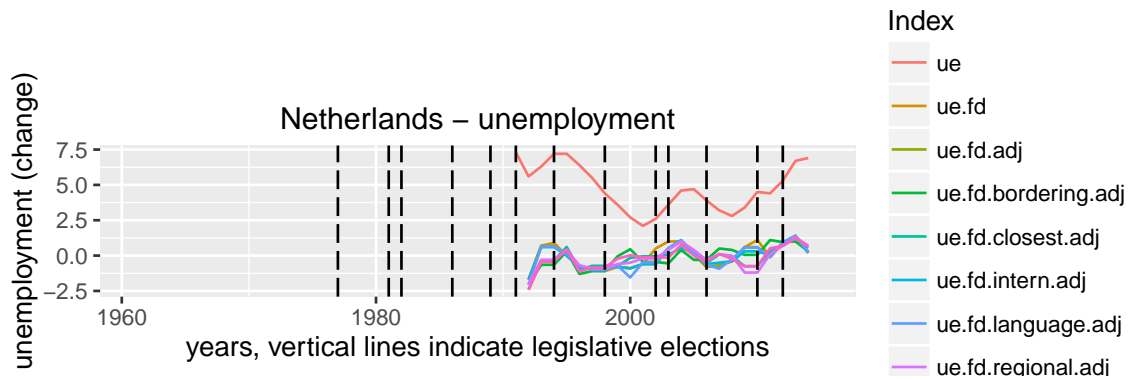
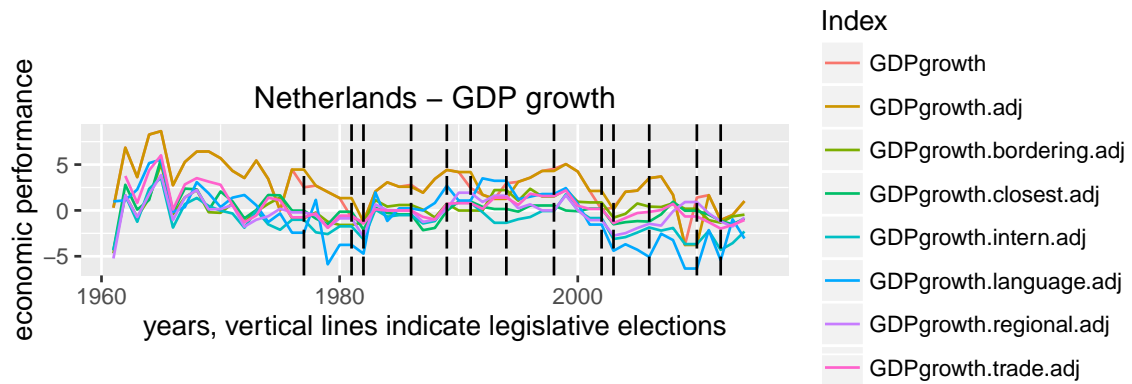
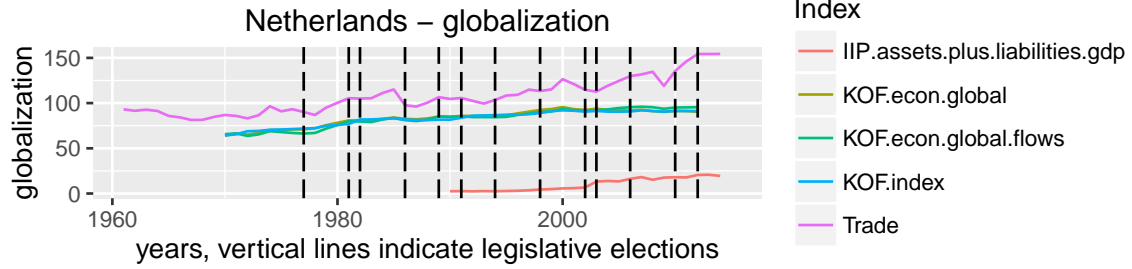


Figure 34: Indicators of New Zealand

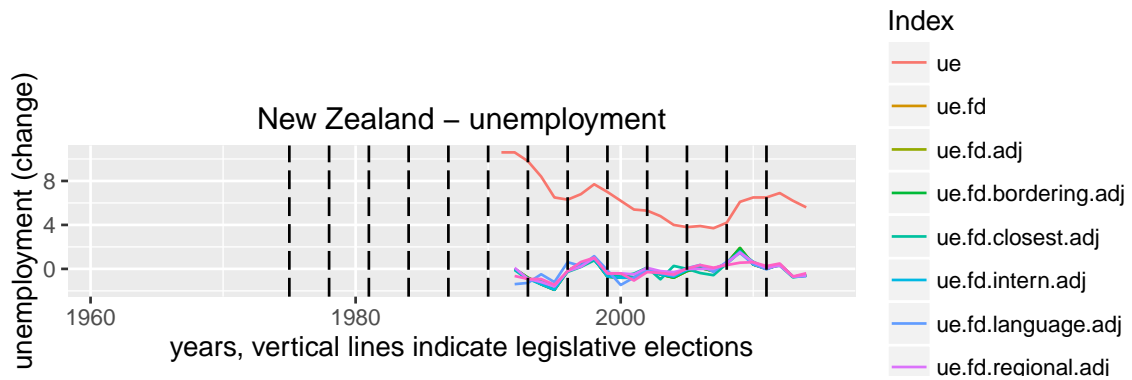
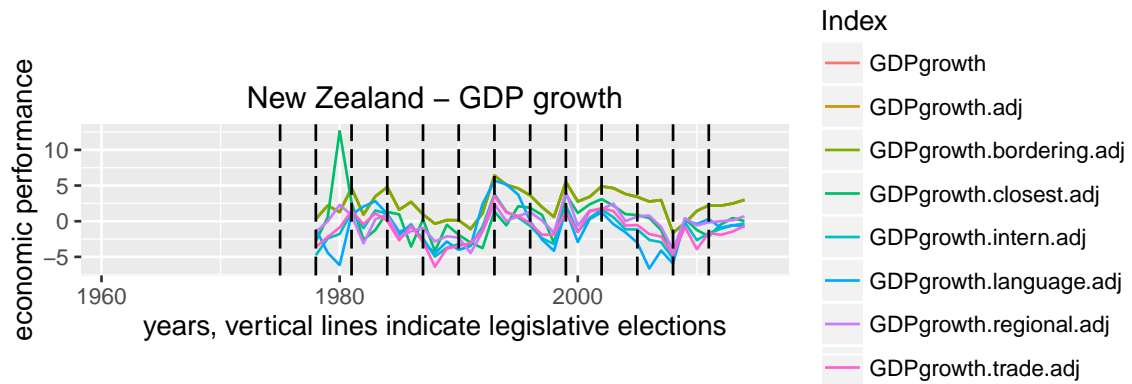
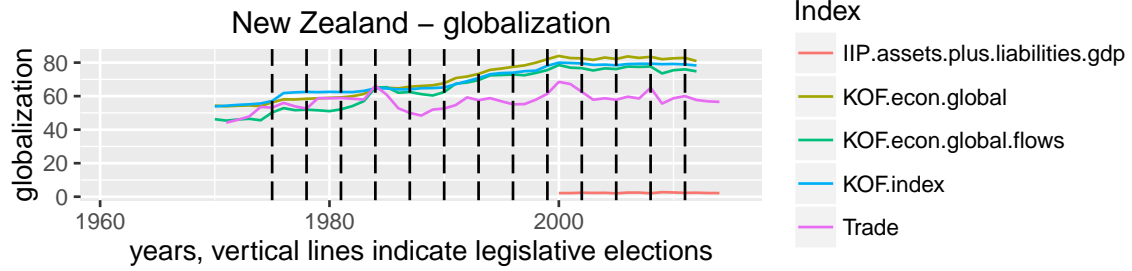




Figure 35: Indicators of Norway

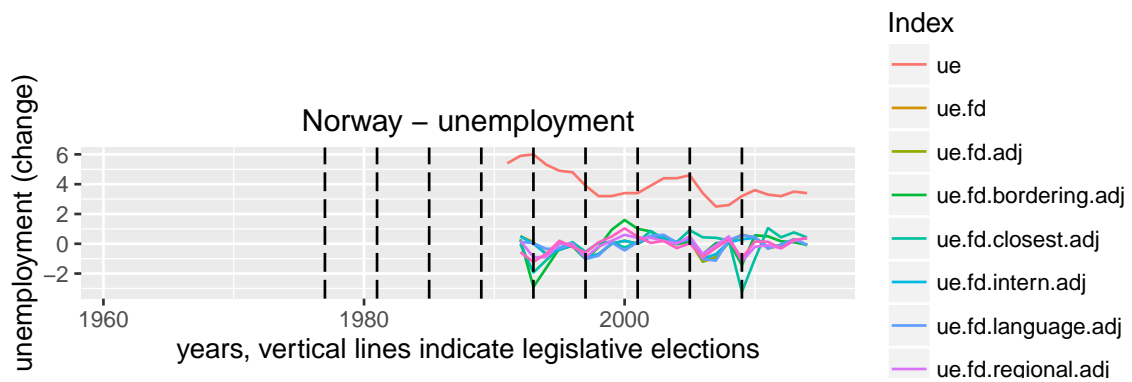
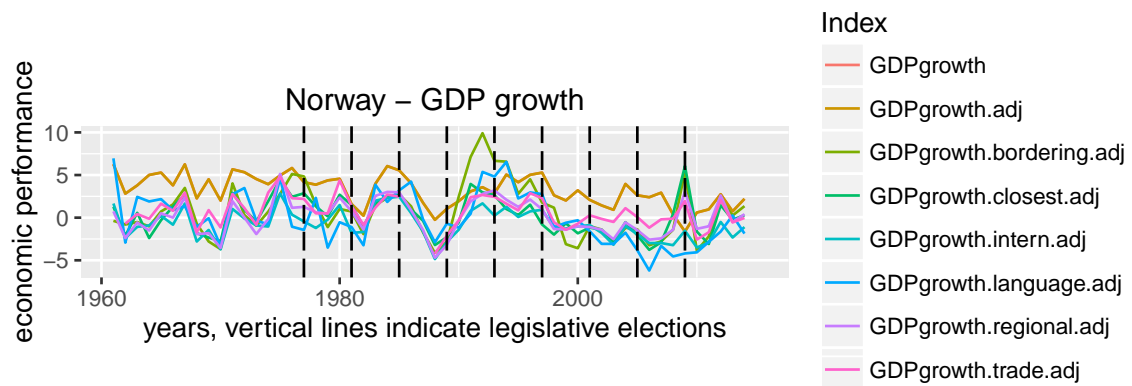
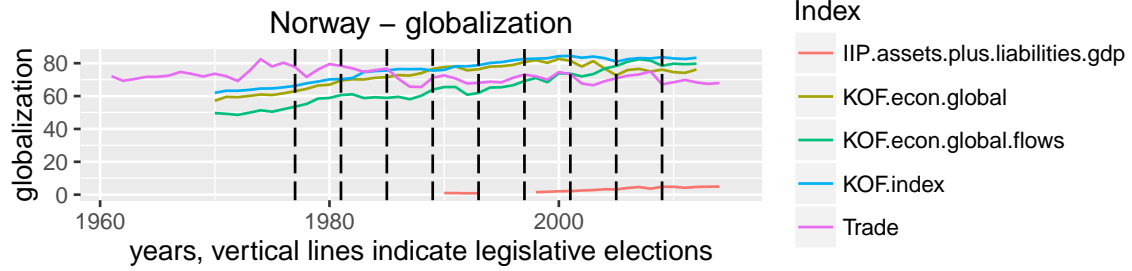


Figure 36: Indicators of Portugal

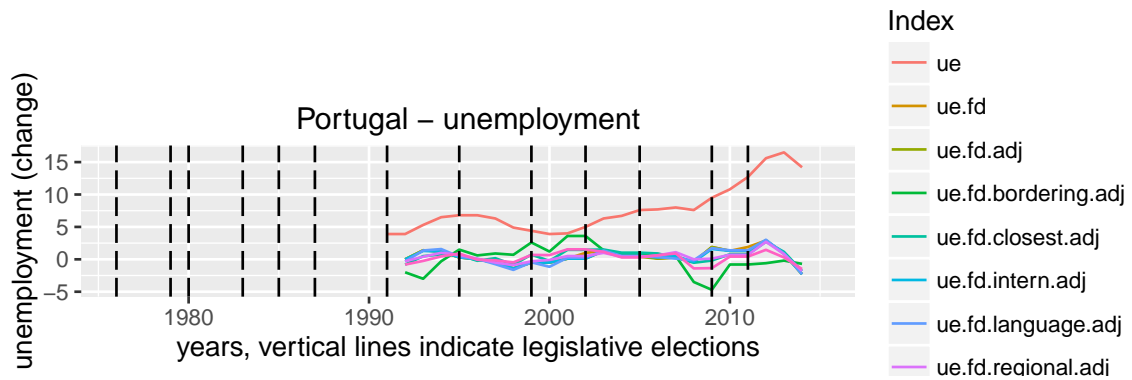
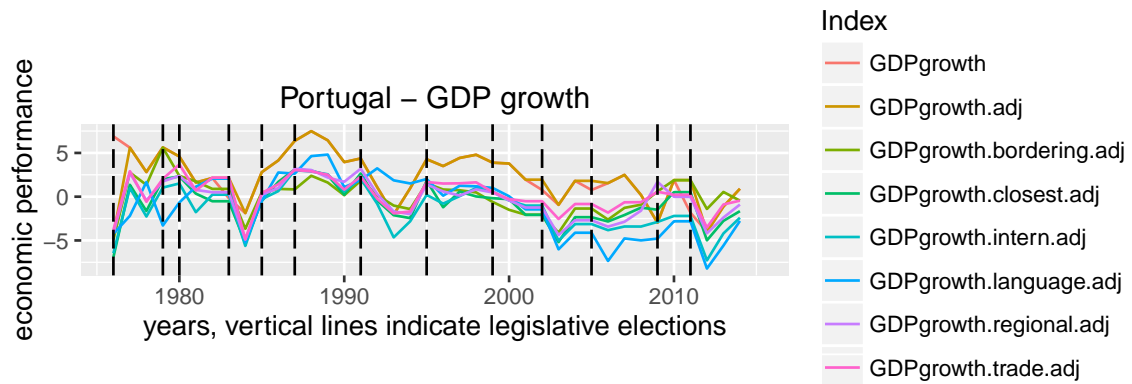
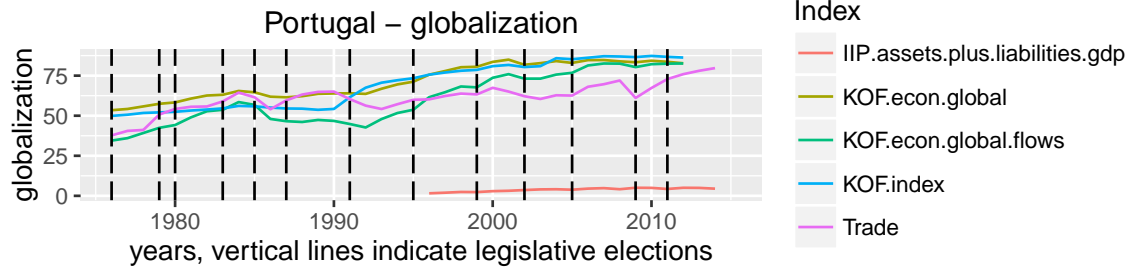


Figure 37: Indicators of Spain

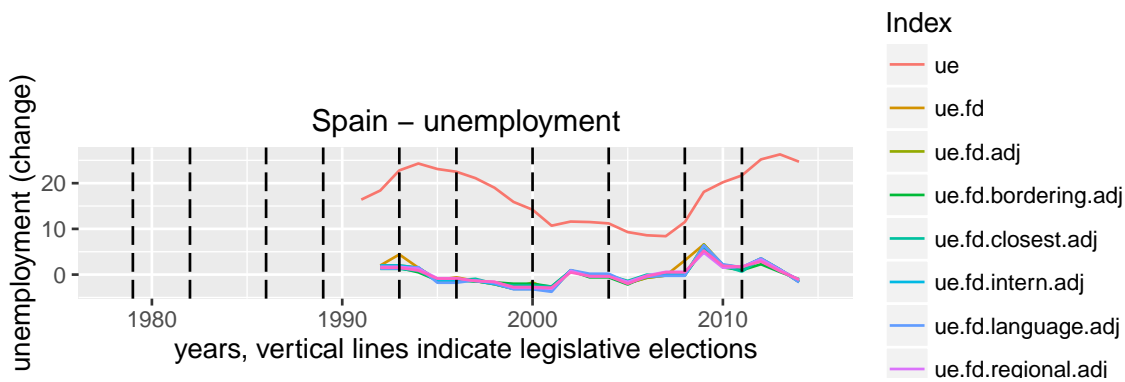
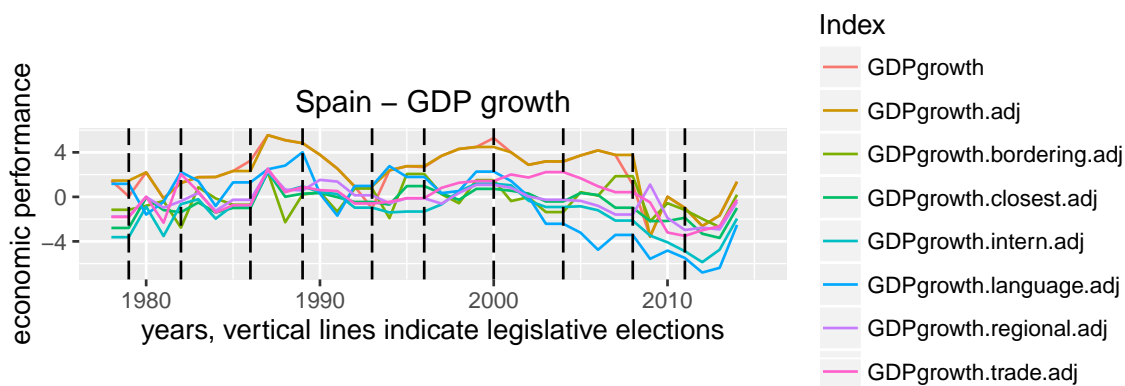
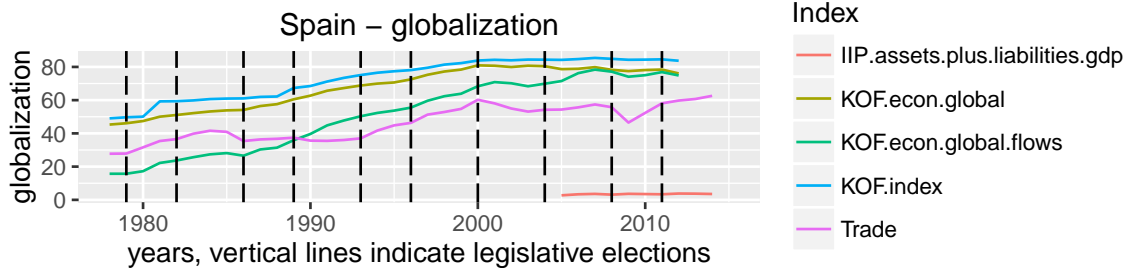


Figure 38: Indicators of Sweden

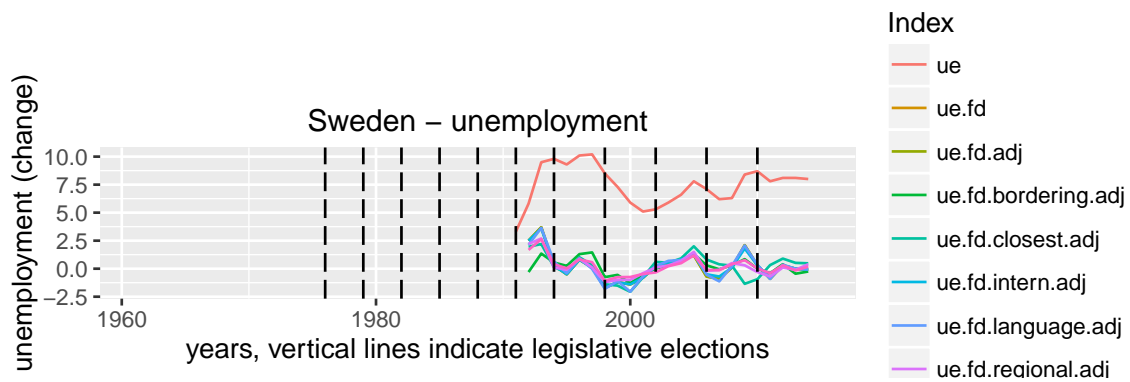
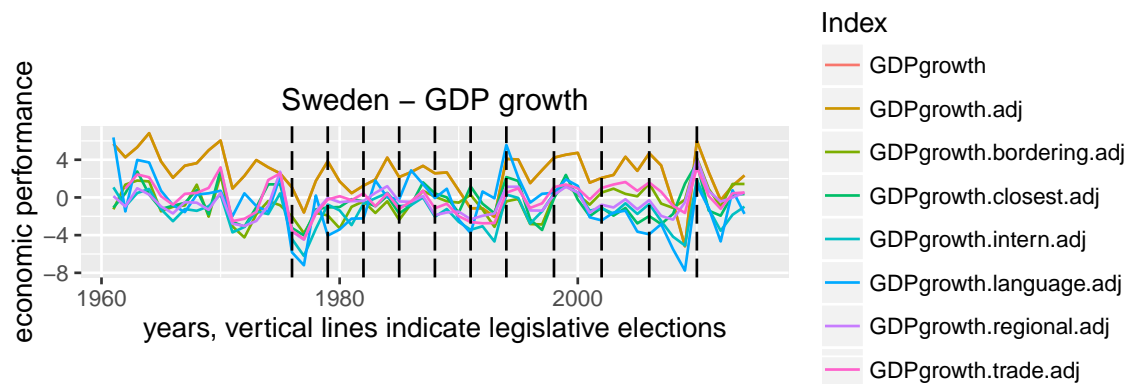
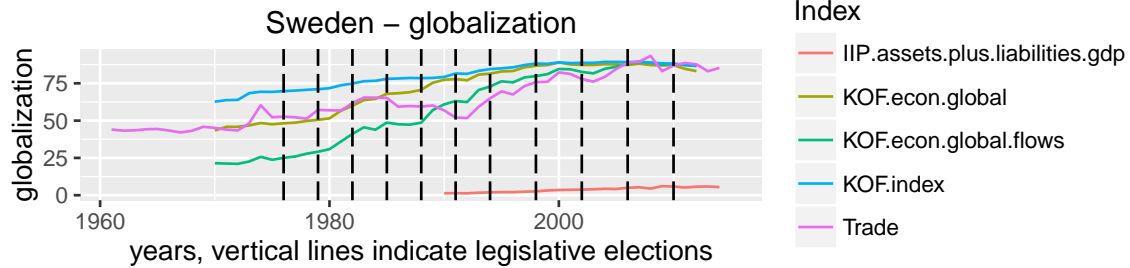
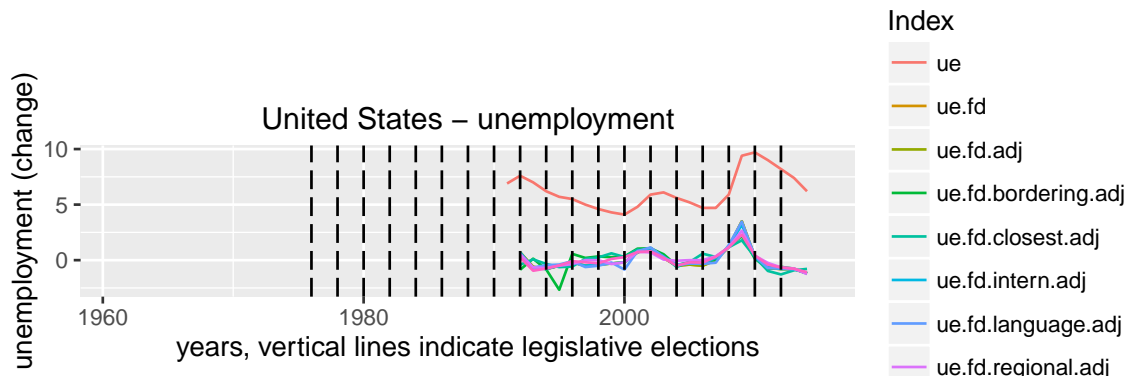
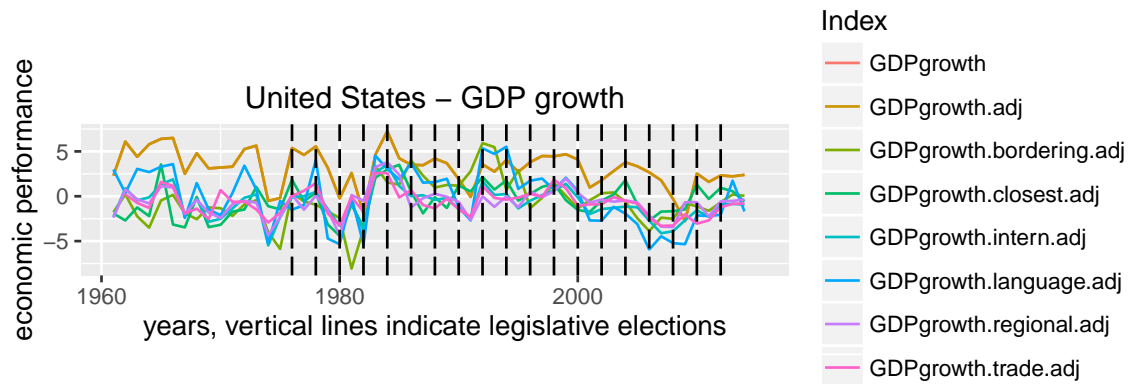
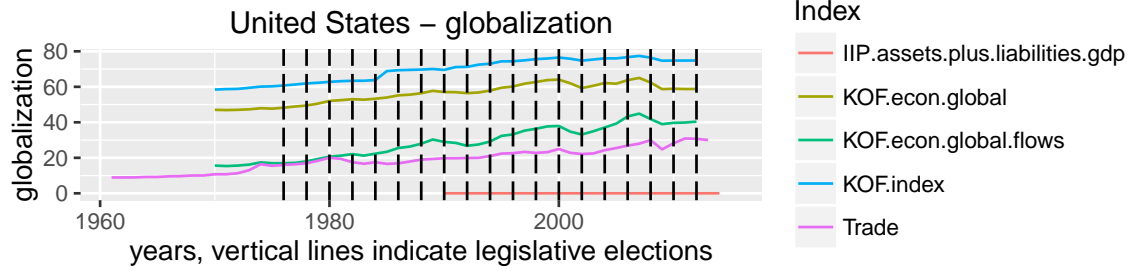


Figure 39: Indicators of the United States



## Appendix D: Robustness regarding other measures for globalization

Table 18: Pooled OLS, economic performance with KOF.index interacted

	<i>Dependent variable:</i>							
	election							
	GDPgrowth	GDPgrowth.adj	GDPgrowth.bordering.adj	GDPgrowth.regional.adj	GDPgrowth.intern.adj	GDPgrowth.trade.adj	GDPgrowth.closest.adj	GDPgrowth.laguage.adj
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	−0.4 (1.2)	−0.3 (1.4)						
GrowthLoc			0.1 (0.8)	−1.2 (1.4)	−0.1 (1.4)	−1.2 (1.2)	−0.1 (1.1)	0.1 (1.1)
KOF.index	−0.1** (0.1)	−0.1** (0.1)	−0.1* (0.1)	−0.1* (0.1)	−0.1* (0.1)	−0.1* (0.1)	−0.1* (0.1)	−0.1* (0.1)
GrowthInt			0.2 (0.2)	0.7** (0.3)	0.5 (0.4)	0.7** (0.3)	0.3 (0.3)	0.7** (0.3)
election.previous	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)
system.parliamentary	−2.8** (1.4)	−2.8** (1.4)	−3.5** (1.4)	−3.0** (1.4)	−2.8** (1.4)	−2.9** (1.4)	−3.0** (1.4)	−2.8* (1.5)
GDPperCapita.ln	1.9 (1.6)	1.9 (1.5)	0.9 (1.5)	1.8 (1.6)	1.9 (1.5)	1.5 (1.6)	1.7 (1.6)	1.7 (1.5)
parties.L	−2.7 (2.4)	−2.7 (2.4)	−2.2 (2.3)	−3.2 (2.3)	−2.7 (2.3)	−3.1 (2.2)	−2.6 (2.3)	−2.9 (2.2)
parties.Q	1.2 (1.7)	1.0 (1.7)	0.8 (1.6)	0.8 (1.6)	1.0 (1.6)	0.9 (1.6)	0.8 (1.6)	0.8 (1.6)
GrowthNat:KOF.index	0.01 (0.02)	0.01 (0.02)						
GrowthLoc:KOF.index			0.01 (0.01)	0.02 (0.02)	0.01 (0.02)	0.02 (0.02)	0.01 (0.01)	0.004 (0.01)
Constant	−0.2 (16.8)	−1.0 (16.7)	7.5 (16.0)	−4.2 (16.4)	−3.8 (16.4)	−0.7 (16.3)	−1.1 (16.1)	−3.3 (16.3)
Observations	231	231	231	231	231	231	231	231
R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Adjusted R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Figure 40: Pooled OLS, interaction between GDP growth and KOF.index

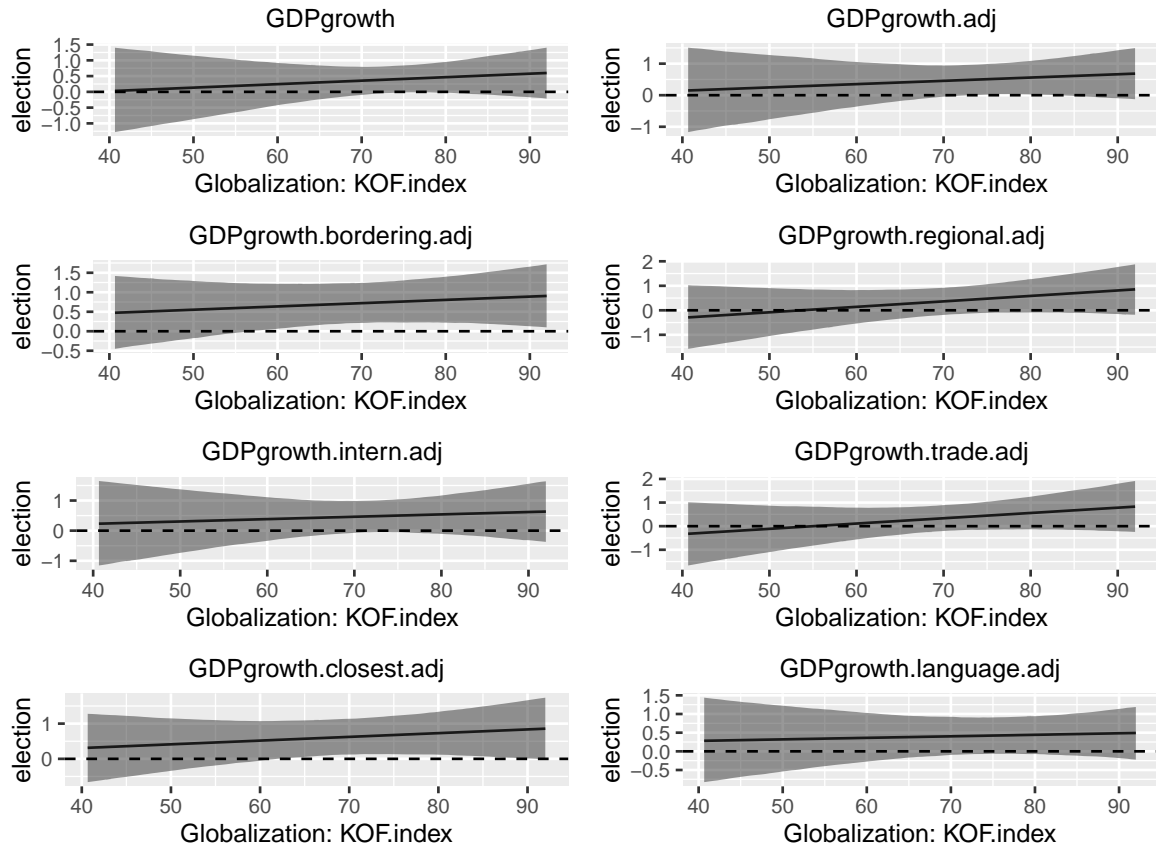


Table 19: Fixed-effects, GDP growth with KOF.index interacted

	<i>Dependent variable:</i>							
	election							
	GDP growth	GDP growth.adj	GDP growth.bordering.adj	GDP growth.regional.adj	GDP growth.intern.adj	GDP growth.trade.adj	GDP growth.closest.adj	GDP growth.language.adj
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	−0.4 (1.7)	−0.5 (1.5)						
GrowthLoc			−0.02 (1.0)	−0.3 (1.3)	−0.1 (1.5)	−0.2 (1.5)	0.9 (0.9)	0.6 (1.0)
KOF.index	−0.2 (0.1)	−0.2 (0.1)	−0.1 (0.2)	−0.1 (0.2)	−0.1 (0.2)	−0.1 (0.2)	−0.1 (0.2)	−0.1 (0.2)
GrowthInt			0.3 (0.3)	0.7** (0.3)	0.7 (0.5)	0.6 (0.4)	0.4 (0.3)	0.8*** (0.3)
election.previous	0.7*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)
GDPperCapita.ln	0.9 (4.7)	0.8 (4.9)	0.3 (4.8)	1.1 (4.8)	0.8 (4.7)	0.7 (5.0)	0.3 (4.9)	−0.4 (4.2)
parties.L	−3.6* (2.0)	−3.4* (1.9)	−3.2* (1.6)	−3.5* (1.8)	−3.5** (1.8)	−3.6** (1.7)	−3.6** (1.7)	−3.5** (1.7)
parties.Q	−0.1 (1.9)	−0.3 (1.9)	−0.5 (1.7)	−0.4 (1.8)	−0.4 (1.8)	−0.4 (1.8)	−0.7 (1.9)	−0.5 (1.8)
GrowthNat:KOF.index	0.01 (0.02)	0.01 (0.02)						
GrowthLoc:KOF.index			0.01 (0.01)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	−0.002 (0.01)	−0.002 (0.01)
Observations	231	231	231	231	231	231	231	231
R <sup>2</sup>	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Adjusted R <sup>2</sup>	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.3

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01



Figure 41: Fixed-effects, interaction between GDP growth and KOF.index

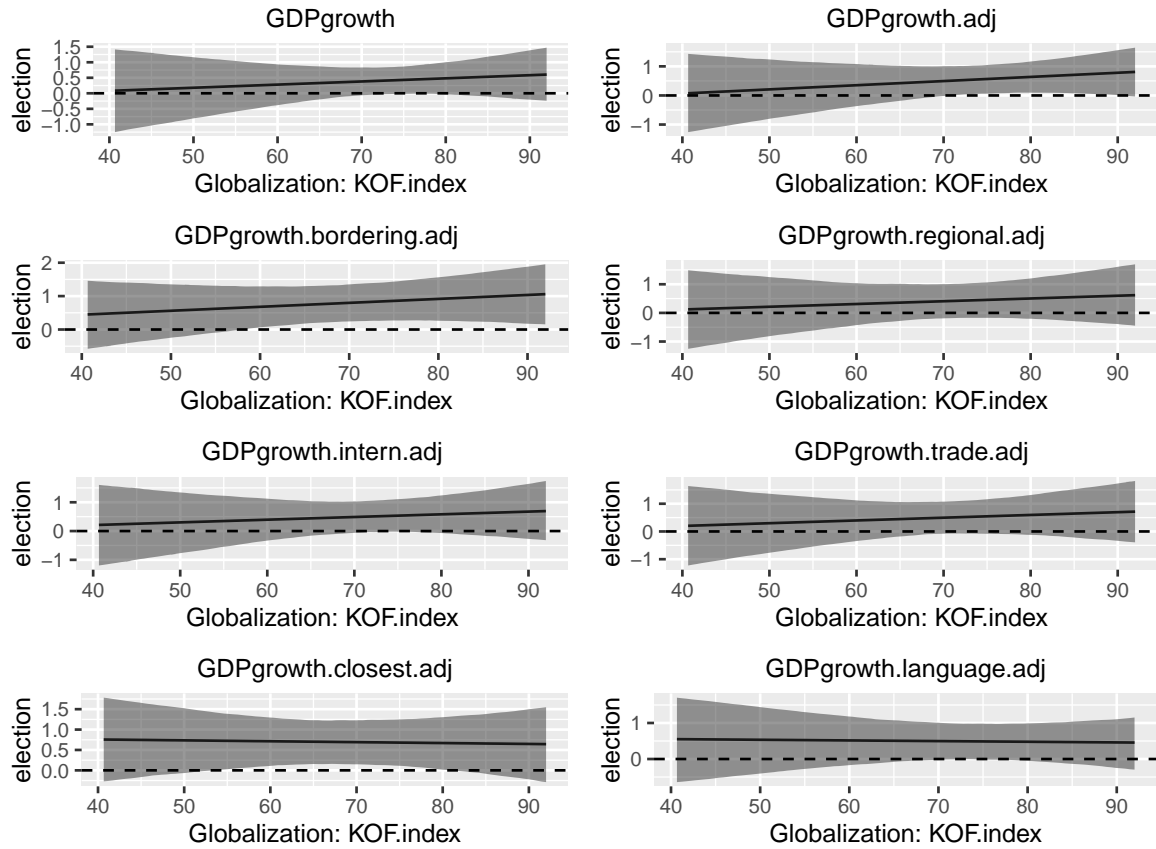


Table 20: Pooled OLS, economic performance with KOF.econ.global.flows interacted

	<i>Dependent variable:</i>							
	election							
	GDPgrowth	GDPgrowth.adj	GDPgrowth.bordering.adj	GDPgrowth.regional.adj	GDPgrowth.intern.adj	GDPgrowth.trade.adj	GDPgrowth.closest.adj	GDPgrowth.laguage.adj
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	0.2 (0.5)	0.1 (0.6)						
GrowthLoc			0.8 (0.6)	−0.7 (0.6)	−0.1 (0.6)	−0.8 (0.6)	−0.1 (0.5)	−0.001 (0.4)
KOF.econ.global.flows	−0.1* (0.03)	−0.1* (0.04)	−0.04 (0.03)	−0.03 (0.03)	−0.04 (0.03)	−0.04 (0.03)	−0.04 (0.03)	−0.04 (0.03)
GrowthInt			0.3 (0.3)	0.7** (0.3)	0.6 (0.4)	0.8** (0.3)	0.4 (0.3)	0.8*** (0.3)
election.previous	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)
system.parliamentary	−2.7* (1.5)	−2.7* (1.6)	−3.4** (1.5)	−3.0* (1.6)	−2.7* (1.6)	−2.9* (1.6)	−3.1** (1.5)	−2.7* (1.5)
GDPperCapita.ln	0.8 (1.4)	0.9 (1.4)	−0.1 (1.4)	0.5 (1.4)	0.9 (1.4)	0.2 (1.4)	0.4 (1.4)	0.8 (1.4)
parties.L	−2.4 (2.4)	−2.4 (2.4)	−2.2 (2.4)	−3.1 (2.3)	−2.5 (2.4)	−2.9 (2.1)	−2.8 (2.4)	−2.8 (2.2)
parties.Q	1.3 (1.7)	1.1 (1.7)	0.8 (1.6)	0.7 (1.6)	1.1 (1.7)	0.8 (1.6)	0.5 (1.7)	0.8 (1.6)
GrowthNat:KOF.econ.global.flows	0.004 (0.01)	0.01 (0.01)						
GrowthLoc:KOF.econ.global.flows			−0.001 (0.01)	0.02** (0.01)	0.01 (0.01)	0.02** (0.01)	0.01** (0.01)	0.01 (0.005)
Constant	3.7 (15.9)	3.4 (16.0)	12.8 (15.9)	5.0 (15.9)	1.5 (15.8)	7.9 (15.9)	7.7 (15.9)	1.6 (15.7)
Observations	231	231	231	231	231	231	231	231
R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Adjusted R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Figure 42: Pooled OLS, interaction between GDP growth and KOF.econ.global.flows

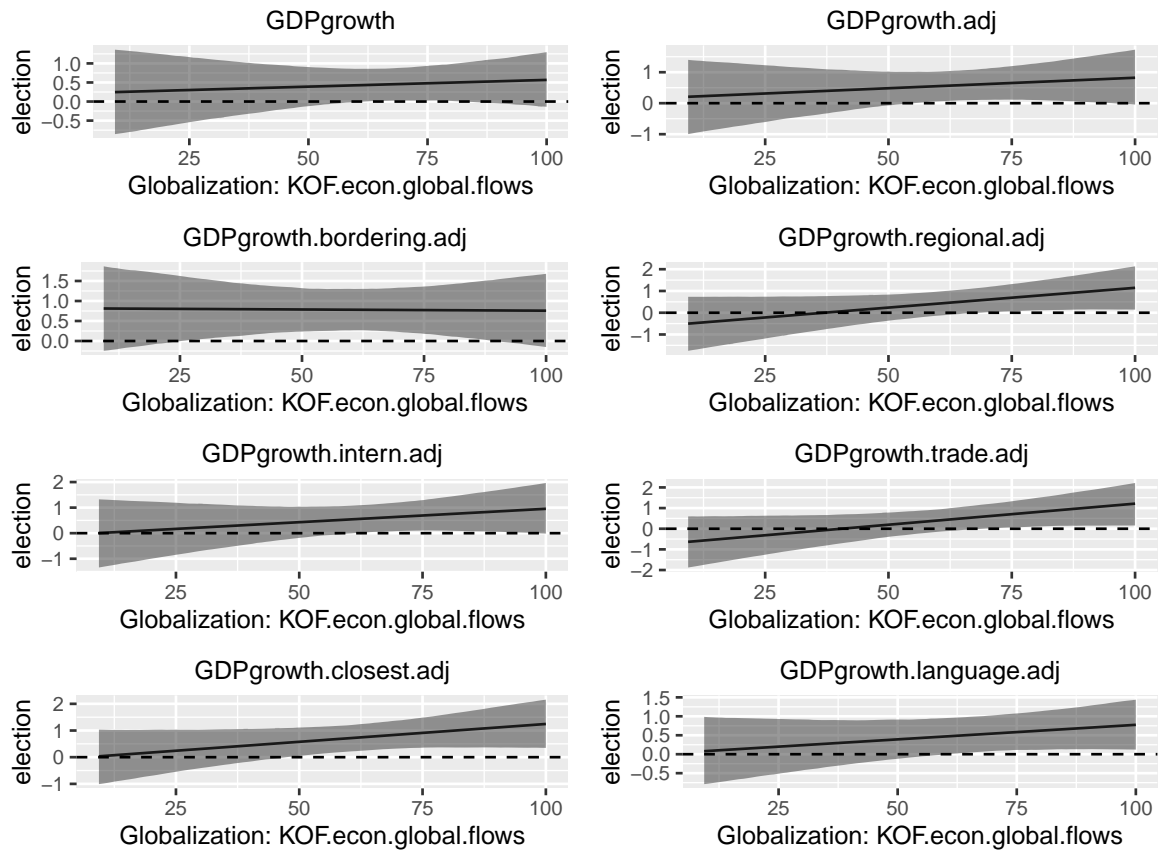


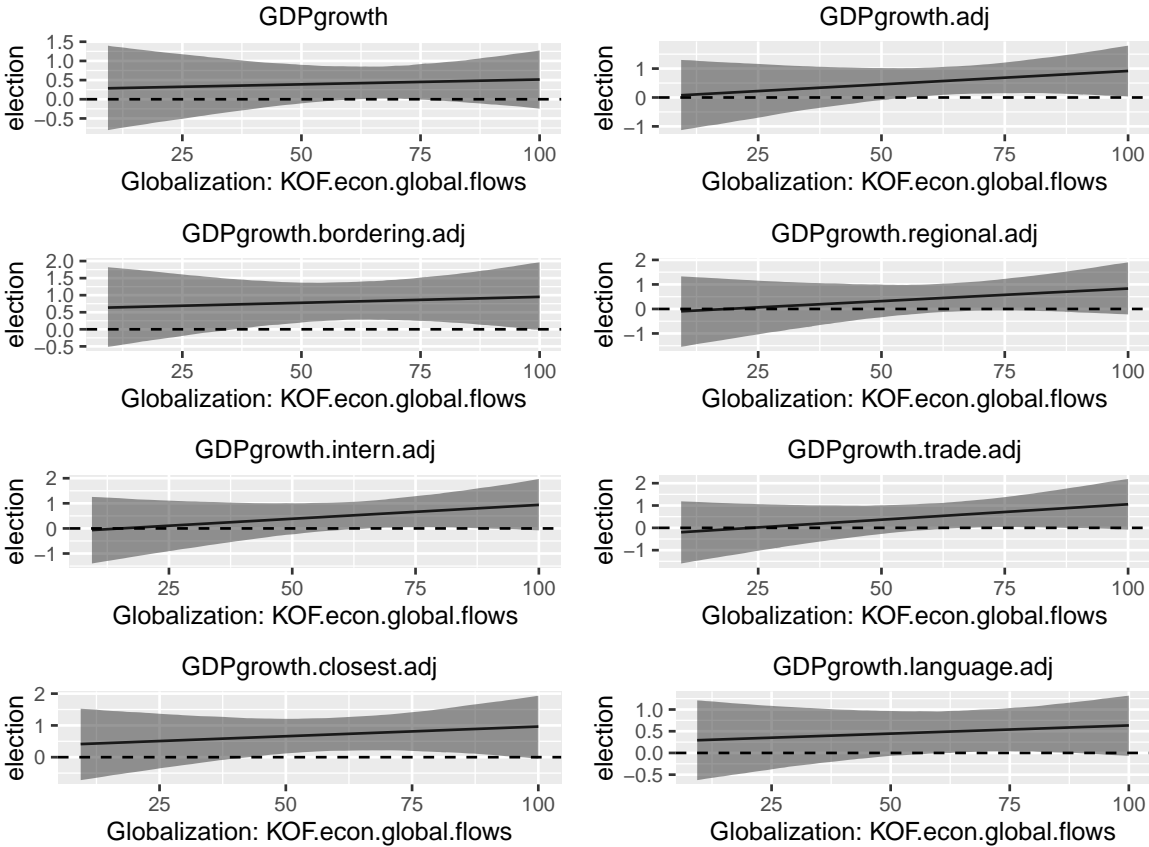
Table 21: Fixed-effects, GDP growth with KOF.econ.global.flows interacted

	<i>Dependent variable:</i>							
	election							
	GDP growth	GDP growth.adj	GDP growth.bordering.adj	GDP growth.regional.adj	GDP growth.intern.adj	GDP growth.trade.adj	GDP growth.closest.adj	GDP growth.language.adj
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	0.2 (0.7)	−0.03 (0.8)						
GrowthLoc			0.6 (0.7)	−0.2 (0.7)	−0.2 (0.7)	−0.3 (0.9)	0.3 (0.6)	0.3 (0.3)
KOF.econ.global.flows	−0.1 (0.1)	−0.1 (0.1)	−0.1 (0.1)	−0.1 (0.1)	−0.1 (0.1)	−0.1 (0.1)	−0.1 (0.1)	−0.1 (0.1)
GrowthInt			0.3 (0.3)	0.8** (0.3)	0.7 (0.5)	0.7* (0.4)	0.4 (0.3)	0.8*** (0.3)
election.previous	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.6*** (0.1)	0.7*** (0.1)	0.7*** (0.1)
GDPperCapita.ln	−0.3 (2.8)	−0.5 (3.2)	−0.9 (3.2)	−0.4 (3.1)	−0.6 (3.2)	−0.9 (3.4)	−0.8 (3.3)	−0.5 (2.6)
parties.L	−3.2 (2.0)	−3.0 (2.0)	−3.0* (1.7)	−3.1 (2.0)	−3.1 (2.0)	−3.0* (1.7)	−3.4* (1.8)	−3.3* (1.8)
parties.Q	−0.2 (1.9)	−0.4 (1.8)	−0.6 (1.7)	−0.4 (1.8)	−0.4 (1.8)	−0.4 (1.8)	−0.9 (1.9)	−0.5 (1.7)
GrowthNat:KOF.econ.global.flows	0.003 (0.01)	0.01 (0.01)						
GrowthLoc:KOF.econ.global.flows			0.004 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.004 (0.01)
Observations	231	231	231	231	231	231	231	231
R <sup>2</sup>	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Adjusted R <sup>2</sup>	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Note:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

Figure 43: Fixed-effects, interaction between GDP growth and KOF.econ.global.flows



## Appendix E: Deviations over globalization

In the following the deviations of all measures of GDP growth from 0 (i.e. the absolute values) are plotted for different levels of globalization - measured as *KOF.index*, *KOF.econ.global*, and *KOF.econ.global.flows*. In the following *GDPgrowth* and *GDP-growth.adj* are included to serve as a benchmark in order to better understand the findings for the relative measurements.

Regression coefficients shown in the title of each plot are obtained from simple bivariate regressions with an absolute measure for GDP growth as the dependent variable and different measures for globalization as the independent variable. Local regression (*loess*) has been used to fit a non-linear line through the data. Values for GDP growth greater than 10 have been excluded from the plot, but they remain in the sample to calculate the local regression and in the sample to compute the regression coefficient.

Figure 44: Scatterplot of (absolute) GDP growth and KOF.index

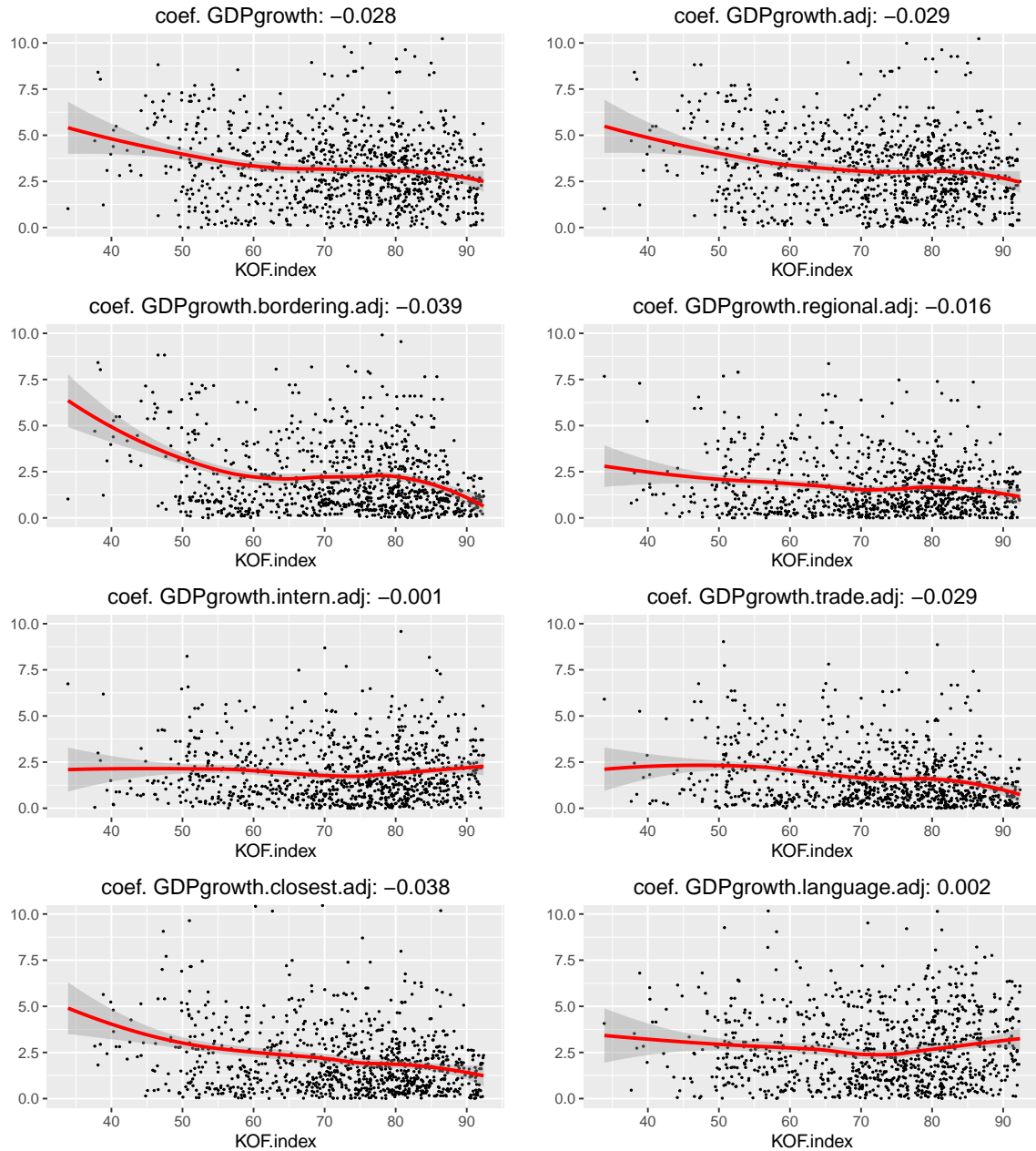


Figure 45: Scatterplot of (absolute) GDP growth and KOF.econ.global

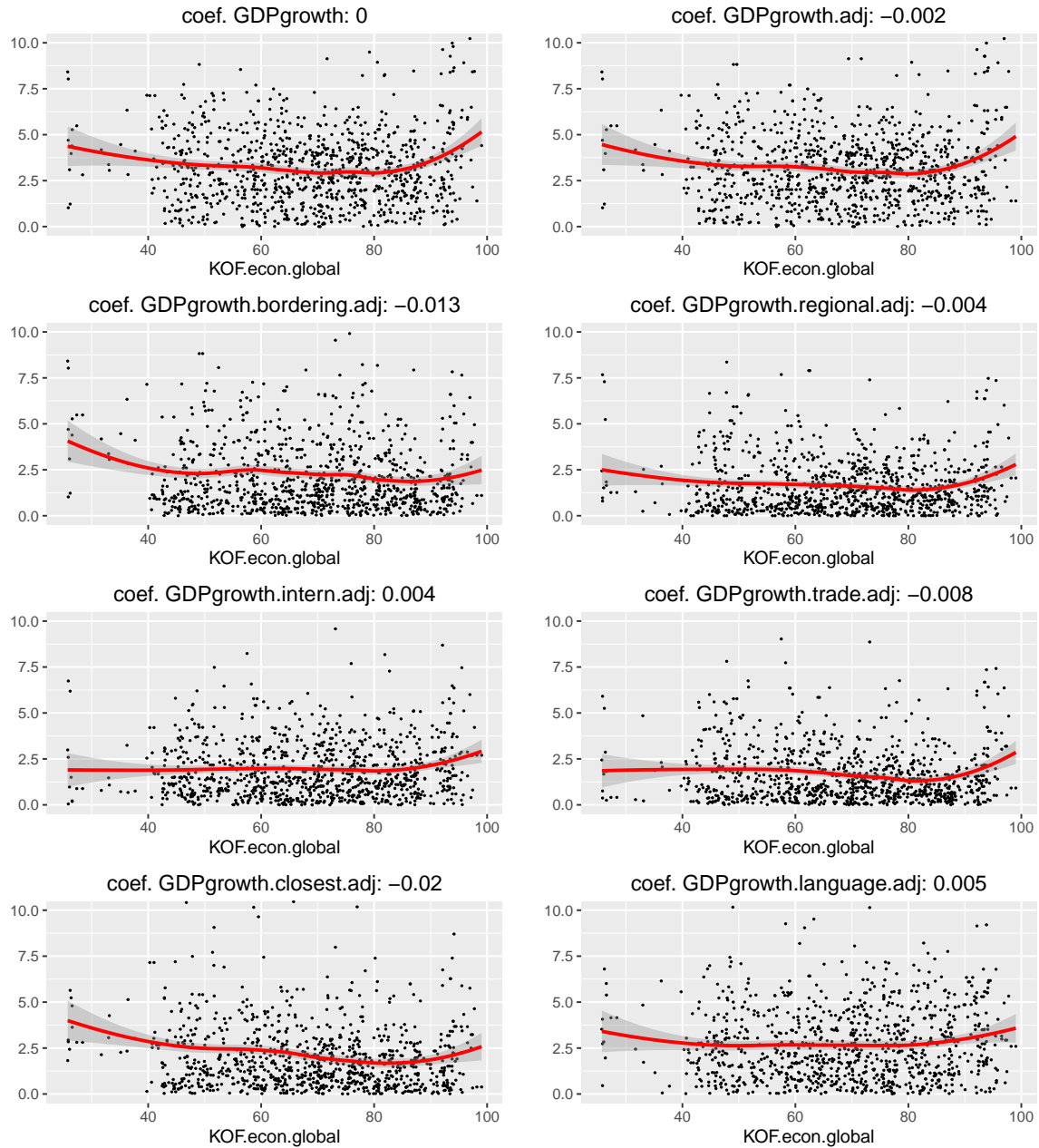
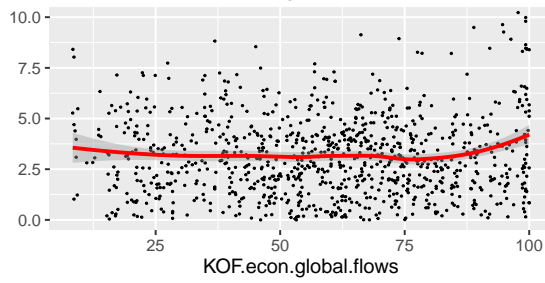
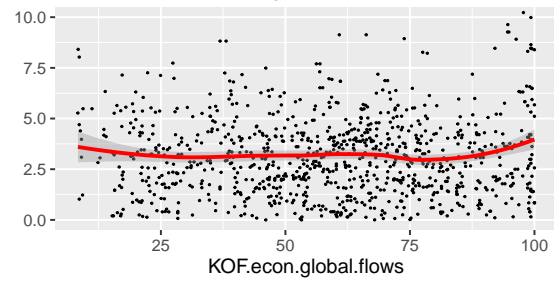




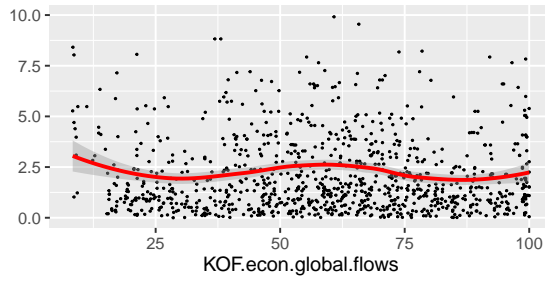
Figure 46: Scatterplot of (absolute) GDP growth and KOF.econ.global.flows  
coef. GDPgrowth: 0.003



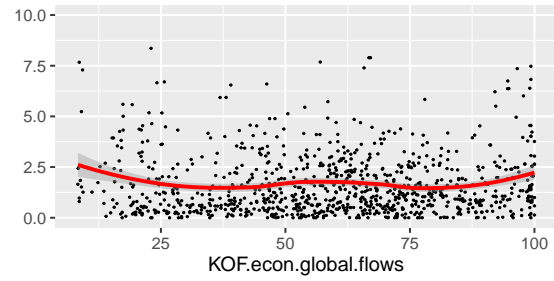
coef. GDPgrowth.adj: 0.002



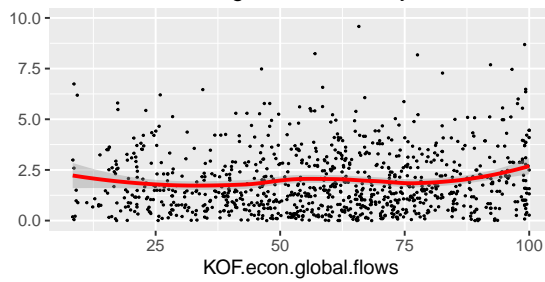
coef. GDPgrowth.bordering.adj: -0.002



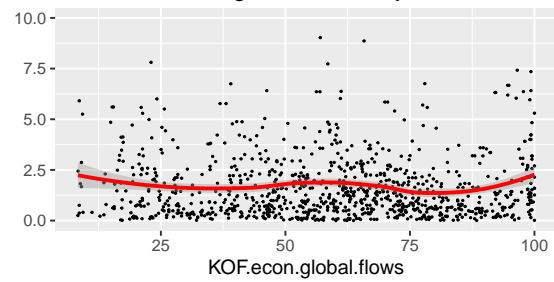
coef. GDPgrowth.regional.adj: 0



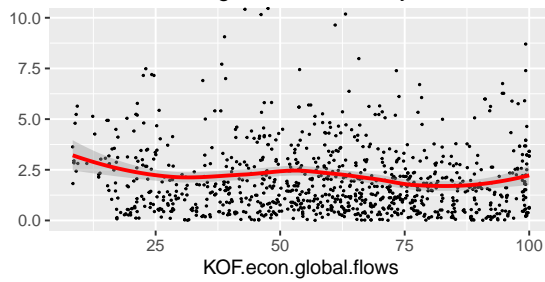
coef. GDPgrowth.intern.adj: 0.006



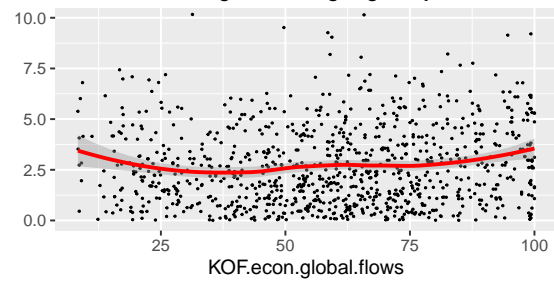
coef. GDPgrowth.trade.adj: -0.001



coef. GDPgrowth.closest.adj: -0.007



coef. GDPgrowth.language.adj: 0.008



## Appendix F: Exclusion of international component

The regression results of table 7 for the exclusion of the international component for GDP growth are reported in this section (table 22 and figure 47). Thereby the robustness of the previous findings is shown, especially with regard to multicollinearity potentially introduced by (partially) correlated variables. In addition, it shows that the results can be interpreted in a more general sense, i.e. with fewer *ceteris paribus* assumptions.

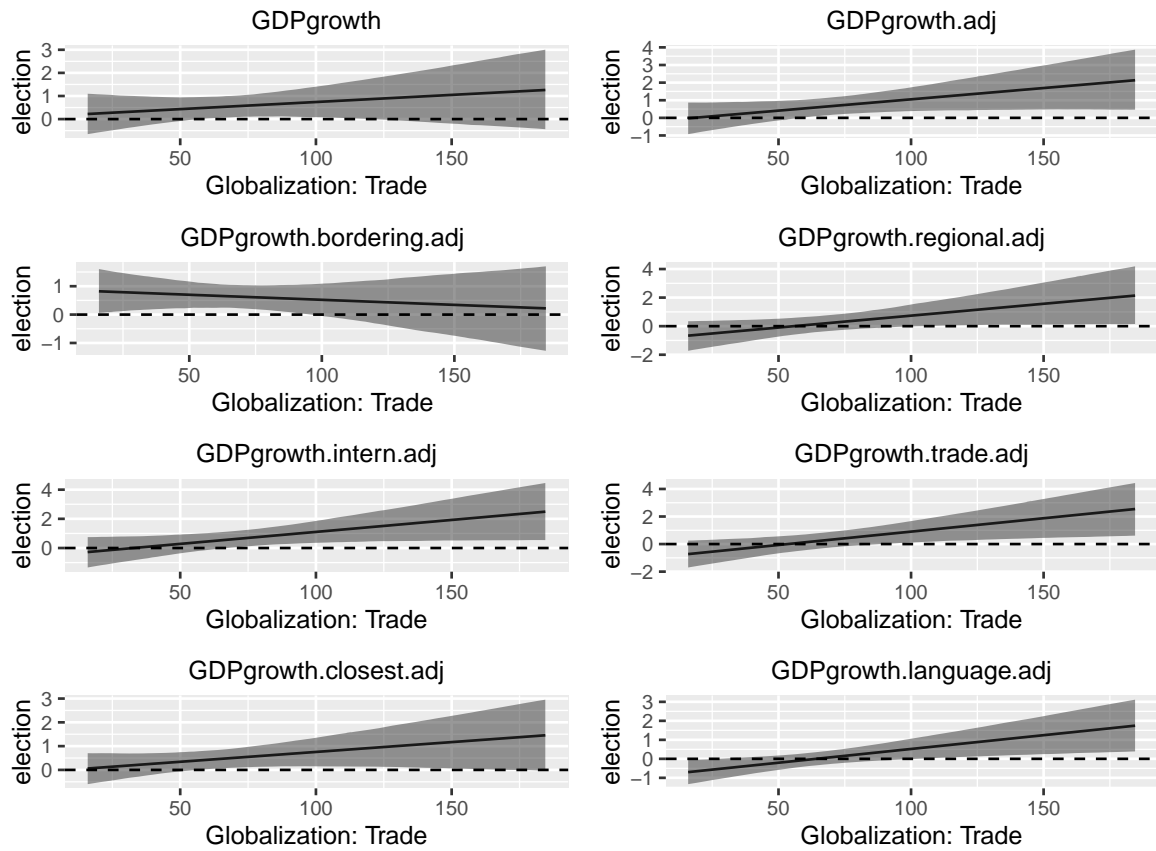
Table 22: Pooled OLS, GDP growth with Trade interacted, international component excluded

	<i>Dependent variable:</i>							
	election							
	GDP <sub>growth</sub>	GDP <sub>growth.adj</sub>	GDP <sub>growth.bordering.adj</sub>	GDP <sub>growth.regional.adj</sub>	GDP <sub>growth.intern.adj</sub>	GDP <sub>growth.trade.adj</sub>	GDP <sub>growth.closest.adj</sub>	GDP <sub>growth.laguage.adj</sub>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
GrowthNat	0.1 (0.4)	−0.2 (0.5)						
GrowthLoc			0.9** (0.4)	−0.9* (0.5)	−0.5 (0.5)	−1.0** (0.5)	−0.1 (0.4)	−0.9*** (0.3)
Trade	−0.1* (0.03)	−0.1** (0.03)	−0.02 (0.03)	−0.03 (0.02)	−0.02 (0.02)	−0.04* (0.02)	−0.03 (0.02)	−0.02 (0.02)
election.previous	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)	0.7*** (0.1)
system.parliamentary	−2.8* (1.5)	−3.0* (1.6)	−4.0** (1.6)	−3.2** (1.6)	−3.1* (1.6)	−3.1* (1.6)	−3.3** (1.5)	−3.6** (1.7)
GDPperCapita.ln	0.3 (1.4)	0.3 (1.4)	−0.9 (1.5)	−0.4 (1.5)	0.3 (1.4)	−0.3 (1.4)	−0.4 (1.5)	0.2 (1.5)
parties.L	−2.2 (2.4)	−2.1 (2.4)	−1.8 (2.2)	−2.3 (2.4)	−2.1 (2.4)	−2.3 (2.4)	−2.2 (2.5)	−2.3 (2.3)
parties.Q	1.3 (1.7)	1.1 (1.7)	1.1 (1.6)	1.3 (1.7)	1.2 (1.7)	1.2 (1.7)	0.9 (1.7)	1.4 (1.6)
GrowthNat:Trade	0.01 (0.01)	0.01** (0.01)						
GrowthLoc:Trade			−0.003 (0.005)	0.02*** (0.01)	0.02** (0.01)	0.02*** (0.01)	0.01* (0.004)	0.01*** (0.004)
Constant	10.7 (16.2)	11.1 (16.2)	22.2 (17.2)	17.2 (16.9)	9.1 (16.1)	15.9 (16.2)	16.9 (16.6)	10.1 (16.8)
Observations	224	224	224	224	224	224	224	224
R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Adjusted R <sup>2</sup>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Figure 47: Interaction between GDP growth and Trade



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