

DOES POLITICAL POLARIZATION  
AFFECT ECONOMIC EXPECTATIONS?:  
EVIDENCE FROM THREE DECADES  
OF CABINET SHIFTS IN EUROPE

2021

BANCO DE **ESPAÑA**  
Eurosistema

Documentos de Trabajo  
N.º 2133

Luis Guirola

**DOES POLITICAL POLARIZATION AFFECT ECONOMIC EXPECTATIONS?:  
EVIDENCE FROM THREE DECADES OF CABINET SHIFTS IN EUROPE**

# DOES POLITICAL POLARIZATION AFFECT ECONOMIC EXPECTATIONS?: EVIDENCE FROM THREE DECADES OF CABINET SHIFTS IN EUROPE (\*)

Luis Guirola (\*\*)

BANCO DE ESPAÑA

(\*) This paper solely reflects the view of its author, and was written as part of his PhD. dissertation. It should therefore not be considered as representing the views of the Banco de España.

(\*\*) [luis.guirola@bde.es](mailto:luis.guirola@bde.es), [luis.guirola@duke.edu](mailto:luis.guirola@duke.edu).

Documentos de Trabajo. N.º 2133

September 2021

The Working Paper Series seeks to disseminate original research in economics and finance. All papers have been anonymously refereed. By publishing these papers, the Banco de España aims to contribute to economic analysis and, in particular, to knowledge of the Spanish economy and its international environment.

The opinions and analyses in the Working Paper Series are the responsibility of the authors and, therefore, do not necessarily coincide with those of the Banco de España or the Eurosystem.

The Banco de España disseminates its main reports and most of its publications via the Internet at the following website: <http://www.bde.es>.

Reproduction for educational and non-commercial purposes is permitted provided that the source is acknowledged.

© BANCO DE ESPAÑA, Madrid, 2021

ISSN: 1579-8666 (on line)

## Abstract

Polarization can have economic effects if the hostility between political camps (i.e., *affective polarization*) shapes economic expectations. This paper shows that, in polarized contexts, agents disagree more over their expectations, and that partisan hostility – rather than differences in individual economic circumstances or beliefs about government policies – drives this disagreement.

The causal impact of partisanship is identified from the discontinuity created by shifts in Prime Ministers' cabinet. The study of 134 shifts between 1993 and 2019 in 27 European countries reveals that left and right supporters with identical circumstances and information sets update their expectations in opposite directions, evidencing a partisan bias. Its size ranges from 1.5 to 0 standard deviations across these cabinet shifts. The polarization of parties – measured by their left-right positions or their cooperation within coalitions – explains half this variation, and adverse economic conditions amplify it.

The analysis points to affective polarization (rather than disagreements over the likely effects of government policy) as the driver of partisan bias. Partisan bias extends to variables unaffected by future policy and, even when parties have similar economic positions, bias increases with polarization on non-economic dimensions. Overall, these findings suggest that political conflicts originally unrelated to economic matters could affect household behavior and policy debates and extend to the economic sphere.

**Keywords:** expectations, polarization, political partisanship, motivated beliefs.

**JEL classification:** D14, D84, E71, F34, G01, H12.

## Resumen

La polarización política puede tener un impacto sobre la economía si la hostilidad entre campos políticos (la llamada «polarización afectiva») moldea las expectativas económicas. Este trabajo muestra que, cuanto mayor es la polarización política, mayor es el desacuerdo en las expectativas de los agentes, y que su fuente está en la hostilidad partidista —y no en diferencias en las circunstancias económicas o en opiniones sobre las políticas económicas— de los agentes.

Se identifica el efecto causal del partidismo sobre las expectativas por la discontinuidad generada por los cambios de Gobierno. El estudio de 134 cambios de Gobierno en 27 países europeos desde 1993 revela que ciudadanos con circunstancias y conjuntos de información idénticos actualizaron sus expectativas asimétricamente según si simpatizaban con la izquierda o con la derecha.

Esta asimetría pone en evidencia un sesgo partidista en las expectativas cuyo tamaño varía entre 1,5 y 0 desviaciones típicas. La mitad de esta varianza se explica por la polarización de los partidos políticos —medida por su posición en el eje izquierda-derecha o por su colaboración en coaliciones—, y su intensidad es mayor en situaciones económicas adversas.

Asimismo, los resultados sugieren que es la polarización afectiva —antes que las diferencias de opinión sobre las políticas del Gobierno— la que altera las expectativas. El sesgo partidista se extiende a percepciones sobre variables que están fuera del control del Gobierno, y la polarización de los partidos lo acentúa incluso cuando estos tienen posiciones similares de política económica. En total, estos resultados sugieren que los conflictos políticos originalmente no relacionados con la economía podrían extenderse a la esfera económica y afectar al comportamiento de los hogares y a los debates sobre política económica.

**Palabras clave:** expectativas, polarización política, partidismo, cognición motivada.

**Códigos JEL:** D14, D84, E71, F34, G01, H12.

# 1 Introduction

Can political polarization have economic effects? The literature suggests that it could result in myopic policies<sup>1</sup>, volatility<sup>2</sup>, or slow recoveries<sup>3</sup>, among other negative consequences. At the same time, the roots of polarization are often in political conflicts unrelated to economic debates –e.g., cultural or political identities (Piketty, 2020). Could these purely “political” conflicts extend to the economic sphere? This paper suggests that it could by showing that the hostility between political camps –*affective polarization*– is systematically associated with distortions in economic expectations.

The role of expectations in economic policy and private decisions is well known (Roth and Wohlfart, 2020). Agents’ response to economic shocks depends on how they anticipate their effects but, if two persons voted for opposing parties, their expectations will typically differ (Guirola, 2020; Coibion et al., 2020). For instance, in 2010, Republicans were twice more likely than Democrats to anticipate negative effects from the stimulus package enacted by the Obama Administration<sup>4</sup>. Subsequent episodes –e.g., the 2011 debt ceiling crisis, the 2013 government shutdown– confirmed the importance of polarization for economic uncertainty (Fernández-Villaverde et al., 2015) or the transmission of fiscal policy (D’Acunto et al., 2021).

What, however, drives partisan disagreement over economic expectations? In 2010, one possibility was that Republicans and Democrats differed in their views about the efficacy of fiscal stimuli. However, many observers (e.g., Skocpol and Williamson, 2016) noted that the Republican opposition did not boil down to views about fiscal multipliers. Its roots were in the long trend of hostility between the two political camps –i.e., *affective polarization* (Iyengar et al., 2019; Boxell et al., 2020; Gidron et al., 2020)– whose origin could hardly be restricted to economic factors. This experience thus suggests that exogenous political hostility could affect expectations and propagate into the economic sphere.

This paper’s contribution is to establish the generality of the link between polarization and expectations. Examining 27 European countries over three decades, it shows that polarization systematically translates into partisan disagreements over economic expectations. Moreover, it shows that these disagreements are not due to differences in individual economic conditions (“fundamentals”) or to substantive disputes over economic policy. Instead, *affective polarization* is an autonomous source of disagreement, suggesting that conflicts unrelated to economics could contaminate economic expectations.

I identify the link between subjective expectations and polarization by combining survey data on expectations with data on cabinets for 27 European countries between 1993 and 2019. Firstly, I isolate partisan bias from fundamentals. Using a methodology similar to Mian et al. (2018), I identify the causal effect of political identity (i.e., *partisan bias*) comparing how 134 cabinet shifts affect the expectations of left and right partisans. Secondly, I examine the link between the *size* of the effect and the polarization of parties. Finally, I test whether partisan bias can be rationalized as substantive disagreements over economic policy.

The link between polarization and heterogeneity in expectations appears in three empirical patterns. Firstly, I find that partisan bias is substantial and cannot be attributed to fundamentals. In the

---

<sup>1</sup>Alesina and Drazen (1991)

<sup>2</sup>Azzimonti (2011); Azzimonti and Talbert (2014)

<sup>3</sup>Funke et al. (2016); Mian et al. (2014)

<sup>4</sup>Pew Research (2010) “Pessimistic Public Doubts Effectiveness of Stimulus”

two years surrounding the cabinet shift, the gap in expectations may change by up to 1.5 standard deviations. However, this change varies substantially across countries, and over time.

Secondly, the polarization of parties can explain most of the variation in bias. I measure shifts in the left-right position of cabinets using expert survey data from ParlGov (Döring and Manow, 2020). This measure of polarization alone explains between 60% and 30% of the variance in bias estimated from survey data. The strength of this association is robust to the inclusion of country fixed effects and controls for the economic environment. I also measure party disagreement based on their cooperation within coalitions. I find that when parties cooperate within the same coalition, partisan bias is systematically smaller. This suggests that the dialogue between politicians could create a friendlier political environment and reduce the size of the distortion.

Thirdly, I find that affective polarization (rather than disagreements over the expected effect of policy) is the most likely driver of these shifts in expectations. Partisan bias affects expectations, but also the perception of the current economic situation, and the EU economy, over which the cabinet shift could have no impact. Similarly, partisan bias does not only arise from shifts in left-right positions over economic policy (state vs. market). Even controlling for this dimension, shifts on the “social” (authoritarian vs. libertarian) axis affect partisan bias.

These findings contribute to the understanding of economic expectations and polarization in three respects. Firstly, they show a natural channel through which political conflicts, unrelated to economics, can extend into the economic sphere. Politically distorted expectations may affect private economic choices (e.g., Cookson et al., 2020; Girardi, 2020; Barrios and Hochberg, 2021; Meeuwis et al., 2018; Kempf and Tsoutsoura, 2018; Benhabib and Spiegel, 2019; D’Acunto, 2020), and economic policy (D’Acunto et al., 2021) and policy discussions. This finding thus complements the literature linking polarization to uncertainty and weak recoveries (Funke et al., 2016; Mian et al., 2014; Azzimonti and Talbert, 2014).

Secondly, this paper is, to my knowledge, the first to study the link between partisan bias and affective polarization across a large number of countries and contexts. While the research on polarization is abundant, it concentrates on the American case, and it has only recently been taken to a cross-country context (Gidron et al., 2020; Boxell et al., 2020). This has obeyed in part to the absence of data comparable across countries. This paper uses a large number of multi-country surveys to fill this gap and uncover the strong link between polarization and partisan bias across countries and political contexts.

Finally, this paper confirms the general validity of previous findings about the departure of subjective expectations from full information rationality (Guirola, 2020; Gillitzer and Prasad, 2018; Mian et al., 2018; Benhabib and Spiegel, 2019; Coibion et al., 2018). Multiple measures of uncertainty or economic sentiment are based on subjective perceptions and take them as a direct (i.e., unbiased) measurement of fundamentals. However, this paper shows that, in highly polarized contexts, the deviation of subjective expectations from fundamentals is likely to be large.

The paper is structured as follows. Section 2 explains the key concepts of the paper: polarization, partisan bias, and its link to expectations. Section 3 identifies partisan bias looking at 134 cabinet shifts for four different economic items. Section 4 explores how the size of partisan bias varies across context and links between various forms of polarization and to economic conditions.



## 2 How polarization could shape economic expectations.

This section outlines the connection between polarization and economic expectations. It argues that partisan bias and disagreements between parties are two expressions of the antagonisms implied by polarization, and the two are expected to be empirically linked.

### 2.1 Polarization and partisan bias: definitions.

Partisan bias in economic expectations is a channel through which polarization can translate into the economic sphere, and I will therefore start defining polarization and partisan bias.

**Definition I: Polarization as systematic disagreement.** Polarization can interfere with economic outcomes undermining the rationality of economic disagreements. Polarization refers to the systematic confrontation of two political camps. Its systematic character can “artificially” accentuate pre-existing disagreements or transform them into partisan conflict. This point is illustrated by Baldassarri and Gelman (2008):

Political polarization constitutes a threat to the extent that it induces alignment along multiple lines of potential conflict and organizes individuals and groups around exclusive identities, thus crystallizing the public arena into opposite factions. In contrast, intrasocial conflict is sustainable as long as there are multiple and nonoverlapping lines of disagreement.

While disagreements are inherent to politics, they do not need to be systematic. This would be the case if opinions were driven by *rationality* -understood either as “self-interest” or as “truth-seeking”. Rational agents could disagree on both the issue of gay marriage and of redistribution. But these two debates are logically unrelated, and affect different segments of the population. Thus, if citizens pick their sides “*rationally*”, these issues would not oppose the same factions. In contrast, if their opinions are partisan, they will be systematically sorted into the same camps on both debates.

Thus defined, polarization captures the fears often voiced by economists. Ideology and partisanship could contaminate discussions over economic policy or central bank communication to the detriment of scientific evidence. The opposition on the left-right axis may propagate non-economic disagreements into economic policy- a phenomenon known as *conflict extension* (Layman and Carsey, 2002). Citizens may, for example, disagree over fiscal policy for reasons unrelated to their preference about taxes and spending. They could agree on the goals, and the means could be cleared by neutral scientific arguments and yet partisan motivations could divide them.

**Definition II: Partisan bias and rational expectations.** Polarization may not only be reflected in political preferences, but also in the perception of reality (Alesina et al., 2020). *Partisan bias* (Bartels, 2002) - the predisposition to represent facts in a different light driven by partisanship- could distort the rationality of expectations.

Rationality in expectations is central to both individual and collective decisions. When they define their political preferences or make economic choices, individuals are assumed to optimize their decisions: they will incorporate as much information about *fundamentals* -expected prices, income, the state of

technology- as it is available to them. The assumption of “informational efficiency” underlies the design of market (Grossman and Stiglitz, 1980) and representative institutions (Piketty, 1999; Achen and Bartels, 2017), as well as the interpretation of indicators of subjective perceptions -e.g., consumer confidence indexes, inflation expectations- as trackers of economic fundamentals.

However, under the influence of partisan bias, citizens with identical fundamentals will disagree and depart from full information rationality (Coibion et al., 2018). Firstly, bias may generate heterogeneity in spending and investment decisions (D’Acunto, 2020; Meeuwis et al., 2018; Kempf and Tsoutsoura, 2018; Ke, 2020). Secondly, it could interfere with economic policy discussions (D’Acunto et al., 2021). Assessing the effects of policies not only involves a statement about the expected state of the economy, but also about the role of the party in office in that state. Partisanship is likely to have a larger impact on this last component (Guirola, 2020), and thus its effect on the former can be regarded as a lower bound on disagreement over policy in general.

We can now envision how polarization can affect economic outcomes. Polarization creates systematic disagreements across domains, and partisan bias connects it to expectations. Through this channel, polarization could “artificially” (irrationally) create disagreements over economic issues and distort economic decisions. Conflicts unrelated to economics could create feelings of like or dislike towards politicians which will translate into economic expectations.

## 2.2 Polarization and partisan bias: three hypotheses.

The mechanism described in the previous section can be summarised by three empirical claims: firstly, partisan bias in expectations is not driven by fundamentals; secondly it is artificially induced by political hostility and can not be rationalized as a substantive disagreement over economic policy; thirdly, its origin is in the political sphere. I discuss these three claims.

**Partisan bias vs. fundamentals.** While there is a well known correlation between left-right support and economic perceptions (Bartels, 2002), this correlation does not need to result from partisan bias (Lewis-Beck et al., 2013). It could reflect differences in fundamentals between left and right supporters. If they faced different economic circumstances or information sets, disagreements in expectations could be rationalized and would not be partisan in any meaningful sense.

Recently, however, the hypothesis that partisanship has a causal effect on economic perceptions has enjoyed additional support (Mian et al., 2018; Gerber and Huber, 2010, 2009; Coibion et al., 2020). Partisan bias does not only affect perceptions of general economic performance, but also of variables that are out of government’s control -e.g., inflation or interest rates in the EU (Guirola, 2020)- and perceptions about verifiable facts (Prior et al., 2015). Thus, one of the empirical challenges (discussed in section 3) in the measurement of partisan bias is to separate it from both observed and unobserved fundamentals. I summarise this hypothesis in the following question:

**Q.1. Partisan bias vs. fundamentals.** Are disagreements between the left and the right an expression of *partisan bias*, or can they be rationalized by differences in underlying fundamentals?

**Affective motivations vs. policy ideology in partisan bias.** I argued that partisan bias is irrational because it reflects the dislike of citizens toward the party in office. *Affective motivations* –unrelated to economics– would cause disagreement over economic expectations. However, these

disagreements could also result from different opinions about economic policy. Parties differ in their policies, and left-right voters could have different priors –different *policy ideologies*– about their effects. The disagreement over economic expectations would then not be artificially created by the climate of hostility; it could reflect a substantive policy controversy—even if driven by ideology. How can we distinguish between these two mechanisms?

Affective motivations and policy ideology have different implications: while the former implies differences in beliefs and behavior, affective motivations do not. On the one hand, both policy ideology and affective motivations may impact beliefs if, for example, citizens consume partisan media or rely on party cues. These beliefs will then be revealed in the impact on spending (Gillitzer and Prasad, 2018; Gerber and Huber, 2010; Huberman et al., 2018; Benhabib and Spiegel, 2019) or investment (Cookson et al., 2020; Girardi, 2020; Kempf and Tsoutsoura, 2018; Huberman et al., 2018; D’Acunto, 2020; Meeuwis et al., 2018) decisions documented in the literature.

However, when partisan bias results from affective motivations, it does not need to reflect inaccurate beliefs. Several authors (Bullock et al., 2015; Prior et al., 2015; Bullock and Lenz, 2019) have shown that agents tend to represent reality in a negative light to express their hostility towards the government. Partisans could have similar beliefs but disagree in how they state their expectations. To signal their discontent, citizens could verbalize their pessimism over policy issues or economic forecasts, but still behave rationally in their private spending or investment decisions (McGrath, 2017; Mian et al., 2018).

Therefore, partisan bias in expectations can reflect policy ideology only if two conditions are fulfilled. Firstly, it can only impact variables that are affected by the future policy path. Negative outlooks over variables out of government control can not be attributed to policy ideology. Secondly, disagreements over issues unrelated to economics can not translate into economic expectations. This will only be the case if affective motivations drive them. Conflicts over non-economic issues may accentuate the hostility (sympathy) towards the government and push citizens to express negative (positive) economic expectations. I summarise this discussion in the following hypothesis.

**Q.2. Economic policy ideology vs. affective motivations.** Does partisan bias reflect ideological disagreements about the likely effects of economic policies (*policy ideology*), or the general hostility towards the party in office (*affective polarization*)? This will have two empirical implications:

- Does partisan bias impact variables that are not affected by government’s policy?
- Do conflicts unrelated to economics affect economic expectations?

**Partisan bias and the polarization of political parties.** Our third claim was that political conflicts could contaminate economic expectations. Disagreements between politicians are the most visible face of a context of polarization and the channel through it can translate into policy outcomes. The empirical strategy will rely on observed party disagreement to measure polarization, and we thus need to clarify their link with partisan bias in expectations.

Agent’s partisan bias and parties’ disagreement are likely to be simultaneous outcomes of polarization. The two will tend to reinforce each other: parties’ could adopt extreme positions responding to existing divisions among consumers but, these division could also influence consumer expectations. In either case, we would expect partisan bias and party polarization to move together.

Parties left-right positions (stated in manifestos or public declarations) are perhaps the most direct indicator of party polarization. However, as argued by Fortunato and Stevenson (2013), the cooperation within coalitions could be even more informative. The experience of compromise and governing together could generate a friendlier atmosphere and reduce the public's hostility towards opponents. Similarly, it may reveal the "true" party positions to voters: even if economic policy promises are extreme, voters could expect more moderate outcomes within a coalition agreement. The above considerations motivate our third empirical question.

**Q.3. Partisan bias and party polarization.** Does the bias in economic expectations among the public reflect the polarization of political parties (measured as left-right positions or coalition cooperation)?

## 2.3 Partisan bias and polarization: The role of economic trends.

Even if partisan bias is driven by political factors, it seems natural to ask how the economic environment could condition its impact. I have argued that polarization can interfere with economic outcomes through partisan bias in expectations. This interference would be "artificial" or "irrational": it would come out of the hostility towards politicians. It could not be rationalized by differences in individual fundamentals, or views over economic policy. However, polarization is a team-sport. It reflects interdependent positions, and the economic context may influence the effect of partisanship on expectations. One of the goals of our empirical investigation will therefore be to control for these factors.

**Inequality.** A long tradition in political economy regards inequality as the central explanation for conflicts, and it seems natural to link it to partisan disagreement. If different segments of society face highly unequal economic conditions their perceptions of economic fundamentals are also likely to diverge. These conditions could interact with political identities, and lead to asymmetric interpretations of common shocks (Dixit and Weibull, 2007). McCarty et al. (2006) observed that the period of rising polarization that started in the 70's paralleled by the historical rise of economic inequality. The same relationship was found to hold at the sub-national level both in the US (Voorheis et al., 2015) and in Europe (Winkler, 2019).

**Macroeconomic factors.** Macroeconomic conditions can also affect polarization in perceptions. Understanding its effect is particularly important given our interest in how polarization can translate into policy distortions, which is particularly important during crises. On the one hand, one could expect that under extreme economic conditions, disagreement over the state of the economy should be smaller. On the other hand, research has shown that polarization and political fragmentation tend to increase after large economic crises (Mian et al., 2014; Funke et al., 2016), and that these divisions are reinforced by partisan cleavages. Dixit and Weibull (2007) have shown that, different priors can result in polarized (i.e., bimodal) responses to identical shocks, while Gidron et al. (2020) show that unemployment is one of the key variables that amplify affective polarization.

**Q.4. Inequality and macroeconomic trends.** To what extent can the size of partisan bias be accounted by common explanations about the role of economic factors such as inequality and the business cycle?

**Summary of the main hypotheses** . To understand how polarization can interfere with economic outcomes, we will therefore investigate the impact of partisan bias in expectations. We will then proceed to analyze its connection with context-specific variables: the affective and ideological component of polarization, the importance of parties' disagreement, and the impact of the economic context. These four empirical questions can be summarised as:

1. **Q.1. Partisan bias vs. fundamentals.** Are disagreements between the left and the right an expression or *partisan bias*, or can they be rationalized by differences in underlying fundamentals?
2. **Q.2. Economic policy ideology vs. affective motivations.** Does partisan bias reflect ideological disagreements about the likely effects of economic policies (*policy ideology*), or the general hostility towards the party in office (*affective polarization*)? This will have two empirical implications:
  - Does partisan bias impact variables that are not affected by government's policy?
  - Do conflicts unrelated to economic affect economic expectations?
3. **Q.3. Partisan bias and party polarization.** Does the bias in economic expectations among the public reflect the polarization of political parties (measured as left-right positions or coalition cooperation)?
4. **Q.4. Inequality and macroeconomic trends.** To what extent can the size of partisan bias be accounted by common explanations about the role of economic factors such as inequality and the business cycle?

### 3 Identifying the causal effect of partisan bias

Our first goal is to identify the causal effect of partisanship on economic expectations (Q. 1) and assess whether its impact has varied over time. In this section, I present a method to separate the effect of partisanship from that of unobserved fundamentals, and describe its variation across countries and time in Europe.

**Identification of partisan bias from cabinet shifts.** Partisanship is only one source of disagreement between supporters of the left and the right. They may also disagree because they face different economic conditions (i.e., *fundamentals*). Fundamentals refer to information about all those economic factors that can be “rationally” linked economic perceptions. For example, part of the gap in expectations can be explained because the left and the right differ in their occupation, employment conditions, or purchasing power. Therefore, partisan bias is defined as the tendency to represent the same fundamentals in a different light, due to the sympathy towards the government. Empirical research on partisan bias has traditionally disagreed on its importance, due to the impossibility of disentangling both sources of variation. To understand the nature of this challenge, consider the following decomposition:

$$\underbrace{\text{Subjective expectation}}_{y_{it}} = \alpha_t + \underbrace{\lambda_{it} + X_{it}^T \beta}_{\text{Fundamentals}} + \underbrace{\omega_t Pol_i \beta_P}_{\text{'Partisan bias'}} + e_{it} \quad (1)$$

Equation 1 decomposes heterogeneity in subjective expectations  $y_{it}$  between the part driven by economic fundamentals, and the part attributable to partisan bias. Partisan bias are deviations from fundamentals due to the sympathy towards the party in office. It therefore enters eq. 1 as a term where the interaction of left-right orientation ( $Pol_i$ ) and the party in office at time  $t$  ( $\omega_t$ ) generates a gap between subjective expectations ( $y_{it}$ ) and fundamentals.

The identification problem arises because fundamentals may not be fully observed in the data. While characteristics ( $X_{it}$ ) like education, gender or employment status can be observed and controlled for, other relevant fundamentals ( $\lambda_{it}$ ) may be unobservable. If these are correlated with left-right orientation ( $Pol_i$ ), they will bias the estimation of  $\beta_P$  from  $\beta_p$ . Because political preferences are not independent of (unobserved) economic fundamentals supporters of different parties are likely to be heterogeneous in a way that can't be observed in the data. For example, individuals with the same occupations may be employed in sectors with highly different economic conditions (e.g., industry vs services, public vs private). If supporters of the left and the right are systematically employed in different sectors (e.g., private vs public) (Kitschelt and Rehm, 2014), their fundamentals may also differ.

Recent research (Mian et al., 2018; Gillitzer and Prasad, 2018) has shown that the effect of partisan bias ( $\beta_P$ ) can credibly be identified from shifts in the party in office ( $\Delta\omega_t$ ) if repeated cross-sections are available. Consider the following equation:

$$\underbrace{\text{Subjective expectation}}_{y_{it}} = \alpha_t + X_{it}^T \beta_t + \overbrace{Cabinet_t}^{\omega_t} Pol_{it} \beta_p + e_{it} \quad (2)$$

here  $t$  refers to each of the cross-sections, and  $Cabinet_t$  is a dummy for the party in office at the time of the study. Over relatively short periods of time, the effect of unobserved fundamentals  $\lambda_{it}$  (conditional on observables) can be assumed stable. Therefore, in the neighborhood of a cabinet shift the distance between left and right supporters due to unobserved fundamentals should not vary, and shifts in the coefficient associated with left-right identity ( $\beta_p$ ) can be attributed to the effect of partisan bias ( $\beta_P$ ).

This strategy assumes that the shift in cabinet affects the fundamentals of left and right supporters in the same way. Its validity would be threatened, for example, if a new government party enacted a subsidy that targets its electoral base, and the shift in cabinet would reflect a shift in fundamentals, not in how these are represented by supporters. However, Gillitzer and Prasad (2018) argue that when time varying coefficients ( $\beta_t$ ) are included on observables, this concern is likely to be minor. In industrialized countries, most policies are targeted upon observable demographics -like employment status, occupation, age or gender- which are captured by  $X_{it}$ . Once a sufficiently rich set of observable controls  $X_{it}$  is included, the shift in the coefficient ( $\beta_p$ ) can be considered an unbiased estimate of partisan bias ( $\beta_P$ ).

Following this strategy, I will measure the size of partisan bias examining the change of  $\beta_p$  in response to a large number of cabinet shifts in Europe.

**Data description.** To estimate equation 2, two pieces of information are needed: data on cabinet shifts ( $Cabinet_t$ ), and microdata on expectations ( $y_{it}$ ), economic fundamentals ( $X_{it}$ ) and identity ( $Pol_{it}$ ) that captures  $\beta_p$  of that data.

I measure expectations ( $y_{it}$ ), fundamentals ( $X_{it}$ ) and identity ( $Pol_{it}$ ), based on the Eurobarometer survey conducted by the European Commission. Eurobarometers have two unique features that make them idoneous: they are designed to be comparable across countries, and they contain items that have been asked regularly for decades. I selected all those surveys between 1990 and 2019 that included information for 27 countries, amounting to 43 waves and 933,760 observations on the key variables of equation 2:

- Economic expectations ( $y_{it}$ ) based on four items. Respondents are asked about how they see four outcomes evolving in the year ahead (Improve, stay the same, or worsen). These four outcomes include the (a) economic situation of the household (b) their individual job prospects (c) the evolution of the country’s economy and (d) the situation of the labor market. Individual response were mapped on a continuous scale using for each country empirical cumulative distribution, and imputing the mean of each quantile associated with a normal distribution.
- Political identity ( $Pol_{it}$ ) is measured based on where respondents place themselves on a 1 to 10 scale. I classified as “Left” and “Right” depending on whether respondents place themselves above or below 5 (non respondents and those answering 5 are grouped in a third category).
- I include a set of variables which control for observable fundamentals ( $X_{it}$ ). These include six age intervals, gender, four levels of education, as well as eighteen dummies accounting for occupation and employment status.<sup>5</sup>

I identify cabinet shifts ( $Cabinet_t$ ) relying on the ParlGov database (Döring and Manow, 2020). ParlGov includes detailed data on parties, elections, and cabinets, including the number of seats of each party in the legislature, as well as party positions on several dimensions (left-right, liberty-authority, and state market). The left-right orientation of each party is measured by a 0-10 time-invariant scale based on multiple expert surveys. For each cabinet, I computed its left-right score based on the average of its member parties, weighted by their seats in the legislature. I then defined as a *cabinet shift* any change on this score of 0.2 or more. In total, this amounted to 134 cabinet shifts.

For each cabinet shift, one sample was collected combining information on cabinets with the microdata from surveys. For every two adjacent cabinets and items, I gathered the observations seven quarters before and after the shift in that country. These observations were then used to estimate partisan bias as the shift in the coefficient  $\beta_p$  before and after the change in the cabinet (eq 2).

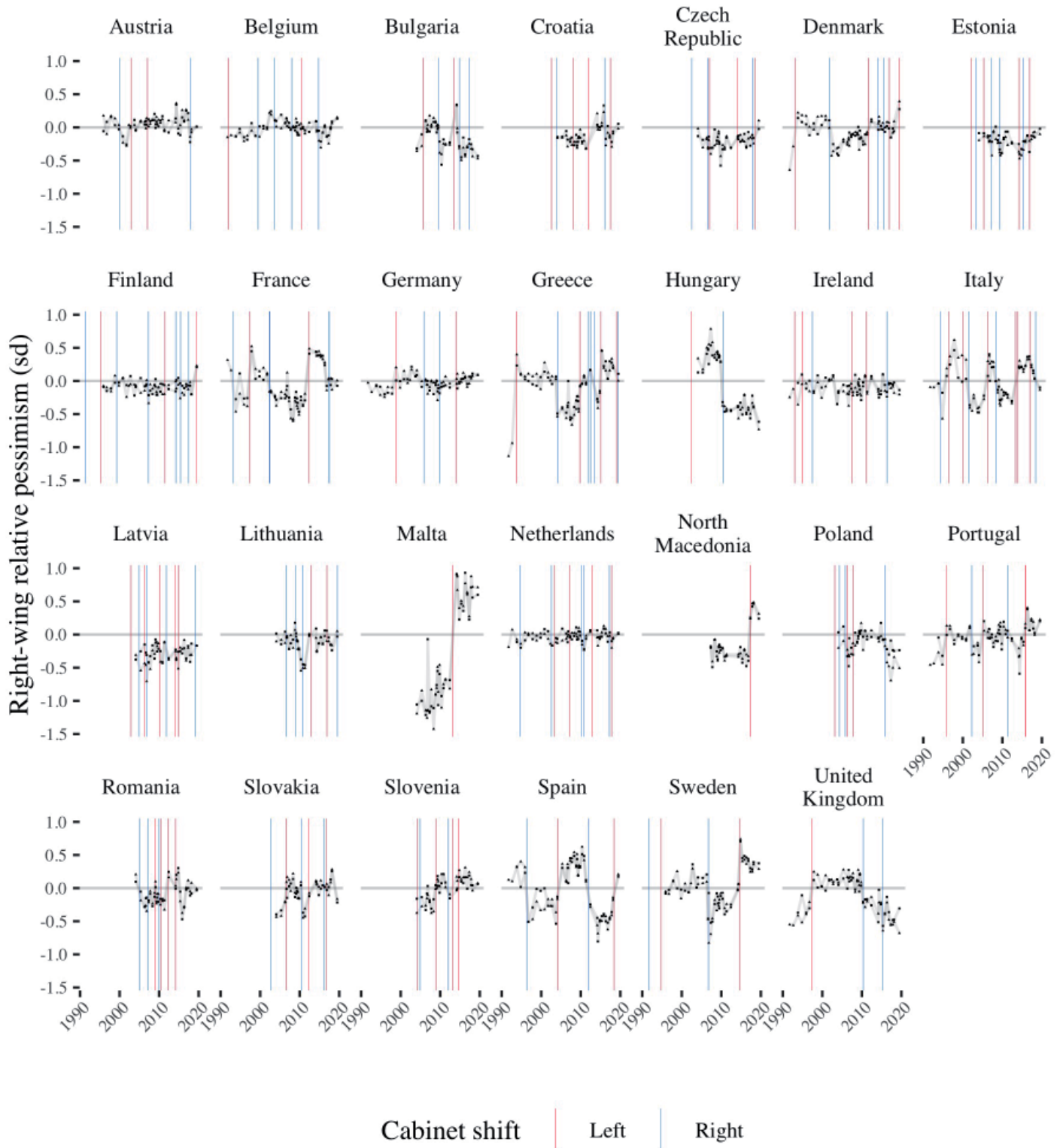
**Estimates of partisan bias.** Partisan bias is identified from changes in the coefficient  $\beta_p$  that take place around cabinet shifts. Figures 1 and 2 shows the value of  $\beta_p$  estimated separately for each cross-section. For each item, this coefficient measures the relative pessimism (optimism) of a typical supporter of the right (left) compared to its left (right) counterpart, once the effect of fundamentals ( $X_{it}$ ) is removed. Vertical lines show the date in which cabinet shifts take place.

---

<sup>5</sup>These categories included: fisherman, farmer, service employee, desk employee, unskilled worker, skilled manual worker, general manager, middle manager, supervisor ,professional, shopmen/craftsmen, business - person, travelling employee, retired, homemaker, student, and other.

Figure 1: Difference in expectations between left and right (conditional on observables  $X_{it}$ )

### Expectation of country's labor market and economic situation (+1y)

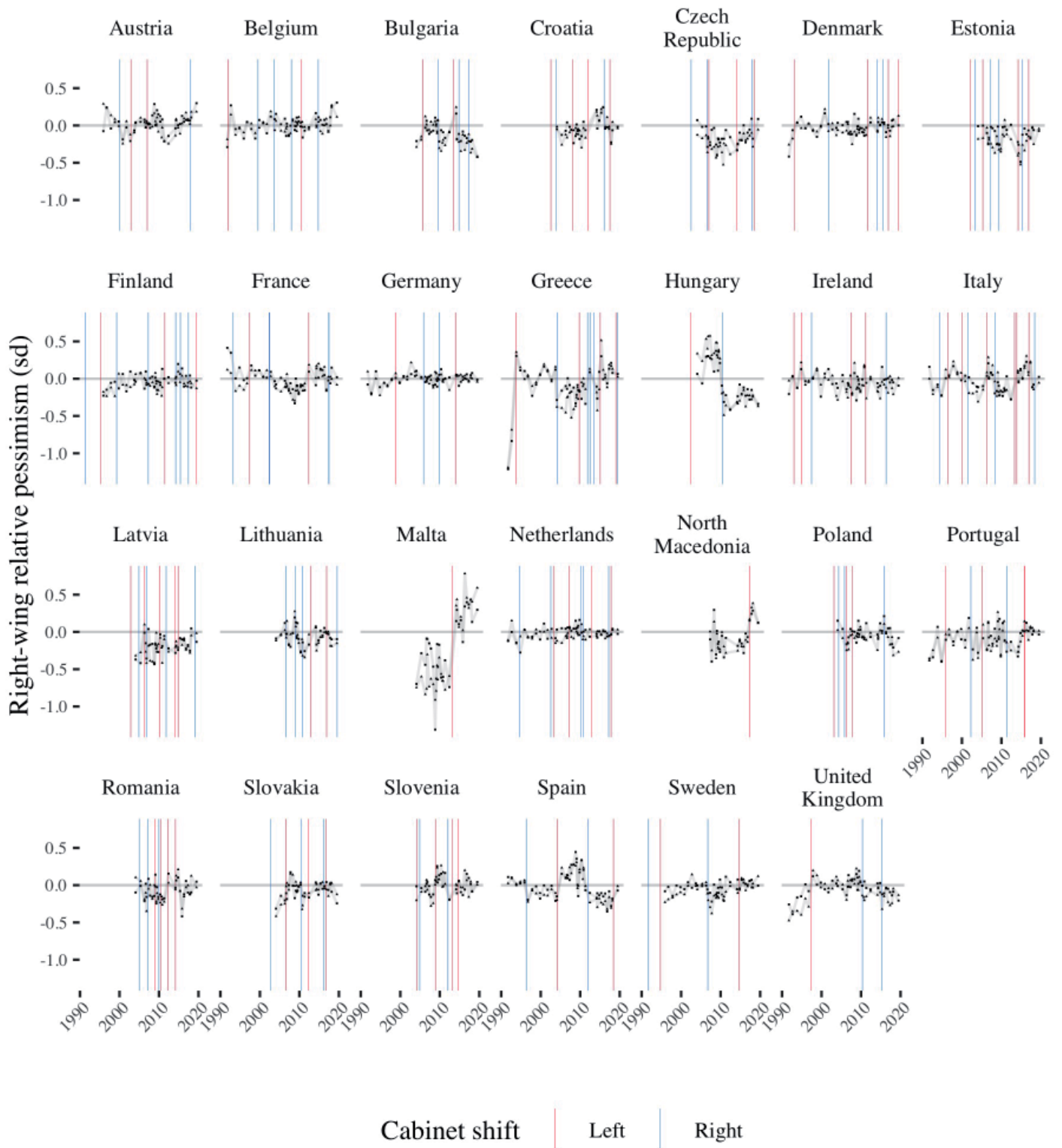


Dots show the conditional distance in standard deviations approximated by the OLS coefficient associated with “Right” (default category is left). Controls include six age intervals, gender, four levels of education, and eighteen dummies accounting for occupation and employment status. Vertical lines depict points where cabinet shifts take place – shown as red if the cabinet shifts to the left, and as blue if it shifts towards the right.



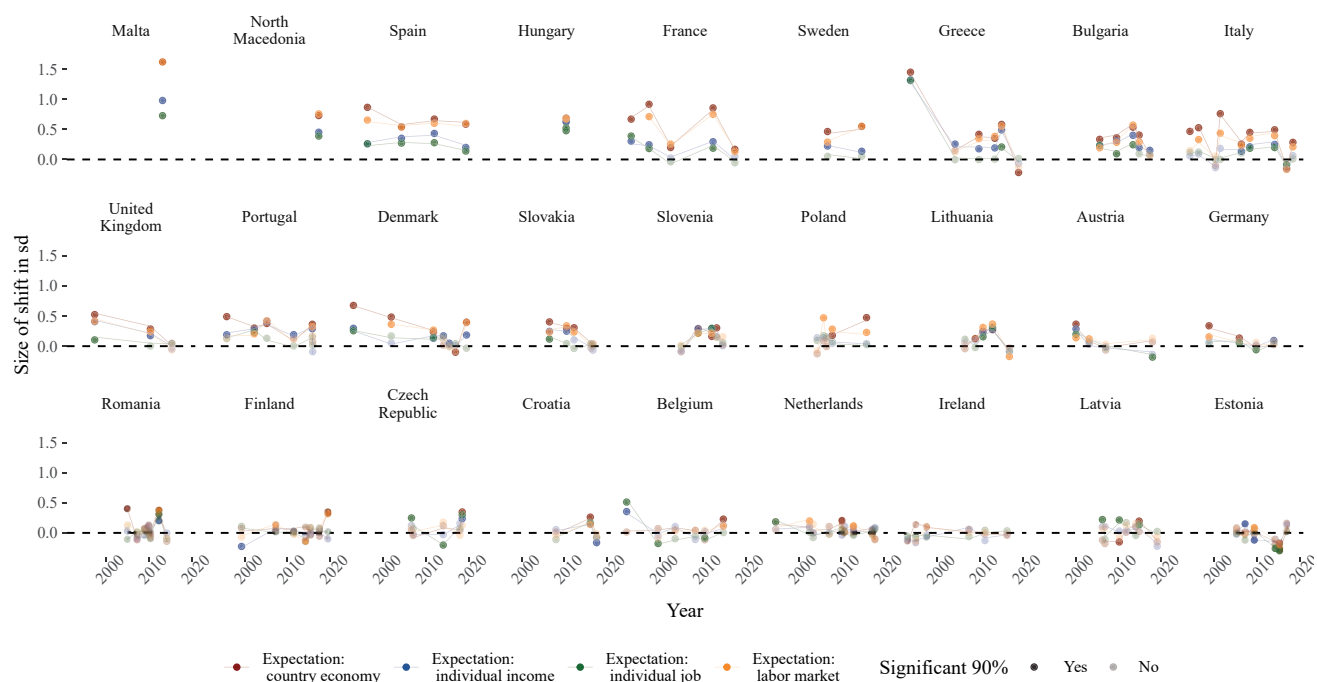
Figure 2: Difference in expectations between left and right (conditional on observables  $X_{it}$ )

### Expectation of individual job and economic situation (+1y)



Dots show the conditional distance in standard deviations approximated by the OLS coefficient associated with “Right” (default category is left). Controls include six age intervals, gender, four levels of education, and eighteen dummies accounting for occupation and employment status. Vertical lines depict points where cabinet shifts take place – shown as red if the cabinet shifts to the left, and as blue if it shifts towards the right.

Figure 3: Estimates of bias



Dots represent the relative change in expectations of associated with each of the 134 cabinet shifts. I results from the OLS estimate of  $\beta_p$  of eq 2 for the observations in a neighborhood of 7 quarters, multiplied by the sign of the cabinet shift. Controls  $X_{it}$  include six age intervals, gender, four levels of education, and eighteen dummies accounting for occupation and employment status.

Two features of cabinet shifts' effects become apparent in figures 1 and 2. Firstly, cabinet shifts coincide with breaks in expectations. The relative pessimism of the right, conditional on observables ( $X_{it}$ ), increases when cabinet become more left-oriented, and viceversa. Secondly, figures 1 and 2 illustrates the problem of identifying partisan bias from a single cross-section. Coefficient changes systematically with cabinets, but these shifts are not symmetrical around zero. This suggests that part of the difference in perceptions between left and right supporters is permanent in certain countries, and not attributable to partisan bias.

The size of partisan bias is quantified in figure 3. It reports the estimate of equation 2 for each of the samples built with observations before and after each cabinet shift. The coefficient estimates is adjusted by the sign of the cabinet shift to make left and right comparable.

The estimates of partisan bias exemplify two patterns. Firstly, figure 3 shows that the substantial variation of bias across countries. The shift in the perception of the country's economy one year ahead ranges from 1.66 standard deviations for Malta, to the essentially null effects of Ireland or the Netherlands in recent times. Secondly, the size of the bias within countries seems to vary much more than within countries. For the case of Spain, the size is of bias for perceptions about the general economy is anchored between 0.8 and 0.62 standard deviations, while for the case of Sweden it ranges between 0.4 and 0.5.

## 4 How partisan bias varies with polarization.

Can the estimates of partisan bias be regarded as an expression of polarization? Partisan bias in expectations was found to vary substantially across countries and contexts. I now turn to investigate

its link with the affective and ideological dimensions of polarization (Q.2), and how the degree of party disagreement (Q.3), and the role of economic conditions (Q.4).

## 4.1 Measurement and identification.

**Measurement of party disagreement.** Party disagreement can manifest itself either in party positions or in their willingness to cooperate in the same government (Fortunato and Stevenson, 2013). For each of the cabinet shifts, I therefore will explore how the size of bias is related to these two dimensions.

- Firstly, I measure the *distance between party positions* based on the shift in left-right axis of the cabinet. This shift is based on the party scores provided by ParlGov (Döring and Manow, 2020), which are in turn based on a large number of expert surveys. The shift on the left-right dimension of the cabinet is obtained as the difference between the average score of its members, weighted by their seats. Therefore, while the party scores are time invariant, this measure captures change in cooperation over time as different parties become part of the same coalition.
- Secondly, I measure *party cooperation* dividing cabinet shifts in three categories that imply increasing levels of cooperation. As the lowest level of cooperation (“*One party*”) I consider the case in which the executive switches between two single party cabinets. Secondly, I consider as “*Coalition*” all those cabinets in which either the incoming or outgoing cabinet is composed by two or more parties. Finally, “*Bipartisan*” cabinets are a subcategory of coalition cabinets in which there is at least one party from the right (with a left-right score above 5), and one from the left (5 or less).

**Identifying the nature of partisan bias: affective or ideological.** Identifying partisan bias in expectations from cabinet shifts may capture two qualitatively different effects. On the one hand, it could be rationalized as the response to an expected shift in economic policy by voters who disagree on the likely effects of economic policy (policy ideology). But it could also reflect a shift in how agents *feel* about the party in office (affective polarization). In line with the previous discussion, I will look at two patterns which can be regarded as evidence of affective polarization.

Firstly, I will look at the effect on other perceptions logically unrelated to future economic policy. If partisan bias affects these perceptions and economic expectations simultaneously, it would evidence its connection with affective polarization. While not available for every single year, there are three categories of items in eurobarometers that fulfill these conditions:

- *Expectations about life in general.* Together with economic expectations, Eurobarometers often ask about whether respondents expect their “life in general” to improve in the year ahead. While these are likely to be correlated to individual economic wellbeing, they should also incorporate aspects unaffected by economic policy. Therefore, the association of party disagreement with this item should be smaller than with economic expectations items.
- *Current economic perceptions.* While the expectations of future economic well-being are contingent on prospective economic policy, the current economic situation should not depend on

policies that have not taken place yet. I therefore rely on two items that ask about the current economic situation of the country economy and the labor market.

- *The current state of the EU economy.* Finally, I will examine partisan bias in the perceptions about the current state of the economy of the EU. For most countries, a shift in the country's cabinet and its policy is unlikely to have any effect of the EU. Therefore, partisan bias in this item can not be rationalized as an effect of policy ideology.

Secondly, I will examine how a shift in the non-economic dimension affects partisan bias in expectations. The ParlGov database provides measures of the placement of parties on the state/market (first dimension) and liberty/authority (second dimension) axes. The former measures positions on economic policy and redistribution, while the latter captures positions on social issues such as social issues or multiculturalism. Separating these two dimensions is *informative*<sup>6</sup> about whether the effect on the cabinet shift is driven by different beliefs about the expected effects of economic policy, or by a generic hostility towards the party in office. Shifts on the first dimension could be rationalized as either a shift in hostility, or in the expected effects of policy. Citizens could have (ideologically driven) beliefs over how a government inclined to rise taxes will affect economic outcomes. Alternatively, they may not have a strong belief about the effect of economic policy, but a sympathy/hostility towards the government that is captured by left-right positions. However, once the first dimension is taken into account, shifts over social issues have a much less clear connection with economic policy, and its effect should primarily go through the affective channel.

**The effect of economic factors.** While we found no clear rising trend in partisan bias, we would like to understand its link with inequality and economic shocks (Q.4). For all the countries I therefore incorporate three variables a) Inequality, measured by GINI,<sup>7</sup> b) the unemployment rate c) whether the country is a period of expansion or contraction (measured by the sign of that year GDP growth).

**A hierarchical bayesian model to aggregate partisan bias information.** We want to measure the link between party disagreement and economic trends and partisan bias observed in eight different items. This task needs to take into account three challenges.

Firstly, the drivers of partisan bias are likely to differ across items. However, we are interested in measuring (a) the common effect across the four expectations' items and (b) how this link varies, compared to the other four items. How then should information be aggregated across items?

Secondly, measurement error compounds the challenge of combining estimates of bias across items. In several cases the estimate of partisan bias was found to be statistically non-significant. However it is unclear whether this was the result of measurement error, or of the absence of an effect, and the information retrieved should take this into account.

---

<sup>6</sup>This argument should be taken with caution. The state-market dimension arguably captures economic policy positions with substantial measurement error, and even controlling for its effect, the liberty-authority measure could reflect differences in economic policy. For example, stances with respect to reconciliation of work and family life or immigration and multiculturalism could be reflected in both dimensions. Two parties with similar state-market positions could therefore stand for very different future immigration (and thus economic) policies.

<sup>7</sup>based on WIID database (Solt, 2009)

Finally, the role of institutions or other country specific unobserved characteristics needs to be taken into account. It is unclear whether parties tend to disagree more in countries with certain characteristics (e.g., institutions or political cleavages), or whether partisan bias is also larger when parties disagree more in the same country.

I address these challenges estimating this link in the frame of a bayesian hierarchical model, which deals with the country and item heterogeneity, as well as measurement error. In a first layer, we want to weight each estimate of  $\beta_P$  based on its precision:

$$\hat{\beta}_{P,cjt} \sim N(\beta_{P,cjt}, \hat{\sigma}_{cjt}) \quad (3)$$

equation 3 models the distribution of the OLS estimated value of partisan bias  $\hat{\beta}_{P,cjt}$ . The estimate for item  $j$  for country  $c$  under cabinet shift  $t$  is distributed around its true value  $\beta_{P,cjt}$  and standard deviation  $\hat{\sigma}_{cjt}$  (derived from the standard error of the OLS).

In a second layer, we want to model the link between the true value of  $\beta_{P,cjt}$ , and the measures of party disagreement:

$$\beta_{P,cjt} \sim N(\alpha_j + \alpha_{jc} + X_{ct}^T \theta_j, \Sigma_{P,cjt}) \quad (4)$$

where the mean of true value of  $\beta_{P,cjt}$  is modeled to depend linearly on our measures of party disagreement and economic factors  $X_{ct}^T$ . Similar to what would happen if this relation was examined separately for each item, we allow this link to be heterogeneous across items. This is captured by the the item specific intercept  $\alpha_j$  and its slope  $\theta_j$ . In addition, in certain specifications we want to account for the effect of  $\theta_j$  within the same country, to capture unobserved heterogeneity. We will therefore include a country-item varying intercept  $\alpha_{jc}$ .

A central challenge to estimate equation 4 and 3 is how to aggregate their information across items. Estimating them separately not only would not allow its aggregation, but the large number of parameters will produce highly uncertain estimates. We therefore add an additional layer:

$$\theta_j \sim N(\theta, \tau) \quad \alpha_j \sim N(\alpha, \xi) \quad (5)$$

$$\alpha_{jc} \sim N(\alpha_j, \sigma_{\alpha,j}) \quad (6)$$

where item specific parameters (mean  $\alpha_j$  and slope  $\theta_j$ ) are modeled as deriving from an cross-item distribution. In the case country-item intercept will be included, they will be distributed around the item specific mean  $\alpha_j$ .

Equation 5 aggregates the information of item specific parameters (its intercept  $\alpha_j$  and its link with covariates  $\theta_j$ ). The model partially pools (Gelman et al., 2013; Stegmüller, 2013) the information across items, based on their relative information weight (i.e., their covariances and precision). In a bayesian framework, this amount to allow the priors of item-specific estimate of  $(\alpha_j, \theta_j)$  to be informed by the estimates of other items. In addition, the common a cross-item “latent” distribution of partisan bias  $(\alpha, \theta)$  can be interpreted as the optimal measure of the “true” bias, given the informational constraint.

Finally, the priors for variances and means are set as weakly diffuse priors for means StudenttT(3, 0, 2.5), and uninformative priors for variances LKJCholesky(1). The model was estimated using the brms R package for the bayesian NUTS algorithm simulated in Stan (Carpenter et al., 2017).

## 4.2 Results

Results can be summarised in three clear defined findings. Firstly, partisan bias is a reflection of polarization because about half of its variance can be predicted by party disagreement, even within the same institutional and economic context (Q.3). Secondly, this link can not be rationalized as a substantive disagreement over economic policy (Q.2). Thirdly, adverse economic conditions amplify the size of bias, but their impact is only quantitatively strong for unemployment (Q.4). I first present some descriptive evidence, and then the results of the hierarchical model.

**Results I. Bivariate evidence on the affective link between party disagreement and partisan bias.** I start providing a first outlook of the association between partisan bias and our two measures of party disagreement for the eight items considered. There are three patterns that become apparent from Figure 4.

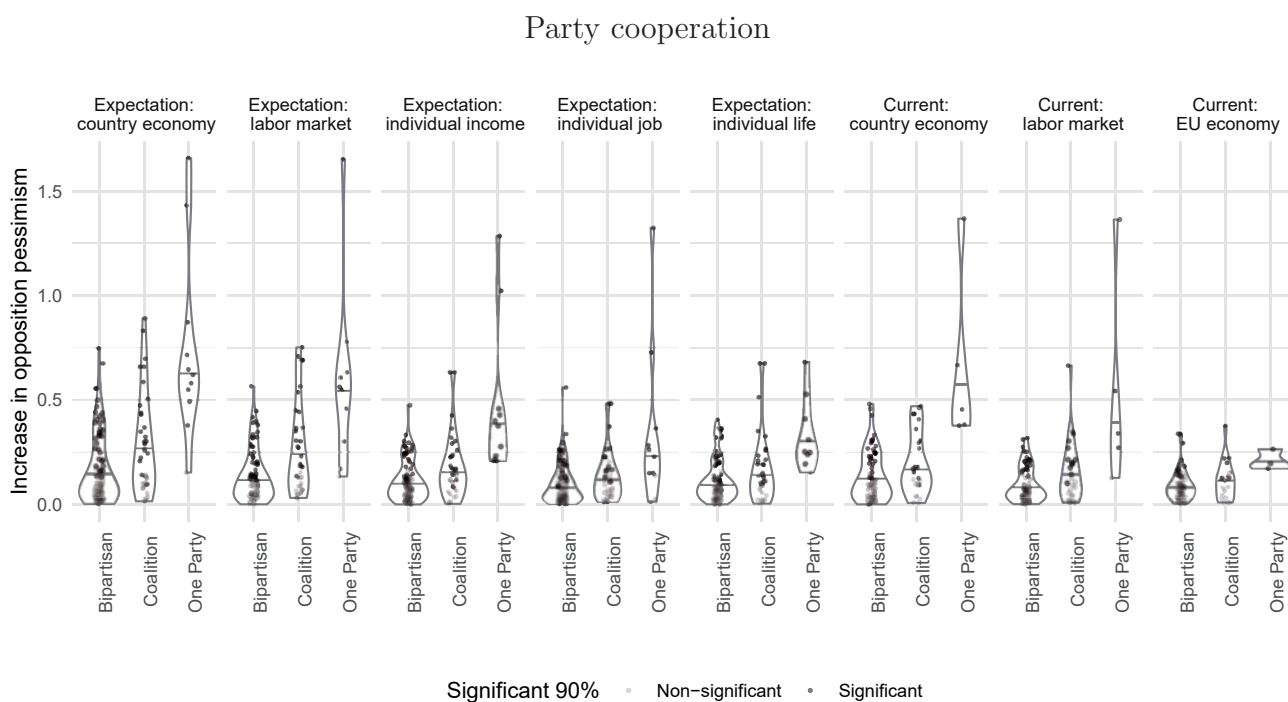
Firstly, the quantitative relevance of partisan bias becomes clear. In many of the contexts uncovered in previous section (figure 3), the size of bias was small or statistically insignificant. However, the bottom panel (figure 4) shows that this reflected cases in which the shift in the political orientation of the cabinet was very small. For cabinet shift of 1.5 points on the left-right scale, most of the effects on expectations' items are statistically significant, and above 0.2 standard deviations. For the five largest economies of the EU, the size of the average cabinet shift was between 1.5 (Germany) and 3.8 (Spain and France). This shows that partisan bias is indeed important, once substantial cabinet shifts are taken into account.

Secondly, the influence of party polarization also becomes strikingly apparent. Although constructed on the basis of scores retrieved from expert surveys, our measure of cabinet distance explains around half of the variance of the partisan bias estimated from mass surveys. Similarly, when the cabinet shifts are compared on the basis of party cooperation (figure 4), the partisan bias derived from One-party transition is significantly larger, while the vast majority of null results are concentrated in bipartisan shifts.

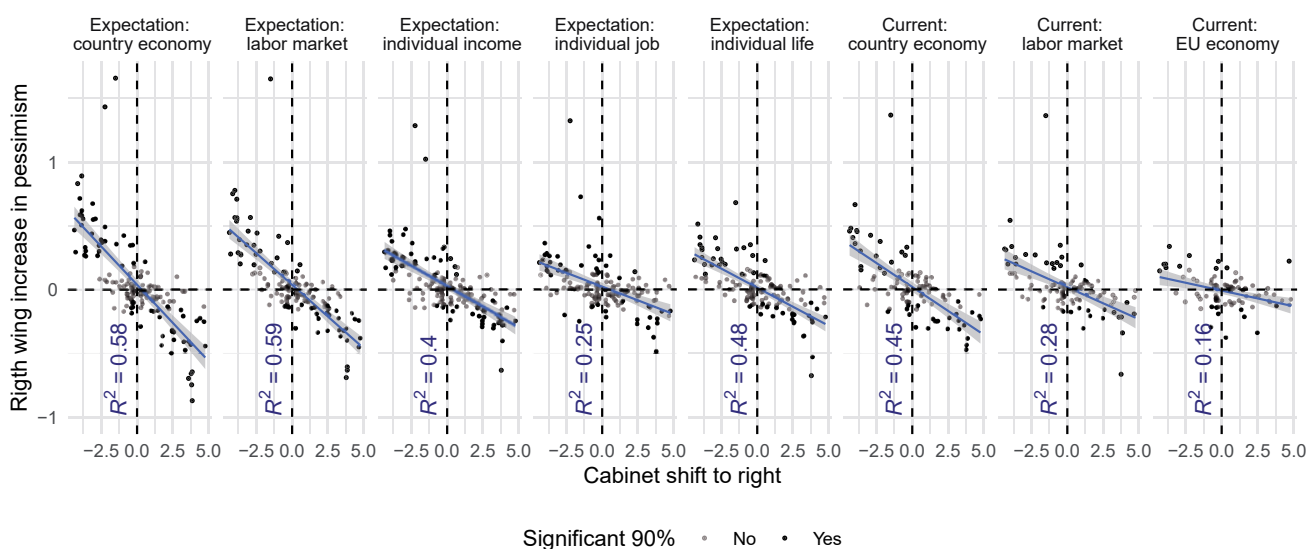
Finally, it suggests that affective polarization is, at least in part, behind this link, and not only policy expectations. Disagreement between politicians is not only associated to partisan bias in the four expectations' items. It also influences perception of the current state of the country's economy and the labor market, and even of the European economy-which is out of the government control. It also suggests that the cabinet shift is reported to have effects on individual well-being that go beyond its effect on economic policy. This is shown by the expectations about "individual life", the association (measured by  $R^2$ ) is larger than for items referred to individual income or labor market expectations.

These findings are suggestive of a strong link between party disagreement and partisan bias. However, their bivariate nature does not allow to fully quantify their influence, which I address in the following section.

Figure 4: Party disagreement and partisan bias



Distance in cabinet's left-right position



Vertical axis depicts the estimates of partisan bias  $\beta_p$  resulting from eq. 2. Statistically significant estimates are shown in darker. Top panel visualizes the density of  $\beta_p$  adjusted by the left-right sign of the based on three types of cabinet shifts: single party to single party; one side coalition or bipartisan coalition. The horizontal line is drawn at the median. Bottom panel shows the linear association between the change in the left (1) right (10) mean cabinet score, and the raw value of the coefficient.

**Results II. Evidence from the hierarchical regression model.** Comparing the estimates of  $\theta_j$  for the above 8 items confirms the above conjectures. I considered four different specifications, each ran with and without country-item random effects ( $\alpha_{cj}$ )- named “CRE” and “Plain”, respectively- to separate within and between country variation. Specification (3) isolates the role of economic factors: GINI (scaled in standard deviations, one sd corresponding to 4.7 GINI points), unemployment rate,

and a dummy for recession. In contrast, specification (1) is the baseline to measure disagreement among politicians. It includes (a) sign-adjusted size of the left-right cabinet shift, (b) a dummy for a coalition cabinet and (c) additional dummy for bipartisan coalitions. Specification (2) shows how these two specifications resist controlling for economic conditions. Finally specification (4) decomposes the two dimensions of State vs. Market and Liberty vs. Authority, to examine the role of ideological and affective considerations. These are summarized in figures 5 and 6.

**Partisan bias and party disagreement.** The estimates confirm that our measures of party disagreement -cooperation within government, and distance between cabinet position- are strongly linked to partisan bias.

The sign of the effect goes in the expected direction. The first four columns of figure 5 illustrate that partisan bias is larger when Left-Right distance between cabinets is as well as with one party shifts, but is reduced with bipartisan coalitions.

The size of the effects are substantial and consistent with the bivariate evidence. Consider the baseline (“(1) Plain”) specification for “*Expectation: labor market*”. A one point cabinet shift on the left-right scale is associated with a shift in expectations of 0.096 standard deviations. For the typical cabinet shift in Germany (1.5 -the median of the sample) this would translate in a shock of 0.144 standard deviations (sd), and for Spain and France (3.8) of 0.36 sd. Results for measures of party cooperation go in the same direction. One-party shifts are associated with 0.2 sd more partisan bias than coalition shifts of the same size. Similarly, when one of the coalition had a bipartisan character, the shift

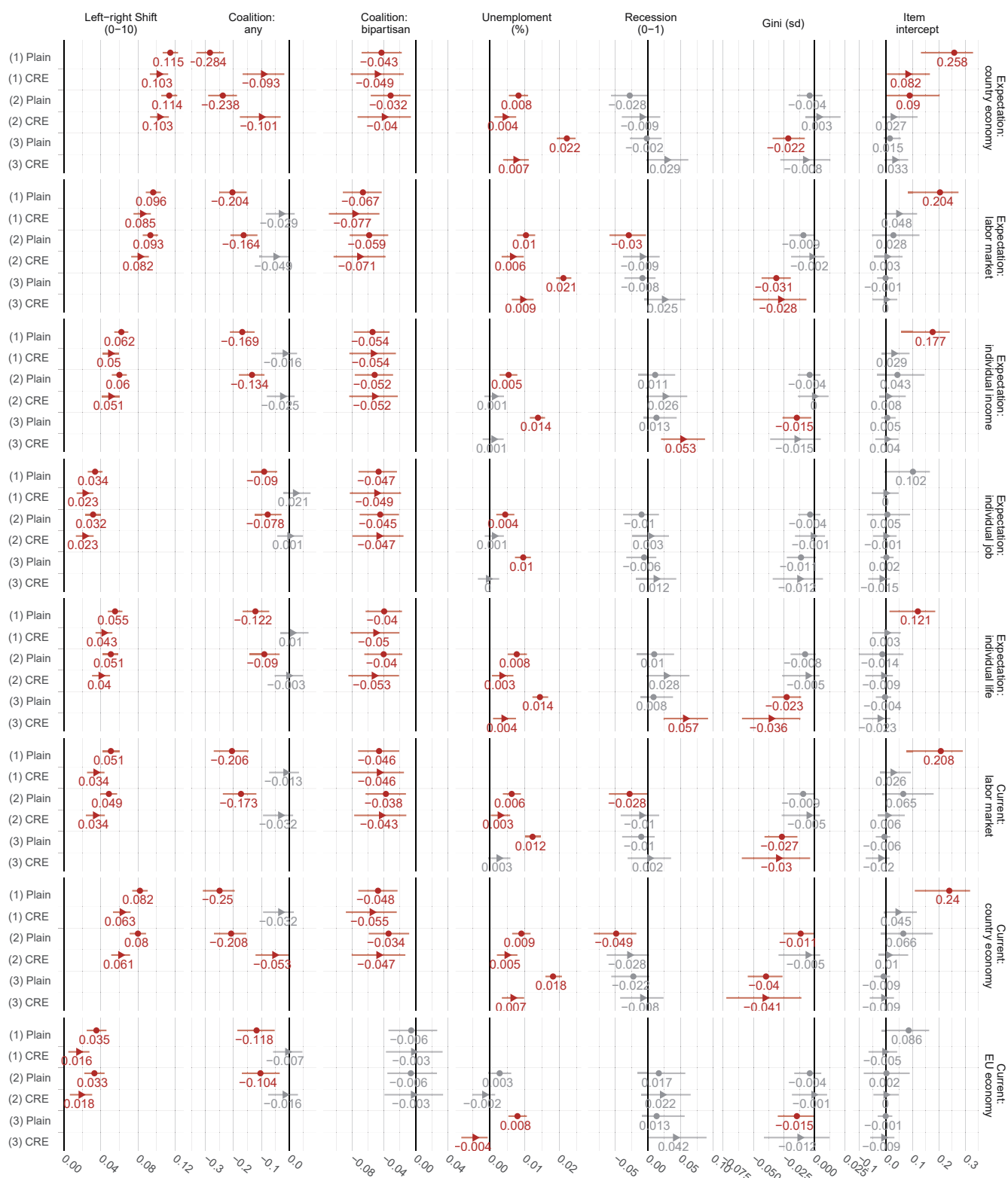
The impact of party disagreement -with one exception- is strikingly robust to the inclusion of economic controls (comparing model (1) to (2) ) and to country effects (*Plain* vs. *CRE*). For “*Expectation: labor market*”, a 1.5 left-right shift would range between 0.144 and 0.123 sd, while the 0.054 reduction of bipartisan shift is only reduce to 0.052. Within the same country higher party disagreement is therefore associated with higher levels of partisan bias which confirms that the bivariate analysis in figure 4 was broadly correct.

The comparison of coalition and one-party shifts suggests that institutions could affect polarization by affecting party cooperation. In the absence of country-item effects, the difference in the partisan bias between one party and coalition shifts is large: 0.2 or 0.164 sd for “*Expectation: labor market*”. When country effects are introduced this difference shrinks by an order of magnitude: the mean of the posterior is of 0.03 sd, and is below 0.01 with a probability of .25. Inspecting the data reveals that all one-party shifts were concentrated in five countries. Of these, Spain, Malta, North Macedonia only experienced one-party shifts, and (as shown in figure 1,2 and 3) were those where the size of bias was largest. With the exception of Portugal in 1997 and United Kingdom in 1995, all other shifts involved at least one coalition cabinet. The small amount of within-country variation prevent in coalition vs. one-party government could be due to country-specific institutional features that affect the constraints of cabinet formation. This interpretation therefore does not downplay the role of party cooperation- it suggests, instead, that institutions are a strong determinant of this cooperation, and could eventually shape the views of the public.

**Ideological disagreement over economic policy vs affective polarization.** The model estimates confirm that partisan bias in expectations’ items is best understood as an effect of

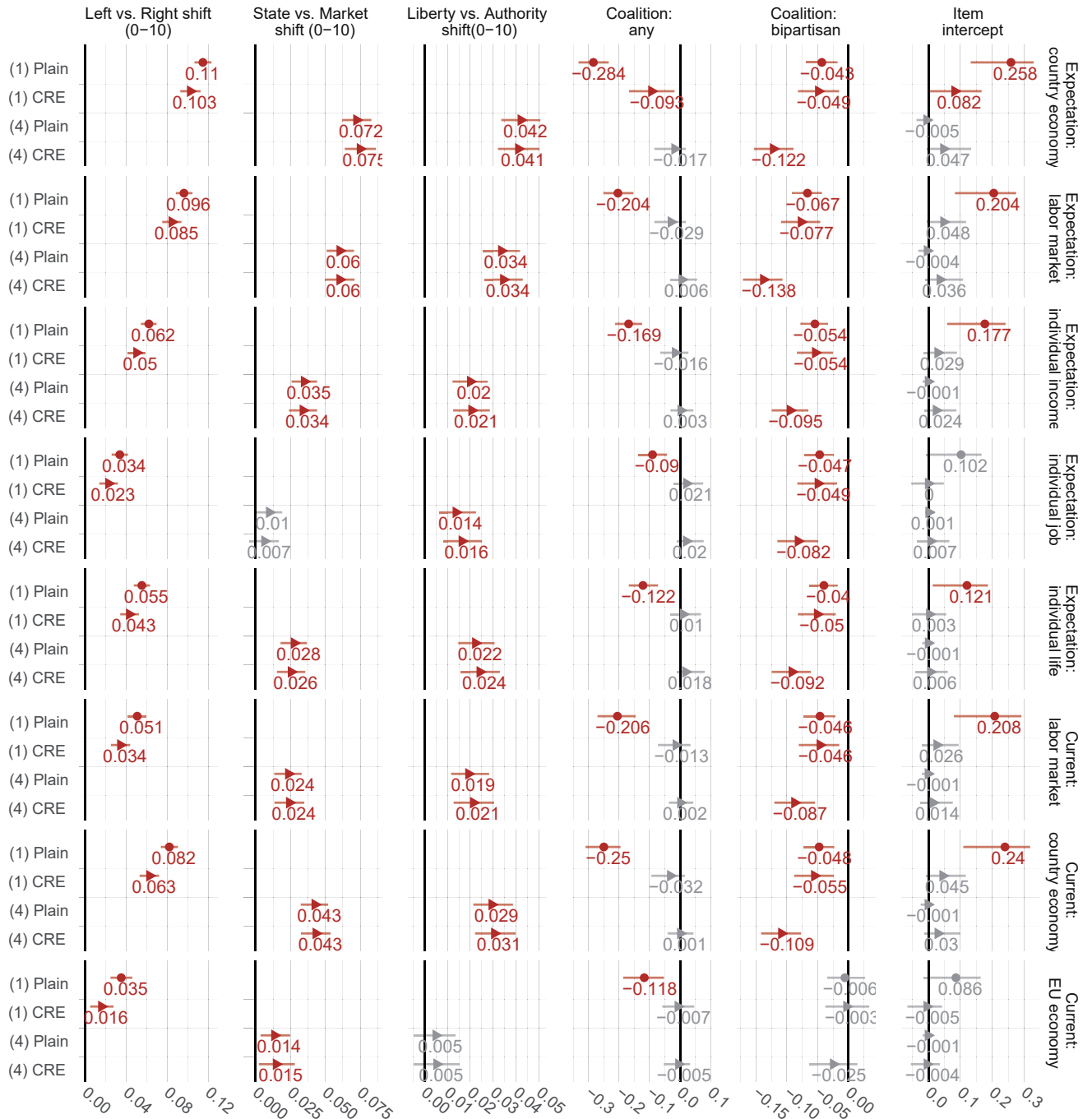


Figure 5: Hierarchical model estimates of  $\theta_j$



Dots show the median of the posterior of  $\theta_j$  along with a 90% credible interval (horizontal line), resulting for each  $j$  item. Three specifications are presented. (1) Includes only the measures of party disagreement: (a) sign-adjusted size of the left-right cabinet shift, (b) a dummy for a coalition cabinet and (c) additional dummy for bipartisan coalitions. (2) Includes in addition the effect of economic factors: GINI (scaled in standard deviations, one sd corresponding to 4.7 GINI points), unemployment rate, and a dummy for recession. (3) Excludes from (2) party disagreement. Each model is run including country random effects  $\alpha_{c_j}$  (“CRE”) and excluding them (“Plain”).

Figure 6: Hierarchical model estimates of  $\theta_j$



Dots show the median of the posterior of  $\theta_j$  along with a 90% credible interval (horizontal line), resulting for each  $j$  item. Two specifications are presented. (1) Includes only the measures of party disagreement: (a) sign-adjusted size of the left-right cabinet shift, (b) a dummy for a coalition cabinet and (c) additional dummy for bipartisan coalitions. (4) Replaces left-right shift by the state-market and the liberty vs authority dimensions. Each model is run including country random effects  $\alpha_{cj}$  (“CRE”) and excluding them (“Plain”).

general hostility between political camps, and not only as a disagreement over the effects of economic policy.

Firstly, partisan bias has an effect on items that are unaffected by future economic policy. Comparing the item “*Expectation: country economy*” and “*Expectation: labor market*” to their “Current”

counterpart reveals that the effect of party cooperation are strikingly similar to what was found for expectations' items for most specifications. Perceptions of the current economy react with to shift in left-right cabinet position with about half of the intensity of the expectations counterpart, but the effect remains quantitatively important. The idea that subjective expectations reflect hostility towards the government is supported by the effect on on perceptions of the EU economy. This effect is quantitatively much smaller, and fades close to zero for measures of party cooperation. Yet, a typical shift of 1.5 points in the left-right scale, would be associated with 0.035-0.016 sd 0.053 to 0.026 sd bias. Finally, the same is revealed comparing expectations of individual economic wellbeing to expectations of life in general: the estimates of  $\theta_j$  the latter are between expectations of individual economic wellbeing (larger) and of individual job situation (smaller).

Secondly, economic expectations are not only affected by shifts in economic policy, but also in other dimensions. This is revealed by figure 6, which shows that for most items, once the effect of the shift on the State vs. Market dimension is controlled for, the impact of the shift in the second dimensions is only slightly smaller. This suggests that partisan bias is partly attributable to the distrust caused by liberal/authoritarian policies, but not by the effect of economic policy.

**The impact of economic factors.** Finally, the estimates provide evidence of the role of adverse economic conditions.

Inequality is associated with larger partisan bias, but this effect is quantitatively minor: one sd of GINI (4.7 points) translates into between 0.01 sd and 0.031 sd of bias in expectations depending on the item and specification. While other measures of inequality were considered, their effect was not found to be any larger.

In contrast, macroeconomic conditions seem to have an larger effect on partisan bias. This is especially the case for unemployment. The specification without country effect shows that each unemployment point is associated with and increase in bias between 0.01 and 0.021 depending on the item. This translates into relatively large effects: a 10% unemployment rate would be associated with a bias between 0.1 and 0.2 sd. This is comparable in size to the effect of a cabinet shift of 1.5 on the left-right scale (the average value for Germany, and in the sample).

The link between partisan bias and unemployment is partly driven by higher polarization in countries with higher unemployment rates. When country-item intercepts are included, the mean effect fades to zero for individual expectations' items, and declines from .02 to 0.07 and 0.09 for expectations about the economy and the labor market. This effect therefore suggests that bad economic periods tend to be associated with higher levels of polarization.

The comparison of specification (2) -including measures of party polarization- and (3) is suggestive of the channel between unemployment and partisan bias. Once measures of partisan polarization are included, the effect of unemployment significantly decreases. Part of the effect of unemployment on partisan bias could be to generate disagreements among politicians -either generating larger left-right shifts, or preventing bipartisan coalitions.

Overall, the analysis of economic factors suggests that, on top of institutions and the party system, the structure of preferences -affected by economic factors- plays a role shaping the hostility towards government. These may not only accentuate partisan among the public, but may also create incentives for political entrepreneurs to disagree.

## 5 Conclusion

This paper asked whether political polarization could affect economic outcomes. Polarization creates systematic disagreements between political camps. Shouldn't these disagreements also affect economic expectations? The answer resulting from the exploration of three decades of economic expectations data in 27 countries was found to be affirmative: political polarization is a source of conflicts that distort subjective expectations, even when this conflict is unrelated to economic issues. This answer was substantiated in four pieces of evidence.

Firstly, cabinet shifts affect the economic expectations of supporters of the left and right in opposite ways. The large changes in the aftermath of elections that were observed can not be rationalized by differences in economic fundamentals, and can be confidently attributed to partisan bias.

Secondly, the size of partisan bias in expectations varied substantially across contexts. Our most major finding was that strength of the correlation between the left-right shift of the cabinet and the size of the bias. Only the distance between cabinet positions on the left-right axis, measured by an independent source of data- i.e., expert assessments- could explain about half of the variance in partisan bias estimated from surveys. Similarly, partisan bias was systematically larger in environments of low cooperation among parties, and especially in the case of one-party cabinets. These findings speak directly to the evidence on the American case documented by Mian et al. (2018), since the US is characterized by one-party government, and by increasing distance in party positions.

Thirdly, we turned to address whether partisan bias in expectations could be rationalized as a form of ideological disagreement about economic policy. We found instead evidence that partisan bias in expectations is, at least in part, an expression of affective polarization and reflects the hostility towards the party in office irrespective of its economic policy positions. This finding has implications for economic outcomes. It suggests that conflicts unrelated to the state of the economy may translate into distrust and dislike towards politicians, and distort economic expectations.

Finally, we asked how global and economic trends are related to partisan bias. In line with other research on affective polarization (Gidron et al., 2020), there is no evidence of a secular rise across countries, but its effects were amplified by economic conditions. While the effects of inequality are neglectable, a 10% unemployment rate is associated with a comparable effect to a 1.5 shift on the left-right scale (the average of the sample). This finding underlines the role of macroeconomic turbulence increasing polarization and thus an obvious interaction between political conditions and slow recoveries (Funke et al., 2016; Mian et al., 2018).

Whether the action of parties fosters polarization is the last, perhaps most important, open question that merits to be researched. I find a strong link between politicians' disagreement and partisan bias. And I also find that cooperation between parties in coalition cabinets are closely associated to country-specific characteristics (i.e., coalitions are very uncommon in certain countries, arguably due to institutional features). If this relationship had a causal nature (i.e., was not driven by electoral incentives only), it would have large policy implications. It would suggest, for instance, that institutional arrangements that promote cooperation (e.g., Martin and Vanberg, 2020, 2011) could affect the economic impact on mass polarization.

## References

- Achen, C. H., and L. M. Bartels (2017). *Democracy for realists: Why elections do not produce responsive government*, Vol. 4, Princeton University Press.
- Alesina, A., and A. Drazen (1991). “Why are Stabilizations Delayed?”, *The American Economic Review*, pp. 1170-1188.
- Alesina, A., A. Miano and S. Stantcheva (2020). “The polarization of reality”, Vol. 110, pp. 324-328.
- Azzimonti, M. (2011). “Barriers to investment in polarized societies”, *American Economic Review*, Vol. 101, No. 5, pp. 2182-2204.
- Azzimonti, M., and M. Talbert (2014). “Polarized business cycles”, *Journal of Monetary Economics*, Vol. 67, pp. 47-61.
- Baldassarri, D., and A. Gelman (2008). “Partisans without constraint: Political polarization and trends in American public opinion”, *American Journal of Sociology*, Vol. 114, No. 2, pp. 408–446.
- Barrios, J. M., and Y. V. Hochberg (2021). “Risk perceptions and politics: Evidence from the covid-19 pandemic”, *Journal of Financial Economics*.
- Bartels, L. M. (2002). “Beyond the running tally: Partisan bias in political perceptions”, *Political behavior*, Vol. 24, No. 2, pp. 117-150.
- Benhabib, J., and M. M. Spiegel (2019). “Sentiments and economic activity: Evidence from US states”, *The Economic Journal*, Vol. 129, No. 618, pp. 715-733.
- Boxell, L., M. Gentzkow and J. M. Shapiro (2020). *Cross-country trends in affective polarization*, Technical Report, National Bureau of Economic Research.
- Bullock, J. G., A. S. Gerber, S. J. Hill and G. A. Huber (2015). “Partisan Bias in Factual Beliefs about Politics”, *Quarterly Journal of Political Science*, Vol. 10, pp. 519-578.
- Bullock, J. G., and G. Lenz (2019). “Partisan bias in surveys”, *Annual Review of Political Science*.
- Carpenter, B., A. Gelman, M. D. Hoffman, D. Lee, B. Goodrich, M. Betancourt, M. Brubaker, J. Guo, P. Li and A. Riddell (2017). “Stan: A probabilistic programming language”, *Journal of statistical software*, Vol. 76, No. 1.
- Coibion, O., Y. Gorodnichenko and R. Kamdar (2018). “The formation of expectations, inflation, and the phillips curve”, *Journal of Economic Literature*, Vol. 56, No. 4, pp. 1447-1491.
- Coibion, O., Y. Gorodnichenko and M. Weber (2020). *Political Polarization and Expected Economic Outcomes*, Technical Report, National Bureau of Economic Research.
- Cookson, J. A., J. E. Engelberg and W. Mullins (2020). “Does Partisanship Shape Investor Beliefs? Evidence from the COVID-19 Pandemic”, *The Review of Asset Pricing Studies*, Vol. 10, No. 4, pp. 863-893.

- D'Acunto, F. (2020). *Tear down this wall street: The effect of anti-market ideology on investment decisions*, Working Paper.
- D'Acunto, F., P. Ghosh and A. G. Rossi (2021). *Political Partisanship and the Transmission of Fiscal Policy*, available at SSRN 3837682.
- Dixit, A. K., and J. W. Weibull (2007). "Political polarization", *Proceedings of the National Academy of sciences*, Vol. 104, No. 18, pp. 7351-7356.
- Döring, H., and P. Manow (2020). "Parliament and government composition database (ParlGov)", *An infrastructure for empirical information on parties, elections and governments in modern democracies. Version*, Vol. 12, No. 10.
- Fernández-Villaverde, J., P. Guerrón-Quintana, K. Kuester and J. Rubio-Ramírez (2015). "Fiscal volatility shocks and economic activity", *American Economic Review*, Vol. 105, No. 11, pp. 3352-3384.
- Fortunato, D., and R. T. Stevenson (2013). "Perceptions of partisan ideologies: The effect of coalition participation", *American Journal of Political Science*, Vol. 57, No. 2, pp. 459-477.
- Funke, M., M. Schularick and C. Trebesch (2016). "Going to extremes: Politics after financial crises, 1870–2014", *European Economic Review*, Vol. 88, pp. 227-260.
- Gelman, A., J. B. Carlin, H. S. Stern, D. B. Dunson, A. Vehtari and D. B. Rubin (2013). *Bayesian data analysis*, CRC press.
- Gerber, A. S., and G. A. Huber (2009). "Partisanship and economic behavior: Do partisan differences in economic forecasts predict real economic behavior?", *American Political Science Review*, pp. 407-426.
- Gerber, A. S., and G. A. Huber (2010). "Partisanship, political control, and economic assessments", *American Journal of Political Science*, Vol. 54, No. 1, pp. 153-173.
- Gidron, N., J. Adams and W. Horne (2020). "American Affective Polarization in Comparative Perspective", *Elements in American Politics*.
- Gillitzer, C, and N. Prasad (2018). "The effect of consumer sentiment on consumption: cross-sectional evidence from elections", *American Economic Journal: Macroeconomics*, Vol. 10, No. 4, pp. 234-269.
- Girardi, D. (2020). "Partisan Shocks and Financial Markets: Evidence from Close National Elections", *American Economic Journal: Applied Economics*, Vol. 12, No. 4, pp. 224-252.
- Grossman, S. J., and J. E. Stiglitz (1980). "On the impossibility of informationally efficient markets", *The American Economic Review*, Vol. 70, No. 3, pp. 393-408.
- Guirola, L. (2020). *Animal spirits in subjective expectations: evidence from a confidence vote*, unpublished manuscript.
- Huberman, G., T. Konitzer, M. Krupenkin, D. Rothschild and S. Hill (2018). "Economic Expectations, Voting, and Economic Decisions around Elections", in *AEA Papers and Proceedings*, Vol. 108, pp. 597-602.

- Iyengar, S., Y. Lelkes, M. Levendusky, N. Malhotra and S. J. Westwood (2019). “The origins and consequences of affective polarization in the United States”, *Annual Review of Political Science*, Vol. 22, pp. 129-146.
- Ke, D. (2020). *Left behind: Presidential cycles and partisan gap in stock market participation*, available at SSRN 3384406.
- Kempf, E., and M. Tsoutsoura (2018). *Partisan professionals: Evidence from credit rating analysts*.
- Kitschelt, H., and P. Rehm (2014). “Occupations as a site of political preference formation”, *Comparative Political Studies*, Vol. 47, No. 12, pp. 1670-1706.
- Layman, G. C., and T. M. Carsey (2002). “Party polarization and ‘conflict extension’ in the American electorate”, *American Journal of Political Science*, pp. 786-802.
- Lewis-Beck, M. S., N. F. Martini and D. R. Kiewiet (2013). “The nature of economic perceptions in mass publics”, *Electoral Studies*, Vol. 32, No. 3, pp. 524-528.
- Martin, L. W., and G. Vanberg (2011). *Parliaments and coalitions: The role of legislative institutions in multiparty governance*, OUP Oxford.
- Martin, L. W., and G. Vanberg (2020). “What You See Is Not Always What You Get: Bargaining before an Audience under Multiparty Government”, *American Political Science Review*, Vol. 114, No. 4, pp. 1138-1154.
- McCarty, N., K. T. Poole and H. Rosenthal (2006). *Polarized America: The Dance of Ideology and Unequal Riches*, MIT Press.
- McGrath, M. (2017). “Economic behavior and the partisan perceptual screen”, *Quarterly Journal of Political Science*, Vol. 11, No. 4, pp. 363-383.
- Meeuwis, M., J. A. Parker, A. Schoar and D. I. Simester (2018). *Belief disagreement and portfolio choice*, Technical Report, National Bureau of Economic Research.
- Mian, A. R., A. Sufi and N. Khoshkhoh (2018). *Partisan bias, economic expectations, and household spending*, Fama-Miller Working Paper.
- Mian, A., A. Sufi and F. Trebbi (2014). “Resolving debt overhang: Political constraints in the aftermath of financial crises”, *American Economic Journal: Microeconomics*, Vol. 6, No. 2, pp. 1-28.
- Piketty, T. (1999). “The information-aggregation approach to political institutions”, *European Economic Review*, Vol. 43, No. 4-6, pp. 791-800.
- Piketty, T. (2020). *Capital and ideology*, Harvard University Press.
- Prior, M., G. Sood and K. Khanna (2015). “You cannot be serious: The impact of accuracy incentives on partisan bias in reports of economic perceptions”, *Quarterly Journal of Political Science*, Vol. 10, No. 4, pp. 489-518.

- Roth, C., and J. Wohlfart (2020). “How do expectations about the macroeconomy affect personal expectations and behavior?”, *Review of Economics and Statistics*, Vol. 102, No. 4, pp. 731-748.
- Skocpol, T., and V. Williamson (2016). *The Tea Party and the remaking of Republican conservatism*, Oxford University Press.
- Solt, F. (2009). “Standardizing the world income inequality database”, *Social Science Quarterly*, Vol. 90, No. 2, pp. 231-242.
- Stegmueller, D. (2013). “How many countries for multilevel modeling? A comparison of frequentist and Bayesian approaches”, *American Journal of Political Science*, Vol. 57, No. 3, pp. 748-761.
- Voorheis, J., N. McCarty and B. Shor (2015). “Unequal incomes, ideology and gridlock: How rising inequality increases political polarization”, *Ideology and Gridlock: How Rising Inequality Increases Political Polarization*, August 21.
- Winkler, H. (2019). “The effect of income inequality on political polarization: Evidence from European regions, 2002–2014”, *Economics & Politics*, Vol. 31, No. 2, pp. 137-162.



## BANCO DE ESPAÑA PUBLICATIONS

### WORKING PAPERS

- 2020 VICTORIA IVASHINA, LUC LAEVEN and ENRIQUE MORAL-BENITO: Loan types and the bank lending channel.
- 2021 SERGIO MAYORDOMO, NICOLA PAVANINI and EMANUELE TARANTINO: The impact of alternative forms of bank consolidation on credit supply and financial stability.
- 2022 ALEX ARMAND, PEDRO CARNEIRO, FEDERICO TAGLIATI and YIMING XIA: Can subsidized employment tackle long-term unemployment? Experimental evidence from North Macedonia.
- 2023 JACOPO TIMINI and FRANCESCA VIANI: A highway across the Atlantic? Trade and welfare effects of the EU-Mercosur agreement.
- 2024 CORINNA GHIRELLI, JAVIER J. PÉREZ and ALBERTO URTASUN: Economic policy uncertainty in Latin America: measurement using Spanish newspapers and economic spillovers.
- 2025 MAR DELGADO-TÉLLEZ, ESTHER GORDO, IVÁN KATARYNIUK and JAVIER J. PÉREZ: The decline in public investment: “social dominance” or too-rigid fiscal rules?
- 2026 ELVIRA PRADES-ILLANES and PATROCINIO TELLO-CASAS: Spanish regions in Global Value Chains: How important? How different?
- 2027 PABLO AGUILAR, CORINNA GHIRELLI, MATÍAS PACCE and ALBERTO URTASUN: Can news help measure economic sentiment? An application in COVID-19 times.
- 2028 EDUARDO GUTIÉRREZ, ENRIQUE MORAL-BENITO, DANIEL OTO-PERALÍAS and ROBERTO RAMOS: The spatial distribution of population in Spain: an anomaly in European perspective.
- 2029 PABLO BURRIEL, CRISTINA CHECHERITA-WESTPHAL, PASCAL JACQUINOT, MATTHIAS SCHÖN and NIKOLAI STÄHLER: Economic consequences of high public debt: evidence from three large scale DSGE models.
- 2030 BEATRIZ GONZÁLEZ: Macroeconomics, Firm Dynamics and IPOs.
- 2031 BRINDUSA ANGHEL, NÚRIA RODRÍGUEZ-PLANAS and ANNA SANZ-DE-GALDEANO: Gender Equality and the Math Gender Gap.
- 2032 ANDRÉS ALONSO and JOSÉ MANUEL CARBÓ: Machine learning in credit risk: measuring the dilemma between prediction and supervisory cost.
- 2033 PILAR GARCÍA-PEREA, AITOR LACUESTA and PAU ROLDAN-BLANCO: Raising Markups to Survive: Small Spanish Firms during the Great Recession.
- 2034 MÁXIMO CAMACHO, MATÍAS PACCE and GABRIEL PÉREZ-QUIRÓS: Spillover Effects in International Business Cycles.
- 2035 ÁNGEL IVÁN MORENO and TERESA CAMINERO: Application of text mining to the analysis of climate-related disclosures.
- 2036 EFFROSINI ADAMOPOULOU and ERNESTO VILLANUEVA: Wage determination and the bite of collective contracts in Italy and Spain: evidence from the metal working industry.
- 2037 MIKEL BEDAYO, GABRIEL JIMÉNEZ, JOSÉ-LUIS PEYDRÓ and RAQUEL VEGAS: Screening and Loan Origination Time: Lending Standards, Loan Defaults and Bank Failures.
- 2038 BRINDUSA ANGHEL, PILAR CUADRADO and FEDERICO TAGLIATI: Why cognitive test scores of Spanish adults are so low? The role of schooling and socioeconomic background
- 2039 CHRISTOPH ALBERT, ANDREA CAGGESE and BEATRIZ GONZÁLEZ: The Short- and Long-run Employment Impact of COVID-19 through the Effects of Real and Financial Shocks on New Firms.
- 2040 GABRIEL JIMÉNEZ, DAVID MARTÍNEZ-MIERA and JOSÉ-LUIS PEYDRÓ: Who Truly Bears (Bank) Taxes? Evidence from Only Shifting Statutory Incidence.
- 2041 FELIX HOLUB, LAURA HOSPIDO and ULRICH J. WAGNER: Urban air pollution and sick leaves: evidence from social security data.
- 2042 NÉLIDA DÍAZ SOBRINO, CORINNA GHIRELLI, SAMUEL HURTADO, JAVIER J. PÉREZ and ALBERTO URTASUN: The narrative about the economy as a shadow forecast: an analysis using Banco de España quarterly reports.
- 2043 NEZIH GUNER, JAVIER LÓPEZ-SEGOVIA and ROBERTO RAMOS: Reforming the individual income tax in Spain.
- 2101 DARÍO SERRANO-PUENTE: Optimal progressivity of personal income tax: a general equilibrium evaluation for Spain.
- 2102 SANDRA GARCÍA-URIBE, HANNES MUELLER and CARLOS SANZ: Economic uncertainty and divisive politics: evidence from the *Dos Españas*.
- 2103 IVÁN KATARYNIUK, VÍCTOR MORA-BAJÉN and JAVIER J. PÉREZ: EMU deepening and sovereign debt spreads: using political space to achieve policy space.
- 2104 DARÍO SERRANO-PUENTE: Are we moving towards an energy-efficient low-carbon economy? An input-output LMDI decomposition of CO<sub>2</sub> emissions for Spain and the EU28.

- 2105 ANDRÉS ALONSO and JOSÉ MANUEL CARBÓ: Understanding the performance of machine learning models to predict credit default: a novel approach for supervisory evaluation.
- 2106 JAVIER ANDRÉS, ÓSCAR ARCE and PABLO BURRIEL: Market polarization and the Phillips curve.
- 2107 JUAN de LUCIO and JUAN S. MORA-SANGUINETTI: New dimensions of regulatory complexity and their economic cost. An analysis using text mining.
- 2108 DANILLO LEIVA-LEON and LUIS UZEDA: Endogenous time variation in vector autoregressions.
- 2109 CORINNA GHIRELLI, ANDREA GONZÁLEZ, JOSÉ LUIS HERRERA and SAMUEL HURTADO: Weather, mobility and the evolution of the Covid-19 pandemic.
- 2110 KLODIANA ISTREFI, FLORENS ODENDAHL and GIULIA SESTIERI: Fed communication on financial stability concerns and monetary policy decisions: revelations from speeches.
- 2111 YUNUS AKSOY, HENRIQUE S. BASSO and CAROLYN ST AUBYN: Time Variation in Lifecycle Consumption and Income.
- 2112 JENNIFER PEÑA and ELVIRA PRADES: Price setting in Chile: micro evidence from consumer on-line prices during the social outbreak and Covid-19.
- 2113 NEZIH GUNER, YULIYA A. KULIKOVA and ARNAU VALLADARES-ESTEBAN: Does the added worker effect matter?
- 2114 RODOLFO G. CAMPOS and JACOPO TIMINI: Unequal trade, unequal gains: the heterogeneous impact of MERCOSUR.
- 2115 JAVIER QUINTANA: Import competition, regional divergence, and the rise of the skilled city.
- 2116 PATRICK MACNAMARA, MYROSLAV PIDKUYKO and RAFFAELE ROSSI: Marginal Tax Changes with Risky Investment.
- 2117 RODOLFO G. CAMPOS, JACOPO TIMINI and ELENA VIDAL: Structural gravity and trade agreements: does the measurement of domestic trade matter?
- 2118 ALESSANDRO MELCARNE, JUAN S. MORA-SANGUINETTI and ROK SPRUK: Democracy, technocracy and economic growth: evidence from 20 century Spain.
- 2119 ÁNGEL ESTRADA and DANIEL SANTABÁRBARA: Recycling carbon tax revenues in Spain. Environmental and economic assessment of selected green reforms.
- 2120 ALEJANDRO FERNÁNDEZ-CEREZO, BEATRIZ GONZÁLEZ, MARIO IZQUIERDO and ENRIQUE MORAL-BENITO: Firm-level heterogeneity in the impact of the COVID-19 pandemic.
- 2121 EDUARDO GUTIÉRREZ and CÉSAR MARTÍN MACHUCA: The effect of tariffs on Spanish goods exports.
- 2122 JACOPO TIMINI: Revisiting the 'Cobden-Chevalier network' trade and welfare effects.
- 2123 ALEJANDRO BUESA, JAVIER J. PÉREZ and DANIEL SANTABÁRBARA: Awareness of pandemics and the impact of COVID-19.
- 2124 ALICIA AGUILAR and DIEGO TORRES: The impact of COVID-19 on analysts' sentiment about the banking sector.
- 2125 SILVIA ALBRIZIO, IVÁN KATARYNIUK, LUIS MOLINA and JAN SCHÄFER: ECB euro liquidity lines.
- 2126 ANTHONY BALD, ERIC CHYN, JUSTINE HASTINGS and MARGARITA MACHELETT: The causal impact of removing children from abusive and neglectful homes.
- 2127 IRMA ALONSO, PEDRO SERRANO and ANTONI VAELO-SEBASTIÀ: The impact of heterogeneous unconventional monetary policies on the expectations of market crashes.
- 2128 MARÍA T. GONZÁLEZ-PÉREZ: Lessons from estimating the average option-implied volatility term structure for the Spanish banking sector.
- 2129 SIMÓN A. RELLA, YULIYA A. KULIKOVA, EMMANOUIL T. DERMITZAKIS and FYODOR A. KONDRASHOV: Rates of SARS-COV-2 transmission and vaccination impact the fate of vaccine-resistant strains.
- 2130 MATÍAS LAMAS and DAVID MARTÍNEZ-MIERA: Sectorial holdings and stock prices: the household-bank nexus.
- 2131 ALBERT BANAL-ESTAÑOL, ENRIQUE BENITO, DMITRY KHAMETSHIN and JIANXING WEI: Asset encumbrance and bank risk: theory and first evidence from public disclosures in Europe.
- 2132 ISABEL ARGIMÓN and MARÍA RODRÍGUEZ-MORENO: Business complexity and geographic expansion in banking.
- 2133 LUIS GUIROLA: Does political polarization affect economic expectations?: Evidence from three decades of cabinet shifts in Europe.