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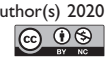

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Trust spillovers among national and European institutions

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Abstract
In this article, we study spillovers in political trust between the national parliaments of 15 Member States and the European Commission, the European Parliament and the European Central Bank in the period 2000–2015. We show that in most instances spillovers between the national parliaments and the European Commission and the European Parliament are bidirectional, asymmetric, and change over time and place. A corollary of these findings is that simultaneously achieving high level of trust in institutions at different levels of governance may require a deeper understanding of the complex inter-institutional relationships that exist in the EU multilevel governance setting.

Keywords
Commission, European Parliament, institutional trust, trust spillovers

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Introduction

In the European Union (EU), supranational and subnational institutions complement the governance structure of national political systems (Hooghe and Marks, 2003; Marks and Hooghe, 2000). In this multilevel governance system, changes in public trust in institutions at one level of governance influence public trust in institutions at other levels. Therefore, many scholars have investigated how changes in citizens' attitudes towards institutions placed at one level spill onto institutions at other levels (Anderson, 1998; Kritzinger, 2003; Sánchez-Cuenca, 2000; Torcal and Christmann, 2018).

In this article, we contribute to this literature in two ways. First, we propose a taxonomy of the possible kinds of interactions among institutions. We say that two institutions are *interacting* when there are trust spillovers among them. We say that the *kind* of interaction between two institutions is defined in terms of the *direction* (i.e. unilateral or bilateral) and the *sign* (i.e. positive or negative) of the spillovers between these institutions. This taxonomy reveals eight different types of possible interactions. In contrast, the existing literature has focused almost exclusively on only two of these interactions, in particular those described by congruence theory (Anderson, 1998; Torcal and Christmann, 2018) and compensation theory (Kritzinger, 2003; Sánchez-Cuenca, 2000). In our taxonomy, we label these two theories 'unilateral congruence' and 'unilateral compensation', respectively.

After having developed our taxonomy, we employ a model of differential equations that allows us to determine which of the eight kinds of interactions emerge among the national parliaments (NPs) of 15 Member States[1] and three key European institutions: the European Commission (EC), the European Parliament (EP) and the European Central Bank (ECB). This analysis shows that in *all countries* there is a clear predominance of asymmetric interactions, a kind of interaction that has been overlooked by the literature.

Asymmetric interactions present two features. First, the spillovers are bidirectional. That is, changes in trust level in NPs affect trust in EU institutions and changes in trust level in EU institutions affect trust in NPs. Second, an increase/decrease in the trust in the national institution influences trust levels in EU institutions in one direction (e.g. positive), whereas an increase/decrease in the trust in EU institutions influences trust in the NP in the opposite direction (e.g. negative). For instance, our results show the existence of an asymmetric interaction between the Danish NP and the EP after the year 2012. In this case, an increase in the trust in the NP would generate a *positive* spillover onto the EP. Vice versa, an increase in the trust in the EP would generate a *negative* spillover onto the NP. This result entails that the two dominant theories of trust spillovers between national and EU institutions, i.e. congruence theory and compensation theory, are an oversimplification of reality.

In line with recent literature (Torcal and Christmann, 2018), our analysis confirms that the way in which institutions interact changes over time. These results

highlight the need to employ dynamic models to study trust spillovers between institutions at different levels of governance within the EU.

The analysis is performed at the country level. Therefore, we write a separate code for each of the 15 countries. For this reason, the fact that we observe similar patterns across all the countries considered is remarkable, and suggests that there might be some fundamental rules determining how national and EU institutions interact. Uncovering these rules would be an important step to improve our understanding of the multi-institutional European architecture.

Literature review

At the most general level, the literature on political trust spillovers can be divided in two strands. One strand focuses on spillover effects from national institutions to the EU as a whole (Armingeon and Guthmann, 2014; Harteveld et al., 2013; Hobolt and Wittrock, 2011). The other strand focuses on interactions between specific institutions at the two levels of governance (Ares et al., 2017; Arnold et al., 2012; Munoz et al., 2011). Our study is connected with the second strand of research. In particular, building on Norris (2017), we look at spillovers in institutional trust as a component of political support.[2] In doing so, we are interested in identifying the existing kinds of *interactions* among four key institutions: the NPs of 15 Member States, the EU, the EP, and the ECB.

For the purpose of this article, there is an interaction between two institutions when there are trust spillovers between them. When there are no spillovers in terms of trust between two institutions, we say that the institutions are not interacting. The kind of interaction among institutions is defined in terms of the *sign* (positive or negative) and the *direction* (unilateral or bilateral) of these spillovers. Building on the language of congruence and compensation theory, Figure 1 provides a taxonomy of the possible interactions occurring between institutions.

Earlier studies on political trust interactions investigated spillovers from the national level to the European level, and therefore refer only to the quadrants 'unilateral compensation' and 'unilateral congruence'. A first group of scholars advanced the so-called congruence theory (Anderson, 1998; Hobolt and Wittrock, 2011; Rohrschneider, 2002; Torcal and Christmann, 2018). According to this theory, citizens assess the performance of EU institutions based on the perceived performance of national institutions. Two mechanisms explain this phenomenon. First, citizens have limited direct information on EU institutions, and therefore they take cues from national institutions to assess the quality of EU institutions (Anderson, 1998). This research builds on cue theory (Sniderman et al., 1993), which posits that individuals use heuristics to form opinions when lacking information (Zaller, 1992). Second, national institutions participate into the EU ones and thus can shape their functioning (Anderson, 1998). An example of this is the Council of the EU, where its (different) configurations—made up of the government ministries of each EU member state—play an important role for the EU policy-making process. In this vein, this literature posits that

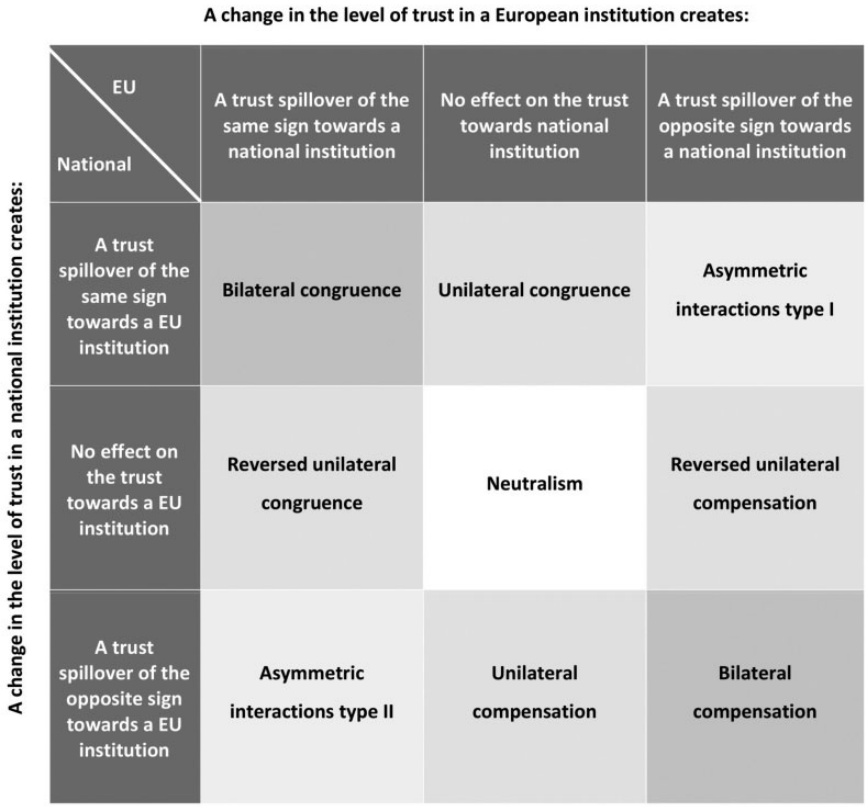

Figure 1. Taxonomy of the possible forms of interactions among institutions.

an increase in the levels of trust in, and support for, national institutions generates a positive spillover in terms of trust in, and support for, European institutions.

In our framework, this theory is defined as 'unilateral congruence.' Changes in the trust in national institutions generate a spillover of the same sign toward European institutions (congruence). At the same time, the spillovers only go from the national to the European level (unilateral).

Other scholars, instead, formulated the compensation theory (Kritzinger, 2003; Sánchez-Cuenca, 2000). According to this theory, citizens use national institutions as a benchmark against which they compare the performance of EU institutions. On the one hand, if citizens perceive national institutions as performing negatively, transferring sovereignty from the national level to the EU presents a lower risk (Sánchez-Cuenca, 2000). On the other hand, a positive evaluation of the EU can be seen as a reaction for discontent against domestic institutions (Kritzinger, 2003). Therefore, according to compensation theory, a change in the trust in the national

level produces a spillover of the opposite sign toward the EU institution (compensation). Since spillovers only go from the national to the European level, this interaction is unilateral. Thus, we include this theory in the quadrant 'unilateral compensation'.

Recent research challenges the idea that spillovers only go from the national level to the European level. For instance, Mair (2013) argues that the EP often fails to create enthusiasm and commitment in the electorate, producing a negative effect also on trust for national institutions. Similarly, Chiru and Gherina (2012) show that there can be positive spillovers from the European to the national level when the EU is associated with the idea of democratization and marketization. Therefore, these works argue that changes in the trust in EU institutions produce spillovers of the same sign onto national institutions (congruence). However, while these works debunk the idea that spillovers run only from the national to the European level, they do not discuss the specific types of bilateral spillovers that can emerge between institutions located at different governance levels. Similarly to the studies that focused on 'unilateral compensation' and 'unilateral congruence', they only look at spillovers from one level to another.[3]

On the contrary, our taxonomy shows that once the possibility of spillovers from EU institution to national institution is acknowledged, different kinds of bidirectional interactions between the two levels of governance can emerge. In particular, bilateral interactions can be either symmetric ('bilateral congruence' and 'bilateral compensation') or asymmetric (of type I and type II).

An interaction is symmetric when changes in the trust in the national institution produce a spillover of the same sign as the spillover produced by changes in the trust in the EU institution towards the national institution. For instance, according to our results, between 2008 and 2012 the Belgian national parliament and the EP enter in a relationship of bilateral compensation. Here, an increase in the trust in the Belgian NP would produce a negative spillover onto the EP *and* an increase in the trust in the EP would produce a negative spillover onto the NP.

Another form of bilateral symmetric interaction is bilateral congruence. For instance, between 2003 and 2006 the Belgian national parliament and the EP engaged in this form of relationship. In this vein, an increase in the trust in the NP would increase the trust in the EP *and* an increase in the trust in the EP would increase the trust in the NP. Therefore, the two forms of interactions are symmetric because the effect of a change in the trust in national institutions on EU institutions is the same—in terms of sign—as that of a change in the trust in EU institutions on national institutions.

On the contrary, there is an asymmetric interaction when a change in the trust in the national institution influences the trust in the EU in one direction (e.g. positive), whereas a change in the trust in the EU influences the trust in the national institution in the other direction (e.g. negative).

We distinguish two types of asymmetric interactions, type I and type II. In a type I asymmetric interaction, growing trust in a national institution increases the trust in the European institution, whereas an increase in the trust in the European

institution *decreases* the trust in the national institution. In a type II asymmetric interaction, an increase in the trust in a national institution decreases the trust in the European institution, whereas an increase in the trust in the European institution increases the trust in the national institution. Thus, when the interaction is asymmetric changes in the trust in the European institution and in the national institution have an opposite impact on the institution at the other level of governance.

Notice that identifying the type of asymmetric interaction (i.e. type I or type II) that occurs at a given moment can be valuable for European and national institutions. For example, the EC would benefit from an increase in trust in the national institution only in a type I asymmetric interaction.

Data and methods

Method

This article differs substantially from the majority of empirical research on trust and political support, insofar it does not use statistical methods to analyze trust. Rather, we adopt a deterministic model based on differential equations. A brief formal description of the model can be found in the Online appendix, whereas the full description and the mathematical proofs underlying the model can be found in Marasco et al. (2016). The model was originally developed to study the interactions among firms (Marasco et al., 2016), and was later applied to investigate the most disparate contexts like inter-generational conflict (Marasco and Romano, 2018), the interaction among renewable energy sources and oil prices (Dominioni et al., 2019) and the dynamics of racial groups in the US society (Dominioni et al., 2018).

The main purpose of this model is the study of how entities interact to allocate a scarce resource in an established niche. In this particular case, the model studies how institutions interact in terms of trust. The term interaction has to be read according to the definition given in this study, namely that two institutions are interacting when there are trust spillovers between them. This broad definition explains the flexibility of the model, and why it can be applied in such a wide range of contexts. It is clear that a change in the strategy of a firm has an effect (a spillover) on the competitive position of the other firms in the same market. Similarly, as extensively shown by the literature (Anderson, 1998; Armingeon and Guthmann, 2014; Hooghe and Marks, 2005; McLaren, 2002), a change in the trust for an institution influences the trust for other institutions. Therefore, this model allows us to identify the kind of trust interaction (i.e. the sign and the direction of trust spillovers) among institutions.

In this framework, the sign of the spillovers is represented by the so-called *interaction coefficients*. The interaction coefficient captures how a change in the inner strength (in this context, trust) of an entity (institution) affects the inner strength of another entity. The sign of the interaction coefficient then determines the sign of the spillovers (see Table 1).

This model has a number of properties that make it an ideal complement to statistical studies, especially for the study of trust spillovers in a complex, dynamic, and multilayered institutional landscape. First, it allows us to capture any possible kind of interaction (Table 1), i.e. any possible combination of spillovers. Second, the interaction coefficients of the model are dependent on time, and therefore we can identify how the interaction evolves over time. This is an important property since trust spillovers depend on the context (Torcal and Christmann, 2018), and hence might change over time. Third, this model allows us to describe the simultaneous interactions among an arbitrarily great number of entities. In other words, we do not have to isolate a dyad of institutions to identify whether their trust correlates positively or negatively. Instead, we can study a framework in which n institutions interact simultaneously, influencing each other. This is especially relevant in the EU multilevel governance where a high number of national and supranational institutions are constantly interacting (Hooghe and Marks, 2003; Marks and Hooghe, 2000). Fourth, since the solutions of the model are known, we do not have to rely on expensive numerical methods as genetic algorithms to estimate the model parameters but we can derive the kind of interaction among institutions from very limited data. Thanks to this property, we can study aggregate dynamics at a country level.

To be sure, it is possible to devise statistical studies that present some of the features of our model. For example, it is certainly possible to perform a statistical analysis that identifies how the sign of the spillovers between two institutions changes over time. However, it would be complicated to perform a statistical analysis that simultaneously presents the four features described above. Indeed, to the best of our knowledge, in the existing literature, there is no statistical study that presents all these features.

Table 1. Correspondence table between possible interactions and the interactions in congruence and compensation theories (and neutralism).

Congruence and compensation framework	Kind of interaction in Lotka Volterra literature	Sign of the interaction coefficients
Bilateral compensation	Competition	+ and +
Asymmetric interaction type I	Predator–Prey	+ and –
Asymmetric interaction type II		
Bilateral congruence	Mutualism	– and –
Unilateral congruence	Commensalism	– and 0
Reversed unilateral congruence		
Unilateral compensation	Amensalism	+ and 0
Reversed unilateral compensation		
Neutralism	Neutralism	0 and 0

Data

We use data from 31 Eurobarometer (EB) surveys[4] pertaining to the years 2000–2015 for the 15 countries that were members of the European Community in 2000.[5] We perform the analysis at the country level, and hence we take national averages for each survey. Our data point is the percentage of individuals in a Member State that declared to tend to trust an institution. Thus, we have 31 observations for each institution per Member State.

This dataset is rather small when compared to the dataset used in most statistical analyses performed on the same topic. However, there are two factors justifying our choice. First, the goal of this study is not to make causal inferences, but to identify the nature of interactions. In mathematical terms this translates into fitting observational data with a function. Second, the analytic solution of the model presented is known, and therefore we do not have to estimate the parameters of the model (see Marasco et al., 2016 for a formal proof). Instead, we can directly identify the function that provides the best fit to the data (Marasco et al., 2016). In short, the kind of question asked and the kind of mathematical model adopted justify the use of a relatively small dataset.[6]

Previous research conceptualized trust at the individual level, whereas we study aggregate levels of trust. By using aggregate data we can obtain comparable data for many countries covering a significant time horizon. This allows us to exploit the features of our model to uncover macro-trends.

For each country we collect data on trust relative to the EC, the EP, the ECB, and the NPs. For the three European institutions, the data refer to the question 'And, for each of them, please tell me if you tend to trust it or tend not to trust it?', which is answered in a multiple choice format (Tend to trust; Tend not to trust; Don't know). Trust in the NP is measured on the basis of the following question: 'I would like to ask you a question about how much trust you have in certain institutions. For each of the following institutions, please tell me if you tend to trust it or tend not to trust it?'. Also in this case, the answer is provided on a trinary basis (Tend to trust; Tend not to trust; Don't know). For each institution, we operationalize trust levels with the percentage of respondents that responded 'Tend to trust'.

The choice of institutions is based on the following criteria. We select NP and EP because they are the most comparable institutions in terms of how their members are appointed and how well citizens are informed about them (similarly, Munoz et al., 2011). Including the EC and the ECB allows us to study the interactions between elected institutions (NP vs. EP) and between elected and non-elected institutions (NP vs. EC/ECB). We include the EC and the ECB because these are the most publicly known non-elected institutions in the EU according to the Eurobarometer. For instance, in 2013, 83% and 85% of respondents had heard of the EC and the ECB, respectively. Other institutions are much less known by the public. For example, in 2013, only 69% and 77% of respondents had heard of the Council of the EU and the European Court of Justice. Citizens are more likely to

form independent attitudes towards known institutions than towards unknown institutions. Indeed, there is evidence that citizens' trust towards the ECB varies depending on the perceived performance of the ECB itself (Ehrmann et al., 2013). Data availability also influenced our choice of institutions, since the Eurobarometer provides (almost) complete data for all the countries considered only for a limited set of institutions.

All the data are presented in the form of trust shares. These shares are computed by dividing the trust in each institution by the sum of the trust in all the institutions in the given year/country. For instance, assume that the proportion of Austrians that tend to trust the institutions are respectively: NP = 30%; EP = 20%; EC = 50%; ECB = 50%. In this case, the trust share of the Austrian NP is given by $30/(30 + 20 + 50 + 50) = 0.2$. Mathematically, this is a necessary choice because the logit model—and hence the model adopted here—requires that data are expressed in terms of shares. Conceptually, the use of trust shares is consistent with our research question, given that we are interested in studying how a change in the level of trust in one institution influences the trust in other institutions, and not in the absolute values of trust. The Online appendix presents the summary statistics of the data collected.

Results and discussion

General observations

To begin with, we note that our model offers an accurate description of the trust dynamic among the institutions considered. We assess the accuracy considering two standard measures of error: the mean square error (MSE) and the mean absolute percentage error (MAPE). Following Lewis (1982), we consider our model to be highly accurate if $MAPE < 10\%$, good for $10\% < MAPE < 20\%$, reasonable for $20\% < MAPE < 50\%$, and inaccurate if $MAPE > 50\%$. In 58 instances out of 60, the model proves to be 'highly accurate'. In the remaining two cases its accuracy is 'good'. On average, the MAPE is way below the 10% threshold and hence we can consider the model as generally 'highly accurate' (see the Online appendix).

Our results emphasize three general patterns. First, the trust spillovers are always bidirectional. Not only the trust in national institutions influences the trust in European institutions, but also the latter affects the former. Indeed, we never observe unilateral compensation and unilateral congruence. Previous research has consistently shown that citizens tend to rely on national politics as a basis to trust the EU institutions (Sanders et al., 2012). Given a general lack of knowledge about the EU, national economic and instrumental causes serve as cues for forming a certain attitude towards the EU. This mechanism therefore accounts for the existence of trust spillovers from the national to the EU level.

On the contrary, the existence of spillovers from the EU to the national level is less established. Some scholars argued that changes in the trust in EU institutions

can create positive and negative spillovers towards national institutions (Chiru and Gherghina, 2012; Mair, 2013). Other authors argued that a negative assessment of the political process in the EU itself can reduce support and trust in EU institutions (Dotti Sani and Magistro, 2016; Hobolt, 2011; Roth et al., 2013). If this is true, it stands to reason that the political process in the EU can also affect trust in national institutions.

One hypothesis is that the sign of the spillover might depend on the attitude of national institutions towards the EU. In countries that have parliaments and governments that are more pro-EU (e.g. Germany), a decrease in the trust in European institutions might produce a negative spillover on the pro-EU institutions. Vice versa, in countries in which the governing parties are more anti-EU (e.g. the first Italian government after the 2018 political elections), such trend might produce a positive spillover on the anti-EU institutions. To be clear, the orientation of national institutions toward the EU is unlikely to be the only determinant of the sign of the spillovers, but it is plausibly a factor.

Second, we observe that institutions change the way in which they interact over time. This is evidence that spillovers are context dependent, and that dynamic models are important to study how inter-institutional interactions evolve over time (Ares et al., 2017; Torcal and Christmann, 2018).

Third, our analysis indicates that the ECB interacts with the NPs in a very different way than with the EC and the EP. While interactions between NPs and the EC/EP fall almost always under the two types of asymmetric interactions, this pattern is not observed for ECB-NPs interactions (see the Online appendix). ECB-NPs interactions present a less regular pattern than those between NPs and the EC/EP, suggesting that the ECB is perceived as markedly distinct from the other EU institutions considered. The distinction between the ECB and the other institutions considered is in line with previous findings in the literature showing that citizens can form independent attitudes towards the ECB (Ehrmann et al., 2013).

Asymmetric interactions and underlying theory

The main finding of our article is that there is a clear prevalence of asymmetric interactions in all the 15 countries considered. Moreover, in 10 countries we observe only asymmetric interactions. Interestingly, we note that even the financial crisis did not break the dominance of asymmetric interactions. The likelihood of finding a prevalence of asymmetric interactions in all countries for a given pair of institutions is about 0.00003 (see the Online appendix for a full discussion of this finding), and hence this result cannot be considered random. More specifically, if we focus on the interactions NPs-EC and NPs-EP we observe that roughly 440 years are characterized by one of the two types of asymmetric interaction over a total of 465 years (two pairs of institutions interacting for 15.5 years in 15 countries).[7] In other words, NPs are in an asymmetric interaction with the EC and the EP about 95% of the time. Thus, our study reveals that asymmetric spillovers are a

fundamental feature of political trust dynamics in the multilevel governance structure of the EU. Figures 2 and 3 present the detailed results.

Figures 2 and 3 are best read in conjunction with Table 1, which describes how the sign of the interaction coefficients determines the kind of interaction between the institutions considered. If both interaction coefficients are positive, there is a bilateral compensation between the institutions. If both coefficients are negative, there is a bilateral congruence. Both these forms of interactions are symmetric, and in fact the two interaction coefficients have the same sign. On the contrary, when

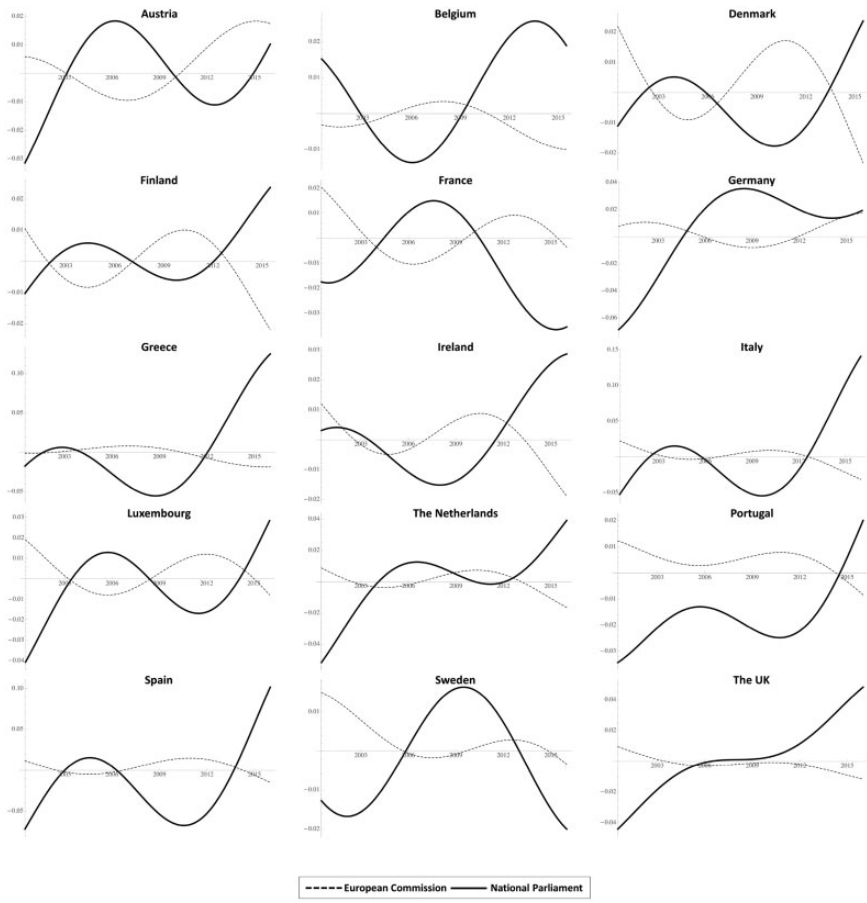

Figure 2. Interaction coefficients of EC (dotted line) and NP (solid line) in the 15 countries considered. The interaction coefficients are on the vertical axis, while time is on the horizontal axis. The relevant information is the sign of the interaction coefficients and not their absolute value because the interaction coefficients are not expressed in a unit of measure that allows us to easily identify the exact magnitude of the spillover.

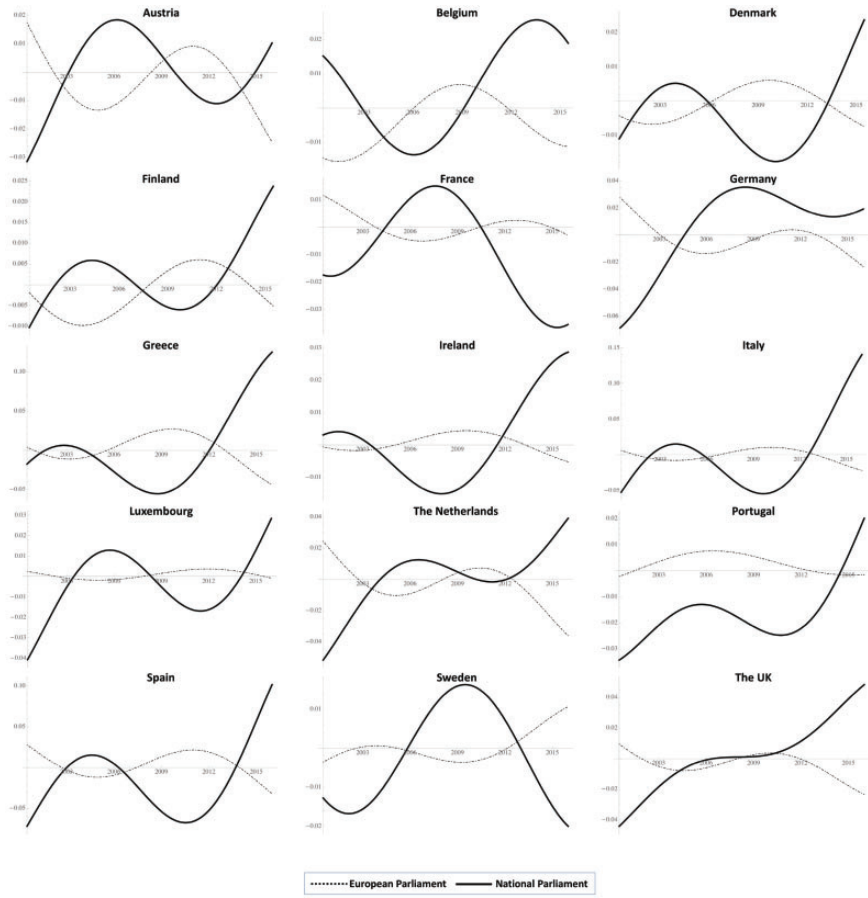

Figure 3. Interaction coefficients of EP (dotted line) and NP (solid line) in the 15 countries considered. The interaction coefficients are on the vertical axis, while time is on the horizontal axis. The relevant information is the sign of the interaction coefficients and not their absolute value because the interaction coefficients are not expressed in a unit of measure that allows us to easily identify the exact magnitude of the spillover.

one of the interaction coefficients is positive and one is negative we observe an asymmetric interaction.

An obvious question then is how these asymmetric interactions develop. To understand these dynamics, we look more closely at the case of Spain, and draw parallels to the results obtained by Torcal and Christmann (2018). They observe that starting in 2009 there was a sharp decline in the trust that Spanish citizens placed in their national institutions, and that this decline also reduced the trust in European institutions. Moreover, they find that the intensity of this negative

spillover intensified during periods of economic distress. To explain their findings, they rely on the traditional arguments put forward by congruence theory, namely that national politics serves as a basis for the perceived performance of EU institutions.

Our findings are consistent with the evidence produced by Torcal and Christmann (2018). In particular, we observe that between 2009 and 2014 the EC and the NP are in an asymmetric interaction of type I, in which a decrease in the trust in the NP has a negative impact on the trust in the EC. This interaction is described by Figure 2. In fact, between 2009 and 2014 the NP has a negative interaction coefficient, whereas the EC has a positive interaction coefficient. We observe also that the intensity of this interaction increased around 2008–2009 when the Spanish gross domestic product per capita started to decline due to the financial crisis. This form of interaction persists until 2013–2014 when the Spanish unemployment rate started to decline. The fact that two studies using two different methodologies produce compatible results increases the reliability of both. Thus, in line with Torcal and Christmann (2018), we suggest that citizens use cues from the national system to evaluate European institutions.

Moreover, Torcal and Christmann (2018) note that citizens' positive evaluation of the EU performance partially counterbalanced the negative spillover from the national level. In other words, at least some Spanish citizens were able to form an independent opinion of the quality of the EU governance, instead of relying only on national cues. If citizens are sufficiently informed to have an opinion about the quality of EU institutions, they are in the position to benchmark them against national institutions. In this vein, the increase in trust among EU institutions that Torcal and Christmann (2018) observe would generate a negative spillover onto national institutions, in line with compensation theory.

The results of our model support this theoretical possibility, and hence point to an asymmetric interaction of type I. The decrease in trust in national institutions generates a spillover of the same sign on EU institutions (congruence). At the same time, growing trust in EU institutions generates a decrease in the trust in national institutions (compensation). Our results indicate that this particular dynamic of trust spillovers does not only occur in Spain, as asymmetric spillovers are the norm in all the countries considered.

Another result of our model is that the kind of asymmetric interaction changes over time. Therefore, at times the dynamic described above is reversed, and there is a compensation mechanism operating from the national level to the European level and a congruence mechanism operating from the European level to the national level (type II asymmetric interaction). The possibility of a compensation mechanism from the national level to the European level is supported by the findings of Munoz et al. (2011) and Sánchez-Cuenca (2000) who observe how a change in the trust for national institutions can create a spillover of the opposite sign onto European institutions. For instance, the emergence of salient issues like corruption may lead citizens to use this specific set of information as a basis for benchmarking the performance of national and EU institutions. At the same time, the possibility

of a congruence mechanism from the European level is supported by the studies of Chiru and Gherghina (2012) and Mair (2013) who argue that the positive spillover from the EU to the national level is due to the fact that EU membership is associated with political and economic benefits.

One hypothesis is that the kind of asymmetric interaction (type I or type II) is determined by the issues that are salient at different points in time. Salient issues are those about which citizens are relatively well informed since they are extensively covered by the media (Torcal and Christmann, 2018; Wilson and Hobolt, 2015). This suggests that when there are salient issues pertaining to the European level, citizens might rely less on cues from the national level to evaluate EU institutions. On the contrary, when most salient issues pertain to the national level, citizens might rely more on cues on the national level to asses EU institutions. Whether salient issues are associated with the national or the European level may determine the type of asymmetric interaction.

Another important point that is worth discussing is the magnitude of the spillovers. While our model is well-suited to measure the relative size of the spillovers in time, it should not be used to calculate the absolute magnitude of the effects. Therefore, while we can answer the question 'Were trust spillovers more intense during the financial crisis?', we do not attempt to answer the question 'How much of the variance in the trust for EU institutions depends on the spillovers from the national level?'. This is another reason why our model is an important contribution but needs to be complemented by statistical studies. First, a statistical study can identify the exact magnitude of trust spillover at a given moment—something for which our model is ill-equipped. Second, our model allows us to immediately extrapolate how this magnitude changes at any point in time—a result that is harder to obtain with statistical studies without large panel data.

Conclusions

Citizens' trust in national and European institutions has been the object of substantial scholarly attention in recent decades. Within this literature, a number of studies have analyzed spillovers in trust between the two levels of governance and focused on identifying their determinants, intensity, direction, and sign.

This article contributes to this strand of research in two ways. First, we develop a taxonomy of different kinds of possible interactions between institutions. We identify eight kinds of interactions and show that existing research has focused almost exclusively on only two of them. Second, we carry out an empirical analysis to determine which of these interactions emerge between the EC, the EP, the ECB, and the NPs of 15 European countries between the years 2000 and 2015.

We find that the interactions among these institutions are always bilateral, i.e. changes in trust at the national level influence trust in EU institutions and vice versa. This result indicates that spillovers among national and European institutions are different from those described by congruence theory and compensation

theory, as they both postulate that only spillovers from the national to the European level exist.

We also find that spillovers between NPs and EC/EP are asymmetric for about 95% of the observed years. In other words, the sign of the spillover from the national to the EU level is almost always the opposite of the sign of the spillovers from the EU to the national level. This result can be explained using the theoretical framework developed by other scholars (e.g. Torcal and Christmann, 2018), according to which compensation and congruence can operate simultaneously. Our findings also show that the sign of the spillovers changes over time. We argue that changes in the sign of the spillover depend on which policy issues are salient in citizens' minds and on whether these issues are associated with the national or the European level.

The asymmetric nature of the spillovers indicates that it can be difficult to simultaneously increase the trust in national and EU institutions, as the increase in trust in one institution can trigger a negative spillover towards other institutions. The material relevance of this issue depends on the intensity of the spillovers. In this respect, we find that the intensity of the spillovers varies across countries and time. The causes of these variations remain unclear and need to be identified by future research. More generally, research that adopts statistical approaches should try to isolate the determinants of the various kinds of interactions and the factors that yield changes in how institutions interact.

Another question that should be addressed by future research is why some countries present similar dynamics. For instance, the interactions between the Italian and Spanish NPs and the EP follow similar patterns up to 2012. Future research could analyze whether the emergence of these similar patterns across countries results from a common set of causes. This analysis exceeds the scope of the present work, because it would be best performed with statistical methods apt to identify causal relations at a more granular level.

In this article, the empirical analysis is performed using a model that has been applied in many different contexts (e.g. Dominioni et al., 2019; Marasco and Romano, 2018; Romano, 2016), but never in political science. We want to stress that this model is very versatile, and could be used to answer a diverse range of questions related to political trust. For instance, the model can be used to study the interaction among political parties in a multiparty system. Consider for instance the Italian case in which traditional parties like the Democratic Party face populist parties like the Five Stars Movement and the League – Salvini Premier. In such a framework, it becomes important to understand the spillovers in terms of consent between traditional parties and populist parties, but also among traditional parties and among populist parties.

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Supplemental Material

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Notes

1. We consider the 15 countries that were already members of the European Community in 2000.
2. Norris (2017) regards political support as a continuum encompassing different levels of support. The most specific levels of political support, i.e. confidence in regime institutions and approval of incumbent office-holders, coincide with political trust.
3. Since these works are silent on the spillovers from the national to the European level, it is impossible to place them in one of the quadrants. These works can be included in the following quadrants: 'bilateral congruence', 'asymmetric interactions', and 'reversed unilateral congruence'.
4. Data available at: http://ec.europa.eu/COMMFrontOffice/PublicOpinion/index.cfm/Chart/index (accessed 16 September 2016).
5. The surveys are the following: EB52; EB53; EB54; EB55; EB56; EB57; EB58; EB59; EB60; EB61; EB62; EB63; EB64; EB65; EB66; EB67; EB68; EB69; EB70; EB71; EB72; EB73; EB74; EB75; EB76; EB77; EB78; EB79; EB80; EB81; EB82.
6. The existing literature on national-EU spillovers relies on trust data gathered from two different sources, the Eurobarometer (e.g. Armingeon and Ceka, 2014) and the European Social Survey (e.g. Munoz et al., 2011). We opted for the former because Eurobarometer data are collected more frequently and therefore provides more historical data points for each country. While our model is significantly less data demanding than statistical studies generally employed in the literature on political trust, it still requires a minimum number of observations that is higher than the number of observations available in the European Social Survey data.
7. This is a conservative estimate that derives from subtracting 25 years in which a non-asymmetric interaction emerges from the total of 465 years observed. In fact, the interaction coefficients cannot be expected to cross exactly at the axis in each single case.

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