# The Battle of Ideas on the Euro Crisis: Evidence from ECB Inter-Meeting Speeches*

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**Abstract**

The European Central Bank (ECB) has often been portrayed as highly resistant to ideational change. This paper paints a different picture. A battle of ideas dominated the academic debate on the euro crisis: one view stressed crisis-stricken countries' fiscal laxity, whereas the other highlighted the systemic roots of financial turmoil. I argue that the failure of policy experiments inspired by the fiscal discipline view favoured the ECB's adoption of systemic risk ideas, which shaped its crisis response. Empirically, I use an innovative technique combining automated text classification and unsupervised scaling methods to detect ideational variation in ECB Executive Board members' public speeches. Results indicate that the ECB has progressively moved from a fiscal to a systemic narrative of the euro crisis. Significantly, this shift anticipated and accompanied the ECB's commitment to unlimited bond purchases in summer 2012. Evidence suggests that this ideational turn was incremental and driven by policy learning dynamics.

*The author is a PhD Trainee at the European Central Bank and is himself alone responsible for the views expressed in the article, which do not necessarily represent the views, decisions or policies of the European Central Bank. A previous version of the paper was presented at the 2018 MPSA Annual Conference in Chicago. The author is extremely grateful to Thomas Sattler, Maurizio Ferrera, John Freeman, David Schäfer, Frank Schimmelfennig, and Susanne Pihs-Lang for helpful comments.

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# 1 Introduction

By the end of 2012, European Central Bank (ECB) President Mario Draghi was widely credited with saving the euro. In July 2012, Draghi's oft-cited "whatever it takes" pledge anticipated the launch of a new bond purchasing programme, named "Outright Monetary Transactions" (OMT). This programme quickly restored investor confidence in the sustainability of Southern European countries' public finances, resulting in a sharp decrease in their sovereign bond yields (Baldwin et al. 2015).

The key feature that proved extremely effective in promoting financial stability was the unlimited nature of the ECB's commitment to intervening in secondary government bond markets, which removed concerns over a breakup of the euro area (Chang and Leblond 2015; Frieden and Walter 2017). This intervention was justified in terms of financial fragility and systemic risk, as exemplified by a key passage of Draghi's famous speech at the Global Investment Conference in London on 26 July 2012: "The key strategy point here" – he argued – "is that if we want to get out of this crisis, we have to repair this financial fragmentation." (Draghi 2012d).

The concept of systemic risk has come to the centre of the policy agenda of international financial regulatory networks after the 2008 global financial crisis (Baker 2013b). Also, central banks in advanced economies have increasingly strengthened their focus on financial stability issues in the conduct of monetary policy (Goodhart 2015; Moschella 2015a). Have ideas of systemic risk also shaped the interpretation of the euro crisis and the policy response of the ECB? This question calls for a detailed analysis of the relative weight attributed to competing economic ideas at different stages of the crisis.

Many studies have focused on the influence of neoliberal and ordoliberal ideas on the European crisis response (e.g., Schmidt and Thatcher 2013; Blyth 2013; Dellepiane-Avellaneda 2015; Matthijs and McNamara 2015; Helgadóttir 2016; Matthijs and Blyth 2018). These accounts, I argue, overlook the presence of a "battle of ideas" taking place among mainstream economists after 2008. Indeed, two competing views dominated the economic debate on the euro crisis. One narrative – hereby termed the "fiscal discipline view" – emphasised the negative effects of crisis-stricken countries' budgetary laxity, and prescribed fiscal austerity as an effective policy strategy to cope with the crisis (e.g., Alesina and Ardagna 2009; Sinn 2014). Another narrative – diametrically opposed to the former and hereby termed "systemic risk perspective" – downplayed the role of fiscal factors by highlighting the systemic nature of the crisis. Furthermore, it prescribed the ECB's unlimited intervention in sovereign bond markets and the improvement of the euro area governance as the most appropriate measures to address financial fragilities (e.g., De Grauwe 2011b). This battle of ideas was rooted in major academic contributions and pervaded policy-makers' debate on the causes and remedies for the sovereign debt crisis in Europe.

Contrary to the picture painted by many constructivist analyses, I argue that ECB's interpretation of the euro crisis and its policy response were conditioned by a learning process, which determined a shift in the relative weight attributed to fiscal discipline and systemic risk ideas. Indeed, new ideas have greater leeway to influence policy making when policy experiments inspired by the prevailing normative framework encounter repeated failure in restoring stability (Hall 1993). In the case of the ECB, as measures aimed at strengthening fiscal surveillance in the euro area and the fiscal position of crisis-stricken countries did not have long-lasting effects on investor confidence, the institution became increasingly open to systemic risk ideas. This favoured the ECB's decision to play the role of lender of last resort in the euro area.

To show the relevance of this arguent, the paper traces the evolution of economic ideas on the euro crisis inside the ECB. Building on a burgeoning literature that makes use of quantitative text analysis to study the politics of independent central banks (e.g., Baerg and Lowe 2018; Moschella and Pinto 2018; Tortola and Pansardi 2018), I employ automated text tools to detect the presence of different economic ideas in the communication of European central bankers. In particular, I use a novel dataset of inter-meeting speeches – i.e., public speeches given outside of the Governing Council meeting – given by ECB Executive Board members.

My estimation strategy is based on an innovative technique that combines automated text classification with unsupervised scaling methods. This approach allows me to isolate messages related to fiscal policy and sovereign debt in euro area member states, and show that there is a significant degree of variation in the way European central bankers talk about fiscal issues. This variation is ascribable to the fiscal discipline view and the systemic risk perspective of the euro crisis.

Results show that, after an initial level of high support for ideas that emphasise the importance of fiscal discipline, the communication of ECB Executive Board members has gradually moved towards a systemic narrative. Significantly, this ideational turn anticipated the policy shift of summer 2012, and became stronger at the time of the OMT announcement. No ideational reversal took place after the policy change. Evidence suggests that the ECB's ideational turn was incremental and driven by a process of policy learning occurring within the Board, rather than punctuated and directly induced by Board member replacements.

The next section reviews the literature on economic ideas in the euro crisis and develops the conceptual framework underlying the empirical analysis. Section 3 presents the research design and results of the quantitative text analysis of ECB Executive Board members' inter-meeting speeches. Section 4 discusses the findings. The final section draws conclusions and points to further avenues of research.

# 2 Theorising the Role of Economic Ideas in the Euro Crisis

The role of economic ideas is central to many analyses of international policy-making and institutional change. A wide literature has focused on the role of policy-makers' economic beliefs in times of crisis. Drawing on this type of contributions, this section offers theorises the presence and nature of the ECB's ideational change on the causes of the euro crisis.

First, I review the literature on the role of economic ideas in the euro crisis and highlight the missing elements that my analysis aims to address. Second, I provide an account of the "battle of ideas" taking place among mainstream economists during the euro crisis. Third, I derive the hypotheses underlying my empirical analysis.

## 2.1 The Power of Ideas in Times of Crisis

The global financial crisis of 2008 and the euro crisis, which saw the period of greatest height between 2010 and 2012, have captured the attention of scholars interested in the role that economic ideas play in policy-making. Importantly, a large part of contributions scrutinises the influence of long-standing neoliberal and ordoliberal ideas. Hence, these studies emphasise elements of ideational stability through and after the crisis.

Focusing on the euro crisis, Blyth (2013), Dellepiane-Avellaneda (2015) and Helgadóttir (2016) stress the influence exerted on European economic policy-making by ideas of "expansionary fiscal contractions" (EFC), disseminated within European policy circles by Harvard economist Alberto Alesina at the beginning of the euro crisis. This set of ideas prescribed fiscal austerity – most notably, the one based on spending cuts – as an effective tool to deal with economic crises. Blyth (2013) considers the ECB monthly bulletins as evidence of a dissemination of EFC ideas within powerful European epistemic communities. Dellepiane-Avellaneda (2015) points to a paper presented by Alesina at the Economic and Financial Affairs Council meeting of April 2010 to underscore the connections between orthodox economists and EU officials. Helgadóttir (2016) argues that a network of economists from Bocconi University in Milan, Italy, operated as a "transmission belt" of EFC ideas to the most powerful European and international economic institutions.

More broadly, Matthijs and McNamara (2015) claim that the response to the euro crisis was heavily informed by broader social logics that constructed the problem as a "normative" morality tale of Southern profligacy versus Northern thrift, thereby ruling out Eurobonds as a possible solution to solve the crisis. Both Nedergaard and Snaith (2015) and Matthijs (2016) emphasise the role of Germany's ordoliberalism in the euro crisis by considering the unintended consequences of strictly adhering to budgetary orthodoxy and structural reforms: these policies turned a containable fiscal problem into full-blown financial contagion and ended up hurting Germany's own national interest. From a critical political economy perspective, Ryner (2015) takes into account the role of German ordoliberalism to claim that the euro crisis management has strengthened and deepened the hegemony of finance-led transnational capitalism.

In sum, the minimum common denominator of most constructivist research on the euro crisis is the belief that orthodox ideas were not defeated by any competing economic narrative inside the ECB and the European Commission. As Matthijs and Blyth (2018) maintain, the underlying ideas of the ECB and the Commission "remained largely the same, despite any and all evidence to the contrary". A consequence of depicting the ECB as an actor that has persistently remained a stubborn defendant of harsh fiscal austerity is that much of the existent constructivist literature has little leverage in accounting for the evolution of the ECB's crisis response. This paper contributes to filling this gap, by considering whether and how the ECB changed its interpretation of euro crisis.

## 2.2 Clashing Euro Crisis Narratives: Fiscal Discipline versus Systemic Risk

Two opposite interpretive frameworks dominated the economic debate on the euro crisis: one stressed crisis-stricken countries' fiscal laxity, whereas the other downplayed the role of fiscal factors by highlighting the systemic nature of the crisis. These narratives found their roots in major academic contributions and pervaded policy-makers' debate on the causes and remedies for the sovereign debt crisis in Europe.

The ideational accounts of the euro crisis mentioned in the previous section focused on the former narrative, which I refer to as the "fiscal discipline view" of the euro crisis. This view identified the causes of crisis-stricken countries' financial instability in the deterioration of their fiscal fundamentals, and prescribed fiscal austerity as an effective tool to cope with financial stress and economic recession. The fiscal discipline view was rooted in academic contributions ascribable to neoclassical economic orthodoxy, which stressed the importance of credibility, consistency, and commitments in order to successfully influence the expectations of rational market actors (e.g., Kydland and Prescott 1977; Barro and Gordon 1983).

Particularly important as an intellectual cover for this narrative was the notion of "expansionary fiscal contractions" (EFC), originally advanced by economists Francesco Giavazzi and Marco Pagano in the 1990s (e.g., Giavazzi and Pagano 1990; Giavazzi and Pagano 1996), and promoted by Harvard economist Alberto Alesina at the beginning of the euro crisis (e.g., Alesina and Ardagna 2009; Alesina 2010a). According to the EFC theory, fiscal adjustments, and most notably those that are based on spending cuts, may quickly reduce public debt without having negative effects on GDP growth (Alesina 2010b). The main argument made by advocates of this narrative is that spending cuts have a positive impact on rational economic agents' confidence: a reduction in government spending determines higher levels of private consumption, investment, and private wealth, as future expected taxes fall (Alesina et al. 2015). This, so the argument goes, may offset the adverse Keynesian effects that a reduction in government spending has on growth and jobs.

Consistent with this perspective, many economic analyses of sovereign default risk in Europe have identified an empirical relationship between the surge in sovereign bond yields and the deterioration of fiscal fundamentals in euro area peripheral countries (e.g., Attinasi et al. 2009; Afonso 2010; Aizenman et al. 2011). Other academic contributions, more ordoliberal in nature, have put greater emphasis on the role of current account deficits and low levels of competitiveness as drivers of the euro crisis, but their prescribed policy solutions equally revolved around the need for greater fiscal discipline in crisis-stricken countries (e.g., Sinn 2014).

With a few notable exceptions, which do not systemically consider ideational change inside the ECB (e.g., Jones 2015; Brunnermeier et al. 2016; Schäfer 2016; Schmidt 2016), previous studies on the role of narratives in the euro crisis pay much less to attention to an alternative, but equally influential set of ideas, which I refer to as the "systemic risk perspective". This interpretive framework underscored the presence of structural weaknesses in the euro area governance, and pointed to the high correlation between sovereign risk and bank risk in the euro area – often referred to as the "sovereign-bank vicious circle" – as the root cause of the crisis.

One of the most vocal proponents of these ideas was London School of Economics and Catholic University of Leuven economist Paul De Grauwe. Building on models of multiple equilibria in financial crises (e.g., Obstfeld 1986; Calvo 1988), De Grauwe argued that member countries of a monetary union face the same problem experienced by emerging countries that issue debt in a foreign currency, usually the dollar (De Grauwe 2011b). These countries can be confronted with "sudden stops" leading to liquidity crises, when capital inflows are suddenly withdrawn by financial investors. Since they have no control over the currency in which their debt is issued, financial markets can force them into a bad equilibrium and easily drive them into default. The need to bail out banks under financial stress, combined with investors' herd behaviour, caused a wave of contagion in government bond markets of crisis-stricken countries, which was disconnected from underlying increases in their government debt and budget deficits (Baldwin 2011; De Grauwe 2013; Gros 2013). This engendered negative self-fulfilling market sentiments that became very strong since the end of 2010 (De Grauwe and Ji 2013b).

De Grauwe argued that austerity is a self-defeating strategy to restore investor confidence (De Grauwe and Ji 2013a), and strongly advocated that the ECB should act as a lender of last resort with an unlimited intervention in sovereign bond markets, in order to put the brakes to self-fulfilling financial market dynamics leading crisis-stricken countries into default (De Grauwe 2011c; De Grauwe 2011a). These views were echoed by important media outlets (Wolf 2012; Warner 2012; Wolf 2013), and articles by notable American and European economists (Krugman 2012; Wyplosz 2012; Delbecque 2012; Véron 2015).

## 2.3 Theorising the ECB's Ideational Change

The ECB's policy change of summer 2012 turned the tide of the euro crisis. By announcing that the ECB stood ready to act in defence of the common currency at any condition, Mario Draghi *de facto* signalled to financial investors the willingness of the Bank to act as a lender of last resort. Crucially, this move went directly against the policy prescriptions of the fiscal discipline view of the euro crisis. This raises the question as to what extent the ECB's policy change was informed by the main alternative interpretive framework of the crisis – namely, the systemic risk perspective.

Many have hypothesised the absence of significant ideational change inside the ECB during the euro crisis. Indeed, the ECB is often considered as a stubborn defendant of neoliberal and ordobileral ideas (e.g., Blyth 2013: 54-62). To justify the lack of ideational change inside the Bank from a theoretical standpoint, scholars argue that technocratic actors have both the capacity and the incentive to systematically skew the interpretation of policy anomalies, as their authority rests in large part upon appeal to the "ruling ideas" of the day (Matthijs and Blyth 2018).

**Hypothesis 1a (Ideational Stability):** *The ECB's interpretation of the euro crisis has largely and persistently relied on the fiscal discipline view. The ECB's commitment to unlimited bond purchases was neither anticipated nor accompanied by any significant change in the crisis narrative employed by ECB officials.*

Contrary to this perspective, I argue that the repeated failure of austerity policies catalysed ideational change inside the ECB, and did so before the policy shift of summer 2012. Indeed, major policy shifts are most likely preceded by policy experimentation and the accumulation of anomalies, which undermine the authority of the prevailing ideational framework (Hall 1993). During the euro crisis, measures aimed at strengthening fiscal surveillance in the euro area (e.g., the signing of the Fiscal Compact) and the fiscal position of peripheral countries (e.g., the fiscal consolidation plans implemented by the technocratic governments of

Papademos and Monti) did not have long-lasting effects on investor confidence. I hypothesise that these empirical anomalies progressively provided asymmetric support for the systemic risk perspective. Thus, they favoured a process of instrumental policy learning process inside the ECB, which led the institution to assume the role of lender of last resort in the euro area.

**Hypothesis 1b (Ideational Change):** *The ECB's interpretation of the euro crisis has moved from the fiscal discipline view to the systemic risk perspective. This movement anticipated the ECB's commitment to unlimited bond purchases and became stronger at the time of the policy shift. No ideational reversal took place afterwards.*

The notion of a instrumental policy learning process may be further corroborated by evidence about the dynamics of the ECB's ideational change. Some scholars hypothesise that policy change in international organisations is induced by normative isomorphism, when new individuals bring new norms, and policy innovations implicit in them, when they enter an organisation (e.g., Chwieroth 2010). This is often associated with instances of punctuated change: stasis prevails until some event, such as new recruitment (e.g., Chwieroth 2008) or the active role of critical agents (e.g., Finnemore 1996; Abdelal 2007), ruptures the status quo and pushes new ideas into the debate.

**Hypothesis 2a (Punctuated Change):** *The ECB's ideational turn was punctuated and driven by systemic risk ideas brought into the institution by new ECB officials.*

Alternatively, ideational change may occur in a more incremental fashion (e.g., Baker 2013a; Moschella 2015b). Incrementalism is often associated with learning processes, when ideational change is progressively driven by the failure of policy experiments inspired by the prevailing normative framework. This process may be also fostered by factors that are endogenous to the institutional dynamics of crisis management. For instance, Moschella (2016) argues the ECB and the European Commission relaxed their staunch opposition to fiscal accommodation in the euro area due to the layering of new rules specifying how financial assistance can be disbursed to member countries. This institutional change altered the cost-benefit analysis of the ECB and the Commission in assessing the risk of debt restructuring in Greece.

**Hypothesis 2b (Incremental Change):** *The ECB's ideational turn was incremental and driven by policy learning processes of ECB officials.*

To evaluate if the ECB's ideational turn was incremental or punctuated, I consider whether the ECB's change in the narrative of the euro crisis was gradual and general, rather than sudden and driven by single, pivotal actors. The presence of significant and systematic differences in the communication of new actors entering the institution is interpreted as evidence of punctuated change induced by ideas carried by pivotal individuals. Instead, the presence of a common and gradual trend towards systemic risk ideas in the communication of key actors inside the ECB is taken as evidence of an incremental process of ideational change.

# 3 The Battle of Ideas on the Euro Crisis Through the Lenses of ECB Inter-Meeting Speeches

I use a novel dataset of ECB officials' communication to evaluate changes in the set of ideas prevailing inside the institution. In particular, I consider ECB Executive Board members' inter-meeting speeches – i.e., public speeches given outside of the Governing Council meeting – between 2009 and 2017. The Executive Board of the ECB consists of the President, the Vice-President and four other members. The Executive Board implements monetary policy decisions taken by the Governing Council, which consists of the ECB Executive Board and the governors of the national central banks of euro area member countries. Executive Board members are appointed by the European Council. Their term in office is eight years and is not renewable (de Haan et al. 2005).

In this section, I employ an innovative methodology that combines automated text classification with unsupervised scaling methods to analyse the communication of ECB Executive Board members. First, I discuss the research design of my empirical analysis. Second, I present the results of my estimation strategy.

## 3.1 Data and Methodology

While several analyses of policy scaling exploit party manifestos or legislative speeches (e.g. Laver and Garry 2000; Laver et al. 2003; Slapin and Proksch 2008; Lauderdale and Herzog 2016), inter-meeting speeches are generally less tractable. Unlike party manifestos, they are not organised into policy sections; unlike legislative speeches, they often address a wide range of topics simultaneously. To tackle these issues, this paper exploits a two-step method. First, I use classification and regression trees (CART) to select text excerpts that are related to the topic of interest. Then, I employ the Wordfish scaling model from Slapin and Proksch (2008) to estimate time-series and Board members' positions along the latent dimension of selected text excerpts.

My analysis focuses on central bankers' stance on fiscal policy and sovereign debt issues in euro area member states. This topic is particularly appropriate to verify the presence of variation in the ECB's crisis narrative, as it may capture aspects that are central to both the fiscal discipline view and the systemic risk perspective of the euro crisis. In line with the former view, this type of communication may highlight the virtues of and need for fiscal consolidation; consistent with the latter, it may underscore the systemic risk implications of the sovereign-bank nexus and financial contagion in sovereign bond markets.

To construct the dataset, I draw text data from the ECB website, which provides complete coverage of all the inter-meeting speeches given by ECB Executive Board members. My initial corpus of texts consists of 1,619 documents, which include all public speeches given in English by ECB Executive Board members until June 2017, without considering interviews and press conferences following the Governing Council meeting. Different from interviews and press conferences, speeches provide ECB Executive Board members with greater freedom in the expression and elaboration of ideas about the euro area economic outlook and the ECB's monetary policy. Thus, they are more suitable for evaluating the presence of ideational variation occurring inside the Bank.

## 3.2 Classification Model

The first challenge is to separate communication on fiscal policy and sovereign debt issues from any other topic. I proceed as follows. In the process of parsing text data from the ECB website, I maintain the same paragraph structure as raw HTM documents. Speech subdivision into short paragraphs proves beneficial. While single sentences might miss out relevant information, full speeches typically encompass multiple themes and are not well suited for analyses focused on a single dimension. Hence, paragraphs allow to maximise the likelihood of selecting all relevant passages while minimising the overlap with non-relevant topics. This yields a text corpus of 72,224 documents.

To identify the paragraphs of interest, I build on the literature that analyses text data with supervised learning methods (e.g., Hopkins and King 2010; Diermeier et al. 2012; Peterson and Spirling 2017). More specifically, I make use of classification and regression trees (CART) analysis (Breiman et al. 1984). The output is a decision tree where a weight in favour of class 1 and class 0 is assigned to each word. In this case, class 1 contains documents related to fiscal policy and sovereign debt, and class 0 contains non-relevant topics. The procedure to apply CART is described in detail in Appendix A, which also provides evaluation criteria to assess the performance of the classifier. This procedure allows to identify the paragraphs addressing the topic of interest with high accuracy.

After applying automated classification to the whole text corpus, I subset the relevant paragraphs. Also, since I aim to detect variation in crisis narratives, I select only the paragraphs belonging to speeches that were given after the outset of the global financial crisis, starting from January 2009. Table A2 in the Appendix A reports summary statistics for the data I use in subsequent analyses. The table presents the absolute number of speeches and paragraphs, as well as the volume of fiscal communication – i.e., the number of paragraphs selected by CART as a share of total paragraphs – by Board member between 2009 and 2017.

## 3.3 Scaling Model

I then estimate the evolution of fiscal communication over time and by member of the ECB Executive Board. I implement the Wordfish scaling model from Slapin and Proksch (2008), which retrieves position estimates on a latent dimension:

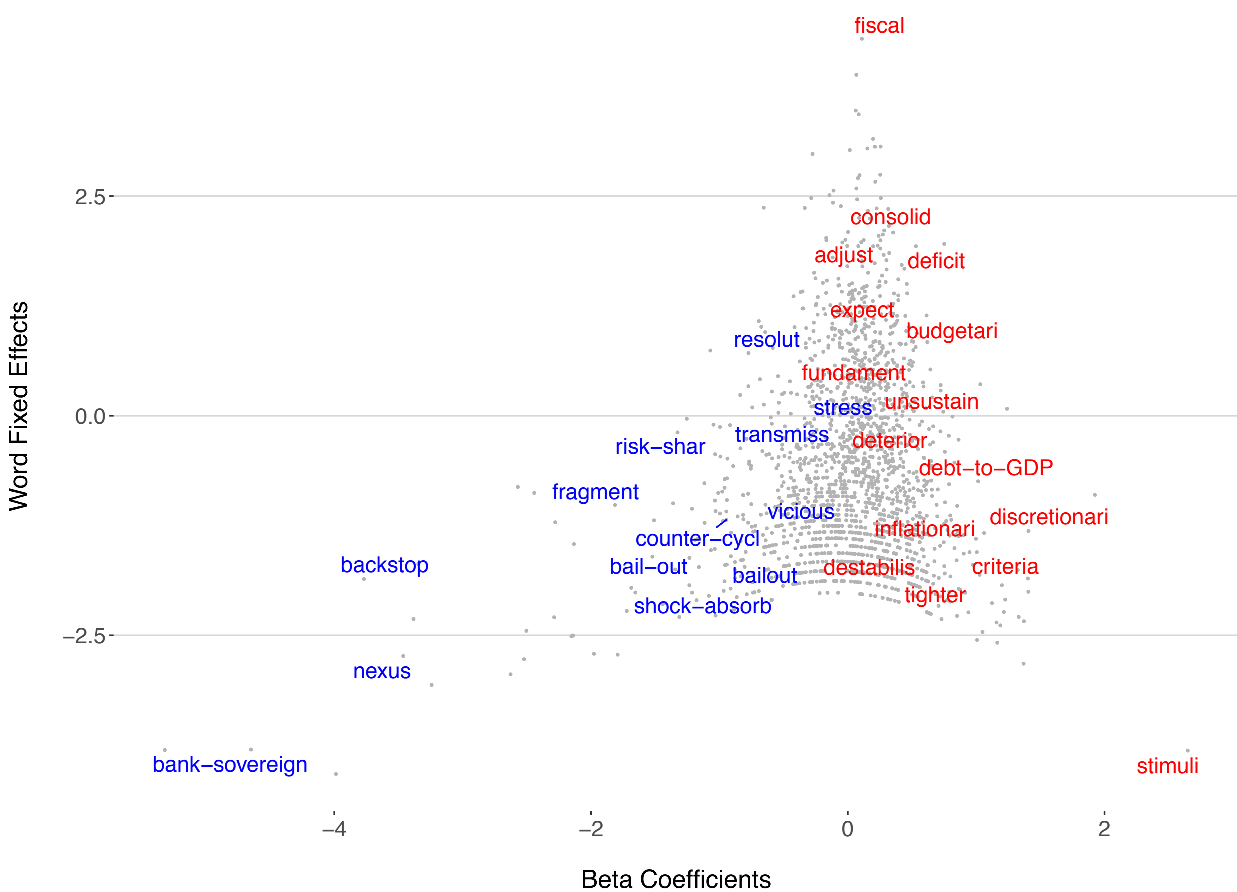
$$y_{ij} \sim Poisson(\lambda_{ij})$$
$$\lambda_{ij} = \exp(\alpha_i + \psi_j + \beta_j \cdot \omega_i)$$

where $y_{ij}$ is the count of word $j$ in quarter (or speaker) $i$'s document, $\alpha$ is a set of quarter (or speaker) fixed effects, $\psi$ is a set of word fixed effects, $\beta$ is an estimate of word-specific weights capturing the importance of word $j$ in discriminating between quarter (or speaker) positions, and $\omega$ is the estimate of quarter (or speaker) $i$'s position.

Notably, Wordfish provides estimates on a single dimension. Slapin and Proksch (2008) manually select text passages related to a given policy issue and then apply their method to quantify the latent ideal point in each sub-dimension. Thus, in order to obtain meaningful and reliable estimates, it is essential that input documents pertain to only one topic. Wordfish estimates also provide word discrimination parameters that can validate the classification approach. If words that contribute most to discriminating among candidates' positions are related to the topic of interest, one can infer that the classifier performs reasonably well.

After building document-term matrices, I automatically stem words by removing morphological and inflexional endings, as well as I exclude stop-words (e.g., the, of, at, etc.) and words mentioned in less than 20 percent of all documents to improve estimation efficiency (Proksch and Slapin 2009).

Figure 1: ECB Executive Board Members' Communication: Word Weights vs. Word Fixed Effects (Wordfish Estimates)



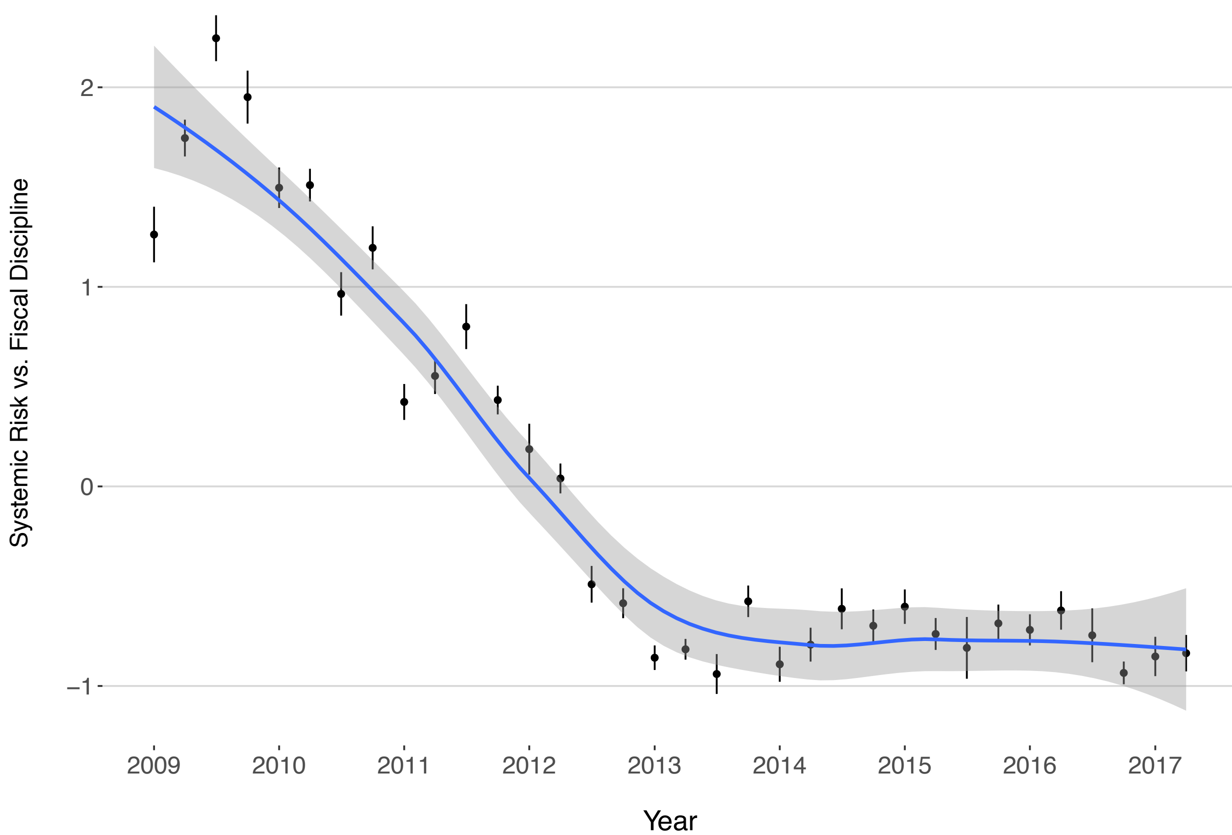

NOTES: This figure presents Wordfish estimates of word-specific weights and fixed effects from ECB Executive Board members' inter-meeting speeches. Weights on the x axis are plotted against fixed effects on the y axis. Words with positive weight are linked to the fiscal discipline view, words with negative weight to the systemic risk perspective.

Figure 1 plots words' beta coefficients and fixed effects. Stemmed words are distributed along the latent dimension identified by Wordfish. High-beta words (i.e., those at the extremes of the x-axis) are associated with greater discriminating weights. In Figure 1, terms on the left-hand side of the spectrum underscore problems of systemic risk and financial contagion stemming from the "vicious circle" between sovereign debt and banks' balance sheets. Indeed, some of the most discriminating words clearly refer to the "sovereign-bank nexus" and "bailouts" of banks under financial stress, as well as to the need for a greater degree of "risk-sharing" to tackle financial "fragmentation" in the euro area.

Conversely, words at the other end point to the importance of fiscal discipline. Indeed, they underscore the negative consequences that "deterioration" in fiscal "fundamentals" and "unsustainable" measures of fiscal "stimulus" have on investor "expectations". Moreover, they resonate with calls for fiscal "consolidation" and to respect the Maastricht "criteria". The most frequent and median term is "fiscal", which contributes to validating the automated procedure of corpus selection.

## 3.4 Results

Figure 2: ECB Executive Board Members' Communication: Systemic Risk vs. Fiscal Discipline by Quarter (Wordfish Estimates)




NOTES: This figure presents Wordfish estimates from ECB Executive Board members' inter-meeting speeches by quarter, together with their conditional mean. Estimates are distributed along the latent dimension identified in Figure 1. Higher (lower) values indicate a greater degree of communication related to fiscal discipline (systemic risk). Estimates show 95% confidence intervals.

Figure 2 presents Wordfish estimates of ECB Executive Board members' fiscal communication aggregated by quarter. Estimates are distributed along the latent dimension identified in Figure 1. Higher (lower) values indicate a greater degree of communication related to fiscal discipline (systemic risk).

The graph suggests the presence of significant ideational shift occurring within the ECB Executive Board during the crisis. The narrative on sovereign debt issues has changed from being focused on underscoring the benefits of fiscal consolidation and the risks from deteriorating fiscal fundamentals to highlighting the importance of addressing systemic risk and financial fragmentation in the euro area. Starting from high levels of austerity-focused communication and after an additional surge over 2009, there appears to be a declining trend in the weight attributed to fiscal consolidation. This change occurred most prominently in 2011 and 2012. Importantly, there is a particularly pronounced difference between the second and the third quarter of 2012 – namely, when the "whatever it takes" pledge took place and the OMT was announced. After that quarter, central bankers' framing of fiscal communication remained broadly stable.

Time-series estimates are complemented by estimates of ECB Executive Board member-specific positions, as showed in Figure 3. The relative position of each member along the identified dimension does not follow national lines. In particular, the difference in the relative importance attributed to systemic risk is very high between Jean-Claude Trichet and Benoît Cœuré, as well as between Jürgen Stark and Jörg Asmussen.

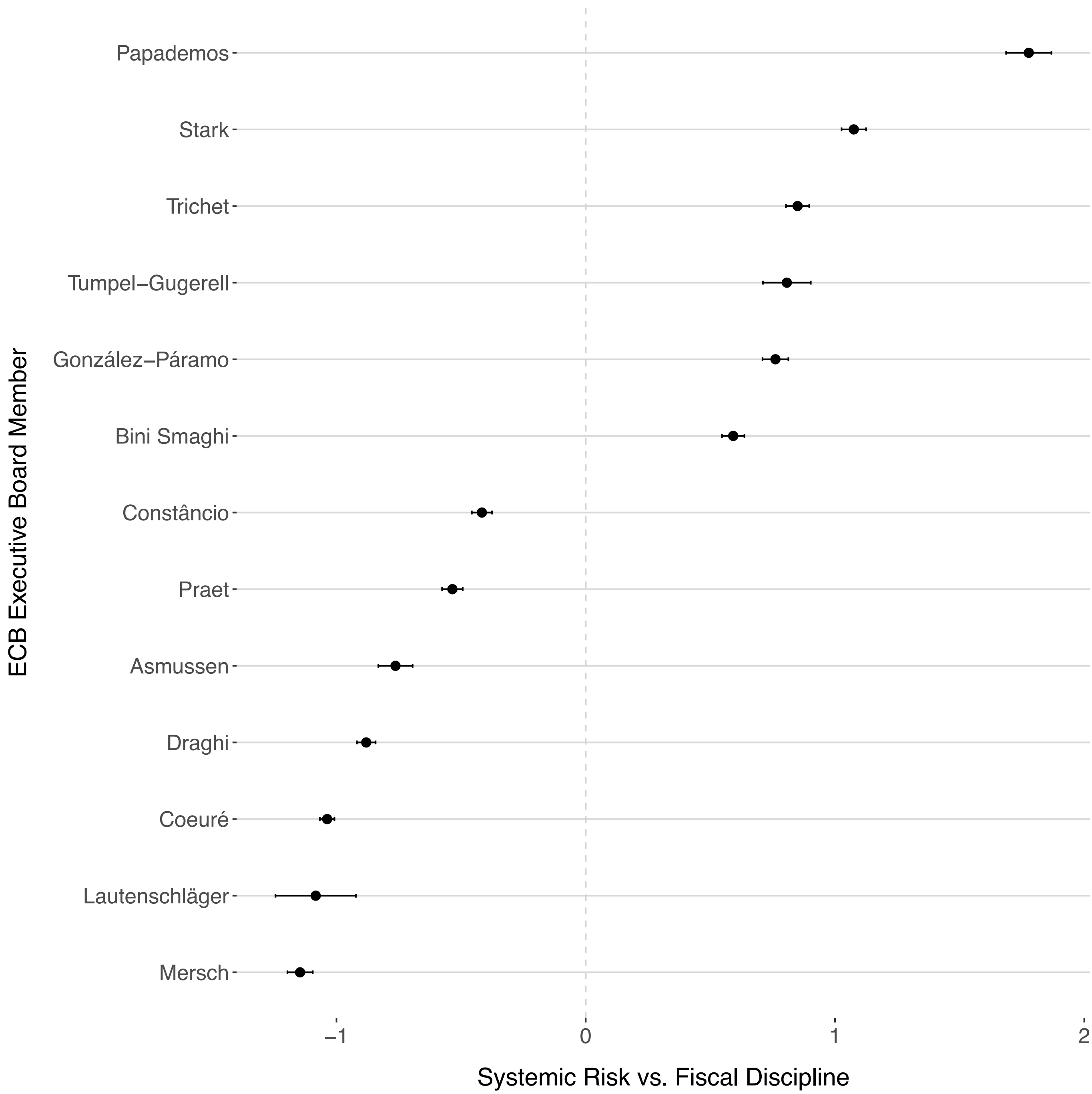
Furthermore, positioning does not appear to be influenced by a North-South divide, as Southern European members Papademos, González-Paramo, and Bini Smaghi talked more about fiscal discipline than Northern European members Asmussen, Lautenschläger, Mersch and Praet. Rather, the distribution of relative positions is characterised by a divide between old and new members of the ECB Executive Board. This is consistent with the over time variation showed in Figure 2. Overall, these results are consistent with *Hypothesis 1b*.

Nonetheless, these results do not cast enough light on the dynamics of the ECB's ideational change – most notably, they do not clarify whether it was incremental or punctuated. To address this point, Figure 4 presents estimates by ECB Executive Board member and quarter, thereby showing the relative position of each member over time. Evidence from Figure 4 suggests that the movement towards ideas of systemic risk was incremental and potentially driven by policy learning dynamics taking place within the ECB Executive Board. Conversely, it is more difficult to find evidence of punctuated change.

Two findings are particularly noteworthy. First, older members of the Board – namely, Bini Smaghi, González-Páramo, Papademos, Stark, Trichet, and Tumpell-Gugerell – started from high levels of fiscal discipline, but all of them exhibited either stable or lower degrees of austerity-focused communication by the end of their term. Importantly, the estimated conditional means show that the new members that succeeded them – namely, Asmussen, Cœuré, Constâncio, Draghi, Mersch, and Praet – started from positions that were not statistically different from the ones held by old members when they left the Board.

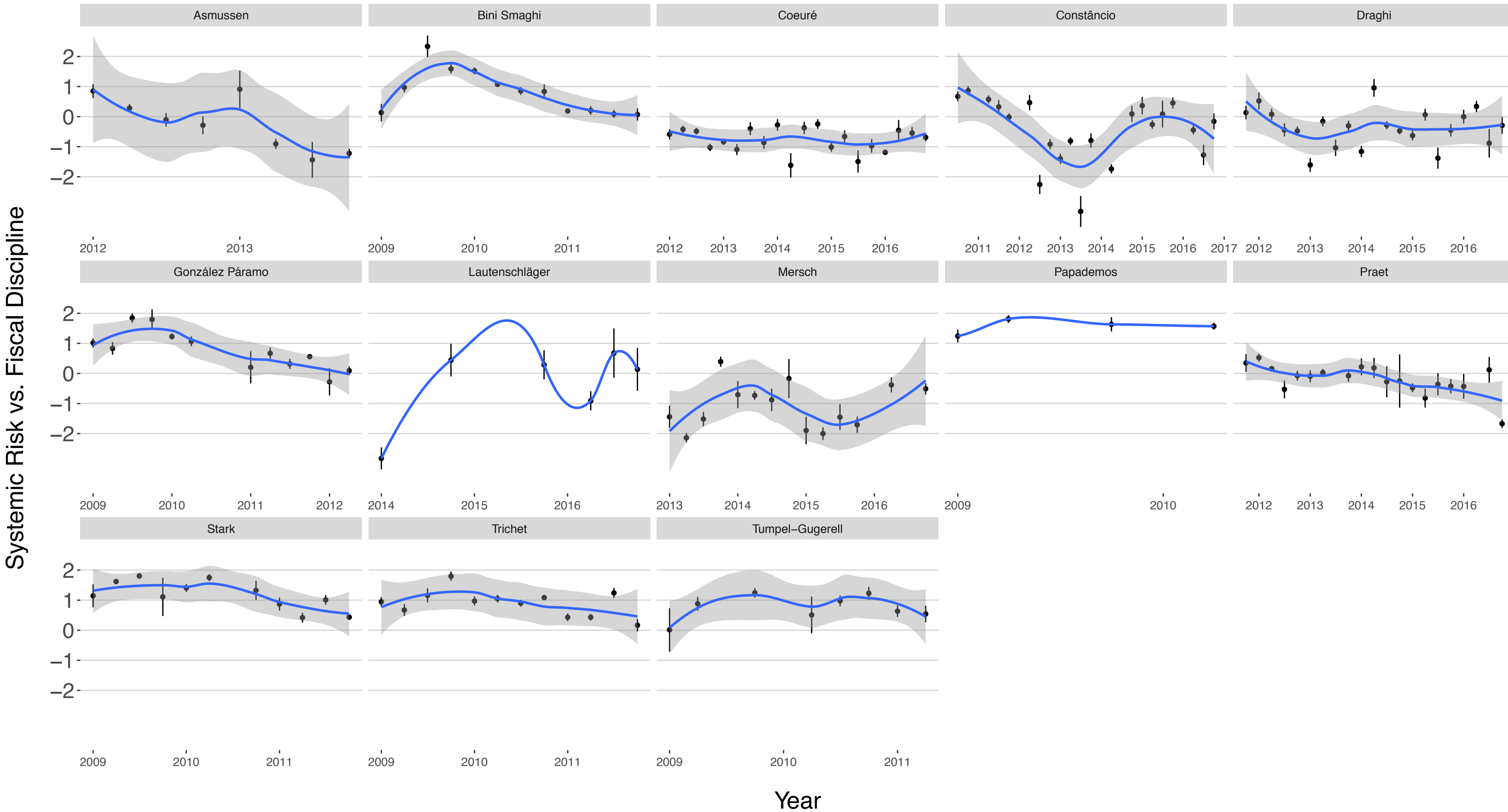
Second, despite significant variation across members, there is a common declining trend in the estimates, suggesting that the shift towards systemic risk of the Board can not be attributed to any single member. The only exceptions are given by Lautenschläger, whose estimates display much greater variation due to the low volume of fiscal communication in her speeches, and by Constâncio and Mersch, who reached the highest levels of systemic risk-related communication in 2013, and then converged to a more median position in line with other Board members. Taken together, these results are consistent with *Hypothesis 2b*.

Figure 3: ECB Executive Board Members' Communication: Systemic Risk vs. Fiscal Discipline by Member (Wordfish Estimates)




NOTES: This figure presents Wordfish estimates from inter-meeting speeches by ECB Executive Board member. Estimates are distributed along the latent dimension identified in Figure 1. Higher (lower) values indicate a greater degree of communication related to fiscal discipline (systemic risk). Estimates show 95% confidence intervals.

Figure 4: ECB Executive Board Members' Communication: Systemic Risk vs. Fiscal Discipline by Member and Quarter (Wordfish Estimates)




NOTES: This figure presents Wordfish estimates from inter-meeting speeches by ECB Executive Board member and quarter, together with their conditional mean. Estimates are distributed along the latent dimension identified in Figure 1. Higher (lower) values indicate a greater degree of communication related to fiscal discipline (systemic risk). Estimates show 95% confidence intervals.

# 4 Discussion

Is the output presented in Figures 2, 3 and 4 conceptually valid? A qualitative examination of ECB Executive Board members' speeches is useful to validate the results of automated text tools, and further assess the hypotheses laid out in Section 2.3. I hereby focus on the fiscal communication of the most pivotal member within the ECB Executive Board, namely, the President. Appendix B offers an extended discussion of all the other Board members.

Fiscal communication by ECB President Jean-Claude Trichet in 2009 and 2010 mostly underscored that "overly activist [fiscal] policies may risk destabilising expectations, thereby being counterproductive", as well as that "economic research has demonstrated that two-thirds to three-quarters of European households are 'Ricardian'" – i.e., they consume less and save more if they lack confidence in the soundness of future public finances (Trichet 2009). Furthermore, Trichet directly referred to the theory of "expansionary fiscal contractions" as the rationale for a swift implementation of austerity measures (Trichet 2010). Yet, despite Trichet's position, some resonance of the systemic risk perspective among older Board members can be found already in 2011 (e.g., Bini Smaghi 2011; González-Páramo 2011)

At the beginning of his term in November 2011, Mario Draghi did not display a markedly different stance vis-á-vis Trichet. The findings of Figure 4 are well exemplified by Draghi's first public appearance as President of the ECB. During his first press conference after the monetary policy decision of the Governing Council, Draghi ruled out the possibility for the ECB to act as a "lender of last resort" to governments and stated that "the first and foremost responsibility for maintaining financial stability and orderly financial conditions lies with national economic policies" (Draghi 2011). Continuity with Jean-Claude Trichet was perceived by international commentators, who raised concerns about Draghi's "excess of discipline" (e.g., Financial Times 2012).

A progressive change in economic narrative took place over the following months. While always exhorting euro area member states to implement "growth-friendly" fiscal consolidation and structural reforms, Draghi soon acknowledged and underscored the progress made by crisis countries in addressing their fiscal and macroeconomic imbalances (e.g. Draghi 2012b; Draghi 2012c). Then, the announcement of the policy shift of summer 2012 was underpinned by the systemic risk perspective and anticipated by speeches of other Board members informed by this narrative (e.g., Praet 2012; Cœuré 2012). Draghi argued that the short-term challenges of the euro crisis were related "mostly to the financial fragmentation" taking place in the euro area (Draghi 2012d) and claimed that large parts of the euro area were in a "bad equilibrium" where negative self-fulfilling expectations could take place (Draghi 2012a).

Based on this evidence, it is difficult to claim that Draghi, as any other Board member, acted as a normative entrepreneur that carried ideas of systemic risk into the Board and the institution. Instead, the movement towards systemic risk better resembles an incremental process of quasi-Bayesian updating given information flows. Repeated policy failures of the fiscal discipline view have progressively undermined the authority of its advocates both inside and outside the Bank. Conversely, the worsening of the crisis and the increase of between-country and sovereign-bank financial spillovers have favoured the diffusion of the systemic risk perspective.

Three episodes preceding the *critical juncture* of July 2012 may have played a major role in hollowing out the fiscal discipline view of the euro crisis. The first one is the appointment of the technocratic governments of Mario Monti in Italy and Lucas Papademos in Greece in November 2011. Despite the severe measures carried out by these governments and the positive effects of their appointment in the short-run, national technocrats did not restore investor confidence in their countries sovereign bond markets' in the medium-run, as sovereign bond rates further worsened over the first half of 2012.

The second episode is the signing of the Treaty on Stability, Coordination and Governance (i.e., the Fiscal Compact) in March 2012. Notwithstanding the greater degree of fiscal discipline and stricter surveillance imposed by the Fiscal Compact, the formalisation of EU member states' commitment to austerity did little to increase financial stability in Europe.

The third event is the bankruptcy of Bankia, the third largest institution in Spain, and the consequent bailout by the government, which determined a spike in Spanish sovereign bond yields and a wave of contagion to other crisis-stricken countries. This episode epitomised the reality of the "sovereign-bank vicious circle" in a clear and disruptive way, and may have persuaded the ECB to fully embrace the new interpretive framework.

# 5 Conclusion

Like international financial regulatory networks and other international economic institutions after the global financial crisis, independent central banks have not been impervious to ideas of systemic risk. This paper has argued that the ECB has progressively become more open to economic ideas stressing the systemic nature of the euro crisis, while changing its view on the fiscal roots of financial turmoil in Europe. This ideational turn underpinned the ECB's commitment to unlimited bond purchases in summer 2012, which was the single most effective measure to preserve the stability of the common currency.

To provide evidence for my argument, I have used a novel dataset of ECB Executive Board members' speeches and have applied an innovative technique that combines supervised text classification with unsupervised scaling methods. Results show that, after an initial level of high emphasis on fiscal discipline, ECB Executive Board members have gradually embraced a systemic narrative of the euro crisis. Crucially for my argument, this ideational change anticipated the commitment to unlimited bond purchases in summer 2012, and gained momentum at the time of the announcement. No ideational reversal took place afterwards. Evidence also suggests that the ECB's ideational turn was incremental and driven by policy learning dynamics occurring within the Board, rather than punctuated and directly induced by Board member replacements.

Future research will have to analyse in greater detail the dynamics of the ECB's policy learning, and assess the relative weight of different factors driving ideational change at the European level. Also, the analysis of competing narratives of the euro crisis may be extended to other national and supranational actors, such as the European Commission. Finally, greater attention should be paid to how the ECB engaged in rhetorical action and used systemic risk ideas as strategic devices so as to re-shape the feasibility frontier of its policy strategy and obtain political support from euro area member states for its unconventional measures.

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# Appendix

## A Coding Scheme, Classification Model and Summary Statistics

This section describes the procedure followed to apply classification and regression trees (CART) to identify paragraphs on fiscal policy and sovereign debt in ECB Executive Board Members' inter-meeting speeches. First, I select a random sample of 1000 paragraphs from the text corpus of all speeches. Second, I develop a coding scheme to identify the paragraphs of interest. I aim to select paragraphs containing the following types of statements:

(1) Statements on fiscal consolidation and sovereign debt sustainability in euro area member states. These may include references to deterioration or improvement of fiscal fundamentals, as well as financial, economic or political effects of fiscal austerity.

(2) Statements on fiscal interventions in euro area member states. These may include references to domestic automatic stabilisers, welfare transfers and bail-out of institutions under financial stress.

(3) Statements on fiscal governance, fiscal policy coordination, and fiscal integration in the euro area. These may include references to fiscal surveillance, fiscal institutions, and Eurobonds.

Third, based on this coding scheme, I label paragraphs in the sample as being relevant the topic of interest or non-relevant. Fourth, I convert text into a structured form. I rely on the classic "bag-of-words" approach and convert each paragraph into a vector $[t_0, t_1, \ldots, t_j, \ldots, t_n]$ that contains all of the $n$ unique words in the sample. $t_j$ denotes the number of times word $j$ is mentioned in the paragraph. I use this vector to build a term-frequency matrix $tf(M, n)$, where $M$ is the number of paragraphs and $n$ is the number of words. Thus, each cell $ij$ in the term-frequency matrix indicates $t_{i,j}$ – i.e., the number of times term $j$ occurs in paragraph $i$. Then, I multiply term counts by the inverse document frequency in order to downweight words that are likely to have low discriminative power. The inverse document frequency measures the frequency of occurrence of a term across all documents:

$$idf_j = \log \frac{M}{m : j \in m}$$

where $m$ is the number of paragraphs containing term $j$. The resulting tf-idf matrix is used as an input to the CART algorithm. CART are a method that relies on repeated partitioning of the data to estimate the conditional distribution of a response given a set of explanatory variables (Jones and Linder 2015). Let the outcome of interest be a vector of observations $y = (y1, ..., yn)^{\mathrm{T}}$ and the set of explanatory variables or predictors a matrix $X = (x_1, ..., x_{\mathrm{p}})$, where $x_{\mathrm{j}} = (x_{1\mathrm{j}}, ..., x_{\mathrm{nj}})^{\mathrm{T}}$ for $j \in 1, ..., p$. Here $Y$ is a binary variable that takes value 1 if the paragraph is relevant to the topic of interest, and 0 otherwise. $X$ is given by the tf-idf matrix. The goal of the algorithm is to partition $y$ conditional on the values of

$X$ in such a way that the resulting subgroups of $y$ are as homogeneous as possible. In this context, the CART algorithm identifies words that have high discriminating value to predict whether a paragraph is related to the topic of interest, and splits the data in two classes, based on whether or not each unit of analysis is predicted to belong to the set of paragraphs of interest.

To evaluate the performance of CART, I use two evaluation criteria – namely, accuracy and precision. Accuracy is the proportion of correct predictions among all predictions. Precision is the proportion of documents correctly assigned to a category among all of the documents assigned to that category. I train the classifier on a subsample of 667 paragraphs and test it on 333 paragraphs. Table A1 reports these measures.

Table A1: Evaluation Criteria of CART

| Evaluation Criterion | Score |
|---|---|
| Accuracy | 0.994 |
| Precision | 0.926 |

NOTES: This table presents results of performance evaluation of a classification tree employed to identify paragraphs on fiscal policy and sovereign debt issues in the corpus of ECB Executive Board members' inter-meeting speeches.

The CART classifier appears to perform very well, as nearly all of the relevant paragraphs in the test set are identified. After applying automated classification to the text corpus, I subset and maintain only the paragraphs that are predicted as relevant. The new corpus consists of 3,772 paragraphs and is used to run the unsupervised scaling model. As explained in Section 4.3, the performance of the classifier is also validated by results from the scaling model.

Table A2 reports summary statistics for the data I use in my empirical analysis. The table presents the absolute number of speeches and paragraphs, as well as the volume of fiscal communication – i.e., the number of paragraphs selected by CART as a share of total paragraphs – by Board member between 2009 and 2017.

Table A2: Summary Statistics of ECB Executive Board Members' Fiscal Communication

| Board Member | Speeches | Total Paragraphs | Fiscal Paragraphs | Fiscal Vol. (%) |
|---|---|---|---|---|
| Asmussen | 37 | 1750 | 133 | 7.6 |
| Bini Smaghi | 67 | 3546 | 242 | 6.8 |
| Cœuré | 132 | 6375 | 430 | 6.7 |
| Constâncio | 108 | 5949 | 290 | 3.9 |
| Draghi | 143 | 6069 | 359 | 5.9 |
| González-Páramo | 45 | 2342 | 201 | 8.6 |
| Lautenschläger | 45 | 1675 | 17 | 1 |
| Mersch | 93 | 3676 | 148 | 4 |
| Papademos | 14 | 570 | 34 | 6 |
| Praet | 90 | 3690 | 263 | 7.1 |
| Trichet | 119 | 5324 | 320 | 6 |
| Tumpel-Gugerell | 44 | 1562 | 64 | 4.1 |
| Stark | 33 | 1603 | 204 | 12.7 |

NOTES: This table presents summary statistics of ECB Executive Board members' communication in the 2009-2017 period. Fiscal volume is defined as the number of paragraphs about fiscal policy and sovereign debt identified by the CART classifier as a share of total paragraphs by Board member.

# B Extended Discussion

This section provides an extended discussion of the output presented in Figures 2, 3 and 4 and adds to the qualitative assessment of Section 4.

Similar to Jean-Claude Trichet, older members of the ECB Executive Board focused on the negative consequences of deterioration in fiscal fundamentals, arguing that the "main reason for the severe deterioration of public finances was the activation of automatic stabilisers as a result of the marked contraction of economic activity which followed the collapse of Lehman Brothers" (Papademos 2010) and claiming that "timely and credible exit strategies for withdrawing the existing fiscal stimuli must be developed and communicated as soon as possible" (Stark 2009).

The narrative of the crisis progressively changed starting from 2011. Great attention to fiscal discipline kept on being paid, but alternative views on the causes of the crisis started emerging. While maintaining a tough stance on fiscal discipline, Lorenzo Bini Smaghi was one of the first who highlighted the risks stemming from financial sector fragilities and contagion (Bini Smaghi 2011): "Even when fiscal policy is sound, as it was in Ireland's case, a country's public finances can be derailed if its banking system is overextended, poorly regulated and insufficiently diversified. Furthermore, given the integration of Europe's financial system, contagion cannot be avoided."

In a similar vein, José M. González-Páramo publicly acknowledge the literature "calling for euro-area wide bank supervisory bodies in order to bypass dangerous incentives at the national level to tolerate imbalances in the domestic banking sector, with associated risks of contagion and systemic crises" (González-Páramo 2011b) and talked about evidence of sovereign contagion in the euro area (González-Páramo 2011a).

However, it's after 2011 that the framing of the ECB's fiscal communication became mainly focused on systemic risk. In the second half of 2011, major changes in the composition of the ECB Executive Board took place. Mario Draghi replaced Jean-Claude Trichet as ECB President in November 2011. After his resignation, Jürgen Stark was succeeded by Jörg Asmussen in January 2012. Peter Praet and Benoît Cœuré also joined the board in 2011. In February 2012, Peter Praet was the first one who expressly referred to the sovereign-bank vicious circle as a root cause of the euro crisis (Praet 2012): "An adverse feedback loop set in: a vicious circle by which weak sovereign hurt banks and the need for bank recapitalisation and refinancing hurt sovereign. Risk aversion by market participants soared: there was contagion."

In the same spirit, just few days before Draghi's famous "whatever it takes" pledge, Benoît Cœuré described the decision to give the European Stability Mechanism the ability to recapitalise banks directly as a move that was "crucial to break the vicious circle between banks and sovereigns that is at the heart of the crisis" (Cœuré 2012).

A similar line was adopted by Jörg Asmussen. Starting from April 2012, he conceded that "several European countries face a vicious circle where weak domestic banks cause fiscal difficulties for governments, which in turn undermines public debt sustainability and further damages banks' balance sheets" (Asmussen 2012b). Moreover, after a legal challenge against the OMT programme was launched in Germany, Asmussen took a favourable stance on the ECB's decision before the German Federal Constitutional Court with arguments that entirely resonated with the systemic risk perspective (Asmussen 2013): "[...] the rapid rise in spreads in the first half of 2012 was not accompanied by an equivalent deterioration in those countries' fundamentals. At the same time, there was an acute risk that contagion would affect other euro area countries, pointing to systemic risks that were not limited to specific countries".

Nonetheless, as in the case of Draghi, it would be misleading to consider Asmussen as a carrier of new ideas inside the Board. Indeed, in his first two public speeches as a Board member, Jörg Asmussen appeared to display continuity with Jürgen Stark, as he defended the fiscal adjustment process in Greece and Ireland, and argued that fiscal consolidation based on spending cuts was key to foster economic growth (Asmussen 2012a; Asmussen 2012c).

The content of fiscal communication has been rather stable since 2013. From this year onwards, this type of communication has remained focused on calling for growth-enhancing supply side measures in euro area member states (i.e., "structural reforms"), and advocating greater European integration (i.e., "risk-sharing") to reinforce the euro area governance. This has been especially true for new members of the Executive Board. Former Bundesbank vice-president Sabine Lautenschläger, who succeeded Jörg Asmussen after his resignation in December 2013, is often regarded as a carrier of the doctrinaire view of the Bundesbank, especially since she signalled her opposition to the ECB's interventionism in many occasions (e.g., Wall Street Journal 2014; Reuters 2015). However, when considering her fiscal communication, one can hardly find any similarity with that of Jürgen Stark, another German member of the ECB Executive Board with a long experience in the Bundesbank.

Consistent with her role of Vice-Chair of the ECB Supervisory Board, Lautenschläger has put much greater emphasis on problems of systemic risk in the euro area than Stark. For instance, she argued (Lautenschläger 2016):"It's becoming more likely that systemic problems are emerging or intensifying: a state infects the national banking system, or vice versa, and the problems spread across borders. Such systemic risks can then only be kept in check by way of a fiscal risk-sharing". Furthermore, she has repeatedly called for greater European integration and claimed that a European finance minister with strong powers could serve as an anchor for deeper economic union (Lautenschläger 2017).

Along the same line, Luxembourger ECB Executive Board member Yves Mersch, who joined the board in December 2012 and is often regarded as an anti-inflation "hawk" (Politico 2013), repeatedly referred to the sovereign-bank loop as the key cause of the euro crisis (e.g., Mersch 2013b; Mersch 2016) and called for further steps towards fiscal union and a stronger governance of the economic union (e.g., Mersch 2013a; Mersch 2014).

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