

What's the Message? Interpreting Monetary Policy Through Central Bankers' Speeches



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Summary

Collecting thousands of speeches, we analyze their content by means of statistical learning techniques. Our focus is on speeches made by central bankers in Europe. Four topics are identified: structural economic policies, economic growth, monetary and economic integration; inflation, inflation expectations, price stability; speeches that deal with financial stability, risk, banks and regulation; finally, outside the box topics related to issues not directly associated with the remit of central banks. The analysis reveals that the ECB, other non-euro area central banks and central banks from Central- East and Southeastern Europe (CESEE) devote much of their communication to issues related directly to monetary policy and price stability. Moreover, the monetary authorities in CESEE countries are seen as covering a wider array of topics than their counterparts in the euro area as a means perhaps of educating policy makers and the general population about the role and influence of monetary policy.

Introduction

In economics there is greater emphasis, inspired by both theory and accumulated empirical evidence, of the critical role played by communication as a vehicle to influence expectations (e.g., Woodford 2003). Greater emphasis on communication can be seen as a recognition of the power of narratives to influence expectations (Shiller 2019). Central bankers also understand that communicating in crises differs from normal times (e.g., Carney 2009).

Speeches represent the most consistent format used by senior central bank staff to communicate to the public past central bank decisions and the economic outlook. This is the focus of our empirical analysis although we acknowledge that central bank communication takes place along several dimensions (e.g., see De Haan and Sturm 2019).

What Do We Know About the Impact and Practice of Central Bank Communication?

Central bank communication is often linked to central bank transparency and accountability (e.g., see Dincer et al. 2019). Both follow directly from the provision of greater autonomy. Three reasons explain why central bank communication can play a distinct role in the monetary policy setting process. Expectations of future inflation and interest rates, that is, forward guidance, are also on the minds of investors, households, and firms. Second, central banks 'talk' about a wide variety of issues and problems. Indeed, academic investigations have begun to examine the relationship between central bank goals and the topics covered by speeches and other forms of communication. Third, the last decade and a half has seen a series of economic crises. Consequently, communication has shifted emphasis towards implications for financial stability.

Nevertheless, communication is a complex subject. In particular, communication about monetary policy serves a multitude of purposes. For example, in the case of a central bank, communication must avoid the risk that financial markets and the public interpret central banks as institutions that care only about inflation to the possible detriment their policies have on real economic outcomes. Moreover, communication is further complicated by the challenge of translating technical language into everyday language that the general public can understand. Indeed, some former central bankers are skeptical of the ability of monetary authorities to explain the conduct of monetary policy to a wider public. As Blinder (2018, Prediction #4), former vice-chair of the US Federal Reserve argues: "Central banks will keep trying to communicate with the general public, as they should. But for the most part, they will fail."

Communication as Data

A variety of methodologies have surfaced to analyze the content and sentiment contained in various forms of communication. Economists have been late to adopt procedures and techniques developed in other fields, notably psychology and political science. However, approaches borrowed from other fields have now made a significant impact in interpreting the conduct of monetary policy. At the risk of some oversimplification, we highlight four that have been used so far. They are: defining dummy variables that classify whether central bank communication is dovish or hawkish. Second, the quantification of the tone and content of central bank verbal and written documents via the collection of data on the frequency of words used. Third, surveys are conducted where the respondents can range from the central bankers themselves to the public at large. Finally, by automatically identifying topics that senior central bankers cover, for example, in their speeches using text mining and statistical learning techniques. Our recent study (Feldkircher et al., 2021) provides more details and links to the broader literature (also see Gentzkow et al., 2019).

Heard on the Street: Topics Central Bankers Talk About

We collected data on central bankers' speeches by scraping the archive of the Bank for International Settlements' (BIS). This is a global archive which contains over 15,500 speeches starting in 1996. We then selected speeches from European central banks focusing on euro area countries on the one hand and non-euro area countries on the other. The analysis aims to reveal whether we can find some similarities among the topics covered and whether these regularly differ to those covered by EA member states. The data show a steady rise in the number of speeches particularly after crises events. Notably, the frequency of communication need not depend on the (economic) size of a country nor on whether the country pursues an independent monetary policy or is part of a monetary union. There is one additional common feature that conceivably influences the number and topic(s) of speeches covered, namely the state of the business cycle.

The methodology employed in our analysis assumes first that each text document potentially covers not a single but a number of a priori unknown topics (think of "themes" like economic growth, or financial crisis) and second, each topic itself is defined by the frequency with which specific sets of words appear (e.g., in a topic "financial crisis", bankruptcy, or debt appear more often; see Blei et al., 2003). After some preliminary data analysis, we end up identifying four main topics in the speeches collected. The Chart 1 and 2 illustrate some of our findings based on widely used word clouds.

Chart 1: Topic "European integration" and "Monetary policy and price stability"

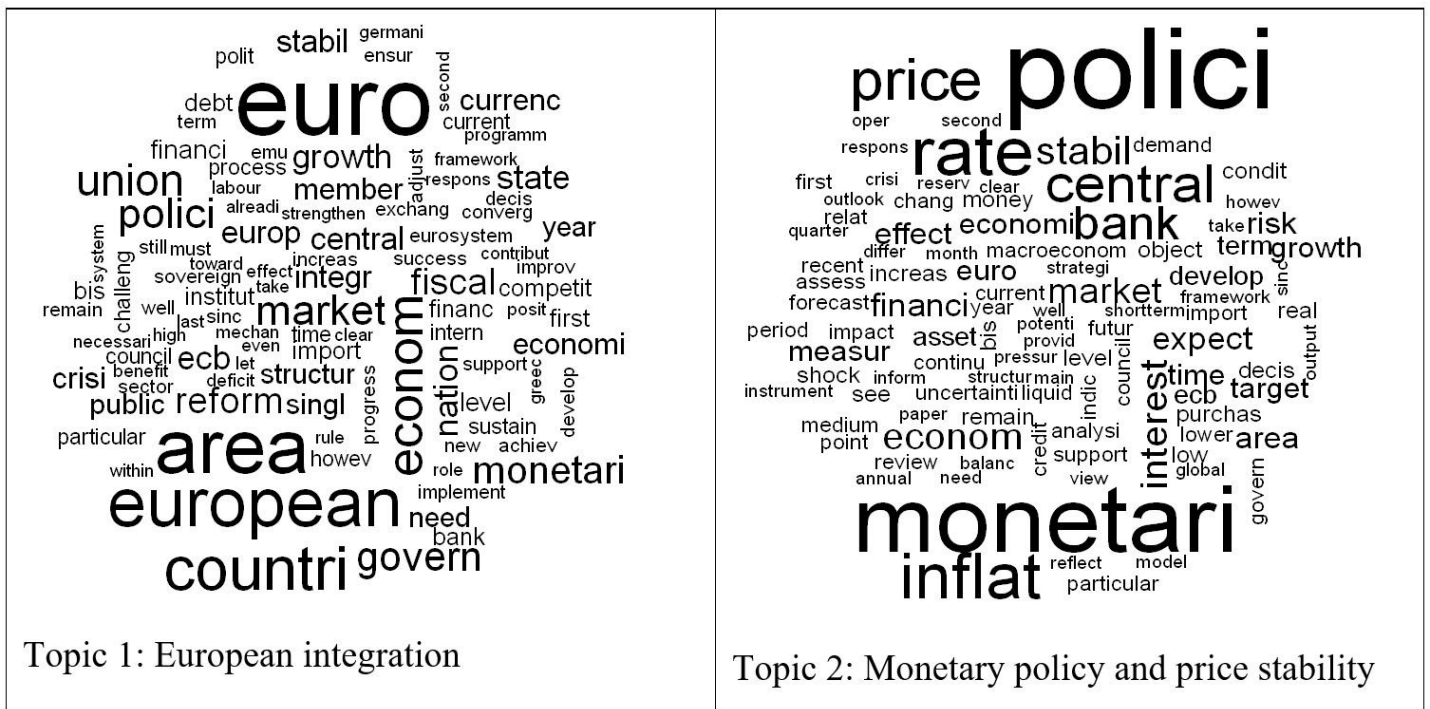
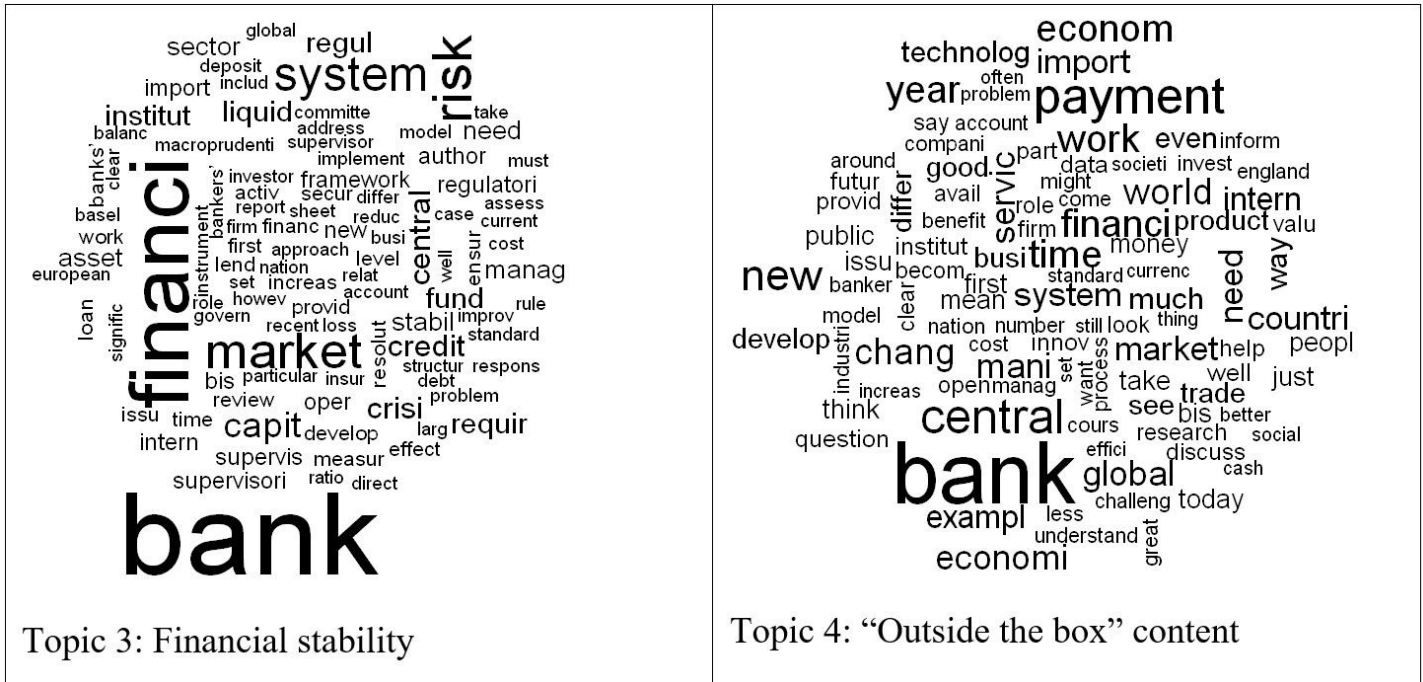
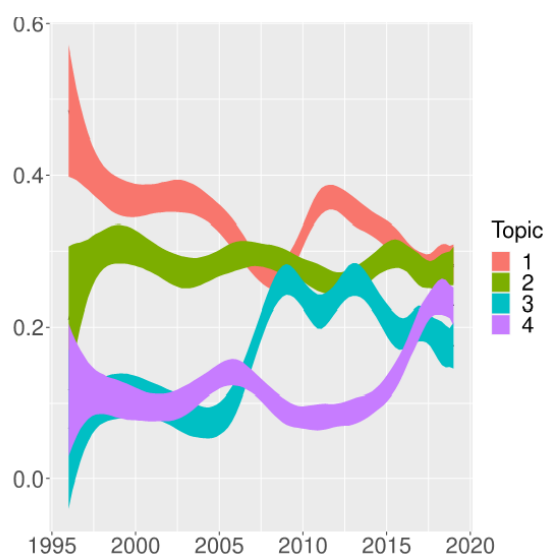


Chart 2: Topic "Financial stability" and "Outside the box content"



Each word cloud visualizes the most important words for each of the identified topics, with larger words reflecting a higher frequency of that word appearing in a specific topic. Note that we use the words' roots to make sure that the frequency of similar words is aggregated (e.g., inflation and inflationary, policy and policies, etc.). Terms frequently used in speeches on the first topic (*Topic 1*) consist of structural economic policies, economic growth, and monetary and economic integration. *Topic 2* is defined by inflation, inflation expectations, price stability and monetary policy. In *Topic 3*, we have speeches that deal with financial stability, risk, the banking sector, and regulation. *Topic 4* is an out of the box, or residual, topic. Here, speeches related to technological innovation, education and other issues not directly associated with the remit of central banks, are included. Clearly, while the foregoing chart covers the complete sample period, the interests of central bankers in talking about various topics is not static over time. The chart below shows how the relative frequency of speeches deals with the four topics identified above.

Topic prevalence in central bank speeches over time



The above chart shows some striking differences in topic proportions over time. *Topic 1*, structural integration, was the content of many central bankers' speeches in the early 1990s and in the run up to monetary union. With the mid-2000s, a declining trend in the proportion of speeches addressing economic integration set in, with a reversal when the ESDC and talk about euro break-up emerged. *Topic 2*, monetary policy, is much more time-invariant over our sample period. *Topic 3*, financial stability, gained certain momentum with the onset of the global financial crisis. *Topic 4* receives more coverage recently, which could imply that central bankers towards the end of the sample address issues beyond their usual remit.

We perform several other additional tests to determine regional variations over time and across topics. Several interesting findings are reported, and readers are asked to consult our study for greater details. Perhaps unsurprisingly, given the European Sovereign Debt crisis, financial stability concerns rank high at several central banks (e.g., Albania, Bosnia Herz., Bulgaria). However, we also report that several of the countries of Central- East and Southeastern Europe (CESEE; e.g., Croatia, Czechia, Hungary, Poland) show a preference shown for speeches that deal with outside the box' topics. Whether euro area membership, where monetary policy decisions are made at the ECB, plays a role is unclear but is a subject for future research.

Where Do We Go From Here?

An important device used by central banks to communicate consists of speeches. Speech intensity does not appear to depend on the monetary regime: some central banks that are part of the euro area contribute to the same extent as others with their own independent monetary policy. It appears that the frequency of delivering a speech is part of the central banks' overall monetary policy strategy. The analysis reveals that the ECB, other non-euro area central banks and CESEE central banks devote much of their communication to issues related directly to monetary policy and price stability. Moreover, the monetary authorities in CESEE countries are seen as covering a wider array of topics than their counterparts in the euro area as a means perhaps of educating policy makers and the general population about the role and influence of monetary policy.

There is much more that we still don't understand about the communication function that requires additional research. For example, we still require a clearer understanding of the determinants of speech topics. For example, data on the audience, precise timing of speeches, to name just two factors, would be helpful in this respect. Next, it would be useful to extract more precise information about the interaction of topics and tone or sentiment of speeches. As noted above, observers of monetary policy are keenly interested in whether a speech contains hawkish or dovish elements. This is becoming especially important as central banks around the world begin to think about tightening monetary policy once the COVID-19 pandemic is history. These are some of the areas we plan to contribute future research. ■

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