

# Googling “Inflation”: What does Internet Search Behaviour Reveal about Household (In)attention to Inflation & Monetary Policy?

Christian Buelens

DISCUSSION PAPER 183 | MARCH 2023

EUROPEAN ECONOMY



**European Economy Discussion Papers** are written by the staff of the European Commission's Directorate-General for Economic and Financial Affairs, or by experts working in association with them, to inform discussion on economic policy and to stimulate debate.

## **DISCLAIMER**

The views expressed in this document are solely those of the author(s) and do not necessarily represent the official views of the European Commission.

Authorised for publication by Lucio Pench, Director for Macroeconomic Policies.

## **LEGAL NOTICE**

Neither the European Commission nor any person acting on behalf of the European Commission is responsible for the use that might be made of the information contained in this publication.

This paper exists in English only and can be downloaded from [https://economy-finance.ec.europa.eu/ecfin-publications\\_en](https://economy-finance.ec.europa.eu/ecfin-publications_en).

Luxembourg: Publications Office of the European Union, 2023

PDF ISBN 978-92-76-52951-4 ISSN 2443-8022 doi:10.2765/843032 KC-BD-22-020-EN-N

---

© European Union, 2023

Non-commercial reproduction is authorised provided the source is acknowledged. For any use or reproduction of material that is not under the EU copyright, permission must be sought directly from the copyright holders.

CREDIT

Cover photography: © iStock.com/g-stockstudio

# Googling “Inflation”: What does Internet Search Behaviour Reveal about Household (In)attention to Inflation and Monetary Policy?

Christian Buelens

## Abstract

This paper shows that internet search intensity for the term “inflation” provides a meaningful direct measure of attention to inflation by households across the euro area. In support of the theory of rational inattention, it finds that inflation attention is contingent on the level of inflation and increases in it in a non-linear manner, pointing to different inflation attention-regimes. As inflation increases, economic agents abandon their state of inattention at an accelerating rate, which may have lasting implications on inflation expectations and the way they are formed. Attention to inflation in some euro area countries is also found to be triggered by other factors, notably monetary policy decisions or a deterioration in households’ economic situation. This suggests that households do establish a link between inflation and monetary policy decisions, and think about inflation when economic sentiment drops. However, there is strong heterogeneity across the euro area, both in terms of inflation attention levels and sensitivity. These findings have implications for public communication in high inflation attention-regimes and for the modelling of inflation expectations when there are information frictions.

**JEL Classification:** C82, D83, D84, E31, E52, E58, E7.

**Keywords:** Inflation, Attention, Rational inattention, Expectations, Internet, Search engine, Google trends, Central banks, Monetary policy.

**Acknowledgements:** I have benefited from discussions and many useful comments and suggestions from Jorge Duran Laguna, Francesco Montaruli, Eric Ruscher, Virgilijus Rutkauskas, Matteo Salto, Alexander Schäfer and Joris Wauters, as well as seminar participants at the European Commission, who I would all like to thank. All errors and views expressed in this paper are mine.

**Contact:** Christian Buelens, European Commission, Directorate-General for Economic and Financial Affairs, [christian.buelens@ec.europa.eu](mailto:christian.buelens@ec.europa.eu).



# CONTENTS

- 1. Introduction .....5
- 2. Data and descriptive statistics .....10
- 3. Empirical analysis .....16
  - 3.1 Inflation attention and inflation levels .....16
  - 3.2 Inflation attention and monetary policy .....18
  - 3.3 Event study of daily inflation attention around Governing Council meetings.....23
- 4. Conclusion .....25
- 5. References.....28
  
- 6. ANNEX I: Tables.....31
- 7. ANNEX II: Construction of time series of search intensity .....51
- 8. ANNEX III: ECB monetary policy events.....54



*“[We] need to know more about the manner in which inflation expectations are formed and how monetary policy influences them.” (Janet Yellen, 2016).*

*“The basic communication problem [of central banks with the broader public] is simple, though its solution isn’t. Households and firms have a low desire to be informed about monetary policy and are relatively inattentive to news about it.” (Blinder et al., 2022).*

*“One useful insight into how actual inflation may affect expectations about its future path is based in the concept of “rational inattention.” When inflation is persistently high, households and businesses must pay close attention and incorporate inflation into their economic decisions. [...] Of course, inflation has just about everyone’s attention right now, which highlights a particular risk today: The longer the current bout of high inflation continues, the greater the chance that expectations of higher inflation will become entrenched.” (Jerome H. Powell, 26 August 2022).*

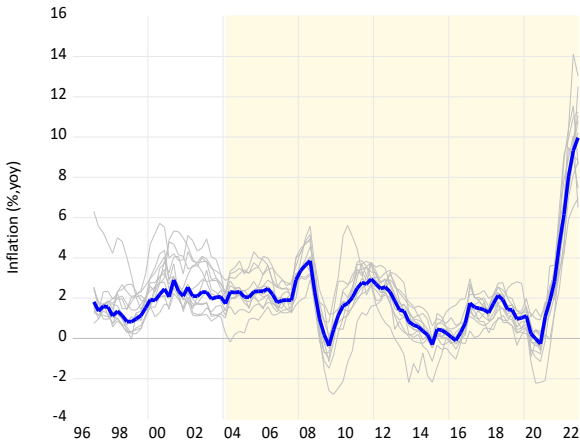
## 1. INTRODUCTION

The importance of inflation expectations in economics is undisputed, as testified by their central role both in economic theory and economic policy-making – they are used to explain inflation dynamics (via the New Keynesian Philips curve), consumption paths (via the Euler equation) or forward-looking monetary policy reactions (Clarida et al., 2000). The anchoring of expectations around a central bank’s inflation target should prevent supply shocks from being unnecessarily dragged out through second-round effects and bring inflation back towards target in the swiftest and least costly way. Central banks (but not only) thus have a fundamental interest that expectations remain closely tied to their inflation objective. Central banks themselves can contribute to such anchoring both by establishing credibility through a track record of monetary policy actions underlining their commitment to their target, as well as forward-looking communicating in view of steering the inflation expectations of different groups of economic actors - notably financial market participants, households and firms – towards their target (Blinder et al., 2022).

The understanding of how inflation expectations by different agents are formed, however, does not (yet) fully live up to the pivotal role they play in economic theory and policy-making. And while central bank actions and communication are certainly one factor influencing them, they are by far not the only one. Households, in particular, are exposed to a flurry of signals that may shape their inflation beliefs, such as media reports and comments, price changes observed in their everyday life when shopping for groceries or refuelling their car, say, or simply the reminiscence of actual inflation sometime in the past. However, as households typically have many other issues on their mind (definitely so when compared to professional forecasters or financial market participants), inflation is unlikely to catch their undivided attention at any moment in time and available inflation signals may not be adequately processed. Many households are likely to be inattentive to inflation (which may be deliberate, i.e. rational) or even have no views at all on inflation, let alone on how monetary policy

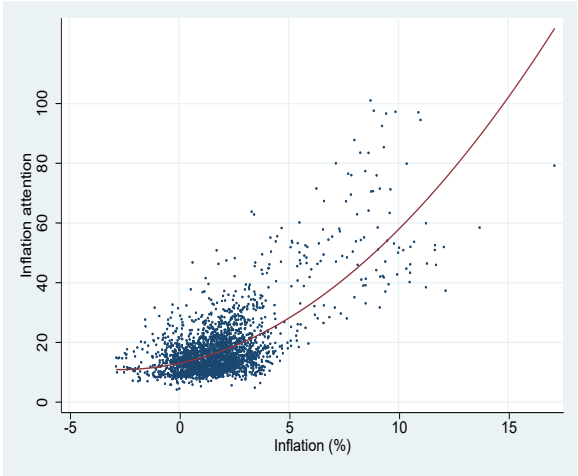
influences it. However, this is likely to be state-contingent and to change in periods in which broad-based price increases are difficult to escape and when references to “inflation” become ubiquitous,<sup>1</sup> as has been the case across the euro area and other advanced economies following the surprisingly rapid and inexorable rise in inflation since early 2021 (Figure 1). In September 2022, for example, items representing almost half of the euro area consumption basket, registered their highest annual prices increases since the introduction of the euro. In such a context, inflation is inevitably propelled to the centre of economic agents’ attention, as proxied is notably visible in the growing intensity of internet searches (Figure 2). It is plausible that this multiplication of inflation signals has implications as to how they are processed in the inflation expectations-formation process.

Figure 1: Euro area inflation and inflation dispersion, %, (January 2004 – September 2022)



Note: figure shows the euro area aggregate HICP (Harmonised Index of Consumer Prices) inflation (blue) and national HICP inflation for the 12 original euro area countries. The shading corresponds to the period studied in this article.

Figure 2: Inflation attention and inflation rate (January 2004-September 2022)



Note: the figure plots national HICP inflation rates against the Google Search intensity (seasonally adjusted) for the term “inflation” and superposes a quadratic fit. Maximum search intensity for any given month and country corresponds to 100. The sample contains the 12 original euro area countries.

This paper assesses the degree of attention households pay to inflation across the euro area, through the lens of a simple exercise based on internet search data, as collected from Google Trends, which provides aggregate information from Google Search, the dominant internet search engine.<sup>2</sup> It is

<sup>1</sup> Besides news headlines and policy-discussions on “anti-inflation” measures, anecdotal evidence also suggests that high inflation features as a background in advertising, as well as private conversations.

<sup>2</sup> According to the website [statcounter](https://www.statcounter.com), the market share of Google Search in 2022 hovered about 92% both globally and in Europe. Moreover, the verb to google has been added to different dictionaries, including for example the Oxford English Dictionary. In its intransitive form, it is defined as “To use the Google search engine to find information on the internet”. In its transitive form, it is defined as “To enter (a search term) into the Google search engine to find information on the internet; to search for information about (a person or thing) in this way” (“Google, v.2.” OED Online, Oxford University Press, December 2022, [www.oed.com/view/Entry/261961](http://www.oed.com/view/Entry/261961). Accessed 6 March 2023).



structured around the question what internet search behaviour can reveal about household attention to inflation and monetary policy, respectively. Quite a lot, as documented below.

Internet searches are made by the own initiative and decision of an individual internet user, in view of satisfying a desire to be informed about a particular issue. With the ubiquity of internet access nowadays, individuals can make queries on any subject, regardless of time and place, at virtually no cost and without any other significant constraint. The fact that a user is “active”, confers a clear behavioural trait to a query, revealing an intrinsic interest in or attention to a given topic or issue, as well as a demand for further information. Information obtained through internet searches thus also contrast with information acquired through traditional media - think about the morning radio programme, evening news on television, the newspaper or a website. While the latter have been shown indeed to be a major source of information and knowledge on monetary policy and inflation (van der Crujisen et al. (2015), Hayo and Neuenkirch (2018)), they are however likely to be consumed primarily for general information purposes, with very limited scope to “search” for specific information, meaning that obtaining information on inflation and monetary policy would essentially be unrelated to a person’s interest. Through the observation of aggregate internet search queries, individual *quests for information become* information in their own right. Given that data on aggregate search patterns are a by-product of individual search decisions and are not solicited by a researcher, contrary to a survey, they are unbiased and closely related to the casual and unplanned character of natural experiments. The existence of the aggregate information is purely fortuitous and determined *ex post* by the researcher.

The informational content and quasi-real time availability of internet search data has increasingly been exploited for research and analysis in a wide range of economic areas, where they complement traditional data sources. The corollary is a flourishing Google Trends literature and a growth of applications in policy institutions.<sup>3</sup> For example, the OECD provides a weekly tracker of GDP growth using Google Trends data (Woloszko, 2020). The usefulness of Google Trends data for now- or forecasting purposes has been demonstrated, for example, for car sales (Choi and Varian, 2009), unemployment in Germany (Askatas and Zimmermann, 2009) and the Unites States (D’Amuri and Marcucci, 2017), or consumption (Vosen and Schmidt, 2011). Stephens-Davidowitz (2013, 2014) examines search behaviour to infer societal attitudes and biases, which do not always emerge from surveys, while Brodeur et al. (2021) have used searches on Google to assess well-being during the lockdowns imposed during the Covid-19 pandemic. Separately, Google Trends has also been considered and used for the real-time surveillance of epidemics and disease outbreaks (Carneiro and Mylonakis, 2009).

This paper makes an innovative use of Google Trends data by exploiting them as a complementary data source in the context of inflation belief formation by households.<sup>4</sup> The focus of this paper is on their attention to inflation (defined as the annual change in the general price level). As “inflation” is both a measure of the evolution of purchasing power and the main indicator on the radar of inflation-targeting central banks, it is also the dominant term used in the media and public debate. It is thus considered that searches for the term “inflation” provide a meaningful and representative measure of

---

<sup>3</sup> See McLaren and Shanbhogue (2011) or Robin (2018) on the use of internet search data at the Bank of England and Banque de France, respectively.

<sup>4</sup> Related parallel work using google searches of inflation as an attention measure has recently also been carried out by Korenok et al. (2022) and Marcellino and Stevanovic (2022).

attention to inflation.<sup>5</sup> Still, as is well-known from the literature on subjective inflation expectations, familiarity with concepts on the one hand and with terms attached to describe them on the other hand, may introduce some noise. For example, individuals interested in “inflation”, may search for related terms (“price stability”, “price level”, “price change”) or related concepts that speak more to their actual concerns (e.g. “purchasing power”, “cost of living”). The existence of multiple languages across the country-sample potentially adds a layer of complexity.<sup>6</sup>

While the internet search intensity for “inflation” may be an adequate measure for attention to it, it can neither be ascertained what motivates the search in the first place and it cannot be known how the information found by the internet user is then processed further. This contrasts with a survey. In the latter, agents’ views are elicited on an issue that is of interest *to the investigator*, and the answers provided can then be processed by the latter. In such a researcher-driven exercise, there is *a priori* no intention to affect the respondent’s views or behaviour. Whereas both questions and answers are known in a survey, neither is when it comes to internet search data. The only certainty is that internet users have solicited a search engine with a query involving a particular keyword. Also, search engines are not conceived to provide answers, but to organise results that may contain answers. The obtained search results may, for example, provide some factual information (e.g. in response to the question “how high is inflation?”), but can also provide steer for the subsequent formation of subjective views (perceptions and expectations) or decisions (e.g. “will inflation get worse?”), depending on how and whether a user continues “surfing” along the links returned. Importantly, the data on search intensity thus only capture one single step in a sequence of events. Parallels can be drawn with information-provision experiments, in which participants’ inflation expectations are elicited before and after being provided with specific information items on inflation, as done for example in Coibion et al. (2022). They show that information treatments can entail large updates of expectations, with the size however depending on the type of information (“treatment”) provided. Their finding thus suggests that information obtained through internet searches is not innocuous, as it could result in an updating of information and beliefs. Indeed, the primary motivation for using a search engine is to address the demand for specific information. In contrast to a randomised controlled trial, however, there is clear self-selection by internet users who use a search engine (and possibly have a prior bias), while the information “treatment” returned by the search engine is neither controlled, nor known by the researcher. For example, in one imagined scenario, the user may “click” on the link of the statistical authority or the central bank and stumble across information on the latest inflation rate or the inflation target, while in another one, the user may land on a forum discussing biased views on monetary policy and providing erroneous facts. Internet searches hence carry risks, such as confirmation biases or the creation of new biases.

By examining household attention to inflation and monetary policy, this paper is related and contributes to the literature on inflation expectations and different strands of it, notably pertaining to inattention and central bank communication. Most modern macroeconomic models assume full-

---

<sup>5</sup> By construction, the analysis is limited to Google Search users. Clearly, changes in inflation attention do not necessarily imply Google searches.

<sup>6</sup> Research on subjective inflation expectations however has shown that the socio-demographic characteristics matter in explaining inflation beliefs (Jonung (1981); D’Acunto et al (2022)). A limitation of the aggregate format of search-intensity is that only time and location of the search are available. Nothing is known on their individual characteristics (e.g. gender, income or wealth) and whether they have a direct role in price determination, e.g. as managers responsible for price setting, trade union representatives negotiating a collective wage agreement or property owners adjusting their tenant’s rental price.

information rational expectations (FIRE), implying that economic agents have full knowledge about the state of the economy and that their expectations are model-consistent. When confronted with the data, however, the FIRE assumption has proven to be a fairly strong one, both because agents often have biased expectations and disagree among each other (D’Acunto et al., 2022), and because they appear to be subject to information constraints (Coibion and Gorodnichenko, 2012 and 2015). The latter observation has engendered the construction of models with information frictions. Mankiw and Reis (2002) propose a sticky-information model, in which information has a fixed acquisition cost inducing agents to only update it infrequently. Woodford (2001), meanwhile, proposes a model in which information is available, yet noisy, meaning that agents may struggle processing it. Models of rational inattention, as proposed by Sims (2003) and integrated into a dynamic stochastic general equilibrium model by Mackowiak and Wiederholt (2009), are closely related to this. In these models, information would be available in principle, but as economic agents decide on the optimal amount of attention they allocate to a particular issue (i.e. in some sense they prioritise), they may forgo, or imperfectly use it. Applied to inflation, agents essentially compare the cost of attention to the cost of making sub-optimal decisions as a result misperceiving inflation. A noisy (high volatility) macroeconomic series would warrant high attention, while a stable series would in turn permit a reasonable degree of neglect. In a stable inflation environment, for example, the benefits of monitoring inflation are easily outweighed by the costs, and agents would consequently pay little attention to inflation. To some extent, inattention in the pre-pandemic decades may hence be the corollary of successful monetary policy by independent inflation-targeting central banks (Coibion et al., 2020). Conversely, as inflation picks up, the cost-to-benefit ratio of attention changes and incomplete information translates into larger mistakes. Bracha and Tang (2022) construct time series of inflation inattention measures for the US by exploiting contradictory response sequences and “don’t know”-answers in the Michigan Survey of Consumers. They find that consumers’ pay more attention to inflation when it is high, supporting the rational inattention hypothesis. Cavallo, Cruces, and Perez-Truglia (2017) test the rational inattention model through survey experiments in low inflation (United States) and high inflation (Argentina) environments, respectively. Consistent with the rational inattention hypothesis, they find that Argentinian survey respondents, for whom the costs of misperceiving inflation are higher, are better informed about the inflation rate than their US counterparts. Closely related to the present paper, recent work by Korenok et al. (2022), based on Google searches for inflation and inflation mentions on Twitter, points to the existence of attention thresholds concerning inflation in most of the 37 countries considered in their sample. Marcellino and Stevanovic (2022) assess the demand for information about inflation, proxied by Google searches and find that the additional information helps to predict inflation via its impact on inflation expectations.

This paper further relates to the literature on central bank communication and the understanding of monetary policy by the wider public. Given central banks’ assignment to stabilise inflation around a given target, monetary policy decisions and central bank communication should play an important role in guiding inflation expectations. For communication channel to exist in the first place, however, the central bank and economic agents need to be in sender-receiver relationship (Blinder et al., 2022). If that relationship exists - and assuming that the emitted signal is then also correctly received – central bank communication could be regarded as a monetary policy instrument in its own right. However, while communication has been effective in anchoring long-run inflation expectations by financial markets and professional forecasters, this has not been the case for households and firms (Coibion et al, 2020), in spite of central banks’ growing efforts to communicate with the wider public. The main challenge, in the words of Blinder et al., is that “households and firms have a low desire to be

informed about monetary policy and are relatively inattentive to news about it”. Put simply, across advanced economies individuals often do not know what central banks do in the first place, let alone what their inflation-target number is or who governs them. In a 2009 survey in the Netherlands, for example, van der Crujisen et al. (2015) put eleven statements about the ECB’s objective (four correct and seven false ones) to respondents, who had to categorise them as either true or false. On average, respondents only recognised less than five statements correctly. Based on a more recent survey in the Netherlands, van der Crujisen et al. (2023) document that a majority of respondents allocates the responsibility of price stability to the government rather than the central bank. Similarly, Hayo and Neuenkirch (2018) document limited knowledge about the ECB among German survey respondents. Such unawareness extends to US households surveyed by Coibion et al. (2022), of which about 40% pinned down the Federal Reserve’s inflation target at 10% or higher. Against this limited state of factual knowledge, it would seem implausible that households would generally establish a correct conceptual link between monetary policy and inflation. Hayo and Neuenkirch (2018) ask survey participants to indicate how the policy interest rates should be changed in a scenario of rising inflation expectations. Indeed, only 20% advocate a rise in interest rates, while the majority recommend a decrease. Consistent with this overall obliviousness, Coibion et al. (2020) find that some major policy announcements by the ECB, the Federal Reserve and the Bank of England, respectively, appear to have affected the beliefs of households and firms only in a limited way, despite widespread news coverage.

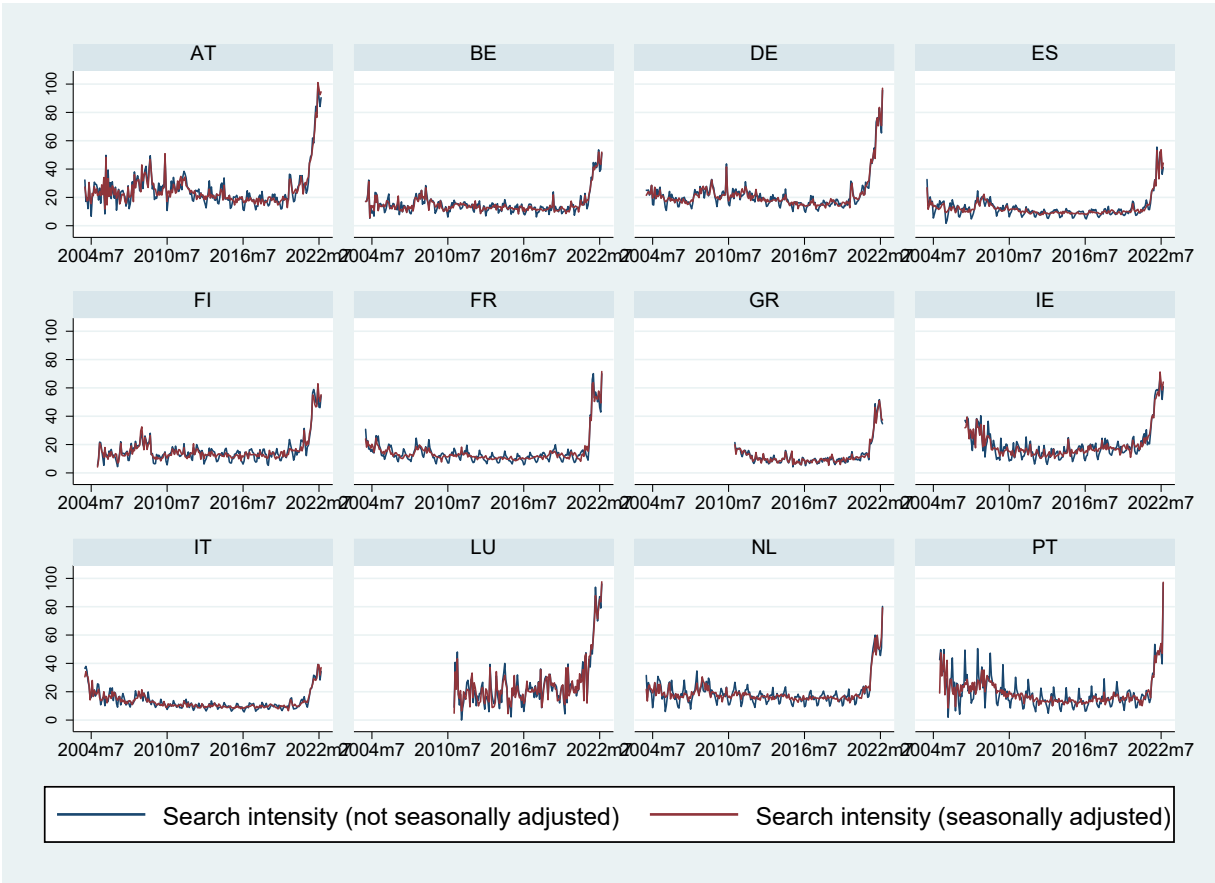
Finally, this paper also contributes to the study of heterogeneities in the euro area, specifically with regard to attitudes towards inflation. In general, large monetary unions are characterised by cyclical and structural heterogeneity among their constituent regions. The euro area, for which “heterogeneity is part of the DNA” (Coeuré, 2019), is no exception. But divergence goes beyond economic conditions and may also relate to cultural characteristics and preferences, including attitudes to inflation (Collins and Giavazzi, 1993). For example, Jost (2018) shows that within Switzerland, different language groups have distinct monetary policy preferences, in spite of their long shared economic history. In the euro area, cultural diversity is further exacerbated by national monetary and central bank traditions that still prevailed in the recent past. Also, the literature on subjective inflation expectations emphasises the role of personal experiences, such as the inflation experienced during an individual’s lifetime (Malmendier and Nagel (2016)) or the consumption of media (Dräger, 2015). While these factors primarily explain dispersion within a national population, they could potentially provide explanations for differences between countries, as households collectively are more likely to have common personal experiences. For example, the media determine how inflation-related news are disseminated in a population. A central bank decision or an inflation data release may make good front page material in one country, but not in another, thus affecting knowledge heterogeneity. Against that background, Coibion et al. (2020) consider that targeted and differentiated communications strategies across the monetary union, aimed to affect inflation expectations at the regional level, may help to address challenges related to a one-size-fits-all monetary policy.

## 2. DATA AND DESCRIPTIVE STATISTICS

The data used in this paper come from multiple sources. The main variable of interest is the Google search intensity for the term “inflation”, obtained from Google Trends for the twelve countries that

have been euro area members throughout the sample period covered, namely from January 2004 to September 2022. Annex II details the extraction procedure and construction of the search index. Figure 3 below displays both the not seasonally adjusted (blue) and the seasonally adjusted (red) search series for the countries included in the analysis. The search intensity can be compared across countries. The series are normalised, such that the highest search intensity (not seasonally adjusted) observed over the sample period in any given country equals 100. The highest search intensity for the term “inflation” was observed in Austria in June 2022, which hence has the value 100.

Figure 3: Inflation attention measured by Google search intensity, euro area, January 2004 – September 2022



Note: The series are normalised such that the highest search intensity over the sample period in any given country equals 100. As data are drawn from samples, which are very noisy for smaller countries and towards the front end of the series, the sample is shortened for Finland, Portugal (both starting in 2005), Ireland (2006), Greece and Luxembourg (both 2011).

A first striking feature is that in many countries (notably France, the Netherlands and Portugal) the search series exhibit a marked seasonal pattern. Search interest typically peaks in January, then declines to a seasonal low in July/August, before rebounding in September. A possible interpretation is that many prices are adjusted at given times of the year, such as January (start of year) or September (start of the academic year), rather than continuously. This may notably be the case for administered prices (e.g. public transports, TV licence), as well as social benefits (e.g. pensions) or rents, which are

typically indexed to past inflation.<sup>7</sup> Attention to inflation may hence be higher during these periods.<sup>8</sup> This issue is not pursued further and for the remainder of the paper, the series on search intensity are seasonally adjusted (Census-X13 method).

Turning to the seasonally smoothed search intensity, the series look relatively well-behaved in general<sup>9</sup> and reveal patterns in search behaviour. For example, search activity increased during the high-inflation period that preceded the 2008 global financial crisis, while the “lowflation” period (2015-2019) was associated to low searches overall. This has drastically changed as of mid-2021, when inflation started to climb relentlessly from one multi-decade record to the next. Since then, the public interest for “inflation” has clearly gone through the ceiling, up to a multiple of its intensity in the pre-pandemic years. Attention to inflation was visibly greater than it had ever been in the past, intimating that the high-inflation environment has contributed to the breaching of inattention “thresholds”, consistent with the theory of rational inattention. While the surge in search intensity relative to the pre-pandemic period is common to all countries, its size and the search levels however vary, pointing to heterogeneous levels of attention to inflation. In some countries, households appear to have developed an awareness of inflation only in the high inflation context of 2021. Meanwhile in others, alertness and attention to inflation appears to be a structural feature that is also present in “normal times”.

In some cases, the series exhibit clear positive outliers. For example, in many countries search intensity spiked at the start of the Covid-19 pandemic, in March and April 2020. In the absence of harsh movements in actual inflation at that time, this points to a more forward-looking considerations or concerns about inflation. That would be consistent with the stagflationary-interpretation of adverse shocks that is characteristic for households and the concomitant plunge in consumer confidence at that time. Separately, there are some occasional “spikes”, the timing of which sometimes coincides across subsets of countries, suggesting a reaction to a common shock. Monetary policy events are an obvious candidate and are further discussed below.

Figure 4 below displays the annualised inflation-search intensity for the 12 countries included in the sample. There is little criss-crossing of lines, suggesting that the country ranking is relatively stable over time, led by Austria, Luxembourg and Germany. The scatter plot (Figure 5) relating the average search intensity to average inflation over the entire sample, also indicates that the cross-country relationship between search and inflation levels, respectively, is weak, at best – for example, the countries with the highest (Austria) and lowest (Spain) search interest respectively, had comparably high inflation rates. In any case, inflation for most of the period was low and inflation differentials were relatively narrow – only Greece and Ireland, which both underwent an economic adjustment programme during that period, are an outlier. Overall, this again points to inherent structural differences in attention towards inflation across countries.

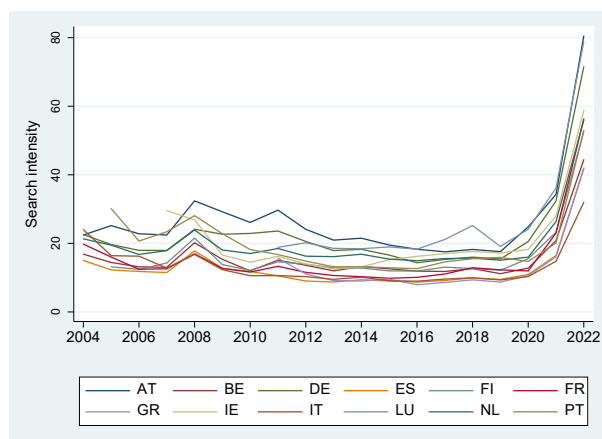
---

<sup>7</sup> Some inflation adjustments may explicitly raise attention to inflation, e.g. when accompanied by a (recommended) letter justifying price changes with reference to the inflation rate.

<sup>8</sup> Despite the potential relevance of seasonal variation, the literature on inflation beliefs does not seem to devote a lot of attention to it.

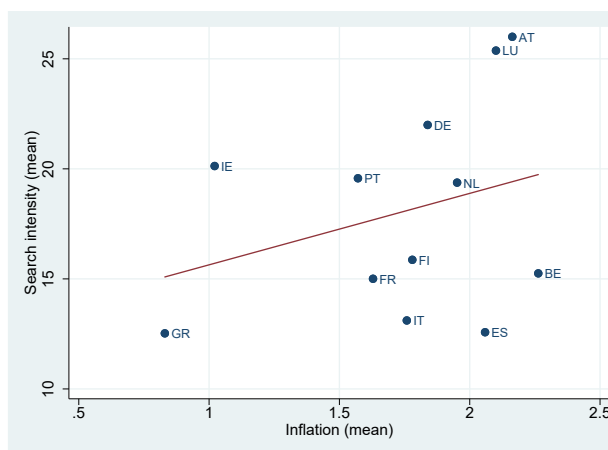
<sup>9</sup> The series for Luxembourg remains very volatile, despite averaging and sample shortening. This “noise” is likely a reflection of the small sample size.

Figure 4: Annual Google search intensity for inflation, euro area, 2004-2022



Note: sample period is shorter for some countries. Value for 2022 is based on the period January to September.

Figure 5: Average Google search intensity for inflation and average HICP inflation, euro area, 2004-2022



Note: sample period is shorter for some countries (see Figure 3).

How is search intensity for “inflation” related to inflation dynamics? As an illustration, Figure 6 below exhibits search intensity (seasonally-adjusted and log-transformed) and both national and euro area headline HICP (Harmonised Index of Consumer Prices<sup>10</sup>) inflation for France between 2004 and 2019, a period in which inflation was relatively moderate overall. Indeed, it reveals a strong co-movement of the series, reflected in a strong contemporaneous correlation of 0.64 (the highest in the country sample).<sup>11</sup> Table 1 (annex I) displays the correlations between search intensity and contemporaneous and lagged national inflation both in a restricted pre-pandemic and in the full sample, respectively. The correlation between search intensity and headline inflation generally increases somewhat in near-lags, with correlation generally being highest at the first or second lag. This may be explained by the fact that inflation in the current month is not known and that attention to “inflation” is a reaction to data releases and the reported inflation rate, rather than a reaction to contemporaneously perceived price changes. That said the change in the correlation coefficient over the first two lags is minor, in line with the high persistence in headline inflation over the pre-pandemic sample period. Moving from the restricted to the full sample, which includes the pandemic and the subsequent high inflation period, significantly raises the correlation. Heterogeneity across countries in the search intensity-inflation correlation is substantial, at least in the restricted (pre-pandemic) sample. The contemporaneous correlation coefficient is relatively low for the Netherlands (0.14), Germany (0.27) or Austria (0.30), and high for Spain, France and Italy (all above 0.5). Inflation attention in the first group, which is structurally high, would hence seem to be less reactive to changes in inflation than inflation attention in the latter group of countries. This points to a trade-off between structural attention to inflation and reactivity to the changes in inflation.

<sup>10</sup> The Harmonised Indices of Consumer Prices are published by Eurostat. They measure the changes over time in the prices of consumer goods and services acquired by households. They are calculated for all European Union countries according to harmonised definitions, hence giving a comparable measure of inflation.

<sup>11</sup> Including the remaining years of the sample (2020-2022), raises the correlation coefficient to 0.78.

Figure 6: Inflation attention (Google search intensity, standardised) and inflation, France, 2004-2019

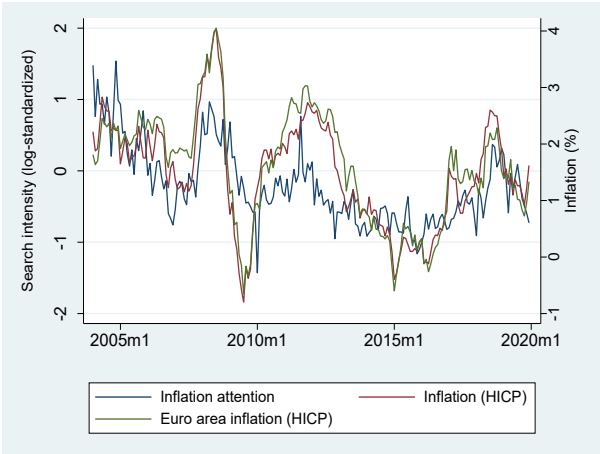
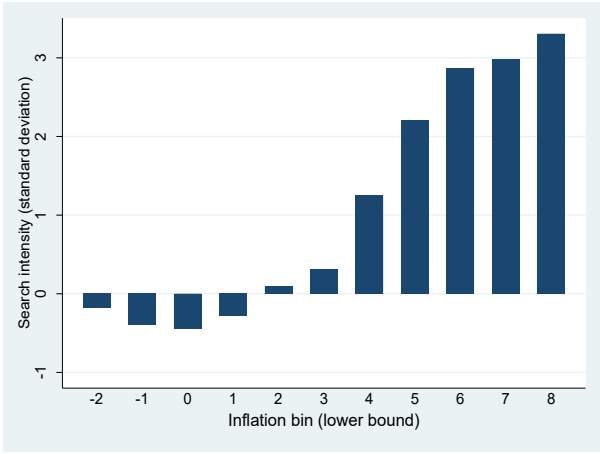


Figure 7: Inflation attention (Google search intensity, standardised) and inflation, euro area, 2004-2022



Note: average search intensity corresponding to different inflation bins across the 12 original euro area countries.

Figure 7 above displays search intensity over (1 percentage point) inflation bins for the pooled observations.<sup>12</sup> It confirms both that the average search intensity increases in headline inflation and that this relationship is positively skewed, intimating the presence of inattention thresholds: for example, for headline inflation between 2% and 3%, the average search intensity is 0.18 standard deviations higher than the full sample average. It increases to above one and two standard deviations, when inflation lies in the 4-to-5% and 5-to-6% inflation brackets, respectively. For inflation above 8%, the search intensity is more than three standard deviations above the sample mean.<sup>13</sup>

A number of studies on subjective inflation expectations have shown that individuals often place a high weight on prices of goods they purchase on an everyday basis when forming views about inflation, such as groceries (D’Acunto et al., 2021) or fuel. At the aggregate level, this could imply that the public interest in inflation relates differently to various measures of inflation. It would thus be plausible that certain subsets of the consumer basket, say food inflation, are more relevant in attracting interest in inflation than headline inflation. A further relevant dimension for euro area countries is the relevance of national with respect to area-wide data series. National inflation measures are better suited to capture the evolution of a household’s purchasing power, whereas euro area inflation constitutes a noisy gauge of the national cost of living, given that is based on a pan-euro area consumption basket. However, it is the more relevant indicator for monetary policy decisions, which are taken in a common euro area perspective, and may matter more for savers or households with a

<sup>12</sup> The search series are converted into their standard score (z-score), to allow comparability.

<sup>13</sup> It is also noted (but not further pursued), that search-intensity picks up again as inflation turns negative (in some countries, attention even exceeds the average). The fact that inflation is noticed when it is not around, may be related both to the rarity and a certain peculiarity of “negative inflation” episodes, as well as greater central bank efforts during those episodes to “restore” (positive) inflation.



variable interest rate mortgage, say. What constitutes the most “relevant” inflation rate is hence not trivial but depends on the agent’s ultimate interest. Table 1 in the annex displays the overall correlation between search intensity and national HICP subcomponents for food and energy, as well as the national consumer price index (CPI) and the euro area HICP. Methodologically, the national CPIs, which are released by National Statistical Institutes, generally differ only slightly from the national HICP, even if they may play a formal (e.g. indexation) or informal (e.g. higher media coverage) role in some countries.

Overall, the correlation with HICP sub-components (food, energy) is lower than that with headline inflation (again, it increases in the near lags). Still, in some countries the correlation is as high, or marginally higher, for food (Austria, Spain and Finland) or energy (Netherlands) inflation. A priori, there seems to be little difference in the correlation of search intensity and CPI and HICP inflation, respectively. More noteworthy, in many countries, search-interest in inflation correlates more with euro area than with national inflation. In some cases, the difference is non-negligible, notably for the Netherlands (correlation coefficient rises from 0.14 to 0.47), and to a lesser extent in Germany, Portugal and Austria. This possibly indicates that discussions on inflation conducted at national level take a stronger euro area perspective, for example by placing them in the context of the common monetary policy and the implications for interest rates. In contrast, the national discourse on inflation in other countries may be more focussed on the cost of living, where national inflation rates matter more. In the quantitative analysis below, the focus will hence be limited to national and euro area headline HICP.

How is search intensity linked to household perceptions and expectations of inflation, respectively? It is likely that the (initial) interest and attention to inflation is triggered by some signal (price observation, media reporting on inflation), which then induce a demand for further information. As such, a search on the internet may also be intended as an updating of prior perceptions regarding inflation. Likewise, searches may have the potential to affect – or purpose to steer - inflation expectations. Table 2 in the annex displays the correlation between search intensity and inflation perceptions and expectations from the European Commission’s Business and Consumer Survey (BCS).<sup>14</sup> For the pre-pandemic sample, the correlation between attention to inflation (search intensity) and inflation perceptions is generally as high, and often higher, than with inflation. For example, for Italy, the correlation with perceptions is 0.74, compared to 0.51 for inflation. In contrast, the correlation with inflation expectations is overall lower than with perceptions and in some cases absent. This suggests that *prima facie*, search intensity and inflation expectations are not or only weakly related. However, some important caveats apply. First, there is heterogeneity across countries and correlations are about 0.3 for Spain, Ireland and Portugal. Secondly, adding the high inflation years to the sample, results in a substantial increase in the correlation coefficients, implying that there may be structural breaks or state-dependency.

---

<sup>14</sup> Inflation perceptions and expectations by consumers are presented as seasonally adjusted balances (i.e. the difference between the percentages of positive and negative responses). Question 5 of the BCS on perceptions asks: “How do you think that consumer prices have developed over the last 12 months?” Survey respondents can chose between the following options: risen a lot; risen moderately; risen slightly; stayed about the same; fallen; don't know. Question 6 of the BCS on expectations asks: “By comparison with the past 12 months, how do you expect that consumer prices will develop in the next 12 months?” Survey respondents can chose between the following options: increase more rapidly; increase at the same rate; increase at a slower rate; stay about the same; fall; don't know. (see [https://economy-finance.ec.europa.eu/economic-forecast-and-surveys/business-and-consumer-surveys\\_en](https://economy-finance.ec.europa.eu/economic-forecast-and-surveys/business-and-consumer-surveys_en)).

Table 2 further includes the correlation with variables that are susceptible to affect attention to inflation. As suggested by Chiang (2022), attention typically rises when agents believe or expect the economy to be in a bad state. These beliefs are captured by consumer confidence and consumers' views on their past and present economic situation, all taken from the European Commission's Business and Consumer Survey (BCS). The pooled correlation confirms a negative association with inflation attention but is weak overall. However, the (negative) correlation is very high for some countries – notably Austria and Germany, for which the correlation coefficient between inflation attention and consumer confidence is -0.59 – underling the negative connotation of inflation attention in some cases. The table also includes the so-called 5year/5year inflation linked swap rate (5y5y ILS) obtained from Bloomberg, which is a measure of medium-term financial market-based euro area inflation expectations that is closely watched by central banks<sup>15</sup> and market participants and offers a consensus view on inflation expectations. While it is improbable that households monitor it, movements in this indicator and the events triggering them, are however likely to be associated to increased press coverage that may in turn trigger interest. Finally, the table includes the share of items in the national consumer basket, which registered their highest annual prices increases since the start of the series in 1996.<sup>16</sup> This captures both the broad-based and exceptional character of price changes at a given point in time.

## 3. EMPIRICAL ANALYSIS

### 3.1 INFLATION ATTENTION AND INFLATION LEVELS

The inflation-(in)attention hypothesis tested here is the following: i) search intensity (attention) should increase with inflation, and ii) if there is state-dependency and different attention regimes exist, attention should increase in a non-linear manner. Empirically, this hypothesis is tested first within a fixed effects panel setting:

$$(1a) \quad s_{it}^{Inflation} = c + \beta_1 \pi_{it-1} + \beta_2 (\pi_{it-1} \times D_{it-1}^{\pi > 2\%}) + \beta_3 D_{it-1}^{\pi > 2\%} + \mathbf{X}_{it} \boldsymbol{\mu} + \varphi_i + \epsilon_{it}$$

$$(1b) \quad s_{it}^{Inflation} = c + \beta_1 \pi_{it-1} + \beta_2 (\pi_{it-1}^2 \times D_{it-1}^{\pi > 0\%}) + \beta_3 D_{it-1}^{\pi > 0\%} + \mathbf{X}_{it} \boldsymbol{\mu} + \varphi_i + \epsilon_{it}$$

Where  $s_t^{Inflation}$  is the (seasonally adjusted) logarithm of search intensity for “inflation” in country  $i$  and in month  $t$ . This is regressed on inflation  $\pi_{it}$  (or its lag), as well as variables that capture possible non-linear effects:  $D_{it}^{\pi > x}$  is an indicator variable that takes the value 1 whenever inflation exceeds a threshold of  $x\%$  and 0 otherwise. This indicator is then interacted with inflation when it is above 2% (equation 1a), and with the quadratic inflation term ( $\pi_{it}^2$ ) when inflation is positive (equation 1b). A positive and significant  $\beta_2$  would hence point to the existence of different inflation attention-regimes.

<sup>15</sup> It has been knighted by then-ECB President Draghi (2014) in his 2014 Jackson Hole Speech as “the metric that we usually use for defining medium term inflation”.

<sup>16</sup> Calculated on the basis of a decomposition of the basket in 39 items (Coicop-3 level).

$\varphi_i$  is a fixed effect, i.e. a binary regressor for country  $i$ , which captures time-invariant differences between countries.  $X_{it}$  is a vector of the following control variables: 5year/5year inflation linked swap rate (5y5y ILS), consumer confidence and consumers' views on past and present economic situation, respectively, and the share of the national inflation basket experiencing a historic peak in annual price growth. All specifications include dummies for the outbreak of the Covid-19 pandemic in Europe (March and April 2020, respectively).

Table 3 (annex) displays the estimation results for equation 1a (Panel A) and 2b (Panel B). Overall, they support the inattention hypothesis, as inflation attention increases in inflation and does so in a non-linear manner. As these are log-level regressions, the interpretation of the coefficient on inflation in specification 1 of the pre-pandemic sample is as follows: a 1 percentage point increase in (lagged) inflation would imply an increase in search intensity of about 15% ( $e^{0.14} - 1$ ). Specification 2 in panel A suggests that an increase in inflation above 2% has a statistically significant positive effect on attention: a 1 percentage point increase in inflation raises search intensity by about 21% ( $e^{(0.019+0.168)} - 1$ ). Likewise, the significant quadratic inflation term in specification 2 of Panel B confirms that inflation attention increases at an accelerating rate when inflation rises. This state-contingency thus points to the existence of different inflation attention regimes. Specifications 3 to 8 of both panels include the control variables. The share of the consumer basket experiencing a historic inflation peak is significant and positive in all specifications. Market-based inflation expectations have a positive impact on attention to inflation, suggesting that inflation attention is not only reactive, but also has a forward-looking component.<sup>17</sup> The statistical significance however varies across specifications. Among the survey-based indicators, consumers' perception of their economic situation over the past year has a significant negative effect on attention, i.e. the worse their situation, the higher the attention households pay to inflation. This contrasts with the positive coefficient on consumer confidence. To acknowledge the exceptionality of the inflation surge after September 2021, specifications 9 to 12 include a dummy for each month in the remainder of the sample period. Overall, inflation maintains a positive impact on inflation attention, even though the size of the coefficient halves and the significance clearly weakens. However, the coefficients on the controls remain stable and significant.

Given the high correlation of inflation attention and euro area inflation, equations 1a and 1b are also estimated with euro area inflation,  $\pi_{EA}$ , replacing national inflation. The results are reported in Table 4 (annex). The coefficients on inflation or the non-linear inflation terms are generally higher than in the corresponding equations based on national inflation and remain statistically significant throughout all specifications. Likewise, the fit of the models are marginally above those obtained from the models with national inflation. Among the control variables, the significance of market-based inflation expectations is somewhat weaker, while the others remain broadly unchanged. Overall, the results confirm the positive and non-linear effect of inflation on inflation attention but suggest that the choice of the inflation rate considered is non-trivial. In particular, they indicate that in a monetary union the area-wide inflation rate may be more relevant than the national one in explaining inflation attention.

---

<sup>17</sup> The Covid-19 outbreak was a noteworthy exception, with inflation attention by households and market inflation expectation moving strongly in opposite directions. This however reflects a strong disagreement on inflation expectations observed at that time between households, who strongly revised expectations upwards, and financial markets and professional forecasters, who took a strong deflationary view.

The correlation analysis above indicated considerable heterogeneity regarding inflation attention across countries. Heterogeneity is further investigated by estimating the following time series equation for each country (country subscript  $i$  is thus omitted):

$$(2a) \quad s_t^{Inflation} = c + \beta_1 \pi_{t-1} + \beta_2 (\pi_{t-1} \times D_{t-1}^{\pi > 2\%}) + \beta_3 D_{t-1}^{\pi > 2\%} + \mathbf{X}_t \boldsymbol{\mu} + \epsilon_t$$

$$(2b) \quad s_t^{Inflation} = c + \beta_1 \pi_{t-1} + \beta_2 (\pi_{t-1}^2 \times D_{t-1}^{\pi > 0\%}) + \beta_3 D_{t-1}^{\pi > 0\%} + \mathbf{X}_t \boldsymbol{\mu} + \epsilon_t$$

Regression results are reported in Table 9 (annex). Inflation has a significant positive effect on search intensity in all countries. However, the attention-elasticities differ. In the simple linear model (Panel A), the coefficients range from 0.11 (Netherlands) to 0.25 (France). Likewise, the model fit varies strongly. The corollary of these differences is that there is potential scope for other factors driving national search patterns. Panels B to D include augmented specifications, which account for possible non-linear patterns and other explanatory variables. Panels B (2% inflation threshold) and C (quadratic inflation) confirm the non-linear character of search intensity, as the coefficients on interacted or quadratic inflation terms are in most cases significant and positive. The goodness of fit (adjusted coefficient of variation) of the non-linear models generally improves upon the linear one.

The 2% inflation threshold remains significant when adding exogenous variables (Panel D). In most countries, inflation attention moves together with market-based expectations, confirming the forward-looking dimension of attention. In some countries, e.g. Austria, Germany or Portugal, households' economic situation (past or expected) has a significant negative impact on interest in inflation, i.e. a worsening economic situation boosts attention to inflation. The association between a more pessimistic attitude and inflation does not emerge in all countries, however, as reflected in the positive coefficient on consumer confidence. The importance of variables other than inflation in explaining inflation attention in some countries, is notably captured by the large increase in the adjusted  $R^2$  for Germany.

As for the panel estimation above, the country-specific models are also estimated with euro area inflation instead of national inflation (Table 10). Strikingly, the attention elasticity of attention to euro area inflation is comparable or slightly stronger in many countries (e.g. the Netherlands), than to national inflation. Differences in elasticities difference may shed light on how inflation enters the national public discourse. For example, in the group of countries, where euro area inflation plays a bigger role in driving attention, it is likely that inflation is predominantly discussed in the context of monetary policy. In countries where the reverse holds, the focus of inflation discussion may in turn lie more on the implications for purchasing power.

### 3.2 INFLATION ATTENTION AND MONETARY POLICY

This section assesses whether attention to inflation changes in response to a central bank decision. Increases in search intensity around these events would point to awareness of the central bank's mandate and also reveal that households make a link between monetary policy and inflation dynamics. That said it does not imply that the public's view on monetary transmission coincides with that of the

central bank. All monetary policy decisions by the ECB between 2004 and September 2022 are included in this exercise.<sup>18</sup> Over that period, there have been 197 regular (i.e. scheduled) Governing Council monetary policy meetings.<sup>19</sup> In addition, some decisions or announcements relevant for monetary policy (or perceived to be) were made outside of the regular meeting schedule.<sup>20</sup> At 37 of the regular meetings, at least one monetary policy instrument was introduced or changed. The majority of policy announcements were changes in the key interest rates (16 cuts and 14 hikes), the traditional tool of central banks, while 10 announcements involved asset purchases (see annex III). Among the latter, some were “quantitative easing” measures, i.e. related to the monetary stance. Meanwhile others, such as the securities market programme of May 2010 (SMP1) or its reactivation in July 2011 (SMP2), were not intended to alter the monetary policy stance and primarily aimed to ensure the proper transmission of monetary policy.

To illustrate the effect of monetary policy announcements and individual events, Figure 8 below shows the monthly search intensity for inflation in a symmetric six month-window centred on four selected events. The events included in the figure are: 1) the Securities Market programme of 10 May 2010; 2) the introduction of negative interest rates on the deposit facility, announced on June 2014; 3) the expanded asset purchase programme (APP) of 22 January 2015, which included secondary market purchases of bonds issued by euro area central governments, agencies and European institutions by the ECB; 4) the introduction of the Pandemic Emergency Purchase Programme (PEPP) on 18 March 2020, which however coincides with the outbreak of Covid-19 in Europe and associated lockdowns.

The announcement of the SMP1 is associated to a substantial surge in “inflation” searches in Austria and Germany (somewhat less in the Netherlands), even if there was little discernible movement in the other countries. In fact, for Austria and Germany, the search intensity associated to that event was not matched until inflation started to surge in 2021. Meanwhile, the introduction of negative interest rates was accompanied by a minor but nonetheless visible pick-up in searches in Austria and Germany. The APP announcement again led to a search spike in Luxembourg, Austria and Germany. However, the search intensity was lower than for the SMP1 announcement, even though the APP related to the implementation of the monetary stance and was indeed intended to directly affect inflation. The relatively lower attention may be possibly explained by the fact that it occurred in a period in which inflation was low and asset purchases were less of a novelty, due to quantitative easing measures already being implemented in other jurisdictions, such as the United States at that time and to the existence of related programmes in the euro area (SMP1 and SMP2).<sup>21</sup> Finally, the period around the Covid-19 outbreak in Europe (March 2020) and the associated introduction of lockdowns, was again associated to a surge in search intensity in Austria and Germany, which persisted in the following months. In many other countries, attention to inflation also visibly increased in April 2020. Given the

---

<sup>18</sup> Information on monetary policy events and decisions is retrieved from the ECB website: <https://www.ecb.europa.eu/press/govcdec/mopo/html/index.en.html>.

<sup>19</sup> This includes the October 2022 Governing Council, which is however not included in the econometric analysis. Until end 2014, Governing Council monetary policy meetings took place on a monthly basis and then switched to a 6-week rhythm.

<sup>20</sup> For example, the Governing Council met on Sunday 9 May 2010 to decide to start conducting interventions in the euro area public and private debt securities markets (Securities Markets Programme). Separately, the Outright Monetary Transaction programme was announced in principle by then ECB President Draghi in a speech on 26 July 2012.

<sup>21</sup> The timing may also play a role, as the APP was announced late in January 2015, implying that some of the interest may have shifted to February.

high uncertainty regarding the economic impact of the pandemic and the multitude of policy measures announced around that time (e.g. PEPP), there are different confounding factors at play explaining this surge in interest in inflation.

Figure 8: Inflation attention (Google search intensity) around selected events



Note: The vertical line marks the month of a selected event. Search intensity is seasonally adjusted (s.a.).

Empirically, the (in)attention hypothesis tested here is: given the central bank’s objective and mandate, search intensity for inflation should increase following ECB policy announcements. This is again tested first by the following fixed effects panel regressions:

$$(3a) \quad s_{it}^{Inflation} = c + \beta_1 \pi_{it-1} + \beta_2 (\pi_{it-1} \times D_{it-1}^{\pi > 2\%}) + \beta_3 D_{it-1}^{\pi > 2\%} + \gamma_1 H_t + \gamma_2 C_t + \gamma_3 P_t + \mathbf{X}_{it} \boldsymbol{\mu} + \varphi_i + \epsilon_{it}$$

$$(3b) \quad s_{it}^{Inflation} = c + \beta_1 \pi_{it-1} + \beta_2 (\pi_{it-1}^2 \times D_{it-1}^{\pi > 0\%}) + \beta_3 D_{it-1}^{\pi > 0\%} + \gamma_1 H_t + \gamma_2 C_t + \gamma_3 P_t + \mathbf{X}_{it} \boldsymbol{\mu} + \varphi_i + \epsilon_{it}$$

Where  $H_t$ ,  $C_t$  and  $P_t$  are indicator series representing the use of a particular monetary policy tool, i.e. rate hikes, cuts or asset purchases. They take the value 1 when a decision of a particular type is taken, and 0 otherwise (i.e. a shift in the intercept and no discrimination is hence made between individual events belonging to the same category). In the next specification, each monetary policy event is included individually, with  $H^h$ ,  $C^c$  and  $P^p$  representing dummy variables for each hike, cut and purchase, respectively.

$$(4a) \quad s_{it}^{Inflation} = c + \beta_1 \pi_{it-1} + \beta_2 (\pi_{it-1} \times D_{it-1}^{\pi > 2\%}) + \beta_3 D_{it-1}^{\pi > 2\%} + \sum \gamma_{1h} H_t^h + \sum \gamma_{2c} C_t^c + \sum \gamma_{3p} P_t^p + \mathbf{X}_{it} \boldsymbol{\mu} + \varphi_i + \epsilon_{it}$$

$$(4b) \quad s_{it}^{Inflation} = c + \beta_1 \pi_{it-1} + \beta_2 (\pi_{it-1}^2 \times D_{it-1}^{\pi > 0\%}) + \beta_3 D_{it-1}^{\pi > 0\%} + \sum \gamma_{1h} H_t^h + \sum \gamma_{2c} C_t^c + \sum \gamma_{3p} P_t^p + \mathbf{X}_{it} \boldsymbol{\mu} + \varphi_i + \epsilon_{it}$$

The panel regression results are displayed in Table 5 to Table 8 for different specifications. When controlling for national inflation (Table 5), the monetary policy indicator series are not statistically significant. However Table 6, which displays regressions controlling for euro area inflation, suggests that interest rate cuts have a weakly significant impact in boosting inflation attention. Furthermore, the coefficient remains relatively stable across specifications. Table 7 and Table 8 display regression results including all individual monetary policy events. Among the asset purchase announcements, the first Covered Bonds Purchase Programme (CBPP1) announced in May 2009 the APP in January 2015 and, albeit less significantly, the SMP1 lifted inflation attention. Specification 2 of Table 7 or Table 8, for example, suggests that the CBPP1 had a comparable impact on inflation attention than a 1 percentage point increase in inflation at levels above the 2% threshold.<sup>22</sup> Many of interest rate cuts around the time of the financial crisis in late 2008 and early 2009 have raised attention to inflation, even after applying controls. Finally, the coefficients on the interest rate hikes of July 2008 and September 2022 are also positive and significant, but coincide with historic inflation peaks.

The empirical investigation continues with a country-specific focus by augmenting equations 2a and 2b with the three monetary policy indicator series:

$$(5a) \quad s_t^{Inflation} = c + \beta_1 \pi_{t-1} + \beta_2 (\pi_{t-1} \times D_{t-1}^{\pi > 2\%}) + \beta_3 D_{t-1}^{\pi > 2\%} + \gamma_1 H_t + \gamma_2 C_t + \gamma_3 P_t + \mathbf{X}_t \boldsymbol{\mu} + \epsilon_t$$

---

<sup>22</sup> Note, however, that the July 2012 dummy, capturing both the “whatever it takes” speech by then ECB President Mario Draghi (heralding the Outright Monetary Transactions framework) and a rate cut early in the month, has a significant negative impact on inflation attention. This may seem surprising given the momentous effect of that speech on financial markets but may merely highlight that in the public debate at the time, inflation concerns were secondary to financial stability concerns.

$$(5b) \quad s_t^{Inflation} = c + \beta_1 \pi_{t-1} + \beta_2 (\pi_{t-1}^2 \times D_{t-1}^{\pi > 0\%}) + \beta_3 D_{t-1}^{\pi > 0\%} + \gamma_1 H_t + \gamma_2 C_t + \gamma_3 P_t + \mathbf{X}_t \boldsymbol{\mu} + \epsilon_t$$

As for the panel regression, the models are then re-estimated with the monetary policy events now entering the equation individually:

$$(6) \quad s_t^{Inflation} = c + \beta_1 \pi_{t-1} + \beta_2 (\pi_{t-1} \times D_{t-1}^{\pi > 2\%}) + \beta_3 D_{t-1}^{\pi > 2\%} + \sum \gamma_{1h} H_t^h + \sum \gamma_{2c} C_t^c + \sum \gamma_{3p} P_t^p + \mathbf{X}_t \boldsymbol{\mu} + \epsilon_t$$

The estimates are shown in Table 11 to Table 14. The first takeaway is that the inflation attention-triggering effect of monetary policy events varies strongly across euro area countries. In particular, the significance of interest cuts emerging from the panel regressions above seems to be driven to a very large extent by Austria, Germany and Portugal. Likewise, asset purchases have a significant effect on attention in for Germany and Austria: the impact of an asset purchase decision would trigger a rise in attention comparable to a 2 percentage point increase in inflation. This result is robust to different specifications and to the choice of national or euro area inflation. For the remaining countries, monetary policy announcements are generally not significant or of the right sign. This is consistent with a limited public knowledge of monetary policy: as documented in van der Cruysen et al (2023), seven out of ten survey respondents attribute the responsibility for maintaining price stability to government. Why would they react to monetary policy announcements?

Looking further into individual Governing Council decisions confirms the outlier position of Austria and Germany, where a number of decisions involving asset purchases have significantly raised inflation attention, even after controlling for non-linear effects and other exogenous variables. As already suggested in Figure 8, this was in particular the case for the Securities Market Programmes, the APP and the PEPP. For the remaining countries, asset purchases have no significant effect, with the exception of the APP for Greece and SMP1 for the Netherlands. Many interest rate cuts during the financial crisis or end 2011 have led to higher search intensity for inflation in some countries. Again, the significant events are mainly concern Austria and Germany.

These results suggest that, at least in some countries, ECB monetary policy decisions are a significant driver of attention to inflation. In other words, the public in these countries *does* make a connection between monetary policy and inflation – something that is not evident in light of the literature reviewed above. However, based on this exercise, little can be said about the particular transmission channels households have in mind, i.e. how they consider that monetary policy affects inflation and how it eventually impacts them. For example, past survey-based studies (Hayo and Neuenkirch (2018), Coibion et al. (2020)) have found that the understanding of the inflation-monetary policy relationship is often shaky, with rises in interest rates by the central associated to higher inflation expectations and vice versa. The results here also point to an asymmetry with regard to the type of decision, with interest in inflation significantly increasing when monetary policy is, or is perceived to



be, loosened (via cuts or purchases), but not when it is tightened. It cannot be ascertained that the higher attention indeed reflects the “correct” perception that the central bank aims to lift inflation and bring it back to target. Also, it cannot be ruled out that the increased attention reflects disagreement about a particular decision, for example regarding the use of a particular instrument or the change in its stance. Looking at tweets (in English and German) about the ECB, Ehrmann and Wabitsch (2022) find that tweets with negative, stronger or more subjective views are more likely to be retweeted, liked or replied to. As documented in Hayo and Neuenkirch (2018), many ECB decisions introducing unconventional instruments, have been controversial and given rise to sometimes heated national debates, notably in Germany, where complaints were brought to the Federal Constitutional Court. As a more general conclusion, however, the findings in this section highlight that there is heterogeneity within the euro area regarding the factors that trigger attention to inflation, notably the respective roles of the inflation level, households’ economic situation and monetary policy.

### 3.3 EVENT STUDY OF DAILY INFLATION ATTENTION AROUND GOVERNING COUNCIL MEETINGS

The analysis so far has suggested that monetary policy decisions may raise attention to inflation, albeit only in some countries. As the estimations above were based on monthly data, this issue is investigated further by considering the daily attention series (see annex II) and assessing how it behaves in the days following monetary policy events. The events considered here are all ECB Governing Council meetings that took place between 2004 and October 2022.<sup>23</sup> There are two broad groups of meetings: the first group contains all those at which a policy change was decided and can hence be subdivided further in type of decision, while the second group contains meetings where policy was kept unchanged. The effect of a monetary policy change on searches related to inflation is estimated with a difference-in-differences (DiD) approach. In DiD parlance, decision meetings are thus akin to “treatments” or “interventions”, while the latter make up the “control group”. The estimation window considered respectively stretches 14 days before and after the meeting, i.e. 29 days in total. Overall, the sample includes 197 meetings, i.e. events, denoted by  $m$ : policy was left unchanged 158 times, while there were 14 hikes, 16 cuts and 10 asset purchases. To ensure comparability and control for confounding factors that affect attention within a given event window, the attention sequence for each event window is transformed into its z-score, i.e. in standard deviation-units. Each sequence is then normalised, such that search intensity in the 14 pre-event days (the reference period) averages zero. The difference-in-differences regression model is as follows:

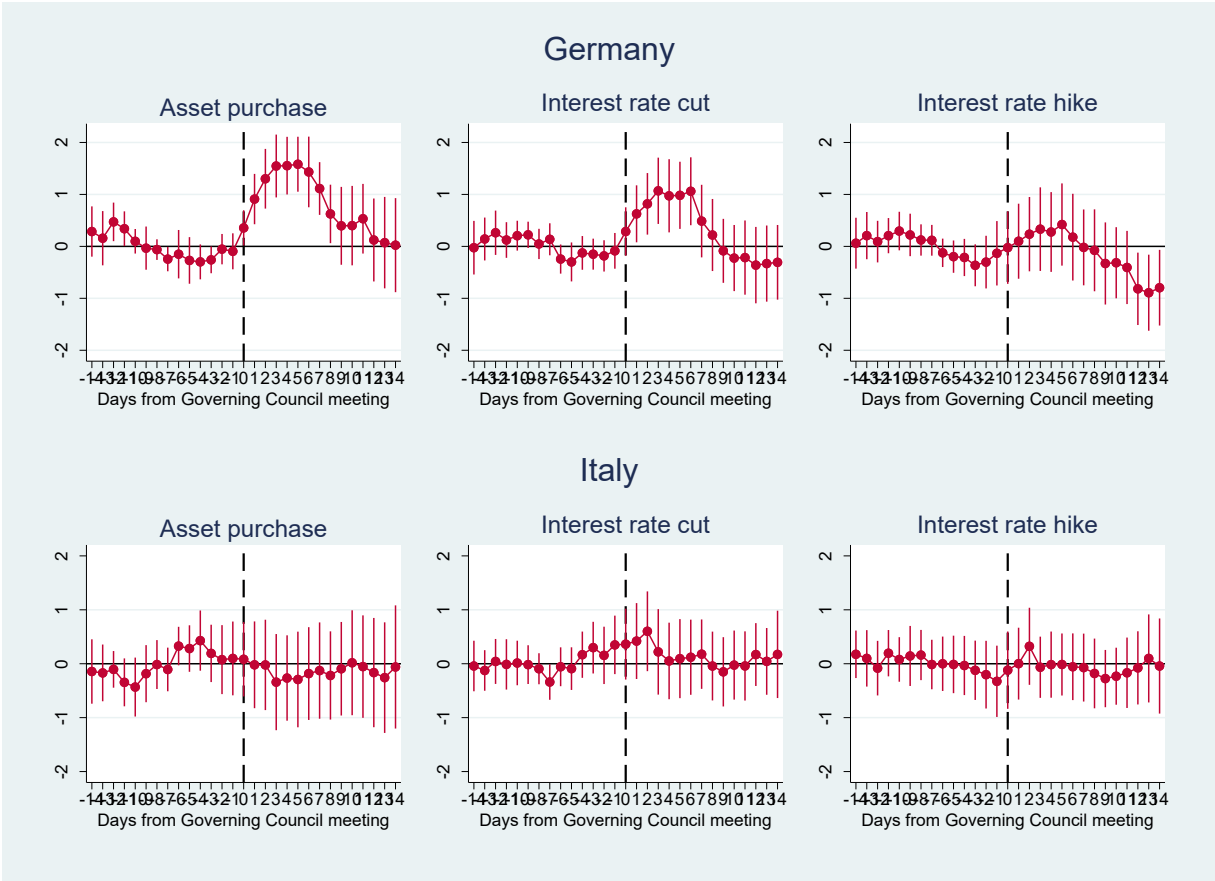
$$(7) \quad s_{dm}^{Inflation} = \sum_{d=-14}^{14} \alpha_d^D (T_d \times \delta_m^D) + \gamma \delta_m^D + \sum_{d=-14}^{14} \beta_d T_d + \mathbf{X}_{dm} \boldsymbol{\varphi} + \epsilon_{dm}$$

The left-hand side variable,  $s_{dm}^{Inflation}$ , is the daily attention (z-score) in event window  $m$ .  $T_d$  is a time dummy that takes the value 1 on each day  $d$  within the event window.  $\delta_m^D$  is an event dummy that equals 1 if the meeting considered led to a policy change of a certain type,  $D \in (H, C, P)$ , namely a rate hike ( $H$ ), a rate cut ( $C$ ) or asset purchases ( $P$ ).  $\mathbf{X}_{dm}$  is a vector including fixed effects for each

<sup>23</sup> For some countries, the inflation attention series start later.

weekday (i.e. Monday to Sunday) and day in the month, as well as the release date for the euro area inflation flash estimate by Eurostat and the national equivalent.<sup>24</sup>  $\varphi$  is the associated coefficient vector. The standard errors are robust. The DiD estimates,  $\alpha_d^D$  – there is one for each day within the event window – thus capture the additional inflation attention around a meeting producing a decision, relative to the counterfactual meeting delivering no policy change. A positive estimate for  $\alpha_1^C$ , say, would indicate that an interest rate cut raises the relative attention to inflation on the first day after the meeting. The hypothesis that attention to inflation rises in the wake of a monetary policy event, i.e. post-treatment, is thus tested by the sign and significance of  $\alpha$ , when  $d \geq 0$ . Note that a rejection of that hypothesis does not imply in general that households’ attention is not affected. It merely suggests that the “inflation lights” on households’ attention radar are not blinking. However, it does not exclude that households are attentive to monetary policy events and associate them to other phenomena than inflation, for example mortgage rates or returns on savings.

Figure 9: Inflation attention impact of monetary policy decisions, Germany versus Italy



Note: DiD estimates of inflation attention add-on using Governing Council meetings with constant policy counterfactual are measured on the vertical axis (in terms of z-score). Vertical lines show the 95% confidence intervals around each coefficient estimate.

<sup>24</sup> Note that the national inflation release is assumed to correspond across all countries to the weekday prior to the euro area flash release.

Confirming the results of the previous section, the inflation attention-grabbing power of a monetary policy decision varies across countries and by type of decision (see regressions estimates for  $\alpha_a^D$  displayed in Table 15 to Table 17). Yet, the introductory citation of Blinder et al., namely that households are relatively inattentive to news about monetary policy (at least when thinking about inflation), appears to hold. Germany constitutes the most notable exception, as illustrated in the upper panel of Figure 9. The charts in the columns of the figure plot DiD coefficients (the  $\alpha_a^D$ ) and their 95% confidence interval for asset purchases, rate cuts and rate hikes, respectively. Following interest rate cuts or decisions related to asset purchases, searches for inflation pick up and remain significantly higher than after a “no change” meeting for about a week. Some signs of increased attention are also visible in Austria and Belgium for rate cuts (Table 15) and in Finland and the Netherlands for asset purchases (Table 16). Meanwhile there is no significant impact on attention after interest rate hikes. The bottom panel of Figure 9 displays the DiD coefficients for Italy, which is illustrative and fairly representative of the remaining countries considered in this analysis: regardless of its type, the marginal effect of a monetary decision on inflation attention is not significantly different from zero.

## 4. CONCLUSION

Against the background of the pervasive price increases since 2021 to historic highs, attention to inflation by households has surged. Concerns by policy-makers about a de-anchoring of inflation expectations have risen together with inflation. While the importance of stable inflation expectations around central banks’ inflation targets is undeniable, their formation is complex and imperfectly understood, notably as regards households and firms. Changes in the inflation attention-regime, triggered by the level of inflation or by particular events, could indeed affect the formation process of inflation expectations and by extension inflation dynamics.

This paper has shown that internet searches for “inflation” provide a plausible direct measure of attention to inflation in euro area countries that can complement the understanding of how beliefs about inflation are formed. For euro area countries, inflation attention is found to be contingent on the level of inflation, increasing in a non-linear manner, in line with the theory of rational inattention: as inflation increases, the costs of ignoring it also rise at an increasing rate. Importantly, this result is not limited to the post-pandemic period of high inflation, but also holds in the pre-pandemic low inflation years. That said attention to inflation has clearly surged after mid-2021 to levels for which no (recent) precedent exists.

Is high attention to inflation good or bad? While further research on the implications of high attention is warranted, higher alertness would seem to contain elements of both risk and opportunity. Inattention to inflation has sometimes been branded a “success” for central banks, to whom the task of ensuring price stability has been delegated. In an environment of low and stable inflation, agents can serenely take inflation off their mind and focus on other issues. The converse – namely, that high attention to inflation would constitute a failure of monetary policy – cannot be directly implied, in particular if the shocks driving inflation are clearly exogenous. Notwithstanding this, however, high attention clearly carries the risk that individuals do interpret high inflation as a failure. Indeed, attentive agents are more receptive of signals, including critical and possibly erroneous ones. This is illustrated by the findings of the Twitter-study by Ehrmann and Wabitsch (2022), who document the relative success of

tweets with negative, stronger or more subjective views. Likewise, van der Crujssen et al. (2023) suggest that the surge in inflation in 2022 has eroded trust in the central bank and politics more generally. Furthermore, a high inflation attention-regime, caused by elevated inflation could entail higher inflation persistence via the inflation expectations channel. This would be in line with the conclusion of Marcellino and Stevanovic (2022), who show for the US that the demand for information about inflation through Google searches contributes to the formation of inflation expectations and helps to predict inflation. Then again, high attention also presents an opportunity to be seized by central banks. For example, information-provision experiments by Coibion, Gorodnichenko, and Weber (2022) show that even simply informing (US) consumers about the inflation target of the Federal Reserve, can have a sizeable effect on inflation expectations. The relative unawareness of European households about the ECB and its objective, suggests that there is indeed ample scope for improvement and the rectification of misconceptions.

In addition to the existence of different inflation attention-regimes, this paper finds that drivers other than inflation matter in explaining attention. In particular, inflation attention rises with market-based inflation expectations, suggesting that households' attention is not only reactive, but contains forward-looking elements in line with the market consensus on the medium-term inflation outlook. Meanwhile, in some countries attention to inflation rises when confidence declines, indicating that inflation attention has a negative connotation and may be associated to bad news. Finally, monetary policy decisions significantly lift inflation attention in some countries only, in line with a limited public knowledge and understanding of monetary policy. In countries in which monetary policy events increase inflation attention, however, there are asymmetries with regard to the type of decision, with interest rate cuts and asset purchases triggering most attention.

Another conclusion of this paper is that the levels of attention to inflation and the relative impact of the various drivers considered, differs substantially across countries and within the euro area. First, this paper documents that attention levels differ, with inflation attention being structurally higher in some countries than in others. Second, the responsiveness of inflation attention to exogenous drivers also varies, pointing to different (in)attention thresholds levels and types across countries. Third, while search intensity is predominantly driven by the prevailing inflation rate, in some countries consumer confidence (or the lack of it) and specific events can explain attention spikes. This has notably been the case for some monetary policy decisions, suggesting that households in those countries do indeed link inflation to monetary policy. However, there is strong heterogeneity in the relative importance of the different drivers across the euro area. While this heterogeneity calls for further analysis into the factors explaining it, it points to likely very different national debates with regard to inflation, including media coverage. Related to this, in many countries, the inflation rate of the euro area, which is relevant for monetary policy, appears to matter more than the national one in explaining inflation attention.

These findings have a number of implications for the modelling of inflation expectations when there are information frictions, as well as policy implications. High attention to inflation by households implies that they are more likely to adapt their views on future inflation, including in ways that may complicate monetary policy, for example if the memory of the high inflation period introduces biases in expectations (Malmendier and Nagel, 2016). In a context of above-target inflation, it is important for central banks to ensure that their credibility remains strong. Central banks can influence inflation expectations but cannot set them. They may do so by explaining inflation drivers to the public and communicating how they envisage returning to their target and the risks they face in doing so. This

may be particularly relevant when the public's understanding of inflation drivers and monetary policy transmission channels may differ from that of the central bank. Layered communication, containing both non-specialist summaries and technical underpinnings for specialist readers (Haldane and McMahon, 2018), may be one way to reach diverse audiences and assert their credibility. In a monetary union, economic and societal heterogeneity implies that one-size-fits-all policies may warrant differentiated and bespoke communication. Differentiation of messages may depend on diverse economic conditions (Coibion et al., 2020), but may also warrant a differentiated use of communication channels when a given context (e.g. a deterioration in consumer confidence) triggers different associations.

## 5. REFERENCES

- Askatas, N. and K. Zimmermann (2009). Google Econometrics and Unemployment Forecasting. *Applied Economics Quarterly*, Vol. 55/2, pp. 107-120, <http://dx.doi.org/10.3790/aeq.55.2.107>.
- Blinder, A.S., M. Ehrmann, J. de Haan and D. Jansen (2022). Central bank communication with the general public: Promise or false hope? NBER Working Paper 30277.
- Bracha, Anat and Tang, Jenny (2022). Inflation Levels and (In)Attention. FRB of Boston Working Paper No. 22-4, Available at SSRN: <http://dx.doi.org/10.29412/res.wp.2022.04>.
- Carneiro HA and Mylonakis E. (2009). Google trends: a web-based tool for real-time surveillance of disease outbreaks. *Clin Infect Dis*. 2009 Nov 15;49(10):1557-64. doi: 10.1086/630200.
- Cavallo, Cruces and Perez-Truglia (2017). Inflation Expectations, Learning, and Supermarket Prices: Evidence from Survey Experiments. *American Economic Journal: Macroeconomics*.
- Clarida, Richard, Jordi Gali, and Mark Gertler (2000). Monetary Policy Rules and Macroeconomic Stability: Evidence and Some Theory. *The Quarterly Journal of Economics* 115, no. 1 (2000): 147–80. <http://www.jstor.org/stable/2586937>.
- Cebrián Eduardo and Josep Domenech (2022). Is Google Trends a quality data source? *Applied Economics Letters*, DOI: 10.1080/13504851.2021.2023088.
- Chiang, Yu-Ting (2022). Attention and Fluctuations in Macroeconomic Uncertainty. Federal Reserve Bank of St. Louis Working Paper 2022-004, <https://doi.org/10.20955/wp.2022.004>.
- Cœuré, Benoît (2019). Heterogeneity and the ECB’s monetary policy. Speech by Benoît Cœuré at the Banque de France Symposium & 34th SUERF Colloquium on the occasion of the 20th anniversary of the euro on “The Euro Area: Staying the Course through Uncertainties”, Paris, 29 March 2019
- Coibion, Olivier, and Yuriy Gorodnichenko (2012). What Can Survey Forecasts Tell Us about Information Rigidities? *Journal of Political Economy* 120, no. 1 (2012): 116–59. <https://doi.org/10.1086/665662>.
- Coibion, Olivier, and Yuriy Gorodnichenko (2015). Is the Phillips Curve Alive and Well after All? Inflation Expectations and the Missing Disinflation. *American Economic Journal: Macroeconomics* 7:197–232.
- Coibion, Olivier, Yuriy Gorodnichenko, Saten Kumar, and Mathieu Pedemonte (2020). Inflation Expectations as a Policy Tool? *J. Internat. Econ.* 124:103297.
- Coibion, Olivier, Yuriy Gorodnichenko, and Michael Weber (2022). Monetary Policy Communications and Their Effects on Household Inflation Expectations, *Journal of Political Economy* 2022 130:6, 1537-1584.
- Collins, Susan M. and Francesco Giavazzi (1993). Attitudes toward Inflation and the Viability of Fixed Exchange Rates: Evidence from the EMS. NBER Chapters, in: *A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform*, pages 547-586, National Bureau of Economic Research, Inc.

- D'Acunto, Francesco, Ulrike Malmendier, Juan Ospina, and Michael Weber (2021). "Exposure to Grocery Prices and Inflation Expectations." *J.P.E.* 129 (5): 1615–39.
- D'Acunto, Francesco and Malmendier, Ulrike and Weber, Michael (2022). What Do the Data Tell Us About Inflation Expectations? NBER Working Paper No. w29825, March 2022.
- D'Amuri, F. and Marcucci, J. (2017). The predictive power of Google searches in forecasting US unemployment. *International Journal of Forecasting*, 33(4), 801–816.
- Dräger, Lena (2015). Inflation perceptions and expectations in Sweden – Are media reports the 'missing link'? *Oxford Bulletin of Economics and Statistics*, 77, pp. 681–700.
- Draghi, Mario (2014). Unemployment in the euro area. Speech by Mario Draghi, President of the ECB, Annual central bank symposium in Jackson Hole, 22 August 2014
- Ehrmann, Michael and Alena Wabitsch (2022). Central bank communication with non-experts – A road to nowhere?, *Journal of Monetary Economics*, Elsevier, vol. 127(C), pages 69-85.
- Eichenauer, V.Z., Indergand, R., Martínez, I.Z. & Sax, C. (2022). Obtaining consistent time series from Google Trends. *Economic Inquiry*, 60(2), 694–705. Available from: <https://doi.org/10.1111/ecin.13049>.
- Haldane, Andrew, and Michael McMahon (2018). Central Bank Communications and the General Public, *American Econ. Assoc. Papers and Proc.* 108:578–83.
- Hayo, Bernd and Neuenkirch, Edith (2014). The German public and its trust in the ECB: The role of knowledge and information search. *Journal of International Money and Finance*, 47, pp. 286–303.
- Hayo, Bernd and Neuenkirch, Edith (2018). The influence of media use on layperson monetary policy knowledge in Germany, *Scottish Journal of Political Economy*, 65, issue 1, p. 1-26.
- Jonung, Lars (1981). Perceived and Expected Rates of Inflation in Sweden, *The American Economic Review*, 71(5), 961–968. <http://www.jstor.org/stable/1803477>.
- Jost, Adriel (2018). Cultural Differences in Monetary Policy Preferences, Working Papers 2018-02, Swiss National Bank.
- Korenok, Oleg and Munro, David and Chen, Jiayi (2022). Inflation and Attention Thresholds (September 26, 2022). <http://dx.doi.org/10.2139/ssrn.4230600>.
- Mackowiak, Bartosz and Mirko Wiederholt (2009). Optimal Sticky Prices under Rational Inattention, *A.E.R.* 99 (June):769–803.
- Malmendier, Ulrike, and Stefan Nagel (2016). Learning from inflation experiences, *The Quarterly Journal of Economics* 131.1 (2016): 53-87.
- Mankiw, N. Gregory and Ricardo Reis, 2002, Sticky Information versus Sticky Prices: A Proposal to Replace the New Keynesian Phillips Curve, *Q.J.E.* 117 (November):1295–1328.
- Marcellino, Massimiliano and Dalibor Stevanovic (2022). The demand and supply of information about inflation. CIRANO Working Papers 2022s-27, CIRANO.
- McLaren, Nick and Shanbhogue, Rachana (2011). Using Internet Search Data as Economic Indicators (June 13, 2011). Bank of England Quarterly Bulletin No. 2011 Q2.

Narita, F. and R. Yin (2018), “In Search of Information: Use of Google Trends’ Data to Narrow Information Gaps for Low-income Developing Countries”, IMF Working Papers, No. 18/286, IMF, Washington DC;

Powell Jerome H. (2022). Monetary Policy and Price Stability, August 26, 2022, Board of Governors, Federal Reserve System, <https://www.federalreserve.gov/newsevents/speech/powell20220826a.htm>.

Robin, François (2018). Use of Google Trends Data in Banque de France Monthly Retail Trade Surveys. *Economie et Statistique/ Economics and Statistics*, 505-506, 35–63. <https://doi.org/10.24187/ecostat.2018.505d.1965>.

Sims, Christopher (2003). Implications of Rational Inattention, *J. Monetary Econ.* 50 (April):665–90.

Stephens-Davidowitz, S. (2013). *Essays Using Google Data*. Doctoral dissertation, Harvard University.

Stephens-Davidowitz, S. (2014). The cost of racial animus on a black candidate: evidence using Google search data. *Journal of Public Economics*, 118, 26–40.

Stephens-Davidowitz S. and H. Varian (2015). A Hands-on Guide to Google Data, Google, Inc., <https://people.ischool.berkeley.edu/~hal/Papers/2015/primer.pdf>.

van der Cruijssen, Carin., David-Jan Jansen and Jakob de Haan (2015). How much does the public know about the ECB’s monetary policy? Evidence from a survey of Dutch consumers. *International Journal of Central Banking* 11(4), 169–218.

van der Cruijssen, Carin, Jakob de Haan and Maarten van Rooij (2023). The impact of high inflation on trust in national politics and central banks, DNB Working Paper No 762, January 2023.

Varian, H. and H. Choi (2009), “Predicting the Present with Google Trends”, SSRN Electronic Journal, <http://dx.doi.org/10.2139/ssrn.1659302>;

Vosen, Simeon and Torsten Schmidt (2011). Forecasting private consumption: survey-based indicators vs. Google trends. *Journal of forecasting* 30, no. 6 (2011): 565-578;

Woloszko, Nicolas (2020). Tracking activity in real time with Google Trends. OECD Economics Department Working Papers, No. 1634, OECD Publishing, Paris, <https://dx.doi.org/10.1787/6b9c7518-en>.

Woodford, Michael (2003). Imperfect Common Knowledge and the Effects of Monetary Policy, in *Knowledge, Information, and Expectations in Modern Macroeconomics: In Honor of Edmund Phelps*, edited by P. Aghion, R. Frydman, J. Stiglitz and M. Woodford. Princeton, NJ: Princeton Univ. Press.

Yellen, Janet L. (2016). Macroeconomic Research after the Crisis, 14 October 2016, Board of Governors, Federal Reserve System, <https://www.federalreserve.gov/newsevents/speech/yellen20161014a.htm>.



## 6. ANNEX I: TABLES

Table 1: Correlation between inflation attention and different inflation measures

Correlation between Google search intensity for "inflation" (in logs and seasonally adjusted) and inflation measures: Pre-pandemic (2004-2019)																
	Pooled	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT	Minimum	Mean	Maximum
HICP inflation	0,37	0,30	0,33	0,28	0,52	0,53	0,64	0,40	0,50	0,51	0,05	0,14	0,28	0,05	0,37	0,64
HICP inflation (1st lag)	0,38	0,32	0,35	0,34	0,52	0,51	0,66	0,43	0,50	0,52	0,03	0,15	0,29	0,03	0,39	0,66
HICP inflation (2nd lag)	0,38	0,37	0,36	0,33	0,51	0,47	0,68	0,45	0,50	0,52	0,03	0,15	0,31	0,03	0,39	0,68
CPI inflation	0,38	0,33	0,33	0,28	0,52	0,55	0,65	0,46	0,48	0,53	0,01	0,19	0,31	0,01	0,39	0,65
CPI inflation (1st lag)	0,39	0,36	0,36	0,35	0,51	0,56	0,67	0,49	0,51	0,54	-0,01	0,20	0,32	-0,01	0,41	0,67
CPI inflation (2nd lag)	0,40	0,39	0,36	0,34	0,50	0,56	0,69	0,50	0,53	0,54	-0,04	0,18	0,34	-0,04	0,41	0,69
Food HICP inflation	0,30	0,29	0,22	0,11	0,53	0,52	0,44	0,45	0,49	0,43	-0,11	0,11	0,10	-0,11	0,30	0,53
Food HICP inflation (1st lag)	0,31	0,33	0,25	0,15	0,55	0,47	0,44	0,45	0,48	0,46	-0,13	0,08	0,10	-0,13	0,30	0,55
Food HICP inflation (2nd lag)	0,31	0,35	0,27	0,14	0,54	0,42	0,47	0,44	0,48	0,47	-0,12	0,05	0,13	-0,12	0,30	0,54
Energy HICP inflation	0,28	0,27	0,27	0,36	0,34	0,28	0,44	0,40	0,18	0,30	0,13	0,23	0,20	0,13	0,28	0,44
Energy HICP inflation (1st lag)	0,29	0,29	0,30	0,40	0,33	0,29	0,46	0,42	0,19	0,30	0,11	0,25	0,22	0,11	0,30	0,46
Energy HICP inflation (2nd lag)	0,29	0,32	0,31	0,37	0,31	0,30	0,48	0,47	0,19	0,29	0,13	0,25	0,23	0,13	0,30	0,48
Euro area HICP inflation	0,42	0,36	0,36	0,45	0,48	0,44	0,61	0,50	0,37	0,49	0,06	0,48	0,42	0,06	0,42	0,61
Euro area HICP inflation (1st lag)	0,44	0,39	0,38	0,48	0,49	0,47	0,63	0,48	0,37	0,50	0,05	0,49	0,44	0,05	0,43	0,63
Euro area HICP inflation (2nd lag)	0,44	0,41	0,38	0,47	0,48	0,47	0,63	0,50	0,36	0,51	0,07	0,49	0,45	0,07	0,43	0,63

Correlation between Google search intensity for "inflation" (in logs and seasonally adjusted) and inflation measures: Full Sample (2004-September 2022)																
	Pooled	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT	Minimum	Mean	Maximum
HICP inflation	0,68	0,69	0,60	0,76	0,76	0,69	0,78	0,78	0,74	0,72	0,57	0,78	0,54	0,54	0,70	0,78
HICP inflation (1st lag)	0,66	0,68	0,59	0,76	0,74	0,64	0,77	0,75	0,73	0,71	0,54	0,76	0,51	0,51	0,68	0,77
HICP inflation (2nd lag)	0,63	0,68	0,56	0,73	0,70	0,58	0,75	0,71	0,70	0,68	0,51	0,71	0,49	0,49	0,65	0,75
CPI inflation	0,67	0,71	0,56	0,78	0,76	0,70	0,77	0,81	0,66	0,73	0,55	0,78	0,55	0,55	0,70	0,81
CPI inflation (1st lag)	0,65	0,70	0,54	0,78	0,74	0,68	0,76	0,80	0,65	0,72	0,51	0,77	0,53	0,51	0,68	0,80
CPI inflation (2nd lag)	0,62	0,70	0,50	0,76	0,71	0,64	0,73	0,76	0,63	0,70	0,47	0,72	0,51	0,47	0,65	0,76
Food HICP inflation	0,49	0,52	0,20	0,62	0,70	0,48	0,39	0,78	0,57	0,59	0,23	0,44	0,38	0,20	0,49	0,78
Food HICP inflation (1st lag)	0,44	0,48	0,18	0,59	0,66	0,42	0,32	0,74	0,53	0,57	0,13	0,38	0,33	0,13	0,44	0,74
Food HICP inflation (2nd lag)	0,39	0,44	0,15	0,53	0,61	0,35	0,28	0,69	0,49	0,52	0,05	0,30	0,30	0,05	0,39	0,69
Energy HICP inflation	0,64	0,63	0,59	0,72	0,66	0,58	0,66	0,79	0,62	0,63	0,58	0,82	0,46	0,46	0,64	0,82
Energy HICP inflation (1st lag)	0,63	0,62	0,59	0,71	0,67	0,56	0,67	0,77	0,61	0,63	0,56	0,81	0,46	0,46	0,64	0,81
Energy HICP inflation (2nd lag)	0,61	0,61	0,57	0,68	0,64	0,53	0,66	0,76	0,58	0,62	0,55	0,76	0,45	0,45	0,62	0,76
Euro area HICP inflation	0,73	0,70	0,60	0,77	0,79	0,72	0,83	0,83	0,70	0,72	0,61	0,81	0,66	0,60	0,73	0,83
Euro area HICP inflation (1st lag)	0,72	0,69	0,57	0,76	0,78	0,71	0,82	0,82	0,68	0,72	0,59	0,79	0,67	0,57	0,71	0,82
Euro area HICP inflation (2nd lag)	0,70	0,68	0,53	0,72	0,75	0,68	0,80	0,80	0,64	0,71	0,56	0,76	0,67	0,53	0,69	0,80

Source: Google Trends, Eurostat, National Statistical Institutes

Table 2: Correlation between inflation attention and different exogenous variables

Correlation between Google search intensity for "inflation" (in logs and seasonally adjusted) and exogenous variables: Pre-pandemic (2004-2019)																
	Pooled	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT	Min	Mean	Max
Inflation perceptions (BCS)	0,42	0,44	0,38	0,40	0,46	0,49	0,64	0,44	0,51	0,74	-0,11	0,44	0,50	-0,11	0,44	0,74
Inflation perceptions (BCS) (1st lag)	0,43	0,45	0,40	0,42	0,47	0,48	0,64	0,46	0,51	0,75	-0,13	0,45	0,50	-0,13	0,45	0,75
Inflation expectations (BCS)	0,08	-0,05	-0,11	0,11	0,31	0,26	0,01	0,26	0,35	-0,16	0,01	-0,08	0,27	-0,16	0,08	0,35
Inflation expectations (BCS) (1st lead)	0,06	-0,11	-0,16	0,09	0,29	0,19	0,00	0,31	0,30	-0,15	-0,06	-0,12	0,27	-0,16	0,05	0,31
Consumer confidence (BCS)	-0,07	-0,59	-0,28	-0,59	-0,29	-0,35	-0,05	-0,22	0,14	0,20	0,16	-0,30	0,00	-0,59	-0,19	0,20
Economic situation: future (BCS)	-0,19	-0,38	-0,29	-0,42	-0,46	-0,42	-0,15	-0,18	-0,29	-0,21	0,17	-0,32	-0,16	-0,46	-0,26	0,17
Economic situation: past (BCS)	-0,19	-0,35	-0,42	-0,41	-0,16	-0,12	-0,20	-0,27	-0,03	-0,35	0,18	-0,35	-0,30	-0,42	-0,22	0,18
Market inflation expectations (5y5y)	0,43	0,58	0,41	0,71	0,56	0,26	0,39	0,45	0,13	0,56	-0,07	0,54	0,50	-0,07	0,41	0,71
Maximum inflation (% of basket)	0,27	0,31	0,32	0,17	0,44	0,47	0,48	0,04	0,22	0,30	-0,16	0,00	0,11	-0,16	0,24	0,48

Correlation between Google search intensity for "inflation" (in logs and seasonally adjusted) and exogenous variables: Full Sample (2004-September 2022)																
	Pooled	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT	Min	Mean	Max
Inflation perceptions (BCS)	0,53	0,53	0,55	0,56	0,56	0,52	0,64	0,66	0,61	0,73	0,50	0,67	0,62	0,50	0,59	0,73
Inflation perceptions (BCS) (1st lag)	0,51	0,52	0,54	0,55	0,55	0,48	0,61	0,63	0,58	0,71	0,47	0,64	0,60	0,47	0,57	0,71
Inflation expectations (BCS)	0,31	0,36	0,20	0,39	0,38	0,37	0,45	0,56	0,53	0,28	0,52	0,26	0,44	0,20	0,39	0,56
Inflation expectations (BCS) (1st lead)	0,30	0,32	0,18	0,38	0,35	0,34	0,44	0,60	0,53	0,29	0,48	0,23	0,44	0,18	0,37	0,60
Consumer confidence (BCS)	-0,11	-0,61	-0,38	-0,53	-0,28	-0,34	-0,10	0,01	0,02	0,09	-0,18	-0,41	-0,05	-0,61	-0,24	0,09
Economic situation: future (BCS)	-0,24	-0,47	-0,38	-0,38	-0,41	-0,42	-0,18	-0,10	-0,34	-0,20	-0,11	-0,41	-0,19	-0,47	-0,30	-0,10
Economic situation: past (BCS)	-0,22	-0,38	-0,41	-0,40	-0,24	-0,25	-0,11	-0,03	-0,15	-0,19	-0,11	-0,41	-0,30	-0,41	-0,24	-0,03
Market inflation expectations (5y5y)	0,23	0,28	0,22	0,28	0,28	0,06	0,18	0,30	0,06	0,43	0,01	0,26	0,42	0,01	0,22	0,43
Maximum inflation (% of basket)	0,63	0,65	0,66	0,78	0,74	0,63	0,73	0,68	0,61	0,57	0,54	0,68	0,46	0,54	0,66	0,78

Source: Google Trends, Eurostat, European Commission (Business and Consumer Surveys), Bloomberg.

**Table 3: Panel regressions with national HICP inflation**

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)

Panel A: 2% inflation threshold												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Inflation (lagged)	0.140*** (18.56)	0.019 (1.46)	0.021 (1.59)	0.015 (1.18)	0.018 (1.40)	0.026+ (2.06)	0.020 (1.51)	0.022* (2.25)	0.066*** (8.08)	0.018 (1.32)	0.018 (1.40)	0.015 (1.59)
Inflation (lagged)*I(inflation >2%)		0.168*** (7.20)	0.124*** (4.82)	0.173*** (7.90)	0.174*** (8.01)	0.156*** (7.17)	0.166*** (7.77)	0.129*** (6.45)		0.039 (1.03)	0.022 (0.60)	0.020 (0.69)
I(inflation >2%)		-0.266** (-4.32)	-0.166* (-2.56)	-0.290*** (-4.91)	-0.272*** (-4.50)	-0.256*** (-4.65)	-0.264*** (-4.52)	-0.212** (-4.13)		0.050 (0.52)	0.081 (0.84)	0.043 (0.56)
Maximum inflation (% of basket) (lagged)			0.012** (3.91)					0.011** (3.84)			0.009*** (4.69)	0.008** (4.25)
Market inflation expectations (5y5y)				0.050 (1.19)				0.092+ (2.15)				0.137** (3.58)
Consumer confidence (BCS)					0.002 (1.31)			0.019** (4.10)				0.017** (3.73)
Economic situation: past (BCS)						-0.001* (-2.55)		-0.004*** (-6.13)				-0.003*** (-4.68)
Economic situation: future (BCS)							-0.000 (-0.55)	-0.004* (-2.84)				-0.005* (-3.07)
Constant	2.527*** (190.34)	2.621*** (134.26)	2.613*** (136.64)	2.530*** (33.28)	2.647*** (139.40)	2.577*** (117.21)	2.617*** (144.90)	2.505*** (32.27)	2.605*** (217.88)	2.621*** (162.84)	2.616*** (168.60)	2.425*** (34.72)
R-squared	0.34	0.36	0.38	0.36	0.39	0.34	0.36	0.44	0.44	0.44	0.45	0.52
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.	.	.	.
Observations	2460	2460	2460	2446	2459	2459	2459	2445	2460	2460	2460	2445
Countries	12	12	12	12	12	12	12	12	12	12	12	12
Months(max)	224	224	224	222	224	224	224	222	224	224	224	222
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post-Sept 2021 Fixed Effects	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes

Panel B: Quadratic inflation term												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Inflation (lagged)	0.140*** (18.56)	0.120*** (6.89)	0.113*** (8.51)	0.111*** (5.57)	0.122*** (6.61)	0.116*** (6.57)	0.117*** (6.53)	0.098*** (5.78)	0.066*** (8.08)	0.103*** (8.07)	0.095*** (7.28)	0.070*** (5.35)
Inflation (lagged) <sup>2</sup>		0.005* (2.35)	0.001 (0.74)	0.006* (2.56)	0.005* (2.37)	0.005* (2.38)	0.005* (2.40)	0.003 (1.21)		-0.004 (-1.59)	-0.004 (-1.65)	-0.003 (-1.52)
I(inflation >0%)		-0.200*** (-7.95)	-0.179*** (-7.53)	-0.195*** (-7.09)	-0.206*** (-8.02)	-0.178*** (-6.23)	-0.195*** (-7.61)	-0.148*** (-5.13)		-0.150*** (-7.37)	-0.135*** (-5.92)	-0.098*** (-4.20)
Maximum inflation (% of basket) (lagged)			0.015*** (4.47)					0.015** (4.38)			0.009*** (5.48)	0.008** (4.14)
Market inflation expectations (5y5y)				0.045 (1.11)				0.083+ (1.82)				0.141** (3.55)
Consumer confidence (BCS)					0.002 (0.99)			0.018** (4.43)				0.018** (3.90)
Economic situation: past (BCS)						-0.002* (-2.69)		-0.004*** (-6.42)				-0.003*** (-4.77)
Economic situation: future (BCS)							-0.001 (-0.87)	-0.004* (-2.81)				-0.005** (-3.12)
Constant	2.527*** (190.34)	2.704*** (152.28)	2.690*** (154.89)	2.619*** (32.43)	2.727*** (113.93)	2.645*** (92.98)	2.695*** (140.54)	2.576*** (31.66)	2.605*** (217.88)	2.696*** (163.39)	2.685*** (165.48)	2.466*** (33.97)
R-squared	0.34	0.36	0.39	0.36	0.38	0.34	0.36	0.44	0.44	0.44	0.45	0.52
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.	.	.	.
Observations	2460	2460	2460	2446	2459	2459	2459	2445	2460	2460	2460	2445
Countries	12	12	12	12	12	12	12	12	12	12	12	12
Months(max)	224	224	224	222	224	224	224	222	224	224	224	222
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post-Sept 2021 Fixed Effects	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

**Table 4: Panel regressions with euro area HICP inflation**

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)

---

**Panel A: 2% inflation threshold**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Euro area inflation (lagged)	0.171*** (33.49)	0.045* (2.91)	0.044* (2.88)	0.036* (2.28)	0.041* (2.73)	0.056** (4.17)	0.045* (3.00)	0.052** (3.42)	0.094*** (10.92)	0.045* (2.88)	0.044* (2.84)	0.045* (2.96)
Euro area inflation (lagged)*I(EA inflation >2%)		0.182*** (9.15)	0.166*** (8.03)	0.191*** (10.46)	0.192*** (10.32)	0.166*** (9.01)	0.182*** (9.60)	0.167*** (11.50)		0.148** (4.21)	0.123** (3.39)	0.111** (3.79)
I(EA inflation >2%)		-0.335*** (-8.59)	-0.296*** (-8.57)	-0.354*** (-10.94)	-0.338*** (-8.31)	-0.324*** (-8.94)	-0.335*** (-8.82)	-0.313*** (-12.49)		-0.276** (-3.37)	-0.218* (-2.61)	-0.210* (-3.00)
Maximum inflation (% of basket) (lagged)			0.004 (1.55)					0.003 (1.27)			0.007** (3.89)	0.006** (3.69)
Market inflation expectations (5y5y)				0.032 (0.85)				0.064 (1.32)				0.096+ (2.06)
Consumer confidence (BCS)					0.003* (2.20)			0.019** (3.71)				0.018** (3.56)
Economic situation: past (BCS)						-0.001* (-2.25)		-0.005*** (-6.28)				-0.004*** (-5.02)
Economic situation: future (BCS)							0.000 (0.01)	-0.003 (-1.57)				-0.004+ (-2.09)
Constant	2.465*** (269.15)	2.597*** (157.63)	2.595*** (159.06)	2.543*** (37.12)	2.637*** (151.75)	2.549*** (105.54)	2.597*** (175.43)	2.524*** (33.40)	2.560*** (211.11)	2.598*** (156.40)	2.594*** (155.55)	2.469*** (34.87)
R-squared	0.37	0.42	0.42	0.42	0.46	0.39	0.42	0.49	0.43	0.44	0.45	0.52
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.	.	.	.
Observations	2460	2460	2460	2446	2459	2459	2459	2445	2460	2460	2460	2445
Countries	12	12	12	12	12	12	12	12	12	12	12	12
Months(max)	224	224	224	222	224	224	224	222	224	224	224	222
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post-Sept 2021 Fixed Effects	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes

---

**Panel B: Quadratic inflation term**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Euro area inflation (lagged)	0.171*** (33.49)	0.116*** (9.89)	0.120*** (10.65)	0.111*** (7.85)	0.119*** (8.84)	0.112*** (10.21)	0.115*** (9.04)	0.110*** (6.19)	0.094*** (10.92)	-0.024 (-0.79)	-0.011 (-0.38)	-0.026 (-1.03)
Euro area inflation (lagged) <sup>2</sup>		0.010*** (6.77)	0.006*** (5.37)	0.010*** (7.54)	0.010*** (6.69)	0.009*** (7.83)	0.010*** (7.32)	0.008*** (4.84)		0.041*** (5.52)	0.035*** (4.73)	0.034*** (5.94)
I(EA inflation >0%)		-0.163*** (-10.53)	-0.164*** (-10.93)	-0.161*** (-10.33)	-0.169*** (-10.90)	-0.137*** (-7.59)	-0.161*** (-10.56)	-0.098*** (-4.57)		-0.022 (-1.25)	-0.030+ (-1.84)	0.027+ (1.84)
Maximum inflation (% of basket) (lagged)			0.008* (2.62)					0.006* (2.35)			0.007** (3.36)	0.006** (3.24)
Market inflation expectations (5y5y)				0.015 (0.39)				0.041 (0.81)				0.095+ (2.03)
Consumer confidence (BCS)					0.003 (1.55)			0.019** (3.76)				0.018** (3.50)
Economic situation: past (BCS)						-0.002+ (-2.17)		-0.005*** (-6.28)				-0.004*** (-4.93)
Economic situation: future (BCS)							-0.000 (-0.53)	-0.004 (-1.77)				-0.004+ (-2.06)
Constant	2.465*** (269.15)	2.657*** (159.65)	2.654*** (162.38)	2.630*** (36.82)	2.688*** (144.87)	2.595*** (86.61)	2.653*** (196.58)	2.573*** (33.39)	2.560*** (211.11)	2.624*** (199.70)	2.623*** (199.95)	2.466*** (34.52)
R-squared	0.37	0.40	0.41	0.41	0.43	0.38	0.40	0.47	0.43	0.45	0.45	0.52
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.	.	.	.
Observations	2460	2460	2460	2446	2459	2459	2459	2445	2460	2460	2460	2445
Countries	12	12	12	12	12	12	12	12	12	12	12	12
Months(max)	224	224	224	222	224	224	224	222	224	224	224	222
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post-Sept 2021 Fixed Effects	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

**Table 5: Monetary policy augmented panel regressions with national HICP inflation**

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Inflation (lagged)	0.139*** (18.04)	0.140*** (18.57)	0.140*** (18.64)	0.139*** (18.16)	0.019 (1.45)	0.119*** (6.79)	0.095*** (14.06)	0.022* (2.22)	0.098*** (5.84)	0.042*** (7.64)	0.015 (1.53)	0.070*** (5.21)
Interest rate hikes	0.019 (0.75)			0.021 (0.81)	0.006 (0.26)	-0.001 (-0.02)	0.002 (0.08)	-0.005 (-0.20)	-0.009 (-0.39)	0.046 (1.68)	0.044 (1.68)	0.042 (1.58)
Interest rate cuts		0.023 (0.73)		0.025 (0.88)	0.032 (1.22)	0.037 (1.33)	0.007 (0.26)	0.012 (0.50)	0.015 (0.55)	0.027 (1.33)	0.031 (1.54)	0.029 (1.40)
Asset purchases			0.006 (0.16)	-0.004 (-0.13)	-0.042 (-1.42)	-0.043 (-1.28)	-0.015 (-0.61)	-0.029 (-1.16)	-0.030 (-1.14)	-0.007 (-0.28)	-0.014 (-0.51)	-0.013 (-0.48)
Inflation (lagged)*I(inflation >2%)					0.169*** (7.28)			0.129*** (6.44)			0.019 (0.67)	
I(inflation >2%)					-0.268** (-4.37)			-0.213** (-4.15)			0.045 (0.60)	
Inflation (lagged) <sup>2</sup>						0.005* (2.36)			0.003 (1.24)			-0.003 (-1.51)
I(inflation >0%)						-0.201*** (-7.97)			-0.149*** (-5.24)			-0.097** (-4.19)
Maximum inflation (% of basket) (lagged)							0.020*** (8.25)	0.011** (3.81)	0.015** (4.35)	0.009*** (4.57)	0.008** (4.29)	0.008** (4.17)
Market inflation expectations (5y5y)							0.065 (1.52)	0.092* (2.24)	0.083+ (1.90)	0.140** (3.79)	0.131** (3.54)	0.135** (3.53)
Consumer confidence (BCS)							0.018*** (4.66)	0.018** (4.13)	0.018*** (4.47)	0.018** (3.80)	0.017** (3.73)	0.017** (3.91)
Economic situation: past (BCS)							-0.004*** (-6.56)	-0.004*** (-6.02)	-0.004*** (-6.32)	-0.003*** (-4.70)	-0.003*** (-4.70)	-0.003*** (-4.80)
Economic situation: future (BCS)							-0.004* (-2.81)	-0.004* (-2.88)	-0.004* (-2.82)	-0.005* (-3.08)	-0.005* (-2.99)	-0.005* (-3.04)
Constant	2.527*** (190.71)	2.525*** (186.26)	2.527*** (186.68)	2.525*** (184.55)	2.620*** (140.23)	2.704*** (151.54)	2.479*** (32.42)	2.506*** (32.70)	2.577*** (32.24)	2.406*** (35.04)	2.432*** (35.13)	2.472*** (34.32)
R-squared	0.34	0.34	0.34	0.34	0.36	0.36	0.42	0.44	0.44	0.51	0.52	0.52
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.	.	.	.	.
Observations	2460	2460	2460	2460	2460	2460	2445	2445	2445	2445	2445	2445
Countries	12	12	12	12	12	12	12	12	12	12	12	12
Months(max)	224	224	224	224	224	224	222	222	222	222	222	222
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post-Sept 2021 Fixed Effects	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

**Table 6: Monetary policy augmented panel regressions with euro area HICP inflation**

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)												
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Euro area inflation (lagged)	0.171*** (30.68)	0.171*** (34.16)	0.171*** (33.29)	0.172*** (31.22)	0.046** (3.22)	0.118*** (10.33)	0.145*** (14.33)	0.052** (3.43)	0.112*** (6.55)	0.076*** (6.94)	0.045* (2.96)	-0.021 (-0.86)
Interest rate hikes	-0.022 (-0.58)			-0.018 (-0.47)	-0.019 (-0.51)	-0.038 (-0.99)	-0.014 (-0.46)	-0.019 (-0.64)	-0.032 (-1.13)	0.036 (1.17)	0.032 (1.05)	0.028 (0.92)
Interest rate cuts		0.051+ (1.93)		0.052* (2.25)	0.046+ (1.99)	0.073** (3.14)	0.041+ (2.05)	0.033 (1.63)	0.053* (2.82)	0.041+ (2.16)	0.034 (1.79)	0.037+ (1.98)
Asset purchases			0.010 (0.29)	-0.007 (-0.24)	-0.052+ (-1.93)	-0.066* (-2.37)	-0.010 (-0.42)	-0.031 (-1.42)	-0.040 (-1.70)	-0.002 (-0.09)	-0.008 (-0.34)	-0.007 (-0.30)
Euro area inflation (lagged)*I(EA inflation >2%)					0.183*** (9.54)			0.167*** (11.51)			0.107** (3.64)	
I(EA inflation >2%)					-0.337*** (-8.67)			-0.313*** (-12.69)			-0.200* (-2.83)	
Euro area inflation (lagged)^2						0.010*** (6.68)			0.008*** (5.41)			0.033*** (5.76)
I(EA inflation >0%)						-0.172*** (-11.80)			-0.106*** (-5.31)			0.022 (1.75)
Maximum inflation (% of basket) (lagged)							0.013*** (5.38)	0.003 (1.34)	0.006* (2.40)	0.008*** (4.53)	0.006** (3.75)	0.006** (3.31)
Market inflation expectations (5y5y)							0.004 (0.09)	0.063 (1.34)	0.040 (0.82)	0.094+ (2.10)	0.091+ (2.01)	0.089+ (1.98)
Consumer confidence (BCS)							0.019** (4.11)	0.019** (3.69)	0.018** (3.72)	0.018** (3.67)	0.018** (3.56)	0.018** (3.49)
Economic situation: past (BCS)							-0.005*** (-6.64)	-0.005*** (-6.11)	-0.005*** (-6.07)	-0.004*** (-5.06)	-0.004*** (-5.00)	-0.004*** (-4.89)
Economic situation: future (BCS)							-0.003 (-1.73)	-0.003 (-1.52)	-0.003 (-1.67)	-0.005* (-2.30)	-0.004+ (-2.01)	-0.004+ (-1.97)
Constant	2.465*** (265.21)	2.461*** (289.44)	2.465*** (269.33)	2.461*** (281.00)	2.596*** (168.82)	2.661*** (176.80)	2.512*** (34.09)	2.526*** (34.09)	2.580*** (34.33)	2.436*** (34.16)	2.474*** (35.44)	2.474*** (35.24)
R-squared	0.37	0.37	0.37	0.37	0.42	0.41	0.46	0.49	0.47	0.51	0.52	0.52
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.	.	.	.	.
Observations	2460	2460	2460	2460	2460	2460	2445	2445	2445	2445	2445	2445
Countries	12	12	12	12	12	12	12	12	12	12	12	12
Months(max)	224	224	224	224	224	224	222	222	222	222	222	222
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post-Sept 2021 Fixed Effects	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

Table 7: Monetary policy events augmented panel regressions with national HICP inflation

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Inflation (lagged)	0.135*** (18.33)	0.021 (1.66)	0.127*** (6.38)	0.099*** (14.76)	0.025* (2.68)	0.105*** (5.84)	0.041*** (8.71)	0.017+ (1.93)	0.071*** (5.47)
Purchase: Covered Bonds Purchase Programme 1	0.235** (3.61)	0.202** (3.92)	0.207** (3.57)	0.082 (1.75)	0.079+ (2.05)	0.079+ (1.82)	0.034 (1.01)	0.048 (1.34)	0.041 (1.19)
Purchase: Securities Markets Programme 1	0.237+ (1.97)	0.256* (2.29)	0.249+ (2.13)	0.207+ (1.84)	0.217+ (2.08)	0.215+ (1.94)	0.177 (1.64)	0.190 (1.77)	0.187 (1.73)
Purchase: Securities Markets Programme 2	-0.183 (-1.53)	-0.161 (-1.38)	-0.156 (-1.35)	-0.114 (-0.93)	-0.116 (-0.96)	-0.110 (-0.91)	-0.035 (-0.30)	-0.054 (-0.46)	-0.044 (-0.37)
Purchase: Covered Bonds Purchase Programme 2	-0.188** (-3.33)	-0.175* (-2.61)	-0.165* (-2.70)	-0.113+ (-1.80)	-0.109 (-1.66)	-0.104 (-1.70)	0.013 (0.22)	-0.003 (-0.05)	0.000 (0.01)
Purchase: 'Whatever it takes'	-0.215** (-3.89)	-0.153* (-2.21)	-0.180* (-3.06)	-0.165** (-3.79)	-0.123* (-2.34)	-0.146** (-3.26)	-0.099* (-2.88)	-0.105* (-2.59)	-0.103* (-2.94)
Purchase: Outright Monetary Transactions	-0.176* (-2.78)	-0.114 (-1.45)	-0.142+ (-2.04)	-0.153* (-2.56)	-0.105 (-1.59)	-0.132+ (-2.17)	-0.089 (-1.54)	-0.091 (-1.53)	-0.091 (-1.58)
Purchase: Covered Bonds Purchase Programme 3	0.009 (0.21)	-0.020 (-0.67)	-0.019 (-0.41)	0.035 (1.12)	0.014 (0.51)	0.018 (0.48)	-0.004 (-0.15)	0.003 (0.10)	-0.006 (-0.19)
Purchase: Expanded Asset Purchase Programme	0.238* (2.71)	0.120+ (1.83)	0.154+ (1.93)	0.248** (3.29)	0.172* (2.71)	0.199* (2.82)	0.193* (3.03)	0.176* (2.93)	0.186* (2.94)
Purchase: Corporate Sector Purchase Programme	-0.055 (-1.23)	-0.127** (-3.31)	-0.136** (-3.18)	-0.052 (-1.12)	-0.090+ (-1.12)	-0.099+ (-1.93)	-0.070 (-1.54)	-0.077 (-1.70)	-0.088 (-1.78)
Purchase: Pandemic Emergency Purchase Programme	0.018 (0.33)	0.061 (1.06)	0.061 (1.13)	0.082 (1.10)	0.122 (1.65)	0.117 (1.66)	0.141+ (1.91)	0.149+ (2.10)	0.150+ (2.11)
Purchase: Transmission Protection Instrument	0.272*** (5.70)	-0.029 (-0.40)	0.016 (0.16)	-0.010 (-0.13)	-0.105 (-1.66)	-0.091 (-1.36)	0.815*** (26.96)	0.904*** (7.40)	0.907*** (11.65)
Hike: December 2005	-0.005 (-0.06)	0.042 (0.61)	0.021 (0.29)	0.007 (0.10)	0.027 (0.42)	0.014 (0.21)	0.047 (0.73)	0.043 (0.69)	0.044 (0.68)
Hike: March 2006	-0.011 (-0.14)	0.031 (0.42)	0.012 (0.15)	0.001 (0.01)	0.013 (0.20)	0.003 (0.05)	0.048 (0.79)	0.047 (0.80)	0.044 (0.72)
Hike: June 2006	-0.020 (-0.40)	0.014 (0.31)	-0.001 (-0.01)	0.008 (0.18)	0.012 (0.27)	0.005 (0.11)	0.065 (1.46)	0.050 (1.16)	0.058 (1.30)
Hike: August 2006	-0.131 (-1.40)	-0.087 (-0.90)	-0.108 (-1.14)	-0.097 (-1.05)	-0.088 (-0.92)	-0.099 (-1.07)	-0.058 (-0.63)	-0.066 (-0.73)	-0.063 (-0.69)
Hike: October 2006	-0.100+ (-1.96)	-0.059 (-1.31)	-0.072 (-1.45)	-0.076 (-1.54)	-0.067 (-1.51)	-0.071 (-1.48)	-0.068 (-1.28)	-0.059 (-1.26)	-0.065 (-1.27)
Hike: December 2006	-0.059 (-1.08)	0.010 (0.20)	-0.030 (-0.53)	-0.032 (-0.56)	-0.002 (-0.05)	-0.027 (-0.48)	-0.021 (-0.36)	-0.010 (-0.19)	-0.020 (-0.35)
Hike: March 2007	0.005 (0.07)	0.072 (0.90)	0.038 (0.46)	0.022 (0.34)	0.054 (0.81)	0.031 (0.47)	0.048 (0.64)	0.054 (0.76)	0.049 (0.65)
Hike: June 2007	-0.022 (-0.38)	0.050 (0.79)	0.010 (0.16)	-0.009 (-0.17)	0.024 (0.41)	-0.002 (-0.04)	0.011 (0.19)	0.018 (0.30)	0.011 (0.20)
Hike: July 2008	0.214* (2.92)	0.171+ (2.00)	0.208* (2.57)	0.106 (1.15)	0.116 (1.23)	0.124 (1.29)	0.341*** (5.07)	0.344*** (5.61)	0.334*** (5.09)
Hike: April 2011	-0.103 (-1.68)	-0.084 (-1.19)	-0.080 (-1.24)	-0.011 (-0.15)	-0.021 (-0.30)	-0.014 (-0.20)	0.079 (1.02)	0.069 (0.89)	0.068 (0.90)
Hike: July 2011	-0.123* (-2.86)	-0.104+ (-2.05)	-0.097+ (-2.03)	-0.023 (-0.47)	-0.036 (-0.77)	-0.026 (-0.54)	0.049 (0.94)	0.030 (0.58)	0.038 (0.74)
Hike: July 2022	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Hike: September 2022	0.345** (4.36)	0.030 (0.30)	0.063 (0.56)	0.136 (1.39)	0.007 (0.07)	0.027 (0.28)	0.940*** (11.11)	1.033*** (5.95)	1.045*** (7.38)
Hike: October 2022	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)

Table 7: Monetary policy events augmented panel regressions with national HICP inflation continuation

Continued	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Cut: October 2008	0.159** (3.77)	0.127* (2.41)	0.159** (3.26)	0.143+ (2.20)	0.122+ (1.98)	0.142* (2.29)	0.308*** (6.98)	0.302*** (7.62)	0.297*** (6.89)
Cut: November 2008	0.077 (1.35)	0.072 (1.03)	0.089 (1.36)	0.057 (0.86)	0.053 (0.72)	0.062 (0.89)	0.174** (3.22)	0.161* (3.07)	0.165* (3.03)
Cut: December 2008	0.130* (2.30)	0.185* (2.71)	0.158* (2.63)	0.068 (1.05)	0.118 (1.69)	0.091 (1.44)	0.113* (2.31)	0.122* (2.23)	0.114* (2.28)
Cut: January 2009	0.184* (2.55)	0.231* (2.93)	0.216* (2.82)	0.074 (0.80)	0.133 (1.41)	0.111 (1.20)	0.106 (1.43)	0.130 (1.60)	0.117 (1.52)
Cut: March 2009	0.335** (3.97)	0.368*** (4.71)	0.369*** (4.45)	0.190* (2.50)	0.243** (3.21)	0.235* (3.06)	0.191* (2.26)	0.222* (2.79)	0.212* (2.52)
Cut: April 2009	0.308** (3.59)	0.273** (3.96)	0.279** (3.56)	0.144+ (1.94)	0.146* (2.39)	0.145+ (2.07)	0.099 (1.66)	0.115+ (1.89)	0.108 (1.76)
Cut: May 2009	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Cut: November 2011	-0.100+ (-1.95)	-0.086 (-1.44)	-0.078 (-1.44)	-0.037 (-0.75)	-0.034 (-0.65)	-0.029 (-0.61)	0.081 (1.79)	0.067 (1.51)	0.069 (1.51)
Cut: December 2011	-0.211** (-3.19)	-0.195* (-2.64)	-0.188* (-2.79)	-0.130+ (-2.13)	-0.134+ (-2.08)	-0.127+ (-2.13)	-0.033 (-0.61)	-0.045 (-0.83)	-0.045 (-0.84)
Cut: July 2012	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Cut: May 2013	-0.157** (-3.99)	-0.128** (-3.64)	-0.133** (-3.90)	-0.130*** (-4.68)	-0.107** (-4.32)	-0.111** (-4.15)	-0.135*** (-5.54)	-0.125*** (-6.04)	-0.127*** (-5.56)
Cut: June 2014	0.005 (0.13)	-0.027 (-0.72)	0.012 (0.30)	0.038 (1.18)	0.009 (0.26)	0.043 (1.33)	-0.011 (-0.31)	-0.005 (-0.14)	0.004 (0.12)
Cut: September 2014	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Cut: December 2015	-0.031 (-0.75)	-0.082* (-2.78)	-0.059 (-1.70)	-0.030 (-0.94)	-0.063* (-2.42)	-0.045 (-1.54)	-0.058+ (-2.02)	-0.059* (-2.27)	-0.056+ (-2.10)
Cut: March 2016	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Cut: September 2019	-0.086+ (-2.02)	-0.073+ (-1.80)	-0.061 (-1.45)	-0.059 (-1.02)	-0.051 (-1.00)	-0.042 (-0.81)	-0.023 (-0.45)	-0.018 (-0.37)	-0.017 (-0.35)
Inflation (lagged)*I(inflation >2%)		0.166*** (6.68)			0.129*** (6.03)			0.008 (0.30)	
I(inflation >2%)		-0.251** (-3.62)			-0.205** (-3.61)			0.073 (0.96)	
Inflation (lagged)^2			0.004 (1.64)			0.002 (0.99)			-0.003+ (-1.81)
I(inflation >0%)			-0.208*** (-7.46)			-0.155*** (-5.27)			-0.096** (-4.07)
Maximum inflation (% of basket) (lagged)				0.018*** (7.16)	0.011** (3.47)	0.014** (4.18)	0.007** (4.24)	0.007** (4.05)	0.007** (3.86)
Market inflation expectations (5y5y)				0.058 (1.35)	0.075+ (1.83)	0.068 (1.57)	0.133** (3.61)	0.120** (3.30)	0.126** (3.29)
Consumer confidence (BCS)				0.017*** (4.55)	0.017** (3.95)	0.017** (4.35)	0.017** (3.65)	0.016** (3.56)	0.017** (3.74)
Economic situation: past (BCS)				-0.004*** (-6.59)	-0.004*** (-5.89)	-0.004*** (-6.27)	-0.003*** (-4.70)	-0.003*** (-4.67)	-0.003*** (-4.79)
Economic situation: future (BCS)				-0.004* (-2.71)	-0.004* (-2.60)	-0.004* (-2.67)	-0.005* (-2.71)	-0.004* (-2.58)	-0.004* (-2.68)
Constant	2.532*** (191.49)	2.615*** (139.11)	2.702*** (175.54)	2.488*** (32.98)	2.528*** (33.27)	2.598*** (32.06)	2.422*** (34.81)	2.449*** (35.19)	2.488*** (33.74)
R-squared	0.37	0.38	0.38	0.43	0.45	0.45	0.52	0.53	0.52
Prob>F	.	.	.	.	.	.	.	.	.
Observations	2460	2460	2460	2445	2445	2445	2445	2445	2445
Countries	12	12	12	12	12	12	12	12	12
Months(max)	224	224	224	222	222	222	222	222	222
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post-Sept 2021 Fixed Effects	No	No	No	No	No	No	Yes	Yes	Yes

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

Table 8: Monetary policy augmented panel regressions with euro area HICP inflation

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Euro area inflation (lagged)	0.172*** (29.22)	0.040* (2.78)	0.118*** (8.85)	0.155*** (13.94)	0.053** (3.55)	0.117*** (6.60)	0.079*** (6.75)	0.046* (3.07)	-0.016 (-0.66)
Purchase: Covered Bonds Purchase Programme 1	0.276*** (6.67)	0.224*** (5.26)	0.285*** (6.61)	0.166*** (5.78)	0.138*** (4.84)	0.181*** (6.25)	0.084** (3.11)	0.103** (3.59)	0.116** (3.82)
Purchase: Securities Markets Programme 1	0.179 (1.65)	0.262* (2.31)	0.217+ (1.97)	0.186+ (1.82)	0.239* (2.28)	0.200+ (1.95)	0.172 (1.64)	0.216+ (2.00)	0.211+ (1.95)
Purchase: Securities Markets Programme 2	-0.167 (-1.37)	-0.119 (-1.01)	-0.120 (-0.99)	-0.102 (-0.82)	-0.088 (-0.72)	-0.085 (-0.69)	-0.043 (-0.35)	-0.062 (-0.52)	-0.048 (-0.40)
Purchase: Covered Bonds Purchase Programme 2	-0.208** (-3.57)	-0.188** (-3.24)	-0.164* (-2.64)	-0.153* (-2.37)	-0.142* (-2.29)	-0.124+ (-1.93)	-0.030 (-0.47)	-0.075 (-1.25)	-0.074 (-1.23)
Purchase: 'Whatever it takes'	-0.237*** (-5.51)	-0.176** (-4.18)	-0.190** (-4.28)	-0.189*** (-4.86)	-0.147** (-3.74)	-0.161** (-4.16)	-0.123** (-3.59)	-0.131** (-3.49)	-0.115** (-3.23)
Purchase: Outright Monetary Transactions	-0.201** (-3.53)	-0.144* (-2.22)	-0.154* (-2.50)	-0.161* (-2.90)	-0.120+ (-2.10)	-0.131* (-2.43)	-0.105+ (-1.93)	-0.111+ (-1.90)	-0.095 (-1.72)
Purchase: Covered Bonds Purchase Programme 3	0.080* (2.43)	-0.003 (-0.11)	0.078* (2.57)	0.115** (4.24)	0.046 (1.46)	0.109** (3.67)	0.044 (1.50)	0.035 (1.12)	0.037 (1.21)
Purchase: Expanded Asset Purchase Programme	0.296** (4.15)	0.143* (2.33)	0.086 (1.37)	0.305*** (4.91)	0.193** (3.55)	0.177** (3.35)	0.232** (4.10)	0.197** (3.71)	0.189** (3.70)
Purchase: Corporate Sector Purchase Programme	0.048 (1.39)	-0.099* (-2.42)	-0.159** (-3.92)	0.044 (1.10)	-0.050 (-1.15)	-0.074 (-1.53)	-0.019 (-0.43)	-0.050 (-1.11)	-0.055 (-1.11)
Purchase: Pandemic Emergency Purchase Programme	0.037 (0.61)	0.068 (1.08)	0.067 (1.08)	0.054 (0.71)	0.114 (1.47)	0.091 (1.20)	0.116 (1.57)	0.128 (1.69)	0.136+ (1.82)
Purchase: Transmission Protection Instrument	0.111* (2.99)	-0.241*** (-6.13)	-0.263*** (-6.95)	-0.097 (-1.23)	-0.231** (-3.97)	-0.271*** (-5.44)	0.593*** (6.72)	0.241 (1.38)	-1.106** (-3.74)
Hike: December 2005	-0.056 (-0.68)	0.005 (0.07)	-0.011 (-0.14)	-0.045 (-0.69)	-0.018 (-0.28)	-0.027 (-0.42)	0.015 (0.22)	0.004 (0.06)	0.020 (0.31)
Hike: March 2006	-0.050 (-0.64)	0.007 (0.10)	-0.005 (-0.07)	-0.039 (-0.63)	-0.020 (-0.32)	-0.024 (-0.37)	0.021 (0.32)	0.006 (0.10)	0.022 (0.35)
Hike: June 2006	-0.046 (-0.69)	0.003 (0.05)	-0.001 (-0.01)	-0.012 (-0.24)	-0.007 (-0.14)	-0.000 (-0.00)	0.046 (0.92)	0.024 (0.49)	0.039 (0.78)
Hike: August 2006	-0.176 (-1.73)	-0.124 (-1.28)	-0.130 (-1.31)	-0.130 (-1.37)	-0.126 (-1.36)	-0.121 (-1.28)	-0.080 (-0.84)	-0.100 (-1.08)	-0.085 (-0.89)
Hike: October 2006	-0.101 (-1.34)	-0.001 (-0.02)	-0.061 (-0.84)	-0.058 (-1.02)	-0.005 (-0.08)	-0.051 (-0.88)	-0.060 (-1.03)	-0.020 (-0.36)	-0.033 (-0.58)
Hike: December 2006	-0.069 (-1.01)	0.041 (0.63)	-0.028 (-0.42)	-0.027 (-0.47)	0.034 (0.59)	-0.020 (-0.35)	-0.019 (-0.33)	0.022 (0.38)	0.004 (0.07)
Hike: March 2007	0.009 (0.09)	0.120 (1.20)	0.051 (0.49)	0.042 (0.54)	0.112 (1.40)	0.055 (0.67)	0.054 (0.67)	0.096 (1.22)	0.079 (0.97)
Hike: June 2007	-0.020 (-0.24)	0.095 (1.22)	0.023 (0.28)	0.020 (0.32)	0.084 (1.37)	0.027 (0.44)	0.022 (0.36)	0.066 (1.07)	0.047 (0.76)
Hike: July 2008	0.146+ (2.20)	0.101 (1.47)	0.168* (2.48)	0.106 (1.44)	0.103 (1.49)	0.154+ (2.16)	0.289*** (4.54)	0.206** (3.21)	0.135+ (2.03)
Hike: April 2011	-0.080 (-1.13)	-0.040 (-0.52)	-0.034 (-0.44)	0.010 (0.13)	0.010 (0.13)	0.023 (0.31)	0.074 (0.94)	0.046 (0.59)	0.057 (0.74)
Hike: July 2011	-0.124* (-2.31)	-0.086 (-1.58)	-0.077 (-1.35)	-0.023 (-0.39)	-0.034 (-0.59)	-0.016 (-0.28)	0.037 (0.64)	0.006 (0.10)	0.015 (0.27)
Hike: July 2022	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Hike: September 2022	0.136* (2.20)	-0.248** (-3.20)	-0.308** (-3.69)	-0.006 (-0.07)	-0.204* (-2.31)	-0.262** (-3.17)	0.696*** (8.01)	0.311 (1.65)	-1.262** (-3.50)
Hike: October 2022	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)



Table 8: continuation

Continued									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Cut: October 2008	0.113*	0.088+	0.144**	0.107+	0.079	0.131*	0.257***	0.182***	0.140**
	(2.55)	(1.97)	(3.12)	(2.08)	(1.64)	(2.73)	(5.47)	(6.06)	(4.09)
Cut: November 2008	0.042	0.048	0.083	0.031	0.026	0.059	0.138*	0.092+	0.084
	(0.79)	(0.86)	(1.51)	(0.54)	(0.45)	(1.03)	(2.48)	(1.80)	(1.60)
Cut: December 2008	0.145**	0.220***	0.190***	0.117*	0.185**	0.152**	0.128*	0.151*	0.168**
	(3.78)	(5.18)	(4.95)	(2.61)	(4.14)	(3.65)	(2.88)	(2.88)	(3.64)
Cut: January 2009	0.218**	0.293***	0.255**	0.153+	0.244**	0.196*	0.137+	0.195*	0.196*
	(3.57)	(5.08)	(4.25)	(2.00)	(3.55)	(2.71)	(1.92)	(2.98)	(2.91)
Cut: March 2009	0.368**	0.391***	0.396***	0.263**	0.313**	0.302**	0.225*	0.269*	0.283*
	(4.41)	(4.62)	(4.73)	(3.36)	(3.44)	(3.53)	(2.57)	(2.96)	(3.02)
Cut: April 2009	0.352***	0.295***	0.359***	0.238***	0.216**	0.258***	0.153*	0.174*	0.187**
	(5.81)	(4.86)	(5.83)	(4.49)	(4.01)	(4.80)	(2.78)	(3.08)	(3.23)
Cut: May 2009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Cut: November 2011	-0.127*	-0.109*	-0.083	-0.076	-0.074	-0.051	0.040	-0.006	-0.008
	(-2.44)	(-2.25)	(-1.57)	(-1.47)	(-1.45)	(-0.97)	(0.80)	(-0.13)	(-0.17)
Cut: December 2011	-0.234**	-0.217**	-0.190*	-0.163*	-0.175*	-0.147*	-0.067	-0.111+	-0.113+
	(-3.62)	(-3.62)	(-2.93)	(-2.59)	(-2.90)	(-2.36)	(-1.14)	(-1.95)	(-1.98)
Cut: July 2012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Cut: May 2013	-0.112*	-0.088*	-0.083+	-0.073*	-0.052+	-0.056+	-0.105**	-0.076*	-0.066*
	(-2.92)	(-2.22)	(-2.16)	(-2.68)	(-1.97)	(-2.07)	(-3.81)	(-2.84)	(-2.46)
Cut: June 2014	0.050	-0.015	0.055	0.102*	0.035	0.092*	0.031	0.024	0.030
	(1.26)	(-0.40)	(1.45)	(2.62)	(0.86)	(2.39)	(0.75)	(0.60)	(0.76)
Cut: September 2014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Cut: December 2015	0.054+	-0.060*	0.041+	0.058*	-0.026	0.050*	-0.008	-0.030	-0.038+
	(1.98)	(-2.67)	(1.81)	(2.64)	(-1.20)	(2.37)	(-0.39)	(-1.41)	(-1.87)
Cut: March 2016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Cut: September 2019	-0.051	-0.048	-0.027	-0.059	-0.041	-0.036	-0.029	-0.026	-0.015
	(-1.44)	(-1.36)	(-0.73)	(-1.14)	(-0.79)	(-0.71)	(-0.59)	(-0.53)	(-0.30)
Euro area inflation (lagged)*I(EA inflation >2%)		0.198***			0.178***			0.096*	
		(9.48)			(12.39)			(3.04)	
I(EA inflation >2%)		-0.347***			-0.311***			-0.151+	
		(-7.80)			(-12.66)			(-2.01)	
Euro area inflation (lagged)^2			0.011***			0.009***			0.034***
			(5.99)			(6.47)			(5.67)
I(EA inflation >0%)			-0.181***			-0.110***			0.019
			(-13.17)			(-5.58)			(1.53)
Maximum inflation (% of basket) (lagged)				0.012***	0.003	0.005+	0.007**	0.006**	0.005**
				(4.58)	(1.16)	(2.08)	(4.34)	(3.69)	(3.11)
Market inflation expectations (5y5y)				-0.013	0.031	0.014	0.083	0.070	0.069
				(-0.27)	(0.63)	(0.28)	(1.78)	(1.48)	(1.45)
Consumer confidence (BCS)				0.018**	0.018**	0.017**	0.017**	0.017**	0.017**
				(3.90)	(3.36)	(3.45)	(3.51)	(3.32)	(3.26)
Economic situation: past (BCS)				-0.005***	-0.004***	-0.004***	-0.004***	-0.004***	-0.004***
				(-6.98)	(-6.21)	(-6.18)	(-5.11)	(-5.06)	(-4.89)
Economic situation: future (BCS)				-0.003	-0.003	-0.003	-0.004+	-0.004	-0.003
				(-1.60)	(-1.18)	(-1.41)	(-2.05)	(-1.70)	(-1.67)
Constant	2.461***	2.592***	2.662***	2.526***	2.568***	2.614***	2.452***	2.503***	2.502***
	(254.64)	(166.98)	(169.13)	(33.73)	(33.85)	(33.34)	(33.29)	(34.45)	(33.29)
R-squared	0.39	0.43	0.42	0.47	0.50	0.49	0.52	0.53	0.53
Prob>F	.	.	.	.	.	.	.	.	.
Observations	2460	2460	2460	2445	2445	2445	2445	2445	2445
Countries	12	12	12	12	12	12	12	12	12
Months(max)	224	224	224	222	222	222	222	222	222
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Post-Sept 2021 Fixed Effects	No	No	No	No	No	No	Yes	Yes	Yes

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

**Table 9: Time series regressions by country with national HICP inflation**

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)

---

Panel A: simple linear regression

	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Inflation (lagged)	0.18*** (13.8)	0.12*** (15.6)	0.17*** (17.5)	0.12*** (16.7)	0.17*** (13.2)	0.25*** (18.1)	0.13*** (13.3)	0.14*** (15.3)	0.15*** (14.7)	0.13*** (7.4)	0.11*** (17.2)	0.12*** (9.6)
Constant	2.80*** (85.6)	2.39*** (103.3)	2.70*** (115.8)	2.19*** (100.6)	2.38*** (80.6)	2.20*** (79.7)	2.30*** (86.7)	2.77*** (132.3)	2.23*** (91.4)	2.81*** (52.5)	2.69*** (148.3)	2.70*** (91.8)
R-squared	0.47	0.53	0.59	0.56	0.46	0.60	0.57	0.56	0.50	0.29	0.58	0.31
adj. R-squared	0.46	0.52	0.58	0.55	0.45	0.59	0.56	0.55	0.49	0.27	0.57	0.30
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

---

Panel B: 2% inflation threshold

	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Inflation (lagged)	-0.03 (-0.7)	-0.06** (-2.7)	-0.01 (-0.6)	-0.01 (-0.3)	0.03 (0.8)	0.13*** (4.5)	-0.00 (-0.2)	0.00 (0.0)	0.09** (3.1)	-0.07 (-1.2)	0.08*** (3.6)	0.01 (0.4)
Inflation (lagged)*I(inflation >2%)	0.28*** (6.4)	0.23*** (9.6)	0.25*** (10.0)	0.21*** (10.4)	0.23*** (5.2)	0.23*** (6.2)	0.13*** (5.3)	0.17*** (7.5)	0.04 (1.1)	0.29*** (4.9)	0.07** (2.8)	0.13** (3.3)
I(inflation >2%)	-0.60*** (-7.6)	-0.40*** (-8.6)	-0.42*** (-8.1)	-0.44*** (-9.9)	-0.47*** (-4.8)	-0.46*** (-5.4)	0.21+ (2.0)	-0.01 (-0.1)	0.10 (1.4)	-0.60*** (-4.8)	-0.25*** (-5.1)	-0.11 (-1.2)
Constant	3.12*** (53.6)	2.59*** (91.2)	2.91*** (102.2)	2.28*** (119.4)	2.52*** (61.1)	2.33*** (69.5)	2.24*** (94.8)	2.76*** (155.4)	2.26*** (72.9)	2.99*** (50.9)	2.76*** (95.9)	2.74*** (85.9)
R-squared	0.58	0.67	0.72	0.73	0.52	0.66	0.70	0.71	0.52	0.42	0.62	0.35
adj. R-squared	0.57	0.67	0.71	0.72	0.51	0.65	0.69	0.70	0.51	0.40	0.62	0.33
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

---

Panel C: Quadratic inflation term

	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Inflation (lagged)	0.06+ (1.8)	0.05* (2.2)	0.07* (2.5)	0.06** (2.9)	0.04 (1.2)	0.13*** (3.8)	0.15*** (5.2)	0.14*** (6.3)	0.15*** (5.3)	0.03 (0.5)	0.07*** (3.4)	0.09** (2.7)
Inflation (lagged)^2	0.02*** (3.9)	0.01*** (4.6)	0.02*** (5.1)	0.01*** (5.7)	0.02*** (4.3)	0.02*** (4.2)	0.03*** (0.2)	0.00 (1.7)	0.00 (0.5)	0.02** (2.8)	0.00** (2.8)	0.01* (2.0)
I(inflation >0%)	-0.26+ (-1.7)	-0.21** (-2.9)	-0.14+ (-2.0)	-0.12* (-2.1)	-0.02 (-0.3)	-0.12 (-1.5)	-0.28** (-3.3)	-0.24*** (-4.1)	-0.06 (-0.9)	-0.21 (-1.4)	-0.03 (-0.5)	-0.13 (-1.6)
Constant	3.20*** (21.9)	2.66*** (48.2)	2.93*** (54.0)	2.32*** (72.0)	2.51*** (35.7)	2.39*** (36.7)	2.44*** (45.8)	2.92*** (74.8)	2.29*** (41.3)	3.05*** (32.5)	2.77*** (52.2)	2.82*** (50.7)
R-squared	0.52	0.64	0.67	0.69	0.52	0.65	0.63	0.65	0.50	0.40	0.60	0.35
adj. R-squared	0.51	0.63	0.66	0.69	0.50	0.64	0.62	0.64	0.49	0.38	0.59	0.34
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

---

Panel D: 2% inflation threshold and controls

	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Inflation (lagged)	0.12** (3.0)	-0.03 (-1.4)	0.01 (0.5)	-0.02 (-1.2)	0.07+ (1.9)	0.09** (3.2)	0.00 (0.1)	0.00 (0.0)	0.04 (1.6)	-0.01 (-0.2)	0.04* (2.0)	0.07* (2.4)
Inflation (lagged)*I(inflation >2%)	0.08+ (1.7)	0.21*** (7.7)	0.19*** (6.4)	0.21*** (9.0)	0.19*** (3.8)	0.19*** (4.3)	0.17*** (4.6)	0.18*** (9.2)	0.13*** (3.9)	0.25** (2.8)	0.08** (3.1)	0.07 (1.4)
Maximum inflation (% of basket) (lagged)	0.01* (2.1)	-0.00 (-0.3)	0.01 (1.3)	0.00 (0.7)	0.01** (2.7)	0.02*** (3.8)	-0.03* (-2.1)	0.01+ (1.9)	0.00 (1.2)	0.00 (0.4)	0.01* (2.1)	0.00 (0.6)
Market inflation expectations (5y5y)	0.18** (3.2)	0.04 (1.2)	0.12*** (4.0)	0.15*** (3.9)	-0.17*** (-3.6)	0.03 (0.6)	0.36*** (3.5)	0.08+ (1.8)	0.14*** (3.6)	-0.32* (-2.1)	0.13*** (4.2)	0.32*** (6.0)
Consumer confidence (BCS)	0.01 (1.4)	0.02** (3.1)	0.00 (1.0)	0.02*** (5.8)	0.07*** (7.3)	0.05*** (4.9)	0.02*** (4.8)	0.02*** (9.1)	0.04*** (9.4)	-0.00 (-0.1)	0.02*** (4.4)	0.04*** (9.5)
Economic situation: past (BCS)	-0.01*** (-6.6)	-0.00*** (-4.5)	-0.01*** (-5.8)	-0.00*** (-4.9)	-0.01*** (-5.3)	0.00 (0.1)	-0.00 (-1.1)	-0.00*** (-4.0)	-0.00*** (-5.3)	-0.00 (-1.1)	-0.00*** (-3.2)	-0.01*** (-4.4)
Economic situation: future (BCS)	-0.00 (-0.7)	-0.00 (-0.6)	0.00 (0.8)	-0.01*** (-4.8)	-0.02*** (-5.5)	-0.01** (-3.1)	-0.01** (-3.1)	-0.01*** (-6.2)	-0.00 (-1.2)	0.01 (0.8)	-0.00** (-3.3)	-0.01*** (-3.9)
I(inflation >2%)	-0.26** (-2.9)	-0.41*** (-7.2)	-0.30*** (-4.5)	-0.47*** (-8.1)	-0.37*** (-3.5)	-0.32** (-3.2)	0.01 (0.0)	-0.24*** (-3.4)	-0.17* (-2.3)	-0.51* (-2.5)	-0.25*** (-4.4)	-0.20 (-1.6)
Constant	2.49*** (23.2)	2.52*** (35.4)	2.57*** (37.8)	2.12*** (35.4)	2.82*** (35.7)	2.55*** (33.5)	2.16*** (20.5)	2.73*** (35.6)	2.34*** (34.5)	3.45*** (18.1)	2.62*** (44.5)	2.51*** (27.3)
R-squared	0.70	0.72	0.82	0.78	0.68	0.74	0.76	0.84	0.74	0.47	0.70	0.62
adj. R-squared	0.69	0.71	0.81	0.77	0.66	0.73	0.74	0.83	0.72	0.43	0.69	0.60
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	222	222	222	222	212	222	140	188	221	140	222	212
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

Table 10: Time series regressions by country with euro area HICP inflation

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)

Panel A: simple linear regression												
	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Euro area inflation (lagged)	0.16*** (14.5)	0.15*** (15.3)	0.17*** (17.8)	0.18*** (18.5)	0.17*** (15.4)	0.21*** (21.6)	0.20*** (16.6)	0.16*** (13.2)	0.16*** (14.7)	0.17*** (8.5)	0.15*** (18.9)	0.17*** (13.8)
Constant	2.88*** (108.0)	2.38*** (100.1)	2.70*** (118.4)	2.12*** (92.5)	2.37*** (89.4)	2.23*** (97.2)	2.05*** (67.1)	2.63*** (88.8)	2.22*** (87.6)	2.79*** (54.7)	2.64*** (138.5)	2.59*** (89.2)
R-squared	0.49	0.52	0.59	0.61	0.53	0.68	0.67	0.49	0.50	0.35	0.62	0.48
adj. R-squared	0.49	0.51	0.59	0.60	0.53	0.67	0.66	0.48	0.49	0.33	0.61	0.47
p	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel B: 2% inflation threshold												
	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Euro area inflation (lagged)	-0.03 (-1.3)	-0.02 (-1.1)	0.02 (0.9)	0.05* (2.0)	0.04 (1.6)	0.11*** (4.4)	-0.01 (-0.4)	0.08* (2.4)	0.09*** (3.3)	0.03 (0.4)	0.04+ (1.9)	0.13*** (4.1)
Euro area inflation (lagged)*I(EA inflation >2%)	0.26*** (8.7)	0.24*** (9.1)	0.22*** (8.4)	0.20*** (7.6)	0.21*** (6.5)	0.15*** (5.3)	0.25*** (6.5)	0.16*** (4.3)	0.07* (2.1)	0.23** (3.3)	0.18*** (8.4)	0.06 (1.5)
I(EA inflation >2%)	-0.41*** (-6.5)	-0.39*** (-7.1)	-0.40*** (-7.4)	-0.40*** (-7.2)	-0.45*** (-6.7)	-0.28*** (-4.7)	-0.23** (-2.9)	-0.44*** (-5.2)	-0.05 (-0.7)	-0.54*** (-3.7)	-0.36*** (-8.2)	-0.13 (-1.6)
Constant	3.07*** (96.1)	2.56*** (90.9)	2.86*** (104.3)	2.27*** (80.8)	2.52*** (76.7)	2.34*** (78.0)	2.21*** (59.9)	2.73*** (72.4)	2.27*** (65.1)	2.94*** (43.4)	2.77*** (121.8)	2.63*** (65.9)
R-squared	0.62	0.65	0.70	0.70	0.63	0.72	0.75	0.55	0.51	0.41	0.72	0.49
adj. R-squared	0.61	0.64	0.69	0.69	0.62	0.71	0.75	0.54	0.50	0.39	0.71	0.47
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel C: Quadratic inflation term												
	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Euro area inflation (lagged)	0.09** (3.0)	0.09*** (3.6)	0.09*** (3.9)	0.12*** (4.7)	0.08** (2.8)	0.17*** (6.4)	0.20*** (5.6)	0.11** (3.2)	0.16*** (5.5)	0.05 (0.8)	0.08*** (4.1)	0.16*** (4.6)
Euro area inflation (lagged) <sup>2</sup>	0.01*** (3.9)	0.01*** (3.5)	0.01*** (4.4)	0.01*** (3.6)	0.01*** (3.7)	0.01* (2.3)	0.00 (0.6)	0.01* (2.2)	0.00 (0.1)	0.02* (2.4)	0.01*** (4.5)	0.00 (0.7)
I(EA inflation >0%)	-0.22** (-3.1)	-0.20** (-3.1)	-0.18** (-2.8)	-0.18** (-2.9)	-0.09 (-1.2)	-0.14* (-2.1)	-0.30*** (-3.4)	-0.17* (-2.1)	-0.14+ (-1.9)	-0.09 (-0.6)	-0.13* (-2.5)	-0.12 (-1.4)
Constant	3.15*** (56.4)	2.61*** (52.0)	2.93*** (61.9)	2.34*** (48.2)	2.53*** (44.1)	2.38*** (47.0)	2.31*** (33.5)	2.82*** (44.1)	2.33*** (40.3)	2.97*** (25.1)	2.81*** (71.0)	2.71*** (41.0)
R-squared	0.59	0.60	0.67	0.67	0.59	0.71	0.71	0.53	0.51	0.39	0.69	0.49
adj. R-squared	0.58	0.59	0.67	0.67	0.58	0.70	0.70	0.52	0.50	0.37	0.69	0.48
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Panel D: 2% inflation threshold and controls												
	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Euro area inflation (lagged)	0.07* (2.5)	-0.01 (-0.4)	0.04* (2.0)	-0.01 (-0.5)	0.13*** (3.6)	0.09*** (3.6)	-0.04 (-1.1)	0.00 (0.0)	0.04 (1.6)	0.05 (0.7)	0.06** (3.2)	0.09** (3.2)
Euro area inflation (lagged)*I(EA inflation >2%)	0.14*** (3.4)	0.27*** (7.4)	0.14*** (4.9)	0.25*** (8.0)	0.08+ (1.8)	0.15*** (4.6)	0.34*** (7.9)	0.20*** (7.5)	0.17*** (6.0)	0.20+ (1.8)	0.16*** (6.2)	0.13*** (3.6)
Maximum inflation (% of basket) (lagged)	0.00 (1.0)	-0.01 (-1.4)	0.01*** (3.3)	0.00 (0.0)	0.01** (2.7)	0.01+ (1.7)	-0.03*** (-3.5)	0.02** (3.3)	-0.00 (-0.8)	0.01 (0.6)	0.00 (0.3)	-0.01 (-1.3)
Market inflation expectations (5y5y)	0.11* (2.1)	-0.01 (-0.2)	0.10** (3.1)	0.23*** (6.1)	-0.14** (-2.9)	0.00 (0.0)	0.26* (2.4)	0.21*** (4.7)	0.19*** (5.9)	-0.38* (-2.5)	-0.02 (-0.8)	0.30*** (6.4)
Consumer confidence (BCS)	0.01 (1.3)	0.01+ (1.8)	0.01* (2.2)	0.03*** (7.3)	0.04*** (4.2)	0.04*** (4.7)	0.02*** (4.9)	0.03*** (12.9)	0.03*** (10.2)	-0.00 (-0.2)	0.01*** (4.0)	0.04*** (9.6)
Economic situation: past (BCS)	-0.01*** (-7.0)	-0.01*** (-5.4)	-0.01*** (-6.7)	-0.00*** (-4.1)	-0.01*** (-6.0)	-0.00 (-0.7)	-0.00+ (-1.9)	-0.00*** (-3.9)	-0.01*** (-6.6)	-0.01+ (-1.8)	-0.00*** (-6.7)	-0.01*** (-4.7)
Economic situation: future (BCS)	-0.00 (-0.6)	0.00 (1.0)	0.00 (0.6)	-0.01*** (-6.7)	-0.01* (-2.2)	-0.01* (-2.5)	-0.01** (-2.8)	-0.01*** (-9.0)	-0.00* (-2.2)	0.01 (1.3)	0.00 (0.0)	-0.01*** (-3.7)
I(EA inflation >2%)	-0.23** (-3.0)	-0.46*** (-5.9)	-0.26*** (-4.1)	-0.51*** (-7.2)	-0.20* (-2.1)	-0.26*** (-3.6)	-0.46*** (-4.5)	-0.46*** (-7.7)	-0.29*** (-4.8)	-0.31 (-1.2)	-0.34*** (-5.4)	-0.33*** (-4.1)
Constant	2.69*** (33.8)	2.53*** (37.0)	2.58*** (36.9)	2.07*** (34.0)	2.64*** (35.8)	2.55*** (36.7)	2.24*** (23.3)	2.57*** (36.3)	2.22*** (32.8)	3.49*** (18.2)	2.81*** (53.3)	2.47*** (32.1)
R-squared	0.72	0.71	0.81	0.77	0.72	0.78	0.82	0.82	0.76	0.49	0.78	0.72
adj. R-squared	0.71	0.69	0.80	0.76	0.71	0.77	0.80	0.81	0.75	0.45	0.77	0.70
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	222	222	222	222	212	222	140	188	221	140	222	212
Covid Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

Table 11: Augmented time series regressions with national HICP inflation

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)

Panel A: simple linear regression, augmented

	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Inflation (lagged)	0.18*** (13.5)	0.12*** (15.2)	0.17*** (17.5)	0.12*** (16.1)	0.17*** (13.0)	0.25*** (17.8)	0.13*** (11.9)	0.13*** (14.2)	0.15*** (13.8)	0.12*** (6.5)	0.12*** (17.0)	0.11*** (8.6)
Interest rate hikes	0.03 (0.4)	-0.04 (-0.7)	-0.04 (-0.6)	-0.05 (-0.7)	-0.05 (-0.6)	-0.10 (-1.3)	-0.01 (-0.1)	0.15 (1.4)	0.09 (1.2)	0.31 (1.2)	-0.04 (-0.7)	0.19* (2.0)
Interest rate cuts	0.16* (2.2)	0.06 (1.0)	0.11+ (1.9)	0.10 (1.5)	-0.08 (-1.0)	-0.01 (-0.1)	-0.17 (-1.6)	-0.03 (-0.5)	-0.01 (-0.2)	-0.22 (-0.4)	0.03 (0.5)	0.15+ (1.8)
Asset purchases	0.16+ (1.9)	0.05 (0.6)	0.19** (2.7)	0.02 (0.2)	-0.04 (-0.5)	-0.01 (-0.2)	0.04 (0.3)	-0.11 (-1.3)	-0.13 (-1.6)	-0.07 (-0.4)	-0.02 (-0.3)	-0.13 (-1.2)
Constant	2.78*** (85.1)	2.38*** (101.1)	2.68*** (113.8)	2.19*** (96.3)	2.39*** (80.6)	2.21*** (78.1)	2.31*** (84.1)	2.78*** (127.4)	2.24*** (91.2)	2.84*** (52.2)	2.69*** (144.7)	2.70*** (90.3)
R-squared	0.49	0.52	0.60	0.56	0.46	0.60	0.57	0.57	0.50	0.31	0.58	0.33
adj. R-squared	0.48	0.52	0.59	0.55	0.45	0.59	0.56	0.56	0.49	0.29	0.57	0.32
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212

Panel B: 2% inflation threshold, augmented

	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Inflation (lagged)	-0.02 (-0.4)	-0.06** (-2.7)	-0.00 (-0.1)	-0.01 (-0.4)	0.03 (0.8)	0.13*** (4.5)	-0.00 (-0.2)	0.00 (0.1)	0.08** (2.8)	-0.06 (-1.1)	0.08*** (3.6)	0.01 (0.5)
Inflation (lagged)*I(inflation >2%)	0.27*** (6.0)	0.23*** (9.6)	0.24*** (9.5)	0.22*** (10.5)	0.23*** (5.3)	0.24*** (6.4)	0.14*** (5.5)	0.17*** (7.3)	0.05 (1.4)	0.29*** (4.7)	0.07** (2.8)	0.13*** (3.2)
Interest rate hikes	-0.01 (-0.1)	-0.04 (-0.6)	-0.03 (-0.6)	-0.09 (-1.6)	-0.09 (-1.2)	-0.12+ (-1.7)	-0.25+ (-1.7)	0.07 (0.8)	0.06 (0.9)	0.06 (0.3)	-0.05 (-0.8)	0.15 (1.6)
Interest rate cuts	0.14* (2.1)	0.07 (1.4)	0.09+ (1.8)	0.10+ (1.9)	-0.06 (-0.8)	-0.02 (-0.4)	-0.20* (-2.2)	0.02 (0.4)	-0.02 (-0.3)	-0.18 (-1.2)	0.06 (1.2)	0.14 (1.6)
Asset purchases	0.12 (1.6)	0.00 (0.1)	0.15* (2.6)	-0.04 (-0.6)	-0.07 (-0.8)	-0.04 (-0.5)	0.03 (0.3)	-0.08 (-1.2)	-0.13+ (-1.7)	-0.12 (-0.8)	-0.03 (-0.4)	-0.16 (-1.6)
I(inflation >2%)	-0.57*** (-7.2)	-0.40*** (-8.6)	-0.40*** (-7.7)	-0.44*** (-9.9)	-0.48*** (-4.8)	-0.47*** (-5.6)	0.22* (2.1)	-0.02 (-0.3)	0.08 (1.1)	-0.60*** (-4.8)	-0.26*** (-5.2)	-0.12 (-1.3)
Constant	3.08*** (52.5)	2.59*** (90.3)	2.89*** (98.9)	2.28*** (115.3)	2.54*** (60.9)	2.33*** (68.4)	2.26*** (94.8)	2.76*** (147.7)	2.27*** (73.0)	3.01*** (51.0)	2.75*** (94.7)	2.74*** (84.0)
R-squared	0.58	0.67	0.72	0.73	0.52	0.66	0.71	0.71	0.52	0.43	0.63	0.36
adj. R-squared	0.57	0.66	0.71	0.72	0.51	0.65	0.70	0.70	0.51	0.41	0.62	0.35
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212

Panel C: Quadratic inflation term, augmented

	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Inflation (lagged)	0.07* (2.0)	0.04* (2.0)	0.08** (2.8)	0.05* (2.6)	0.04 (1.1)	0.13*** (3.7)	0.16*** (5.2)	0.14*** (6.2)	0.14*** (5.0)	0.02 (0.4)	0.07*** (3.4)	0.08* (2.5)
Inflation (lagged) <sup>2</sup>	0.01*** (3.7)	0.01*** (4.8)	0.02*** (4.8)	0.01*** (6.2)	0.02*** (4.4)	0.03*** (4.6)	0.00 (0.3)	0.00+ (1.7)	0.00 (0.8)	0.02** (2.9)	0.00** (2.9)	0.01* (2.1)
Interest rate hikes	-0.01 (-0.1)	-0.06 (-1.0)	-0.05 (-0.8)	-0.09 (-1.5)	-0.11 (-1.4)	-0.14* (-2.0)	-0.16 (-1.0)	0.08 (0.8)	0.08 (1.1)	0.06 (0.3)	-0.05 (-0.9)	0.17+ (1.7)
Interest rate cuts	0.16* (2.4)	0.10+ (1.9)	0.12* (2.2)	0.10+ (1.9)	-0.04 (-0.6)	-0.04 (-0.0)	-0.18+ (-1.8)	0.00 (0.0)	-0.01 (-0.1)	-0.16 (-1.0)	0.04 (0.8)	0.14+ (1.7)
Asset purchases	0.13 (1.6)	-0.01 (-0.1)	0.15* (2.3)	-0.06 (-1.0)	-0.08 (-1.0)	-0.06 (-0.8)	0.06 (0.6)	-0.16* (-2.1)	-0.14+ (-1.8)	-0.16 (-1.0)	-0.03 (-0.4)	-0.17+ (-1.7)
I(inflation >0%)	-0.29+ (-1.8)	-0.21** (-2.9)	-0.14* (-2.0)	-0.09+ (-1.7)	-0.02 (-0.2)	-0.11 (-1.4)	-0.28** (-3.3)	-0.24*** (-4.1)	-0.06 (-0.9)	-0.20 (-1.3)	-0.03 (-0.5)	-0.11 (-1.4)
Constant	3.20*** (22.2)	2.66*** (48.1)	2.91*** (54.1)	2.30*** (70.0)	2.52*** (35.4)	2.40*** (36.8)	2.46*** (45.6)	2.93*** (74.1)	2.31*** (41.0)	3.07*** (32.6)	2.78*** (52.0)	2.81*** (49.8)
R-squared	0.54	0.64	0.68	0.69	0.52	0.65	0.64	0.65	0.50	0.42	0.60	0.37
adj. R-squared	0.52	0.63	0.67	0.68	0.50	0.65	0.62	0.64	0.49	0.39	0.59	0.35
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212

Panel D: 2% inflation threshold and controls, augmented

	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Inflation (lagged)	0.12*** (2.8)	-0.04+ (-1.8)	0.02 (1.2)	-0.02 (-1.3)	0.08* (2.1)	0.09*** (3.3)	-0.00 (-0.3)	-0.01 (-0.4)	0.04 (1.4)	-0.01 (-0.1)	0.04* (2.0)	0.05+ (1.9)
Inflation (lagged)*I(inflation >2%)	0.07 (1.4)	0.22*** (8.0)	0.17*** (5.6)	0.21*** (8.8)	0.18*** (3.5)	0.19*** (4.3)	0.17*** (4.7)	0.17*** (8.3)	0.14*** (4.0)	0.24** (2.7)	0.08** (2.9)	0.06 (1.2)
Interest rate hikes	0.01 (0.2)	-0.05 (-0.9)	-0.05 (-1.0)	-0.11* (-2.1)	-0.05 (-0.7)	-0.20** (-3.3)	-0.23+ (-1.7)	0.15* (2.2)	0.02 (0.4)	0.12 (0.5)	-0.07 (-1.4)	0.04 (0.6)
Interest rate cuts	0.06 (0.9)	0.06 (1.2)	0.07 (1.5)	0.09+ (1.8)	-0.04 (-0.6)	0.04 (0.7)	-0.17* (-2.0)	0.04 (0.9)	-0.03 (-0.7)	-0.11 (-0.7)	0.01 (0.2)	0.13+ (1.8)
Asset purchases	0.14* (2.0)	0.03 (0.6)	0.19*** (3.7)	-0.00 (-0.0)	-0.01 (-0.2)	-0.05 (-0.7)	0.08 (1.0)	-0.03 (-0.6)	-0.00 (-0.1)	-0.11 (-0.7)	-0.03 (-0.6)	-0.10 (-1.2)
Maximum inflation (% of basket) (lagged)	0.01* (2.0)	-0.00 (-0.3)	0.00 (1.0)	0.00 (1.1)	0.01** (2.7)	0.02*** (4.5)	-0.02+ (-1.8)	0.01** (2.7)	0.00 (1.1)	0.00 (0.4)	0.01* (2.4)	0.01 (1.0)
Market inflation expectations (5y5y)	0.11+ (1.9)	0.03 (1.0)	0.05 (1.6)	0.14*** (3.4)	-0.18*** (-3.7)	0.05 (1.2)	0.38*** (3.7)	0.05 (1.1)	0.14*** (3.5)	-0.32* (-2.3)	0.14*** (4.4)	0.29*** (5.3)
Consumer confidence (BCS)	0.01 (0.5)	0.02*** (3.4)	-0.00 (-0.7)	0.02*** (5.8)	0.07*** (6.9)	0.05*** (5.7)	0.02*** (4.5)	0.02*** (8.4)	0.04*** (9.4)	-0.00 (-0.1)	0.02*** (4.2)	0.04*** (9.3)
Economic situation: past (BCS)	-0.01*** (-5.9)	-0.00*** (-3.7)	-0.00*** (-4.9)	-0.00*** (-4.4)	-0.01*** (-5.2)	0.00 (0.6)	-0.00 (-0.0)	-0.00** (-3.1)	-0.00*** (-5.2)	-0.00 (-1.0)	-0.00** (-2.9)	-0.01*** (-3.5)
Economic situation: future (BCS)	-0.00 (-0.2)	-0.00 (-1.4)	0.00 (1.6)	-0.01*** (-5.5)	-0.02*** (-5.4)	-0.02*** (-4.1)	-0.01*** (-3.6)	-0.01*** (-6.4)	-0.00+ (-1.7)	0.00 (0.6)	-0.00*** (-3.4)	-0.01*** (-4.9)
I(inflation >2%)	-0.22* (-2.4)	-0.42*** (-7.3)	-0.26*** (-3.9)	-0.45*** (-7.6)	-0.36** (-3.1)	-0.32** (-3.3)	0.03 (0.3)	-0.19** (-2.6)	-0.18* (-2.4)	-0.49* (-2.4)	-0.24*** (-4.3)	-0.14 (-1.1)
Constant	2.60*** (23.6)	2.57*** (35.4)	2.69*** (38.4)	2.17*** (37.3)	2.82*** (35.9)	2.55*** (35.3)	2.16*** (20.8)	2.79*** (37.7)	2.36*** (35.1)	3.48*** (19.8)	2.60*** (44.1)	2.58*** (28.3)
R-squared	0.69	0.72	0.81	0.78	0.67	0.75	0.77	0.83	0.73	0.48	0.70	0.61
adj. R-squared	0.67	0.70	0.80	0.77	0.66	0.74	0.75	0.82	0.72	0.43	0.69	0.59
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	222	222	222	222	212	222	140	188	221	140	222	212

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

Table 12: Augmented time series regressions with euro area HICP inflation

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)

Panel A: simple linear regression, augmented												
	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Euro area inflation (lagged)	0.16*** (14.3)	0.16*** (15.2)	0.17*** (17.4)	0.18*** (17.8)	0.18*** (15.3)	0.21*** (21.6)	0.20*** (15.0)	0.15*** (12.1)	0.15*** (13.9)	0.17*** (7.5)	0.16*** (19.1)	0.16*** (13.1)
Interest rate hikes	-0.03 (-0.3)	-0.09 (-1.3)	-0.09 (-1.4)	-0.03 (-0.5)	-0.14+ (-1.8)	-0.16* (-2.5)	0.04 (0.2)	0.18 (1.6)	0.11 (0.9)	0.21 (1.5)	-0.12* (-2.3)	0.21* (2.6)
Interest rate cuts	0.15* (2.2)	0.10 (1.6)	0.07 (1.2)	0.06 (1.1)	0.07 (1.0)	-0.01 (-0.2)	-0.12 (-1.3)	0.00 (0.0)	0.05 (0.8)	-0.19 (-1.2)	0.06 (1.2)	0.15* (2.0)
Asset purchases	0.21* (2.5)	0.03 (0.3)	0.19** (2.6)	-0.04 (-0.6)	0.01 (0.1)	-0.02 (-0.3)	0.04 (0.4)	-0.14 (-1.5)	-0.11 (-1.4)	-0.09 (-0.5)	-0.01 (-0.2)	-0.12 (-1.3)
Constant	2.87*** (107.2)	2.37*** (98.1)	2.69*** (116.2)	2.12*** (89.7)	2.37*** (87.6)	2.23*** (96.1)	2.06*** (65.0)	2.64*** (87.1)	2.22*** (86.1)	2.81*** (53.8)	2.63*** (136.8)	2.58*** (88.9)
R-squared	0.51	0.52	0.60	0.60	0.54	0.69	0.67	0.49	0.50	0.36	0.63	0.50
adj. R-squared	0.50	0.51	0.59	0.60	0.53	0.68	0.66	0.48	0.49	0.34	0.62	0.49
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212
Panel B: 2% inflation threshold, augmented												
	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Euro area inflation (lagged)	-0.02 (-0.9)	-0.02 (-0.8)	0.03 (1.4)	0.04+ (1.9)	0.05+ (1.9)	0.11*** (4.5)	-0.02 (-0.7)	0.07* (2.2)	0.09** (3.0)	0.01 (0.2)	0.04* (2.2)	0.12*** (3.8)
Euro area inflation (lagged)*I(EA inflation >2%)	0.25*** (8.4)	0.24*** (9.1)	0.21*** (8.0)	0.21*** (8.0)	0.20*** (7.7)	0.15*** (6.5)	0.26*** (5.4)	0.16*** (6.7)	0.07* (4.4)	0.24*** (3.4)	0.18*** (8.5)	0.06+ (1.7)
Interest rate hikes	-0.02 (-0.3)	-0.08 (-1.4)	-0.08 (-1.5)	-0.03 (-0.5)	-0.12+ (-1.8)	-0.16** (-2.6)	-0.08 (-0.6)	0.13 (1.2)	0.12 (1.6)	0.07 (0.7)	-0.12* (-2.6)	0.21** (2.6)
Interest rate cuts	0.14* (2.3)	0.09 (1.6)	0.06 (1.2)	0.06 (1.0)	0.07 (1.1)	-0.02 (-0.4)	-0.16+ (-1.9)	0.02 (0.2)	0.05 (0.7)	-0.19 (-1.3)	0.05 (1.3)	0.15* (2.0)
Asset purchases	0.15* (2.1)	-0.03 (-0.5)	0.14* (2.3)	-0.09 (-1.4)	-0.03 (-0.5)	-0.05 (-0.8)	-0.02 (-0.2)	-0.15+ (-1.8)	-0.13+ (-1.7)	-0.09 (-0.6)	-0.05 (-1.0)	-0.13 (-1.5)
I(EA inflation >2%)	-0.40*** (-6.5)	-0.39*** (-7.2)	-0.39*** (-7.3)	-0.41*** (-7.3)	-0.45*** (-6.8)	-0.28*** (-4.9)	-0.24*** (-3.0)	-0.43*** (-5.1)	-0.06 (-0.9)	-0.53*** (-3.6)	-0.36*** (-8.3)	-0.14+ (-1.8)
Constant	3.06*** (94.1)	2.55*** (88.8)	2.85*** (101.0)	2.28*** (78.5)	2.52*** (75.0)	2.34*** (77.3)	2.24*** (59.1)	2.75*** (71.4)	2.27*** (64.2)	2.97*** (42.9)	2.76*** (120.7)	2.63*** (65.8)
R-squared	0.63	0.65	0.70	0.69	0.63	0.72	0.76	0.56	0.52	0.42	0.73	0.51
adj. R-squared	0.62	0.65	0.69	0.69	0.62	0.72	0.75	0.55	0.50	0.40	0.72	0.50
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212
Panel C: Quadratic inflation term, augmented												
	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Euro area inflation (lagged)	0.09** (3.1)	0.09*** (3.7)	0.09*** (3.8)	0.11*** (3.8)	0.09** (2.9)	0.17*** (6.5)	0.20*** (5.4)	0.11** (3.2)	0.16*** (3.2)	0.05 (0.8)	0.09*** (4.4)	0.15*** (4.5)
Euro area inflation (lagged) <sup>2</sup>	0.01*** (3.9)	0.01*** (3.7)	0.01*** (4.5)	0.01*** (3.8)	0.01*** (3.9)	0.01** (2.6)	0.00 (0.7)	0.01* (2.2)	0.00 (0.2)	0.02* (2.3)	0.01*** (4.8)	0.00 (0.7)
Interest rate hikes	-0.05 (-0.7)	-0.10+ (-1.7)	-0.11+ (-1.8)	-0.05 (-0.8)	-0.15* (-2.1)	-0.18** (-2.8)	-0.03 (-0.2)	0.13 (1.2)	0.11 (1.5)	0.05 (0.2)	-0.14** (-2.9)	0.20* (2.5)
Interest rate cuts	0.18** (2.8)	0.12* (2.2)	0.09+ (1.7)	0.08 (1.5)	0.09 (1.3)	0.00 (0.0)	0.00 (-1.2)	0.03 (0.4)	0.07 (1.0)	-0.18 (-1.1)	0.08+ (1.8)	0.16* (2.2)
Asset purchases	0.14+ (1.8)	-0.04 (-0.5)	0.13* (2.0)	-0.10 (-1.5)	-0.04 (-0.5)	-0.06 (-0.9)	-0.01 (-0.1)	-0.18* (-2.1)	-0.14+ (-1.7)	-0.12 (-0.8)	-0.06 (-1.2)	-0.15+ (-1.7)
I(EA inflation >0%)	-0.21** (-2.9)	-0.20** (-3.1)	-0.16* (-2.5)	-0.18** (-2.9)	-0.09 (-1.2)	-0.14* (-2.1)	-0.29*** (-3.3)	-0.18* (-2.2)	-0.15* (-2.0)	-0.11 (-0.7)	-0.14** (-2.0)	-0.14+ (-1.7)
Constant	3.12*** (56.3)	2.61*** (51.9)	2.91*** (60.8)	2.35*** (47.6)	2.53*** (43.9)	2.39*** (47.2)	2.32*** (32.7)	2.84*** (44.2)	2.34*** (40.2)	3.01*** (25.0)	2.82*** (72.0)	2.71*** (41.6)
R-squared	0.60	0.61	0.68	0.67	0.59	0.71	0.71	0.54	0.52	0.40	0.71	0.52
adj. R-squared	0.59	0.60	0.67	0.66	0.58	0.71	0.70	0.53	0.50	0.38	0.70	0.50
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	224	224	224	224	212	224	140	188	224	140	224	212
Panel D: 2% inflation threshold and controls, augmented												
	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Euro area inflation (lagged)	0.08** (2.7)	-0.01 (-0.4)	0.05* (2.4)	-0.01 (-0.4)	0.14*** (3.7)	0.09*** (3.8)	-0.05 (-1.5)	-0.01 (-0.3)	0.03 (1.5)	0.05 (0.8)	0.06** (3.2)	0.08** (3.0)
Euro area inflation (lagged)*I(EA inflation >2%)	0.12** (2.9)	0.27*** (7.4)	0.12*** (4.2)	0.24*** (7.6)	0.09+ (1.9)	0.15*** (4.5)	0.34*** (7.8)	0.18*** (6.8)	0.17*** (5.9)	0.17+ (1.7)	0.16*** (6.1)	0.13*** (3.6)
Interest rate hikes	0.01 (0.1)	-0.06 (-1.1)	-0.06 (-1.1)	-0.08 (-1.6)	-0.08 (-1.3)	-0.21*** (-3.8)	0.00 (0.0)	0.18* (2.5)	0.05 (1.1)	0.12 (0.5)	-0.12** (-2.7)	0.11+ (1.7)
Interest rate cuts	0.08 (1.3)	0.08 (1.5)	0.07 (1.5)	0.04 (0.9)	0.03 (0.4)	0.04 (0.8)	-0.15+ (-2.0)	0.01 (0.2)	-0.01 (-0.1)	-0.10 (-0.7)	0.05 (1.3)	0.12* (2.1)
Asset purchases	0.17* (2.6)	0.00 (0.0)	0.17** (3.2)	-0.02 (-0.3)	0.00 (0.0)	-0.04 (-0.7)	0.03 (0.3)	-0.03 (-0.5)	0.00 (0.0)	-0.10 (-0.7)	-0.04 (-0.9)	-0.07 (-0.9)
Maximum inflation (% of basket) (lagged)	0.00 (0.9)	-0.01 (-1.5)	0.01** (3.1)	0.00 (0.3)	0.01* (2.4)	0.01* (2.5)	-0.03** (-3.2)	0.02*** (4.1)	0.02*** (-0.8)	-0.00 (0.7)	0.00 (0.8)	-0.01 (-1.3)
Market inflation expectations (5y5y)	0.04 (0.7)	-0.01 (-0.4)	0.03 (0.9)	0.22*** (5.6)	-0.14** (-2.9)	0.02 (0.5)	0.29** (2.7)	0.17*** (4.0)	0.18*** (5.5)	-0.40** (-2.9)	-0.02 (-0.5)	0.27*** (5.6)
Consumer confidence (BCS)	0.00 (0.4)	0.01* (2.1)	0.00 (0.3)	0.03*** (7.1)	0.04*** (4.3)	0.05*** (5.8)	0.02*** (4.5)	0.03*** (12.1)	0.03*** (10.0)	-0.01 (-0.3)	0.01*** (3.8)	0.04*** (9.4)
Economic situation: past (BCS)	-0.01*** (-6.5)	-0.00*** (-4.7)	-0.01*** (-5.3)	-0.00*** (-3.5)	-0.01*** (-5.8)	-0.00 (-0.0)	-0.00 (-0.5)	-0.00** (-3.0)	-0.01*** (-6.4)	-0.00 (-1.6)	-0.00*** (-6.1)	-0.00*** (-3.8)
Economic situation: future (BCS)	0.00 (0.1)	0.00 (0.3)	0.00 (1.4)	-0.01*** (-7.2)	-0.01* (-2.4)	-0.01*** (-3.7)	-0.01** (-3.4)	-0.01*** (-9.5)	-0.00** (-2.4)	0.01 (1.1)	-0.00 (-0.1)	-0.01*** (-4.7)
I(EA inflation >2%)	-0.21** (-2.6)	-0.48*** (-5.9)	-0.23*** (-3.6)	-0.50*** (-6.9)	-0.22* (-2.2)	-0.25*** (-3.6)	-0.45*** (-4.3)	-0.42*** (-6.8)	-0.29*** (-4.7)	-0.24 (-1.0)	-0.32*** (-5.2)	-0.33*** (-4.0)
Constant	2.79*** (34.4)	2.57*** (36.7)	2.71*** (37.1)	2.11*** (35.4)	2.64*** (36.1)	2.56*** (38.9)	2.26*** (23.2)	2.63*** (38.1)	2.24*** (33.6)	3.54*** (19.6)	2.80*** (53.2)	2.53*** (33.1)
R-squared	0.71	0.70	0.80	0.77	0.73	0.79	0.81	0.81	0.76	0.49	0.78	0.71
adj. R-squared	0.70	0.69	0.78	0.76	0.71	0.78	0.80	0.80	0.75	0.44	0.77	0.70
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	222	222	222	222	212	222	140	188	221	140	222	212

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

**Table 13: Augmented time series regressions with monetary policy events and national HICP inflation**

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)

	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Inflation (lagged)	0.09* (2.1)	-0.04 (-1.5)	0.02 (0.9)	-0.02 (-1.3)	0.08* (2.2)	0.09** (3.2)	0.00 (0.0)	-0.01 (-0.4)	0.05+ (1.8)	-0.00 (-0.0)	0.06* (2.6)	0.06+ (1.8)
Inflation (lagged)*I(inflation >2%)	0.12* (2.3)	0.23*** (7.3)	0.17*** (5.5)	0.23*** (8.9)	0.19** (3.2)	0.20*** (4.4)	0.16*** (4.0)	0.18*** (7.6)	0.15*** (4.0)	0.25** (2.7)	0.06* (2.0)	0.06 (1.0)
Purchase: Covered Bonds Purchase Programme 1	0.18 (0.8)	0.25 (0.8)	0.13 (0.8)	0.14 (0.8)	-0.04 (-0.2)	0.14 (0.7)	0.00 (.)	0.09 (0.5)	0.08 (0.4)	0.00 (.)	-0.10 (-0.6)	0.03 (0.1)
Purchase: Securities Markets Programme 1	0.74*** (3.6)	0.03 (0.2)	0.75*** (5.1)	0.22 (1.2)	0.16 (0.7)	-0.15 (-0.7)	0.00 (.)	0.23 (1.3)	-0.07 (-0.4)	0.00 (.)	0.25 (1.4)	-0.08 (-0.3)
Purchase: Securities Markets Programme 2	0.22 (1.0)	-0.18 (-1.0)	0.28+ (1.9)	-0.11 (-0.6)	-0.18 (-0.8)	0.32 (1.6)	-0.17 (-0.7)	0.15 (0.9)	-0.02 (-0.1)	-1.23** (-3.0)	-0.14 (-0.8)	-0.16 (-0.6)
Purchase: Covered Bonds Purchase Programme 2	0.09 (0.4)	0.00 (0.0)	0.08 (0.6)	-0.20 (-1.1)	-0.33 (-1.5)	-0.21 (-1.1)	0.11 (0.4)	0.12 (0.7)	-0.39* (-2.2)	-0.28 (-0.7)	-0.01 (-0.1)	-0.12 (-0.5)
Purchase: 'Whatever it takes'	0.05 (0.2)	0.23 (1.3)	0.23 (1.6)	0.13 (0.8)	-0.16 (-0.7)	-0.27 (-1.4)	0.03 (0.1)	-0.10 (-0.6)	-0.20 (-1.1)	-0.15 (-0.4)	-0.07 (-0.4)	-0.17 (-0.7)
Purchase: Outright Monetary Transactions	0.05 (0.2)	0.02 (0.1)	0.23 (1.6)	-0.00 (-0.0)	0.28 (1.2)	-0.19 (-0.9)	0.04 (0.2)	-0.03 (-0.2)	-0.45* (-2.6)	0.38 (0.9)	-0.20 (-1.1)	-0.20 (-0.8)
Purchase: Covered Bonds Purchase Programme 3	-0.03 (-0.2)	0.05 (0.3)	0.09 (0.6)	-0.08 (-0.5)	0.17 (0.8)	0.15 (0.7)	-0.11 (-0.5)	-0.06 (-0.3)	0.21 (1.2)	0.23 (0.6)	0.16 (1.0)	0.11 (0.4)
Purchase: Expanded Asset Purchase Programme	0.34+ (1.7)	0.19 (1.0)	0.31* (2.1)	0.13 (0.8)	-0.03 (-0.1)	0.15 (0.8)	0.64** (2.7)	-0.00 (-0.0)	0.18 (1.0)	0.56 (1.4)	0.15 (0.9)	0.02 (0.1)
Purchase: Corporate Sector Purchase Programme	-0.13 (-0.6)	0.16 (0.9)	-0.06 (-0.4)	-0.09 (-0.5)	-0.08 (-0.4)	0.10 (0.5)	-0.33 (-1.4)	-0.09 (-0.5)	-0.05 (-0.3)	-0.29 (-0.7)	-0.01 (-0.1)	0.13 (0.5)
Purchase: Pandemic Emergency Purchase Programme	0.59** (2.8)	0.03 (0.1)	0.55*** (3.7)	0.10 (0.5)	0.04 (0.2)	-0.11 (-0.5)	0.07 (0.3)	-0.16 (-0.9)	0.30 (1.6)	-0.12 (-0.3)	-0.12 (-0.7)	-0.02 (-0.1)
Purchase: Transmission Protection Instrument	-0.25 (-1.1)	-0.17 (-0.8)	-0.18 (-1.1)	0.06 (0.3)	-0.12 (-0.5)	-0.63** (-2.8)	-0.22 (-0.8)	-0.24 (-1.3)	0.14 (0.7)	-0.63 (-1.3)	-0.26 (-1.3)	0.09 (0.3)
Hike: December 2005	-0.08 (-0.4)	-0.15 (-0.8)	-0.31* (-2.1)	-0.23 (-1.3)	0.08 (0.4)	0.25 (1.3)	0.00 (.)	0.00 (.)	0.13 (0.8)	0.00 (.)	-0.15 (-0.9)	0.18 (0.7)
Hike: March 2006	0.27 (1.3)	-0.10 (-0.6)	-0.16 (-1.1)	-0.25 (-1.4)	-0.09 (-0.4)	-0.19 (-0.9)	0.00 (.)	0.00 (.)	0.28 (1.6)	0.00 (.)	-0.12 (-0.7)	-0.03 (-0.1)
Hike: June 2006	0.23 (1.1)	-0.15 (-0.8)	-0.12 (-0.8)	-0.07 (-0.4)	-0.03 (-0.1)	-0.28 (-1.4)	0.00 (.)	0.00 (.)	0.18 (1.0)	0.00 (.)	-0.17 (-1.0)	-0.06 (-0.2)
Hike: August 2006	0.10 (0.5)	0.42* (2.3)	-0.05 (-0.3)	-0.27 (-1.6)	-0.58* (-2.6)	-0.30 (-1.5)	0.00 (.)	0.00 (.)	-0.12 (-0.7)	0.00 (.)	-0.23 (-1.3)	-0.35 (-1.4)
Hike: October 2006	-0.24 (-1.2)	-0.21 (-1.1)	-0.06 (-0.4)	-0.06 (-0.3)	0.10 (0.4)	-0.20 (-1.0)	0.00 (.)	0.00 (.)	0.05 (0.3)	0.00 (.)	-0.11 (-0.6)	-0.22 (-0.9)
Hike: December 2006	0.08 (0.4)	-0.28 (-1.5)	0.09 (0.6)	0.05 (0.3)	-0.02 (-0.1)	-0.23 (-1.2)	0.00 (.)	0.00 (.)	-0.08 (-0.4)	0.00 (.)	-0.16 (-0.9)	-0.01 (-0.0)
Hike: March 2007	-0.15 (-0.7)	-0.09 (-0.5)	-0.02 (-0.1)	-0.03 (-0.2)	-0.09 (-0.4)	0.01 (0.0)	0.00 (.)	0.54** (3.1)	-0.23 (-1.3)	0.00 (.)	0.03 (0.2)	0.19 (0.7)
Hike: June 2007	0.33 (1.6)	-0.09 (-0.5)	-0.04 (-0.3)	-0.11 (-0.6)	-0.12 (-0.5)	-0.17 (-0.9)	0.00 (.)	0.28 (1.6)	0.08 (0.5)	0.00 (.)	-0.06 (-0.3)	0.06 (0.2)
Hike: July 2008	0.12 (0.6)	-0.24 (-1.3)	0.06 (0.4)	0.31 (1.6)	0.35 (1.6)	-0.64** (-3.1)	0.00 (.)	0.14 (0.8)	0.12 (0.7)	0.00 (.)	0.42* (2.4)	0.34 (1.3)
Hike: April 2011	-0.07 (-0.4)	0.09 (0.5)	0.17 (1.2)	-0.19 (-1.1)	-0.12 (-0.5)	-0.10 (-0.5)	-0.28 (-1.1)	0.06 (0.3)	-0.25 (-1.4)	0.63 (1.5)	0.04 (0.2)	-0.23 (-0.9)
Hike: July 2011	0.16 (0.8)	0.12 (0.7)	0.24+ (1.7)	-0.16 (-0.9)	0.00 (0.0)	-0.04 (-0.2)	-0.17 (-0.7)	0.13 (0.8)	-0.24 (-1.3)	-0.13 (-0.3)	-0.19 (-1.1)	-0.07 (-0.3)
Hike: July 2022	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Hike: September 2022	-0.36 (-1.5)	0.08 (0.4)	-0.03 (-0.2)	-0.27 (-1.4)	-0.10 (-0.4)	-0.54* (-2.2)	-0.20 (-0.7)	0.12 (0.6)	-0.10 (-0.5)	0.26 (0.6)	-0.13 (-0.7)	0.80** (2.7)
Hike: October 2022	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)

Table 13: Augmented time series regressions with monetary policy events and national HICP inflation continuation

Continued	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Cut: October 2008	0.16 (0.8)	0.12 (0.6)	0.12 (0.8)	0.21 (1.2)	-0.21 (-0.8)	-0.11 (-0.6)	0.00 (.)	0.11 (0.6)	-0.24 (-1.3)	0.00 (.)	0.27 (1.5)	0.21 (0.8)
Cut: November 2008	0.22 (1.0)	-0.10 (-0.5)	-0.05 (-0.4)	0.27 (1.5)	0.00 (0.0)	-0.29 (-1.5)	0.00 (.)	0.17 (1.0)	-0.24 (-1.3)	0.00 (.)	0.07 (0.4)	0.31 (1.2)
Cut: December 2008	0.17 (0.8)	0.11 (0.6)	0.16 (1.1)	0.32+ (1.8)	-0.08 (-0.4)	0.31 (1.6)	0.00 (.)	0.19 (1.1)	-0.25 (-1.4)	0.00 (.)	0.15 (0.9)	0.30 (1.1)
Cut: January 2009	0.03 (0.1)	-0.33+ (-1.8)	0.15 (1.0)	0.56** (3.1)	-0.08 (-0.3)	0.48* (2.4)	0.00 (.)	0.26 (1.5)	0.03 (0.2)	0.00 (.)	-0.08 (-0.4)	0.28 (1.1)
Cut: March 2009	0.59** (2.8)	0.40* (2.1)	0.45** (2.9)	0.32+ (1.8)	0.48* (2.1)	0.27 (1.4)	0.00 (.)	-0.09 (-0.5)	-0.02 (-0.1)	0.00 (.)	-0.05 (-0.3)	0.17 (0.7)
Cut: April 2009	0.41+ (1.9)	0.24 (1.3)	0.27+ (1.8)	0.16 (0.9)	-0.10 (-0.4)	0.20 (1.0)	0.00 (.)	0.06 (0.3)	0.04 (0.2)	0.00 (.)	-0.01 (-0.1)	0.23 (0.9)
Cut: May 2009	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Cut: November 2011	0.08 (0.4)	-0.09 (-0.5)	0.26+ (1.7)	0.01 (0.0)	0.10 (0.4)	-0.10 (-0.5)	0.02 (0.1)	0.18 (1.1)	-0.19 (-1.1)	-0.35 (-0.9)	0.04 (0.2)	-0.04 (-0.2)
Cut: December 2011	0.08 (0.4)	-0.07 (-0.4)	0.25+ (1.7)	-0.15 (-0.9)	-0.33 (-1.5)	-0.12 (-0.6)	-0.22 (-0.9)	0.11 (0.6)	-0.25 (-1.4)	-0.44 (-1.1)	0.02 (0.1)	-0.12 (-0.5)
Cut: July 2012	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Cut: May 2013	0.01 (0.0)	0.06 (0.3)	-0.00 (-0.0)	-0.09 (-0.5)	0.03 (0.1)	0.15 (0.7)	-0.02 (-0.1)	-0.08 (-0.5)	0.11 (0.6)	-0.05 (-0.1)	-0.11 (-0.6)	0.02 (0.1)
Cut: June 2014	0.02 (0.1)	0.14 (0.8)	0.19 (1.3)	0.01 (0.1)	0.10 (0.4)	0.03 (0.2)	-0.31 (-1.3)	-0.02 (-0.1)	0.06 (0.3)	0.30 (0.7)	0.10 (0.6)	0.21 (0.8)
Cut: September 2014	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Cut: December 2015	-0.06 (-0.3)	0.01 (0.1)	0.07 (0.5)	0.02 (0.1)	0.14 (0.6)	-0.19 (-1.0)	-0.19 (-0.8)	0.04 (0.2)	0.04 (0.2)	-0.00 (-0.0)	-0.13 (-0.8)	-0.15 (-0.6)
Cut: March 2016	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Cut: September 2019	0.16 (0.8)	0.03 (0.1)	-0.00 (-0.0)	-0.06 (-0.4)	-0.35 (-1.6)	-0.11 (-0.5)	-0.04 (-0.2)	-0.01 (-0.0)	0.08 (0.4)	-0.48 (-1.2)	0.02 (0.1)	0.12 (0.5)
Maximum inflation (% of basket) (lagged)	0.01+ (1.9)	-0.00 (-0.3)	0.01 (1.6)	0.00 (0.1)	0.01+ (1.9)	0.03*** (5.0)	-0.02 (-1.6)	0.02** (2.7)	0.00 (0.1)	0.01 (0.6)	0.02* (2.5)	0.00 (0.2)
Market inflation expectations (5y5y)	0.07 (1.1)	0.03 (1.0)	0.03 (0.9)	0.11** (2.7)	-0.19*** (-3.7)	0.02 (0.4)	0.42*** (3.8)	0.02 (0.5)	0.14** (3.3)	-0.28+ (-1.8)	0.12*** (3.4)	0.28*** (4.5)
Consumer confidence (BCS)	0.00 (0.1)	0.03*** (3.7)	-0.01 (-1.0)	0.02*** (5.6)	0.07*** (6.8)	0.05*** (5.3)	0.03*** (4.8)	0.02*** (7.3)	0.04*** (8.9)	0.02 (0.9)	0.02*** (3.7)	0.04*** (8.0)
Economic situation: past (BCS)	-0.01*** (-5.9)	-0.00*** (-3.6)	-0.01*** (-5.1)	-0.00*** (-5.0)	-0.00*** (-4.8)	0.00 (0.4)	-0.00 (-0.1)	-0.00** (-2.8)	-0.01*** (-5.3)	-0.00 (-1.0)	-0.00** (-3.1)	-0.01** (-3.3)
Economic situation: future (BCS)	0.00 (0.4)	-0.01+ (-1.8)	0.00* (2.3)	-0.01*** (-4.3)	-0.02*** (-5.2)	-0.02*** (-3.6)	-0.01*** (-4.0)	-0.01*** (-5.4)	-0.00 (-1.4)	-0.00 (-0.4)	-0.00* (-2.4)	-0.01*** (-4.1)
I(inflation >2%)	-0.32** (-3.2)	-0.43*** (-6.8)	-0.25*** (-3.7)	-0.48*** (-7.5)	-0.37** (-2.8)	-0.32** (-3.1)	0.03 (0.2)	-0.25** (-3.0)	-0.18* (-2.2)	-0.53* (-2.5)	-0.22*** (-3.5)	-0.11 (-0.8)
Constant	2.69*** (23.0)	2.58*** (31.4)	2.74*** (38.7)	2.20*** (35.8)	2.85*** (34.1)	2.60*** (33.8)	2.14*** (19.0)	2.83*** (34.6)	2.33*** (33.0)	3.47*** (18.5)	2.62*** (41.4)	2.59*** (26.0)
R-squared	0.75	0.76	0.86	0.81	0.72	0.80	0.78	0.85	0.78	0.55	0.74	0.65
adj. R-squared	0.69	0.70	0.83	0.77	0.65	0.75	0.73	0.82	0.72	0.45	0.67	0.56
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	222	222	222	222	212	222	140	188	221	140	222	212

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets

**Table 14: Augmented time series regressions with monetary policy events and euro area HICP inflation**

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted)

	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Euro area inflation (lagged)	0.05+ (1.8)	-0.00 (-0.0)	0.04+ (1.7)	-0.00 (-0.2)	0.12** (3.2)	0.09*** (3.7)	-0.05 (-1.4)	-0.01 (-0.4)	0.04 (1.5)	0.08 (1.0)	0.06** (3.1)	0.08** (2.9)
Euro area inflation (lagged)*I(EA inflation >2%)	0.17*** (3.9)	0.27*** (6.6)	0.14*** (4.5)	0.27*** (7.9)	0.14** (2.9)	0.15*** (4.4)	0.34*** (7.5)	0.19*** (6.4)	0.18*** (5.7)	0.16 (1.6)	0.15*** (5.5)	0.12** (3.0)
Purchase: Covered Bonds Purchase Programme 1	0.21 (1.1)	0.23 (1.2)	0.15 (1.0)	0.12 (0.7)	-0.04 (-0.2)	0.12 (0.7)	0.00 (.)	0.02 (0.1)	0.05 (0.3)	0.00 (.)	0.08 (0.6)	0.05 (0.2)
Purchase: Securities Markets Programme 1	0.80*** (4.2)	0.01 (0.1)	0.74*** (4.8)	0.18 (1.0)	0.12 (0.6)	-0.09 (-0.5)	0.00 (.)	0.22 (1.2)	-0.11 (-0.6)	0.00 (.)	0.32* (2.3)	-0.09 (-0.4)
Purchase: Securities Markets Programme 2	0.42* (2.2)	-0.00 (-0.0)	0.35* (2.3)	-0.12 (-0.7)	0.08 (0.4)	0.25 (1.4)	-0.03 (-0.1)	0.09 (0.5)	-0.15 (-0.9)	-1.21** (-3.0)	-0.06 (-0.4)	-0.09 (-0.4)
Purchase: Covered Bonds Purchase Programme 2	0.23 (1.2)	-0.12 (-0.6)	0.07 (0.5)	-0.29 (-1.6)	-0.23 (-1.2)	-0.28 (-1.5)	0.22 (1.0)	0.00 (0.0)	-0.28 (-1.6)	-0.27 (-0.7)	-0.14 (-1.0)	-0.06 (-0.3)
Purchase: 'Whatever it takes'	-0.04 (-0.2)	0.09 (0.5)	0.12 (0.8)	0.02 (0.1)	-0.03 (-0.2)	-0.23 (-1.3)	-0.20 (-0.9)	-0.12 (-0.7)	0.01 (0.0)	-0.28 (-0.7)	-0.15 (-1.0)	-0.12 (-0.5)
Purchase: Outright Monetary Transactions	-0.08 (-0.4)	-0.17 (-0.9)	0.12 (0.8)	-0.15 (-0.8)	0.42* (2.2)	-0.18 (-1.0)	-0.18 (-0.9)	-0.08 (-0.4)	-0.22 (-1.3)	0.27 (0.7)	-0.26+ (-1.8)	-0.14 (-0.6)
Purchase: Covered Bonds Purchase Programme 3	0.05 (0.2)	0.08 (0.4)	0.11 (0.7)	-0.06 (-0.4)	0.15 (0.8)	0.16 (0.8)	-0.09 (-0.5)	-0.04 (-0.2)	0.17 (1.0)	0.30 (0.7)	0.21 (1.5)	0.10 (0.5)
Purchase: Expanded Asset Purchase Programme	0.36+ (1.9)	0.21 (1.1)	0.31* (2.0)	0.18 (1.0)	-0.03 (-0.1)	0.17 (0.9)	0.58** (2.8)	0.04 (0.2)	0.17 (1.0)	0.63 (1.6)	0.12 (0.8)	0.05 (0.2)
Purchase: Corporate Sector Purchase Programme	-0.08 (-0.4)	0.15 (0.8)	-0.05 (-0.4)	-0.07 (-0.4)	-0.13 (-0.6)	0.09 (0.5)	-0.37+ (-1.8)	-0.09 (-0.5)	-0.00 (-0.0)	-0.21 (-0.5)	0.03 (0.2)	0.18 (0.8)
Purchase: Pandemic Emergency Purchase Programme	0.58** (3.0)	0.04 (0.2)	0.56*** (3.5)	0.09 (0.5)	0.11 (0.5)	-0.06 (-0.3)	0.11 (0.5)	-0.13 (-0.7)	0.24 (1.3)	-0.17 (-0.4)	-0.11 (-0.7)	-0.03 (-0.1)
Purchase: Transmission Protection Instrument	-0.15 (-0.7)	-0.27 (-1.1)	-0.32+ (-1.9)	-0.05 (-0.2)	-0.23 (-1.0)	-0.54* (-2.6)	-0.19 (-0.8)	-0.10 (-0.5)	0.08 (0.4)	-0.55 (-1.1)	-0.47** (-2.8)	0.13 (0.5)
Hike: December 2005	-0.18 (-0.9)	-0.18 (-1.0)	-0.27+ (-1.7)	-0.16 (-0.9)	-0.01 (-0.1)	0.10 (0.5)	0.00 (.)	0.00 (.)	0.19 (1.1)	0.00 (.)	-0.23 (-1.6)	0.26 (1.1)
Hike: March 2006	0.14 (0.7)	-0.05 (-0.3)	-0.16 (-1.0)	-0.06 (-0.4)	-0.18 (-0.9)	-0.30 (-1.6)	0.00 (.)	0.00 (.)	0.30+ (1.7)	0.00 (.)	-0.23 (-1.6)	0.10 (0.4)
Hike: June 2006	0.06 (0.3)	-0.16 (-0.8)	-0.13 (-0.9)	0.09 (0.5)	-0.10 (-0.5)	-0.18 (-1.0)	0.00 (.)	0.00 (.)	0.17 (1.0)	0.00 (.)	-0.23 (-1.6)	0.11 (0.5)
Hike: August 2006	-0.01 (-0.0)	0.35+ (1.8)	-0.05 (-0.3)	-0.13 (-0.7)	-0.70*** (-3.6)	-0.29 (-1.6)	0.00 (.)	0.00 (.)	-0.10 (-0.6)	0.00 (.)	-0.26+ (-1.8)	-0.26 (-1.2)
Hike: October 2006	-0.24 (-1.3)	-0.19 (-1.0)	-0.05 (-0.4)	-0.02 (-0.1)	0.04 (0.2)	-0.21 (-1.1)	0.00 (.)	0.00 (.)	0.25 (1.5)	0.00 (.)	-0.03 (-0.2)	-0.06 (-0.2)
Hike: December 2006	0.10 (0.5)	-0.24 (-1.3)	0.10 (0.7)	0.03 (0.2)	-0.02 (-0.1)	-0.26 (-1.4)	0.00 (.)	0.00 (.)	0.05 (0.3)	0.00 (.)	-0.06 (-0.4)	0.10 (0.5)
Hike: March 2007	-0.11 (-0.6)	-0.06 (-0.3)	-0.04 (-0.2)	-0.08 (-0.5)	-0.10 (-0.5)	-0.05 (-0.3)	0.00 (.)	0.67*** (3.7)	-0.08 (-0.4)	0.00 (.)	0.11 (0.8)	0.31 (1.4)
Hike: June 2007	0.38* (2.0)	-0.03 (-0.2)	-0.04 (-0.3)	-0.17 (-1.0)	-0.08 (-0.4)	-0.24 (-1.3)	0.00 (.)	0.38* (2.1)	0.06 (0.4)	0.00 (.)	-0.00 (-0.0)	0.14 (0.6)
Hike: July 2008	0.18 (0.9)	-0.09 (-0.5)	0.07 (0.4)	0.39+ (1.9)	0.49* (2.5)	-0.33+ (-1.7)	0.00 (.)	0.14 (0.8)	0.17 (1.0)	0.00 (.)	0.14 (0.9)	0.19 (0.8)
Hike: April 2011	-0.01 (-0.0)	0.06 (0.3)	0.17 (1.1)	-0.16 (-0.9)	0.10 (0.5)	-0.18 (-1.0)	0.22 (1.0)	-0.04 (-0.2)	-0.24 (-1.4)	0.77+ (1.9)	-0.02 (-0.1)	-0.04 (-0.2)
Hike: July 2011	0.30 (1.6)	0.11 (0.6)	0.23 (1.5)	-0.22 (-1.2)	0.18 (0.9)	-0.10 (-0.5)	0.09 (0.4)	0.03 (0.2)	-0.20 (-1.1)	-0.01 (-0.0)	-0.30* (-2.1)	-0.01 (-0.0)
Hike: July 2022	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Hike: September 2022	-0.28 (-1.3)	-0.21 (-1.0)	-0.07 (-0.4)	-0.41* (-2.0)	-0.37 (-1.6)	-0.48* (-2.1)	-0.32 (-1.3)	0.17 (0.8)	-0.09 (-0.5)	-0.15 (-0.3)	-0.05 (-0.3)	0.64* (2.5)
Hike: October 2022	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)



Table 14: Augmented time series regressions with monetary policy events and euro area HICP inflation continuation

Continued	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
Cut: October 2008	0.14 (0.7)	0.24 (1.3)	0.11 (0.7)	0.20 (1.1)	0.21 (0.9)	-0.06 (-0.3)	0.00 (.)	0.10 (0.5)	-0.22 (-1.3)	0.00 (.)	0.06 (0.4)	0.10 (0.4)
Cut: November 2008	0.14 (0.7)	0.07 (0.4)	-0.08 (-0.5)	0.18 (1.0)	0.27 (1.4)	-0.22 (-1.2)	0.00 (.)	0.15 (0.9)	-0.19 (-1.1)	0.00 (.)	-0.07 (-0.5)	0.20 (0.9)
Cut: December 2008	0.17 (0.8)	0.27 (1.3)	0.16 (1.0)	0.24 (1.3)	0.23 (1.1)	0.21 (1.1)	0.00 (.)	0.23 (1.3)	-0.13 (-0.8)	0.00 (.)	0.30* (2.1)	0.32 (1.4)
Cut: January 2009	0.15 (0.7)	-0.22 (-1.1)	0.20 (1.3)	0.48** (2.7)	0.33 (1.5)	0.45* (2.4)	0.00 (.)	0.14 (0.8)	0.18 (1.0)	0.00 (.)	0.14 (1.0)	0.28 (1.2)
Cut: March 2009	0.67*** (3.4)	0.37+ (1.9)	0.48** (3.0)	0.24 (1.3)	0.64** (3.1)	0.28 (1.5)	0.00 (.)	-0.17 (-0.9)	-0.08 (-0.5)	0.00 (.)	0.18 (1.2)	0.17 (0.8)
Cut: April 2009	0.46* (2.3)	0.23 (1.2)	0.32* (2.0)	0.08 (0.5)	-0.05 (-0.2)	0.21 (1.1)	0.00 (.)	-0.02 (-0.1)	-0.01 (-0.0)	0.00 (.)	0.18 (1.3)	0.24 (1.0)
Cut: May 2009	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Cut: November 2011	0.17 (0.9)	-0.20 (-1.0)	0.24 (1.6)	-0.13 (-0.7)	0.10 (0.5)	-0.15 (-0.8)	0.11 (0.5)	0.03 (0.2)	-0.07 (-0.4)	-0.34 (-0.8)	-0.06 (-0.4)	0.09 (0.4)
Cut: December 2011	0.20 (1.0)	-0.17 (-0.9)	0.25 (1.6)	-0.31+ (-1.7)	-0.35+ (-1.8)	-0.12 (-0.7)	-0.10 (-0.5)	-0.05 (-0.3)	-0.15 (-0.9)	-0.38 (-0.9)	-0.12 (-0.8)	-0.08 (-0.3)
Cut: July 2012	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Cut: May 2013	0.05 (0.2)	0.06 (0.3)	-0.01 (-0.1)	-0.13 (-0.7)	0.12 (0.6)	0.11 (0.6)	0.04 (0.2)	-0.05 (-0.3)	0.02 (0.1)	-0.03 (-0.1)	-0.03 (-0.2)	-0.02 (-0.1)
Cut: June 2014	0.10 (0.5)	0.16 (0.8)	0.19 (1.3)	0.00 (0.0)	0.05 (0.3)	0.06 (0.3)	-0.28 (-1.4)	0.01 (0.0)	0.05 (0.3)	0.34 (0.8)	0.11 (0.8)	0.18 (0.8)
Cut: September 2014	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Cut: December 2015	-0.07 (-0.3)	-0.02 (-0.1)	0.08 (0.5)	0.01 (0.1)	0.06 (0.3)	-0.19 (-1.1)	-0.19 (-0.9)	0.03 (0.2)	0.09 (0.5)	0.04 (0.1)	-0.09 (-0.7)	-0.09 (-0.4)
Cut: March 2016	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)	0.00 (.)
Cut: September 2019	0.16 (0.8)	0.01 (0.1)	-0.04 (-0.2)	-0.10 (-0.6)	-0.24 (-1.2)	-0.08 (-0.4)	-0.04 (-0.2)	-0.03 (-0.2)	0.09 (0.5)	-0.53 (-1.3)	0.11 (0.7)	0.08 (0.4)
Maximum inflation (% of basket) (lagged)	0.00 (0.8)	-0.01 (-1.1)	0.01*** (3.5)	-0.00 (-0.5)	0.01 (0.9)	0.02** (2.7)	-0.03* (-2.5)	0.02*** (3.9)	-0.00 (-1.3)	0.01 (0.9)	0.01 (1.2)	-0.01 (-1.5)
Market inflation expectations (5y5y)	-0.00 (-0.0)	-0.02 (-0.6)	0.01 (0.2)	0.19*** (4.7)	-0.16** (-3.3)	-0.00 (-0.1)	0.31** (2.7)	0.14** (2.9)	0.19*** (5.3)	-0.40** (-2.8)	-0.05 (-1.5)	0.26*** (5.0)
Consumer confidence (BCS)	0.00 (0.1)	0.02* (2.2)	0.00 (0.1)	0.03*** (6.9)	0.04*** (4.3)	0.05*** (5.3)	0.02*** (4.7)	0.03*** (10.4)	0.03*** (9.2)	0.01 (0.6)	0.01** (3.3)	0.04*** (8.0)
Economic situation: past (BCS)	-0.01*** (-6.8)	-0.00*** (-4.4)	-0.01*** (-5.7)	-0.00*** (-4.4)	-0.01*** (-5.6)	-0.00 (-0.1)	-0.00 (-0.7)	-0.00** (-2.6)	-0.01*** (-6.3)	-0.00 (-1.6)	-0.00*** (-6.3)	-0.00*** (-3.5)
Economic situation: future (BCS)	0.00 (0.8)	0.00 (0.0)	0.00* (2.1)	-0.01*** (-5.9)	-0.01* (-2.2)	-0.01** (-3.3)	-0.01*** (-3.5)	-0.01*** (-8.1)	-0.00* (-2.4)	0.00 (0.3)	0.00 (0.3)	-0.01*** (-4.0)
I(EA inflation >2%)	-0.27** (-3.3)	-0.48*** (-5.4)	-0.25*** (-3.6)	-0.53*** (-6.7)	-0.31** (-3.0)	-0.24** (-3.2)	-0.46*** (-4.2)	-0.43*** (-6.0)	-0.29*** (-4.2)	-0.20 (-0.8)	-0.27*** (-4.1)	-0.28** (-3.1)
Constant	2.87*** (33.9)	2.58*** (32.8)	2.77*** (37.3)	2.14*** (33.9)	2.70*** (36.1)	2.60*** (36.3)	2.25*** (21.9)	2.68*** (35.7)	2.20*** (30.8)	3.56*** (19.1)	2.85*** (52.1)	2.53*** (30.2)
R-squared	0.78	0.74	0.85	0.80	0.79	0.82	0.84	0.84	0.79	0.57	0.82	0.74
adj. R-squared	0.73	0.67	0.81	0.76	0.73	0.78	0.80	0.80	0.74	0.47	0.78	0.67
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Observations	222	222	222	222	212	222	140	188	221	140	222	212

Note: + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

**Table 15: Difference-in-difference model: inflation attention add-on from interest rate cuts**

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted, standardised)

Days until/from meeting	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
-14	-0.16 (-0.4)	-0.27 (-1.0)	-0.03 (-0.1)	0.07 (0.3)	-0.04 (-0.1)	0.28 (0.9)	-0.02 (-0.1)	-0.02 (-0.1)	-0.04 (-0.2)	-0.27 (-0.9)	-0.38+ (-1.8)	0.05 (0.2)
-13	-0.04 (-0.1)	-0.35 (-1.4)	0.14 (0.7)	-0.03 (-0.1)	-0.08 (-0.3)	0.19 (0.7)	0.13 (0.5)	-0.19 (-0.8)	-0.13 (-0.7)	-0.17 (-0.7)	-0.46* (-2.2)	-0.09 (-0.4)
-12	-0.14 (-0.6)	-0.22 (-1.2)	0.26 (1.2)	-0.17 (-0.9)	-0.24 (-1.1)	0.09 (0.4)	-0.10 (-0.4)	-0.03 (-0.1)	0.04 (0.2)	0.20 (0.9)	-0.25 (-1.2)	-0.14 (-0.7)
-11	0.17 (0.8)	-0.18 (-0.9)	0.12 (0.7)	-0.02 (-0.1)	-0.14 (-0.7)	-0.09 (-0.4)	-0.02 (-0.1)	0.21 (0.9)	-0.01 (-0.1)	-0.03 (-0.2)	-0.11 (-0.6)	-0.03 (-0.2)
-10	0.17 (0.7)	-0.03 (-0.2)	0.21 (1.4)	-0.10 (-0.4)	-0.49** (-2.6)	-0.15 (-0.9)	-0.13 (-0.7)	0.48** (2.8)	0.01 (0.1)	-0.01 (-0.0)	0.10 (0.6)	-0.18 (-0.9)
-9	-0.12 (-0.6)	0.07 (0.3)	0.22+ (1.7)	-0.09 (-0.4)	-0.37+ (-1.9)	-0.16 (-0.9)	-0.03 (-0.2)	0.58** (2.9)	-0.02 (-0.1)	0.12 (0.5)	0.14 (0.7)	-0.17 (-0.8)
-8	0.03 (0.2)	-0.07 (-0.4)	0.05 (0.3)	0.18 (0.9)	-0.10 (-0.5)	-0.03 (-0.2)	0.15 (0.8)	0.51* (2.3)	-0.09 (-0.6)	0.13 (0.6)	0.40+ (1.7)	0.07 (0.3)
-7	0.13 (0.5)	0.19 (0.9)	0.14 (0.9)	0.26+ (1.8)	-0.04 (-0.2)	-0.03 (-0.2)	-0.07 (-0.4)	0.38+ (1.9)	-0.34* (-2.0)	0.24 (1.2)	0.30 (1.4)	0.11 (0.5)
-6	0.09 (0.4)	0.03 (0.1)	-0.24+ (-1.7)	0.19 (1.1)	0.23 (0.9)	0.08 (0.4)	-0.30 (-1.3)	-0.06 (-0.3)	-0.06 (-0.3)	0.13 (0.6)	0.31+ (1.9)	0.21 (1.2)
-5	0.04 (0.2)	0.01 (0.0)	-0.30 (-1.6)	0.33+ (1.7)	0.17 (0.8)	0.11 (0.5)	-0.30 (-1.3)	-0.01 (-0.1)	-0.09 (-0.5)	-0.08 (-0.5)	0.21 (1.1)	0.40* (2.1)
-4	-0.12 (-0.6)	0.08 (0.4)	-0.13 (-0.8)	0.01 (0.1)	0.14 (0.8)	0.18 (0.8)	0.10 (0.4)	-0.22 (-0.9)	0.17 (0.8)	-0.05 (-0.3)	0.24 (1.3)	0.08 (0.4)
-3	-0.28 (-1.0)	0.16 (0.8)	-0.15 (-1.0)	-0.09 (-0.4)	0.34 (1.6)	0.05 (0.2)	0.27 (1.2)	-0.48* (-2.5)	0.30 (1.2)	0.14 (0.6)	0.11 (0.5)	0.05 (0.2)
-2	0.11 (0.4)	0.17 (0.9)	-0.18 (-1.2)	-0.23 (-0.9)	0.44+ (1.7)	-0.14 (-0.7)	0.09 (0.4)	-0.54* (-2.5)	0.16 (0.6)	-0.08 (-0.3)	0.19 (0.7)	0.07 (0.2)
-1	0.06 (0.3)	0.36 (1.5)	-0.09 (-0.5)	-0.24 (-0.8)	0.26 (1.1)	-0.13 (-0.5)	0.35 (1.0)	-0.38+ (-1.7)	0.35 (1.3)	-0.08 (-0.3)	-0.13 (-0.4)	-0.12 (-0.4)
0	0.12 (0.4)	0.40 (1.5)	0.29 (1.2)	-0.08 (-0.3)	0.01 (0.0)	0.04 (0.1)	0.30 (0.9)	-0.39 (-1.4)	0.36 (1.1)	-0.16 (-0.6)	-0.27 (-1.0)	-0.22 (-0.9)
1	0.19 (0.6)	0.56* (2.3)	0.63* (2.2)	-0.29 (-1.1)	-0.11 (-0.4)	0.10 (0.3)	0.51 (1.4)	-0.19 (-0.6)	0.42 (1.2)	-0.31 (-1.1)	-0.07 (-0.2)	-0.18 (-0.7)
2	0.40 (1.1)	0.58* (2.0)	0.82** (2.7)	-0.43 (-1.5)	0.08 (0.3)	0.02 (0.0)	0.57 (1.6)	-0.32 (-1.0)	0.60 (1.6)	-0.30 (-1.0)	-0.13 (-0.4)	-0.07 (-0.3)
3	0.37 (1.3)	0.69* (2.2)	1.07** (3.3)	-0.36 (-1.2)	-0.07 (-0.2)	0.08 (0.2)	0.19 (0.7)	-0.33 (-0.9)	0.22 (0.5)	-0.33 (-1.2)	-0.17 (-0.7)	-0.03 (-0.1)
4	0.60+ (1.9)	0.43 (1.3)	0.97** (2.7)	-0.26 (-0.8)	-0.22 (-0.7)	0.29 (0.9)	0.37 (1.2)	-0.43 (-1.1)	0.05 (0.1)	-0.43 (-1.6)	-0.14 (-0.5)	0.16 (0.6)
5	0.20 (0.8)	0.18 (0.5)	0.98** (3.0)	-0.20 (-0.6)	-0.32 (-1.2)	0.50 (1.4)	0.28 (0.8)	-0.38 (-0.9)	0.09 (0.3)	-0.21 (-0.7)	-0.09 (-0.3)	0.27 (1.0)
6	0.57* (2.4)	-0.10 (-0.3)	1.06** (3.2)	-0.22 (-0.7)	0.02 (0.1)	0.39 (1.0)	0.03 (0.1)	-0.46 (-1.3)	0.12 (0.3)	0.05 (0.2)	-0.16 (-0.6)	0.28 (1.0)
7	0.45 (1.6)	-0.32 (-1.0)	0.49 (1.4)	-0.44 (-1.4)	-0.03 (-0.1)	0.39 (1.0)	0.19 (0.6)	-0.38 (-1.1)	0.18 (0.5)	0.07 (0.2)	-0.09 (-0.3)	0.22 (0.7)
8	0.28 (1.0)	-0.31 (-1.0)	0.22 (0.6)	-0.20 (-0.6)	-0.10 (-0.4)	0.30 (0.8)	0.07 (0.2)	-0.33 (-1.0)	-0.04 (-0.1)	0.18 (0.5)	-0.31 (-0.9)	0.15 (0.4)
9	0.17 (0.5)	-0.52+ (-1.9)	-0.09 (-0.3)	0.02 (0.1)	-0.06 (-0.2)	0.24 (0.6)	0.07 (0.2)	-0.35 (-1.0)	-0.15 (-0.5)	0.21 (0.5)	-0.36 (-1.2)	0.01 (0.0)
10	0.15 (0.5)	-0.79** (-2.6)	-0.22 (-0.7)	-0.07 (-0.2)	0.17 (0.5)	0.37 (1.0)	-0.08 (-0.3)	-0.44 (-1.3)	-0.02 (-0.1)	0.29 (0.7)	0.05 (0.1)	0.07 (0.2)
11	0.20 (0.8)	-0.58+ (-1.9)	-0.22 (-0.6)	-0.12 (-0.3)	0.28 (1.0)	0.33 (0.9)	-0.33 (-1.3)	-0.12 (-0.4)	-0.04 (-0.1)	0.22 (0.5)	0.09 (0.2)	-0.07 (-0.2)
12	0.33 (1.0)	-0.37 (-1.2)	-0.36 (-1.0)	-0.20 (-0.5)	0.35 (1.2)	0.31 (0.8)	-0.31 (-1.2)	-0.15 (-0.4)	0.17 (0.6)	0.16 (0.5)	0.16 (0.4)	-0.13 (-0.4)
13	0.23 (0.5)	-0.23 (-0.8)	-0.33 (-0.9)	-0.29 (-0.8)	-0.13 (-0.4)	0.45 (1.1)	-0.07 (-0.3)	-0.23 (-0.7)	0.04 (0.1)	-0.07 (-0.2)	0.47 (1.3)	-0.07 (-0.2)
14	0.36 (0.9)	-0.18 (-0.6)	-0.31 (-0.8)	-0.14 (-0.4)	0.10 (0.3)	0.35 (0.9)	0.00 (0.0)	-0.34 (-1.1)	0.17 (0.4)	0.06 (0.2)	0.61 (1.6)	0.18 (0.5)
R-squared	0.02	0.03	0.03	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02
Observations	5039	5039	5039	5039	5039	5039	5039	5039	5039	5039	5039	5039
Governing Council meetings	174	174	174	174	174	174	174	174	174	174	174	174

Note: The coefficients correspond to the marginal effect on inflation attention of a particular policy change by the ECB Governing Council relative to a meeting where policy remains unchanged. The models control for day of week and month and release dates of inflation data. p + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

Table 16: Difference-in-difference model: inflation attention add-on from asset purchases

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted, standardised)												
Days until/from meeting	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
-14	-0.04 (-0.1)	-0.38 (-1.1)	0.29 (1.2)	-0.05 (-0.2)	-0.35 (-1.0)	-0.16 (-0.9)	-0.01 (-0.0)	-0.20 (-0.6)	-0.14 (-0.5)	-0.48+ (-1.7)	0.10 (0.3)	0.46+ (1.7)
-13	0.17 (0.5)	-0.12 (-0.4)	0.16 (0.6)	0.07 (0.3)	-0.03 (-0.1)	-0.20 (-1.0)	-0.09 (-0.3)	-0.33 (-1.3)	-0.17 (-0.6)	-0.30 (-1.1)	-0.11 (-0.4)	0.27 (1.3)
-12	0.35* (2.3)	0.11 (0.3)	0.47* (2.5)	0.29 (1.2)	-0.19 (-0.7)	-0.19 (-0.7)	-0.25 (-0.8)	-0.40 (-1.5)	-0.10 (-0.6)	0.12 (0.4)	-0.24 (-1.1)	0.28 (1.0)
-11	0.39 (1.5)	0.12 (0.3)	0.34* (2.0)	0.28 (0.9)	0.11 (0.5)	-0.23 (-1.0)	-0.03 (-0.1)	-0.17 (-0.7)	-0.35 (-1.5)	0.12 (0.5)	-0.65** (-3.1)	0.16 (0.7)
-10	0.28 (1.2)	0.23 (0.8)	0.10 (0.8)	0.24 (1.0)	0.21 (0.7)	-0.34 (-1.5)	-0.01 (-0.0)	0.07 (0.3)	-0.43 (-1.6)	0.36 (1.6)	-0.96*** (-3.7)	-0.00 (-0.0)
-9	0.21 (0.9)	0.37 (1.3)	-0.03 (-0.2)	0.30* (2.0)	-0.10 (-0.4)	-0.08 (-0.5)	-0.10 (-0.4)	0.27 (1.2)	-0.18 (-0.7)	0.12 (0.5)	-0.70*** (-3.5)	-0.06 (-0.2)
-8	0.12 (0.7)	0.21 (1.1)	-0.06 (-0.6)	0.18 (0.9)	-0.20 (-0.8)	-0.02 (-0.1)	-0.07 (-0.2)	0.11 (0.3)	-0.02 (-0.1)	0.18 (0.7)	-0.08 (-0.3)	-0.14 (-0.6)
-7	0.25 (1.1)	0.32 (1.5)	-0.24* (-2.0)	0.35+ (1.8)	-0.27 (-1.2)	-0.19 (-0.7)	0.03 (0.1)	0.22 (0.9)	-0.11 (-0.5)	0.23 (1.0)	0.01 (0.0)	-0.46+ (-1.7)
-6	0.25 (1.0)	-0.06 (-0.3)	-0.15 (-0.6)	0.20 (1.1)	-0.27 (-1.5)	0.19 (0.9)	-0.12 (-0.6)	0.02 (0.1)	0.33+ (1.8)	0.33 (1.2)	-0.04 (-0.2)	-0.24 (-1.1)
-5	-0.14 (-0.7)	-0.13 (-0.4)	-0.27 (-1.2)	-0.18 (-0.9)	0.02 (0.1)	0.34 (1.4)	0.09 (0.4)	0.18 (0.8)	0.28 (1.3)	-0.19 (-0.8)	0.35 (1.2)	-0.25 (-1.3)
-4	-0.47+ (-1.9)	-0.07 (-0.2)	-0.30+ (-1.7)	-0.30 (-1.0)	-0.08 (-0.4)	0.35 (1.5)	0.18 (0.8)	0.23 (0.8)	0.43 (1.5)	-0.19 (-1.0)	0.63** (2.9)	-0.26 (-1.3)
-3	-0.52 (-1.6)	-0.04 (-0.1)	-0.26* (-2.0)	-0.27 (-1.1)	0.19 (0.6)	0.33 (1.5)	0.07 (0.3)	-0.09 (-0.4)	0.19 (0.7)	-0.05 (-0.3)	0.65+ (1.9)	-0.06 (-0.2)
-2	-0.33 (-1.5)	-0.22 (-0.7)	-0.05 (-0.4)	-0.38 (-1.6)	0.52+ (1.7)	0.15 (1.2)	-0.01 (-0.0)	0.03 (0.1)	0.08 (0.2)	-0.18 (-0.7)	0.47 (1.4)	0.05 (0.1)
-1	-0.38 (-1.4)	-0.32 (-1.2)	-0.10 (-0.5)	-0.75** (-3.1)	0.52* (2.2)	0.02 (0.1)	0.07 (0.2)	-0.04 (-0.1)	0.10 (0.3)	-0.16 (-0.5)	0.14 (0.4)	-0.04 (-0.1)
0	-0.46 (-1.5)	-0.49* (-2.3)	0.36* (2.1)	-0.72* (-2.3)	0.67* (2.1)	0.06 (0.2)	-0.38 (-0.8)	-0.25 (-0.8)	0.08 (0.2)	-0.21 (-0.8)	0.21 (0.9)	0.01 (0.0)
1	-0.33 (-1.0)	-0.03 (-0.1)	0.91*** (3.7)	-1.05*** (-3.8)	0.72** (3.2)	0.11 (0.3)	-0.40 (-0.8)	-0.19 (-0.5)	-0.02 (-0.0)	-0.10 (-0.2)	0.70* (2.4)	-0.08 (-0.2)
2	-0.19 (-0.6)	-0.19 (-0.7)	1.30*** (4.4)	-0.85* (-2.5)	0.43 (1.4)	-0.07 (-0.2)	-0.46 (-1.1)	-0.19 (-0.5)	-0.02 (-0.1)	0.01 (0.0)	0.62+ (1.7)	0.00 (0.0)
3	-0.29 (-0.8)	0.07 (0.2)	1.55*** (5.0)	-0.79** (-2.6)	0.19 (0.6)	0.09 (0.2)	-0.55+ (-1.8)	0.03 (0.1)	-0.34 (-0.8)	0.03 (0.1)	0.10 (0.2)	-0.20 (-0.5)
4	-0.09 (-0.3)	0.07 (0.2)	1.55*** (5.5)	-0.74* (-2.3)	0.12 (0.4)	0.05 (0.1)	-0.50 (-1.4)	-0.01 (-0.0)	-0.27 (-0.7)	-0.26 (-0.5)	0.01 (0.0)	0.07 (0.2)
5	-0.07 (-0.2)	0.03 (0.1)	1.58*** (5.9)	-0.61+ (-1.7)	0.03 (0.1)	0.30 (0.6)	-0.39 (-1.2)	-0.21 (-0.5)	-0.29 (-0.6)	-0.01 (-0.0)	0.15 (0.4)	0.16 (0.5)
6	0.14 (0.4)	-0.06 (-0.2)	1.43*** (4.1)	-0.55+ (-1.8)	0.41 (0.9)	0.38 (0.6)	-0.72** (-2.8)	-0.11 (-0.2)	-0.18 (-0.4)	0.06 (0.1)	0.09 (0.2)	0.39 (1.1)
7	-0.31 (-0.8)	0.07 (0.2)	1.11*** (4.3)	-0.97* (-2.5)	0.38 (0.9)	0.24 (0.4)	-0.59+ (-1.8)	-0.10 (-0.2)	-0.13 (-0.3)	0.21 (0.4)	0.32 (0.7)	0.45 (1.2)
8	-0.29 (-0.8)	0.04 (0.1)	0.62* (2.2)	-0.62 (-1.5)	0.11 (0.3)	0.13 (0.3)	-0.30 (-1.0)	0.45 (1.0)	-0.22 (-0.5)	0.02 (0.0)	0.18 (0.4)	0.43 (1.2)
9	-0.07 (-0.2)	0.18 (0.4)	0.40 (1.0)	-0.62+ (-1.7)	0.18 (0.4)	0.13 (0.2)	-0.00 (-0.0)	0.43 (1.2)	-0.09 (-0.2)	0.03 (0.1)	-0.16 (-0.4)	0.18 (0.5)
10	0.42 (0.9)	-0.36 (-0.8)	0.40 (1.0)	-0.75+ (-1.8)	0.33 (0.8)	-0.08 (-0.2)	-0.14 (-0.4)	-0.04 (-0.1)	0.02 (0.0)	-0.08 (-0.2)	0.33 (0.7)	0.37 (1.0)
11	0.13 (0.2)	0.16 (0.4)	0.53 (1.6)	-0.69 (-1.3)	0.13 (0.3)	-0.00 (-0.0)	-0.03 (-0.1)	0.15 (0.4)	-0.05 (-0.1)	-0.04 (-0.1)	0.27 (0.6)	0.17 (0.4)
12	-0.01 (-0.0)	0.56 (1.3)	0.12 (0.3)	-0.70 (-1.3)	0.01 (0.0)	-0.03 (-0.1)	-0.01 (-0.0)	0.19 (0.5)	-0.16 (-0.3)	-0.29 (-0.6)	0.16 (0.4)	0.28 (0.7)
13	0.02 (0.0)	0.40 (1.0)	0.07 (0.2)	-0.49 (-0.8)	-0.31 (-0.7)	-0.07 (-0.2)	0.29 (0.6)	0.53 (1.2)	-0.26 (-0.5)	-0.46 (-1.0)	0.01 (0.0)	0.31 (0.9)
14	0.56 (0.9)	0.23 (0.5)	0.02 (0.0)	-0.17 (-0.3)	-0.42 (-1.1)	-0.02 (-0.1)	0.41 (1.0)	0.81 (1.6)	-0.06 (-0.1)	-0.25 (-0.5)	-0.32 (-0.9)	0.68 (1.2)
R-squared	0.02	0.02	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.02	0.05	0.02
Observations	4865	4865	4865	4865	4865	4865	4865	4865	4865	4865	4865	4865
Governing Council meetings	168	168	168	168	168	168	168	168	168	168	168	168

Note: The coefficients correspond to the marginal effect on inflation attention of a particular policy change by the ECB Governing Council relative to a meeting where policy remains unchanged. The models control for day of week and month and release dates of inflation data. p + p<0.10, \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. Numbers in brackets are standard errors.

Table 17: Difference-in-difference model: inflation attention add-on from interest rate hikes

Dependent variable: Google search intensity "inflation" (in logs and seasonally adjusted, standardised)

Days until/from meeting	AT	BE	DE	ES	FI	FR	GR	IE	IT	LU	NL	PT
-14	0.18 (0.6)	0.22 (0.6)	0.06 (0.2)	0.17 (0.4)	0.15 (0.5)	0.52+ (1.9)	0.44 (1.2)	-0.20 (-0.7)	0.17 (0.8)	0.16 (0.4)	-0.17 (-0.5)	0.38 (1.2)
-13	0.25 (1.0)	0.10 (0.3)	0.21 (0.9)	0.03 (0.1)	0.07 (0.3)	0.44* (2.2)	0.37 (1.1)	-0.46+ (-1.8)	0.10 (0.4)	-0.09 (-0.2)	-0.12 (-0.4)	0.04 (0.2)
-12	0.45+ (1.7)	0.29 (1.0)	0.09 (0.4)	-0.04 (-0.2)	-0.17 (-0.6)	0.24 (1.1)	0.27 (0.8)	-0.42+ (-1.7)	-0.08 (-0.3)	-0.16 (-0.5)	-0.13 (-0.4)	-0.15 (-0.6)
-11	0.43+ (1.8)	0.28 (1.1)	0.21 (1.2)	0.01 (0.0)	-0.16 (-0.7)	0.20 (1.3)	0.49* (2.0)	-0.25 (-1.0)	0.20 (0.9)	-0.13 (-0.6)	-0.20 (-0.7)	-0.45* (-2.1)
-10	0.04 (0.2)	-0.11 (-0.5)	0.30 (1.6)	0.02 (0.1)	-0.01 (-0.0)	0.21 (1.0)	0.23 (1.0)	-0.13 (-0.6)	0.08 (0.4)	-0.12 (-0.5)	-0.20 (-0.9)	-0.65** (-2.6)
-9	-0.17 (-0.7)	-0.10 (-0.6)	0.22 (1.1)	0.01 (0.0)	0.01 (0.0)	0.07 (0.4)	0.24 (1.3)	0.06 (0.2)	0.14 (0.5)	-0.18 (-1.1)	-0.28 (-1.2)	-0.30 (-1.3)
-8	-0.11 (-0.5)	-0.15 (-0.9)	0.12 (0.8)	-0.02 (-0.1)	0.03 (0.2)	-0.10 (-0.4)	0.23 (1.2)	0.19 (0.9)	0.16 (0.7)	-0.22 (-1.0)	0.19 (0.9)	-0.19 (-0.9)
-7	-0.17 (-0.7)	-0.08 (-0.4)	0.12 (0.8)	-0.00 (-0.0)	0.12 (0.7)	0.04 (0.2)	0.14 (0.7)	0.34* (2.2)	-0.01 (-0.1)	-0.03 (-0.2)	0.21 (1.1)	-0.10 (-0.6)
-6	-0.09 (-0.6)	0.11 (0.4)	-0.12 (-0.9)	0.06 (0.3)	-0.05 (-0.3)	-0.22 (-1.3)	-0.01 (-0.0)	0.47* (2.0)	-0.00 (-0.0)	0.29 (1.1)	0.24 (1.2)	0.18 (0.9)
-5	-0.18 (-0.7)	-0.27 (-1.4)	-0.20 (-1.2)	0.15 (0.5)	0.05 (0.2)	-0.15 (-0.7)	-0.24 (-1.0)	0.32 (1.3)	-0.01 (-0.0)	0.32 (1.3)	0.22 (1.0)	0.34+ (1.7)
-4	-0.00 (-0.0)	-0.23 (-1.1)	-0.21 (-1.2)	0.09 (0.3)	-0.01 (-0.0)	-0.03 (-0.1)	-0.64** (-3.1)	0.35 (1.3)	-0.03 (-0.1)	-0.05 (-0.2)	0.39 (1.4)	0.31+ (1.7)
-3	-0.13 (-0.5)	-0.05 (-0.2)	-0.36+ (-1.8)	-0.02 (-0.1)	-0.01 (-0.1)	-0.24 (-1.0)	-0.52+ (-1.9)	0.03 (0.1)	-0.12 (-0.4)	-0.00 (-0.0)	0.29 (1.2)	0.28 (1.0)
-2	-0.12 (-0.5)	0.08 (0.3)	-0.30 (-1.2)	-0.18 (-0.7)	0.12 (0.5)	-0.43 (-1.6)	-0.50+ (-1.7)	-0.13 (-0.4)	-0.20 (-0.6)	0.08 (0.3)	0.14 (0.7)	0.19 (0.7)
-1	-0.39+ (-1.6)	-0.03 (-0.1)	-0.13 (-0.4)	-0.28 (-1.1)	-0.09 (-0.3)	-0.42 (-1.3)	-0.48+ (-1.7)	-0.06 (-0.2)	-0.33 (-1.0)	0.10 (0.3)	-0.37+ (-1.9)	0.20 (0.6)
0	-0.55+ (-1.7)	-0.26 (-0.9)	-0.02 (-0.1)	-0.18 (-0.6)	-0.21 (-0.6)	-0.41 (-1.2)	-0.32 (-1.0)	0.04 (0.1)	-0.12 (-0.3)	-0.23 (-0.9)	-0.69** (-3.2)	-0.00 (-0.0)
1	-0.42 (-1.1)	-0.35 (-1.1)	0.10 (0.3)	-0.29 (-1.1)	-0.22 (-0.6)	-0.31 (-0.8)	-0.07 (-0.2)	-0.12 (-0.3)	0.00 (0.0)	-0.53+ (-1.7)	-0.96** (-3.2)	-0.28 (-1.0)
2	-0.52 (-1.6)	-0.27 (-0.8)	0.23 (0.6)	-0.35 (-1.1)	-0.39 (-0.9)	-0.14 (-0.4)	-0.03 (-0.1)	-0.15 (-0.4)	0.32 (0.9)	-0.48 (-1.3)	-0.79** (-2.7)	-0.32 (-1.1)
3	-0.61+ (-1.9)	0.00 (0.0)	0.33 (0.8)	-0.14 (-0.3)	0.05 (0.1)	0.01 (0.0)	0.03 (0.1)	-0.15 (-0.4)	-0.07 (-0.2)	-0.16 (-0.4)	-1.05*** (-3.4)	-0.14 (-0.4)
4	-0.28 (-0.9)	0.01 (0.0)	0.28 (0.7)	0.15 (0.4)	-0.15 (-0.3)	-0.01 (-0.0)	-0.09 (-0.3)	-0.14 (-0.3)	-0.02 (-0.1)	0.04 (0.1)	-1.09** (-3.0)	-0.27 (-0.7)
5	-0.24 (-0.6)	-0.26 (-0.7)	0.42 (1.0)	-0.03 (-0.1)	-0.21 (-0.5)	0.20 (0.5)	-0.14 (-0.4)	-0.04 (-0.1)	-0.01 (-0.0)	-0.08 (-0.2)	-0.85* (-2.5)	-0.60+ (-1.7)
6	0.15 (0.3)	-0.15 (-0.4)	0.18 (0.4)	-0.10 (-0.2)	0.14 (0.3)	0.09 (0.2)	0.09 (-0.7)	-0.25 (-0.5)	-0.20 (-0.2)	0.09 (0.2)	-0.63* (-2.0)	-0.53 (-1.6)
7	-0.04 (-0.1)	-0.10 (-0.3)	-0.02 (-0.1)	-0.25 (-0.6)	0.17 (0.5)	0.15 (0.4)	-0.28 (-0.9)	-0.51 (-1.4)	-0.07 (-0.2)	0.12 (0.3)	-0.34 (-1.0)	-0.46 (-1.4)
8	-0.06 (-0.1)	-0.02 (-0.1)	-0.08 (-0.2)	-0.03 (-0.1)	0.35 (1.0)	0.35 (1.0)	-0.44 (-1.5)	-0.27 (-0.8)	-0.18 (-0.5)	0.16 (0.4)	-0.32 (-0.9)	-0.09 (-0.2)
9	-0.18 (-0.5)	-0.10 (-0.3)	-0.33 (-0.8)	-0.09 (-0.2)	0.40 (1.3)	0.02 (0.1)	-0.31 (-1.2)	-0.23 (-0.7)	-0.28 (-1.0)	-0.14 (-0.4)	-0.44 (-1.3)	0.11 (0.3)
10	-0.20 (-0.5)	-0.39 (-1.1)	-0.32 (-0.9)	-0.16 (-0.5)	0.08 (0.2)	-0.05 (-0.2)	-0.38 (-1.5)	-0.14 (-0.5)	-0.23 (-0.9)	-0.59* (-2.1)	-0.53+ (-1.8)	0.13 (0.4)
11	0.04 (0.1)	-0.52+ (-1.8)	-0.41 (-1.1)	-0.23 (-0.7)	0.19 (0.7)	-0.20 (-0.6)	-0.47+ (-1.9)	-0.01 (-0.0)	-0.17 (-0.5)	-0.50+ (-1.9)	-0.25 (-0.9)	0.21 (0.5)
12	-0.04 (-0.1)	-0.30 (-0.9)	-0.82* (-2.3)	-0.10 (-0.3)	0.43 (1.3)	-0.33 (-1.0)	-0.52* (-2.1)	-0.25 (-1.0)	-0.08 (-0.2)	-0.43 (-1.6)	-0.22 (-0.6)	0.38 (1.2)
13	0.05 (0.1)	-0.22 (-0.7)	-0.89* (-2.4)	-0.05 (-0.2)	0.30 (0.8)	-0.20 (-0.5)	-0.38 (-1.3)	-0.19 (-0.7)	0.10 (0.2)	-0.49+ (-1.7)	-0.24 (-0.6)	0.17 (0.4)
14	0.14 (0.4)	-0.23 (-0.6)	-0.80* (-2.1)	-0.05 (-0.2)	0.30 (0.8)	-0.24 (-0.6)	-0.70** (-3.0)	-0.08 (-0.2)	-0.04 (-0.1)	-0.44 (-1.4)	-0.22 (-0.5)	0.22 (0.8)
R-squared	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.06	0.02
Observations	4952	4952	4952	4952	4952	4952	4952	4952	4952	4952	4952	4952
Governing Council meetings	171	171	171	171	171	171	171	171	171	171	171	171

Note: The coefficients correspond to the marginal effect on inflation attention of a particular policy change by the ECB Governing Council relative to a meeting where policy remains unchanged. The models control for day of week and month and release dates of inflation data.  $p + p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ . Numbers in brackets are standard errors.

## 7. ANNEX II: CONSTRUCTION OF TIME SERIES OF SEARCH INTENSITY

Data on internet search intensity through Google Search can be obtained from the Google Trends website.<sup>25</sup> Google Trends returns time series on the search intensity for a given query in a selected geographic area (country, region and some cities) and time period, starting in 2004 (data can then be downloaded as a csv file). The query can be either a search term or a topic. A topic has a number of advantages, as it notably takes account of spelling mistakes and is automatically translated into national languages, which is particularly valuable in a cross-country comparison.

Given the structure and format under which the raw data are made available, they are not readily usable for the purpose of this analysis and a few intermediate steps are necessary to build the time series used, notably to deal with sampling and rounding issues.<sup>26</sup> This process is documented below.

Google Trends compiles an index of search intensity. This is done in two steps: in the first step, Google Trends uses the search volume,  $S^q$ , for a given query ( $q$ ) and divides it by the overall search volume,  $S^Q$ , obtaining the relative search intensity,  $SR^q$ . In the second step, the compiled series is rescaled by dividing the entire series by the highest search intensity over the sample ( $T$ ) and multiplying it by 100. The resulting search index,  $s^q$ , corresponds to the series which Google makes available to the user. By construction, it always peaks at 100 and has a lower bound of 0. An index value of 50 thus means that the search intensity was half of that observed at the peak. Neither the absolute nor the relative search volume are hence made available, i.e. a drop in the index can be due either to less searches for the keyword or more overall queries.

$$(1) \quad SR_{t,i}^q = \frac{S_{t,i}^q}{S_{t,i}^Q}$$

$$(2) \quad s_{t,i}^q = \frac{SR_{t,i}^q}{\max_{t \in T} SR_{t,i}^q} \times 100$$

**Sampling:** The data on search intensity are based on samples of individual google searches (no additional direct information is provided by google on sample size etc.). This implies that series downloaded on different days will differ, introducing sampling errors and noise, which may have non-negligible effects. As shown in Eichenauer et al. (2022), the sampling variation of returned series is particularly high for small countries (or sub-national regions). This potentially complicates the replication of results by other researchers. A simple method to reduce sampling error – adopted by many researchers (e.g. D’Amuri and Marcucci, 2017) and also this paper - is to average the draws extracted at different dates (Stephens-Davidowitz and Varian, 2015). That said improvements made to Google Trends over time mean that this problem should be concentrated in and limited to the early years (Varian and Choi, 2009). Treating the initial years as a potential “burn-in period” and removing them, may overcome this problem. Of course, the reduction in noise has to be traded off against a

---

<sup>25</sup> <https://trends.google.com>.

<sup>26</sup> For discussions on the quality limitations of Google Trends data, see Eichenauer et al. (2021) and Cebrián and Domenech (2022).

shorter sample. Sampling error is also likely to be higher when search intensity is low, which may affect smaller countries disproportionately.

To address concerns regarding sampling errors and data reliability, the search index used for the analysis is based on an average of search indices retrieved on four different dates (31/08/2022; 7/10/2022; 10/10/2022; 19/10/2022). If there is a high degree of discrepancy across series towards the beginning of the sample, the first months are considered uninformative and discarded.

**Rounding to integers:** The search intensity data made available by Google Trends are rounded to the nearest integer. This rounding essentially compresses some variation (and precision) in the series. Given that search data are always returned in a 0-100 window, this is particularly consequential when there are outliers in a sample. In the context of this analysis, this is an issue both because there seem to be measurement errors in the early years of the sample that give rise to outliers, and because searches for “inflation” have actually become very popular in 2021, hence potentially “rounding away” the variation at times when it was less popular.<sup>27</sup>

**Frequency:** The frequency of the raw data provided by Google Trends is a function of the sample size requested by the user: for samples up to 9 months it is daily, for samples up to 5 years it is weekly and monthly for samples that exceed 5 years. It is hence impossible to directly download a series with daily observations covering the entire sample.

A large part of the analysis in this paper is performed with monthly data. While monthly series could be downloaded directly, they would still suffer from the fact that the longer the sample, the more variation is potentially “rounded away”. The way to overcome this is to “slice” the sample into overlapping sub-samples, and to chain them subsequently. This is done by rescaling one of the series by the ratio of the averages of two series in their overlapping segment. As the two series are not identical in the overlapping segment, due to the integer rounding, the less compressed series is kept, as it contains more variation. The concatenated series thus obtained is then normalised such that its maximum is 100, similar to what would be obtained directly from Google Trends, but now allowing for decimals and higher precision. For this paper, the full sample is split into three subsamples: 2004-2010, 2010-2019, 2015-2022, thus limiting the compressing effect of high values at the extremities of the sample.

A similar procedure is used for the construction of the series with daily frequency used in the event study. Given the constraints described above, such a series cannot be directly downloaded. The full sample is again split in overlapping sub-samples (of 7 months), i.e. returning daily data, where the last (first) month overlaps with the first month of the next (last month of the previous) sub-sample, allowing to chain them. The final series is then normalised again to obtain numbers up to 100 (i.e. 100 will be the day with highest search intensity for the keyword over the sample). The daily series can then be assessed by itself or converted to lower frequency.

---

<sup>27</sup> As an example, a series may contain the two consecutive observations, say 46 and 54, implying that the search-intensity corresponds to 46% and 54%, respectively, of the highest search-intensity in that sample (100). Assuming that the sample is extended to include a new maximum (100, by definition) that is 10 higher than the previous one, the former maximum now has the value 10. The two consecutive observations, which should correspond to 4.6% and 5.4%, respectively, are now returned as 5 and 5. In this example, the 17% increase is entirely rounded away.

**Cross-country comparison:** The procedure above yields country-specific series, which all have a peak at 100. While this allows to assess dynamics, it does not allow to compare the search intensity across countries. However, with Google Trends it is possible to retrieve up to 5 queries that may differ by location and which are returned on a common scale, whereby the most popular query is again set to 100. By choosing an anchor country that is combined with up to 4 other countries, it is then possible to compare countries in terms of their search intensity for the chosen query. This relative search intensity is employed to rescale the country specific series.<sup>28</sup>

**Search topic:** Finally, this project only considers the queries around the topic “inflation”. A correction is however made for France, where the government announced a transfer to a subset of households in response to high costs of living, labelled “prime inflation” or “indemnité inflation”.<sup>29</sup> This announcement at the end of 2021 has triggered a strong search interest for these terms (virtually from zero), which are nested within the search topic “inflation”. While this has put the term inflation into the spotlight, these searches however distort the search intensity series, as there are more likely to be linked to requests by eligible households rather than to a genuine interest in inflation as concept. Consequently, a joint search for “inflation” and the combination “prime inflation” and “indemnité inflation” is made. The corrected inflation series is obtained by deducting the latter.

---

<sup>28</sup> Note that rounding is also potentially a problem when retrieving multiple queries in a single request, for example to do cross-country comparisons. In the case of “inflation”, this seems to be less of an issue, however.

<sup>29</sup> <https://www.economie.gouv.fr/cedef/indemnite-inflation>.

## 8. ANNEX III: ECB MONETARY POLICY EVENTS

The sample period - January 2004 to October 2022 - has been challenging and quite eventful for central banks around the world. It has also been a period of numerous innovations to their toolkits and strategy reviews. While conventional (standard) policy actions, i.e. interest rate changes, remained the primary instrument to set and adjust the monetary policy stance, unconventional (non-standard) instruments bourgeoned in the aftermath of the global financial crisis, as policy rates hit the effective zero lower bound (ZLB). These unconventional policies notably took the form of “quantitative easing” (QE), i.e. an expansion of the central bank balance sheet through asset purchases with the aim of directly affecting the yield curve. Other novel instruments included forward guidance, i.e. communication on future policy intentions, while the modalities of the monetary policy implementation were often enhanced, e.g. through longer maturities of refinancing operations.

In addition, for the euro area, the ECB took a number of decisions primarily aiming to ensure the effective transmission of monetary policy or to limit fragmentation risk within the euro area. These measures were not meant to alter the monetary policy stance and were not designed to overcome ZLB constraints. However, similar to QE measures, they involved actual (e.g. Securities Markets Programme) or potential (e.g. Outright Monetary Transactions) purchases of assets. With respect to QE, they also differed in terms of activation conditions and geographical portfolios.

This analysis focuses on conventional instruments (rate changes) and asset purchases. Information on euro area monetary policy events and decisions is retrieved from the ECB website.<sup>30</sup> Between 2004 and October 2022, there have been 197 regular (scheduled) Governing Council monetary policy meetings.<sup>31</sup> Over that period the ECB Governing Council changed the interest rate 30 times, with 14 hikes and 16 cuts. The analysis further considers 10 announcements pertaining to asset purchases. Some of the latter decisions have been taken outside the scheduled Governing Council meetings, while one was made in a speech.

### Monetary Policy Events included

Interest Rate changes						Asset purchases
Increases			Cuts			
	Policy rate	Deposit Facility		Policy rate	Deposit Facility	
01 December 2005	2,25 (0,25)	1,25 (0,25)	08 October 2008	3,75 (-0,50)		07 May 2009 Purchase programme for covered bonds (CBPP1)
02 March 2006	2,50 (0,25)	1,50 (0,25)	06 November 2008	3,25 (-0,50)	2,75 (-0,50)	10 May 2010 Securities Markets Programme (SMP1)
08 June 2006	2,75 (0,25)	1,75 (0,25)	04 December 2008	2,50 (-0,75)	2,00 (-0,75)	07 August 2011 Securities Markets Programme (SMP2)
03 August 2006	3,00 (0,25)	2,00 (0,25)	15 January 2009	2,00 (-0,50)	1,00 (-1,00)	06 October 2011 Covered bond purchase programme (CBPP2)
05 October 2006	3,25 (0,25)	2,25 (0,25)	05 March 2009	1,50 (-0,50)	0,50 (-0,50)	26 July 2012 "Whatever it takes"-speech (WIT)
07 December 2006	3,50 (0,25)	2,50 (0,25)	02 April 2009	1,25 (-0,25)	0,25 (-0,25)	02 August 2012 Outright Monetary Transactions (OMT)
08 March 2007	3,75 (0,25)	2,75 (0,25)	07 May 2009	1,00 (-0,25)		04 September 2014 Covered bond purchase programme (CBPP3)
06 June 2007	4,00 (0,25)	3,00 (0,25)	03 November 2011	1,00 (-0,25)	0,25 (-0,25)	ABS purchase programme (ABSPP)
03 July 2008	4,25 (0,25)	3,25 (0,25)	08 December 2011	0,75 (-0,25)	0,00 (-0,25)	22 January 2015 Expanded asset purchase programme (APP)
07 April 2011	1,25 (0,25)	0,50 (0,25)	05 July 2012	0,50 (-0,25)		10 March 2016 Corporate sector purchase programme (CSPP)
07 July 2011	1,50 (0,25)	0,75 (0,25)	02 May 2013	0,25 (-0,25)		18 March 2020 Pandemic Emergency Purchase Programme (PEPP)
21 July 2022	0,50 (0,50)	0,00 (0,50)	05 June 2014	0,15 (-0,10)	-0,10 (-0,10)	21 July 2022 Transmission Protection Instrument (TPI)
14 September 2022	1,25 (0,75)	0,75 (0,75)	04 September 2014	0,05 (-0,10)	-0,20 (-0,10)	
27 October 2022	2,00 (0,75)	1,50 (0,75)	03 December 2015		-0,30 (-0,10)	
			10 March 2016	0,00 (-0,05)	-0,40 (-0,10)	
			12 September 2019		-0,50 (-0,10)	

<sup>30</sup> <https://www.ecb.europa.eu/press/govcdec/mopo/html/index.en.html>.

<sup>31</sup> There are other Governing Council meetings which the deliberate on other issues, such as payment systems, financial stability, statistics, banknotes, legal affairs, and banking supervision. Since 2015, Governing Council monetary policy meetings take place every 6 weeks. Until then they took place once per month.



## **EUROPEAN ECONOMY DISCUSSION PAPERS**

European Economy Discussion Papers can be accessed and downloaded free of charge from the following address: [Publications \(europa.eu\)](#).

Titles published before July 2015 under the Economic Papers series can be accessed and downloaded free of charge from:

[http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/index\\_en.htm](http://ec.europa.eu/economy_finance/publications/economic_paper/index_en.htm).



## **GETTING IN TOUCH WITH THE EU**

### **In person**

All over the European Union there are hundreds of Europe Direct Information Centres. You can find the address of the centre nearest you at: <http://europa.eu/contact>.

### **On the phone or by e-mail**

Europe Direct is a service that answers your questions about the European Union. You can contact this service:

- by freephone: 00 800 6 7 8 9 10 11 (certain operators may charge for these calls),
- at the following standard number: +32 22999696 or
- by electronic mail via: <http://europa.eu/contact>.

## **FINDING INFORMATION ABOUT THE EU**

### **Online**

Information about the European Union in all the official languages of the EU is available on the Europa website at: <http://europa.eu>.

### **EU Publications**

You can download or order free and priced EU publications from EU Bookshop at: <http://publications.europa.eu/bookshop>. Multiple copies of free publications may be obtained by contacting Europe Direct or your local information centre (see <http://europa.eu/contact>).

### **EU law and related documents**

For access to legal information from the EU, including all EU law since 1951 in all the official language versions, go to EUR-Lex at: <http://eur-lex.europa.eu>.

### **Open data from the EU**

The EU Open Data Portal (<http://data.europa.eu/euodp/en/data>) provides access to datasets from the EU. Data can be downloaded and reused for free, both for commercial and non-commercial purposes.

