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An increasing sense of urgency: The Inflation Perception Indicator (IPI) to 30 June 2022 - a research note

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**DORTMUND CENTER
FOR DATA-BASED
MEDIA ANALYSIS**

DoCMA Working Paper #12

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An Increasing Sense of Urgency

The Inflation Perception Indicator (IPI) to 30 June 2022 – a Research Note

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1 Of Wise Men and Laggards – Introduction

In the first half of 2022, a remarkable shift has happened in the perception of inflation in Germany. While in the initial phase of the current inflation cycle price dynamics were largely seen as modest and manageable, more recently inflation expectations have shifted upwards. In January 2022, the median private household expected consumer prices to rise by 4,5 per cent over the coming twelve months and by four per cent over the next five years. By June, short- and longer-term inflation expectations had jumped to eight and five per cent respectively, according to a survey conducted by Deutsche Bundesbank¹.

However, following a more or less constant upswing between July 2021 and March 2022, longer-term expectations have moved only little in recent months, while short-term expectations have still been on the rise. This discrepancy can be explained in two ways:

- a) a stabilization of inflation expectations, at higher levels, has occurred, as people realize that several factors – e.g., monetary tightening by central banks, a business cycle downturn, the low likelihood of energy prices jumping further at recent magnitudes – are likely to dampen price dynamics over the medium term.
- b) the stabilization of expectations is a temporary phenomenon due to the familiar effect of households' patchy information behavior, i.e., they don't pay attention to economic news all the time, which leads to "sticky" expectations that lag behind actual data (e.g. Carroll, 2003; Coibion et al., 2018a; Coibion et al., 2018b).

The first argument points to a relative relaxation of inflation perception and would be dimly good news for policy makers. The second one implies that additional hikes of expectations may occur, once people will have updated their inflation assessments, potentially aggravating price pressures and second-round effects, and hence complicating the job of policy makers further.

Which argument holds? How people are actually forming inflation expectations, has been the subject of a host research. It's plausible that individuals pursue a two-way strategy: near-term expectations are strongly influenced by their own recent personal experiences, e.g., in the supermarket or at the gas station, while longer-term expectations should be based on additional information concerning the underlying structure of the economy. The latter proposition is the central argument of the "rational expectations hypothesis" (Muth, 1961), that assumes that there is a "true model" representing the workings of the economy with sufficient accuracy. It is obvious that professional forecasters resort to consensus models, even though they can be grossly misleading in times of radical uncertainty (Kay and King, 2020). To be sure, private households are neither aware of the existence of such a model, let alone able to appreciate its implications. Instead, for gauging future outcomes, they rely on economic narratives: complexity-reduced representations of the economy that establish causes-consequences relationships (Roos and Reccius, 2021; Müller et al., 2022b, pp. 4-8). Narratives are sense-making stories people mainly get from the media (Andre et al., 2022). By watching TV news, reading newspapers or websites,

¹ See <https://www.bundesbank.de/en/bundesbank/research/survey-on-consumer-expectations/inflation-expectations-848334>

citizens inform themselves about what’s going on in the society they live in and in the world beyond. Thereby, they not only pick up some numeric values of inflation rates and professional forecasters predictions, but also narratives about the particular causes and consequences of inflation. “Media sources tend to play the biggest role in shaping the narrative of the public debate on inflation” (Fiore et al., 2022, p. 5).

By pursuing narrative analyses of media content, researchers are able to shed light on the beliefs behind the expectations voiced in surveys. Narratives provide context to raw numbers and may thus enable us to find answers to a question of imminent policy importance at the current juncture: whether longer-term inflation expectations have already stabilized – or whether we are only witnessing a lagged adjustment, that is bound to be followed by further increases in expectations.

To map the narrative media landscape, we’ve constructed the Inflation Perception Indicator, IPI (see Müller et al. (2022b) for details). It is based on a corpus of roughly three million articles published by German broadsheet newspapers. Making use of a dynamic topic modeling approach, RollingLDA (Rieger et al., 2021), the IPI enables us to isolate reporting patterns with regard to inflation. In Müller et al. (2022b), we presented the model and the initial results up to February 28 2022, Müller et al. (2022a) provided an update including data until the end of April. This short research note highlights developments up to June 30. The next section presents our most recent findings. Section 3 draws some conclusions.

2 Towards a high-inflation narrative? – Results

The relative importance of inflation as a news item has increased dramatically. By June 2022, 16 per cent of all articles published in our sample of newspapers were dealing with inflation in one way or another. Compared with the past two decades, the hike in reporting seems disproportionate (Figure 1). Until the beginning of 2022, inflation coverage was broadly in line with actual CPI developments, although in the 2010s it had stayed at elevated levels, even as inflation rates were low and falling, a development, that can be attributed to the relentless criticism of the ECB’s bond buying program Müller et al., 2022b, p. 15. This time around, however, the intensity of coverage exceeds levels seen in the past by several magnitudes, pointing to a shift in the broader inflation regime, that prompts citizens and the media alike to pay close attention.

It might seem straightforward to criticize the media for spreading panic. But that’s beside the point. Issue attention is the result of editors choosing which items to cover and how to go about it. But they are not autonomous in setting priorities, for they need to be considerate of the particular economic restrictions and incentives they face. That’s why their choices are strongly influenced by users’ revealed preferences, measured by page impression, unique users or other media’s editorial choices. Since editors strive to keep up revenues, circulation, and subscriptions, they need to be sensitive to users’ current interests. In effect, newspaper output is the result of a complex interplay between the various demand and supply factors of the news market. Therefore, the intensity of inflation coverage mirrors what citizens are interested in, or worried about. Yet, this

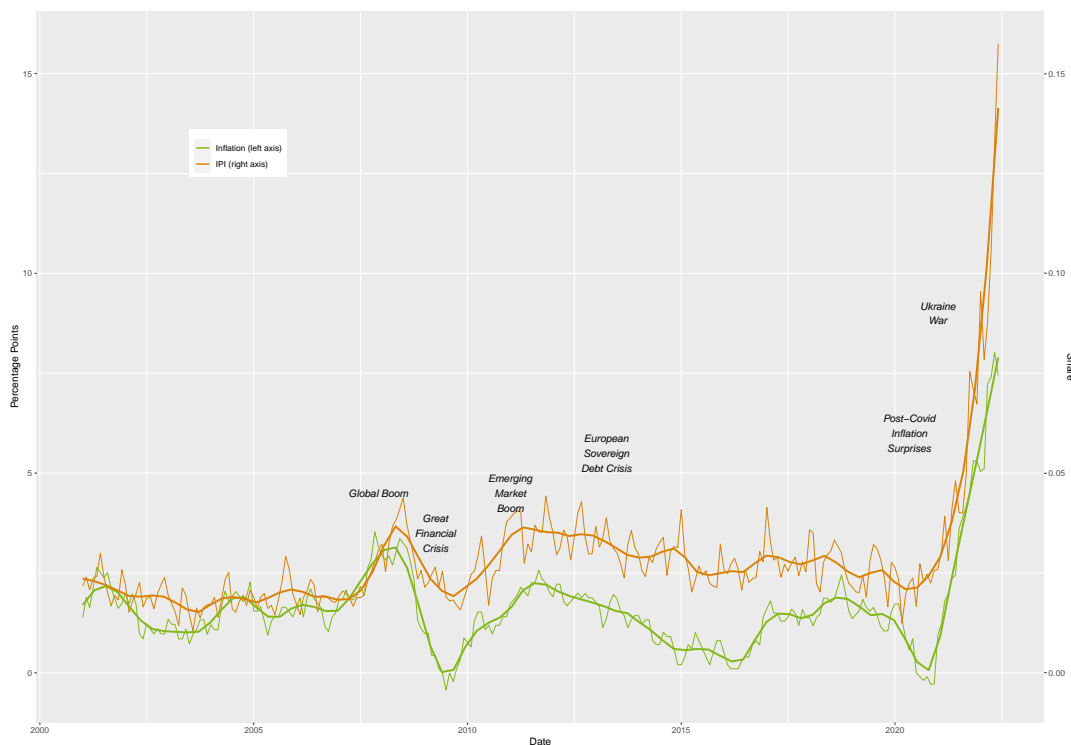


Figure 1: Inflation (CPI for Germany, y-o-y percentage change) and overall IPI (rhs) (share of analysis corpus relative to entire corpus). Source: authors' calculations, Deutsche Bundesbank

tells us little about how they think about it. To get closer to the actual meaning of the observed reporting patterns, we conduct the above-mentioned topic analysis. In our model, four topics are clearly attributed to causes of inflation, while another four can be interpreted as focusing on its consequences.

Inflation expectations are driven by the causes perceived as relevant to price developments. In our model, four thematic clusters are related to the origins of inflation, concerning raw material and energy prices, monetary and fiscal policies including collective bargaining respectively.

Figure 2 shows that recent rises in inflation attention can be attributed to all four factors. Most importantly, though, raw material prices have declined a bit in relative relevance, compared to April figures. This is not the inflation shock of Vladimir Putin, the invader of Ukraine, anymore, but a more broad-based phenomenon. Fiscal and monetary policy are the most important topics mentioned in this context, pointing to mounting political pressure on the European Central Bank (ECB) and national governments. Redistribution issues are also on the rise, pointing to second-round effects in the making and the possibility of setting a hard-to-stop price-wage spiral in motion.

Turning to the consequences of inflation, again four issues can be subsumed under this rubrum. Financial markets and private investment issues provide readers with tips how to safeguard their wealth in turbulent times. The “News” topic that earlier on contained mere reporting on statistical releases, is now ripe with other aspects, such as the plight of poorer households, consequences for renters and real estate markets in general, or the

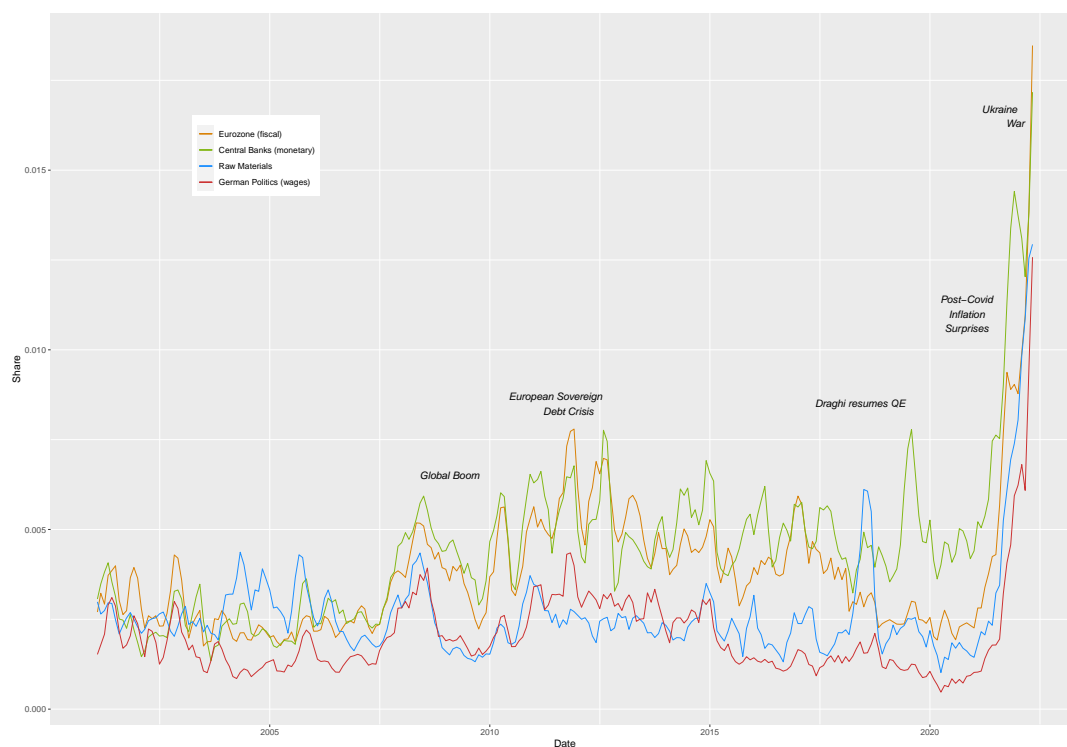


Figure 2: “Causal” IPI topics (three-month moving averages). Source: authors’ calculations

financial squeeze that university students face. Interestingly, after laying dormant for two decades, the topic “Companies” is now as prominent as the “Raw Materials” topics. “Companies” focusses on the detrimental effects of higher input prices on firms, that are unable to pass them on to customers (Figure 3).

Recently all four causal topics have shot up simultaneously, underlining the breadth and force of price dynamics. In the spring, as the fall-out of the Ukraine war became ever more obvious, raw material prices have come to the fore as inflation drivers, slightly easing the pressure on the ECB to act decisively. Redistribution policies and wage settlements – the second-round effects that may set off a wage-price spiral – have also picked up, but, so far, the debate about compensating citizens for lost real purchasing power remains somewhat subdued.

Moving closer to the concept of the narrative, we resort to Entman’s (1993) seminal definition of a media frame, which consists of four elements: a) a problem definition, b) a problem diagnosis, c) a moral judgement, and d) possible remedies. Müller et al. 2018; 2022b, p. 14) augment this approach by adding two more elements – e) one or several protagonists and f) events, that are chronologically integrated and constitute causal relationships – to arrive at the more dynamic definition of a media narrative, that may change over time.

To extract the associated information, we dig deeper into the content for a qualitative analysis. For this, we consider the relevant topics’ top articles, i.e., the ones with the best statistical fit.

June Headlines of the top 10 articles of the topic “Central banks” read:

Economist advises ECB to raise rates firmly

Again, an inflation record

ECB bound to raise policy rate

Experts predict forceful ECB rate hike

ECB substantiates help for Southern Europe

Monetary policy changes track

The return of the Euro Crisis

The ECB’s dilemma

Interest rate turnaround in the Euro area

BIS chief economist Mario Borio: “A situation without precedent”²

All of the articles stress the importance of acting quickly and decisively to reign in inflation, while some also focus on the ECB’s difficulty to balance price stability and fiscal stability in highly-indebted Southern European countries, leaving the Frankfurt-based central bank in a particularly difficult spot.

For the purpose of comparison, it is interesting to consult January’s top articles: back then the stories dealt with warnings of Isabel Schnabel, member of the ECB’s executive board, concerning energy prices driving inflation, the Fed’s first moves to tighten monetary policy, and the first interviews of Deutsche Bundesbank’s new president, Joachim Nagel. The tone was rather neutral and matter-of-factly, lacking the sense of urgency that would prevail half a year later.

The “Eurozone” topic’s top articles contain stories about the fiscal stance, in Germany and beyond, as well as initiatives to ease social tensions, and the associated controversies in the federal government. Particular attention is devoted to the German chancellor’s “Masterplan to fight inflation, i.e., the round table with employers and unions dubbed “concerted action”. In January, the top 10 articles were not as focused on how to fight inflation. Rising costs of living was more of a side aspect back then. Stories ranged from adjusting the progressive German income tax system to rising price levels, French demands for Europe to become more energy-independent, and the project of Germany’s economy minister to augment the government’s concept of welfare by sustainability aspects. Again, the sense of urgency, that is currently detectable in inflation reporting, was largely missing at the beginning of 2022.

² Published in: Handelsblatt 08.06.2022, Handelsblatt 01.06.2022, Süddeutsche Zeitung 10.6.2022, Handelsblatt 02.06.2022, Handelsblatt 29.06.2022, Handelsblatt 08.06.2022, Süddeutsche Zeitung 17.06.2022, Die Welt 09.06.2022, Handelsblatt 10.06.2022, Handelsblatt 27.06.2022

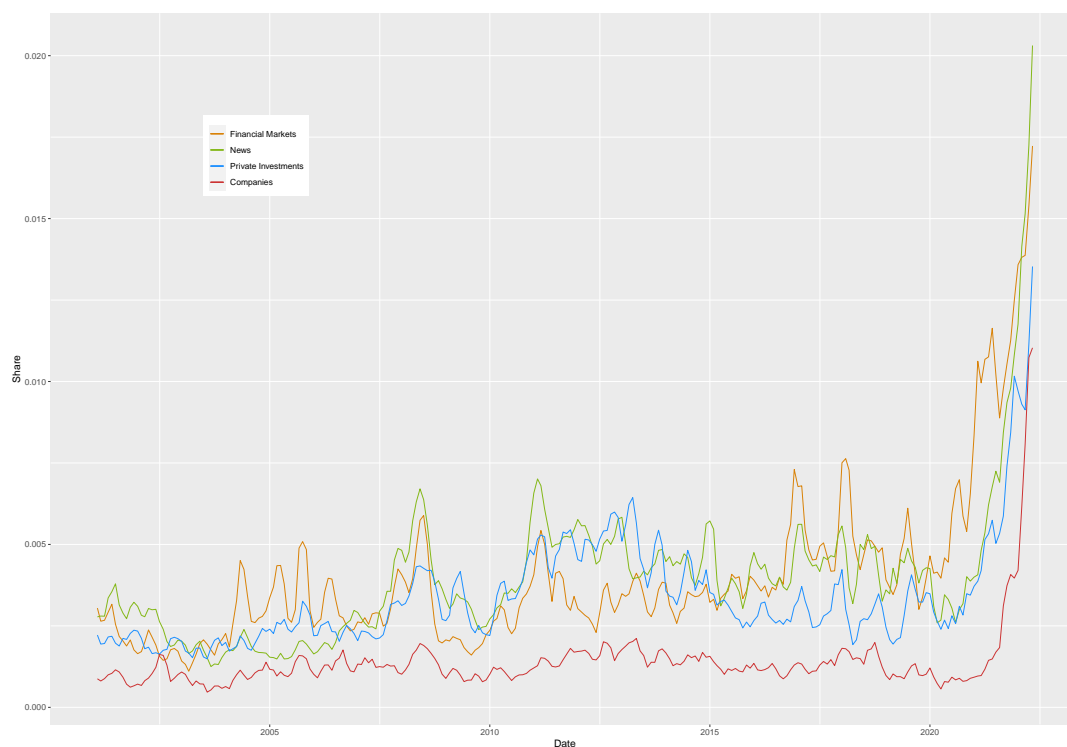


Figure 3: “Consequences” IPI topics (three-month moving averages). Source: authors’ calculations

With respect to redistribution policies (“German politics”), the top article in January were the surprisingly modest economic policy proposals of the new leader of the conservative Christian democrats (CDU), published by *Süddeutsche Zeitung* on 24 January. In contrast, there’s one dominating issue among the topic’s top articles in June: strikes.

At the same time, the topic “Companies” focusses on the difficulties of some firms to deal with higher input prices, while consumers are expected to cut back on certain expenses, such as food deliveries. It’s too early to tell, whether this hints at restraining costs or at raising prices for remaining customers.

Analyzing the news content through the lens of the economic narrative, we summarize our findings as follows:

Germany is cursed with run-away inflation (problem definition), that’s hurting everybody, but particularly the poorer parts of society, and even some corporations (problem diagnosis). This is destabilizing, unjust and unfair (moral judgement). It could be alleviated (possible remedies) by tightening monetary policy (though that may cause financial stress in highly indebted countries), handing out government benefits to the poor and substantial wage increases (though this may kick off a price-wage spiral, rendering inflation even more severe). The problem would have been easier to handle, had the ECB (protagonist) acted early on and if asset purchases in the 2010s had not happened (events).

Hence, this account of media content as structured by the IPI model points to a longer bout of inflation. Since media narratives are thought to be important drivers of peo-

ple's expectations, the current inflation narrative is bound to be self-stabilizing. Further increases of longer-term inflation expectations seem likely, reinforcing price dynamics.

3 Communication-cum-action strategies – Conclusion

In this research note, we updated the Inflation Perception Indicator (IPI) with data up to June 30 2022. The major results can be summarized as follows:

1. Inflation is a top issue in Germany and still on the rise. 16 per cent of articles are dealing with it in some fashion. What's more, inflation coverage is getting more and more broad-based.
2. The ECB, the main culprit, is urged to slow down price dynamics, while the national government is asked to alleviate ensuing social problems by raising benefits. Unions and employers are expected to negotiate wage hikes. However, it is acknowledged that neither course of action is without side effects. This constitutes a dilemma, worsening the outlook for inflation further, and contributing to an increasing sense of urgency.
3. Given that media narratives are an important input into expectations formation, the momentary stagnation of longer-term inflation anticipation is not set to last, but is likely to rise further, a lag due to time-consuming news processing by private households.

To counter these self-enforcing inflationary tendencies, a forceful communication-cum-action strategy is of the essence. Demanding policy rates to be hiked soon and decisively is a no-brainer at a time when real interest rates are still grossly in negative territory while the economy is at full employment. However, there are additional difficulties in the Eurozone. The complex situation is characterized by multiple dilemmas, that an “anti-fragmentation instrument”, ECB lingo for selective bond purchases, seems hardly fit to tackle.

As the narrative we deduced from the IPI model shows, the central bank's and the governments' ability to act against inflationary and fiscal pressures is being called into question. To overcome the Eurozone's complex set of problems, a reinforcement of policy assignments is warranted: the line between fiscal and monetary policy needs to be re-drawn.

It is the member states, who should be responsible for fiscal stability; whenever the fiscal health of a euro zone member state is threatened, it would be primarily the ESM's role to bolster the respective country's finances, subject to conditionality, not the ECB's. If the Eurozone was able to enhance its fiscal architecture credibly by building such a fiscal backstop, the ECB would be freer to curb inflation. By lowering inflation expectations, this may have immediate positive effects. If the arrangement stays the way it is, however, it is hard to see how the Eurozone may exit the dead-end street it is currently perceived to be stuck in.

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