Expectations and Anchoring to Central Bank Expectations after COVID-19, Energy Shortage, and Inflation

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Introduction

Anchoring bias is a cognitive bias observed when an economic agent places excessive reliance on a single piece of information or past experiences in decision-making. Central banks exhibit anchoring tendencies in their monetary policies, wherein strategies are based on specific economic indicators that can impact a nation's economy. Additionally, the degree of anchoring can be assessed by evaluating whether long-term expectations are significantly influenced by current economic conditions.

In Europe, inflation has surged due to supply chain disruptions caused by the COVID-19 pandemic, resulting in shortages of various raw materials. The increase in government spending has further fueled inflationary pressures. Additionally, the ECB has anchored its monetary measures in response to the escalation of energy prices triggered by the Russia-Ukraine conflict.

The role of consumer expectations has been significant in influencing inflation dynamics. Consumer expectations impact prices set by businesses for their goods, as well as the wage demands of employees. When inflation expectations are anchored to the target, meaning they remain consistent with the ECB's goal, it contributes to the stabilization of inflation at the desired level. This underscores the importance of managing/anchoring inflation expectations in achieving central banks' monetary objectives.

The ECB has implemented contractionary monetary policies by raising key interest rates and initiating quantitative tightening measures to reduce its balance sheet. This strategic approach is anchored in a thorough analysis of available data and an assessment of prevailing inflation rates. The consequences of this anchoring strategy are noticeable: bank lending rates have increased, leading to reduced demand for credit, and businesses are experiencing tighter credit terms.

The Eurozone is facing additional challenges, particularly the impact of surging energy prices constituting an energy crisis. Disruptions in trade have occurred due to shortages, weakening the economy. Consumer confidence decreased, contributing to a depreciation of the euro and a simultaneous increase in inflation. These factors have introduced heightened uncertainty into the euro market, with short-term consumer inflation expectations experiencing a significant increase.

Inflation has exhibited volatility, creating turbulence in the market. This scenario raises questions about the ECB's level of anchoring, suggesting a potential shift toward a less well-anchored position amid the evolving economic landscape.

In this report, the roles of different market agents under these circumstances are examined using a behavioral finance lens. Cognitive biases and the psychology of economic entities will be applied to determine their significance with respect to recent events.

Theoretical Framework

Applying Behavioral Finance concepts to central banking can enhance the efficacy of the decisions undertaken by the Central Bank. Cognitive Biases affect the public and the policymakers alike. Every Bias has a two-fold effect: it influences the decision-making by policymakers, as well as impacts the reaction of the common public to economic indicators.

'Loss-Aversion' plays an important role in determining the reaction of the general public to inflation: the fear of losing purchasing power due to inflation leads to a 'scarcity' mindset, wherein the public decides to hoard goods and assets, which further exacerbates inflationary pressures on the economy. This, in turn, reinforces the 'scarcity' mindset, which further aggravates the inflation levels, subjecting the economy to a vicious cycle.

This is closely related to the Anchoring Bias, where the public's preconceived notions shape the perception of inflation. Relying too heavily on a specific point of reference, an 'anchor', leads to biased judgement. The Eurozone crisis is an apt case study of how anchoring bias can mold our perception of inflation. During the crisis, economic instability led to higher inflation levels in several countries. This period of heightened inflation eventually became the **anchor point** for many, leading them to perceive lower inflation rates as deflationary. This bias creates hurdles for policymakers attempting to stabilize the economy by implementing appropriate monetary policies.

The scenario above illustrates the critical role played by **inflation expectations** in the implementation of monetary policies. Economic theory puts a special emphasis on 'expectations' as a driver of actual inflation levels. Simply put, 'inflation expectations' are the rate at which people expect prices to rise in the future, directly affecting the **actual rate** at which prices rise. If inflation is expected to rise, say, 3% next year, firms will increase their prices (by at least 3%), worker unions will demand similar-sized wage increases, and households will buy more goods today (scarcity mindset). Ceteris Paribus, actual inflation will tend to rise by 3 percentage points too! Central banks are more likely to be successful in achieving low and stable inflation if they can *'anchor'* economic agents' long-term inflation expectations close to their inflation objective.

According to former Fed chair, Ben Bernanke, '*Anchored*' means to be "relatively insensitive to incoming data". If the public experiences a short period of inflation higher than their long-run expectations, but their long-run inflation expectation remains **unchanged**, then expectations are said to be *well-anchored***.** However, during the sudden rebound of demand in 2021, the risk of **de-anchoring** was considered to be high. This is because the public might compare the rising inflation to pre-COVID levels, which was their **initial reference point,** and accordingly mark up their long-term inflation expectations. This is an example of how the **anchoring bias can lead to de-anchoring.** Well-anchored expectations imply that the public doesn't respond much to short-term fluctuations in prices, thereby making it easier for the Central Bank to meet its price stability mandates.

Extensive research has concluded that **effective central bank communication with the general public can help anchor inflation expectations**. Studies show that inflation expectations shift toward the central bank's inflation target when people receive information about the inflation target and the bank's inflation forecasts. *Ehrmann, Georgarakos, and Kenny (2022)* provided survey respondents with information about the ECB's new inflation objective along with some explanation of the objectives and monetary policies. This affected both expected inflation and the confidence that the ECB would deliver price stability. *Coition, Gorodnichenko, and Weber (2022)* found that this type of information **reduces** households' average forecast of inflation by **1.0-1.2 percentage points**.
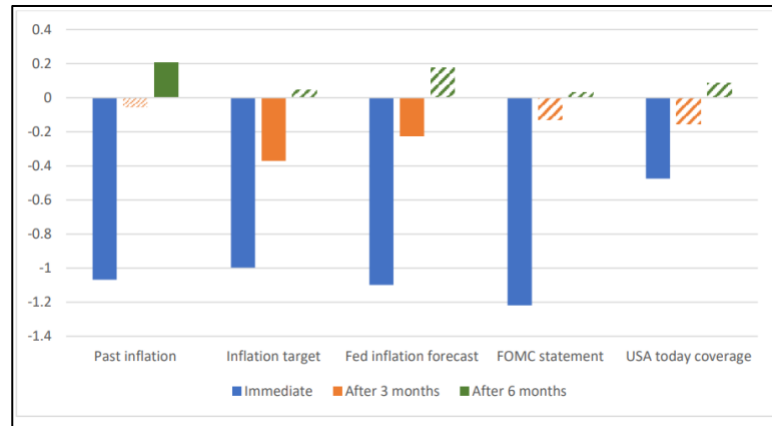

A World Bank paper presents evidence that inflation expectations are better anchored in both advanced and EMDEs when the central bank transparency is high, and it explicitly announces the inflation target it intends to meet (**inflation-targeting**).

Transparency helps control expectations since the public's actual perceptions of inflation are often too high. *Fluch and Stix, Lamla and Lein, Del Giovane and Sabbatini* have argued that **psychological factors affect the perceptions of actual inflation levels**. Firstly, the greater weight of certain goods in consumer purchasing (*frequent purchases)* combined with higher increases in their prices has contributed to the rise in inflation perceptions. Furthermore, individual inflation perceptions show more responsiveness to upward price movements than downward ones. This is closely related to the *loss-aversion bias.*
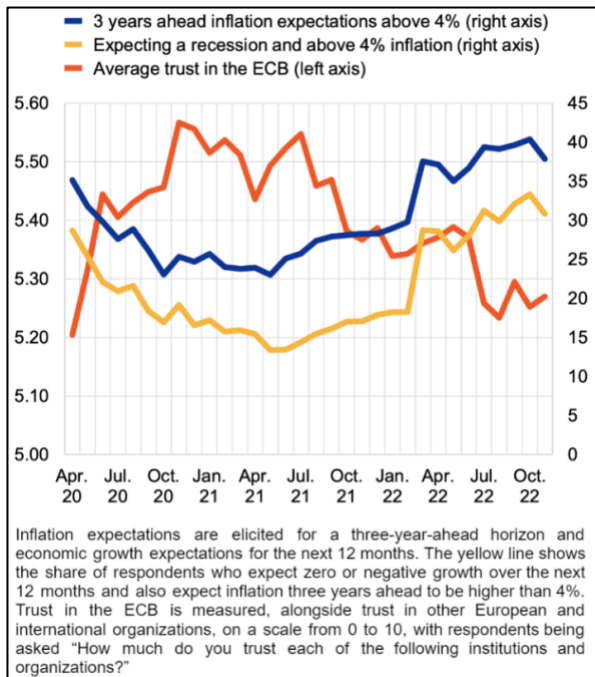
Gabaix (2016) linked behavioral pitfalls to monetary and fiscal policy, describing how 'bounded rationality' can explain the poor comprehension of future policy and its impact, given that the public is not fully rational. The **present bias/myopia** implies that the agent focuses more on short-term events and does not anticipate the future perfectly. This is why central bank communication should strive to be well-balanced, selective, and understandable by the general public.

However, even central bankers are susceptible to behavioral biases, like the **anchoring bias.** In 2021, it became evident that the worldwide consumer price hikes, attributed to the energy crisis and supply chain disruptions, were not going to subside as quickly as many central banks had claimed. The policymakers were anchored to their initial beliefs, i.e., the surge in energy prices was a one-off event and supply chain disruptions would unsnarl soon. However, one-by-one, advanced countries' central banks revised their short-term inflation forecasts up, decided to decrease the bond purchases,
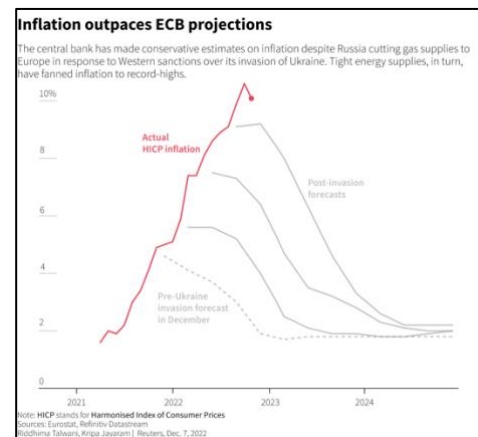
and started to consider raising their policy rates. For instance, the ECB, which in the summer of 2021 insisted that the spike in inflation was merely "transitory", appeared to be astonished in the latter part of 2021 by the persistent upward pressure on prices.

Longer-term inflation expectations in the euro area have evidently become more de-anchored over the years, even before the pandemic itself. *Galati, Moessner, and van Rooij (2021)*, using a representative sample from the Netherlands, show that euro-area consumers' long-term inflation expectations have been de-anchored on the upside during the Pandemic. *Coleman and Nautz (2021)* discovered that in the 2019-2021 period, only 20-29% percent of German households' inflation expectations were in line with the ECB's inflation target; the majority of respondents expected higher inflation.

Inflation expectations are elicited for a three-year-ahead horizon and economic growth expectations for the next 12 months. The yellow line shows the share of respondents who expect zero or negative growth over the next 12 months and also expect inflation three years ahead to be higher than 4%. Trust in the ECB is measured, alongside trust in other European and international organizations, on a scale from 0 to 10, with respondents being asked "How much do you trust each of the following institutions and organizations?"

There was an increase in trust in the ECB during the beginning of the Pandemic. However, in mid-2021, after the ECB's overconfident labeling of the inflation spike as "transitory", public trust declined soon, followed by a corresponding upward trend in medium-term inflation expectations, as well as an increasing share of consumers with medium-term expectations above 4% (**de-anchoring**). Clearly, trust levels seem to be inversely related to the medium-term expectations of the public, which yet again echoes the importance of effective communication with the public to restore faith in monetary policies, thereby anchoring expectations, and hence, controlling inflation.

Application of Behavioral Finance

The COVID-19 pandemic had profound and widespread effects on economies globally. The impact varied across countries, depending on factors such as the severity of the pandemic, the effectiveness of public health measures, the structure of the economy, and the policy responses adopted. Therefore, mitigative measures varied across countries as well. Post-COVID, the euro area economy continued to recover but with a brief slowdown. By the end of 2021, the pandemic led to renewed restrictions in some countries. Higher energy prices slowed the economy. Shortages in some sectors held back production. Inflation remained high. The expectation for 2022 was that the inflation would remain above 2%, but the factors imposing upwards pressure on prices would weaken.

The Pandemic Emergency Purchase Programme (PEPP) is a monetary policy tool introduced by the ECB in response to the economic challenges posed by the COVID-19 pandemic. PEPP is designed to address the severe risks to the monetary policy transmission mechanism and the outlook for the euro area posed by the pandemic. The PEPP is a temporary asset purchase programme of private and public sector securities. The Governing Council decided to increase the initial €750 billion envelope for the PEPP by €600 billion on 4 June 2020 and by €500 billion on 10 December, for a new total of €1,850 billion (ECB).
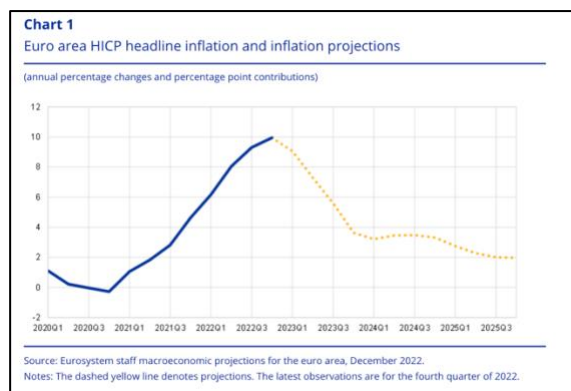
Anchoring bias undoubtedly played a role in this ECB policy. The effects of the bias are evident between the first announcement and the third announcement; bonds eligible to the program experienced a significantly larger decrease in yield spreads after the initial announcement on March 18th of the purchase program as well as after the start of the ECB's purchases. The announcement effect after the third PEPP announcement in December 2020 is completely different as eligible bonds increased more in yield spread.

The primary objective of the PEPP was to address the severe risks to the monetary policy transmission mechanism and the outlook for the euro area. In the first two announcements, the ECB announced the continuation of APP and decided to keep the policy rates unchanged. "No action" or "keeping something unchanged" is reflected in prices since everything is measured against the expectations.

Being eligible to the Pandemic Emergency Purchase Program contributes decreasingly to the corporate bond yields after the initial announcement in March 2020 and after the second announcement in June 2020. The effect after the initial announcement is also economically very large (-27% in three days) compared to the effect after the second announcement (-8%). However, eligibility seems to have a significant yield increasing effect after the third PEPP announcement in December 2020 (+5%). (Koho)

The ECB managed inflation expectations during the energy crisis. The energy shock stemming from Russia's aggression against Ukraine has prolonged and aggravated a sequence of unprecedented supply shocks. These shocks, combined with the reopening of the economy after the pandemic, have driven inflation in the euro area to persistently high levels. To prevent inflation from becoming entrenched, the ECB tightened its monetary policy stance decisively. The ECB averted second-round effects in the form of a de-anchoring of inflation expectations or a wage-price spiral.

The medium-term inflation outlook was revised substantially upwards in the projections last December. Headline inflation was projected to stand at 3.4% in 2024, before falling to 2% in the third quarter of 2025. And core inflation was expected to remain above target throughout our horizon, declining to 2.4% on average by 2025. The risks to this outlook were primarily on the upside.

Chart 1
Euro area HICP headline inflation and inflation projections
(annual percentage changes and percentage point contributions)

Source: Eurosystem staff macroeconomic projections for the euro area, December 2022.
Notes: The dashed yellow line denotes projections. The latest observations are for the fourth quarter of 2022.

But expectations underpinning economic projections can change quickly. In fact, recent surveys and the latest European Commission forecast see headline inflation significantly below the December projections for 2024.

Alternative Explanations

Although the economy is clearly affected by a multitude of factors, one cannot understate the cruciality of the aggregate of human behaviors. As James Madison put it, "the circulation of confidence is better than the circulation of money". This insight into the psychological underpinnings of economic behavior segues into a deeper analysis of specific biases and behavioral phenomena, broadening our horizon from anchoring bias.

The '**Prospect Theory'**, also known as the '**Loss-aversion Theory'**, discusses the "tendency to avoid losses overachieving equivalent gains". Generally speaking, the pain of losing is believed to be psychologically twice as powerful as the pleasure of gaining (Kahneman, Tversky, 1992).

Favaretto and Masciandaro (2016) explain the impact of this bias on Monetary Policy Inertia. This inertial view of monetary policy adjustments discusses the tendency of central banks to adjust interest rates only gradually vis-a-vis economic conditions. This 'lag' in response is often perceived as "ineffectiveness" of central banks. The members of a Monetary Policy Committee (MPC) are categorized into three groups based on their policy conservativeness: doves, pigeons, and hawks. A "**dove**" is a policymaker who favors active monetary policies, even inflationary ones. The "**hawks**" dislike such policies, and the "**pigeons**" lie somewhere in between. The assumptions are that MPC decisions are finalized by using voting with a simple majority rule, and that loss aversion characterizes the behavior of the MPC members.

Loss aversion influences the MPC decisions through three convergent effects: First of all, a **moderation** effect can emerge, i.e., the number of pigeons increases. "Doves" overestimate the losses from an inflationary policy, which forces them to limit their dovishness. On the other hand, "hawks" overestimate the losses from a conservative choice, forcing them to limit their "hawkishness". As central bankers become more loss-averse, the number of "pigeons" increases. Simultaneously, a **hysteresis** effect can come into play: both doves and hawks soften their stances. An increase in loss aversion increases the likelihood of maintaining the status quo since both parties tend to overestimate the losses from a change in strategy. Finally, a smoothing effect stabilizes the number of pigeons. Thus, only large shocks to the 'degree of conservativeness' amongst the bankers can lead to a shift in monetary policy stance. The three effects work in tandem to aggravate interest rate inertia.

Despite the ECB's strategic measures to manage inflation expectations and stabilize the economy during the pandemic, market responses occasionally deviated significantly from such policy guidelines. This divergence was evident in the volatile market reactions of early 2020. Efforts to instill confidence and liquidity failed as markets experienced drastic downturns, driven by panic

and lack of investor confidence. This example is one of many, and proves that the *aggregate psychology of market participants can overcome even well-founded policy expectations*.

Furthermore, the energy crisis provides yet another facet to this complexity. Speculation, especially in the oil and gas industries, created significant price volatility. Such market movements, driven by rising geopolitical tensions and supply chain disruptions, proved a substantial challenge to the ECB policy framework. This can counter the predictive modeling traditionally based on purely economic indicators, further illustrating the dire need for adaptive strategies that accommodate the oft-irrational nature of financial markets.

Additional Examples

Here we analyze the Federal Reserve's approach, compare it to the ECB's approach, and see if it brings different results regarding public trust.

It is worth noting that ECB and the Fed employ different communication strategies due to variations in their structures, mandates, and economic environments. The Fed places a high value on transparency and has historically been proactive in improving communication. The Fed conducts regular press conferences, releases detailed meeting minutes, and provides economic projections. The goal is to offer clear insights into the central bank's thinking and policy outlook. Although the ECB has also made efforts to enhance transparency, it is generally more cautious in its communication, offering comparatively less detail.

Forward guidance is another significant aspect of the Fed's communication strategy. The Fed uses various channels to provide information on the likely path of interest rates and the factors influencing future policy decisions. Again, the ECB employs similar strategies but with less detail.

There is also a difference in the level of independence of the two institutions. While the Fed operates independently and is accountable solely to the US Congress, the ECB's structure involves coordination with multiple Eurozone member countries.

Finally, during economic crises, the Fed adopts a much more active and explicit communication strategy, reassuring markets about its commitment to stability and outlining prospective policies.

When it comes to the efficacy of the Fed's approach, *Naggert (2023)* found that over the last decade, the overall inflation expectations were well-anchored, and that even the movements in the extent of expectations' anchoring were mostly driven by changes in forecaster disagreement. Additionally, after examining the inflation surge in the post-2020-period, the study shows that longer-run inflation expectations remained well-anchored.

Conclusion

The application of behavioral finance concepts to central banking involves a complex interplay between policymaking, cognitive biases, and public perception. The challenges of COVID-19 and the Eurozone crisis have highlighted the importance of considering these biases and implementing effective policies. Inflation expectations have become well-anchored, aligning with the objectives of central banks, and candid communication has been vital in fostering public trust.

Challenges like the de-anchoring of inflation expectations and the response to the energy crisis still remain. Prospect theory emphasizes the psychological aspects that influence monetary policy inertia. As central banks navigate the unstable economic landscape, adopting a dynamic approach that combines behavioral theories with economic indicators is paramount to enhancing the efficacy of economic strategies in this unstable environment.

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