DOCUMENTOS DE TRABAJO

Decoding Central Banks' Practices: A Closer Look at Inflation Expectations Surveys

Valentina Cortés Ayala
Karlla Muñoz Cáceres
Daniel Pérez Klein

N° 1054 Septiembre 2025
BANCO CENTRAL DE CHILE

banco central Chile

Documentos de Trabajo del Banco Central de Chile
Working Papers of the Central Bank of Chile
Agustinas 1180, Santiago, Chile
Teléfono: (56-2) 3882475; Fax: (56-2) 38822311

Documento de Trabajo N° 1054

Working Paper N° 1054

Decoding Central Banks' Practices: A Closer Look at Inflation Expectations Surveys[1]

Valentina Cortés Ayala[2]
Central Bank of Chile

Karlla Muñoz Cáceres[3]
Central Bank of Chile

Daniel Pérez Klein[4]
Central Bank of Chile

Resumen

Este artículo presenta los resultados de la encuesta de expectativas de bancos centrales "Central Bank Expectations Survey", realizada por el Banco Central de Chile y dirigida a más de 30 bancos centrales alrededor del mundo y respondida por 28 de ellos. El objetivo de la encuesta fue recopilar información sobre la existencia de encuestas de expectativas de inflación dirigidas a firmas u hogares, identificar quién realiza la recolección, cuál es la metodología utilizada, los usos que le dan y si los resultados se emplean como insumo para monitorear el anclaje de las expectativas de los agentes con respecto a la meta de inflación de cada institución. Los resultados del estudio evidencian la heterogeneidad metodológica y en el tratamiento de datos, así como la diversidad en la interpretación del anclaje de expectativas. Además, se identifica un rezago en el uso de encuestas de consumidores en comparación con las encuestas a firmas. El estudio demuestra la creciente relevancia de estos instrumentos en el análisis económico y en la formulación de políticas monetarias. pero también destaca la necesidad de un trabajo conjunto entre instituciones para mejorar la calidad y comparabilidad de los resultados obtenidos.

Abstract

This article presents the results of the "Central Bank Expectations Survey," conducted by the Central Bank of Chile and targeted at over 30 central banks worldwide, with responses from 28 of them. The objective of the survey was to gather information on the existence of inflation expectations surveys aimed at firms or households, identifying who conducts the data collection, the methodologies used, the purposes for which they are employed, and whether the results are used as an input to monitor the anchoring of agents' expectations relative to each institution's inflation target. The study's findings reveal methodological and data treatment heterogeneity, as well as diversity in the interpretation of expectations anchoring. Additionally, a lag was identified in the use of consumer surveys compared to firm surveys. The study demonstrates the growing importance of these instruments in economic analysis and monetary policy formulation but also highlights the need for joint efforts among institutions to improve the quality and comparability of the results obtained.

[1]The views expressed are those of the author and do not necessarily represent the views of the Central Bank of Chile or its board members.
[2]vcortes@bcentral.cl
[3]kmunoz@bcentral.cl
[4]dperezk@bcentral.cl

1. Introduction

In any economy, understanding the expectations of economic agents is essential for monetary policy decision-making. Expectations surveys, as one of the main instruments for gathering relevant information, are widely used by central banks and other financial institutions, constituting an invaluable tool for learning about the perceptions and expectations of agents.

In particular, consumer and entrepreneurial expectations are of paramount importance to central banks in their process of formulating monetary policy. Consumers' perceptions of the future of the economy directly influence their spending and investment decisions, which in turn impact economic activity and aggregate demand. Similarly, the firms' expectations regarding product demand, labor costs, and financial conditions play a crucial role in hiring, investment, and pricing decisions.

Understanding these expectations allows central banks to identify potential inflationary pressures and anticipate possible economic imbalances, making this information essential to their work. However, despite the significant proliferation of these instruments in recent decades, the use that central banks make of this information, and their specific role in monetary policymaking, is not so clear. Similarly, the methodological guidelines and criteria applied in processing the data from these surveys are often not disclosed.

This working paper focuses on characterizing the methodologies and use of household and firms expectations surveys by central banks. To this end, various central banks were asked to complete a questionnaire that probes the design, implementation, and use of these surveys in different contexts. Based on this, it is possible to speculate on the challenges faced by the institutions that normally use these instruments.

The study is structured into different chapters covering everything from running the survey to analyzing its results and conclusions. Chapter 2 reviews the existing literature on expectations surveys and methodological recommendations on the subject. Then, in Chapter 3, the methodology and instrument used to perform this study are examined in depth, as are the operational aspects associated with its implementation. Next, in Chapter 4, the results obtained are presented and analyzed, exploring the perceptions and trends identified. Chapter 5 concludes with a general analysis of proposals for areas of common action on expectations surveys.

This analysis is intended to provide a more comprehensive view of how expectations surveys are used by central banks and how they influence economic and financial decisions. The study will not only contribute to the existing body of knowledge in this field, but will also serve as a reference for future research and practices in economic policymaking.

2. Literature review

The inflation expectations of households and firms are essential in determining the capacity of central banks to affect inflation and economic activity. As discussed by Lorca, Pastén, & Pérez (2024), a central bank with an inflation-targeting central monetary policy framework will have a particular interest in understanding the behavior of these variables, as they influence a number of important economic aggregates, such as households' decisions on saving, consumption, and work, as well as the firms' decisions on production, prices, and investment.

Sure enough, however, this assertion rests on two fundamental assumptions.

The first one relates to the difference between how expectations are assumed to be formed in theoretical models and how they are actually formed in reality. In other words, the need for empirical information to inform economic discussion stems from the fact that expectations do not always match the assumptions of economic theory.

The second assumption posits that the inflation expectations of households and firms are formed and behave differently from those of financial markets. Empirical information about financial market expectations is reviewed and collected by most of the world's central banks; however, the need for household and business expectations arises from the fact that they cannot be reduced to those of the markets.

This section reviews the history and discussion that gave rise to each of these statements.

2.1 Limits and extent of the assumption of rational expectations with complete information

The history of studying expectations in economics is long and diverse. As early as the first decades of the 20th century, authors such as Holbrook Working (1949) pointed out the need to integrate expectations into economic theory, distinguishing between individual and aggregate approaches, but warned that the psychological study of individual expectations was limited by the lack of empirical and interdisciplinary tools. Thus, he promoted a more aggregate approach, where variables such as asset prices would reflect the anticipated market consensus. In this tradition, approaches such as static expectations (Kaldor, 1934; Ezekiel, 1938) and extrapolative expectations (Hicks, 1938) also emerged, which assumed simple rules for projecting the future behavior of economic variables, such as assuming that future prices would match or follow the trend of the past. These initial frameworks served as the basis for equilibrium models that considered expectations to be given or fixed.

Then more dynamic models emerged, such as adaptive expectations (Fisher, 1930; Cagan, 1956; Nerlove, 1958), which incorporated mechanisms for gradual correction in response to past prediction errors. These models reflected the intuition that agents learn from their mistakes and adjust their beliefs over time. However, their main limitation was that they could generate inconsistencies if the rules of the system were modified, which gave rise to a fundamental criticism: the models were not structurally consistent in the face of policy changes. This criticism was key to the rational expectations revolution.

The assumption of full-information rational expectations (FIRE) emerged as a fundamental pillar of modern macroeconomics based on the work of Muth (1961) and Lucas (1972). This paradigm posits that economic agents use all available information optimally, forming their expectations in a manner consistent with the structure of the current economic model, and therefore their predictions are not systematically biased. Under FIRE, expectations are equivalent to the model's predictions: although they may be wrong ex post, on average they are correct and well-founded. This hypothesis facilitated the consistent incorporation of expectations into dynamic models, especially in dynamic stochastic general equilibrium (DSGE) frameworks.

The first assumption discussed in the previous section originates from a debate within economics and the social sciences in general, where the empirical validity of this assumption has been widely

questioned. Survey-based studies, both experimental and opinion-based, have shown that the expectations of households and businesses systematically deviate from the predictions of rational models. Mankiw and Reis (2002) introduce the sticky information model, in which agents update their expectations with a lag due to the costs of acquiring or processing information. In this regard, Sims (2003) proposes the rational inattention model, where agents optimize their limited attention by selectively assigning it to certain economic variables. In both approaches, information friction generates persistent prediction errors and heterogeneity among agents.

Added to this heterogeneity are various systematic biases that affect the formation of expectations. In households, gender differences influence exposure and attention to prices, creating a gap in inflation expectations between men and women (D'Acunto et al., 2020). Educational level also plays an important role, as more educated individuals tend to update their expectations more consistently and in line with theoretical models (Roth & Wohlfart, 2020). In addition, it has been documented that cognitive abilities, such as IQ, affect both the accuracy of predictions and the ability to respond to new economic information (D'Acunto et al., 2023). Among firms, biases related to contextual factors have also been identified. The mood of managers can influence their investment and hiring decisions, which affects their macroeconomic expectations (Chhaochharia et al., 2019). Likewise, the political and media environment can introduce partisan biases or amplify perceived uncertainties, thus conditioning the interpretation of economic signals (Dräger et al., 2024).

In turn, after the Global Financial Crisis of 2008, various authors began to question the applicability of the rational expectations assumption in contexts of high uncertainty. Svetlova (2022) points out that this hypothesis, which had been dominant in the field of economics until then, made it difficult to analyze how agents' beliefs are actually formed, because it assumed that they used correct models on average and shared a common understanding of the functioning of the economic system.

Likewise, several studies have shown that inflation expectations vary not only depending on access to information, but also on the type of economic agent. The literature distinguishes between financial agents, households, and firms, not only in terms of accuracy, but also in terms of updating mechanisms, sources of information, and time horizons (Coibion et al., 2020; D'Acunto et al., 2021). This heterogeneity has been widely documented and poses a challenge to models that assume informational or cognitive homogeneity.

The second key assumption in this discussion is that the inflation expectations of households and firms are not the same as those of financial agents. Although empirical information on financial expectations is regularly monitored by central banks around the world, evidence shows that it does not adequately capture the dynamics of expectations of other economic agents (Coibion et al., 2019). Furthermore, there is a marked difference in the preponderance between firms and consumers, based on theories that traditionally assume that firms' expectations are more accurately formed than those of consumers (Kahneman, 1982; Simon, 1955). Although it is considered that firms' expectations precede those of households, there is an alternative theory that argues that households' expectations can change simultaneously or even anticipate firms' expectations due to their personal experiences and social networks, which provide them with early warnings of potential economic changes (Curtin, 2023).

These differences suggest that theoretical models should consider in greater detail the diversity of contexts and processes that influence the formation of expectations. In this regard, empirical

work using surveys of households and businesses is crucial for advancing our understanding of these processes and enriching economic analysis with evidence that is more representative of the variety of agents that make up the economy.

2.2 Conceptual and methodological frameworks for measuring inflation expectations in surveys

Measuring social or economic phenomena through surveys requires clarity regarding the objectives of the analysis, identifying and defining the relevant concepts, operationalizing them, and making them into a questionnaire. This, together with a statistical and methodological design appropriate to the population and objectives of the study, will enable the collection of quality data. In other words, the production of statistics involves developing, adopting, or adapting conceptual and methodological frameworks. Accordingly, one of the fundamental principles of official statistics established by the United Nations is the use of international concepts, classifications, and methods, and it emphasizes the importance of international cooperation in achieving coherent and efficient statistical systems (United Nations, 2014).

To achieve this, statistical standards must be implemented, defined as "agreed rules or guidelines on how one or more parts of the statistical production process should be carried out, in accordance with the requirements of professionalism" (Expert Group on National Quality Assurance Frameworks, 2012) and harmonization, which refers to the process of combining or comparing data for analytical purposes, either through the use of similar standard definitions and classifications, or through a set of explanations on how to make comparisons (Expert Group on International Economic and Social Classifications, 2018).

Along these lines, there are various long-standing international organizations and multilateral cooperation bodies that have contributed to the coordination between countries for the generation of conceptual frameworks, statistical standards, and recommendations for statistical production. In the economic sphere, one of the most relevant is the conceptual and methodological framework provided by the System of National Accounts Manual, the latest version of which dates from 2008 (EC, IMF, OECD, UN, WB, 2016). Another essential variable is headline inflation, which is measured based on the Manual of Concepts and Methods of the Consumer Price Index, updated in 2020 (IMF, ILO, Eurostat, UNECE, OECD, WB, 2020), and on international classifications such as the Classification of Individual Consumption by Purpose (COICOP) (UN, 2018). These are just a few of the most important international statistical standards in the field of economics..

In the area of economic perceptions and expectations of less specialized agents, such as firms and households, there have been some regional or global initiatives to promote the development and harmonization of this type of survey.

On the firms side, In 2000, the Economic Commission for Latin America and the Caribbean (ECLAC), in collaboration with the Organization for Economic Cooperation and Development (OECD) and the European Commission (EC), carried out a project exploring the possibilities of conducting a harmonized entrepreneurial opinion survey in Latin America, focusing on the manufacturing industry (ECLAC, 2008). Related to the previous initiative, in 2003 the OECD published a manual to guide the harmonized design and implementation of business surveys in different economic sectors (OECD, 2003). Subsequently, in 2016, the United Nations published the Manual on Economic Trend Surveys, which arose in the context of a short-term economic statistics program in response to the economic and financial crisis of 2007-2008 (UN, 2015).

These initiatives provide recommendations for the entire process of producing business surveys, from the questionnaire to the indicators to be calculated. However, the surveys currently being applied in different countries have addressed new topics or methodologies not included in these manuals, such as the inclusion of numerical questions on inflation expectations, percentage changes, and probabilities, among others.

In addition, there is a body of specialized literature that has systematized some of the best practices and recommendations for collecting, processing, and analyzing these sources of information. This is in response to the consensus that the statistical production of inflation expectations of households and firms face considerable challenges, both from the respondent's cognitive point of view and from the researcher's statistical design perspective.

This difficulty arises because, unlike financial analysts or experts, households and many small firms lack technical knowledge about aggregate inflation, which translates into systematic biases such as persistent overestimation, high dispersion of responses, and high sensitivity to the prices of frequently consumed goods, especially foods and fuel (D'Acunto et al., 2022); (Weber, 2022). Respondents also tend to round up values or focus on the specific prices they see every day, which distorts the representation of overall inflation (Bruine de Bruin et al., 2009); (Binder, 2017). Furthermore, these distortions can be amplified by the effects of question formulation and collection methods, such as the inclusion of "system alerts" for high responses, which can induce socially desirable or normatively guided responses (Armantier et al., 2012); (Weber, 2022).

Confronted with these challenges, statistical production needs to design instruments that can collect valid, comparable, and stable subjective beliefs over time, considering the cognitive and motivational limitations of respondents. These challenges apply to the design, collection, and processing phases of expectations.

In the design phase, it is recommended to use explicit continuous scales in percentage format (0–100) for point collections, and histogram structures or thresholds to capture subjective distributions when measuring uncertainty (Manski, 2004; Delavande & Rohwedder, 2008; D'Acunto et al., 2021). In contexts of lower numeracy, the use of visual aids—such as beans, cards, or diagrams—has been shown to improve understanding and response quality (Delavande et al., 2011; Attanasio, 2009). In addition, studies such as those by D'Acunto et al. (2022) and Weber et al. (2022) underscore the importance of neutral wording in instruments, avoiding implicit references to specific prices, and warn that terms such as "prices in general" may be interpreted in a biased manner toward goods that are consumed more frequently. In firms surveys, it is recommended to construct sampling frameworks that ensure sectoral and size representativeness and allow controlling for characteristics associated with the ability to form expectations, such as exposure to price setting, educational level of the surveyed manager, and business size (Coibion et al., 2020; Weber et al., 2022).

During data collection, a key recommendation is to train interviewers in probability sampling techniques, where applicable, and in interpreting ambiguous or inconsistent responses, which has proven to be crucial for data validation (Armantier et al., 2013; D'Acunto et al., 2020). Studies such as that by Kim and Binder (2021) have documented that panel participants tend to adjust their responses over time due to learning ("panel effect"), suggesting the need to limit repetitions or rotate samples. In addition, the importance of conducting cognitive pilot tests to detect comprehension problems and optimize question formulation is emphasized (Bruine de Bruin et al., 2012; Weber et al., 2022). Regarding data collection methods, it is recommended to prioritize

face-to-face interviews in populations with poor financial literacy and reserve web or telephone instruments for highly educated agents. Recording paradata—such as response times, presence of doubts, frequency of non-response, or field notes—can be key to assessing measurement biases and optimizing future rounds (UNECE, 2019).

During the processing phase, it is essential to implement validation routines that ensure the internal consistency of responses; for example, by verifying that subjective distributions add up to 100% for probability questions, or that values are within plausible ranges (Armantier et al., 2013; Bruine de Bruin et al., 2022). The literature has documented recurring patterns of "heaping" or clustering into multiples of 5 or 10, especially in household responses, which may reflect both low accuracy and diffuse uncertainty; for these cases, methodological adjustments such as those suggested by Binder (2017) and modeling techniques to impute smoother distributions are proposed. From the distributions collected, it is possible to estimate relevant statistics such as the expected value (mean), the degree of uncertainty (standard deviation), and the asymmetry of beliefs, which is essential for interpreting the aggregate and heterogeneous behavior of expectations (Coibion et al., 2021).

Most recently, the Handbook of Economic Expectations (2023) has positioned itself as a fundamental reference in the study of economic expectations, focusing on various economic actors, including businesses and consumers. This document explores how these actors form and update their expectations based on the information at hand, considering the uncertainty and heterogeneous characteristics of different groups. Its approach includes the analysis of biases and factors that influence decision-making, which is crucial for understanding economic dynamics in different contexts. The handbook not only addresses the collection and use of expectations data, but also delves into its integration into economic models. These data allow for the improvement of both theoretical and applied models, providing tools to analyze the interaction between expectations and economic decisions. By connecting these dynamics with consumer and business behavior, the Handbook establishes a comprehensive framework for advancing research, economic policy formulation, and strategy design that more effectively respond to the challenges of a globalized economic environment.

To continue along this working path, this paper aims to help diagnose the state of surveys on firms' and consumers' expectations in different countries by identifying progress, best practices, similarities and differences in how central banks collect, process, and use data. All with the intention of shedding light on common challenges that can be addressed, in order to coordinate resources and achieve greater harmonization at the international level.

3. Methodological aspects

To characterize the methodologies and uses that central banks give to their household and business expectations surveys, a questionnaire addressing different areas was sent to each contacted central bank.

This section will explore in detail the data collection process, both in terms of the structure and content of the instrument used and the operational aspects of the survey.

3.1 The instrument

The instrument is a web-based questionnaire designed on the Qualtrics platform (see Appendix). The questionnaire was structured into four modules that address the different dimensions of expectations surveys applied to households and/or firms.

Below is a detail of the modules contained in the surveys:

3.1.1 Module I: types of surveys

This module allows classifying and identifying the different types of surveys available to central banks. Its main purpose is to obtain an initial overview of the household and/or business expectations surveys the bank owns or has access to.

The first question in this module aims to identify what type of information each central bank has and to what extent it is involved in its design. Below are two identification questions for each survey mentioned, with a maximum of two surveys allowed, one for firms and one for consumers/households. If there are multiple surveys for the same type of agent, respondents are asked to select the most relevant survey in the context of inflation expectations analysis.

This guideline ensures that the most relevant and representative information is used, allowing for a more in-depth and focused exploration of data analysis.

3.1.2 Module II: Sample designs and collection methods

This module focuses on the methods used for data collection, examining characteristics such as how far back the survey dates, how often it is conducted, and how it is conducted.

Depending on whether the central bank conducts surveys of firms and/or individuals/households, subsection a or b is applied respectively, allowing the specific methodological information for each survey to be collected and the questionnaire flow to be divided in what follows.

3.1.3 Module III: Questionnaire and treatment of the data

This section is intended for the team responsible for survey design, data collection, and/or database creation. It focuses on aspects related to questionnaire design and the processing of data collected on inflation expectations.

Specifically, the module addresses how the respondents are asked the questions about their inflation expectations, whether quantitatively (numerically), qualitatively (with categories), by range, or by some other type of indicator. In the case of numerical questions, it inquires about the existence of any validation to establish limits on responses, requesting details on the minimum and maximum values of this threshold, as well as any modifications made to these thresholds during the last 12 months.[5]

[5] This, in the context of rising inflation in various countries during the reference period considered.

The module also seeks to understand how outliers are treated in the data collected. It asks about the existence of a specific treatment, the method used, and whether there have been changes in these practices with respect to previous periods.

These specific questions seek to provide a detailed overview of the methodology used in the design of the questionnaire and data management for questions on inflation expectations.

3.1.4 Module IV: Survey uses

This module is intended for teams that use data from these surveys, whether to monitor the economy, make monetary policy decisions, or conduct research.

To fully understand the use of survey data, the module considers two parts: the first focuses on the central banks' use and assessment of the usefulness of survey data; the second explores the criteria used to anchor expectations with the gathered information.

Part one: Use of data on business and household expectations

The survey data is examined to determine how it is used, whether for monitoring the economy, making monetary policy decisions, conducting research, or other purposes. In economic monitoring, the frequency and relevance of use is examined, including its application in forecasting models. In the context of monetary policy decisions, the importance assigned to it is explored. In terms of research, it inquires about the implementation of Random Control Trials (RCTs), the integration of survey data with administrative information, and the assessment of survey-based research.

Part two: Anchoring criteria in firms and household expectations

In assessing the criteria for defining the anchoring of expectations, the sources of information used to establish the level of anchoring of inflation expectations are identified, including surveys of household and firm expectations. If they present such expectations but do not use them to establish a measure of anchoring, the reasons behind this choice are explored.

3.2 Collection strategy

Conducting a survey of various central banks is a challenging task in many respects. This is so because of language barriers, security or secrecy considerations, each institution's cybersecurity regulations, and the complexities inherent in an instrument of this nature, which seeks to obtain information from more than one team or manager at each institution. However, overcoming these challenges is crucial to gaining a comprehensive and complete understanding of the methodologies used to collect and use household and business expectations surveys.

In conducting the collection process, a systematic, multi-stage strategy was implemented.

Initially, all central banks that conduct expectations surveys of either firms or households/individuals mentioned in Weber et al. (2022) were identified. From this list, priority was given to those central banks that are internationally recognized for their experience in conducting expectations surveys, as well as those that are part of the same region as the study, given their specific relevance. Contacts were obtained from three sources: i) those available from

the international relations department of the Central Bank of Chile, ii) central banks that participated in the XII Annual Conference - Central Bank Business Survey and Liaison Programs, and iii) those available on the respective websites of the remaining banks.

The questionnaire was distributed in two formats: a PDF document and a link to an online version to maximize accessibility and facilitate responses, thus boosting participation and obtaining a more diverse and detailed set of responses. In total, requests were sent to 34 central banks. It should be noted that sending the questionnaire in PDF format made it possible to identify the different topics and correctly divide them among the different areas responsible at each central bank. It also mitigated potential cybersecurity risks associated with sharing a link via email.

The turnout was significant, yielding a total of 28 valid responses that represent financial institutions of all five continents (see Table 1).

Table 1: Geographic distribution of responses

Continent	**Responses**
Africa	1
America (North)	5
America (South)	6
Asia	6
Europe	9
Oceania	1
Total	**28**

It is worth noting that the participation of central banks from different regions, combined with adaptability in response methods, enriched the quality and diversity of the data collected.

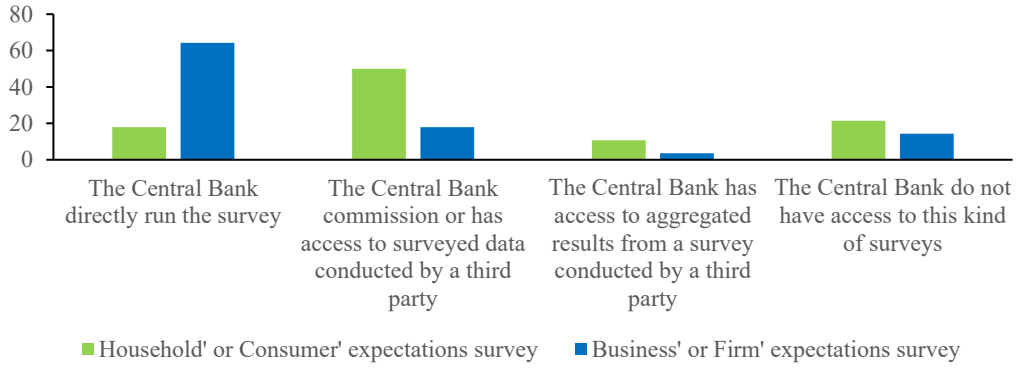
4. Results

This section presents and analyzes the results obtained from the survey conducted on various central banks. This detailed exploration covers three fundamental areas of analysis: operational and historical aspects of the surveys, methodological findings focused on questionnaire design and data processing, and, finally, the applied use of the data collected.

4.1 Operational and historical aspects of the surveys

This section delves into how central banks conduct consumer and business surveys, providing a preliminary overview of the associated operational and historical processes. Figure 1 highlights significant differences in how these surveys are conducted.

Figure 1: Does the Central Bank where you currently work commission or directly collect any surveys to know businesses or consumers inflation expectations?
(% of central banks)



Source: Central Bank of Chile

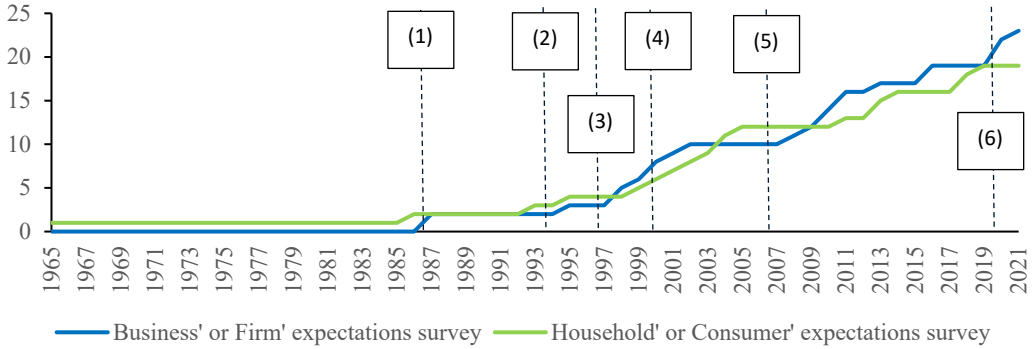
The analysis reveals that most central banks conduct at least one survey targeting consumers and firms, demonstrating the importance attributed to non-expert agents in the analysis of expectations. Furthermore, business surveys are somewhat more prevalent than consumer surveys, possibly because the firms' expectations are generally easier to collect and interpret, as pointed out by Weber (2022) and Armantier (2013).

In addition, it can be observed that surveys to firms are mainly conducted directly by central banks. In contrast, consumer surveys tend to be outsourced, with a third party collecting the data. This implies a more direct involvement of central banks in the statistical production process of surveys to firms, compared to that of surveys to households. It can also be observed that developing countries have lower availability of this type of instrument in the case of consumer surveys, in contrast to what is the case in developed economies.

These preliminary findings begin to reveal differences between the treatment of business surveys and those applied to households. These differences can be observed throughout much of the results of this study.

With regard to the genesis of these surveys, Figure 2 reveals a notable heterogeneity in their origins, with a concentration at critical moments such as social and/or economic crises (increase in the dot-com crisis, subprime crisis, Covid-19 crisis). This data suggests that the implementation of surveys, both of consumers and firms, is often linked to periods of economic transformation or uncertainty, underscoring the usefulness of these tools as key indicators in macroeconomic management. Likewise, when comparing the start years between business and household surveys, a significant time lag can be observed: more often than not, surveys targeting firms were launched earlier than those targeting households.

Figure 2: Year survey began (1)
(quantity of central banks)



Each highlighted point represents a period of economic disruption: (1) Black Monday (1987), (2) Tequila Crisis (1994-1995), (3) Asian Crisis (1997), (4) Dotcom Crisis (2000-2002), (5) Subprime Crisis (2007-2008), y (6) Covid Crisis (2020).

Source: Central Bank of Chile

Along the same lines, when analyzing in detail the year of origin of the surveys, in the case of firms' expectations surveys (see Table 2), the proximity to economic, health, or political crises, both globally and locally stands out. Moreover, several developing countries were pioneers in implementing this type of instrument.

Table 2: Crisis analysis according to the year the survey was created (only surveys close to a crisis)

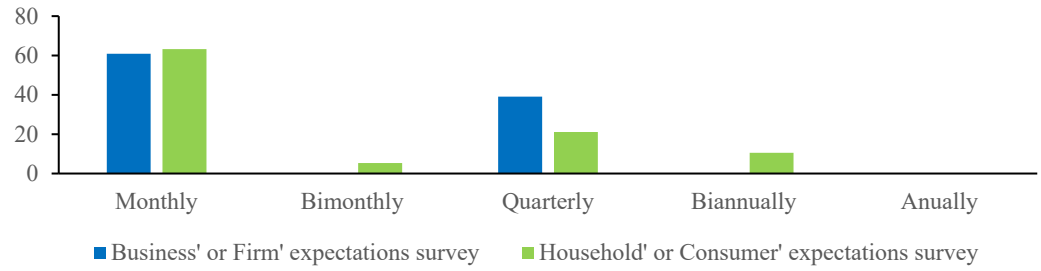
Continent	Level of development	Start year	Related crisis
Asia	Developing	1987	Black Monday
Oceania	Developed	1995	Monetary reforms
Asia	Developed	1995	Political restructuring
Asia	Developing	1998	Asian Crisis
Africa	Developing	2000	
South America	Developing	2000	
Asia	Developing	2001	Political crisis, dotcom crisis
South America	Developing	2002	Post institutional crisis (institutional crisis), dotcom crisis
Asia	Developing	2008	Global Financial Crisis
North America	Developing	2009	
South America	Developing	2010	
North America	Developed	2011	
Asia	Developing	2011	
Europe	Developed	2020	Global pandemic
Europe	Developed	2020	
Europe	Developed	2020	
South America	Developing	2021	

4.2 Questionnaire design and data collection

This section elaborates on the methodology used in consumer and business surveys conducted by central banks, focusing on the frequency of the surveys, how they are implemented, and the collection of economic agents' inflation expectations.

Figure 3 shows the variations in the frequency of these surveys. Typically, most central banks report collecting this data on a monthly basis, given the need for this type of information at a high frequency. At the same time, it can be observed that, while surveys of firms tend to be predominantly monthly or quarterly, surveys of households or consumers may be conducted on a monthly, quarterly, or semi-annual basis.

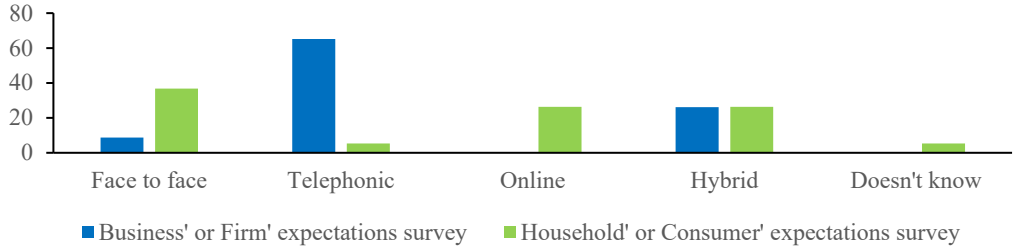
Figure 3: How regularly the survey is conducted?
(% of central banks conducting each type of survey)



Source: Central Bank of Chile

In turn, Figure 4 reveals the use of various collection methods. While surveys of firms tend to favor telephone or hybrid methods, surveys of households or consumers show a greater variety of approaches, notably the trend toward face-to-face surveys. This is consistent with Weber's (2022) observation that online or telephone surveys offer flexibility and low costs but have significant limitations in terms of representativeness, especially in more vulnerable or distrustful populations. This affects households more than businesses, as households tend to show greater heterogeneity in their technological and cognitive capabilities, while in firms, access to the informant may be much more feasible through a telephone appointment than a face-to-face meeting.

Figure 4: What is the collection method used in the survey?
(% of central banks conducting each type of survey)



Source: Central Bank of Chile

When examining the formats used to ask about inflation expectations in questionnaires, a wide variety of approaches emerges. Figure 5 shows that different types of questions are used, and that often two or more formats are combined. Even so, there is a greater prevalence of the use of continuous questions.

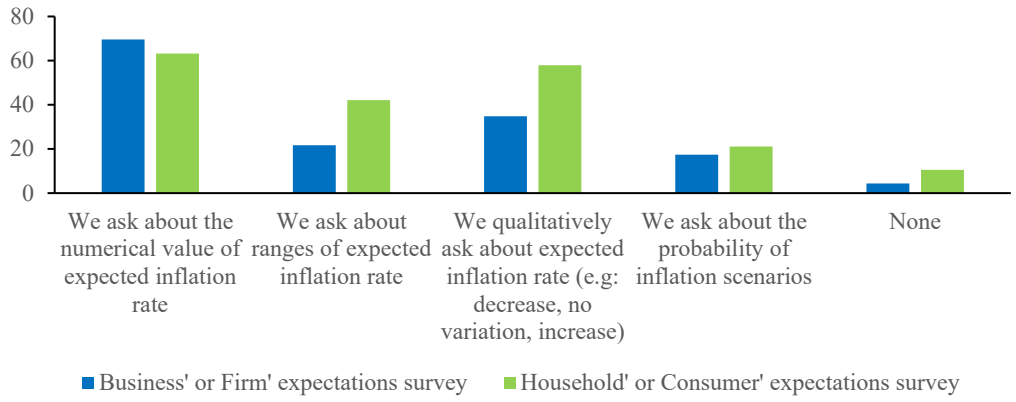
Still, questions directed at households tend to be simplified given the greater effort involved in answering an open-ended question of this nature. There is ample evidence that respondents take "shortcuts" to simplify the task of answering questions that require more time or effort (Groves et al., 2009). Thus, the use of ranges or qualitative scales to answer questions is more prevalent in surveys directed at households than at firms.

Weber (2022) points out that households tend to have greater difficulty answering continuous numerical questions about inflation, while firms—particularly their managers or financial officers—are more familiar with this kind of task.

In addition, Delavande and Rohwedder (2008) document that the cognitive load of numerical questions can be substantial, and that it is preferable to adapt the format to the respondent's abilities. In the case of firms, especially medium-sized and large ones, managers often have training in economics or finance and are accustomed to making quantitative projections, so in comparison they can answer such questions easily.

In any case, the high prevalence of continuous questions, regardless of the respondent's profile, highlights the need for data that allows for more complex statistical analysis (Krosnick & Presser, 2010), and therefore has greater potential for advanced use by central banks.

Figure 5: What type(s) of question do you ask about inflation expectations in the survey?
(% "yes" responses only, of central banks conducting each type of survey)



Source: Central Bank of Chile

Although questions about probability scenarios are included, their prevalence is rather low compared to other types of questions, which may be related to the greater difficulty and time required to answer this type of questions (Binder, 2017; Coibion, 2022).

A closer look at this information by continent reveals a strong preference for numerical questions, by both households and firms. Developed countries tend to use a greater variety of formats, including qualitative and probabilistic questions, especially in North America and Europe. This suggests that some more complex formats, such as those based on probabilities or abstract categories, are used more in contexts where a higher level of financial literacy or cognitive skills is expected from respondents, such as in more developed countries.

When analyzing the results according to the year in which inflation expectations began to be collected, a certain evolution in the formats used can be identified. In countries with older surveys (started between the late 1980s and early 2000s), the use of numerical questions dominates almost exclusively. In contrast, among countries that joined more recently, especially from 2008 onwards, there is a greater relative presence of range questions, qualitative questions, and, to a lesser extent, probabilistic questions. This pattern suggests a possible maturation in methodological procedures, in line with the most recent developments in the literature.

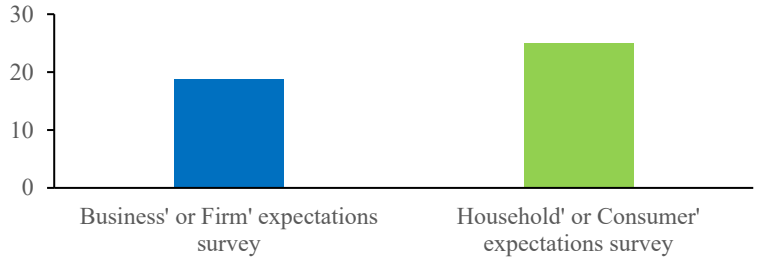
With regard to the validation and treatment of outliers in these continuous questions, the analysis reveals that the validation of quantitative data in these surveys is low (Figure 6). This finding suggests a tendency to collect quantitative data provided by respondents without further intervention, such as defining minimum or maximum ranges. This may be due to a variety of reasons, one of which may be that knowledge about the behavior of these variables is still limited (Pérez, Cortés, Muñoz, & Zapata, 2022), so it may be preferable not to intervene in the answering process before having the results.

When exploring how validation is carried out through open-ended questions, it is observed that setting thresholds tends to be used more in household surveys than in business surveys. This may be so because the use of thresholds seems to be more common and necessary in household surveys, due to the greater dispersion and heterogeneity of their responses (Armantier, 2013). Furthermore, it should be noted that the validation threshold varies among the central banks that answer this question.

Furthermore, in most cases where there is a threshold in place, changes have been made over time. This variability suggests that central banks are continuously adapting to address inflationary fluctuations and adjusting their validation thresholds accordingly. Weber (2022) describes how, in both household and business surveys, ranges are set to restrict outlying responses and facilitate the estimation of subjective distributions, but warns that these ranges can become useless during periods of unexpectedly high inflation. Similarly, Armantier (2013) details how the design of some surveys had to adapt their response intervals as economic conditions evolved. He emphasizes that probability thresholds for inflation expectations must be sensitive to the macroeconomic context, as rigid thresholds can induce biases, truncate important distribution tails, and weaken the instrument's fidelity.

The relationship between these changes in thresholds and inflationary phenomena provides valuable insight. This could indicate greater sensitivity to changing economic conditions and an active response by central banks to maintain the integrity of data collected during periods of inflation volatility.

Figure 6: Does the question have any validator that prevents the recording of answers over or under a specific level of inflation rate?
(% "yes" responses only, of central banks conducting each type of survey)



Source: Central Bank of Chile

The survey also inquired about the treatment of outliers, focusing on whether or not it is done and if so, how it is implemented. Figure 7 reveals that this type of treatment is more frequent than ex ante validation through the inclusion of thresholds in the questionnaire, and is more widely used in surveys of firms, which is the flipside of the lower use of thresholds by this type of respondent. An approach based on the use of outliers alters the responses provided by agents when surveyed, but treatment is carried out in cases where values are considered atypical.

Figure 7: Do you apply any outlier treatment to inflation expectations responses?
(% "yes" responses only, of central banks conducting each type of survey)

Source: Central Bank of Chile

When exploring how this treatment is done, the heterogeneity in the approaches, metrics, and/or values used stands out. In any case, it is possible to group them into two or three types of approaches: one where statistical criteria and data distribution analysis are used, such as the interquartile range or other definitions related to standard deviation; another where an acceptable range for the variable is established, truncating or "winsorizing" at certain fixed thresholds; and a middle -of-the-road situation, where a fixed percentage is defined for the cases to be deleted in the analysis. The diversity of methods suggests adaptability and flexibility in the identification and management of outliers, which may reflect the complexity inherent in the variability of economic agents' responses, as well as changes in economic conditions. However, it also reflects a characteristic that has been common across these results, namely the heterogeneity of the methodologies and practices used by banks when surveying this type of expectations, and therefore the absence of evidence-based guidelines that would allow for the harmonization of the application of these treatments.

4.3 Use and interpretation of survey data

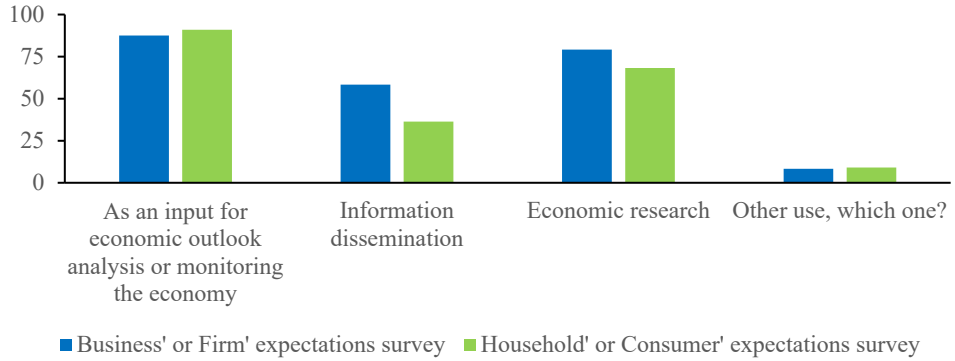
This section examines how the information gathered through expectations surveys is used. For a more detailed understanding, this part is subdivided into two aspects: one that refers to the general uses of the information, and the other to the interpretation of the data with regard to the concept of expectations anchoring.

4.3.1 Use of inflation expectations data

Figure 8 shows that the main use is for analyzing or monitoring the economy. This is its most prominent application, as it allows central banks to increase their battery of indicators for interpreting economic trends..

The next most common use is research. Within this area, it can be seen that surveys of firms are used more than surveys of consumers, with central banks lagging behind somewhat in the use of consumer surveys, which are not as prevalent in external research.

Figure 8: What is your Central Bank's use of inflation expectations?
(% of central banks conducting each type of survey)



Source: Central Bank of Chile

4.3.1.1 Use as an input in economic analysis or monitoring

When focusing on the use of expectations as an input for economic analysis (Figure 9), it becomes apparent that, in general, both business and consumer expectations are typically revised at least every three months, with a greater tendency toward monthly revisions. In this analysis, the firms' inflation expectations are more relevant than consumer expectations. (Figure 10).

Figure 9: How often are inflation expectations are used for economic outlook analisys?
(% of central banks conducting each type of survey, only including those that previously selected economic outlook analysis)

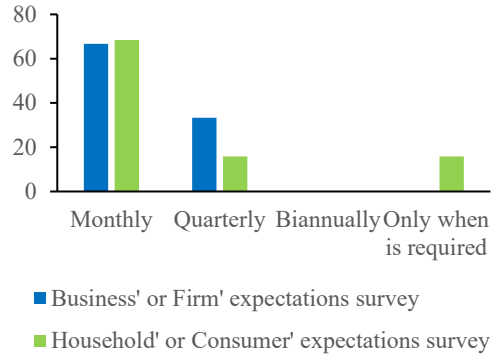
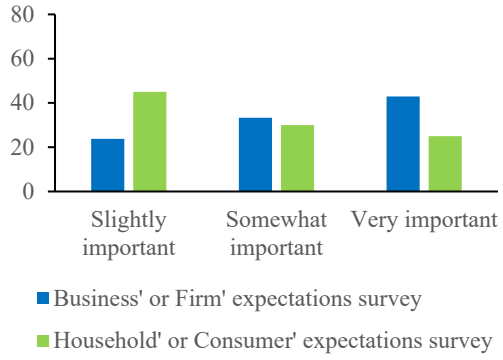


Figure 10: How relevant are inflation expectations as an input to the economic outlook analysis?
(% of central banks conducting each type of survey, only including those that previously selected economic outlook analysis)



Source: Central Bank of Chile

With regard to the use of inflation expectations in forecasting, it appears that almost 60% use business expectations for this purpose, compared with 44% who use consumer expectations. This again shows that this type of instruments uses the firms' expectations more than they do consumers' (Figure 11).

About their specific use for making projections, generating assumptions dominates, while about half use them directly in the models (Figure 12).

Figure 11: Do you use inflation expectations as an input for economic forecasting?
(%"yes" responses only, of central banks conducting each type of survey and only those that previously selected economic outlook analysis)

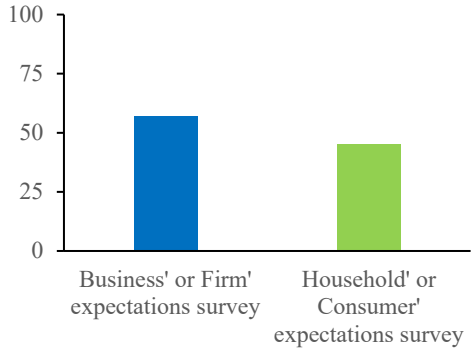
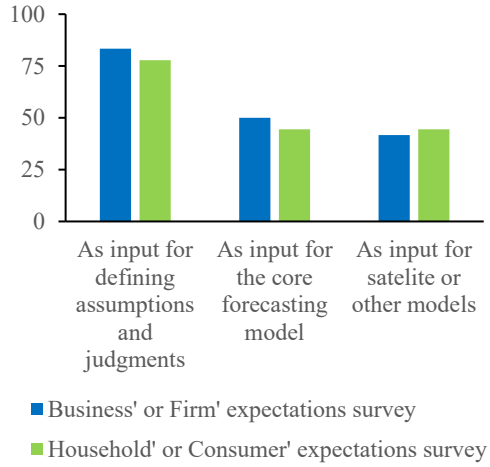


Figure 12: How do you use inflation expectations for economic forecasting?
(% of central banks conducting each type of survey, only those that previously selected to using them for economic outlook analysis and answered "yes" for economic forecasting)



Source: Central Bank of Chile

The analysis of the uses of inflation expectations in monetary policy formulation reveals that many policy makers use and consider these expectations to be important for such purposes (Figure 13). However, the importance assigned to consumer expectations is relatively lower compared to that of firms, where banks that use the latter's expectations tend to give them greater weight in their analyses and decisions (Figure 14).

Figure 13: Do you use inflation expectations for monetary policy decision making?
(% "yes" responses only, of central banks conducting each type of survey and only those that previously selected economic outlook analysis)

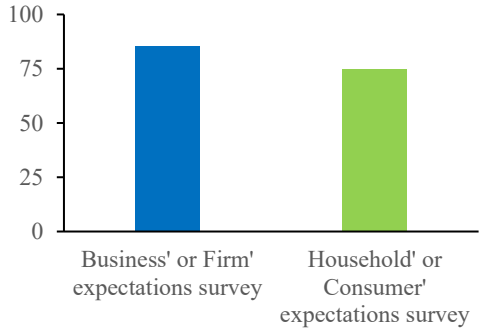
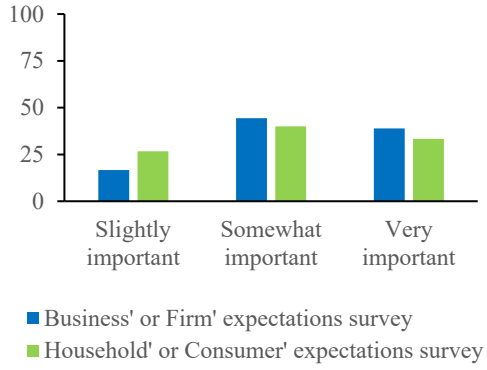


Figure 14: How relevant are inflation expectations as an input to the monetary policy decision making?
(% of central banks conducting each type of survey, only those that previously selected to using them for economic outlook analysis and answered "yes" for monetary policy decision making)



Source: Central Bank of Chile

4.3.1.2 Use in economic research

Focusing on those institutions that use the expectations of firms or households for economic research, it can be seen that the vast majority have conducted research in the last five years with different expectations (Figure 15). Meanwhile, the importance they attach to this research in general has "Some importance," with greater relevance in research conducted using firms (Figure 16).

Figure 15: During the last 5 years, has your institution conducted research based on expectations survey data?
(% of central banks conducting each type of survey, only including those that previously selected economic research)

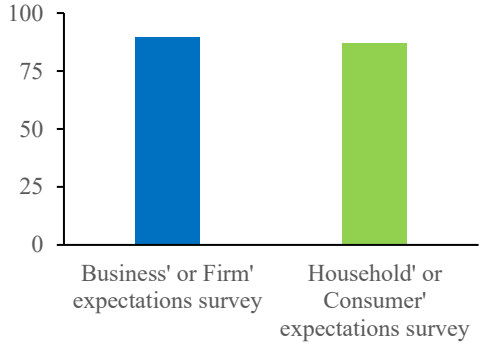
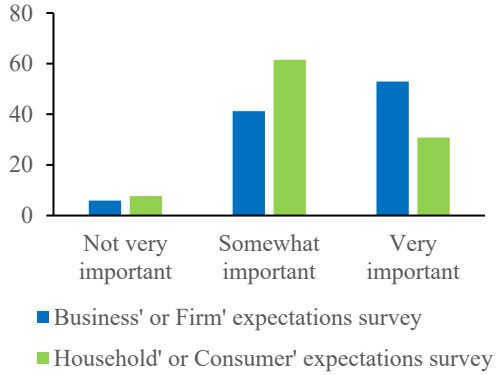


Figure 16: How relevant are research based on expectations survey data to your institution?
(% of central banks conducting each type of survey, only including those that previously selected economic research and answered "yes" to conducting research in the last 5 years)



Source: Central Bank of Chile

Meanwhile, a disaggregation by type of research, specifically about the use of randomized controlled trials (RCTs) shows that only one-third of those who have conducted research in recent years have engaged in this type of practice (Figure 17).

Similarly, when asked about cross-referencing information from expectations surveys with administrative data, approximately one-third reported having conducted this type of research. However, it is interesting to note that a small percentage is limited by technical or legal issues (Figure 18).

Figure 17: Has your institution ever conducted research projects involving randomized trial experiments in the expectations survey? (*)
(% of central banks conducting each type of survey, only including those that previously selected economic research)

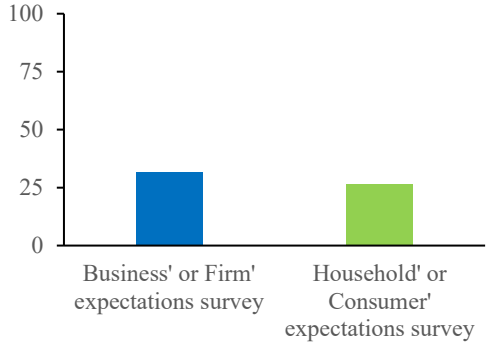
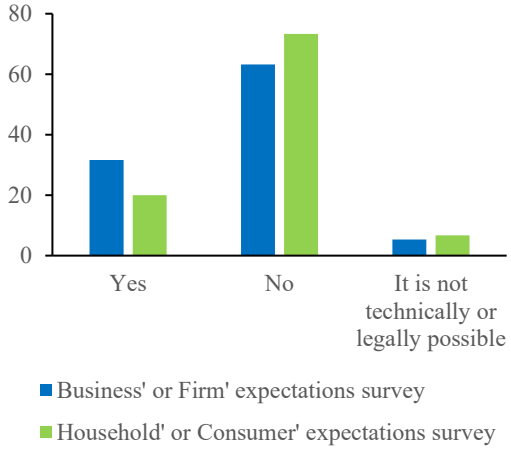


Figure 18: Has your institution ever conducted research projects merging data from the expectations survey with administrative data?
(% of central banks conducting each type of survey, only including those that previously selected economic research)



Source: Central Bank of Chile

4.3.2 Interpreting expectations

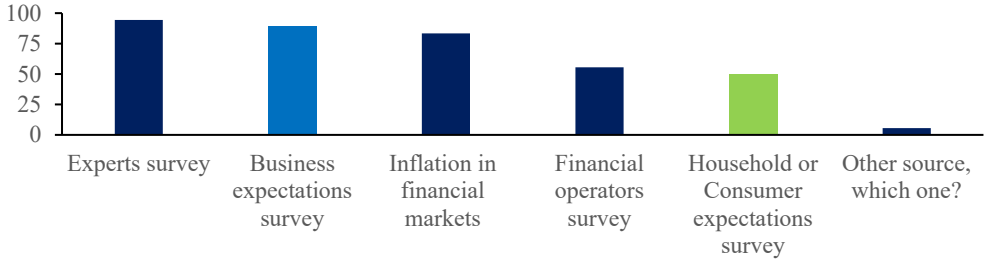
The last section of the module and the survey was based on the assessment of the anchoring of inflation expectations related to business and/or consumer surveys. To this end, the responses of only those institutions that use at least one expectations survey, whether of consumer or business, in their monetary policy decisions were analyzed in order to understand how they analyze anchoring once they have at least one of these surveys available.

Considering this, when respondents were asked about the sources of information, they used to assess the anchoring or de-anchoring of inflation expectations (Figure 19), expert surveys emerge as the most commonly used source. Business surveys follow closely, while consumer surveys remain the least preferred. This suggests that institutions tend to consider business expectations a more reliable indicator than consumer expectations.

Furthermore, looking at the disaggregated results, it can be seen that, in general, surveys are not used in isolation for analysis; only one case uses the business survey alone for its anchor review. In turn, when asked why they do not use surveys as anchor measures, they comment that expectations are not generally used to assess anchoring due to the way the question is formulated or the lack of information.

With regard to countries' level of development, it can be seen that developed ones make extensive and complementary use of various sources to assess the anchoring of expectations, with a marked use of both financial instruments and surveys of experts, businesses, and households. In contrast, developing countries show more limited and heterogeneous use, with a greater focus on business surveys and less use of household surveys.

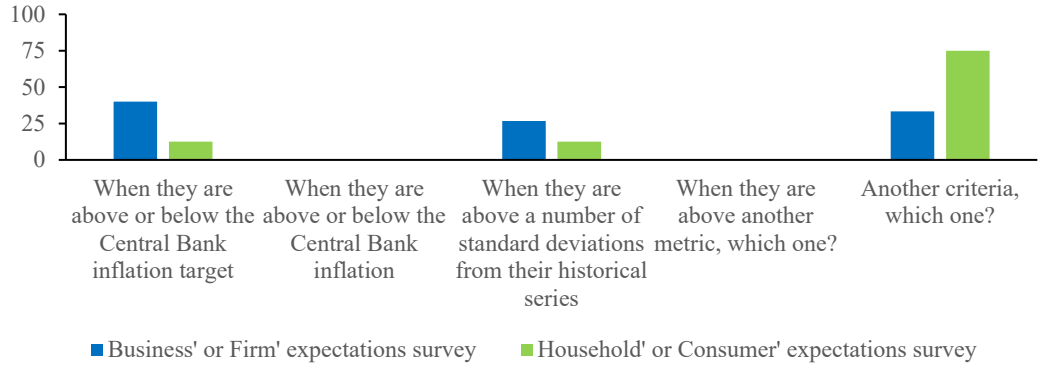
Figure 19: What sources of information do you use to assess the anchoring or de-anchoring of inflation expectations?
(% of central banks conducting each type of survey and using either business or consumer inflation expectations for monetary policy decision making)



Source: Central Bank of Chile

Now, the final question is the criterion used to consider that the expectations of firms or consumers are de-anchored. When consulted, institutions consider that, in the case of business expectations, the most important indicator is whether expectations are above or below the central bank's inflation target, followed by a consideration of the number of deviations from their own historical distribution. This contrasts with consumer expectations, where the main criterion is unspecified “other criteria” (Figure 20).

Figure 20: When do you consider that inflation expectations are de-anchored?
(% of central banks conducting each type of survey and that use it to assess the anchoring or de-anchoring of inflation expectations)



Source: Central Bank of Chile

5. Conclusions

The results presented in the previous section show that business and consumer sentiment surveys are growing in popularity and have become an important source of information for central banks, with different time frames and degrees of progress among countries. This is reflected in the varied methodologies used by the various central banks to collect and analyze data, which creates challenges for the comparison of results.

From a theoretical standpoint, in recent decades, there have been advances in expectations models that incorporate the possible biases in attention and/or information to which these agents are exposed. In macroeconomic models, agents' expectations play a key role, influencing both mathematical modeling and the findings or conclusions that can be obtained from them. Therefore, progress toward the study of expectations that consider various biases has been of great importance.

However, the heterogeneity of the methodological approaches adopted by central banks makes it difficult to compare results and interpret conclusions. This aspect is particularly critical in a context where economic expectations are decisive in modeling and predicting future behavior, which directly influences monetary policy decisions. The absence of a common conceptual framework not only restricts the capacity for evaluation at the international level, but also dilutes the potential impact of these tools on strategic decision-making.

Notwithstanding the above, there are some instances and developments that provide conceptual and methodological guidelines for the collection and analysis of this information. Taking into account the results reviewed in the previous sections, it would be desirable to continue promoting and strengthening this discussion for progress to be made in the following areas:

First, working on an internationally harmonized methodology for these surveys. The disparity in the methodologies used, both in data collection and analysis, highlights the importance of developing a common approach that also considers the specific characteristics of each country. Although the systematization of specialized literature allows us to derive some guidelines for the

different phases of the statistical production process, no standard exists that is comprehensive or clear enough on the matter.

Having a standard of this nature would guarantee improvements in the quality of the various instruments, greater comparability of results at the global level, and therefore the quality of the conclusions derived from these instruments. At the same time, a sufficiently clear and standardized approach could promote initiatives to collect this information in the central banks of emerging countries, which currently lack these instruments, thereby contributing to the generation of a greater volume of evidence on the subject, especially in contexts where this phenomenon has not been studied deeply enough.

Secondly, it is necessary to establish a standard for the use of expectation anchoring in surveys, for both firms and consumers. The diversity of applications of this concept poses significant challenges, especially when assessing inflation expectations. Standardizing the interpretation of data would not only improve the consistency of analyses from different sources or countries, but would also allow monetary authorities to have a more accurate assessment of the dynamics of this variable, thus improving the conditions for greater use.

Finally, there is a delay in the construction and analysis of surveys targeting consumers or households. Although some countries conduct surveys of both sectors, there is a tendency to prioritize surveys of businesses. This discrepancy is reflected in the limited use of consumer survey data in monetary policy formulation, as well as in the insufficient attention they receive in terms of research. This lack of balance in the attention paid to different market segments precludes a comprehensive understanding of economic dynamics.

In a globalized economic environment, international cooperation among central banks and multilateral organizations is key to ensuring the success of these efforts. The creation of a common methodological framework for this type of survey would not only enable more accurate and useful analysis for monetary policy, but would also allow for valid worldwide comparisons, contributing to a better understanding of global economic dynamics.

References

Armantier, O., Bruine de Bruin, W., Potter, S., Topa, G., van der Klaauw, W., & Zafar, B. (2012). Measuring Inflation. *Annual Review of Economics*.

Attanasio, O. (2009). Expectations and Perceptions in Developing Countries: Their Measurement and Their Use. *The American Economic Review 99, no. 2*, 87-92.

Binder, C. (2017). Measuring uncertainty based on rounding: New method and application to inflation expectations. *Journal of Monetary Economics, vol 90.*, 1-12.

Bruine de Bruin, W., Maski, C., Topa, G., & van der Klaauw, W. (2009). Measuring Consumer Uncertainty about Future Inflation. *Federal Reserve Bank of New York Staff Reports*.

Cagan, P. (1956). The monetary dynamics of hyper-inflation. En M. (. Friedman, *Studies in the quantity theory of money* (págs. 25–117). Chicago, IL: University of Chicago Press.

CE, FMI, OCDE, NU, BM. (2016). *Sistema de Cuentas Nacionales 2008.* Nueva York. Obtenido de https://unstats.un.org/unsd/nationalaccount/docs/SNA2008Spanish.pdf

CEPAL. (2008). *Encuestas de opinión empresarial del sector industrial en América Latina.* Santiago. Obtenido de https://www.cepal.org/sites/default/files/publication/files/4770/S0800468_es.pdf

Chhaochharia, V., Kim, D., Korniotis, G. M., & Kumar, A. (2019). Mood, firm behavior, and aggregate economic outcomes. *Journal of Financial Economics, 132*(2), 427–450.

Coibion, O. (2022). Expectations Surveys: Design and Applications.

Coibion, O., Gorodnichenko, Y., & Weber, M. (2019). *Monetary policy communications and their effects on household inflation expectations.* Cambridge, MA: National Bureau of Economic Research.

Curtin, R. T. (2023). Relative performance of business and consumer economic expectations across EU countries. *Journal of Business Cycle Research*, 95-117.

D'Acunto, F., Hoang, D., Paloviita, M., & Weber, M. (2023). IQ, expectations, and choice. *The Review of Economic Studies, 90*(5), 2292–2325.

D'Acunto, F., Malmendier, U., & Weber, M. (2020). *Gender roles and the gender expectations gap.* Cambridge, MA: National Bureau of Economic Research.

D'Acunto, F., Malmendier, U., & Weber, M. (2022). What Do the Data Tell Us About Inflation Expectations? *NBER*.

Delavande, A., Giné, X., & McKenzie, D. (2011). Measuring subjective expectations in developing countries: A critical review and new evidence. *Journal of Development Economics vol 94, Issue 2*, 151-163.

Dräger, L., Gründler, K., & Potrafke, N. (2024). Political shocks and inflation expectations: Evidence from the 2022 Russian invasion of Ukraine. *Journal of International Economics*, 104029.

Expert Group on International Economic and Social Classifications. (2018). Glossary. working document. Obtenido de https://unstats.un.org/unsd/classifications/bestpractices/glossary_short.pdf

Expert Group on National Quality Assurance Frameworks. (2012). Glossary. Obtenido de https://unstats.un.org/unsd/dnss/docs-nqaf/NQAF%20GLOSSARY.pdf

Ezekiel, M. (1938). The cobweb model. *The Quarterly Journal of Economics, 52*(2), 255–280.

Fisher, I. (1930). *Theory of interest.* New York, NY: Macmillan.

Groves, R., Fowler, F., Couper, M., Lepkowski, J., Singer, E., & Tourangeau, R. (2009). *Survey Methodology* (Second Edition ed.). Wiley.

Hicks, J. R. (1938). *Value and capital.* Oxford, England: Oxford University Press.

IMF, ILO, Eurostat, UNECE, OECD, WB. (2020). *Consumer Price Index Manual Concepts and methods.* Washington, DC. Obtenido de https://www.ilo.org/publications/consumer-price-index-manual-concepts-and-methods-2020

Kahneman, D. &. (1982). On the psychology of prediction. En D. &. Kahneman, *Judgment under uncertainty: Heuristics and biases* (págs. 48-68). Cambridge University Press.

Kaldor, N. (1934). A Classificatory Note on the Determinateness of Equilibrium. *The Review of Economic Studies, 1*(2), 122-136.

Krosnick, J., & Presser, S. (2010). *Handbook of Survey Research.* doi:ISBN: 978-1-84855-224-1

Lorca, J., Pastén, E., & Pérez, D. (2024). *Encuestas de expectativas de hogares y empresas: Cómo usarlas y cómo pueden aportar a un Banco Central.* Notas de Discusión División Política Monetaria N°5, Banco Central de Chile. Obtenido de https://www.bcentral.cl/contenido/-/details/notas-de-discusion-5-mayo-2024

Lucas, R. (1972). Expectations and the neutrality of money. *Journal of Economic Theory*, 103–124.

Mankiw, G. &. (2002). Sticky information versus sticky prices: A proposal to replace the New Keynesian Phillips Curve. *The Quarterly Journal of Economics, 117*, 1295–1328.

Manski, C. (2017). Survey Measurement of Probabilistic Macroeconomic Expectations: Progress and Promise. *NBER Macroeconomics Annual Colume 32*, 441-471.

Muth, J. F. (1961). Rational expectations and the theory of price movements. *Econometrica*, 315–355.

Nerlove, M. (1958). *The dynamics of supply: Estimation of the farmers' response to price.* Baltimore, MD: Johns Hopkins University Press.

OECD. (2003). *Business Tendency Surveys: A Handbook.* Paris. Obtenido de https://www.oecd-ilibrary.org/economics/business-tendency-surveys_9789264177444-en

Pérez, D., Cortés, V., Muñoz, K., & Zapata, I. (Marzo de 2022). *Minutas citadas en recuadros del Informe de Política Monetaria* . Obtenido de Expectativas de inflación y comportamiento de hogares y empresas: https://www.bcentral.cl/documents/33528/3456057/Minutas_Citadas_en_Recuadros_IPoM_Marzo_2022.pdf

Roth, C., & Wohlfart, J. (2020). How do expectations about the macroeconomy affect personal expectations and behavior? *The Review of Economics and Statistics, 102*(4), 731–748.

Simon, H. A. (1955). A behavioral model of rational choice. *The Quarterly Journal of Economics*, 99-118.

Sims, C. A. (2003). Implications of rational inattention. *Journal of Monetary Economics, 50*(3), 665–690.

Svetlova, E. (2022). AI meets narratives: The state and future of research on expectation formation in economics and sociology. *Socio-Economic Review*.

UN. (2015). *Handbook on Economic Tendency Surveys.* New York. Obtenido de https://digitallibrary.un.org/record/3899855?ln=es&v=pdf

UN. (2018). *Classification of Individual Consumption According to Purpose (COICOP).* New York. Obtenido de https://unstats.un.org/unsd/classifications/unsdclassifications/COICOP_2018_-_pre-edited_white_cover_version_-_2018-12-26.pdf

UNECE. (2019). *Generic Statistical Business Process Model.* Version 5.1, January 2019. Obtenido de https://unece.org/statistics/documents/2019/01/standards/gsbpm-v51

United Nations. (2014). Fundamental Principles of Official Statistics. *Resolution adopted by the General Assembly.* Obtenido de https://unstats.un.org/unsd/dnss/gp/FP-New-E.pdf

Weber, M. D. (2022). *The subjective inflation expectations of households and firms: Measurement, determinants, and implications.* National Bureau of Economic Research.

Working, H. (1949). The investigation of economic expectations. *American Economic Review, 39*(3), 150-166.

Appendix: The survey questionnaire

Central Banks Expectations Surveys

Start of Block: Instructions

Introduction The purpose of this survey is to learn about characteristics and uses of surveys run or commissioned by central banks, as well as those run by third parties which central banks have access to, aimed to measure inflation expectations of businesses, consumers or households. This survey has 4 modules: (I and II) About general characteristics of inflation expectations surveys on businesses or consumers, (III) about specific questions design in these surveys, and (IV) about the uses given to these surveys. The survey requires the participation and coordination of different areas of the central banks. We would greatly appreciate if you arrange this in order to have the different perspectives of the areas involved in this process. Modules I, II and III should be answered by the team in charge of survey design, collection and/or database creation. Module IV should be answered by the teams using the survey data, either for monitoring the economy, monetary policy decision making or research. The Central Bank of Chile highly appreciates your contribution.

End of Block: Instructions

Start of Block: Module I: Types of survey.

I1 Does the Central Bank where you currently work, commission or directly collect any surveys to know businesses or consumers inflation expectations?

	The Central Bank directly run the survey (1)	The Central Bank commission or has access to surveyed data conducted by a third party (2)	The Central Bank has access to aggregated results from a survey conducted by a third party (3)	The Central Bank do not have access to this kind of surveys (4)
Business' or Firm' expectations survey (1)	○	○	○	○
Household' or Consumer' expectations survey (2)	○	○	○	○

End of Block: Module I: Types of survey.

Start of Block: Module I.a: Business expectations survey

I.a1 First, we will ask you about the **survey on firms' or private businesses' expectations**. If your institution considers the results of more than one business survey, answer for the one considered the **most reliable for analyzing inflation expectations**.

I.a2 ¿What is the full name of the business survey?

_____

I.a3 ¿What is the acronym of the business survey? (short name)

_____

End of Block: Module I.a: Business expectations survey

Start of Block: Module II.a: Business survey sample and collection method

IIa **Module II.a: Business survey sample and collection method** *This module should be answered by the team in charge of the ${I.a3/ChoiceTextEntryValue} survey design and/or collection data.*

II.a1 ¿How regularly the ${I.a3/ChoiceTextEntryValue} survey is conducted?

- ○ Monthly (1)
- ○ Quarterly (2)
- ○ Biannually (3)
- ○ Annually (4)
- ○ Another collection frequency, which one? (5) _____

II.a2 Since what year has the ${I.a3/ChoiceTextEntryValue} survey been conducted? *e.g. 2015*

_____

II.a3 What is the collection method used in the ${I.a3/ChoiceTextEntryValue} survey?

- ○ Face to face (1)
- ○ Telephonic (2)
- ○ Online (3)
- ○ Other, which one? (5) _____

End of Block: Module II.a: Business survey sample and collection method

Start of Block: Module III.a: Business survey questionnaire and data treatment

III **Module III.a: Business survey questionnaire and data treatment** *This module should be answered by the team in charge of the ${I.a3/ChoiceTextEntryValue} survey design, collection data and/or database creation.*

III.a1 What type of question do you ask about business inflation expectations in the ${I.a3/ChoiceTextEntryValue} survey?

	Yes (1)	No (2)
We ask about the numerical value of expected inflation rate (1)	○	○
We ask about ranges of expected inflation rate (2)	○	○
We qualitatively ask about expected inflation rate (e.g: decrease, no variation, increase) (4)	○	○
We ask about the probability of inflation scenarios (3)	○	○

Display This Question:

If What type of question do you ask about business inflation expectations in the ... = We ask about the numerical value of expected inflation rate [Yes]

III.a2 Does the question have any validator that prevents the recording of answers over or under an specific level of inflation rate?

○ Yes (1)

○ No (2)

Display This Question:

If Does the question have any validator that prevents the recording of answers over or under an spec... = Yes

III.a3 At present, what is the **minimum** level of inflation that the questionnaire allows to register?

_____

Display This Question:

If Does the question have any validator that prevents the recording of answers over or under an spec... = Yes

III.a4 At present, what is the **maximum** level of inflation that the questionnaire allows to register?

_____

Display This Question:

If Does the question have any validator that prevents the recording of answers over or under an spec... = Yes

III.a5 During the last 12 months, have you found it necessary to modify the upper threshold?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Does the question have any validator that prevents the recording of answers over or under an spec... = Yes

III.a6 During the last 12 months, did you modify the upper threshold?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If During the last 12 months, did you modify the upper threshold? = Yes

III.a7 How did you modify it?

_____

_____

_____

_____

_____

Display This Question:

If What type of question do you ask about business inflation expectations in the ... = We ask about the numerical value of expected inflation rate [Yes]

III.a8 Once the data has been recollected, do you apply any outlier treatment to the business inflation expectations response?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Once the data has been recollected, do you apply any outlier treatment to the business inflation... = Yes

III.a9 Which outlier treatment do you apply to the business inflation expectations response?

_____

Display This Question:

If Once the data has been recollected, do you apply any outlier treatment to the business inflation... = Yes

III.a10 Previously did you use any different outlier treatment than the current one?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Previously did you use any different outlier treatment than the current one? = Yes

III.a11 Which was the previous outlier treatment and why it was changed?

_____

III.a12 Is the questionnaire available online to be downloaded?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Is the questionnaire available online to be downloaded? = Yes

III.a13 Please, provide the link from which the questionnaire can be downloaded

_____

End of Block: Module III.a: Business survey questionnaire and data treatment

Start of Block: Module I.b Consumer expectations survey

I.b1 Now, we will ask you about the survey on households´ or consumers´ expectations. If your institution considers the results of more than one survey, answer for the one considered the **most reliable for analyzing inflation expectations**.

I.b2 ¿What is the full name of the household or consumer survey?

_____

I.b3 ¿What is the acronym of the household or consumer survey? (short name)

_____

End of Block: Module I.b Consumer expectations survey

Start of Block: Module II.b Consumer survey sample and collection method

IIb **Module II.B: Household or consumer survey sample and collection method** *This module should be answered by the team in charge of the ${I.b3/ChoiceTextEntryValue} survey design and/or collection data.*

II.b1 ¿How regularly the ${I.b3/ChoiceTextEntryValue} survey is conducted?

- ○ Monthly (1)
- ○ Quarterly (2)
- ○ Biannually (3)
- ○ Annually (4)
- ○ Another collection frequency, which one? (5) _____

II.b2 Since what year has the ${I.b3/ChoiceTextEntryValue} survey been conducted? *e.g. 2015*

_____

II.b3 What is the collection method used in the ${I.b3/ChoiceTextEntryValue} survey?

- ○ Face to face (1)
- ○ Telephonic (2)
- ○ Online (3)
- ○ Other, which one? (5) _____

End of Block: Module II.b Consumer survey sample and collection method

Start of Block: Module III.b: Consumer survey questionnaire and data treatment

III.b **Module III.b: Consumer survey questionnaire and data treatment** *This module should be answered by the team in charge of the ${I.b3/ChoiceTextEntryValue} survey design, collection data and/or database creation.*

III.b1 What type of question do you ask about consumers inflation expectations in the ${I.b3/ChoiceTextEntryValue} survey?

	Yes (1)	No (2)
We ask about the numerical value of expected inflation rate (1)	○	○
We ask about ranges of expected inflation rate (2)	○	○
We qualitatively ask about expected inflation rate (e.g: decrease, no variation, increase) (4)	○	○
We ask about the probability of inflation scenarios (3)	○	○

Display This Question:

If What type of question do you ask about consumers inflation expectations in the ... = We ask about the numerical value of expected inflation rate [Yes]

III.b2 Does the question have any validator that prevents the recording of answers over or under an specific level of inflation rate?

○ Yes (1)

○ No (2)

Display This Question:

If Does the question have any validator that prevents the recording of answers over or under an spec... = Yes

III.b3 At present, what is the **minimum** level of inflation that the questionnaire allows to register?

_____

Display This Question:

If Does the question have any validator that prevents the recording of answers over or under an spec... = Yes

III.b4 At present, what is the **maximum** level of inflation that the questionnaire allows to register?

_____

Display This Question:

If Does the question have any validator that prevents the recording of answers over or under an spec... = Yes

III.b5 During the last 12 months, have you found it necessary to modify this upper threshold?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Does the question have any validator that prevents the recording of answers over or under an spec... = Yes

III.b6 During the last 12 months, did you modify the upper threshold?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If During the last 12 months, did you modify the upper threshold? = Yes

III.b7 How did you modify it?

_____

Display This Question:

If What type of question do you ask about consumers inflation expectations in the ... = We ask about the numerical value of expected inflation rate [Yes]

III.b8 Once the data has been recollected, do you apply any outlier treatment to the consumers inflation expectations response?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Once the data has been recollected, do you apply any outlier treatment to the consumers inflation... = Yes

III.b9 Which outlier treatment do you apply to the consumers inflation expectations response?

_____

Display This Question:

If Once the data has been recollected, do you apply any outlier treatment to the consumers inflation... = Yes

III.b10 Previously did you use any different outlier treatment than the current one?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Previously did you use any different outlier treatment than the current one? = Yes

III.b11 Which was the previous outlier treatment and why it was changed?

_____

III.b12 Is the questionnaire available online to be downloaded?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Is the questionnaire available online to be downloaded? = Yes

III.b13 Please, provide the link from which the questionnaire can be downloaded

_____

End of Block: Module III.b: Consumer survey questionnaire and data treatment

Start of Block: Module IV.a: Uses of business survey data

IV.a **Module IV.a: Uses of business survey data** *This module should be answered by the teams users of ${I.a2/ChoiceTextEntryValue} data, either for monitoring the economy, monetary policy decision making or research.*

IV.a1 What is your Central Bank's use of business inflation expectations? *You can choose more than one answer*

- [ ] As an input for economic outlook analysis or monitoring the economy (1)
- [ ] Information dissemination (4)
- [ ] Economic research (2)
- [ ] Other use, which one? (3) _____

Display This Question:

If What is your Central Bank's use of business inflation expectations?You can choose more than one a... = As an input for economic outlook analysis or monitoring the economy

IV.a2 How often business inflation expectations are used for economic outlook analisys?

- ○ Monthly (1)
- ○ Quarterly (2)
- ○ Biannually (3)
- ○ Only when is required (4)

Display This Question:

If What is your Central Bank's use of business inflation expectations?You can choose more than one a... = As an input for economic outlook analysis or monitoring the economy

IV.a3 How relevant are business inflation expectations as an input to the economic outlook analysis?

- ○ Slightly important, they are considered in the analysis as any other input. (1)
- ○ Somewhat important, they are relevant to the analysis but not critical (2)
- ○ Very important, they are part of the most important inputs considered in the analysis (3)

Display This Question:

If What is your Central Bank's use of business inflation expectations?You can choose more than one a... = As an input for economic outlook analysis or monitoring the economy

IV.a4 Do you use business inflation expectations as an input for economic forecasting?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Do you use business inflation expectations as an input for economic forecasting? = Yes

IV.a5 How do you use business inflation expectations for economic forecasting? *You can choose more than one answer*

- ☐ As input for defining assumptions and judgments (1)
- ☐ As input for the core forecasting model (2)
- ☐ As input for satelite or other models (3)

Display This Question:

If What is your Central Bank's use of business inflation expectations?You can choose more than one a... = As an input for economic outlook analysis or monitoring the economy

IV.a6 Do you use business inflation expectations for monetary policy decision making?

- Yes (1)
- No (2)

Display This Question:

If Do you use business inflation expectations for monetary policy decision making? = Yes

IV.a7 How relevant are business inflation expectations as an input to the monetary policy decision making?

- Slightly important, they are considered in the decision making process as any other input. (1)
- Somewhat important, they are relevant to the decision making process but not critical (2)
- Very important, they are part of the most important inputs considered in the decision making process (3)

Display This Question:

If What is your Central Bank's use of business inflation expectations?You can choose more than one a... = Economic research

IV.a8 During the last 5 years, has your institution conducted research based on business' expectations survey data?

- Yes (1)
- No (2)

Display This Question:

If What is your Central Bank's use of business inflation expectations?You can choose more than one a... = Economic research

IV.a9 Has your institution ever conducted research projects about randomized trial experiments in business expectations survey (e.g., giving random information to some respondents to assess the effect of that information on responses)?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If What is your Central Bank's use of business inflation expectations?You can choose more than one a... = Economic research

IV.a10 Has your institution ever conducted research projects with merge data from the business expectations survey with administrative data?

- ○ Yes (1)
- ○ No (2)
- ○ It is not technically or legally possible for our institution to merge expectations survey data with administrative data (3)

Display This Question:

If During the last 5 years, has your institution conducted research based on business' expectations... = Yes

IV.a11 How relevant are research based on business expectations survey data to your institution?

- ○ Not very important, seldomly done or not the main focus of research projects (1)
- ○ Somewhat important, are consider in the bank's research agenda, but not critical (2)
- ○ Very important, are a relevant part of the bank's research agenda (3)

End of Block: Module IV.a: Uses of business survey data

Start of Block: Module IV.b: Uses of consumer survey data

IV.b **Module IV.b: Uses of consumer survey data** *This module should be answered by the teams users of ${I.b2/ChoiceTextEntryValue} data, either for monitoring the economy, monetary policy decision making or research.*

IV.b1 What is your Central Bank's use of consumers inflation expectations? *You can choose more than one answer*

- ☐ As an input for economic outlook analysis or monitoring the economy (1)
- ☐ Information dissemination (4)
- ☐ Economic research (2)
- ☐ Other use, which one? (3) _____

Display This Question:

If What is your Central Bank's use of consumers inflation expectations?You can choose more than one... = As an input for economic outlook analysis or monitoring the economy

IV.b2 How often consumers inflation expectations are used for economic outlook analisys?

- ○ Monthly (1)
- ○ Quarterly (2)
- ○ Biannually (3)
- ○ Only when is required (4)

Display This Question:

If What is your Central Bank's use of consumers inflation expectations?You can choose more than one... = As an input for economic outlook analysis or monitoring the economy

IV.b3 How relevant are consumers inflation expectations as an input to the economic outlook analysis?

- ○ Slightly important, they are considered in the analysis as any other input. (1)
- ○ Somewhat important, they are relevant to the analysis but not critical (2)
- ○ Very important, they are part of the most important inputs considered in the analysis (3)

Display This Question:

If What is your Central Bank's use of consumers inflation expectations?You can choose more than one... = As an input for economic outlook analysis or monitoring the economy

IV.b4 Do you use consumers inflation expectations as an input for economic forecasting?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Do you use consumers inflation expectations as an input for economic forecasting? = Yes

IV.b5 How do you use consumers inflation expectations for economic forecasting? *You can choose more than one answer*

- ☐ As input for defining assumptions and judgments (1)
- ☐ As input for the core forecasting model (2)
- ☐ As input for satelite or other models (3)

Display This Question:

If What is your Central Bank's use of consumers inflation expectations?You can choose more than one... = As an input for economic outlook analysis or monitoring the economy

IV.b6 Do you use consumers inflation expectations for monetary policy decision making?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If Do you use consumers inflation expectations for monetary policy decision making? = Yes

IV.b7 How relevant are consumers inflation expectations as an input to the monetary policy decision making?

- ○ Slightly important, they are considered in the decision making process as any other input. (1)
- ○ Somewhat important, they are relevant to the decision making process but not critical (2)
- ○ Very important, they are part of the most important inputs considered in the decision making process (3)

Display This Question:

If What is your Central Bank's use of consumers inflation expectations?You can choose more than one... = Economic research

IV.b8 During the last 5 years, has your institution conducted research based on consumers' expectations survey data?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If What is your Central Bank's use of consumers inflation expectations?You can choose more than one... = Economic research

IV.b9 Has your institution ever conducted research projects about randomized trial experiments in consumer expectations survey (e.g., giving random information to some respondents to assess the effect of that information on responses)?

- ○ Yes (1)
- ○ No (2)

Display This Question:

If What is your Central Bank's use of consumers inflation expectations?You can choose more than one... = Economic research

IV.b10 Has your institution ever conducted research projects with merge data from the consumer expectations survey with administrative data?

- ○ Yes (1)
- ○ No (2)
- ○ It is not technically or legally possible for our institution to merge expectations survey data with administrative data (3)

Display This Question:

If During the last 5 years, has your institution conducted research based on consumers' expectations... = Yes

IV.b11 How relevant are research based on consumers expectations survey data to your institution?

- ○ Not very important, seldomly done or not the main focus of research projects (1)
- ○ Somewhat important, are consider in the bank's research agenda, but not critical (2)
- ○ Very important, are a relevant part of the bank's research agenda (3)

End of Block: Module IV.b: Uses of consumer survey data

Start of Block: Module IV.c: Assessment of inflation expectations

Q73 Finally, this module asks about the assessment of the anchoring of inflation expectations related to business and/or consumer surveys.

Display This Question:

If Do you use business inflation expectations for monetary policy decision making? = Yes

Or Do you use consumers inflation expectations for monetary policy decision making? = Yes

IV.12 What sources of information do you use to assess the anchoring or de-anchoring of inflation expectations? *You can choose more than one answer*

- ☐ Experts survey (1)
- ☐ Financial operators survey (2)
- ☐ Inflation expectations implicit in financial markets / Inflationary compensation observed in financial markets (3)
- ☐ Business expectations survey (4)
- ☐ Household or Consumer expectations survey (5)
- ☐ Other source, which one? (6) _____

Display This Question:

If What sources of information do you use to assess the anchoring or de-anchoring of inflation expec... = Business expectations survey

IV.13a When do you consider that **businesses** inflation expectations are de-anchored?

- ○ When they are above or below the Central Bank **inflation target** (1)
- ○ When they are above or below the Central Bank **inflation forecast** (2)
- ○ When they are above a number of **standard deviations** from their historical series (3)
- ○ When they are above **another metric**, which one? (4) _____
- ○ **Another criteria**, which one? (5) _____

Display This Question:

If What sources of information do you use to assess the anchoring or de-anchoring of inflation expec... != Business expectations survey

And Does the Central Bank where you currently work, commission or directly collect any surveys to kno... != Business' or Firm' expectations survey [The Central Bank do not have access to this kind of surveys]

And Y What sources of information do you use to assess the anchoring or de-anchoring of inflation expec... q://QID38/SelectedChoicesCount Es mayor que 0

IV.14a Why do you not consider the **businesses** inflation expectations to asses the de-anchored of inflation expectations?

_____

Display This Question:

If What sources of information do you use to assess the anchoring or de-anchoring of inflation expec... = Household or Consumer expectations survey

VI.13b When do you consider that **consumers** inflation expectations are de-anchored?

- ○ When they are above or below the Central Bank **inflation target** (1)
- ○ When they are above or below the Central Bank **inflation forecast** (2)
- ○ When they are above a number of **standard deviations** from their historical series (3)
- ○ When they are above **another metric**, which one? (4) _____
- ○ **Another criteria**, which one? (5) _____

Display This Question:

If What sources of information do you use to assess the anchoring or de-anchoring of inflation expec... != Household or Consumer expectations survey

And Does the Central Bank where you currently work, commission or directly collect any surveys to kno... != Household' or Consumer' expectations survey [The Central Bank do not have access to this kind of surveys]

And Y What sources of information do you use to assess the anchoring or de-anchoring of inflation expec... q://QID38/SelectedChoicesCount Es mayor que 0

IV.14b Why do you not consider the **consumers** inflation expectations to asses the de-anchored of inflation expectations?

_____

End of Block: Module IV.c: Assessment of inflation expectations

Documentos de Trabajo Banco Central de Chile	Working Papers Central Bank of Chile
NÚMEROS ANTERIORES	PAST ISSUES
La serie de Documentos de Trabajo en versión PDF puede obtenerse gratis en la dirección electrónica: www.bcentral.cl/esp/estpub/estudios/dtbc. Existe la posibilidad de solicitar una copia impresa con un costo de Ch$500 si es dentro de Chile y US$12 si es fuera de Chile. Las solicitudes se pueden hacer por fax: +56 2 26702231 o a través del correo electrónico: bcch@bcentral.cl.	Working Papers in PDF format can be downloaded free of charge from: www.bcentral.cl/eng/stdpub/studies/workingpaper. Printed versions can be ordered individually for US$12 per copy (for order inside Chile the charge is Ch$500.) Orders can be placed by fax: +56 2 26702231 or by email: bcch@bcentral.cl.

DTBC – 1054
Decoding Central Banks' Practices: A Closer Look at Inflation Expectations Surveys
Valentina Cortés Ayala, Karlla Muñoz Cáceres, Daniel Pérez Klein

DTBC – 1053
An Assessment of the Effects of Monetary Policy Communication in Chile
Mario González-Frugone, Ignacio Rojas

DTBC – 1052
This Time is Global: Synchronisation in Economic Policy Uncertainty Indices
Carlos Medel

DTBC – 1051
Beyond Costs: The Dominant Role of Strategic Complementarities in Pricing
Elias Albagli, Francesco Grigoli, Emiliano Luttini, Dagoberto Quevedo, Marco Rojas

DTBC – 1050
The Anatomy of Aggregate Productivity
Federico Huneeus, Yasutaka Koike-Mori, Antonio Martner

DTBC – 1049
The Aggregate Welfare Effects of Nonlinear Prices in Supply Chains
Luca Lorenzini, Antonio Martner

DTBC – 1026*
The Incidence of Distortions
David Atkin, Baptiste Bernadac, Dave Donaldson, Tishara Garg, Federico Huneeus

DTBC – 1006*
Input Price Dispersion Across Buyers: New Evidence and Implications for Aggregate Productivity
Ariel Burstein, Javier Cravino, Marco Rojas

DTBC – 1048
The effect of automation on the labor market: An approach using firm-level microdata
Camilo Levenier

DTBC – 1047
Firm-level CO2 Emissions and Production Networks: Evidence from Administrative Data in Chile
Pablo Acevedo, Elías Albagli, Gonzalo García-Trujillo, María Antonia Yung

DTBC – 1046
The Cross Border Effects of Bank Capital Regulation in General Equilibrium
Maximiliano San Millán

DTBC – 1045
The impact of financial crises on industrial growth in the Middle East and North Africa
Carlos Madeira

DTBC – 1044
The impact of financial crises on industrial growth: lessons from the last 40 years
Carlos Madeira

DTBC – 1043
Heterogeneous UIPDs Across Firms: Spillovers from U.S. Monetary Policy Shocks
Miguel Acosta-Henao, Maria Alejandra Amado, Montserrat Martí, David Perez-Reyna

DTBC – 1042
Bank Competition and Investment Costs across Space
Olivia Bordeu, Gustavo González, Marcos Sorá

DOCUMENTOS DE TRABAJO Septiembre 2025