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Qualitative Field Research in Monetary Policy Making

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Acknowledgements

Abstract

Many central banks conduct economic field research involving in-depth interviews with external parties. But very little is known about how this information is used and its importance in the formation of monetary policy. We address this gap in the literature through a thematic analysis of open-ended interviews with senior central bank economic and policy staff who work closely with policy decision-makers. We find that these central bankers consider information from field research programs not just useful but also an essential input for monetary policy making. They use this information in conjunction with quantitative tools primarily to inform their near-term forecasts. The information is considered most valuable at potential turning points in the economy when uncertainty about the pace of economic growth is heightened (in the advent of large shocks to the economy) and when timely official data are not available or are viewed as unreliable. Senior staff also place a high value on maintaining a reliable and credible sample of representative economic agents that can be accessed on an ongoing basis and very quickly when required.

Bank topics: Monetary Policy; Monetary policy and uncertainty; Business fluctuations and cycles
JEL codes: E52, E37, C83

Résumé

Beaucoup de banques centrales mènent des recherches sur le terrain au cours desquelles elles effectuent des entretiens approfondis avec des acteurs du tissu économique de leur pays. Cependant, on en sait très peu sur la manière dont les renseignements ainsi recueillis sont utilisés et sur l'importance qu'ils revêtent dans la conduite de la politique monétaire. Pour remédier à cette *lacune*, nous réalisons une analyse thématique d'entretiens à questions ouvertes menés auprès de cadres supérieurs de banques centrales chargés des questions d'analyse et de politique économiques et qui travaillent de près avec les décideurs de leur institution. Nous constatons que, pour ces cadres, les renseignements obtenus lors des recherches sur le terrain sont non seulement utiles, mais aussi essentiels pour la formulation de la politique monétaire. Les cadres se servent de ces renseignements conjointement avec des outils quantitatifs, principalement pour éclairer leurs prévisions à court terme. Ces renseignements s'avèrent très précieux dans deux cas : quand l'économie pourrait se trouver à un point de retournement compte tenu de l'incertitude élevée entourant le rythme de croissance économique (lorsque l'économie subit des chocs importants); et quand des données officielles à jour ne sont pas disponibles ou qu'elles ne sont pas considérées comme fiables. Les cadres supérieurs accordent aussi une grande importance au maintien d'un échantillon fiable et crédible d'agents économiques représentatifs qu'ils peuvent consulter régulièrement et très rapidement, au besoin.

Sujets : Politique monétaire; Incertitude et politique monétaire; Cycles et fluctuations économiques
Codes JEL : E52, E37, C83

1. Introduction

"Information on economic activity gathered from industry contacts across the country provides a very different lens through which to view the economy . . . [It gives] insight into what business people are seeing and planning and provides insight into the real-world stories and business decisions that underlie the official statistics." (Macklem 2002)

"Through our surveys and conversations with business leaders, we regularly get clues about economic trends before they show up in the official economic statistics." (Poloz 2017b)

Many central banks around the world engage in qualitative research and analysis, devoting important resources to collecting and analyzing data from in-depth interviews with economic agents (e.g., see Dong et al. 2016; Lane and Rosewall 2015; Swiss National Bank Regional Network 2015).[1] While many of these banks provide detailed public documentation about the quantitative models and tools used to generate their forecasts and projections, comparatively little public information exists about the conduct and use of economic field research for monetary policy.[2] According to Woodford (2005, i), a "notable change in central banking over the past [30] years has been a world-wide movement toward increased communication by central banks about their policy decisions." Kozicki and Vardy (2017, 1) argue that the "goal of the Bank's communications is to offer a comprehensive assessment of the events and issues that are influencing monetary policy decisions."[3] This paper, by explaining how and why economic field research is used, contributes to improving the transparency of monetary policy decision-making.

Despite the wide application of qualitative research methods in many central banks, the literature on qualitative research methods and their application in monetary policy is sparse. In-depth interviews with economic agents and any subsequent analysis "are not thought of as being part of the economist's toolkit" (Starr 2014, 238). Information directly collected from economic agents may be considered too "noisy," making central bankers wary of communicating too much about issues raised in such meetings (Blinder et al. 2008). Nevertheless, some seminal papers in the field of economics are based on qualitative analysis. For example, Bewley's (1995, 1999) work on wage setting and Blinder et al.'s (1998) examination of the price-setting behaviour of firms have direct implications for monetary policy (Starr 2014).[4]

We address the gap in the literature regarding how and why these research methods are used in monetary policy making, and we look at the importance of these tools as perceived by those responsible for developing an outlook for the economy. The paper undertakes this through a qualitative analysis of detailed notes and transcripts of confidential, semi-structured interviews with senior economic and

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[1] See the Federal Reserve Bank of Atlanta's Central Bank Business Survey Database for a list of international central banks with field research programs. These programs have developed organically over time for a variety of purposes, such as (1) regional liaison outreach activities used to communicate the rationale for monetary policy decisions and (2) currency-related functions including distribution and public awareness of counterfeiting.

[2] At the Bank of Canada, see Dorich et al. (2013) and Gervais and Gosselin (2014).

[3] Poloz (2017a) suggests that these complementary tools lead to a more stable and predictable rate of inflation and an even better environment for decision-making by agents.

[4] Coase's (1937, 1988) foundational work on the theory of the firm also warrants mention.

policy advisors from several central banks with field research programs.[5, 6] Within central banks, this information is sometimes referred to as business intelligence or regional field work and is usually gathered through open-ended interviews, round tables and industry consultations. Interviewees included senior staff in central banks working at the periphery of decision-making. Often such staff have titles such as senior economic advisor, senior policy advisor, advisor to the governor or senior director. In this paper, we refer to them more generally as advisors.

Monetary policy making is founded upon advanced quantitative research and analysis. These studies use highly developed macroeconomic models based on both official and unofficial statistical data, which policy-makers use to develop a projection and outlook for the economy.[7] Qualitative research—most often performed by central banks after interviews, meetings and consultations with economic agents—provides information about the narratives, structural issues and economic conditions facing consumers and organizations. Analyzing this information can help to explain the behaviour of consumers and organizations, which in turn informs the judgment of central banks in their economic outlook.

Qualitative analysis also provides a reality check of a central bank's outlook. Similarly, through our interviews with central banks, we learned about the language, framework and approaches that advisors use when incorporating this information into their outlook.[8]

Our findings suggest that when developing their economic outlook, many central banks combine traditional quantitative analysis with insights based on field research. We also find that central bank advisors use economic field research primarily to inform the judgment applied to near-term quantitative forecasts, to identify forces acting on the economy, to understand the transmission channels of shocks and to understand changes in agents' decision-making processes relevant to the macroeconomic outlook. This field research is especially important at turning points with respect to economic momentum when there is considerable uncertainty about the direction of the economy (in the presence of large recent shocks to the economy) and when timely official data are not available. Given the importance of this qualitative data in formulating an outlook for the economy during periods of heightened uncertainty, advisors place a high value on being able to reach a relevant, reliable and credible sample of decision-makers across industries and regions in a timely way.[9] We also find some evidence of the use of field research methods to test theories and assumptions about economic behaviour.

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[5] A semi-structured interview includes both closed- and open-ended questions, providing scope for new or unanticipated information to be gathered from conversational partners considered to be experts in the domain of inquiry. The semi-structured interview is a common instrument of qualitative field research.

[6] All participating central banks had already-established field research programs. The number of years these programs had been in place and their level of development, however, varied across organizations.

[7] According to Stockton (2012), forecasting can involve developing a shared understanding of the evolving economic narrative and the likely outlook for the economy, as well as identifying any risks around that outlook.

[8] Central banks' meetings and consultations can involve a broad spectrum of stakeholders. These activities also allow them to hear directly about the impact of their policies and what economic issues are important to economic agents.

[9] The Bank of Canada, for example, has sought to understand and account for these uncertainties by combining quantitative research with insights obtained from a range of alternative sources (Kozicki and Vardy 2017). These include the quarterly Business Outlook Survey and Senior Loan Officer Survey, and one-off qualitative field studies such as Dong et al. (2016, 2017).

The main contribution of this paper is to better understand how and why central banks use in-depth field data and qualitative analysis in monetary policy making. But a second important contribution is to familiarize economists, policy-makers and central bank observers with these research methods by demonstrating directly how one approach works in practice. In particular, we follow established practices in qualitative research methods to arrive at our findings and include detailed annotations to the studies on qualitative research methods throughout this paper. While this is not a comprehensive literature review, we provide a guide to some of the tools and procedures of qualitative analysis, which may be useful to central bank staff interested in further developing this field research.[10]

The remainder of this paper is organized as follows. Section 2 briefly discusses some of the main differences between qualitative and quantitative research methods. Section 3 describes our sample, the data collected and the methodology we use. Section 4 presents our main findings, and Section 5 concludes.

2. Qualitative research

In qualitative research studies, data are usually collected through interviews, focus groups or group discussions, and participant observation. The researcher's focus is to discover the decision-making frame of the interview participant as they describe their "lived experience." The interviewee or participant, rather than the researcher, is the subject expert. Philosophically, many researchers engaged in qualitative analysis adopt a post-positivist or post-modern stance.[11] They anticipate differences in subjects' lived experiences and do not assume a single reality that can be known objectively. Furthermore, they anticipate that the researcher's biases can influence the research, and they incorporate strategies explicitly to mitigate these impacts within the research design. In contrast, quantitative researchers often implicitly assume that they are unbiased and that their choices and methods do not influence the research results. Post-positivists would counter that quantitative researchers are not as bias-free as they assume; rather, the researcher's biases and influences are simply unrecognized.

Qualitative research can involve a variety of methods, including ethnographic research, grounded theory and phenomenology.[12] Economists would be most familiar with case studies. In this paper, we focus on a specific approach to the analysis that is both well suited to the type of field work conducted by central bank staff and popular due to its flexibility. Specifically, the *thematic analysis* approach that we employ involves identifying patterns or themes within textual data that themselves are often collected from in-depth interviews. According to Braun and Clarke (2006), thematic analysis is a method rather than a methodology. The goals of the analysis are to identify and code important or interesting fragments of textual data from interview notes and transcripts, to identify links or connections among meaningful fragments and then to summarize these linkages into themes that inform the research questions. In the next section of the paper, we briefly describe the steps involved.

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[10] More generally, Starr (2014) surveys the growing use of qualitative methods in economics.
[11] Positivism assumes that there is a knowable reality that is independent of the research process, so that causal relationships between variables exist and can even be identified. In contrast, post-positivism does not assume a single knowable reality that is independent of the research process. It does, however, anticipate that the social world is patterned and that causal relationships can be identified using appropriate research methods. See Nagy (2016).
[12] See Creswell and Poth (2017).

3. Methodology

In this section, we describe our process for choosing the sample of interview participants, the size and composition of the sample, the interview setting, and the research methods we used to analyze the qualitative data collected from the interviews. Lastly, we discuss the various research design tools used to ensure the validity and reliability of our findings.

Qualitative research methods are widely used in sociology, anthropology, psychology, political science, medicine, law and other disciplines. Often, qualitative analysis based on in-depth interviews is used to better understand behaviour. In qualitative studies, researchers "proceed to the field" with clear guidelines about the issues they want to investigate. They expect the interaction with the research participants, together with background information and other relevant data, to provide the basis for constructing a sound characterization of the phenomenon of interest. In contrast, in quantitative studies, researchers gather or use data already collected with the expectation that they know in advance a fixed set of dimensions along which the data should be characterized. Important features of a well-designed qualitative research program include participant observation, prolonged engagement, purposive sample construction, cognitive and conversational interviewing techniques, data immersion and thematic analysis.[13]

3.1. Sample

The collection of in-depth interview data is generally time- and labour-intensive; and compared with quantitative analyses, sample sizes are often small. Non-random samples are usually constructed "purposively" to include interviewees who have in-depth knowledge of the area of interest and a capacity to shed light on research questions.[14] In our case, we wanted to learn about the process of monetary policy making by listening to the perspectives and experiences of advisors from a diverse set of central banks who use a combination of both qualitative and quantitative research methods in forming their outlook. We were looking for candor and an opportunity for participants to offer their own unique perspectives unrestricted by their institution's "official view."

Through prolonged engagement and participant observation, we were familiar with the population from which a relevant sample of subject matter experts could be drawn.[15] We sent invitations to participate in interviews to field research staff at 22 central banks, who then identified potential participants using the snowball sampling method.[16] Participation was voluntary, and only in a few cases did we not get a response to our invitation. Overall, 28 advisors from 15 central banks participated in the study. The central banks represented were diverse in terms of their regional composition, the size of their economy their stage of economic development (with emerging and developing economies represented alongside the majority of participants from central banks in advanced economies) and the number of years their qualitative field research program has been in place. We conducted 20 hour-long phone interviews. In

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[13] See Flick (2013) and Given (2008) for detailed information about these methods.

[14] Patton (2002) provides a comprehensive discussion of purposive sampling.

[15] Prolonged engagement and participant observation in qualitative research refer to a research method where the investigator spends significant time with the respondents or takes part in the everyday activities of the respondents, collecting data to better understand their behaviours and values. The methods seek to gain a deeper understanding of a particular topic or behaviour "through the meanings ascribed to it by the individuals who live and experience it" (Given 2008, 598).

[16] Snowball sampling may involve an initial set of respondents suggesting or proposing other participants for a study.

some cases, two interviewees were included in the same meeting. After about half of the interviews were complete, the answers to our questions and the themes of our conversations with interviewees started to become familiar or repetitive. By the 15th interview, we reached a saturation point in terms of themes and narratives that could be extracted from the sample. Having reached the saturation point, we ceased the pursuit of additional in-depth interviews.[17]

3.2. Interviews

Interviewees were informed of our research topic and the open-ended questions of interest prior to the interview (see Appendix A). Participants could respond to our questions using their own words, adding nuances or caveats, instead of having to choose an answer from a list of predetermined responses. Or, if they wished, they were free to question the question and take the discussion in a direction more reflective of their own lived experience. The interview format also allowed us to ask follow-up questions based on the responses of the interviewee. Interviewees were assured confidentiality, with findings to be communicated only in aggregate and without attribution.

Meetings were conducted between August and October of 2018. Both authors were involved in all interviews. Central bank advisors were invited to explain the reasoning behind their responses. This flexible approach, according to Starr (2014, 240), is "needed for gaining a full and complete set of insights into the phenomenon of interest." Clarifying and probing questions allow our study to recover a better picture of the "factors and processes (e.g., cognitive, social, informational) at work in the respondent's thinking, as well as the opportunities and constraints present in the environment that shaped his perceptions, beliefs and behaviours" (Starr 2014, 240).

During our in-depth interviews, each researcher took detailed handwritten interview notes. Our extensive notes documented the questions and responses of all participants, including direct quotes and examples offered in the respondents' own words. Notes from each interview and each interviewer were subsequently entered into a single document and reconciled to ensure consistency and accuracy, thus creating a single transcript of each interview.

3.3. Analysis

The qualitative data analysis stage of the research involved coding, examining and then interpreting the text-based data to develop insights into our research questions of interest. Thematic analysis is one common form of data analysis in qualitative research.[18] It provides a systematic approach to identifying emergent themes within a dataset. Themes are patterns in the data that are important to the overall description of a phenomenon.[19] This process is iterative; and moving back and forth between the following steps is common.

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[17] Saturation is an important concept in sample construction in qualitative field research. A sample reaches saturation when the interviewer begins to hear the same information over and over without learning anything new. When saturation is reached, the sample size is considered enough. See Douglas (1976), Lincoln and Guba (1985), Rubin and Rubin (1995) and Weiss (1994).

[18] Thematic analysis incorporates many aspects of both phenomenology and grounded theory—two basic approaches used in qualitative analysis. Phenomenologists focus on describing what all participants in a study have in common as they experience a phenomenon, while the intent of a grounded theory study is to move beyond description and to formulate a theory. See Creswell and Poth (2017) for more details.

[19] The steps used for conducting thematic analysis are described in more detail in Braun and Clarke (2006).

Our first step was to become fully immersed in the interview data. Both of us, along with a research assistant who was not present in the interviews, read and reread the interview notes.[20] By reading the interview notes and transcripts again and again, we were able to get a general sense of the information collected, reflect on some possible themes and identify the main ideas conveyed, both explicitly and implicitly, by participants, including their overall tone. We identified several different views and perceptions of interviewees.[21] In this first step of our analysis, we started to write down our initial impressions in a "reflexivity journal" to reflect on emergent patterns and themes and to keep track of how the data and our analysis might be biased by our own judgments.[22]

The next step involved starting to identify codes or features of the data that recurred or that appeared interesting or the most meaningful for the research participants. We next imported our extensive interview notes into a spreadsheet and worked systematically through the entire dataset to identify small strings of text that conveyed a discreet bit of meaning; we assigned a unique code to each bit. Boyatzis (1998, 63) suggests that codes are "the most basic segment, or element, of the raw data or information that can be assessed in a meaningful way regarding the phenomenon." Coding reduces the interview notes into small chunks of meaning. Codes may reflect the terminology used by participants during the interview or provide an indication of the context of the conversation.[23] Before we started coding the data, we developed an initial set of codes, which we then modified while working through the coding process. The entire dataset was coded separately by each interviewer and a research assistant to reduce potential biases. The research team then debated and reconciled variances in interpretations and coding. We agreed upon a final list of mutually exclusive codes and applied it to the entire dataset. This set of codes is presented in Appendix B. An example of how some of these codes were linked together based on our interview notes is provided in **Figure 1**.

The following step involved making links among codes to identify patterns and extract overarching themes from the data. These themes captured something significant about the data and our research questions. We assigned higher importance to themes and codes that occurred more frequently in the data. After an extensive period of time recoding and identifying potential themes, some unrelated to our initial research questions, we narrowed down the number of themes to focus on those that could contribute most significantly to our research questions.[24] We also thought about possible relationships between themes and between different levels of themes (i.e., overarching themes versus sub-themes), as well as about how they fit together to convey a story about the dataset. Lastly, we reread the entire

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[20] When central banks engage in field work using qualitative research methods, they do not always wait for all the textual data to be collected before beginning to absorb and process the narratives provided by participants.

[21] The ability of qualitative research to identify and characterize "latent" variables or concepts that are relevant to a phenomenon is one of its great strengths. For example, concepts that are difficult to quantify but that may importantly bear on agents' economic decision-making and behaviour—such as confidence, trust, assumptions about the future, uncertainty and fear—can be explored through qualitative research methods.

[22] A reflexivity journal is a diary or log in which researchers record their evolving positions or perspectives on the study's topics of interest. Finlay (2002) discusses techniques to understand the interviewers' role in the interview context and how to use this knowledge to enhance the trustworthiness, transparency and accountability of their research. A researcher's reflexivity journal should record all the decisions made at each step of the analysis and the reasons for them, in addition to the researcher's own reflections about the study's findings and their implications for the research study.

[23] Coding can be done either manually (using a spreadsheet) or through a specialized software program (e.g., NVivo).

[24] It may be useful to use visual representations (or thematic maps) to help sort the different codes into themes.

Figure 1: Thematic map: illustration of central bank mixed-methods approach to outlook development

(Numbers in parentheses refer to data codes listed in more detail in Appendix B)
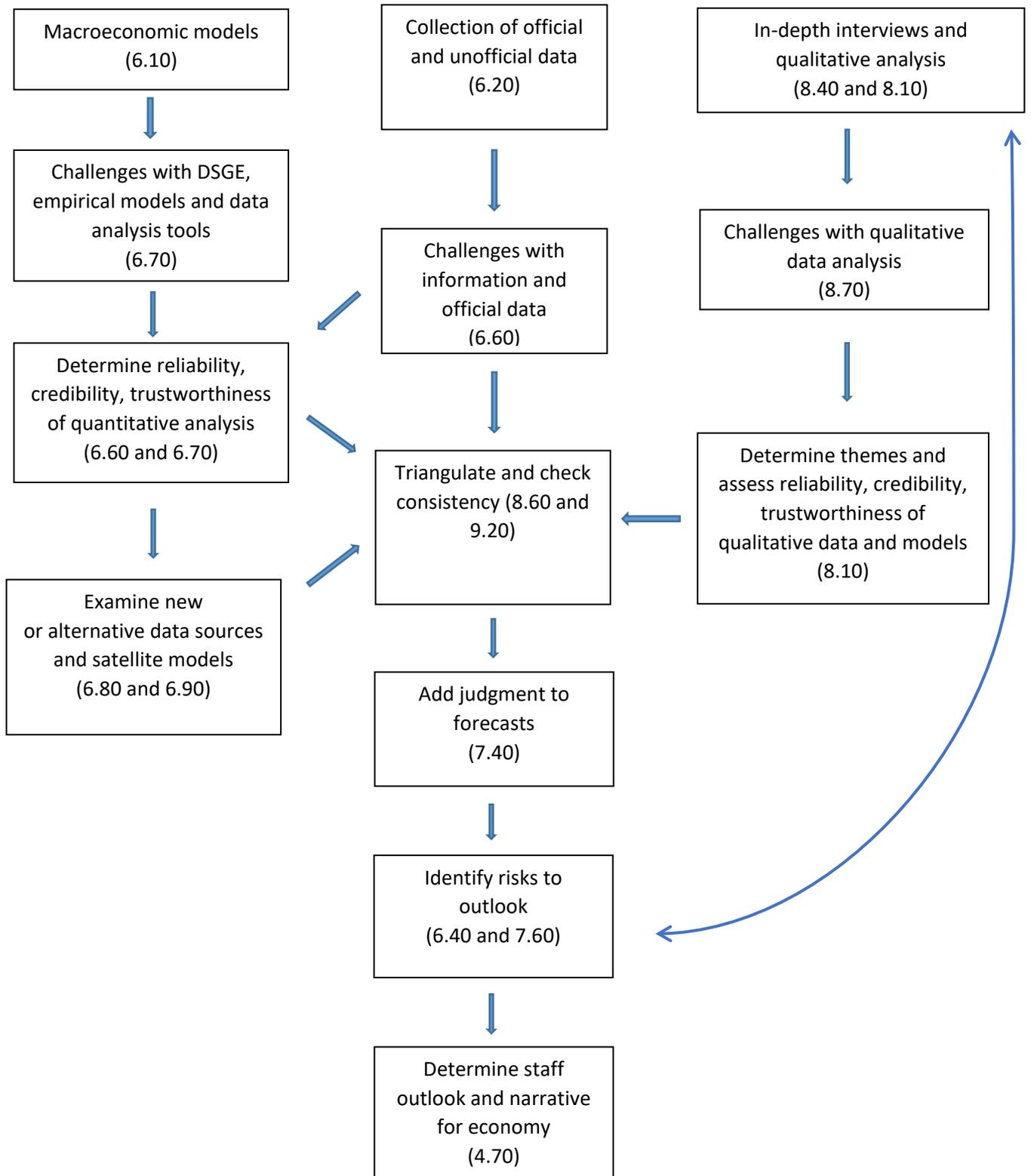
dataset to ensure that the themes accurately reflect the data and to code any additional potentially relevant data that we may have missed.

Credibility is a key criterion for judging the quality of qualitative research.[25] Credibility involves establishing that findings are truly believable. Recall that qualitative researchers generally assume that there is no single objective reality; since everyone is unique, it is not possible to aggregate data across individuals. Lincoln and Guba (1985) refer to credibility as the degree to which a reader can be confident that the results of a study truly represent the perspectives and reality of the interviewees. Credibility will depend in large part on the richness of the information gathered and the appropriateness of the sample, rather than on the amount of data gathered.

To ensure the credibility of our findings, we employed "peer debriefing"—a robustness strategy that involves discussing findings with other economists at the Bank of Canada and with qualitative researchers in other disciplines, asking them to provide feedback on our methods and results. These peers may help identify possible problems or biases of the study or the researcher. Lastly, we employed "member checking," which involves sharing the aggregated information and research findings with interviewees to ensure they can locate their views and experiences among the aggregate results. Member checking was done later in the research process, when research findings were being finalized.

4. Findings

The following subsections summarize the different themes identified in our analysis of conversations with senior staff at central banks around the world.

4.1. Central banks combine traditional quantitative analysis with insights based on field research and analysis

When developing their economic outlook, many central banks with established qualitative research programs combine traditional quantitative analysis with insights based on field research and analysis.[26] This is known in the qualitative research literature as a mixed-methods approach.[27] Interviewees often stressed the importance of integrating information from different research methods—given that the current generation of macroeconomic models central banks use are seen as having reached their

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[25] In quantitative research, "validity" is the key criterion used to judge the trustworthiness of quantitative research. Validity refers to the strength of the inferences drawn from the empirical analysis. For example, "internal validity" refers specifically to whether statistical inferences about the causal effects from a sample are valid for the population being studied.

[26] Based on extensive discussions with central bank staff around the world, many central banks are similarly structured in terms of how they organize economic staff responsible for analyzing developments in their domestic economies. Core in this function is a department or division responsible for generating a forecast or projection for economic growth and inflation over the medium term and making a staff recommendation for the setting of monetary policy.

[27] A mixed-methods research study is not a blending of research methods. The use of a mixed-methods design makes the study more comprehensive or complete than if a single method was used. In the case of central banks, mixed-methods studies are projects in which a core analysis (usually quantitative analysis) and a non-core but required qualitative analysis are conducted at the same time. See Creswell and Clark (2017), Cresswell and Cresswell (2018) and Morse and Niehaus (2016) for additional information.

capacity in terms of their complexity and ability to provide a full picture of how the economy is expected to evolve in the medium term.

We found the process of developing an outlook and monetary policy recommendation using both qualitative and quantitative methods to be far from mechanical or routine. Interviewees often referred to frequent back-and-forth discussions among staff and advisors, including field research staff, about how to interpret and weigh different sources and types of information relevant to the explanation and outlook for the economy.

In our consultations, several policy advisors also indicated that they often test out alternative shock transmission channels by triangulating or cross-verifying information provided by macroeconomic model forecasts, official statistical data, economic field research and other sources. In some central banks, qualitative analysis serves as a reality check for the staff's or decision-makers' economic outlook and the forecasts for the various components of aggregate demand, potential output and inflation, which are largely founded upon their organization's macroeconomic models. Surprisingly, the use of in-depth field interviews as an exploratory tool to learn about changes in the structure of the economy is not widespread, even though exploratory analysis to support the development of new theories is an important motivation for qualitative research in many other social sciences. Only a few advisors referred to field research as a possible avenue for deepening their understanding of how the economy works at the microeconomic level.

The extent to which advisors trust and rely upon economic field research varies. But overall, they view central bank field research as trustworthy, with many indicating an appetite for more qualitative research and analysis to support them in their roles. Generally, higher levels of trust and reliance were associated with more mature programs, proven relevance over time, timeliness in response to shocks and confidence in the quality of the sample. Several respondents noted that their trust in the analysis depends importantly on knowing and trusting that their analysts employ rigour in collecting and analyzing the data and that their field staff have quality long-standing relationships with credible and well-informed external contacts.

A few advisors had a different view of how qualitative analysis should be used in central banks. They indicated that the information collected from in-depth field interviews was best used to "add colour" or provide examples in their published economic outlook or in speeches made by their organization's decision-makers rather than to inform the analysis and decision-making process. These interviewees frequently considered working with field information to be insufficiently systematic. Or they questioned whether qualitative research methods could produce reliable information about changes in economic phenomena.

4.2. Quantitative analysis using macroeconomic models and official data is central to policy

According to central bank advisors, the foundation of central banks' economic outlooks and forecasts and their staff's monetary policy recommendation lies solidly in official data and macroeconomic models, which often use the most up-to-date quantitative research methods. The analysis is usually centred on at least one workhorse dynamic stochastic general equilibrium (DSGE) model. This model is supported by semi-structural or reduced-form econometric models used to forecast the various

components of aggregate demand, potential output and inflation.[28] Even in central banks with well-developed and long-standing field research programs, monitoring, forecasting and policy decision-making are mostly grounded in estimated and calibrated macroeconomic models combined with official monthly or quarterly data distributed by national statistical agencies.

4.3. Field research helps to address challenges with data

Given central banks' highly quantitative approach to developing an outlook for their respective economies, many policy advisors consider one of the most important functions of field work to be filling in data gaps. These can occur when official statistical data are not available or are subject to major delays or revisions once released. For example, the quarterly national accounts in Canada, which include real GDP by expenditure, are released about two months after the end of each calendar quarter and then revised when the next quarter's data are released. Central bank interviewees reported that official data releases can be volatile and at times provide contradictory signals when compared with other data sources. They suggested that field intelligence can provide corroborating evidence and shed light on important macroeconomic dynamics that have taken place in the current and most recent quarter.

We found that central banks sometimes incorporate field research findings into their forecasts using the judgment of staff economists and policy advisors. For example, in cases where field samples are relatively small, economists and advisors often extracted themes from interviews with business executives, usually by topic (e.g., sales, investment, capacity pressures, etc.), and then used them to adjust the quantitative forecasts for components of aggregate demand or inflation in one direction or another. Or they use them to identify risks to the forecasts for components of aggregate demand or inflation. Whether this is done depends on whether the themes extracted from field interviews are considered credible and reliable.

Other central banks integrate their field research results directly into their nowcasts and near-term forecasting models by first creating quantitative summary measures such as scores or indices.[29] Over time, many central banks have found the information content in these summary indexes of field data results valuable in terms of forecasting performance, including at the industry or regional level.

Some advisors also reported that dynamics within dominant or key sectors of the economy were important in determining the macroeconomic outlook, but that official data were too aggregated, late or insufficiently detailed to assist in projecting sectoral-level dynamics. In such cases, insights from economic field research helped inform an understanding of both cyclical and structural developments in those sectors, as well as decisions about the weight that should be placed on the imperfect or incomplete data available from other sources.

4.4. Advisors cross-check central banks' model forecasts with economic field work

Advisors often mentioned that they relied on macroeconomic models to inform their understanding of the current and future trajectory for the economy. They revealed that even when recently released official data are consistent with model-based nowcasts, advisors still looked to economic field work as a further cross-check or consistency check on their outlook for the economy. The more information they

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[28] At the Bank of Canada, see Dorich et al. (2013) and Gervais and Gosselin (2014).
[29] See "Definitions for the Agents' Scores," Bank of England (September 12, 2019), for details and definitions of the Bank of England's agents' scores.

can find pointing in a similar direction to the economic outlook, the more confident advisors are in the conclusions they draw from their principal quantitative tools.

Some policy advisors also indicated that they, as well as decision-makers in their organization, often test out new or alternative theories about the current state and evolution of the economy by triangulating or cross-verifying information provided by macroeconomic model forecasts, official statistical data and field analysis (see **Figure 1**).

4.5. Central banks integrate quantitative analysis and field research

Advisors often stated that a key function of their role is to provide a credible explanation for the various macroeconomic dynamics taking place in the economy that are puzzling staff and decision-makers, including economic developments at a sectoral, industrial, regional or other sub-national level. This involves not only a description but also a better understanding of why, how, for how long and by what channels shocks or ongoing structural changes are affecting the economy, as well as an assessment of risks.

The current generation of DSGE macroeconomic models remains a primary tool of central banks. However, advisors frequently characterized these models as incomplete or reaching their capacity in terms of their ability to provide detailed explanations for how the economy is expected to evolve in the medium term. Advisors indicated that the ability to explain the complex dynamics between macroeconomic aggregates is still very difficult. This is the case even as central banks continue to develop macroeconomic models that include additional microfoundations, allow for more interaction between real and financial variables, increase the amount of heterogeneity across consumers and firms, and include additional sectoral or industrial dynamics.

Further, since it is common for DSGE models to be estimated and calibrated using historical data, advisors commented upon the need to apply judgment when interpreting the results of their models, particularly when economies face major structural changes or cyclical shocks that differ from those in the past. Many advisors also suggested that economic field research serves as an important aid in identifying potential new channels of economic shocks or alternatively in interpreting the results of macroeconomic models.

Several interview participants provided examples of situations in which their theory-based predictions of how agents would behave in response to a shock was different from what their field interviews and qualitative analysis revealed. Advisors considered this new information extremely helpful. In the presence of recent shocks and turning points in economic activity, this additional information provided a basis for questioning model results or building scenarios around model results, leading to a more robust understanding and outlook for possible future paths for the economy. They discussed how field data can shed light on the cyclical impact of economic shocks, the extent to which these shocks will be unwound, and the expected time it takes to reach a new equilibrium.

For example, in 2014, when oil prices fell by more than 50 percent, staff at the Bank of Canada engaged in consultations with energy companies in the Canadian Prairies and the Atlantic region to better understand how firms in the sector would be affected. According to Poloz (2017b, 2), "well before the shock started to show up in the statistics, we could see that it would have a significant negative effect

on the Canadian economy and the outlook for inflation. This was crucial to our decision to lower interest rates in January 2015."

Many advisors further discussed the facts that economic shocks often have important regional or sectoral dimensions and that regional and sectoral granularity is typically neither included in detail in central bank macroeconomic models nor clear in the aggregate official economic data. Models can be adjusted to simulate the impact of regional or sectoral shocks. However, the reliability of such modelling approaches can be enhanced if economic field research is available and can be employed to help approximate the actual channels through which shocks are spreading.

Policy advisors spoke of combining information from different research methods to produce a picture of the economy superior to that which could be derived from traditional quantitative methods alone. The field information is not only timely, but it comes from a different data source and helps to shed light on the complex interactions between agents and sectors of the economy that may not be modelled in traditional, even state-of-the-art, macroeconomic models. At many central banks, economic field staff are often asked to provide a view, based on their open-ended conversations with business executives, about the level and distribution of risk associated with various shocks. Information derived from field research is viewed as unique, complementary and additive to other information usually collected by central banks. It allows advisors to assemble a more complete picture of the outlook for the economy, affording a richer understanding and greater confidence in their economic forecast and assessment of risks and the resulting monetary policy recommendations of staff.

4.6. Field analysis is incorporated into the outlook through constant discussions between staff

The process of developing an outlook and monetary policy recommendation is dialectic and interactive. Advisors often described an approach that is far from mechanical or routine. They reported frequent back-and-forth discussions between staff across divisions on how to interpret different pieces of information and how to weigh competing explanations for recent economic developments. According to advisors, staff involved in developing the outlook, as well as decision-makers, are continually testing different theories and explanation for developments in the economy. The process of arriving at policy recommendations and decisions is characterized as involving extensive dialogue and debate. Staff and advisors consider economic theory, macroeconomic model forecasts and simulations, official and unofficial data, and field information.

Central banks vary in terms of the formality and frequency of this process, but it often involves both economic staff and decision-makers. Field research findings, like other analyses incorporated into the economic outlook, are commonly shared through oral briefings and written reports. Regardless of the structure, the ability to question and challenge findings, including field research findings, with a view to creating an integrated picture of the economy was often described as critical.

Reports or briefing notes, of varying degrees of detail, were widely seen as adding value. However, many respondents emphasized the importance of direct, informal and frequent interaction among central bank economists involved in quantitative and qualitative analysis. In some cases, central banks have developed structures and processes to ensure frequent two-way dialogue between head office and field research staff. Qualitative analysis is generally not widely or well understood by economists at central banks. Therefore, this constant interaction is considered necessary to engender trust and

understanding among economic staff, to integrate different information threads and to ensure correct interpretation of field research results.

Several advisors referred to the importance of direct exposure to economic field interviews and research in shaping both their own and staff economists' understanding of the economy. Some interviewees referred to the value they have personally derived from their own occasional participation in the field research process, noting its capacity to enhance or even to fundamentally alter their understanding of the microfoundations of the macroeconomy.

4.7. Timely access to relevant and credible field research is highly sought after

Central banks are often confounded by puzzles in the official data that can have an important bearing on their economic outlook, especially during times of heightened uncertainty. Most economies are subject to frequent and sometimes sudden or large shocks, often at the sectoral or regional level. Given this, advisors reported placing a high value on the ability to access a relevant, credible and reliable sample of economic agents across the country in a timely manner and at a regular frequency. Policy advisors responsible for developing a staff outlook for their economies mentioned that when confronted with a puzzle, they rely on their access to in-depth regional and sectoral expertise—through knowledge provided by field staff as well as results of timely, issue-based interviews and consultations with agents affected by the shock.[30]

4.8. Economic field research is viewed as trustworthy

Most advisors spoke, unprompted, about the trustworthiness of the economic field research carried out by their institution. This was a somewhat surprising result given the quantitative nature of traditional central bank analyses and typical academic background of economic staff. Generally, economic staff at central banks have a strongly quantitative orientation, characteristic of economics graduate school training.

Most interviewees expressed a high level of confidence in the field research they relied upon, with many indicating an appetite for more. They associated higher levels of trust and reliance with longer programs, proven relevance over time, timeliness in response to shocks, confidence in the sample, experienced professional field staff and the rigour of field research processes. Some conveyed a concern with how economic field research information was incorporated into the economic outlook, describing their own methods of doing so as less systematic than they would prefer. Advisors at central banks with newer field research programs often indicated that these programs needed more experience in gathering and working with this kind of information before advisors could formally assess the value and appropriate use of the information. In contrast, advisors with direct field research experience or a high degree of exposure to field research teams, methods and programs tended to convey a higher level of confidence in their use of qualitative analysis. In no interview did advisors convey an interest in curtailing economic field research programs. In fact, a number of advisors reported recent expansions and plans to invest in technologies and initiatives to further exploit the wealth of information generated by field research programs.

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[30] For example, Brouillette et al. (2018) shed light on Canadian firms' investment and growth strategies in the slow-growth environment following the global financial crisis.

Several respondents noted that their trust in analysis from qualitative research colleagues depends importantly upon several factors:

- knowledge of the analysts (Respondents stated, "I trust it because I know that the people who do [qualitative research] are professionals seeking to find evidence of information that's useful for monetary policy.")
- trust in the samples (Respondents stated, "I care about whether they got the right people in the right companies and a relevant share of the industry or some other measure to suggest that the findings are representative . . . Choosing the sample matters.")
- knowledge of and trust in the rigour and systematic processes employed by the qualitative research team over time (Respondents stated, "There's a well-established framework and methodology, [they] know a lot about survey methodology, [they] know how to ask questions, [they] have a long established track record of producing good analysis, [they] have agreed-upon, well-established protocols"; "The field office does a lot of work [identifying] unconscious biases.")
- a track record of timely, relevant accurate insights provided over time
- persistent engagement, as analysts with history in a region or sector can compare current conditions with prior quarters, other periods in history or past shocks (Respondents stated, "Analysts' experience is critical"; "[Qualitative] analysis [is important and different from] just an anecdote"; "If the analyst is more experienced, I will put more weight on their information.")

In contrast, a few advisors expressed a different perspective on the role of qualitative analysis in policy-making. They indicated their preference to use this information mostly to "add colour" or provide examples when discussing trends and projections in their published economic outlook or speeches made by decision-makers. These interviewees tended to hold the view that central banks did not yet have the expertise or tools to extract signals or themes from meetings and consultations with economic agents with enough rigour to rely on this information more extensively. Respondents with this perspective tended to have relatively weak knowledge about qualitative research and analysis and how it can be used to support and complement quantitative research.

4.9. Advisors are relatively unfamiliar with qualitative research methods

Advisors' trust in economic field research was often tied to the competency and credibility of field staff—which is usually earned over time with experience—and the rigour of field research processes. However, few conveyed familiarity with the qualitative research methods literature or perspectives on different qualitative research methodologies, or knowledge of best practices regarding qualitative research methods, which are unlike traditional quantitative methods.

Some advisors referred to their own recent exposure to in-depth interviews and qualitative research methods after occasionally accompanying field staff in face-to-face interviews with business executives. They suggested that such visits increased their understanding of how qualitative information is collected and analyzed.

Interestingly, although advisors confessed a lack of formal knowledge of qualitative research methods, they nevertheless indirectly referred to several important features of well-designed qualitative research programs. They included participant observation, prolonged engagement, purposive sample construction, cognitive and conversational interviewing techniques, data immersion and thematic analysis as factors contributing to their trust in economic field research information.

4.10. Field research may yield new and sometimes unexpected economic insights

During our meetings, some advisors referred to field research as a possible avenue for deepening their understanding of how the economy worked at the microeconomic level, including structural changes suspected of being underway though not yet evident in official statistics.[31] A few mentioned the opportunity for economic field research to explore (sometimes new) economic trends and phenomena that are from different theoretical perspectives or that have not yet been captured in the data. This affords an opportunity to test competing explanations for recent developments, and at times to provide insights on the economy from outside the dominant paradigm.[32]

Overall, this type of application for economic field research at central banks was not common among respondents. However, a couple of advisors did refer to economic field research that had been or could be undertaken to inform the further development of their core macroeconomic models.

4.11. Qualitative research programs at central banks satisfy information demands

Toward the end of each of our interviews with central bank advisors, we asked the participants if there was anything they would change about the qualitative field research program at their central bank or about the information it contributes to the policy-making process.

Most advisors expressed satisfaction with their existing qualitative field research programs, and many indicated an interest in more qualitative information collected from the field. Not surprisingly, organizations with newer qualitative research programs preferred continuing to expand their qualitative research programs. Interestingly, a couple of respondents from organizations with mature qualitative research programs questioned whether central banks had the tools and expertise to extract credible and reliable signals or themes from in-depth interviews with business executives. Still, while these advisors did not show an interest in increasing the resources devoted to qualitative analysis, they did not want to reduce their current resources involved in this research method.

Many respondents recognized the significant resource costs involved in qualitative research programs, such as the large costs of collecting data through face-to-face meetings, attracting staff with relevant experience and educating quantitatively trained economists on how to conduct mixed qualitative and quantitative analyses. Overall, most respondents discussed the growing role for microeconomic data and analyses at central banks, including field research, in informing the use and interpretation of macroeconomic data and models.

5. Conclusion

We used established qualitative research methods to advance understanding of the role that qualitative economic field research plays in monetary policy making. Themes extracted from in-depth interviews with senior policy advisors improve understanding of the many motivations for using qualitative analysis in setting monetary policy. Many central banks' field research programs incorporate similar methods and practices. However expanding their economists' formal understanding of non-traditional approaches to economic research and knowledge creation may enhance the use of information

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[31] For example, Dong et al. (2017) attempt to understand the channels through which digital transformation affects firms' prices to discern the implications of digitalization for inflation.

[32] Grounded theory methods involve procedures for conducting inductive reasoning based on qualitative analysis aimed at the construction of a theory.

generated by existing field research programs, assist in identifying additional questions to which economic field research uniquely contributes, increase central bank credibility and encourage organizations currently not engaging in field research to consider its potential role.

Central banks conduct qualitative field research primarily to inform near-term forecasts for the economy when official statistical data are lagged or volatile. Our findings suggest that information generated by economic field research programs at central banks is generally viewed as trustworthy by senior central bank advisors and that it is often combined with quantitative research and analysis in a mixed-methods research design. Central bank advisors rely on the maintenance of a relevant, credible and reliable sample of economic agents that can be accessed in a timely manner to inform understanding of frequent data puzzles, shocks and uncertainties. The value of qualitative research and analysis is highest at potential turning points in the economy, in the advent of shocks and in the face of unreliable or untimely official data.

While quantitative and qualitative research methods have their own individual strengths and weaknesses, combining the methods may be optimal for central banks that need to make monetary policy decisions in the face of significant uncertainty about the economy, the data and their models. Poloz (2018, 4) recently stated that "it is equally important that we get out across the country and listen to people. These two-way conversations help fill in the gaps that economic statistics leave behind."

Comparisons with other disciplines, and recent discussion within the profession (Shiller 2017), suggest scope to further the application of qualitative and mixed-methods research designs in economics and central banking. Seminal works by Blinder (1999) and Coase (1937, 1988) provide examples of qualitative research designs in support of new theory development.

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Appendix A. Questionnaire for central bank senior policy advisors

The following invitation was sent to senior managers and advisors at central banks with field research programs identified through a network of participants that attended the Annual Conference on Central Bank Business Surveys and Liaison Programs in Miami and Stockholm in 2017 and 2018, respectively.

> *We are interested in your experiences with qualitative analysis. Within central banks, it is sometimes also referred to as business or regional intelligence, narrative analysis or regional field work, and is usually gathered through open-ended interviews, roundtables and industry consultations.*
>
> *The objective of the survey is to better understand the lived experience (who, what, where, when, why, how) of senior central bank staff and monetary policy decision-makers working with in-field research and business intelligence.*
>
> *Note: Our conversation is strictly confidential and only common narratives across central bank staff (here and at other central banks) will be identified in a forthcoming research paper.*
>
> *Questions:*
>
> 1. *What are the most important types or sources of information that you depend on when you advise or inform monetary policy decision-makers?*
> 2. *What are some of the kinds of qualitative analysis you look for or seek out from your staff or colleagues?*
> 3. *How do you use this qualitative information in your current role? Does it vary over time, or by decision?*
> 4. *How do you integrate qualitative analysis in the projections and forecasts?*
> 5. *Broadly speaking, how do you know that you can rely upon the field intelligence that you receive? What factors do you consider?*
> 6. *In general, how satisfied are you with the qualitative analyses that you receive? What informs this assessment?*
> 7. *What other insights or perspectives do you have on the uses of qualitative analysis in central banking and monetary policy decision-making?*
> 8. *Would you change anything about the qualitative/field-based research that comes to you in support of monetary policy decisions or communications? What would that be? (e.g., timing, frequency, topic, presentation)*

Appendix B. Categories and codes (for coding interview notes)

1. **Central bank organizational structure** (i.e., description of institutional arrangements)

1.10	Quantitative analysis staff
1.20	Qualitative analysis staff (e.g., regional office staff)
1.30	Hybrid qualitative and quantitative analysis staff
1.40	Links between qualitative and quantitative analysis staff
1.50	Links between quantitative analysis staff and decision-makers (e.g., Governing Council)
1.60	Links between qualitative analysis staff and decision-makers
1.70	Links between hybrid qualitative and quantitative analysis staff and decision-makers
1.80	Regional and/or sub-national structures or links
1.90	Links between central bank and (official) external parties
1.99	Other: Organizational structure

2. **Central bank allocation of responsibilities** (i.e., description of responsibilities)

2.10	Quantitative analysis staff
2.20	Qualitative analysis staff
2.30	Hybrid qualitative and quantitative analysis staff
2.40	Decision-makers (outside of monetary policy decision-making)
2.50	External parties
2.99	Other: Allocation of Responsibilities

3. **Central bank flow of collected information** (including frequency, level of integration)

3.10	Between quantitative and qualitative staff (including processes)
3.20	Between quantitative departments and decision-makers
3.30	Between qualitative departments and decision-makers
	• Direct flow of qualitative analysis information (document, presentation, meeting)
3.40	Between hybrid qualitative and quantitative analysis staff and decision-makers
	• Indirect via presentation of integrated quantitative/qualitative department view
3.50	Between staff (i.e., not decision-makers) and firms
3.60	Between staff and formally linked outside groups (Board of Directors) incl. validation
3.70	Between staff and other outside groups (e.g., labour, government)
3.80	From decision-makers to staff (e.g., information from Governor's roundtables)
3.99	Other: Flow of Collected Information

4. **Generating staff forecasts (or "projection," including nowcasts for current and next quarters)**

4.10	Time frame of forecast
4.20	Frequency of forecasts
4.30	Official (both private and public) data sources
4.40	Timing of quantitative analysis as input to forecasts
4.50	Timing of qualitative analysis as input to forecasts
4.60	Methods and processes to put forecast all together
4.70	Outlook and narrative for the economy

| 4.80 | Risks to staff forecasts, confidence in forecasts |
| 4.99 | Other: Generating staff forecasts |

5. Monetary policy decision making process

5.10	CB mandate(s)
5.20	Description of monetary policy decision making process
5.30	Process to generate decision-maker forecast
5.40	Transparency of monetary policy decision-making process
	• Incl. comm. between decision-makers and general public, firms, outside groups
5.50	Independence of decision-makers' outlook from the staff view
5.60	Important existing sources of data, models, quantitative analysis
	• Determining reliability, credibility, trustworthiness of quantitative data, models
5.70	Important existing sources of qualitative data and analysis
	• Determining reliability, credibility, trustworthiness of qualitative data and analysis
5.80	Information received directly from firms and outside groups (and not passed on to staff)
5.90	What inputs do they want more of, or better-quality inputs?
5.99	Other: Monetary policy decision making process

6. Quantitative analysis

6.10	DSGE, empirical models, data analysis tools (e.g., spreadsheets for monitoring)
6.20	Collection of official and unofficial data (both private and public)
6.30	Adding judgment to forecasts (but not based on qualitative data and analysis)
6.40	Identifying and measuring (i.e., severity, likelihood) risks to forecasts
6.50	Using models and tools to provide counterfactual simulations, verify trends in data, etc.
6.60	Challenges with information and official data (both private and public) (e.g., vintages)
6.70	Challenges with DSGE, empirical model, data analysis tools
6.80	Development of new quantitative and analytical models and tools
6.90	Development of new data sources
6.99	Other: Quantitative analysis

7. Qualitative analysis, motivation

7.10	"Scoring" or quantification of qualitative data for nowcasting and forecasting
7.20	Consistency check of quantitative analysis and data (or "reality check")
7.30	Adding judgment to forecasts due to shocks and limitations of data (i.e., not timely)
	• Advance understanding of behaviour/trends, which is eventually evident in the data
	• Identifying turning points in economic cycle
7.40	Adding judgment to forecasts due to shocks and limitations of models (e.g., DSGE)
	• Adding to information set of possible transmission channels to prepare the forecast
7.50	Collecting anecdotes, examples and stories to provide colour to narrative
7.60	Identifying upside and downside risks and relative weights and balance of risks
7.70	Exploratory tool (i.e., Identifying known unknowns and unknown unknowns)
7.80	Identifying new transmission channels or microeconomic foundations

| 7.90 | Identifying non-CB narratives and themes (à la Shiller) |
| 7.99 | Other: Motivation for Qualitative Analysis |

8. Qualitative tools and analysis, process and evaluation

8.10	Methods or type of qualitative analysis (e.g., developed organically; thematic analysis)
8.15	Flexibility of survey questionnaire (e.g., can change questions and topics; add probing)
8.20	Flexibility of survey instrument (e.g., ad hoc outreach, special topics, roundtables)
8.25	Sample size
8.30	Sampling and types of firms (and/or outside groups, directors), weights by industry, size
8.35	Building relationships and network with firms and external organizations
8.40	Types of interviews (e.g., semi-structured), interview techniques and interview training
8.45	Confidentiality (in both directions: CB info. and firm supplied information)
8.50	Nature of qualitative data collection (e.g., notes entered into database, recording)
8.55	General staff understanding of qualitative tools, analysis and methodology

- How and why other staff determine if qualitative analysis is credible and reliable

| 8.60 | Producers of qualitative analysis determine credibility and reliability of analysis |

- Consistency check with other sources of data
- Counting occurrences that a topic or theme is mentioned; widespread or not
- Consistency check / triangulation of qualitative information (other surveys)
- Determine weight or applying judgment to qualitative analysis

8.70	Challenges with qualitative data, including data collection
8.75	Challenges with qualitative data analysis, including available tools
8.80	(Potential) improvements in qualitative tools (e.g., experiments with text mining)
8.99	Other: Qualitative tools and analysis, process and evaluation

9. Mixed-methods methodologies

9.10	Where there are material weights on both qualitative and quantitative analysis
9.20	Triangulation with case studies
9.30	Data mining of other textual data
9.99	Other: Mixed-methods methodologies