Markets Committee | ◈ **BIS**

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Market intelligence at central banks

Insights from a Markets Committee Workshop chaired by Andréa M. Maechler (SNB)

Introduction

Market Intelligence (MI) is a key element in central bank operations and policy analysis. Building on its earlier work, the Markets Committee held a workshop in October 2022 to discuss recent developments in this area.[1] The workshop was chaired by Andréa M. Maechler (SNB) and allowed central bank participants to exchange perspectives on their respective MI frameworks, practices, and challenges.

This note summarises the insights of the workshop. The main highlights include:

- As the market environment has grown more complex, central banks have expanded their MI frameworks to include new market segments and new participants.

- While many central banks are increasingly relying on novel, real-time datasets and advanced analytic tools, traditional qualitative MI and financial market expertise remain essential.

- Many MI teams have incorporated a hybrid format into their outreach to market participants and note associated benefits and drawbacks.

Section 1 reviews the role of MI. Section 2 discusses the increasing scope of MI and how central banks have adapted to the changing environment. Section 3 evaluates efforts to advance quantitative methods to support MI. Last, Section 4 reviews the experience of operating in a hybrid format for MI gathering.

1. Market intelligence

MI has long been an important tool for central banks to inform monetary policy decisions, monetary policy implementation, reserves management, or financial stability risk assessments. More recently, the Central Bank of Mexico has used MI to inform the development of financial markets in Mexico (see Appendix 1).

Traditional MI has three key components. First, direct interaction and dialogue with financial and non-financial sector market participants to interpret market developments or understand changes in the market structure. The identification of outlier views, and the indicators used to form them, have also proved informative for some central banks to better understand emerging risks and potential scenarios ahead. Second, expert judgement which is critical for corroborating and synthesizing insights, and to help interpret quantitative signals. Third, surveys which are another tool used by central banks, for example, to gain insights about market participants'
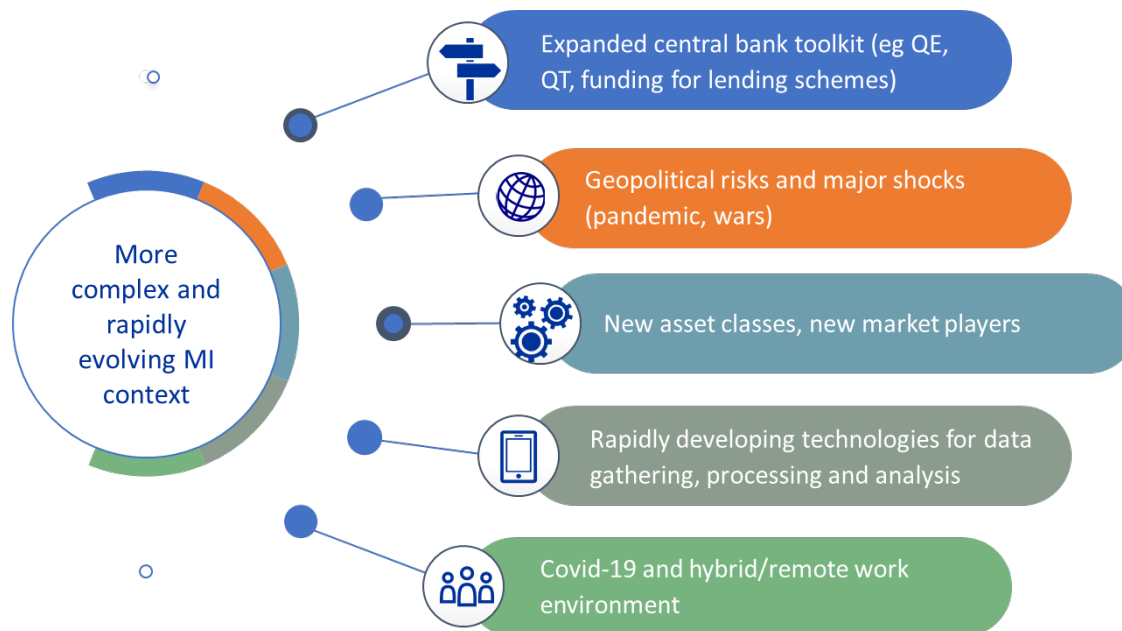
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[1] For an earlier discussion, see Markets Committee (2016): "Market intelligence gathering at central banks", *Markets Committee Papers,* no 8.

expectations on central bank policies to understand shifts in market sentiment or policy expectations.

Traditional MI remains central, and critical, for MI frameworks. As they were discussed in Markets Committee (2016)[2], the remainder of the note focuses on the evolving context for MI in recent years as summarised in Graph 1.

Evolving context for MI   Graph 1

More complex and rapidly evolving MI context

- Expanded central bank toolkit (eg QE, QT, funding for lending schemes)
- Geopolitical risks and major shocks (pandemic, wars)
- New asset classes, new market players
- Rapidly developing technologies for data gathering, processing and analysis
- Covid-19 and hybrid/remote work environment

Source: Markets Committee, 2022.

2. An increasing scope of MI

The scope of MI has expanded in recent years. Previously, MI was used primarily to monitor and inform stakeholders on market development in core asset classes and on market operations, such as standard open market operations or FX interventions.[3] Over the last decade, the scope increased to cover new market participants, new asset classes or other market segments. This reflects, for one, the increased complexity of the market environment. In particular, the growth of new market participants in the non-bank financial intermediation space and technological advances have led to changes in the market microstructure or the emergence of new asset classes (eg digital assets). And other types of risks, such as the pandemic in 2022 or climate risk, have become critical from a central bank perspective. In addition, the expanded scope of MI reflects a need to support a more extensive central bank toolkit, encompassing,

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[2]   See footnote 1.

[3]   FX interventions have typically been used most heavily by emerging market economies. For a discussion of FX interventions see Markets Committee (2022), *FX interventions*.

for instance, funding for lending programmes[4] or quantitative easing (QE), along with shifts in the composition of central bank counterparties.

Against the backdrop of the evolving market microstructure and emergence of new participants, asset classes and risks, different strategies have been explored to adapt MI frameworks. Many central banks have reviewed the structure and skills of their existing MI teams and sought to expand or reorganise their MI activities and teams. Resource constraints were a commonly cited issue, with some redirecting resources from existing MI teams to focus on more urgent issues. Some have adopted a data-driven monitoring approach to monitor new markets on a regular basis, in addition to using surveys to reach out to new types of market participants.

A few central banks have also enhanced efforts to broaden the diversity and inclusion of their contacts to gain richer insights and perspectives into financial markets, and/or reflect the public they serve. Having a dedicated contact relationship manager was noted as helpful to identify and manage relationships with market participants outside of traditional segments.

In determining how the MI framework should adapt to changes in the market microstructure, many central banks have found three considerations especially important. First, materiality: for example, are new market participants thought to be important enough to shape market dynamics in core markets? Are new markets deemed large enough and if so, can they directly affect the central bank mandate? Second, financial stability risks: for example, can risks from new and emerging asset classes be transmitted to core financial markets, thus increasing contagion risk in the financial system? Third, there is a forward-looking element, as MI needs to be agile and adapted in a proactive fashion. This is important because building MI capacity and productive relationships in times of stress can be a challenge. (The case studies by the Bank of England and the Bank of Canada in Annexes 2 and 3 provide examples of the benefits of a proactive approach to building MI capacity.)

3. Advancing quantitative methods for MI

MI has historically relied on both qualitative outreach and data analysis, but central banks are increasingly also leveraging advanced technologies, innovative quantitative methods, and richer, more granular, and higher frequency data to inform their assessments.

The majority of central banks have integrated real-time market monitoring in their MI frameworks. Most central banks collect market-based variables to monitor market liquidity, such as trading volumes, depth, and transaction costs, for example for the FX or bond futures market. But market segmentation and insufficient data have posed challenges to real-time monitoring in some asset classes. Where transactions are spread across different trading platforms, some central banks have sought to aggregate information from multiple venues.

Increasingly, MI frameworks are also employing novel quantitative datasets and data analytic tools to monitor key markets. Around 30% of the central banks participating in the workshop have already integrated advanced statistical tools to complement traditional MI activities, while a further 40% are either planning or are in

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[4]   For a discussion of funding for lending programmes from an operational perspective, see Market Committee (2023), *Funding for lending programmes*.

the process of integrating such tools. Many central banks have also developed more efficient ways to aggregate, process, and visualize data.

Some central banks also complement quantitative indicators with text-based analysis to monitor market sentiment, identify key topics/trends, anticipate risks or events, or quantify market perceptions. However, the cost of developing textual-based analytical tools was considered high, requiring both a different skillset and a different infrastructure. Additionally, the results can be biased, and it can be difficult to communicate outcomes.

In practice, central banks benefit from combining quantitative with qualitative approaches. Quantitative analysis sometimes lacks the nuanced outcomes of qualitative analysis or the necessary contextualisation if market structures have evolved. Equally, MI becomes more powerful and the risk of bias is materially reduced if qualitative information is corroborated or refuted with hard data. The combined analysis turns out to be useful for instance for real-time market monitoring, where a broad set of quantitative indicators complement expert judgements and market surveys.

MI teams and operations have adjusted to these developments. Staff members with technical and data science capabilities are becoming integral parts of MI teams in many central banks. And central banks have advanced their IT infrastructure to process and store large amounts of high-frequency data for real time market monitoring.

4. MI in a virtual/hybrid world

With the outbreak of COVID-19, MI engagement shifted from in-person to either virtual or hybrid format across many institutions. Since then, a hybrid format has become a new norm for many central banks, bringing both opportunities and challenges. Some of the opportunities include: (i) lower administrative cost of conducting MI (eg less travel time); (ii) greater inclusivity and ability to reach a broader set of participants both internally and externally given meetings can be larger and don't have to be in one location. And some of the challenges include: (i) concerns related to the security and confidentiality of MI engagements given it is harder to monitor attendees; (ii) virtual meetings can be less interactive than in-person meetings, possibly diminishing the quality or depth of insights; and (iii) technical problems can also be a hindrance.

Annex 1

MI to foster financial market development: A Bank of Mexico case study

The Bank of Mexico customarily conducts MI to assess financial market functioning and inform its policy making, including to advance its agenda on the development of financial markets in Mexico. For example, market development initiatives included a new securities lending regulation, a new methodology for the valuation of corporate debt securities, and the approval of credit derivatives operations between local financial institutions (eg, investment and pension funds). Work is also currently underway to foster the hedge fund industry in Mexico, create a central counterparty (CCP) for fixed income securities, address the transition process to new reference rates, and calibrate the Market Makers' Program for Government Debt, responding to the changing market dynamics.

Constant communication with market participants as part of qualitative MI activities has helped authorities to identify structural deficiencies in the financial markets and possible regulatory adjustments. Qualitative MI has also been backed with quantitative MI based on key data and market indicators. For example, MI has helped identify important gaps that were preventing the development of the securities lending market, whose activity is very limited relative to the size of financial markets in Mexico. For its part, analyzing the data and market microstructure (ie part of quantitative MI) has helped the Bank of Mexico quantify potential benefits of addressing those gaps, both in terms of potential securities lending income for market participants and tax income for the Federal Government. As a result, financial authorities are in the process of modifying the regulation, and transactional data has been made available to market participants to further promote transparency and accelerate the development of the securities lending industry. This, in turn, should promote a better functioning of local fixed income and equity markets.

Annex 2

A proactive approach to building MI capacity: A Bank of England case study

The Bank of England's (BoE) MI framework aims to cover both the swathe of principal financial markets (UK rates, global rates, currencies, credit, equity, commodities, etc), and the swathe of market participants active in those varied markets. These contacts may be buy- or sell-side participants. On the sell side, the BoE talks to investment banks, brokers, principal trading firms and platform providers; while on the buy side it incorporates asset managers, leveraged investors, pension funds and a range of other medium to very long-term investors.[5]

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[5] For detailed information about the BoE's MI framework see A Rosen (2022): *Navigating market signals: MaPS for policy makers*, remarks given at an Association for Financial Markets in Europe (AFME) event, 28 June 2022.

Via these well-established dialogues, the BoE aims to understand the varied perspectives of market participants – their objective functions, behaviours and stress points – to inform both its monetary and financial stability policy stance.

During the LDI crisis in late September and October 2022, having these long-standing relationships with the UK pension-fund community, and in particular the liability driven investment (LDI) managers, proved invaluable to the BoE's understanding of the issues LDI funds faced. Building a varied and diverse set of relationships quickly from ground level, particularly in a period of acute stress for the industry, would have been tremendously difficult. The required level of trust and access to quality information exchange would have been more limited. However, through its MI framework, the BoE had both the pre-existing relationships and the detailed knowledge of the mechanics of LDIs needed to assess the stress and its causes. Marrying these with its intimate knowledge of the UK rates and credit markets derived both from other MI teams and active participation in those markets, the BoE was able to formulate its ultimate policy response in short order.

In the wake of the episode, the BoE continues its dialogue with relevant participants as it considers the implications for future policy.[6]

Annex 3

A proactive approach to building MI capacity: A Bank of Canada case study

In the past years, the Bank of Canada (BoC), like other central banks, has extended its list of counterparts for MI, and has been increasingly focused on buy-side investors, in particular the large public pension funds that have evolved into key players in Canadian financial markets. By the year of 2016[7], the pension fund sector already held about 15 percent (or $1.5 trillion) of the total assets in the Canadian financial system, with two-thirds of the total pension assets being concentrated in the eight largest funds (the Big Eight). In light of their growing importance, BoC's engagement with pension funds has become more systematic and structured over time.

The decentralized regulatory framework for pension funds in Canada meant that there was little data and information on their positions and their potential behaviours in times of stress, prompting BoC to put more resources on outreach. To this end, BoC has institutionalised its relationship with the Big Eight and has semi-annual meetings with their CEOs. These meetings, which are similar to those held with domestic systemically important banks, are held with the BoC Governor and Senior Deputy Governor to discuss conjunctural and market structure issues, including liquidity management. In parallel, staff have ongoing dialogues with the funds at all levels, drawing on their expertise and inputs for analytical projects, working groups, and ongoing initiatives such as market committees and surveys. Relationships with

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6 For a more detailed account of the autumn volatility and the BoE's policy response, see A Hauser (2022): *Thirteen days in October: how central bank balance sheets can support monetary and financial stability*, speech given at the ECB's 2022 Conference on Money Markets, 4 November 2022.

7 Guillaume B-P, D Bolduc, A Demers, J-P Dion, M Pandey, L Berger-Soucy, and A Walton (2021): "Large Canadian Public Pension Funds: A Financial System Perspective", Bank of Canada, *Staff Analytical Note*, 2021-11.

the funds are mostly managed by the Bank's regional offices in Toronto and Montreal, where traditional MI activities with various types of market participants are led.

The proactive approach in building those relationships with the funds was beneficial during the Covid-19 crisis in Spring 2020. BoC staff were quickly able to draw on the risk officers of pension funds to assess market liquidity and funding conditions. Relationships with their senior managements were also useful in quickly getting in place the documentation (master repurchase agreements and applications) for the activation of the BoC's Contingent Term Repo Facility, which acted as a backstop to the domestic repo market by providing term repos to a broader set of interested and eligible market participants. That is, those which demonstrated significant activity in the Canadian dollar money markets and/or fixed income markets and were subject to federal or provincial financial sector/market regulations. In 2021, BoC staff published a new case study on the large pension funds' liquidity risk management drawing from the funds' experience during the March 2020 stress episode and proprietary data.[8]

The more recent crisis involving leveraged LDI investors in the United Kingdom did not have a significant impact on Canadian markets. However, MI teams of the BoC leveraged existing relationships with the large funds to quickly get their perspectives on the event, as well as their assessment of market liquidity and potential liquidity needs if the situation was to worsen and spill over to Canada.

Going forward, the BoC will continue to leverage its relationships with the large pension funds, namely to investigate how asset managers' demand for cash in times of market stress may be affected by constrained intermediation capacity of banks and dealers, and how central bank facilities could be used, in conjunction with improvements to market structure and liquidity management practices and regulation, in these types of events.

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[8]   See Guillaume et al (2021), cited in footnote 7.