High Level Panel: Insights on the way forward
Granular data: new horizons and challenges for central banks

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Introduction

Good evening. I am glad to share with you some remarks on granular data, emphasizing their importance for policy making as well as the challenges it poses.

First, I would like to express my congratulations to all the presenters of today for their insightful contributions. The presentations have provided valuable perspectives on the transformative power of granular data for central banks.

As I mentioned in the morning, there is an immense value on the usage of granular data in our work. They allow us to expand the scope of our analysis and to react promptly making decisions in the context of uncertainty and complexity we are facing today. Now, I would like to share with the audience an example of granular data analysis. In our experience, this has allowed a greater and timely focus on regional linkages of production and demand, a long sought aim for policy makers at the national and regional level.

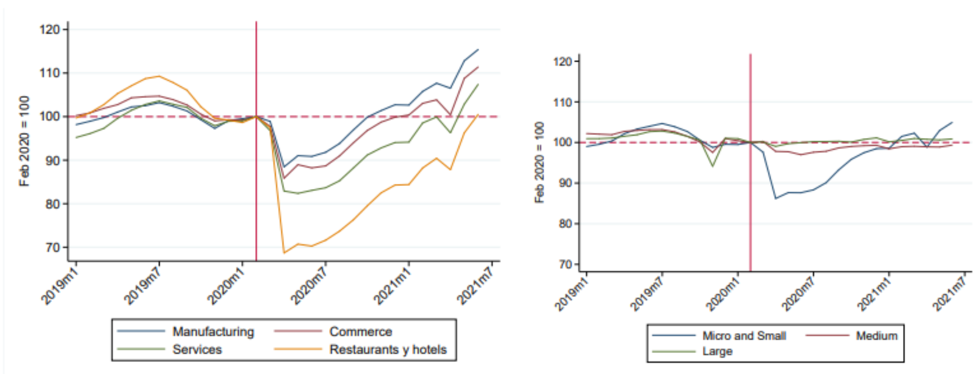
From a perspective of policy and research, we have sufficient evidence of the value of granular data, justifies the costs/risks of granular data collection. Granular data or high frequency data been helpful during the pandemic or in preparedness for future shocks or in other policy and research work.

In terms of the value of granular data, I believe that today's conference sessions have confirmed the immense knowledge and insights that we can get from granular data. Moreover, as the horizon of financial technology continues to expand, granular data plays a pivotal role in helping us navigate and regulate this rapidly evolving frontier. This knowledge helps in turn central banks to formulate more effective policies as they can be better targeted to specific sectors or groups of firms, as was evident during the recent Covid-19 pandemic. Let me share with you some empirical examples that demonstrate how granular data have helped us during the pandemic[1,2].

The Covid-19 crisis had severe affected firms' performance, including firms' sales, investment plans, connections with suppliers, and financial decisions, among other aspects. Many companies were even forced to close temporarily or permanently. These impacts translated into a strong shock to the employment and income of their workers. Therefore, firms are key agents in understanding the adjustment of the economy to the Covid-19 crisis. Because of their relevance in the transmission and amplification of the shock, the mitigation and support policies deployed since the beginning of the crisis were mainly implemented through firms.

Some of the key messages that Covid-19 crisis left us were that it severely affected firms' performance. However, a substantial heterogeneity was found in this adjustment, with more adverse effects centered on micro and small firms, and on industries that reliant more on social contact, such as services, and restaurants and hotels.

Figure 4: Number of firms by sector and size



(a) By sector (b) By size

Note: Number of firms with positive sales every period, normalized to 100 in February, 2020. Seasonally adjusted. In panel (a), the services sector includes personal services, and business services. In panel (b), the classification of firms by size considers annual real sales, following the National Accounts guidelines. The thresholds are based on yearly sales expressed in a unit of account indexed to inflation, called *unidad de fomento* (UF). Micro firms: less than 2,400 UF. Small firms: 2,400-25,000 UF. Medium firms: 25,000-100,000 UF. Large firms: more than 100,000 UF. Based on inflation and market exchange rates at the time of writing, 25,000 UF are approximately equivalent to USD 950,000. Source: Monthly tax form F29 and authors' own calculations.

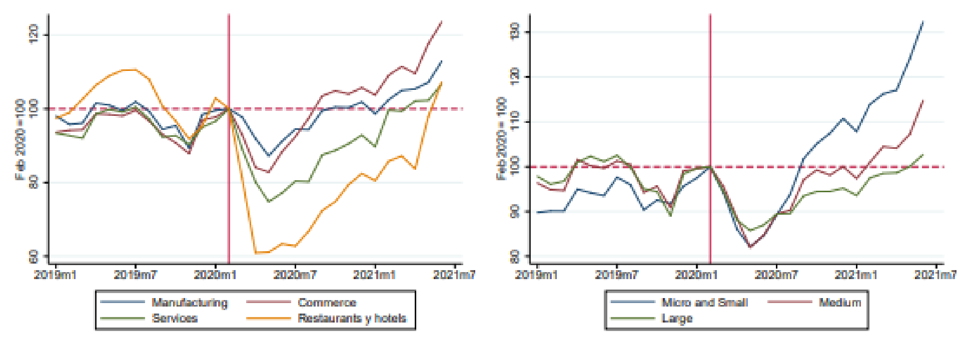
Source: Albagli et. al. (June 2023). Page 12.

For instance, in Chile, even though the number of firms declined in all industries, the number of restaurants and hotels firms declined of nearly 40%. By contrast, in services industry, the number of firms declined nearly 20%, whereas in manufacturing and commerce, the decline was about 10%. The latter two industries have led the recovery in the number of firms, while restaurants and hotels, and services, remained below their pre-pandemic level until 2021. By firms' size, the decline in the

[1] Albagli, E., Fernández, A., Guerra-Salas, J., Huneeus, F. & Muñoz, P. (June 2023): "Anatomy of Firms' Margins of Adjustment: Evidence from the COVID Pandemic". Central Bank of Chile. DTBC N°981.
[2] *Las Empresas Chilenas Durante la Crisis del Covid-19* (March 2023). *Serie Económica y Financiera BCCh*.

number of firms was completely driven by micro and small firms (firms with sales of less than approximately USD 950,000 in the previous year), with the number of medium and large firms hovering slightly above the pre-pandemic level throughout the sample. The evolution of the number of micro and small, medium, and large firms during the pandemic shock differs from the episode of social unrest that Chile experienced in October 2019, when violent protests broke across the country. In that episode, the number of firms of all sizes declined. At the same time, we observed a large decline and a swift recovery in the number of firms reporting sales, as well as in sales themselves.

Figure 6: Sales: Heterogeneity by sector and size



(a) Sector (b) Size

Note: Seasonally adjusted real sales, normalized at 100 in February 2020. The service sector includes personal services and business services. For details on the classification of firms by size, see the note to figure 4. Sources: Electronic invoice; and authors' own calculations.

Source: Albagli et. al. (June 2023). Page 13.

The evolution of total sales masks substantial heterogeneity at the firm level. The behavior of sales is qualitatively similar to that of the number of firms (panel a in figure 4): sales in restaurants and hotels declined dramatically and remain below their pre-pandemic level up to mid 2021. Sales in services also declined substantially and remained below their pre-pandemic level throughout 2020. Sales in manufacturing and commerce, on the other hand, display swift and strong recoveries. By firms' size micro and small, and medium-sized firms were the hardest hit by the COVID shock, with sales dropping about 20%. However, micro and small, and medium-sized firms also experienced the strongest recovery, with sales reaching pre-pandemic levels in the second half of 2020. Large firms display less fluctuation, with sales declining and expanding less than micro and small, and medium-sized firms in the contractionary and recovery phases. It is important to note that results on firm size are not an artifact of industry effects, e.g., that most restaurants and hotels are small firms and, since this industry was badly hit, it drives the decline we see for small firms. It has been verified that micro and small firms are the most affected within each of the industries.

Employment also experienced a large decline, and its recovery seemed to be lagging that of sales, following a U shape rather than a V shape. The employment protection program, a furlough scheme funded by the government, it helped mitigate this effect.

The decline in employment was larger and more persistent than that of sales, so that by the end of 2020, it remained below its pre-pandemic level. The results in terms of heterogeneity within firm’s industry and size was analogous to those previously explored for the case of sales.

In April 2020 the Employment Protection Law (LPE for its acronym in Spanish) was approved by Congress and became another landmark program in the set of policies aimed at supporting firms and, in particular, the relationships they have formed over time with their workers. LPE gave firms important room to maneuver and scale back production without incurring in costly layoffs, while giving them also the chance to scale up quickly and without incurring in hiring costs once the economy recovered. Throughout the program, nearly 120,000 firms enrolled at least one worker. This number represents about 45% of firms that had at least one worker in February 2020. Importantly, LPE contributed to mitigating the decline in aggregate employment due to the COVID shock. In fact, in its absence, employment would have dropped more than twice as it did relative to the pre-pandemic level.

Firm access to domestic bank credit increased during the COVID pandemic. This countercyclicality of credit marks a change with respect to previous crises in Chile, when credit contracted.

On March 16, 2020, two weeks after the first COVID case was identified in Chile, the Central Bank of Chile announced it was lowering its monetary policy rate to 50 bp, which it considered its effective lower bound. Importantly, a separate set of unconventional policies to counteract the economic effects of COVID were also announced. At the core of these measures was a new credit facility (FCIC by its acronym in Spanish) aimed at providing medium-term liquidity to commercial banks at very low rates for up to 4 years, conditional on banks providing loans to small and medium-sized firms. Throughout the COVID pandemic, FCIC provided nearly 40 billion U.S. dollars in loans to banks. A few weeks after this, in April 2020, a complementary policy to FCIC was launched by the Chilean government through FOGAPE-COVID, a state-backed fund that would provide sovereign guarantees of up to 85% of commercial bank loans to firms. The combination of these two credit support policies provided resources and incentives for banks to lend to firms affected by the COVID shock.

There was widespread access to this program. By the end of 2020, nearly 250.000 firms (40% of firms reporting positive sales in February 2020) obtained at least one loan through this program. Importantly, access was equally strong among firms that were performing relatively well and those that were being highly impacted by the crisis. Loans were given relatively more to firms in commerce and manufacturing, and mostly to micro and small, incumbent firms.

The countercyclicality of bank credit in the COVID crisis marks a stark contrast with two previous crises—the global financial crisis of the late 2000s and the Asian financial crisis of the late 1990s, when domestic bank credit decelerated. Crucially, the countercyclical response of bank credit was driven by these credit support policies.

Conclusions and challenges

The analysis of the experience of firms in Chile during the Covid-19 crisis was made possible in large part by access to data from administrative records on their performance, in dimensions such as sales, investment, employment, relationship with the banking system, foreign trade, among others. The use of this anonymized microdata for analysis purposes is part of agreements that the Bank has signed with institutions such as the tax authority, the Financial Regulatory Commission and the pension regulator, among others. Promoting this type of agreements is quite important in order to be able to use microdata in the analysis. A robust data governance strategy, which guarantees a secure data handling, storage, and processing, in conjunction with cybersecurity and data privacy policies, becomes a key objective.

From my perspective, the advantages clearly outweigh the drawbacks. I don't imagine a world where policymaker prefer to have less information while taking decisions. Rather than viewing this as a novel challenge, I see it as a golden opportunity to set an institutional standard for excellence in this field.

Looking towards the future, I think that the first key area of focus in the short term is the strengthening of data privacy and security, so we can be sure that when we handle the extensive data at our disposal, we do it correctly and responsibly. However, achieving this is not simply a matter of implementing more stringent protocols or upgrading our technological infrastructure, the heart of the issue lies in cultivating a robust data compromise culture within our people in our central banks. It is about reshaping perceptions, so our team members view this challenge not as an exercise of bureaucracy, but as a mission-critical commitment to our institution's integrity and to the individuals we serve.

A second immediate focus is to use this data in a smart way. In our modern era, where we are bombarded with relentless stimulus from countless sources, often spending entire days behind screens, and navigating through a sea of disinformation and fake news. It's then imperative that we exercise discernment in the information we generate and disseminate to our authorities, and to the public. In the face of this informational overload, our responsibility is to generate the most meaningful and accurate data, providing our audience with reliable, insightful content that truly adds value and upholds the credibility of our institution.