Third Statistics Conference: "*Measuring the Economy in the Digital Age*"
Opening remarks by Mario Marcel, Governor of the Central Bank of Chile
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Good morning,

It is a great pleasure to welcome you to the Third Statistics Conference organized by the Central Bank of Chile (CBC), on "*Measuring the Economy in the Digital Age*" that brings together distinguished experts on macro statistics from many agencies and countries around the globe. This conference follows the one on "*Statistics for Financial and Monetary Analysis*" in 2015 and on "*Measuring the Economy in a Globalized World*" in 2017 and it is becoming a landmark event for the CBC, and I hope for all participants as well. The conference we are opening today will address the opportunities and challenges that digitalization imposes on us in interpreting and analyzing increasingly dynamic economic and financial phenomena.

The Digital Economy

Digitization is progressively changing the way we understand our world, by creating new business models and processes, generating new smart products and services, with lower costs and more timely delivery, all of which is reshaping consumer behavior.

Major questions are emerging about the ability of our conventional toolkit to measure economic activity in the face of such changes. Digital products, services and means of economic interaction are making the task of identifying economic phenomena more challenging, especially for economic and financial statistics. Traditionally, economic transactions were governed by the interaction between producers and households. In the digital age, households have become firms, and, in turn, producers hire the households' services directly. Seemingly, free products and services have also emerged. All this calls for a revision of a number of assumptions behind GDP as a measure of the population's well-being.

What exactly is the digital economy is an issue still under discussion. According to the *Organization for the Economic Co-operation and Development* (OECD), the focus is on digital transactions, that is, those that order or deliver products using digital means. According to this definition, one important feature of digitization is the massiveness of peer-to-peer services intermediated by platforms such as *Airbnb*, *Uber*, or *eBay*, which facilitate transactions of goods and services. The *International Monetary Fund* (IMF), in turn, defines the digital economy as the use of digital information. Working groups of international experts are being convened to elaborate on these definitions and to propose a general framework for measuring the digital economy.

The structural changes associated with digitization result in the emergence of new occupations and, at the same time, the decline or replacement of some jobs. Together with this, the costs of job search are falling, speeding up the process of matching demand and supply. Thus, impacts on productivity might be observed via the exchange of knowledge and the development of more efficient processes.

In the financial area, digitization is redesigning the traditional payment systems, while drawing attention to concepts such as crypto-currencies and digital money. Disruptive technologies and the creation of these assets have potential benefits, the most important being those related to financial inclusion, reduced informality and tax evasion, and the promotion of safer and more efficient electronic payments. However, risks, concerns, and costs also arise. In particular, there is the need to develop technical capacity and adapt information-technology resources towards cybersecurity. With regard to anonymity, this can generate problems as it discourages users from working with information under these constraints. Finally, if digital currencies are not

universally accepted and financially exclude the population less integrated into the new technologies, reputational risks may also emerge.

When we talk about the digital economy, we are referring to a wide range of economic activities, and the huge volumes of data they generate. Now there are many new, more timely and granular sources of information, but largely unstructured for statistical purposes. This imposes statistical agencies a new role in data management, which involves the application of efficient and secure practices for data storage, handling and dissemination. As the exploitation of administrative records and alternative sources that qualify as *big data* consolidates, it presents an opportunity to complement the indicators currently available. Similarly, we need professionals with the necessary skills to exploit these great volumes of information, along with a technological infrastructure that allows the efficient storage and processing of such volumes.

From a global standpoint, digitization has modified the perception of distance, reducing the costs of cross-country coordination. This process has accelerated the fragmentation of production across borders, requiring additional efforts to adequately measure the value that each country contributes to the production chain of goods and services. This process of productive integration is known as *Global Value Chains* (GVC).

In this context, the scope of idiosyncratic shocks has global repercussions, affecting the different economies involved in the GVC. As we noted in our latest Monetary Policy Report, the escalation of the trade war between the US and China has coincided with the continuous deterioration of various indicators of expectations and slowed down industrial prospects, investment and international trade figures. In fact, global trade is growing at its slowest pace since the Global Financial Crisis of 2008-09.

Our own calculations, using panel data of 28 economies, confirm that statement. Since the beginning of the confrontations, countries integrated into GVC would have had an additional slowdown in their exports, as well as weaker manufacturing prospect (PMI).

On the side of prices, fragmented trade and digitization have been associated with both more synchronized global inflation and a stronger external impact on domestic prices. In addition, digitization allows prices to adjust rapidly to shocks to—or changes in—demand.

The producers of statistics are an essential actor measuring this process and should make additional efforts to improve quality and timeliness while safeguarding the credibility of the statistics. International guidelines and recommendations are necessary, but not sufficient, to capture the particulars of each country. Estimation methods must be improved, and the statistical infrastructure must be strengthened to develop additional indicators describing the new digitalization-driven environment.

In Chile, in order to continue leading official statistics, we have taken a number of steps to respond to the digital economy challenge:

- We are closely involved in the international agenda on the measurement of the digital economy, conformed by various institutions, including the OECD, the United Nations, Eurostat and the IMF.

- In the short term, one of the main challenges we are dealing with is to have an estimation for e-commerce, following the international guidelines. We expect to achieve this using a combination of administrative data and upgraded surveys collected by our National Statistics Office.

- Regarding administrative data, Chile has built a complete and secure set of data that have helped to produce sound traditional statistics, placing the country at the forefront using this type of information. For example, this data is being used intensively as an input for National Accounts official statistics, namely, monthly indicator of economic activity, supply and use tables, regional GDP and international trade in services statistics.

- Furthermore, since 2014 the CBC publishes the housing price index for Chile (HPI), which is built based on administrative data of the Internal Revenue Service, including actual transactions of dwellings. The index considers breakdowns by type of property (houses and apartments) and geographic areas.

- In 2017 we published our first effort to measure research and development as a productive asset in the National Accounts.

- In addition, we recently began to explore new administrative data such as electronic invoices from the Tax Office, which will complement the country's national and regional statistics. The results of these projects will be included in the release of the 2018 benchmark compilation, scheduled for 2021.

- This year, we published a second effort to evaluate Chile's value added in international trade, which identified the presence of heterogeneity among the various industries. This will allow improving the input-output estimates and the description of the productive interrelations of the Chilean economy.

During this Conference we will consider the experiences of Germany and Portugal in having a microdata repository that gives access to third parties, for analysis and research, with due protection of confidential information. In a similar fashion, we are developing an institutional Data Warehouse, strengthening the technological architecture and infrastructure that will allow us to organize, integrate and analyze a large amount of information, enhancing the construction of indicators and applied research in an efficient and timely manner.

The Third Conference on Statistics

Spaces for reflection and dialogue such as the one that this day-and-a-half provides, are essential to deepen and improve our understanding of the phenomena described. Throughout the sessions, we hope learn about the progress made by international organizations, other central banks, statistical offices and researchers in these areas.

The first session will address the challenges of digitization and how we can measure its impact on the economy. We will review how the international statistical community has had to adapt to new sources of information to develop indicators that account for the impact of this new age.

Also, during the first session, we will analyze the implications of digitalization and the use of electronic invoicing data in Chile to support the activities of central banks, mainly in the fields of monetary policy, economic analysis and financial stability. Finally, we will learn about the estimation of the contribution of the digital economy to the GDP of the US.

The second session will address how the globalization of production has imposed demands for greater generation of statistics that provide information on interdependence between countries. We will learn about the experience of Mexico and the US in the development of new national accounts statistics.

In the third session, we will see how digitalization provides us with an opportunity to integrate databases of different sources and sizes, becoming a valuable tool for the design and development of economic and financial indicators.

Finally, in the last panel, we will try to find answers to questions like: What is the role of the digital economy in the decline of productivity estimates? How are we capturing the contribution of digital platforms in the labor market? And how would current statistics and macroeconomic measurements be affected? among others.

I hope this Conference will help us benefit from the exchange of experiences, strengthening working networks and acquiring the necessary know-how to adapt to this new economy, in the quest to ensure confidence in statistical institutions.

Let me finish by thanking Erika Arraño, Felipe Avilés and Simón Guerrero for being the organizers of this Conference. I also thank Paloma Navarro, María José Reyes, and Alejandra Rosas for all their help managing the logistics challenges.

Have a pleasant stay in Santiago and a fruitful discussion over the next day and half.

Thank you

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