Monetary policy in Chile: combining theory, evidence and experience[1]

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Abstract

This chapter provides an overview of the experience of the Central Bank of Chile (CBC) over the last 20 years. It describes the main elements of its current policy framework, and the reasoning behind them. It also discusses Chile's coordinated policy responses to the pandemic and the challenges to the CBC posed by the current upsurge in inflation. The experience of recent decades yields three key lessons: the need for flexibility and innovation in a changing and uncertain environment; the importance of coordination and the role of complementarities between monetary policy and other components of the macroeconomic environment; and the key role of transparency and communication in the anchoring of inflation expectations.

Introduction

This chapter presents a brief description of some features of and lessons derived from the experience of the Central Bank of Chile (CBC) over the last 20 years, as well as the design and rationale behind its current policy framework. It also provides insights into the policy responses to the events of recent years and the current upsurge in inflation.

Section 2 provides some context of Chile's inflationary history over the last century and describes how the last 20 years were, for the most part, a period of exceptional macroeconomic stability. Section 3 presents a description of the institutional arrangements governing the CBC during the last two decades, as well as the main characteristics and reasoning behind its policy framework. Section 4 discusses the challenges experienced by the CBC in the last three years, beginning with the social crisis in October 2019, following with the Covid crisis, and ending with current efforts to return inflation to its target over the next two years. Section 5 discusses some lessons for the future.

For the sake of brevity, this chapter gives special attention to the behaviour of inflation and the CBC's mandate for price stability. Therefore, other important topics that are an explicit part of the CBC's current research agenda are not discussed here. One of these topics is the development of new technologies in the financial sector, reflected in the growing importance of fintech and the evolution of digital means of payment. The importance given by the CBC to these issues has been reflected in its contribution to the discussion of the Financial Innovation Bill, as well as in the recent creation of a high-level working group within the CBC, tasked with generating a medium-term strategy on digital means of payment in the country and studying the potential development of a digital currency issued by the CBC.

[1] I thank Matías Tapia for his valuable collaboration and discussion on the drafting of this chapter.

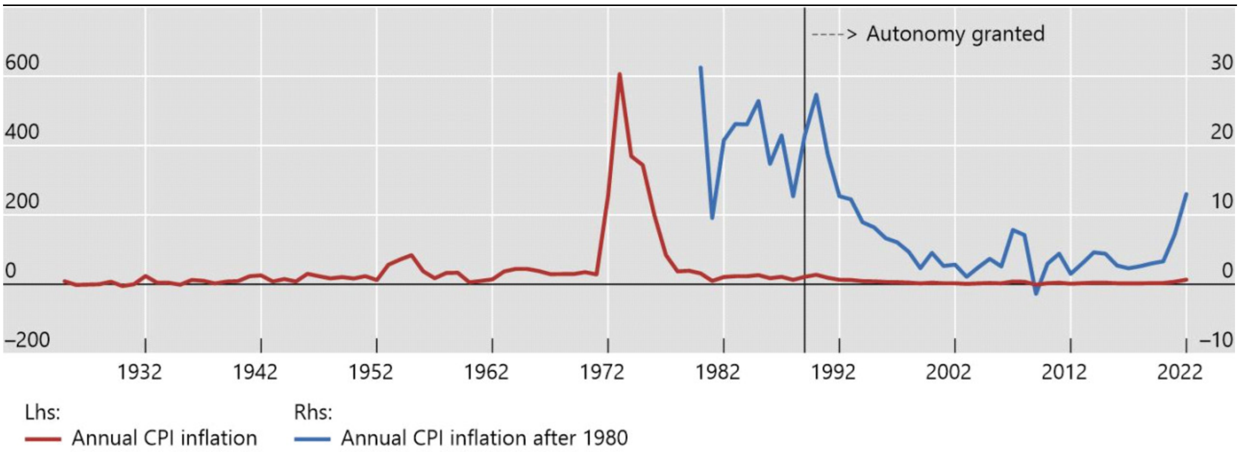
An overview of Chile's history of inflation[2]

During most of the 20th century, Chile frequently experienced periods of high and volatile inflation. In fact, the average annual inflation between 1925 (the year the CBC was created) and 2000 was 43%, with a standard deviation of 93%. The inflationary problem became increasingly acute starting in the 1950s, reaching an all-time peak in the first half of the 1970s. At the time, annual inflation averaged almost 300%, and reached a whopping 600% in 1973 (Graph 1).[3] From the second half of the 1970s onwards, inflation persisted, although at more moderate levels. Inflation started to abate systematically during the 1990s, reaching 3% by the end of the century and remaining low for the next 20 years. Despite the recent spike in inflation in 2021–22, associated with the aftermath of the pandemic and its macroeconomic implications both domestically and abroad, the last 20 years have been a period of low and stable inflation, an anomaly in the broader context of the country's historical record.

CPI inflation, 1925 - 2022

Year on year changes, in per cent

Graph 1



Sources: EH-Cliolab; National Statistics Institute.

As in many countries, the dynamics of inflation up until the mid-1970s were largely explained by the dominance of fiscal needs over monetary policy and the intensive use of money issuance as a source of fiscal financing. Following the mid-1970s, fiscal pressures on monetary policy were mostly absent due to an effort to achieve fiscal balance throughout most of the period, but inflation remained moderately high. The persistence of inflation for almost 15 years can be explained by several forces. One factor was a high degree of inertia, reflected in the widespread use of automatic indexation mechanisms set up as a defence against inflation. Also, with the exception of the 1979–82 fixed exchange rate period that ended in a severe financial crisis, monetary policy lacked a clear nominal anchor for inflation expectations. This problem was especially severe given the country's inflationary history and the associated lack of credibility in the conduct of monetary policy.

2 For a more detailed discussion of the history of inflation in Chile, see Central Bank of Chile (2020b), as well as the references therein.

3 As discussed below, although the inflation peak coincided with the first oil crisis, it largely reflected the state of domestic macroeconomic policies at the time, with an extremely large fiscal deficit throughout the first years of the decade.

The legal autonomy conferred to the CBC in 1989 laid the institutional foundation for a framework that, over the last 30 years, has allowed for independent monetary policy aimed at price stability, isolated from the risk of fiscal dominance. A process of gradual but consistent inflation reduction began in 1990 with the publication of inflation forecasts. Over time, and as they were validated by actual inflation, these evolved into a partial inflation targeting regime with annually decreasing targets. This conservative approach to disinflation reflected concerns over the potential real costs of faster inflation reduction in an economy with high inflationary inertia, as well as the CBC's need to build up credibility in order to anchor expectations. Through this process, inflation fell steadily during the 1990s from 27% to 3%, the long-term inflation target. Full-fledged inflation targeting was formally adopted in 2000, with a permanent target of 3% over a two-year horizon and the establishment of a floating exchange rate regime.[4] From the fiscal side, this policy framework is complemented by an acyclical fiscal policy rule. This implies that monetary policy plays the countercyclical role within the institutional macroeconomic framework, as discussed in further detail below.

Convergence to a low level of inflation and the anchoring of inflation expectations was aided by the growth and deepening of the local financial market and a balanced fiscal policy, leading to the adoption of a fiscal rule in 2001. Even in an institutional framework which prevents fiscal dominance over monetary policy decisions, an unbalanced fiscal path would have made inflation control and credibility very difficult due to its effects on aggregate demand, financial markets and agents' expectations.

Under the inflation targeting scheme, and prior to the recent upsurge in inflation which we discuss in more detail in Section 3, average annual inflation between 2000 and 2020 was 3.2%, with a standard deviation of 1.9%. In addition, two-year inflation expectations remained anchored to the 3% target throughout almost the entire period. In the light of the historical experience of decades of high and volatile inflation, attaining stability has been an important achievement of Chile's macroeconomic institutional framework, associated not only with monetary institutions but also with the operational framework of fiscal policy, and it has had a significant impact on households' welfare.

Moreover, this period of macroeconomic stability has also been a period of high economic growth in the context of Chilean history, with consistent and significant improvements in most socioeconomic indicators. Since 1990, average GDP growth has been 4.5%, with the period of initial disinflation in the 1990s coinciding with Chile's "golden decade" of economic growth. Additionally, the institutional macroeconomic framework has significantly enhanced the Chilean economy's capacity to face adverse cyclical conditions, as seen in the relatively dampened impact of the 2008–09 global financial crisis, the ability to accommodate the end of commodity boom in 2013–14 and the rapid recovery from the Covid shock in 2020. In the past, comparable events had severe and lasting negative consequences for the financial system, the balance of payments and real activity, yet over the last two decades, factors such as exchange rate flexibility, monetary and fiscal policy credibility, the use of countercyclical macro policies, and the robustness of the banking sector have greatly enhanced the resilience of the economy.

[4] Until 2020, the target also considered an explicit 2–4% range for inflation. Although, as discussed below, the 2–4% range can still provide a reference, keeping inflation within that range at all times is no longer an explicit goal.

The Central Bank of Chile's policy framework[5]

a) Legal and institutional framework

In 1989 the Central Bank of Chile became an autonomous institution of constitutional rank, mandated to guarantee the stability of the currency and the normal functioning of internal and external payments. Its autonomy is reinforced by the constitutional prohibition of acquiring securities issued by the state or public agencies or companies and financing public expenditures or loans with direct or indirect credits, therefore eliminating the risk of fiscal dominance. To attain its objectives, the CBC has been granted the management of monetary and exchange rate policy instruments, as well as some aspects of the macroprudential regulation of financial and capital markets in order to attain financial stability. With full autonomy in policy management and decision-making, the CBC communicates its actions to the President of the Republic and the Senate.

In practice, the mandate of currency stability implies keeping inflation low, stable and predictable over time. Meanwhile, the normal functioning of the payments system implies working to guarantee financial stability, preserving financial markets' primary functions of credit intermediation, the provision of payment services and risk allocation.

This institutional framework is completed by a fiscal rule aimed at developing credible fiscal policy; a regulatory and supervisory structure that promotes the stability, efficiency and solvency of the financial system; and a large degree of trade and financial integration with the rest of the world.

As discussed earlier and shown throughout history, the success of monetary policy relies on the strength of the other components of the policy framework. Price stability cannot be achieved in a context of unsustainable fiscal policy, and high and volatile inflation severely harms fiscal management. More generally, coordination can enhance the effectiveness of both fiscal and monetary policy. Monetary and fiscal coordination is generated through various mechanisms. Institutionally, the CBC is mandated to "bear in mind the general orientation of the Government's economic policy", and the minister of finance can participate in Board meetings. In practice, regular coordination between institutions takes place all the time. Coordination is naturally facilitated by the existence of the fiscal rule and the inflation target.

b) Monetary policy and inflation targeting

Given the large costs imposed by inflation and the direct relationship it has with monetary policy, theory, evidence and experience have shown that the greatest contribution central banks can make to society is to ensure low, stable inflation. To attain this objective, since 1999 the CBC has adopted an inflation targeting regime with exchange rate flexibility. The inflation target is the operational implementation of the price stability objective and states that projected inflation at a two-year horizon must always be at 3%. The commitment to inflation convergence at a two-year horizon provides guidance for agents' expectations, making it the nominal anchor of the economy.

5 For a thorough discussion of the Central Bank's policy framework, see Central Bank of Chile (2020a).

While the primary objective of monetary policy is always price stability, the relationship between the output gap and medium-term inflation directly connects inflation stabilisation to output stabilisation in the presence of shocks which move output and inflation in the same direction. For this reason, under most circumstances monetary policy naturally plays a countercyclical role, helping to reduce both inflation and output volatility. This countercyclical role can be especially important in a small, open economy like Chile's, as it facilitates the adjustment of relative prices to different types of shock. More generally, the ability to conduct countercyclical policy rests critically on the credibility of the inflation target. In the face of shocks that move inflation and output in opposite directions, the space for countercyclical policy only exists if inflation expectations remain anchored, guaranteeing the primary inflation objective. As we discuss below, this enhances the importance of credibility and communication in managing expectations.

The inflation targeting regime is defined by three main parameters: (i) the price index associated with the target; (ii) the target level of inflation; and (iii) the policy horizon. The choice of these parameters was guided by analytical insights from the academic literature, international evidence and the policy lessons learned in previous decades.

The inflation target is set as the annual change in the consumer price index (CPI), as estimated by the National Statistics Institute (INE). The CPI is the country's most used price index, including its application as a benchmark unit for the revision of prices, wages and financial contracts, as well as for the calculation of the so-called *unidad de fomento* (UF), a nominal daily unit indexed to the CPI of the previous month. The choice of the CPI as the target, instead of some core inflation indicator that can provide a better measure of medium-term inflationary pressures, comes from its advantages in terms of representativeness and reliability, and the fact that it provides a measure of the cost of the relevant consumption basket of households. These advantages facilitate communication and more than offset the disadvantage of short-term volatility.

As mentioned, the inflation target level is set at 3% annually. The choice of this level is informed by several considerations. On the one hand, a target above 3% can be seen as less consistent with the concept of price stability, and can cause distortions in relative prices and exacerbate volatility. This can generate inflationary costs that have a negative effect on growth and welfare. On the other hand, a lower level of inflation can also be costly. First, in the presence of downward price rigidities, a positive rate of inflation can facilitate the adjustment of relative prices in the event of an adverse shock, minimising the impact on output and prices. Second, CPI inflation is likely to overestimate actual consumer inflation due to advances in product qualities and substitution effects in the presence of relative price changes. Third, the zero lower bound on nominal interest rates reduces the degree of freedom for monetary policy when inflation is near or below 0%. In the face of an adverse shock on activity and inflation, if nominal rates are near 0% and deflation is expected, the implicit positive real interest rates may put further strain on activity and employment. Targeting inflation away from 0% reduces the risk of falling into that scenario.

Defining the target over a longer horizon, instead of an annual end-of-year target as during the 1990s, is crucial to the design of the monetary policy framework. The choice of the two-year horizon as the maximum period over which the CBC drives expected inflation to 3% reflects both the theoretical insights of the academic literature and the practical considerations and lessons derived from the actual conduct of monetary policy over the last three decades. A first consideration comes from the empirical analysis of the effects of monetary policy on output and prices, which can occur with a lag of up to two years. A second consideration is that, conceptually, monetary policy should not respond to temporary fluctuations in inflation, which can be generated by idiosyncratic shocks to particular CPI components and which do not threaten the relevant definition of aggregate price stability associated with the CBC's mandate. Third, and as a consequence of the previous two arguments, targeting inflation at shorter horizons can lead to excessive volatility of interest rates, activity and employment, without additional gains in terms of the benefits of price stabilisation.

More generally, the optimal convergence horizon of inflation will depend on the shock, and in many cases will be less than two years. The two-year horizon represents the longest tolerable period, and provides a clear and effective nominal anchor. Persistent deviations from 3% over the two-year horizon are not tolerable, as they can affect expectations and the credibility of the target, increasing inflationary persistence and the potential costs of disinflation.

This does not imply that inflation at shorter horizons is irrelevant. Current inflation and the inflation outlook at other horizons are also crucial inputs for monetary policy decisions. Indeed, they provide insights on the expected trajectory of monetary policy to attain inflation convergence, and can affect inflation expectations.

Given the shocks typically faced by the Chilean economy over the business cycle, experience has shown that the two-year target implies that inflation should fluctuate most of the time between 2% and 4%. This reflects the tolerance to transitory deviations of inflation from the 3% target, which are inevitable given the exposure to shocks and the arguments about the inconvenience of targeting 3% at every point in time. Greater deviations outside this range will occur occasionally, as seen over the last 20 years, and in principle are not problematic unless they threaten the convergence of inflation to 3% within the two-year horizon.

c) Exchange rate policy

Like many other open economies, Chile has a floating exchange rate regime, which was introduced in 1999. This regime has several advantages, and its adoption came as a result of the lessons derived from the experience of the 1998–99 Asian crisis. At the time, inflation targeting coexisted with an exchange rate band that defined a second policy objective. Tensions between both objectives became problematic due to a few different factors.

First, in a context of financial integration, exchange rate flexibility has allowed for independent monetary policy, which has given more room for inflation and output stabilisation in the face of external shocks. This was important, for example, during the significant drop in commodity prices in 2014–15. During that episode, unlike many other central banks, the CBC was able to adopt a countercyclical monetary policy stance, even in the face of a significant depreciation of the peso. As discussed earlier, the credibility of the inflation target played a key role, reducing the pass-through from the exchange rate to inflation and allowing for a faster recovery of output without affecting price stability.

Second, in the face of price and wage rigidities, exchange rate flexibility facilitates the adjustment of relative prices to real shocks, preventing persistent real exchange rate misalignments that can lead to larger adjustment costs in the future. Third, having a sole inflationary objective, instead of dual inflation and exchange rate goals, reduces the risk of conflict between both targets, as experienced in 1998–99. The policy lesson in the aftermath of that event was that having dual goals with one policy instrument (the monetary policy rate) was not optimal, and that the economy could better brace itself against adverse shocks without a commitment to an exchange rate goal.

Although a floating exchange rate regime will typically lead to greater exchange rate volatility, this need not be harmful as long as the local financial market is developed enough to be able to provide adequate hedging instruments to agents. A further condition is that monetary policy and inflation stabilisation must be credible, as has been the case in Chile in the last two decades.

The adoption of exchange rate flexibility does not imply that the CBC refrains from participating in the market under all circumstances. Since 1999, the CBC has explicitly stated that it can intervene in the market in exceptional occasions, when the health and stability of financial markets may be at risk. This can occur, for example, when large exchange rate fluctuations or excess volatility generate large degrees of uncertainty or muddle the correct interpretation of relative price signals. In that sense, exchange rate interventions are themselves exceptional events whose design and interpretation depend on the nature of the shock that generates them. Interventions are not aimed at sustaining a particular exchange rate level, but rather at facilitating the economy's adjustment in the face of particular circumstances in which an unusually large degree of exchange rate market instability can hinder the operation of the financial market and the price formation process. The CBC has also participated in the market in situations in which market conditions were convenient for the accumulation of international reserves.

Since 1999, the CBC has intervened in the foreign exchange market seven times. All of these interventions have been sterilised in order to isolate the stance of monetary policy in the intervention. This is consistent with the notion that, in the presence of exchange rate misalignments, sterilised interventions can affect the exchange rate, especially in terms of reducing short-term volatility. Three of the intervention episodes were associated with currency purchases to accumulate reserves. The remaining four were carried out to provide liquidity, either through direct currency sales or dollar-denominated instruments, in situations in which the foreign exchange market exhibited relevant levels of stress that could endanger the correct operation of financial markets and the price formation process. The two most recent episodes, in November 2019 and July 2022, are discussed in more detail in Section 3.

d) Financial policy

The financial sector is a key player in the economy, both in the short and the long term. Its importance derives from the multiple functions it performs, such as provision of liquidity, mobilisation and allocation of savings for productive use, risk management, simplification of the payment system and information production. These functions contribute to the economy's long-term growth and development, as well as to its ability to buffer short-term shocks. However, in some contexts, the financial sector can be a source of instability, which can be associated with significant macroeconomic costs as well as amplifying internal or external imbalances.

The CBC shares legal responsibilities with financial sector supervisors, including, among others, the Financial Market Commission (CMF) and the Superintendence of

Pensions. The CBC's concern is preferably system-wide, and its analysis is carried out from a macro-financial perspective. In order to limit risks that threaten the continuity of internal and external payments and to react in a timely and effective manner to adverse events, the CBC is equipped with various legal powers, regulatory attributions and policy tools. Some of the CBC's powers are shared with other authorities, in particular the CMF, which in turn has a broad mandate and regulatory and sanctioning powers over much of the financial system.

Therefore, the stability of the financial sector is itself a fundamental objective of the CBC as part of its mandate, for which it has instruments such as the provision of liquidity in times of need as the lender of last resort. Moreover, financial stability interacts directly with price stability and the objective of keeping inflation low and stable. A fragile financial system hinders the implementation of monetary policy because the transmission and effectiveness of monetary policy requires a correctly functioning financial system. Likewise, episodes of financial stress can have significant and lasting effects on prices through various mechanisms. Meanwhile, macroeconomic imbalances reflected in high and volatile inflation inhibit the development and stability of the financial system. Therefore, controlling inflation requires a stable and well-functioning financial system, and a healthy financial sector requires price stability.

Despite the interaction between price stability and financial stability objectives, both goals are typically addressed using different instruments. This is due to the fundamental difference between price stability, an aggregate objective, and financial stability, which is more directly associated with the functioning of a specific sector in the economy. Thus, the instrument associated with price stability is the monetary policy rate, a macroeconomic instrument with aggregate effects, while financial stability is addressed through more specific prudential instruments. At the same time, coordination between monetary policy and financial policy poses challenges. These are bigger in normal times and require monitoring, model development and analysis, and, ultimately, expert judgment in order to estimate the origin, phase and prospects of the credit cycle. In recent years, the implementation of a Countercyclical Capital Buffer Requirement (CCyB) has provided the CBC with a new financial policy instrument.

In exceptional situations of financial stress, however, the distinction between monetary and financial policy blurs, and the appropriate mitigation tools depend on the nature of the shock. One lesson from the Great Financial Crisis is that central banks can play a crucial role in ensuring the liquidity and functioning of financial markets by supporting careful deleveraging. This can help to avoid massive bankruptcies of institutions and a violent credit crunch that can cause lasting damage to the real economy.

e) Transparency and the role of communication

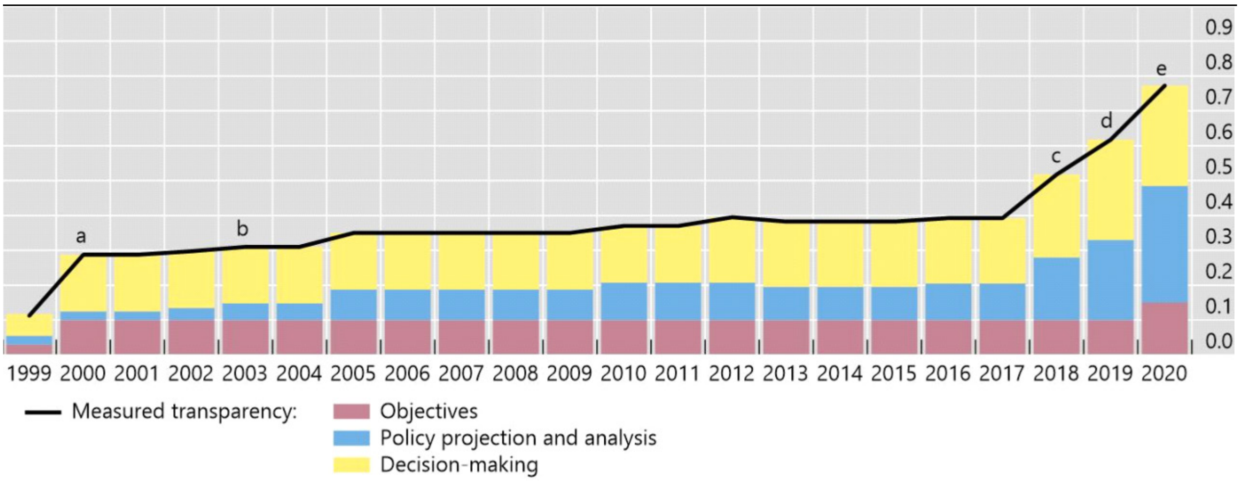
For many years, opacity and secrecy were seen as desirable features of the monetary policy framework. However, the last three decades have seen a dramatic shift in this view, with a virtual consensus on the advantages of transparency and information provision. In the particular case of inflation targeting, communication plays a central role given the importance of anchoring inflation expectations to the target.

As a result, over the last two decades the Central Bank of Chile has acknowledged the key role of inflation expectations by assigning a central role to communication and transparency. Communication policies can explain the rationale behind monetary policy decisions aimed at meeting the inflation target, thereby providing valuable information for the formation of inflation expectations. In that sense, providing clear, coherent information on inflation forecasts, policy responses and the convergence path to the target within the two-year horizon is essential to the credibility of monetary policy and the attainment of price stability. Transparency also provides accountability over the CBC's actions and the fulfilment of its mandate.

The Central Bank of Chile uses multiple communication instruments, such as monetary policy meeting statements and minutes, the Monetary Policy Report and related presentations, and reports explaining its analysis and projection. The movement towards greater transparency in monetary policy over the last two decades in Chile is shown in Graph 2, which presents an index of the evolution of the CBC's transparency. The index considers three dimensions: transparency about monetary policy objectives, the forecasting and policy analysis system that supports decisions, and the monetary policymaking process. As can be seen in the graph, the publication of the first Monetary Policy Report and the formal adoption of inflation targeting constituted the first significant change, further enhanced in later years by actions such as the publication of the MEP projection model in 2003. Transparency has increased in all three dimensions in recent years. Communication of the monetary policy decision-making process was improved, and the CBC's operation was assessed by an external evaluation committee. Transparency in objectives was increased through the publication of an updated version of the Monetary Policy Framework document, which was complemented with a new document discussing the financial policy framework. In addition, communication of the forecasting and analysis system was significantly enhanced by publication of the book on the CBC's macroeconomic models and projections, including computational codes to allow for replication, as well as the presentation of an explicit corridor for the expected future monetary policy path as part of the Inflation Report.

A transparency index for the Central Bank of Chile

Index Graph 2



[a] 2000: Publication of first MP report and MP framework. [b] 2003: Publication of MEP model and the Policy Projection and analysis System. [c] 2018: Updated MP decision-making process and External Evaluation committee. [d] 2019: Publication of updated MP framework whit greater emphasis on financial stability. [e] 2020: Publication of policy and forecasting models book published (including codes for main models) and MPR path corridor.

Source: Fornero et al (2021).

Recent developments and challenges

a) Social crisis and Covid

After three decades of almost uninterrupted macroeconomic stability, over the last three years the Chilean economy has experienced an unexpected and ex ante very unlikely combination of shocks. This sequence of low-probability events, separated only by a few months, has posed policy challenges and dilemmas that had not arisen in several decades.

In October 2019, intense and prolonged episodes of social unrest, in many ways unlike anything else experienced in more than 30 years, abruptly increased uncertainty and caused stress in financial markets, leading to a political agreement to change the Constitution as a potential solution to end the crisis.[6] In that context, the CBC intervened in the foreign exchange market for the first time in almost a decade, selling dollars on the spot market and dollar-denominated instruments in futures markets. This was motivated by unusually high levels of volatility in the exchange rate market, which threatened the normal operation of the financial market. The CBC provided liquidity to facilitate the adjustment of the economy to a new environment with greater degrees of institutional uncertainty. While the intervention program was successful in providing liquidity and reducing volatility, the increased underlying uncertainty in the Chilean economy is reflected to this day in the value of the peso, which has depreciated significantly against most currencies since October 2019.

A few months later, the arrival of Covid took Chile, and indeed most of the world, by storm, and led to the adoption of unprecedented measures to curtail the spread of the virus. The government reacted swiftly, imposing severe restrictions on mobility and the operation of non-essential businesses, while workers started to work remotely from home. These measures, though necessary from a public health perspective, froze the operation of entire sectors overnight, bringing the economy to a halt. In consequence, economic activity fell by 15% in annual terms in April 2020. Services sectors were among the most affected, with month-on-month economic downturns of around 25%. Many firms were forced to cease their operations and employment plummeted.

The extreme nature of these events threatened serious and long-lasting damage to firms, workers, the financial system and the overall economy. Therefore, a battery of policy measures was swiftly implemented. This policy package took advantage of the ample fiscal and monetary policy space available thanks to the strength of the macro policy framework described in the previous section, founded on decades of fiscal discipline and hard-won monetary credibility.

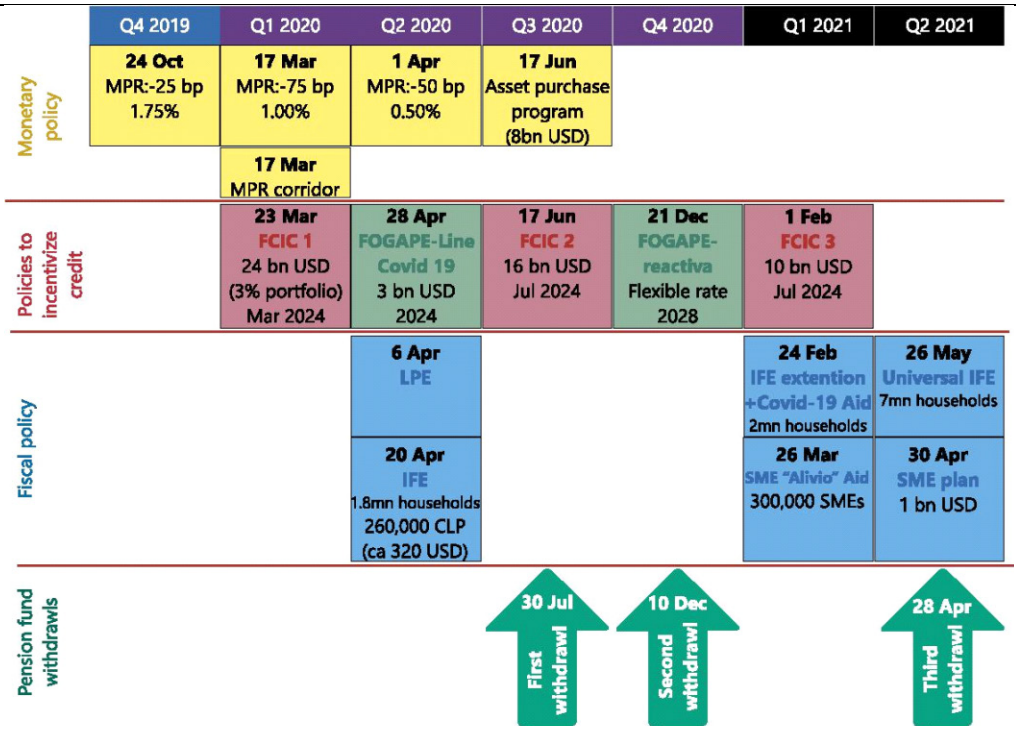
The CBC reacted quickly, both with conventional and unconventional monetary policy tools. Following an extraordinary policy meeting in mid-March 2020, the monetary policy rate was lowered by 75 basis points to 1%, while the scheduled meeting two weeks later brought it further down to 0.5%, the effective lower bound rate for Chile. The policy rate would remain at its minimum feasible level for the next 15 months. Simultaneously, the CBC implemented additional unconventional measures to stimulate credit and provide liquidity to banks and firms. In March, the CBC announced a liquidity facility for commercial banks consisting of a collateralised

6 A newly drafted constitution was rejected in a referendum in September 2022. The constitutional process will continue in 2023.

fixed credit line of up to 3% of their commercial and retail portfolios and a variable credit line conditional on the provision of loans to firms (FCIC, per the acronym in Spanish).[7] As the pandemic continued, the CBC extended this program twice, lending a total of 37 billion US dollars, about 15% of GDP, to commercial banks. In the context of the crisis and the potential stress it put both on the survival of firms and the health of the financial market, the liquidity provision associated with the FCIC was a key element in the macro policy response and had strong complementarities with the quasi-fiscal measures associated with credit provision discussed below. Coordination between the fiscal and monetary response to Covid-19 was key to the economy's resilience and recovery.

Several fiscal or quasi-fiscal policies were also implemented. Credit provision to liquidity-constrained firms was targeted by two government credit guarantee programs to small and medium-sized firms (FOGAPE Covid in 2020 and FOGAPE Reactiva in early 2021), while an employment protection program (LPE, per the acronym in Spanish) aimed to prevent the widespread destruction of job relationships. LPE allowed firms to freeze labour contracts for a few months while employees could withdraw funds from their unemployment insurance accounts. This provided temporary relief to workers and prevented a massive number of permanent layoffs that could have had lasting consequences for both workers and firms, dampening the strength of recovery when the economy was able to reopen.

Policy responses to the Covid crisis, 2020-21 Graph 3



Source: Central Bank of Chile

Subsequently, massive amounts of liquidity were injected into the economy, directly benefiting households. Some of these actions took place even as most sanitary restrictions were lifted and the operation of the economy headed towards normality, aided by a very rapid and successful vaccination program that further

[7] FCIC stands for *Facilidad de Crédito Condicional al Incremento de las Colocaciones.*

boosted recovery. Liquidity was provided to households through several direct cash transfers by the central government (IFEs, per the acronym in Spanish) and three pension fund withdrawals in July 2020, December 2020 and April 2021. A summary of all macro and financial policies implemented in response to the Covid crisis is presented in Graph 3.

As many of these policy measures took place simultaneously, it is hard to evaluate the specific impact of any of them. However, recent research (Albagli et al (2023)) suggests that the credit guarantee programs (FOGAPE Covid and Reactiva) and the employment protection program (LPE) were highly successful in providing liquidity and relief to ailing firms. Model simulations suggest that without the combined effect of all of the implemented plans, output in 2020 would have fallen 4–7% more (Table 1).[8] Even though all of these policies made important positive contributions to avoiding a further deterioration in output, credit policies in the form of liquidity provision, credit guarantees and regulatory flexibility were the most relevant. For the first time in Chilean history, credit to firms actually increased during a recession (Graph 4). This highlights the importance of unconventional policy measures in the occurrence of extraordinary events and the role of interactions between monetary and financial policy. Moreover, it showed the strength of Chile's macroeconomic policy framework, which was able to take advantage of its reputation and credibility built over the last few decades.

Buffer effect on GDP on measures adopted during COVID-19 crisis

In per cent Table 1

	2020	2021-first half
Conventional monetary[1]	[0.1-0.8]	[0.6-2.1]
Unconventional credit[2] policies	[2.2-4.8]	[2.7-4.4]
Fiscal policy	0.7	1.7
Total: Fiscal and monetary policy	**[3.1-6.3]**	**[5.0-8.2]**
Pension fund withdrawals	1.2	2.9
Total	**[4.3-7.5]**	**[7.9-11.1]**
Actual GDP	-5.8	8.7
Counterfactual GDP	[-10.1; -13.3]	[0.8; -2.4]

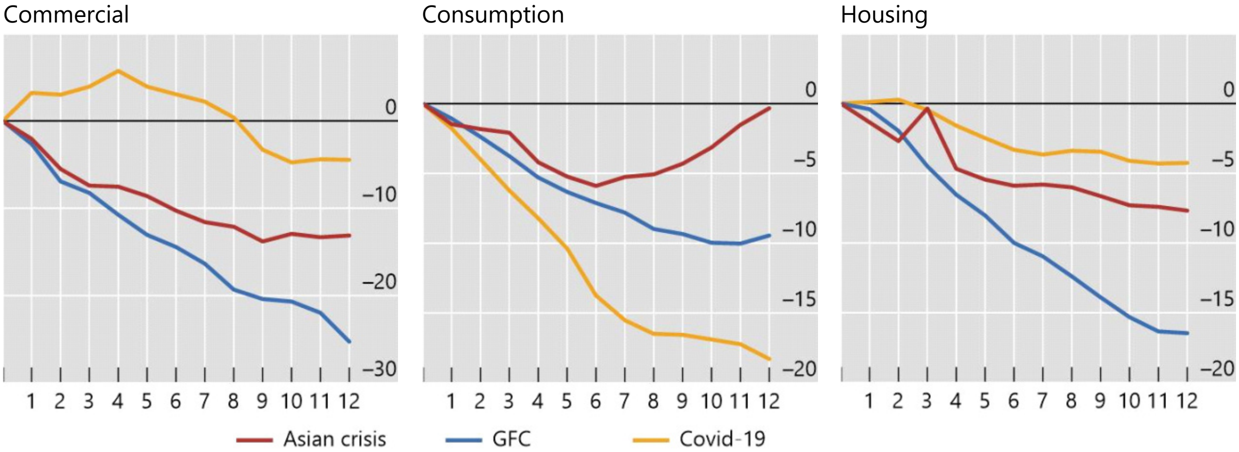
[1] Conventional monetary policy associated with counterfactual of keeping the MPR at 2%. [2] Unconventional credit policies associated with the counterfactual of not implementing the monetary policies as sovereign guarantees that sought to stabilise the financial markets, including the FCIC-FOGAPE program, bond purchase, and liquidity programs in local and foreign currency. Range presented in the two policies is based on two counterfactual exercises: i) where, in the absence of credit policies, the financial shock has been of the same size as that of the 2008-09 financial crisis; and ii) where it had been larger and proportional to the fall of GDP in 2020. Counterfactual GDP subtracts from actual GDP the buffer effects of fiscal and monetary policy and the pension fund withdrawals shown in the upper lines of the table.

Source: Central Bank of Chile.

[8] Notice that this is an illustrative exercise that provides a counterfactual for the behaviour of output in the absence of these policies. It does not include the opportunity costs of these measures, so it is not a cost-benefit analysis. Due to the nature of the model, the analysis also excludes the potential benefit of avoiding a financial crisis, which could have had much larger and persistent effects on real activity and welfare.

Commercial bank loans in recessions[1]

Difference in annual change from period 0, in per cent Graph 4



[1] Months are in horizontal axis. Period one is the first month with negative Imacec (monthly activity index) for each episode.

Source: Central Bank of Chile.

b) The return of inflation and current challenges

In 2021, as the economy began to reopen and the worst part of the pandemic subsided, fiscal policies and pension fund withdrawals became more important, significantly increasing households' liquidity. The sum of the different sources of household liquidity – regular income plus the resources provided by the state and pension fund withdrawals – came close to 71 billion US dollars between 2020 and 2021, equivalent to 28% of GDP. This led to an unprecedented consumption boom, which drove a record recovery of almost 12% GDP growth in 2021 – one of the highest growth rates in the world.

An unintended consequence of these policies was the abrupt acceleration of inflation, reaching two-digit levels well above the 3% target. This has posed the most urgent and important macroeconomic challenge that the CBC has faced at least since the adoption of inflation targeting in the late 1990s. In August 2022, year-on-year inflation peaked at 14.1%, the highest since 1992, while as of April 2023 year-on-year inflation remains at 10% (Graph 5). The return of inflation, and its adverse effects on welfare, have brought a bitter new experience for many younger Chileans, and a reminder of the country's past for older generations.

While some of this inflation is explained by global factors associated with increases in commodity prices and supply chain disruptions during the pandemic, local demand forces associated with the large liquidity shock in 2020–21 have been the main drivers. This is consistent with the notion that inflation in Chile accelerated more than in comparable economies.

Therefore, the behaviour of inflation over the last three years has reflected the impact of these different forces. During the first few months of the pandemic, between March and December 2020, the disruptions associated with Covid generated a global negative supply shock that put upward pressure on prices. However, these inflationary pressures were neutralised by a large negative demand shock as a result of negative income effects, the increase in uncertainty and the restrictions making up the health response. As a result, inflationary effects were mostly muted.

During the first half of 2021, inflation began to rise, as the supply shock abated but demand began to grow strongly due to the withdrawal of pension savings and fiscal transfers. Thus, in this period, demand pressures prevailed, creating a huge imbalance in the economy, as seen in the behaviour of the current account, and driving inflation upwards. The depreciation of the peso, a reflection of external forces as well as high levels of domestic uncertainty, put additional pressure on prices. As the high dynamism of consumption and the behaviour of the exchange rate ignited the inflationary process, the Central Bank of Chile started its monetary policy tightening cycle early, in July 2021, before most emerging and advanced economies.

This local inflationary process was reinforced at the end of 2021 and 2022 by global factors. Supply-side bottlenecks in the aftermath of the pandemic, the effect of the Russian invasion of Ukraine on energy and commodities prices, and tighter sanitary restrictions in China compounded in the local economy and hit Chile in an already high-inflation environment. Under other circumstances, external shocks typically would not require a direct response in the context of Chile's monetary policy framework. However, the more persistent nature of these shocks, and the fact that they hit an economy already experiencing inflation well above its target, required a monetary policy reaction, as they could further ignite the inflationary process and affect inflationary expectations.

These global forces led central banks to withdraw monetary stimulus far more aggressively than previously expected. The increase in the policy rate by the Federal Reserve led to an appreciation of the US dollar, higher interest rates, higher term premiums, and spreads. This negatively affected financial conditions for emerging markets. In the case of Chile, this had a significant effect on the exchange rate, exacerbated by the uncertainty associated with local factors and the political process. This led to a significant spike in exchange rate volatility and frictions in the price formation process. It also stoked concern about potential spillovers to other markets, especially fixed income, and adverse effects to the real economy. In consequence, a new intervention program was announced in July 2022, with similar characteristics to the one conducted in 2019, which brought a moderation in all metrics of volatility and reduced frictions in the price formation process, although its success was facilitated by an improvement in international conditions.

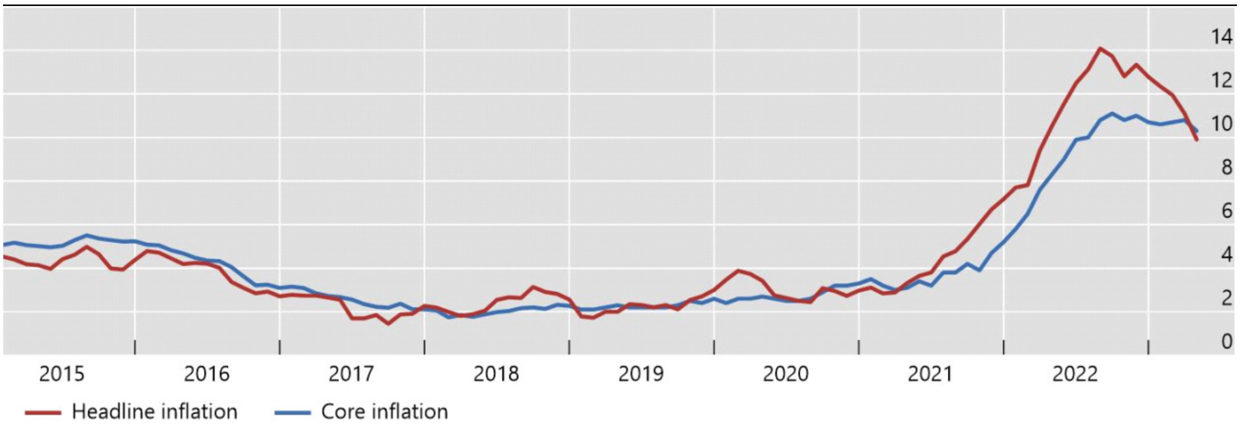
In response to inflation and the need to guarantee convergence to the two-year target, the Board has raised the policy rate over the last 18 months, bringing it up to 11.25% in October of 2022. This has been done swiftly and decisively, as Covid caused the economy to accumulate several macroeconomic imbalances that threatened more severe consequences in the future. This has been aided by the behaviour of fiscal policy, which has adjusted back from its expansionary position in 2020 and 2021. Although the policy rate is expected to have already peaked, it will remain at its current levels until the macroeconomic situation shows a clear convergence of inflation to 3%. To this day, inflation remains at an intolerably high level.

The last two years have a been a painful reminder of the costs of inflation after more than two decades in which inflationary concerns were largely absent from the minds of both households and firms. They have highlighted how inflation directly affects the welfare of households, especially among the poor, and how persistence can make the fight against inflation a long and arduous task. This is especially true in an economy like Chile's, in which, despite two decades of low inflation, the use of automatic indexation mechanisms in prices, wages and contracts is widespread. This reinforces the crucial importance of low and stable inflation for growth, the development of the financial sector, the alleviation of poverty and the overall welfare of households. Although this upsurge in inflation was driven by a set of unusual circumstances, it shows that the battle against inflation is never really over and that monetary policy must always remain attentive and responsive in order to attain price stability.

Inflation indicators, 2015-22

Year over year changes, in per cent

Graph 5



Source: Central Bank of Chile

Some lessons and insights for the future

Over the last 20 years, the experiences of conducting monetary policy under inflation targeting have generated several lessons. These lessons are valuable in the face of the current situation and the challenges faced by the CBC and the Chilean economy looking towards the future.

The first lesson, which became especially clear during the last three years, is the need for central banks and the policy framework to constantly adapt to changing circumstances in order to have the required flexibility to respond to different types of events. In a sense, this flexibility is embedded in the design of the monetary policy framework, with the two-year horizon for the inflation target providing room for different policy choices without compromising price stability. Exchange rate flexibility fulfils a similar role, allowing the economy to adjust more easily to different types of shock without constraining monetary policy to defend a particular exchange rate target. This overall flexibility has proven very valuable in recent years. In mid-2019, neither a severe social crisis nor a worldwide pandemic seemed very likely to present shocks to the Chilean economy, and their joint occurrence seemed almost impossible. When both shocks hit the economy almost simultaneously, the Central Bank of Chile was able to respond rapidly, using both conventional instruments such as the monetary policy rate and unconventional instruments associated with liquidity and credit provision. This fast response played an important role in avoiding more severe consequences of the 2020 recession, such as massive rates of firm closures, defaults and widespread layoffs that could have had long-lasting effects on the financial sector and the economy over subsequent years. The correct design of timely policy responses and their evaluation as a crisis evolves require a rapid process of analysis, incorporating real-time information and the simulation of different policy scenarios. In the case of the CBC, this is possible due to the development of an ambitious research and modelling agenda over the last decade, as well as the increasing use of micro data from administrative records and surveys to monitor the behaviour of the economy.

A second lesson is the importance of coordination and the role of complementarities between the different components of the macroeconomic environment. Monetary policy does not operate in a vacuum, and its ability to attain its objectives depends crucially on the behaviour of fiscal policy and the health of the financial sector. As discussed earlier, the success of inflation targeting and exchange rate flexibility relied on responsible management of fiscal policy and the development of a healthy financial sector. During the Covid crisis, credit and liquidity provision by the CBC were complements to the fiscal credit guarantees and the employment protection programs implemented by the government, mutually enhancing their effects. Moreover, the impact of these programs on aggregate credit provision, firm survival and the protection of jobs depended on the health and strength of the banking sector, as well as the institutional arrangements associated with unemployment insurance funds. Similarly, monetary policy alone cannot reduce inflation in the current situation; fiscal adjustment plays a significant role. This also poses challenges for the future. On the fiscal side, the process of fiscal consolidation must be maintained. Hopefully, over the next few years, this will help rebuild the sovereign funds that have provided an important buffer in recent years. On the financial side, the recovery of the domestic capital market seems imperative. Pension fund withdrawals had a significant impact on the size and depth of financial markets, reducing their capacity to provide credit to firms and households and their ability to shelter the economy from domestic and external shocks.

Finally, management of inflation expectations is a key component for the success of the inflation targeting regime and the capacity to conduct countercyclical monetary policy. In that sense, the ultimate objective of transparency and communication is to build up credibility that anchors expectations to the target. Over most of the last 20 years, inflation expectations in Chile stayed very close to the 3% target, despite temporary fluctuations in current inflation. This was especially true for two-year expectations, the most direct measure of the credibility of the inflation target. This has not been true in the last year, with measures of one- and two-year expectations deviating significantly from the target. This was a serious cause of concern and one of the reasons behind the rapid increase in interest rates, as a more permanent deviation of expectations could lead to de-anchoring, jeopardising the foundations of the inflation targeting regime. Fortunately, two-year expectations have come closer to the target, signalling that agents believe that the process of inflationary convergence is underway. The CBC is also pursuing an agenda to develop a better understanding of inflation expectations, with new detailed surveys for both firms and households.

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