



Central Bank
of Armenia

Inflation Target **in Armenia**

H. Avetisyan, H. Igityan, A. Papikyan

October 2024

Contents

Executive Summary	3
a. History of Monetary Policy in Armenia.....	7
b. Inflation Targeting: Theory	13
c. Case Studies of Global Best Practices in Inflation Targeting.....	20
d. Legal Basis for Setting the Inflation Target in the Republic of Armenia.....	24
e. Conclusion.....	28

DISCLAIMER: The views, opinions, findings, analysis, conclusions and/or recommendations expressed in these working papers are strictly those of the authors, and do not necessarily reflect the views or official position of the Central Bank of Armenia. The Central Bank of Armenia takes no responsibility for any potential errors or omissions in the information contained in the working papers.

EXECUTIVE SUMMARY

As enshrined in the Constitution and “The Law of the Republic of Armenia on the Central Bank of Armenia,” the primary objectives of the Central Bank of Armenia are to ensure price stability and financial stability. The mission of the CBA, as an accountable public sector institution, is to improve the welfare of our nation by realizing these main objectives of ensuring price and financial stability.

To achieve the price stability objective, the Central Bank of Armenia chooses an appropriate monetary strategy and implements monetary policy. Prudent policy aimed at ensuring low and stable inflation provides a credible nominal anchor for the economy and thereby anchors inflation expectations, helps to avoid inefficient boom-bust cycles, stimulates investment, supports the economic development of the country, and improves living standards over time.

In order to define and achieve its price stability mandate, the Central Bank of Armenia is guided in the medium term by the inflation target which is consistent with this mandate. Importantly, defining and achieving price stability is not only about setting an inflation target. Rather, ensuring price stability is a dynamic process that—in addition to having a well-defined and appropriate target—requires a comprehensive, forward-looking monetary policy framework and robust toolkit; the highest standards of transparency, communication and accountability; and an effective transmission mechanism. Guided by this comprehensive approach, the Board of the Central Bank of Armenia reaffirms its commitment to price stability in its “Statement of Long-Run Monetary Policy Objectives” (see Box 1), which is approved and published in the first Monetary Policy Report at the beginning of each year.

A reliable and clearly communicated inflation target is an important benchmark for businesses in decision-making, setting contracts, and forming inflation expectations. At the same time, the selection of the inflation target should reflect the specific characteristics of the RA economy, and take into account issues associated with accurately measuring inflation. Over time, the Central Bank may consider it necessary and appropriate to revise the inflation target to best reflect the long-term structural characteristics of the economy, its driving forces, and the vision for the country’s future economic development and improvement of the country’s wellbeing.

Modern economic literature asserts that an inflation target of zero is the best and most optimal medium-term inflation target that is consistent with price stability. However, the literature also identifies a number of arguments that can explain why a low positive target is chosen in practice. These include factors relating to the zero lower bound of the nominal interest rate, downward rigidities for prices of factors of production (especially wages), and statistical errors in calculating inflation. Taking these factors into account, a low, positive inflation target is considered an acceptable and optimal solution.

In 2005, the Central Bank of Armenia published a “Rationale for the Adoption of Inflation Targeting Strategy by the Central Bank of the Republic of Armenia,” in which a maximum level of 3% was set as a long-term inflation target. The Central Bank of Armenia officially implemented this inflation targeting strategy from January 1, 2006. Some months after the adoption of the inflation targeting strategy and based on developments in the global and domestic economies, a medium-term target index was set at 4% inflation with a tolerance range of ± 1.5 percentage points, while maintaining the long-term inflation target of 3%.

Since the adoption of the inflation targeting strategy in 2006, the Central Bank has consistently achieved the proposed 4% inflation target. As such, between 2006 and 2024, the average year-over-year rate in Armenia has stood at approximately 4.0%. This is the most important indicator of the success and effectiveness of the CBA’s monetary policy. However, it is important to note that this has not fully translated to the public perceiving price stability, as during various regional and internal shocks, the Armenian economy often faced risks of inflation and deanchored inflation expectations. The prevalence of similar situations over the course of Armenia’s monetary policy history may offer signals that the 4% target may currently not be consistent with the definition of true price stability, or that maintaining price stability in line with a 4% target may come at the expense of significant social costs.

Since the introduction of inflation targeting by the Central Bank of Armenia in 2006 and the establishment of a 4% inflation target, the CBA Armenia has made significant investments in developing the Forecasting and Policy Analysis System (FPAS) for monetary policy. Investments in the FPAS over time have laid a

solid foundation for implementing wide-ranging reforms in this direction in the present period. In the context of variegated challenges, soberly assessing the limitations arising from the existing system, and clearly understanding the issues facing the Armenian economy, the CBA has always shown its readiness to implement new and appropriate reforms. Against this background, in 2024, the Central Bank of Armenia officially introduced an innovative and progressive approach to monetary policy aimed at prudently managing risks and uncertainties.

Since the independence of the Republic of Armenia, the country's economy and economic situation have improved significantly, becoming more robust, diversified, and globally interconnected. Parallel to this economic growth and development, the central bank's framework and strategy for price stability and monetary policy have also undergone fundamental changes and developed in several stages, providing a stronger and more robust foundation for prudently managing a growing layering of risks and uncertainties. In recent years, the Armenian economy has benefitted from consistent structural and institutional improvements, while the financial system has made significant strides in becoming more developed and robust, whether in terms of its depth, diversity of sectors, or significant expansion of its toolkit. It is also worth mentioning that with the successes achieved in the fields of monetary and macroeconomic policy as well as in developing robust policymaking frameworks, Armenia is currently "classified" by international experts and investors as a country with a leading monetary policy framework. Therefore, setting a lower and consistent inflation target is also an important factor from the perspective of Armenia's international reputation and rating.

Considering the above, recent developments and achievements in Armenia's economy and monetary policymaking framework provide a solid foundation for the Central Bank of Armenia to continue working to strengthen public confidence in monetary policy, develop the monetary policy framework, and implement large-scale, long-term reforms. This includes setting a lower inflation target that is consistent and compatible with the perception of true price stability and the current structure of the financial and economic system.

Arguments Supporting a Low Inflation Target

A lower inflation target is expected to have a positive impact on mitigating fluctuations in financial and currency markets, increasing households' purchasing power, and increasing the country's investment attractiveness.

- Research shows that low inflation is usually accompanied by low inflation volatility, economic growth, and investments, which are related to declining uncertainties about monetary policy itself. In this context, low and stable inflation, as well as a reduction in policy uncertainty, are important **prerequisites for ensuring long-term investments, increasing consumer confidence, and supporting high and sustainable economic growth.**
- A low inflation target and low inflation expectations are an important precondition for a **decline in nominal market interest rates** (under given risk conditions). Additionally, considering the relationship between level of inflation and its volatility (where lower inflation levels correlate with less inflation volatility), a lower inflation target would be expected to contribute to lower risk premia, which would help to **lower real market interest rates** as well.¹ Such a decline also creates an important basis for long-term investment growth.
- Low and stable inflation and lower policy uncertainty also provide an important basis for **reducing volatility in currency and financial markets**, as they provide a more predictable and stable macroeconomic environment for the functioning of financial markets. This is especially important considering the steps Armenia's neighboring and regional partner countries have taken to gradually lower their inflation targets and increase their monetary policy credibility, which, in turn, can threaten to increase the relative riskiness of Armenia and create preconditions for potential capital outflows.

¹ See, for reference Grier and Perry (1998), Daal et al. (2005), and Fountas and Karanasos (2007).

- Ensuring low and stable inflation minimizes the **need for frequent adjustments to rigid and regulated prices, including rates for strategic products**, as well as inflation or exchange rate **indexing** in pricing processes. Low and stable inflation allows the process of price-setting for rigid and regulated prices to follow a stable and predictable pattern.
- Low and stable inflation **reduces businesses' costs** associated with monitoring demand, market conditions, and competitors' pricing policies, as well as other potential costs **associated with revising the prices of their products**. Reducing these costs will contribute to a more efficient allocation of resources and an overall increase in productivity and potential for economic growth.
- A low inflation target ensures that **real purchasing power of household income and wages** remain stable. This is especially important due to employers' lack of willingness to frequently revise wages in the context of structurally high unemployment in Armenia. Maintaining the purchasing power of income in the long term is an important prerequisite for **poverty reduction**. Additionally, because poorer households often have difficulty accessing the types of financial instruments that shield wealthier households from the effects of inflation, high and volatile inflation disproportionately hurts poorer households and contributes to widening income inequality. Further, low and stable inflation could help to moderate inefficient boom-bust cycles in the economy, which take a heavy toll on poorer households, further supporting poverty reduction.
- Lowering the inflation target essentially reflects the process of **transitioning from a consuming or borrowing society to a saving and investing society**. High, volatile, and unexpected inflation usually benefits debtors because it reduces the real value of debt, while low and stable inflation ensures the stability of the future purchasing power of savings and investments. Consequently, ensuring low inflation, along with increasing confidence in the dram, will lead to an **increase in the volume of long-term savings in the economy**, regardless of a decrease in nominal interest rates.
- The move to lower the inflation target in itself communicates a clear commitment by the Government to rely on a more prudent and sustainable fiscal policy and ensure the independence of the Central Bank's monetary policy. This will **significantly contribute to raising Armenia's reputation on various international rating and, in particular, investment platforms**, which will be an important incentive for the inflow of long-term foreign investments.

Additionally, in order to have a credible inflation target around which market participants, firms, and households can anchor their expectations, it is essential to have in place an effective communications strategy that discusses the target and the rationale behind its adoption. This would entail a multi-layered and targeted communications approach that utilizes various channels, broadly in line with the general principles outlined in the CBA's monetary policy communications strategy.² Examples could include programs oriented toward the general public (e.g. CBA website, media interviews, social media, and so on), seminars with key stakeholders (e.g. financial markets, academia, etc.), and other channels. Ensuring that changes to the inflation target are clearly communicated and explained to all relevant parties would support greater credibility in the revised target, and better facilitate durable price stability in Armenia.

In summary, **lowering the inflation target to 3%** is an important prerequisite for achieving the CBA's and RA Government's joint vision for the long-term development of the RA economy, with positive impacts on ensuring long-term stable economic growth and improving public welfare.

Section A of this report provides a historical overview of the development of monetary policy and implementation of inflation targeting in the Republic of Armenia since independence. Section B presents various theoretical interpretations of inflation targeting. Section C examines various countries' experiences, which show that the quality and characteristics of the monetary policy framework and policymaking system are important prerequisites for ensuring low and stable inflation. Section D presents the legal basis for determining the inflation target in the Republic of Armenia.

² Refer to https://www.cba.am/Storage/EN/publications/DVO/CBA_Monetary_Policy_Communications_Framework.pdf

Box 1: Statement of Long-Run Monetary Policy Objectives

Adopted effective March 12, 2024

As enshrined in “The Law of the Republic of Armenia on the Central Bank of Armenia,” the primary objectives of the Central Bank of Armenia are to ensure price stability and financial stability. The Board of the CBA is committed to using its full suite of monetary policy instruments to achieve its price stability mandate and provide a nominal anchor for the economy.

We emphasize that the primary objectives of price stability and financial stability are a means to an end. The ultimate purpose of the CBA as an accountable public-sector institution is improving the welfare of our nation. A commitment to achieving low and stable inflation provides a credible nominal anchor for the economy and thereby anchors inflation expectations, helps to avoid inefficient boom-bust cycles, stimulates investment, supports the economic development of the country, and improves living standards over time.

The CBA develops and implements monetary policy to achieve its price stability objective. The fundamental role of monetary policy is to provide an anchor for inflation and inflation expectations. The Board believes that a four percent inflation target is consistent with its price stability mandate. The inflation target is expressed in terms of the Consumer Price Index (CPI), since it is the best measure of the cost of living and final consumption expenditures, and is the primary reference point for market participants when making planning decisions and setting contracts. Nevertheless, the overall CPI basket of goods and services includes several items that are subject to seasonal fluctuations and global economic developments, which are not directly influenced by monetary policy. We therefore consider alternative measures of inflation, such as core and non-traded sticky prices, which can provide useful information on the underlying inflationary environment.

The CBA’s primary means of adjusting the stance and path of monetary policy is through changes in the expected path of short-term interest rates. If interest rates were to be constrained by the effective lower bound, the Bank would be prepared to use its full range of policy tools.

While emphasizing the primacy of achieving the price stability and financial stability mandates over the medium term, the CBA recognizes that it is also responsible for managing the short-run tradeoff between inflation and output. In an open market economy, periodic economic and financial shocks cause economic activity and inflation to fluctuate over time. In this context, the CBA does not target CPI inflation on a period-by-period basis and does not attempt to bring CPI inflation back to the target in the short term if it would result in undue economic and financial instability. In any economic situation, the CBA seeks to develop and implement monetary policy in a manner that brings inflation to the target in the medium-term (12 quarter) horizon, while minimizing associated social costs through a “least regrets” approach.

Effective monetary policy improves welfare by anchoring long-term inflation expectations and reducing the volatility of output and unemployment. Avoiding excessive volatility in the economy can result in substantial improvements in welfare by reducing average levels of unemployment and raising the productive capacity of the Armenian economy. The Bank emphasizes that placing weight on other near-term objectives must not be inconsistent with its primary responsibilities of achieving its four percent target in the medium term and maintaining price and financial stability.

The Board places great emphasis on the importance of communicating its policy and decision-making framework to the public in a clear and comprehensible manner. Clear and effective communication helps make policy more effective, and encourages financial markets, businesses, and the general public to better understand and manage risks and uncertainties. Moreover, this communications approach plays an important role in enhancing the transparency of monetary policy and central bank accountability, which is a key priority for the CBA as an independent public sector institution.

The Board will review and renew the Statement of Long-Run Monetary Policy Objectives during the first decision-making round of each year.

A. HISTORY OF MONETARY POLICY IN ARMENIA

Independence and Hyperinflation

Despite the recognition of the independence of the Republic of Armenia in 1991 and the collapse of the Soviet Union, Armenia and other former Soviet republics were still not economically independent. The most obvious manifestation of this was the continuing official circulation and use of the Soviet and then the Russian ruble in the economy. As a result, the Armenian economy directly suffered the consequences of economic policies implemented in Russia. The collapse of the Soviet Union was a source of additional economic and political challenges for the Armenian economy, which was reflected in a significant decrease in output and productivity, high inflation gradually turning into hyperinflation, political and geopolitical instability, and a gradual growth and deepening of public mistrust of the state.

More than two years after the declaration of independence, the introduction of the national currency in Armenia on November 23, 1993 marked the beginning of economic stabilization. The relatively late introduction of the national currency in comparison with the other former Soviet republics led to a significant inflow of rubles, which, in turn, caused a rapid increase in overall prices in the Armenian economy, gradually turning into hyperinflation (inflation was 11,000% in 1993). In these circumstances, despite the more stringent monetary policy conducted by the Central Bank, a number of factors hindered price stability in the economy—in particular, direct lending to the Government by the Central Bank, unanchored inflation expectations, public distrust toward the implemented economic policy, geopolitical problems, and others. It should also be noted that the first “Law on the Central Bank of the Republic of Armenia” did not define the main purpose of the Central Bank; ensuring the internal and external stability of the national currency was singled out among the listed tasks. At the beginning of 1994, the Central Bank of Armenia developed a monetary policy program for the first time. This can be considered the beginning of an effective Central Bank price stabilization policy.

Monetary Aggregate Targeting Strategy (1994-2005)

In 1994, the Central Bank of Armenia chose the targeting of monetary aggregates as a monetary regulation strategy, and this was instituted in the 1996 RA Law on the Central Bank of the Republic of Armenia, according to which the main goal of the Central Bank of Armenia was to ensure stable and low inflation. The ultimate goal of this strategy was to target inflation, the intermediate aim was the money supply, and the operational aim was the monetary base. As part of the monetary aggregates targeting strategy, a target inflation rate was established by the RA Law on the State Budget of the Republic of Armenia each year and carried out through a monetary policy program (see Table 1).

By adopting the monetary aggregates targeting strategy, the Central Bank of Armenia managed to reduce and stabilize inflation in the face of various external and internal shocks, ensuring macroeconomic stability in the economy. In the context of the above-mentioned developments, the inflation target index underwent significant changes. Over time, along with the stabilization of the economy, the inflation target has been significantly reduced from the 26.0% set in 1995 and has been set at 3.0% during 2001-2005. In particular, according to the 2003-2005 RA Law on the State Budget of the Republic of Armenia, as of December 31 of each year, the Central Bank of Armenia, as part of the powers granted to it by law, would ensure an inflation rate of up to 3.0% compared to the same period of the previous year.

This strategy addressed the most pressing problems for the economy but was not without certain problems, mainly related to the management of the nominal anchor. In the context of the weakening of the monetary base-money supply link and the instability of the money supply-inflation link, the Central Bank of Armenia periodically revised the target indicators of the monetary aggregates during the year to ensure the annual inflation target was met.

In the given situation, the intermediate purpose of money aggregates—in particular, the money supply—no longer effectively served its purpose. For this reason, in the context of ensuring price stability, the Central Bank of Armenia faced the problem of choosing a new nominal anchor.

Table A.1. Actual and Projected Indicators of Inflation and Money Supply in Armenia, 1995-2005

		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Inflation at End of Year, %	Proj.	26.0	14.0	10.5	10.0	8.0	5.0	3.0	3.5	3.0	3.0	3.0
	Actual	32.2	5.7	21.9	-1.3	2.0	0.4	2.9	2	8.6	2	-0.2
Money Supply Growth Rate at End of Year, %	Proj.			17.0	14.6	14.0	13.8	16.9	8.7	12.7	12.2	18.5
	Actual		35.1	29.2	36.0	13.6	38.7	4.5	28.8	15.1	22.3	28.2

Source: Forecasting and Policy Analysis System of the Central Bank of the Republic of Armenia, CBA, 2010

Inflation Targeting Strategy

The implementation of the 2006 monetary policy began with two major structural reforms. From January 1, 2006, the Central Bank of Armenia switched to an inflation targeting strategy, and, in the process of improving the effectiveness of the new strategy, the methodology of monetary policy instrument usage changed. As part of the inflation targeting strategy, the target inflation rate was defined as the ultimate goal, and the projected inflation rate (returning to the fixed inflation target over the medium-term forecast horizon) was defined as the nominal anchor. The short-term interest rate was set as an operational goal, but the Central Bank may apply quantitative regulation and other approaches in the event of problems with financial and economic stability. The definition of the new nominal anchor was not the only difference between the monetary aggregate targeting and inflation targeting strategies. Unlike with the monetary aggregate targeting strategy, which is based on strict inflation management rules, inflation management under an inflation targeting strategy allows policymakers to have a degree of “discretion” over effectively managing the short-run inflation-output tradeoff over the forecast horizon.

Prior to the transition to an inflation targeting strategy, a maximum inflation target of 3% was set for a one-year horizon by the RA Law on the State Budget and the monetary policy program. An important prerequisite for the transition to an inflation targeting strategy was the selection of an inflation target over the medium term horizon. In this context, the inflation target index should take into account the specific features of Armenia’s economy and be in line with the vision of price stability and long-term stable economic growth of the country and improvement of public welfare. In the process of choosing an inflation target index in 2006, a number of factors were taken into account, including the presence of rigidities with regard to decreases in wages and domestic production prices, the large role of supply shocks, the peculiarities of competitive market forms, etc. (see Box 2).

In the context of the above-mentioned factors and characteristics, the target inflation rate in 2007 was set at 4% with a fluctuation range of $\pm 1.5\%$.

Since the introduction of the inflation targeting strategy, the Armenian economy has recorded a historical average inflation rate very close to the target rate (around 4.0% in 2006-2024), which is evidence of the Central Bank’s strict consistency in achieving its goals and the effectiveness of the implemented monetary policy. Although the Central Bank of Armenia has managed to consistently maintain the 4% inflation target over the long term, the effects of various economic shocks, external factors, and growing uncertainties have been a source of many risks and challenges in terms of ensuring price stability (see Box 3). Moreover, in 2006-2014, the Central Bank of Armenia generally ensured inflation indicators close to the target level, but inflation expectations continued to remain high during that period. And only as a result of the low inflation policy implemented in 2015-2020 did it become possible to reduce and stabilize inflation expectations.

Box 2: Optimal Inflation Rate in Armenia: Some Interpretations from the Literature

This Box presents the main conclusions of A. Mkrtchyan's 2006 analytical work titled "Price Stability and Choosing an Optimal Inflation Rate."

When discussing the problem of choosing the optimal level of inflation for the RA economy, it is very important to interpret the existing theoretical provisions in accordance with the characteristics of the RA economy. In this context, the following characteristics were distinguished for the RA economy:

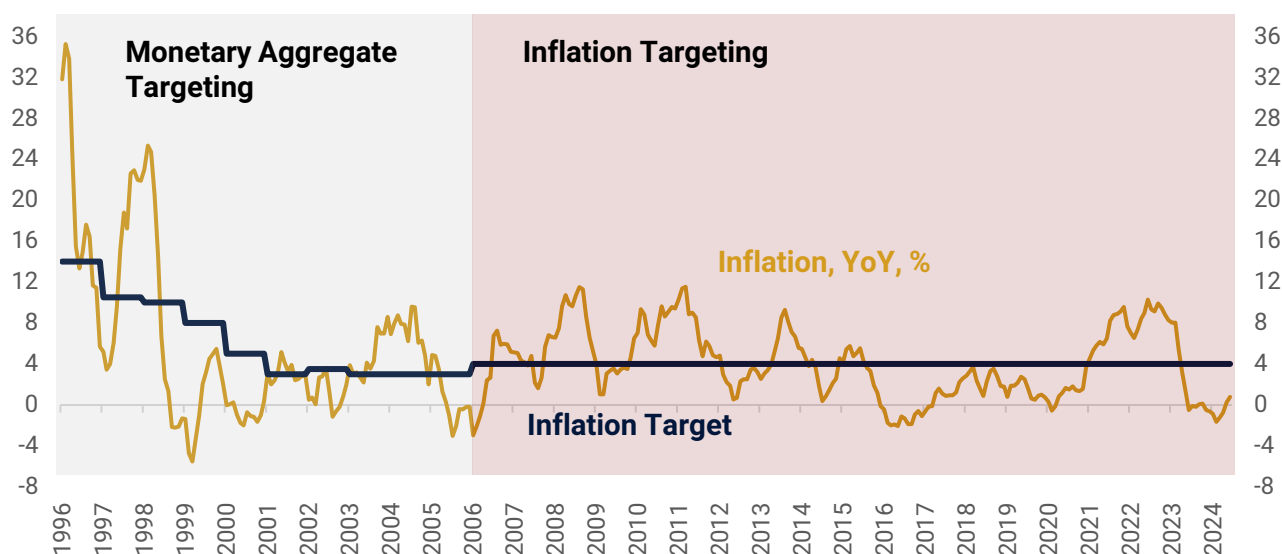
- Nominal rigidities disproportionate to reduction are more pronounced.
- Forms of monopoly and oligopoly competition are more common in the RA economy than forms of monopolistic competition.
- The income redistribution function assigned to the tax system is implemented incompletely.
- Weak ability of the economy to withstand external shocks, mainly due to the problems mentioned in the first two points.

Summarizing in this context the problem of choosing the optimal inflation rate in Armenia, the author concludes the following:

- The presence of stronger rigidities with regard to reductions in wages and domestic production prices in developing countries such as Armenia suggests aiming for a slightly higher inflation rate as compared to developed countries, specifically within a range of 3-5%.
- On the one hand, the presence of monopolistic and oligopolistic competitive forms in commodity markets requires high inflation targeting to significantly reduce unemployment, while, on the other hand, inflationary costs have a much more negative impact on economic growth in the long run. Moreover, such forms of competition also contribute to the deepening of the negative impact. If we also take into account the unequivocal rejections of high inflation by various economists, it becomes obvious that, in this case, making an inefficient macro environment more efficient for society cannot be done only by choosing an inflation level. Ensuring the sustainable growth of public welfare is much more dependent on solutions to the problems existing in the private and fiscal sectors of the economy.
- Given the low ability of the private and fiscal sectors of the economy to withstand external and internal shocks, the most appropriate solution is to choose a proportional range of about 1.5% around a given inflation rate. Otherwise, depending on the presence and extent of these shocks, the Central Bank should periodically review the inflation target.
- In summary, the above analysis and judgments aimed at choosing a relatively optimal level of inflation indicate that it is preferable to give preference to the 1.5% range of inflation fluctuations, under which conditions a 4% inflation target can be considered an optimal choice.

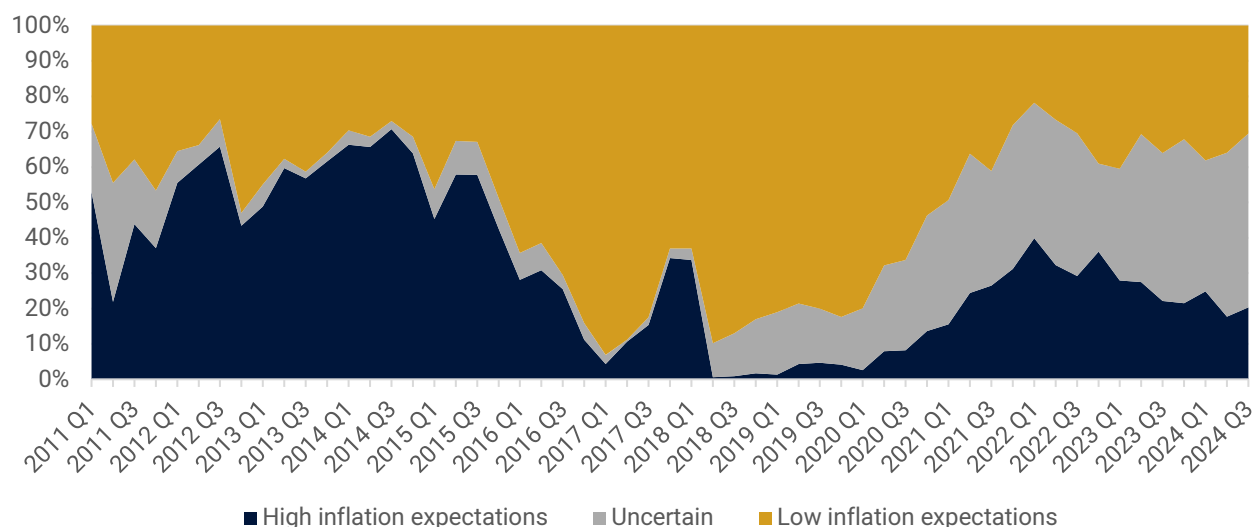
Source: Mkrtchyan, A., "Price Stability and Choosing an Optimal Inflation Rate," Armenia, Finance and Economics, September-October 2006

Figure A.1. Inflation and the Inflation Target in Armenia, 1996-2024³



³ In 1995, the target inflation rate was set at 26.0%, while actual inflation was 32.2% at the end of the year.

Figure A.2. Dynamics of Inflation Expectations in Armenia, 2011-2024
Share of survey participants, quarterly



Since the adoption of the inflation targeting strategy in 2006, the Central Bank has consistently met the proposed 4% inflation target. However, it must also be stated that this was not fully reflected in the formation of public perception of price stability, and during various regional and internal shocks, the RA economy often faced risks of inflation and unanchored inflation expectations. Similar situations in the history of Armenia's monetary policy contain certain indications that the 4% target may currently not be comparable to the definition of price stability or that maintaining price stability in the context of a 4% target may result in significantly larger social costs.

Since the introduction of the inflation targeting strategy by the Central Bank of Armenia in 2006 and the setting of the inflation target rate of 4%, the Central Bank of Armenia has made significant investments in the development of the FPAS monetary policy system. In particular, in 2011-2012, the Central Bank of Armenia carried out significant reforms of the monetary policy development and decision-making system aimed at expanding forecasting and policy analysis structures and improving transparency and communication methods. At the same time, from the second quarter of 2012, the Central Bank expanded the policy horizon from 1 year to 3 years, and also started presenting inflation (and macroeconomic) forecasts based on endogenous monetary policy, instead of the previous forecasts presented under the assumption of fixed interest rates. Over time, such developments have created a solid foundation for the implementation of large-scale reforms in this direction. Soberly assessing the limitations arising from the existing system in the context of various challenges and clearly understanding the problems facing the Armenian economy, in 2024, the Central Bank officially introduced an innovative and advanced approach to monetary policy aimed at prudent management of risks and uncertainties. In this context, the main goal of the Central Bank of Armenia is to establish a target inflation rate in line with the definition of price stability in the context of strengthening public confidence in the Central Bank of Armenia and monetary policy, developing the framework of monetary policy and wide-scale long-term reforms.

Box 3: Developments in the Armenian Economy since the Introduction of the Inflation Targeting Strategy

2006-2009: Double-Digit Economic Growth

In the years leading up to the global financial and economic crisis, the global economy was in a growth/expansion phase, which had an inflationary effect on the international food and raw material prices. During this period, the inflationary effects of global raw materials were transmitted to the Armenian economy in the form of inflation of imported goods. At the same time, significant capital inflows to developing countries led to appreciation pressures on the local currency in the domestic economy and progressive growth of non-exportable sectors, especially the construction industry. During 2006-2008, the Armenian economy experienced double-digit economic growth and a significant inflow of foreign capital, which was accompanied by a significant appreciation of the dram (about 50%). During the second half of the 2000s, the Armenian real estate market experienced unprecedented growth, and the share of the construction sector in GDP grew. In the context of inflationary pressures emanating from the global economy, tight aggregate demand conditions, significant capital flows, a higher exchange rate, as well as the newly introduced monetary policy regime, the main challenge for monetary policy was to destabilize inflation expectations and anchor inflation expectations around the target of 4%.

2009-2014: Global Financial and Economic Crisis, Slow Growth and High Risk Premium

The reduction in global demand as a result of the global financial and economic crisis had a significant impact on the Armenian economy. As in other emerging economies, significant revaluations of the country risk premium in Armenia led to a sharp decline in capital flows and reduction in aggregate demand. As a result, the country experienced a double-digit economic recession in 2009. In the following years, the raising of debt to support economic growth characterized by structural problems allowed for the maintenance of a high level of consumption, but due to the slow adjustment of the structure of the economy, economic growth continued to remain at low levels. Furthermore, the accumulation of public and private debt to support economic growth led to increased debt levels, which were reflected in a relatively high country risk premium.

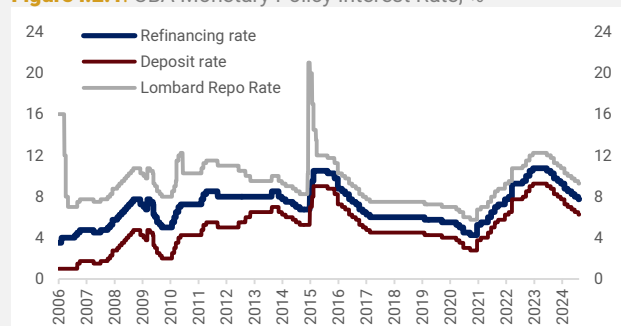
2014-2022: Low Inflation Policy

A slow recovery marred by the European debt crisis and multiple supply shocks was followed by a new wave of challenges. In 2014, the geopolitical conflicts in Crimea and Donbas and the sharp drop in world oil prices had negative consequences for the Russian economy. The sharp devaluation of the Russian ruble had an impact on regional currencies, including the dram. Devaluation pressures on the national currency and the increase in the general level of prices in the economy led to the destabilization of inflation expectations. The latter led to a sharp increase in demand for goods and foreign currency in the economy, further exacerbating inflationary pressures in the economy and endangering the credibility of the Central Bank. In this situation, the monetary policy response was an immediate and drastic tightening of financial conditions, which helped curb inflationary pressures in the economy and stabilize the financial system. However, given the high level of uncertainty, risks of economic destabilization remained. Despite signs of declining inflation since 2015, risks of destabilizing high inflation expectations still persisted. As a result, in 2015, the Central Bank of Armenia adopted a low inflation policy, which resulted in a significant decrease in inflation expectations. This policy has played an important role in shaping and strengthening public confidence in monetary policy.

2020-2024: Post-Pandemic and Post-War Period

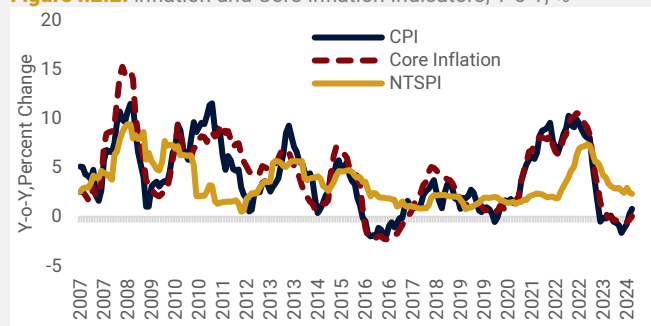
During the 2020s, Armenia's economy faced unprecedented, successive waves of crises. The disruption of global value chains and social distancing requirements stemming from the COVID-19 pandemic were a source of major shocks to global supply. Cautious consumption by consumers and restrictions on free movement moreover led to concurrent negative demand shocks. Against the background of the pandemic, these upheavals were further accompanied by the 44-Day War in the fall of 2020. The combination of war and pandemic led to a sharp decline in aggregate demand, which, in turn, had a deflationary effect on the domestic economy. The double shock also affected aggregate supply and GDP potential. In the context of impact transmitted from the global economy, as well as developments of the domestic economy, inflation showed some downward trends during 2020-2021.

Figure I.2.1. CBA Monetary Policy Interest Rate, %



Source: Central Bank of Armenia

Figure I.2.2. Inflation and Core Inflation Indicators, Y-o-Y, %



Source: RA Statistical Committee, Central Bank of Armenia

From a monetary policy perspective in late 2020, a faster-than-expected recovery of aggregate demand at the expense of delayed consumption and, as a result, a possible destabilization of inflation expectations, was considered an important risk. In this situation, although inflation was below the target, the Central Bank of Armenia increased the refinancing rate by 1 percentage point in December 2020.

The escalation of the Russia-Ukraine conflict in February 2022 was a new source of challenges for Armenia's monetary policy and economy. There was considerable uncertainty about the possible economic consequences of the Russia-Ukraine conflict on the RA economy. Considering Armenia's close economic ties with Russia and the experience of 2014, one view suggested that the above-mentioned conflict would result in a negative external demand shock on Armenia's economy. An alternative view suggested the conflict would be a source of positive opportunities for economic growth and could lead to a significant increase in capital, labor, and tourist inflows. Given high uncertainties, the Central Bank of

Armenia adopted a cautious policy stance, clearly informing the markets about sources of existing risks and uncertainties and possible consequences. During 2022-2023, there was a significant influx of international visitors and capital to Armenia. A similar surge in external demand led to continuing growth in the services, construction, information technology, and export sectors, and also caused renewed inflationary pressures and a heating labor market in the economy.

The above developments required a continuous tightening of the policy position. In this context, in the period from December 2020 to December 2022, the Central Bank of Armenia increased the policy rate by a total of 6.5%. As a result, at the end of 2022, the refinancing rate was 10.75%. In the course of 2023, the inflationary environment in Armenia steadily deteriorated, mainly due to the continued weakening of demand and inflationary pressures amid risks of slowing global economic growth, the impact of the monetary policy implemented by the Central Bank of Armenia, as well as the weakening of financial conditions in key partner countries. As a result, from April 2023, inflation in Armenia was below target and even at negative levels. Despite the similar developments in inflation, indicators characterizing core inflation in the economy (for example, the non-export sticky price index) continued to remain at high levels, which created certain risks with regard to maintaining relatively high levels of inflation expectations and possible destabilization. Taking into account the above and many other possible risks and uncertainties, in 2023, the Central Bank of Armenia started the process of gradually reducing policy interest rates. As a result of this policy, at the beginning of 2024, it became possible to reduce the inflation of sticky-priced goods, wages, and inflationary expectations, and to anchor them to the target index.

To summarize, in order to effectively manage the consequences of future challenges in the continually changing economic reality, the Central Bank of Armenia has invested heavily in the development process of a monetary policy framework aimed at prudent risk and uncertainty management. In this context, Armenia's economy, driving forces, and fundamentals have also changed and developed significantly. Given these fundamental changes in the Armenian economy, as well as the joint vision of the Central Bank of Armenia and the Government regarding the long-term development prospects of the Armenian economy, the question arises as to what level of target inflation is compatible with the new economic reality and long-term vision of development. To what extent is the 4% inflation target set in the early 2000s compatible with the perception of real price stability in Armenia in this context, and can it continue to serve as an effective basis for building a more robust, inclusive, and future-oriented economy?

B. INFLATION TARGETING: THEORY

In modern economic literature, the question of the optimal level of the inflation target is discussed by two schools of thought, Monetarist and New Keynesian. The works of thinkers from these schools aim to address the determination of the optimal inflation level in terms of eliminating certain distortions in the economy.

Monetarism

In monetarist models, where the only nominal deficiency is the demand for cash, the objective of an optimal monetary policy should be to minimize the opportunity cost of holding money by setting the nominal interest rate at zero. This policy is also called the Friedman rule. Application of this rule should result in the optimal level of inflation being negative and equal to the real interest rate in absolute terms.⁴ The real interest rate, in turn, is determined by the fundamentals of the economy, in particular, the growth rate of productivity, which is usually a positive indicator. Progressive productivity growth implies a higher level of real interest rates in developing countries compared to developed countries, as a result of which, under the Friedman rule, the target inflation rate in developing countries should be lower.

The literature specifies an imperfect tax system and external demand for the local currency as the main reasons for the deviation from the Friedman rule,⁵ in the context of which the choice of the inflation rate is considered as the optimal tax. It is noteworthy that the best fundamental solutions to the problems discussed here are in the domain of other economic and structural policies and are not directly related to monetary policy. Therefore, in this context, proposals for solving the issue with the help of the inflation target should be considered exclusively as second best, and strictly temporary, solutions.⁶

The problems of the **imperfect tax system** can be divided into three parts: untaxed income due to the diminishing returns of the production function, imperfect competition in commodity markets, and the shadow economy.

- A. **Diminishing Returns** This first case addresses income from certain resources used in production, in particular capital, which are theoretically not taxed since only labor is represented in the models, in which case it is optimal for the state to have some positive deviation from the Friedman rule. However, this approach does not exist in practice, because, in addition to income tax, the state also taxes profits⁷, as well as enforces a consumption tax⁸. Therefore, according to the above-mentioned authors, this factor cannot be a basis for justifying the deviation from the target level of inflation according to the Friedman rule.
- B. **Imperfect Competition** Some researchers put forward a hypothesis that the higher the level of monopolization of the economy, the higher the target inflation rate should be above the value determined by the Friedman rule.⁹ This point of view is justified by the fact that a high level of monopolization results in the average premium set by companies to be high, reflecting the high income of monopolists. And since many countries tax profits at a flat rate, a monopolist with high profitability will be taxed at the same rate as a company operating in a competitive environment. Thus, the high inflation target is used to “tax” the high profitability of monopolists. However, inflation also imposes an additional tax on those with low profitability. The use of a high inflation target in a monopolistic environment is appropriate only when the state compensates firms with low profitability from the taxes received. Moreover, this approach does not consider the use of dollarization, dollar quotations by firms, and other such circumvention mechanisms during times of high inflation.

⁴ Friedman, M. (1969): The Optimum Quantity of Money and Other Essays. Chicago: Aldine.

⁵ Schmitt-Grohe and Uribe (2010): The Optimal Rate of Inflation

⁶ Asoyan, Grigoryan and Igityan (2023): Inflation and Structural Reforms in Different

⁷ Schmitt-Grohe and Uribe (2004): Solving dynamic general equilibrium models using a second-order appr. to the policy function

⁸ Correia, Nicolini and Teles (2008): Optimal Fiscal and Monetary Policy: Equivalence Results

⁹ Schmitt-Grohe and Uribe (2004): Solving dynamic general equilibrium models using a second-order appr. to the policy function

- C. **Shadow Economy** The next hypothesis states that, in high shadow economies, the target inflation rate should be high in order to tax the shadow activities.¹⁰ But here too, it should be noted that high inflation “taxes” everyone. There is a need to subsidize legal tax payers in this case as well. It is noteworthy that the degree of optimal deviation from the Friedman rule is not significant when there is not a high level of shadowing and is not material.¹¹

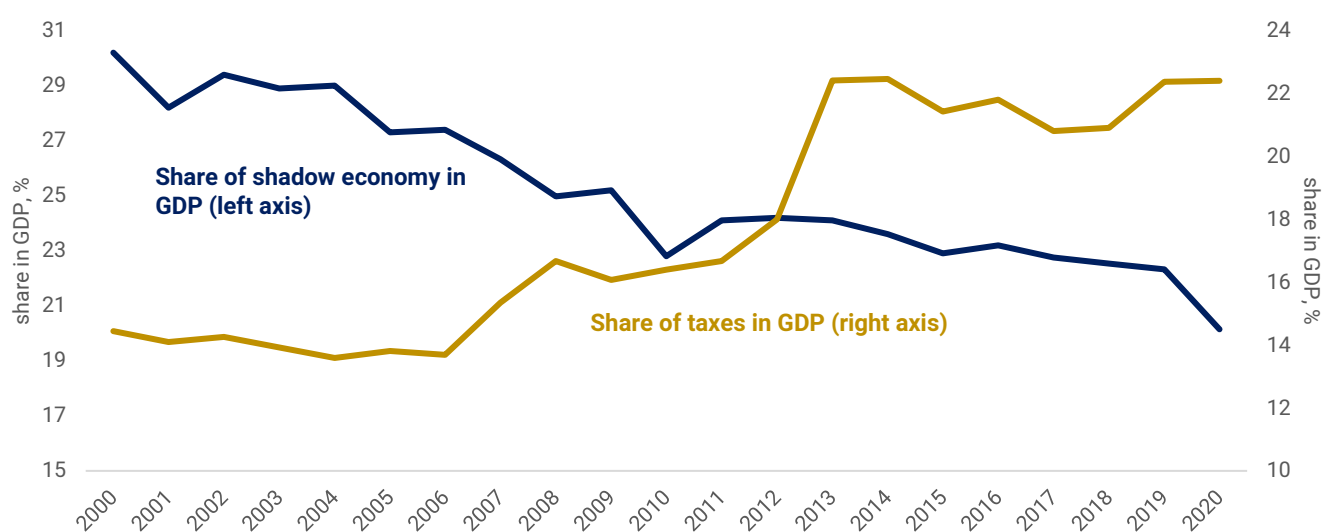
Table B.1. Optimal Inflation Target According to Friedman Rule and at Various Levels of Shadowing (using the US example)¹²

Level of Shadowing	Optimal Inflation (Semi-Optimal Solution)
0%	-3.85
6%	-3.65
12%	-3.37
18%	-2.94
24%	-2.2
31%	-0.71
38%	3.31
46%	20.02

To summarize, it should be noted that effective tax and administrative policies (first best) can help neutralize the above-mentioned three factors and optimally redistribute income, as a result of which the optimal inflation target will be determined exclusively by the Friedman rule.¹³ Therefore, eliminating the imperfections of the tax system with a high inflation rate is not the best policy (first best) and, according to the available estimates and countries’ experience, does not contribute to the elimination of these imperfections in the long term.

Moreover, in the context of Armenia’s economic policies, it can be observed that the structural policies implemented by the Government are gradually yielding results, reducing the shadow economy, as well as the tax gap. All other things being equal, this significantly reduces the need for partial solutions to problems like the high inflation target using second-best or semi-optimal policies.

Figure B.1. Share of Shadow Economy and Taxes in GDP



¹⁰ Nicolini (1998): Tax evasion and the optimal inflation tax

¹¹ Schmitt-Grohe and Uribe (2010): The Optimal Rate of Inflation

¹² Schmitt-Grohe and Uribe (2010): The Optimal Rate of Inflation

¹³ Schmitt-Grohe and Uribe (2010): The Optimal Rate of Inflation

External Demand: Another factor discussed in the monetarist school that can influence the determination of the optimal inflation target is external demand for the local currency. Due to the presence of external demand, the inflation target should be higher than the target determined by the Friedman rule.¹⁴ The explanation for this is that, as a result of having negative inflation determined by the rule, the economy transfers real resources to the outside world, which is reflected in a decrease in welfare in the given country. Therefore, the state must positively deviate from the Friedman rule in order to tax the outside world. This argument naturally does not apply, or may even have the opposite effect, in developing countries where there is no external demand for the local currency or which themselves are dollarized. Among various reasons for setting a lower inflation target, the Friedman rule provides an additional argument for doing so to reduce dollarization. This reasoning has led the Central Reserve Bank of Peru to adopt a lower inflation target than other Latin American countries, aiming to make its currency more competitive against the US dollar.¹⁵

New Keynesian Theory

New Keynesian theorists discuss the question of the optimal inflation target in the context of rigid prices. Models with this structure assess that the optimal target inflation rate should be zero.¹⁶ As a result of this, the costs incurred by business entities to adjust prices are minimized. The point is that, when the inflation target is high and there are price rigidities, when adjusting prices, businesses try to compensate for uncertainties related to expected future inflation by incorporating those uncertainties into the price. When price rigidities exist, only a fraction of businesses are able to adjust prices at any given time, resulting in price dispersion in the market. Such dispersion in relative prices also alters the relative demand for goods, leading to a skewed allocation of resources and, consequently, to suboptimal output and lower welfare. Moreover, both upward and downward deviations from zero have a non-linear effect on economic losses. Therefore, the task of the Central Bank becomes to neutralize and minimize such losses caused by price rigidities by anchoring inflation expectations around an optimal target of zero.¹⁷

From our analysis, when the problem of price rigidity is added, the government is faced with the dilemma of minimizing the costs associated with price changes or minimizing the opportunity cost of holding cash. However, quantitative analysis with structural models shows that this dilemma is resolved in favor of price stability.¹⁸

In addition, a high inflation target leads to high volatility in inflation and the economy, and destabilizes inflation expectations.¹⁹ As a result, the ability of the Central Bank to bring the economy into balance decreases (decrease in determinacy region).

There is also literature²⁰ showing that under high inflation conditions, even if price dispersion is sometimes low, the frequency of price changes is high. The authors therefore conclude that the welfare losses appearing in New Keynesian analysis due to high inflation are much larger than they actually should be. Another study comes to a similar conclusion, but the authors argue that the decision regarding the inflation target should be guided by the Friedman rule.²¹

Although New Keynesian theory argues that the optimal inflation rate should be zero, the New Keynesian literature also discusses individual factors for the optimal inflation rate to be positively different from zero—namely, the zero lower bound of the nominal interest rate, downward rigidities in the prices of factors of production, and statistical problems when calculating inflation.

¹⁴ Schmitt-Grohe and Uribe (2009): On Quality Bias and Inflation Targets

¹⁵ Armas and Grippa (2005): Targeting Inflation in a Dollarized Economy: The Peruvian Experience

¹⁶ Schmitt-Grohe and Uribe (2007): Optimal simple and implementable monetary and fiscal rules

¹⁷ Clarida, Gali and Gertler (1999): The Science of Monetary Policy: A New Keynesian Perspective

¹⁸ Schmitt-Grohe and Uribe (2010): The Optimal Rate of Inflation

¹⁹ Askari and Sbordone (2014): The Macroeconomics of Trend Inflation

²⁰ Nakamura et al. (2017): The Elusive Costs of Inflation: Price Dispersion during the U.S. Great Inflation

²¹ Burstein and Hellwig (2008): Welfare Costs of Inflation in a Menu Cost Model

- A. **Zero Lower Bound of Nominal Interest Rate** It is assumed that nominal interest rates cannot be negative and so that there must be some positive inflation so that an economy in recession can be stimulated with negative real interest rates.^{22 23} However, some analyses show that a high inflation target further increases the probability that the economy will end up at the lower bound of zero interest rates.²⁴ This is explained by the fact that having high inflation on average increases inflation volatility as well, along with the volatility of other variables in the economy, including the nominal interest rate. As a result, the probability that the nominal interest rate will reach its zero lower bound increases.

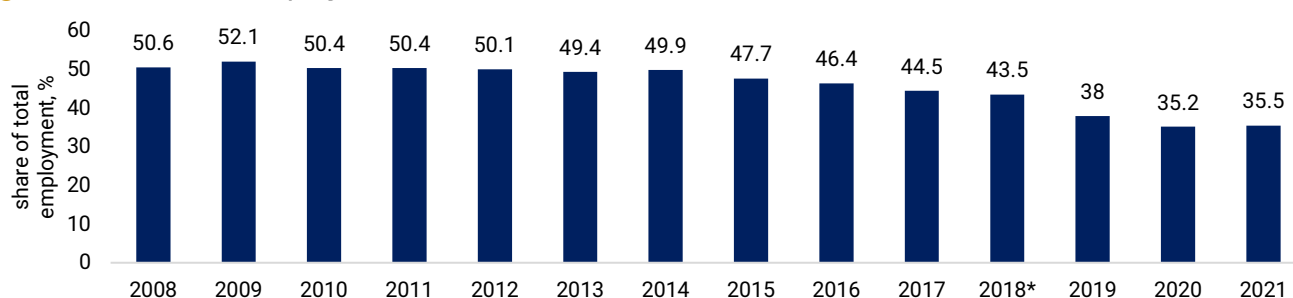
At the same time, the experience of countries has shown that, in the event of a zero lower bound of the nominal interest rate, there are alternative effective tools for stimulating the economy, such as exchange rate devaluation (in small open economies), quantitative easing, forward guidance, and negative interest rates.

Table B.2 presents pre-COVID theoretical estimates of the effective lower bound (ELB) for various developed countries. These estimates are based on models and theoretical considerations rather than actual historical examples of central banks setting interest rates at these levels. It is important to note, that the ELB can vary over time in response to different structural changes.

Table B.2. Zero Lower Bound of the Nominal Interest Rate in Various Countries

Effective Lower Bound of Interest Rate	Country	Source
-2.0%, -1.0%	General Assessment (EU, US)	Jackson (2015)
- 0.75% -0.25%	Canada	Witmer & Yang (2016)
- 1.3%	US	Barr et al. (2016)
- 2.5%	United Kingdom	
-1.6% -1.1%	Czechia	Kolcunova & Havranek (2018)

Figure B.2. Informal Employment in Armenia



- B. **Downward Rigidities in Nominal Wages (DNWR)** The next feature that supports the discussion of a positive inflation target is the observed downward rigidities in the prices of the factors of production, in particular nominal wages. A positive inflation target helps to reduce real wages during a recession to stimulate employment growth. However, the effect of this factor on a high inflation target is weakened in countries with a large share of informal employment in the labor market. A large informal employment sector weakens employees' bargaining power and makes the labor market more flexible, leading to a decrease in nominal wage rigidity.²⁵ It should be

²² Blanchard et al. (2010): Rethinking Stabilization Policy. Back to the Future

²³ Blanchard and Summers (2017): Rethinking Stabilization Policy: Evolution or Revolution?

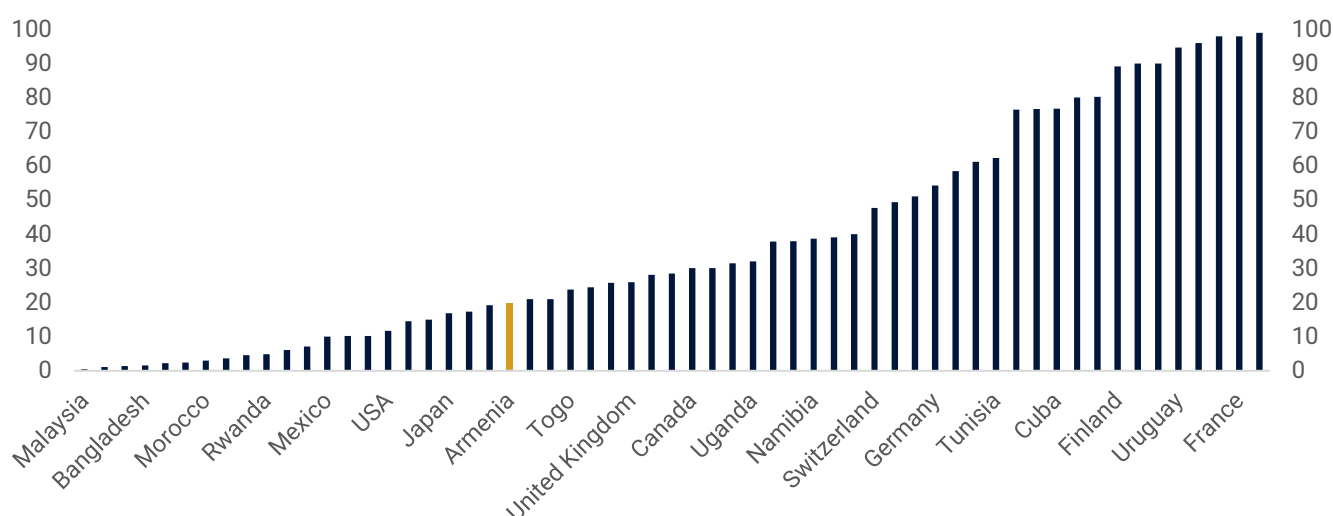
²⁴ Budianto (2018): Inflation Targets and the Zero Lower Bound

²⁵ Kim and Ruge-Murcia (2009): How much inflation is necessary to grease the wheels?

noted that the share of informal workers among the total employed is relatively high in developing countries compared to developed countries. In the case of Armenia, informal employment has decreased in recent years but remains high, and the full protection of workers' rights in the labor market and the bargaining power of workers is significantly lower compared to developed countries, where central banks have relatively low inflation targets (see Figure B.3). Based on the results of the evaluation of the DSGE model with an asymmetric adjustment of wages feature built in the Central Bank of Armenia for the RA economy, it turns out that the optimal inflation rate ensuring maximum public welfare in the range of the given model in Armenia fluctuates around 0.8%.

Figure B.3. Workers' Bargaining Power

Share of Union Members in Workforce, %



The above two reasons for setting a positive inflation target relate to strengthening the ability to stimulate the economy during crises. Trying to choose the inflation target only to crisis situations means giving low importance to normal times when a relatively low inflation target is most beneficial. Therefore, the impact of these two factors on welfare may be debatable²⁶.

- C. **Statistical Error** Another factor in having a positive inflation target is the error in measuring inflation, which can be broken down into qualitative and quantitative components. The qualitative element is the unmeasured component resulting from improvement in the quality of consumer goods, as a result of which inflation is always recorded higher than actual inflation.²⁷ The rising prices of certain goods lead consumers to replace those goods with others, while statistical services calculate inflation with constant weights over a given period of time, resulting in what are called quantitative deviations. In addition, statistical services are often

²⁶ While DNWR is often viewed in the context of economic downturns, recent research (Chodorow-Reich and Wieland, 2020 and Guerrieri et al., 2021) suggests that its implications extend beyond crises. DNWR can also distort labor market adjustments during periods of structural change and sectoral reallocation, especially in response to global supply chain shifts or climate change adaptations. This is particularly relevant for EMDEs, where structural transformations are ongoing, making DNWR an important consideration when setting inflation targets not only during downturns but also during broader economic transitions.

²⁷ Schmitt-Grohe and Uribe (2010): The Optimal Rate of Inflation

unable to adequately record the facts of qualitative changes of products or the inclusion of new products in the basket, resulting in qualitative deviations. As a result, due to quantitative and qualitative deviations, the statistically factually recorded inflation rate deviates from actual inflation dynamics. A number of international organizations regularly provide methodological guidelines²⁸ for price calculation, which offer tools to minimize such deviations. In addition, the improvement of inflation statistics, and especially the possibility of using high-frequency large-scale micro-data (for example, RA SRC data) in recent years can significantly reduce and even eliminate statistical deviations.

In Armenia, until 2015, household surveys for the construction of the consumer basket were conducted once every five years, which implied a significant statistical deviation in the above-mentioned two directions. In 2015-2020, surveys were conducted at annual intervals, significantly reducing the statistical deviation. Starting in 2020, the household surveys are summarized with a two-year lag, which again increases statistical deviations in product substitution. Nevertheless, according to the estimates of the Central Bank of Armenia, these deviations do not exceed a maximum of 0.5 percentage points.

Table B.3. Statistical Deviation in the Calculation of Inflation in Armenia

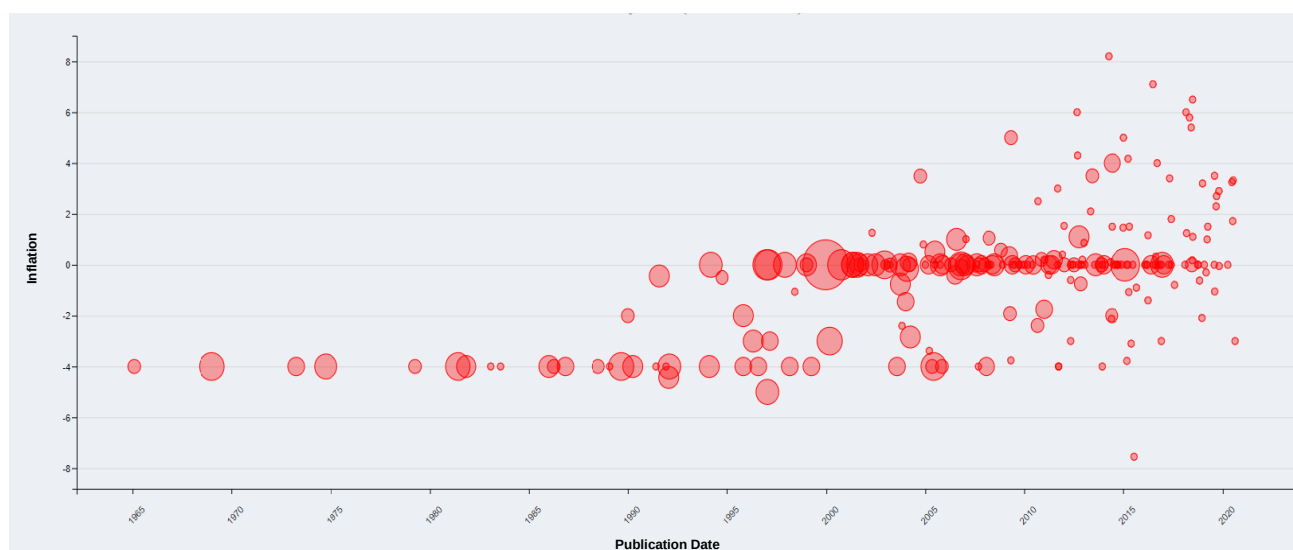
Period	Statistical Deviation (percentage point)
2016	0.09
2017	0.07
2018	0.17
2019	0.17
2020	0.16
2021	0.45
Average	0.19

In addition to the fundamental theories discussed above, the so-called **“structural hypothesis” or the Balassa-Samuelson (B-S) hypothesis** is often discussed when setting the inflation target in practice, particularly in the context of developing countries. This hypothesis stems from the observation that there are sectors with relatively high and low productivity in the economy, which leads to long-term trends in relative prices. In the open economy context, this means that in the economies of developing countries, which over time are gradually catching up with those of high-income countries due to high growth, price adjustments occur at a relatively higher rate compared to high-income countries. Therefore, under this interpretation, various authors and central banks often argue that inflation targets in developing countries should be somewhat higher than the targets adopted in developed countries in order to reflect the relative price adjustment described above. However, it should be emphasized that the adjustment process described above applies to real variables—in particular, the real exchange rate—and therefore the need for a difference in domestic inflation targets arises only under the provision of a fixed nominal exchange rate regime. When setting comparable inflation targets in a floating exchange rate regime, the real adjustment process is reflected in an equivalent movement (appreciation) in the nominal exchange rate. Ultimately, it is up to the central bank to determine the appropriate balance between inflation and exchange rate adjustments.

²⁸ Working version of the new manual: <https://www.imf.org/en/Data/Statistics/cpi-manual>

Old manual: https://www.unece.org/fileadmin/DAM/stats/publications/Practical_Guide_to_Producing_CPI.pdf

Figure B.4. Theoretical Commentary and Empirical Estimates in the Literature on the Optimal Level of Inflation or Inflation Target²⁹



Summarizing the theoretical comments and empirical assessments available in the literature regarding the optimal level of inflation or inflation target, we can state that:

- before the advent of the New Keynesian theory, the main hypothesis for defining the inflation target in the literature referred to the Friedman rule, which proposed a negative inflation target (see Figure B.4);
- with the formation of the New Keynesian theory (early 1990s), a zero percent rate was identified as the optimal inflation target in most cases in the literature (see Figure B.4), as the best rate corresponding to the determination of price stability and maximizing public welfare, according to proponents of the theory;
- at the same time, the New Keynesian literature, taking into account factors such as the zero lower bound of nominal interest rates, downward wage rigidities, and statistical issues with inflation measurement, the optimal inflation target is often considered to be a low but positive rate; and
- in addition to the factors presented above, other existing interpretations of deviation of inflation from theoretically optimal targets in economic literature generally either involve deviation from the best/optimal policy solutions or contain a “theoretical fallacy” and partial misconception of the issue under consideration.

²⁹ Source: https://diercks.shinyapps.io/anthony_diercks_shiny_app

C. CASE STUDIES OF GLOBAL BEST PRACTICES IN INFLATION TARGETING

Over the past 20 years, the inflation targeting strategy has been successfully applied and implemented in many countries around the world. Over time, the inflation targeting strategy has proven to be a rather flexible and effective principle in the process of ensuring price and macroeconomic stability in the economy in the event of various economic shocks. The inflation targeting strategy was first introduced and applied in New Zealand (in 1990) and in Canada (in 1991) and was later gradually introduced in other developed and developing economies, including in Armenia in 2006.

The Forecasting and Policy Analysis System (FPAS) was also soon introduced by the Reserve Bank of New Zealand and the Bank of Canada in order to coordinate and effectively implement the monetary policy development and implementation process under the inflation targeting strategy.

Implementation of the FPAS system involves systemic reforms in the development, implementation, and communication of monetary policy, as well as in the decision-making process. Over time, reforms carried out within the framework of a systemic approach to monetary policy development, implementation, and communication have served as an important basis in the processes of improving the effectiveness of monetary policy, ensuring price and macroeconomic stability in the economy, and increasing public confidence in central banks.

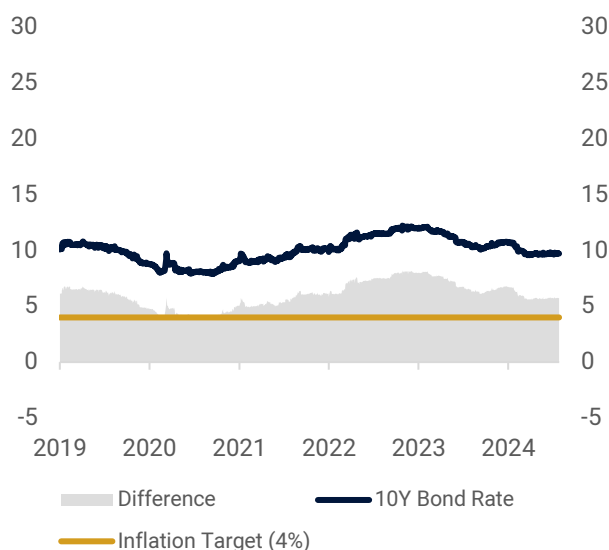
Although it is difficult to clearly separate the effects of inflation targeting and the implementation of the FPAS system on the economy from the effects of long-term economic reforms, empirical data and a study of the international experience show that countries that have made a significant investment in the monetary policy development and implementation system have been able to effectively achieve the goal of price stability over time.

A study of other countries' experiences shows that the existence of a comprehensive framework for monetary policy development and implementation creates positive prerequisites for ensuring price stability in the economy. Similar countries (e.g. Czechia, Chile, New Zealand, Georgia, South Korea, Sweden, and others) have an inflation target of 3% or lower consistent with price stability (see Box 4), and the implementation of monetary policy is based on high standards of transparency and accountability, which contributes to a more stable price level, a stable macroeconomic environment, and greater economic resilience in the event of crises and shocks. What is most important here is that this approach to implementing monetary policy is most consistent with the principles of good governance, democracy, and the rule of law. Thanks to this approach, this group of countries continues on the path of economic convergence with the leading countries, ensuring a more stable macroeconomic environment and improving the welfare and living standards of society, as evidenced by the continuous and stable growth of many macroeconomic indicators (real incomes, purchasing power, etc.).

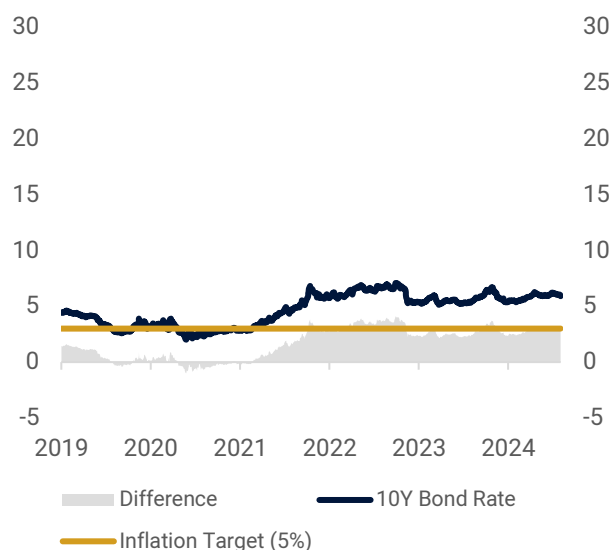
On the other hand, in countries, such as Turkey, Azerbaijan, Belarus, Tajikistan, etc., which lack a structured approach to the development and implementation of an effective monetary policy and related support system, the inflation target corresponding to price stability is at 4% or higher levels. In such countries, monetary policy is characterized by lower efficiency, which often leads to greater macroeconomic volatility and exacerbates the negative effects of macroeconomic shocks and crises on society. In these countries, there is a lack of transparency and accountability, both in monetary policy and in other administrative spheres, which often leads to a waste of public resources. All this is reflected in the low living standards of the population without any real prospects for long-term sustainable development.

Figure C.1. 10-Year Government Bond Yield Trends and Inflation Dynamics

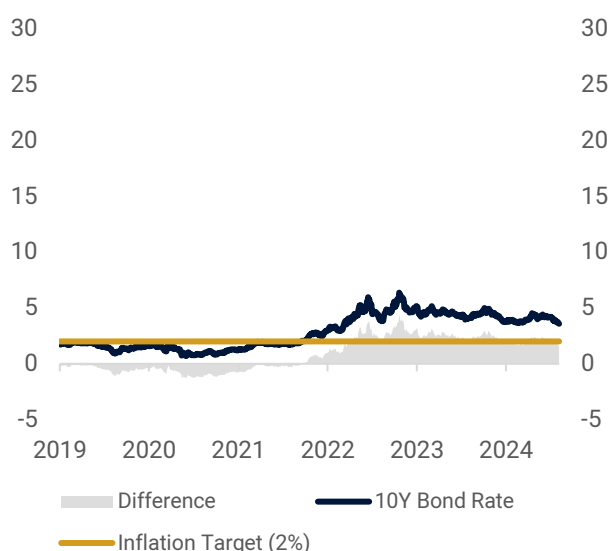
Part A: Armenia



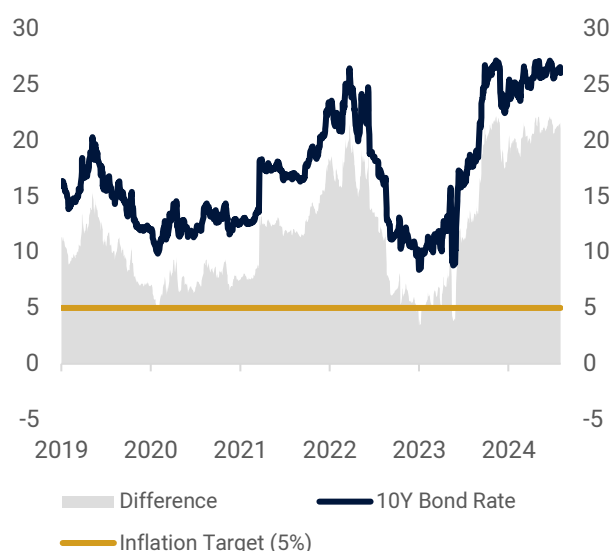
Part C: Chile



Part B: Czechia



Part D: Turkey



Extensive global experience in the implementation of monetary policy and the available research confirm that ensuring low inflation significantly reduces uncertainties associated with future monetary policy and price developments, contributing to the reduction of volatility in the pricing process and creating a favorable environment for sustainable economic growth. This is due to the increased predictability of investment and savings results in a low-inflation and low-volatility environment, the extension of investment terms, as well as the formation of relatively low nominal interest rates. In a low-inflation environment, firms and households do not need to incur various costs to avoid inflation or to effectively plan for consumption and savings. In this context, it can be argued that ensuring low stable inflation is not an end in itself and is an important guarantee of long-term sustainable economic growth. As the analysis of various countries' high economic growth situations during different time periods shows, if we filter out the situations that ended with instability and economic crises, then stable high economic growth was usually accompanied by the development of low—on average 3%—inflation developments. It is no

coincidence that, in most countries, the goal of price stability delegated to central banks is considered as the basis for **societal welfare** and/or **long-term sustainable economic growth**.³⁰

Thus, a review of the international experience shows that the formation of a solid monetary policy framework is an important foundation for a more prosperous, inclusive, and stable economic future. At the same time, relatively developed monetary systems are characterized by the achievement of low inflation goals, which is reflected in lower volatility in the economy and financial markets, lower interest rates, and the application of more inclusive and investment-oriented models of economic development. Moreover, achieving price stability by ensuring low stable inflation is the key to improving the overall well-being of society and long-term sustainable economic growth.

Figure C.2. Economic Growth and Inflation during Periods of High Economic Growth

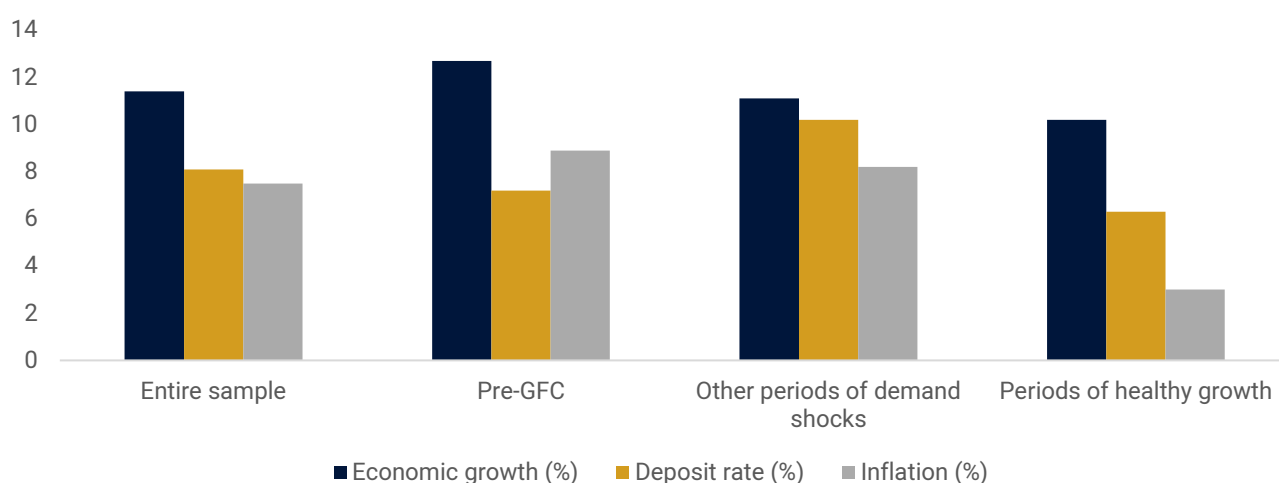
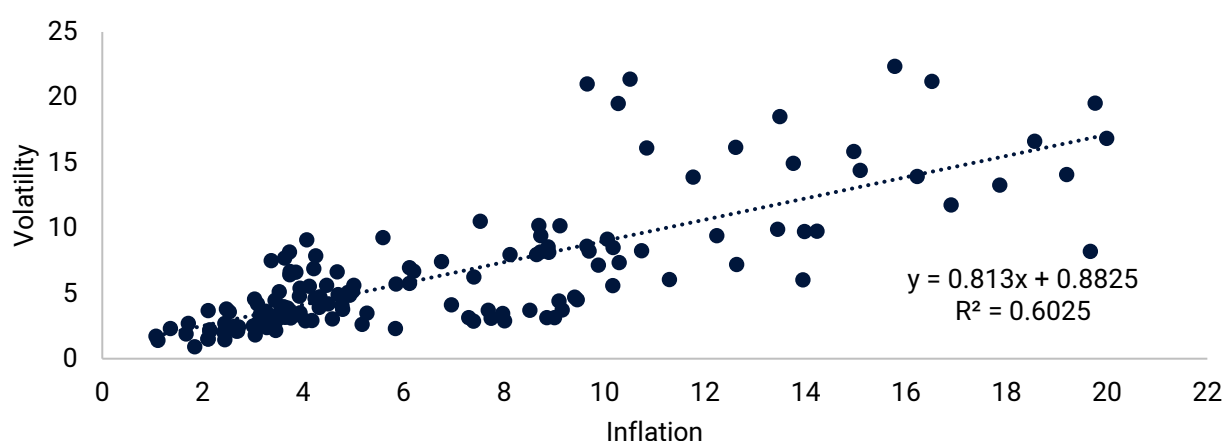


Figure C.3. Average Inflation and Inflation Volatility in 145 Countries, 1980-2018



In summary, it can be said that in the context of the institutional reforms carried out over the years, characteristics of Armenia's economy, and changes in fundamental conditions and driving forces, today the economy of Armenia is closer in terms of its structure and level of institutionalization to the ranks of countries conducting effective monetary policy and is more associated by international experts and investors with such countries. In that sense, a low inflation target and one specific to that group of countries will be an important stimulus and a positive step towards contributing not only to Armenia's international reputation and ranking but also to long-term stable economic growth through the effective implementation of the goal of price stability.

³⁰ Dikau, Volz (2020): Central Bank Mandates, Sustainability Objectives and the Promotion of Green Finance

Box 4: The Experience of Advanced Economies in Inflation Targeting

Developed countries are guided by the New Keynesian experience, and while some (e.g. ECB and Bank of Canada) make efforts to empirically and qualitatively explain how they have chosen the inflation target, the underlying rationale is not always perfectly quantified or easily understandable. The Swiss National Bank alludes only to the impossibility of accurately measuring inflation when determining its inflation target. The Bank of Canada estimates that the inflation measurement error in Canada is around 0.5%. The latter cites three factors in explaining the country's 2% inflation target: statistical error in the measurement of inflation, downward rigidities in nominal wages, and a zero lower bound on the nominal interest rate. The error rate in measuring inflation in the United States from 1995 to 1996 was about 1.1%. Although this large measurement error has decreased in recent years, it still remains high. Some studies estimate it to be in the range of 0.9%. However, it should be noted that the US Federal Reserve System does not take the statistical error into account when setting the inflation target. The Central Bank of Chile notes in its definition of the inflation target that low inflation helps to reduce uncertainty, leading to increases in investment and consumption, and thereby contributing to a more efficient allocation of production resources. Sweden's central bank similarly refers to the issue of high inflation causing great uncertainty in the economy. In defining its inflation target, the bank also notes that the 2% target is enough to stimulate the economy with interest rates in crisis situations.

Figure I.3.1. Initial and Current Inflation Targets in Developed Countries

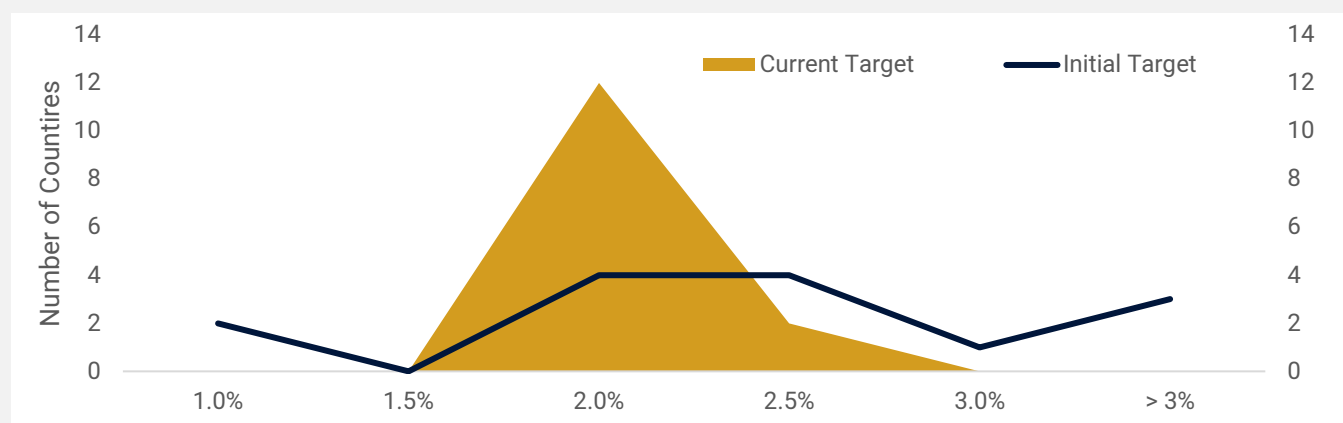
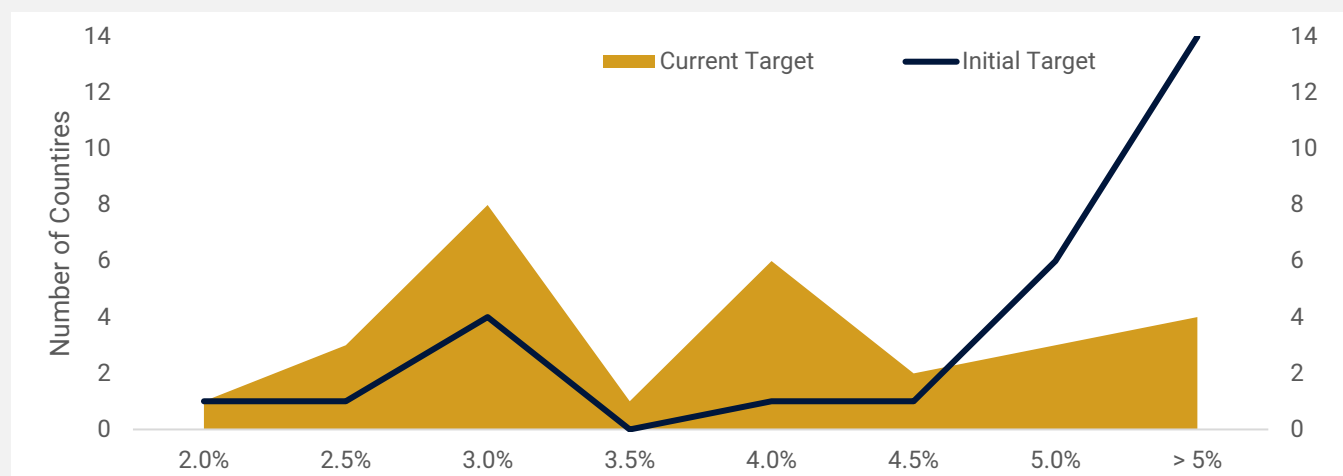


Figure I.3.2. Initial and Current Inflation Targets in Developing Countries



Source: Niedźwiedzińska (2018)

D. LEGAL BASIS FOR SETTING THE INFLATION TARGET IN THE REPUBLIC OF ARMENIA

According to the Constitution of the Republic of Armenia (Article 200) and the RA Law on the Central Bank (Article 4), the main goals of the Central Bank of the Republic of Armenia are to ensure price and financial stability in the Republic of Armenia.

In order to achieve the goal of price stability, the Central Bank develops and implements monetary policy (RA Law on the Central Bank, Article 4, Part 2).

For the purpose of making monetary policy decisions, in accordance with Article 16, Part 5 of the RA Law on the Budget System, each year the law on the state budget assigns to the Central Bank a sliding inflation target, including the target inflation rate and the permissible amount of deviations from this rate. When making decisions on monetary policy during the year, the Central Bank is guided by the logic of achieving the inflation target for the 12 quarters following the date of the decision.

In each year's law on the state budget, it is usually Article 4 that defines the relevant inflation target with the following wording (using the example of the RA Law on the State Budget of 2024):

"Article 4. In 2024, when making monetary policy decisions within the limits of the powers reserved by law, the Central Bank should be guided by a target index within the permissible range of 4 ± 1.5 percentage points of 12-month inflation."

It is worth noting that, when necessary, the Central Bank of Armenia submits recommendations regarding the inflation target to the RA Ministry of Finance at the beginning of August each year, in accordance with the relevant schedule of the budget process for the given year, as approved by decision of the RA Prime Minister (item 34 of the 2025 schedule).

With the approval of the law on the state budget in the National Assembly, a sliding medium-term target is put forward to the Central Bank of Armenia for making decisions on monetary policy from the beginning of the following year, in accordance with the target index specified in the law.

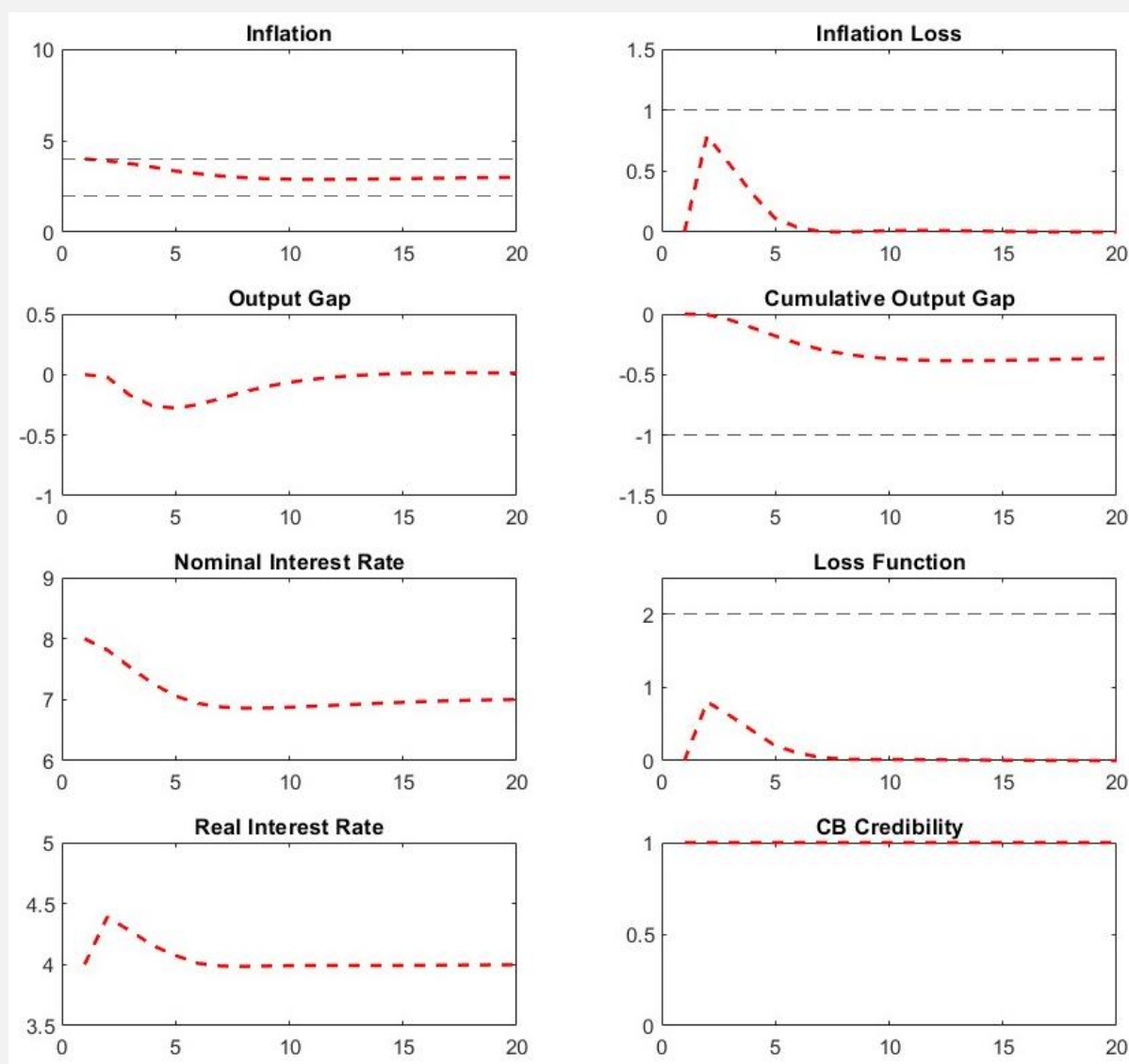
It should also be noted that, at the beginning of each year, the Board of the Central Bank of Armenia approves and publishes in monetary policy reports its "Statement of Long-Run Monetary Policy Objectives," which sets out the inflation target established by the law on the state budget as an important key point of the Central Bank's broad commitment to price stability.

Box 5: Macroeconomic Implications of Transitioning to a Low (3%) Inflation Target

Transitioning from a 4% target to the 3% inflation target entails certain economic consequences, which depend on the level of public confidence in the Central Bank's policy. The latter can be considered under the assumption of perfect credibility or the development of endogenous credibility, in which Central Bank credibility depends on the effectiveness of implemented monetary policy.

Under the assumption of perfect and exogenous/given credibility in the Central Bank's policy, the transition to the medium-term 3% inflation target is relatively smooth and fast. In the perfect credibility scenario, inflation expectations are immediately adjusted to the 3% target announced by the Central Bank. This rapid adjustment provides an important basis and precondition for a stable and smooth transition of actual inflation to the new target. Moreover, perfect confidence in the Central Bank's policy implies that the Central Bank is rapidly reducing interest rates to a new medium-term neutral rate range. However, if the nominal interest rate is immediately adjusted downward by 1%, the real interest rate will fall due to inflationary rigidities. This, in turn, will create excess demand and inflationary pressures, pushing inflation away from the desired path. To counteract this, a gradual adjustment of the nominal interest rate is optimal. This approach contributes to the temporary creation of a small negative GDP gap, which allows inflation to more smoothly "adjust" to the new target.

Figure I.4.1. Transition to 3% Inflation Target with *Perfect Credibility* of Central Bank Policy



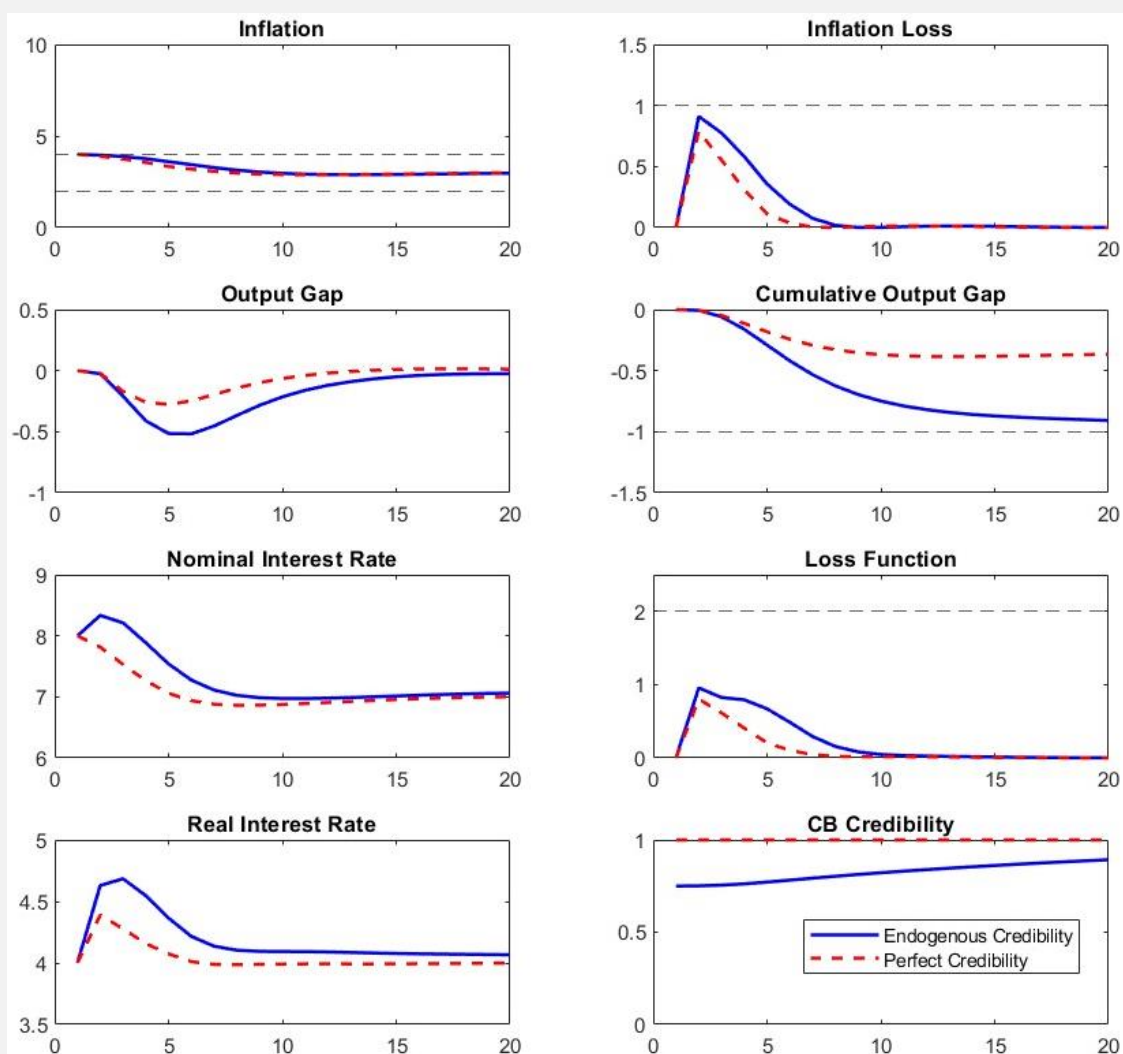
The rate at which inflation must fall to the 3% target can be determined by minimizing the public welfare loss function that accounts for the weighted deviation of inflation from the target and the GDP gap. According to this analysis, in such a scenario, the interest rate adjusts to a new steady state of 7% within 8 quarters, while inflation reaches the 3% target after 10 quarters (Figure I.4.1).

However, it is important to note that assuming perfect public trust in the Central Bank's ability to achieve the new 3% inflation target may be unrealistic. In most cases, the public will not fully adjust inflation expectations to the new target immediately. Instead, there is likely to be a gradual process of trust-building as the public observes the Central Bank's consistent policy actions and success in moving inflation toward the target. This "non-perfect-trust scenario" implies that public expectations will adjust more slowly, and inflation may temporarily deviate from the target as a result. The Central Bank will need to actively manage this transition by using clear communication and maintaining a credible policy path. Over time, as public confidence increases, expectations will align more closely with the 3% target, but this process may take longer than in the perfect credibility scenario.

In contrast to the assumption of exogenous and perfect trust in Central Bank policy, the following policy analysis scenario represents a more realistic approach that makes trust endogenous. The scenario assumes that trust is not perfect and is presumably 25% below perfect. In addition, public confidence in the Central Bank is endogenously dependent on the deviation of inflation from the target index. This is a gradual process by which trust is built or eroded based on the policy's ability to achieve its goals (Figure N.4.2).

In this scenario, given the rigidities in inflation and the gradual adjustment of inflation expectations, managing the inflation-output dilemma becomes more difficult than in the perfect credibility scenario. In particular, a decrease in inflation leads to a larger output loss because expectations adjust more slowly to the new target.

Figure I.4.2. Transition to 3% Inflation Target with *Perfect Credibility* and *Endogenous Credibility* of Central Bank Policy



In particular, under both perfect and endogenous credibility, optimal policy is aimed at smoothly reducing inflation to the new target. However, a slower adjustment of inflation expectations requires a larger initial increase in both nominal and real interest rates to bring inflation in this direction. This leads to a deeper GDP gap compared to the perfect credibility scenario.

Reducing losses in public welfare in these conditions requires a more gradual adjustment of the interest rate toward a new stable state, which takes approximately 12 quarters, while the minimum economic losses are higher than in the perfect credibility scenario.

As the 3% inflation target is pursued, a 1 percentage point nominal exchange rate annual appreciation is expected in the long run. In the short run, however, this appreciation of the nominal exchange rate can act as a negative signal for the export sector, potentially leading to some initial challenges. Despite this, in the long run, the developments in the export sector will be driven by the real exchange rate, which is determined by long-term fundamentals such as productivity growth in a small open economy relative to the rest of the world. Therefore, the transition to a lower inflation target is not anticipated to negatively affect the export sector in the long run. During the transition period, government revenues are projected to temporarily decline by approximately 0.5% relative to the planned budget. This minor adjustment reflects the economic rebalancing during the reduction of inflation. However, the transition to a lower inflation target is also expected to result in a decline in government expenditures. Firstly, the appreciation of the nominal exchange rate will reduce the value of external debt when measured in national currency. Secondly, the reduction in interest rates on domestic debt will contribute to lower expenditures, as the neutral rate adjusts downward in line with the new, lower inflation target.

E. CONCLUSION

Since January 1, 2006, the Central Bank of Armenia has been implementing monetary policy under an inflation targeting strategy, of which a fundamental tenet involves defining a numerical inflation target. The need for a well-defined numerical inflation target stems from the **CBA's primary objective of achieving price stability, which, in practice, means ensuring low and stable inflation** in a manner that ensures inflation expectations are well-anchored among the public and businesses and therefore does not result in changes in their consumption and investment behavior. The inflation target for the CBA is currently set at 4%, with a permissible range of ± 1.5 percentage point fluctuations.

The reforms carried out in the Armenian economy over the past decades, as well as recent developments in the financial system and the economy, provide a robust foundation for achieving the CBA's and RA Government's joint vision for long-term economic development. At the same time, these developments also make clear the need to define an inflation target that better corresponds to true price stability in Armenia. Moreover, the neutralization of several important factors that had supported setting the inflation target at 4% (in the context of various economic shocks in the early 2000s) indicates that the Armenian economy is ready to transition to a new stage of development, with one of the most important steps being the transition to a low inflation target of 3%.

The primary goal and mission of the Central Bank is to improve public and social welfare by ensuring price stability in the economy. Given the assessments discussed in this report, an inflation target of 3% is presently more consistent with the perception of true price stability in Armenia and will undoubtedly have a significant positive impact on both the long-term development of the economy and the living standards and quality of life of the population writ large. Lowering the inflation target is expected to have a positive impact on mitigating fluctuations in the financial and currency markets, increasing households' purchasing power, and enhancing the country's investment attractiveness.

In particular, the adoption of a 3% inflation target will provide an opportunity to ensure low, stable, and less volatile inflation, which will be accompanied by a steady increase in the real incomes and purchasing power of the population. Moreover, it will help to ensure a more stable macroeconomic environment (with less volatility in inflation, output, unemployment, etc.), which will make it possible to reduce the likelihood and impacts of future economic crises. At the same time, a reduction in uncertainty about monetary policy and increasing credibility in the central bank will, in turn, have an important impact in terms of anchoring inflation expectations and reducing the welfare costs associated with ensuring price stability, especially during economic shocks. Designing policy in line with the lower inflation target will also ensure a lower level of interest rates and country risk premium over the long term, thereby contributing to the improvement of the investment environment in Armenia and especially to growth in investments by foreign and institutional investors.

Consequently, having a policy objective that is more consistent with the price stability mandate will help ensure a more stable long-term price level and a predictable environment for investment and consumption planning. The experience of many countries (such as Czechia, Chile, and others) shows that, in the long term, price stability and a predictable macroeconomic environment are among the most important prerequisites for sustainable economic growth and improving the welfare and standard of living of the population at large.

REFERENCES

- Armas, Adrian and Francisco Grippa, "Targeting Inflation in a Dollarized Economy: The Peruvian Experience", Inter-American Development Bank, Working Paper 538, 2005
- Ascari, Guido and Argia Sbordone, "The Macroeconomics of Trend Inflation", *Journal of Economic Literature*, 52(3): 679-739, 2014
- Asoyan Ani, Grigoryan Vahagn and Igityan Haykaz, "Inflation and Structural Reforms in Different Societies (Game Theory Approach)", CBA Working Paper 2023/05
- Blanchard, Olivier, Giovanni Dell'Ariccia and Paolo Mauro, "Rethinking Macroeconomic Policy", IMF Staff Position Note, February 12, 2010
- Blanchard, Olivier and Lawrence Summers, "Rethinking Stabilization Policy: Evolution or Revolution?", National Bureau of Economic Research, Working Paper 24179, 2017
- Budianto, Flora, "Inflation Targets and the Zero Lower Bound", 14th Dynare Conference, Frankfurt, Germany, 2018
- Burstein, Ariel and Christian Hellwig, "Welfare Costs of Inflation in a Menu Cost Model", *American Economic Review*, 98(2): 438-43, 2008
- Chodorow-Reich, Gabriel and Johannes Wieland (2020): Secular Labor Reallocation and Business Cycles, *Journal of Political Economy* 128 (6): 2245-2287
- Correia, Isabel, Juan Pablo Nicolini and Pedro Teles, "Optimal Fiscal and Monetary Policy: Equivalence Results", *Journal of Political Economy* 168, 2008, 141-170
- Correia, Isabel, Juan Pablo Nicolini and Pedro Teles, "Optimal Fiscal and Monetary Policy: Equivalence Results", *Journal of Political Economy* 168, 2008, 141-170
- Clarida Richard, Gali Jordi and Gertler Mark, "The Science of Monetary Policy: New Keynesian Perspective", *Journal of Economic Literature*, Vol. XXXVII (December 1999), pp. 1661-1707
- Dikau, Simon and Ulrich Volz, "Central Bank Mandates, Sustainability Objectives and the Promotion of Green Finance," No 232, Working Papers, Department of Economics, SOAS University of London, UK, <https://EconPapers.repec.org/RePEc:soa:wpaper:232>, 2020
- Forecasting and Policy Analysis System of the Central Bank of the Republic of Armenia, CBA, 2010
- Fountas, S., Karanasos, "Inflation Uncertainty, Output Growth Uncertainty and Macroeconomic Performance". *Oxford Bulletin of Economics and Statistics*, 68, 319-343, 2007
- Friedman, Milton, "The Optimum Quantity of Money", in *The Optimum Quantity of Money and Other Essays*, Chicago, Aldine Publishing Company, 1969
- Jackson, Harriet, "The International Experience with Negative Policy Rates," Discussion Papers 15-13, Bank of Canada, 2015
- Grier, Perry, "On inflation and inflation uncertainty in the G7 countries," *Journal of International Money and Finance*, 1998, vol. 17, issue 4, 671-689, 1998
- Guerrieri, Veronica, Guido Lorenzoni, Ludwig Straub and Ivan Werning (2021): Monetary Policy in Times of Structural Reallocation, Prepared for the 2021 Jackson Hole Economic Policy Symposium

- Kim, Jinill and Francisco Ruge-Murcia, "How much Inflation is Necessary to Grease the Wheels?", *Journal of Monetary Economics*, Volume 56, Issue 3, 2009, 365-377
- Kolcunova, Dominika and Tomas Havranek. "Estimating the Effective Lower Bound on the Czech National Bank's Policy Rate," *Czech Journal of Economics and Finance (Finance a uver)*, Charles University Prague, Faculty of Social Sciences, vol. 68(6), pages 550-577, December, 2018
- Mkrtchyan, A., "Price Stability and Choosing an Optimal Inflation Rate," *Armenia, Ֆինանսներ և էկոնոմիկա ("Finance and Economics")*, September-October 2006
- Nakamura, Emi, Jon Steinsson, Patrick Sun and Daniel Villar, "The Elusive Costs of Inflation: Price Dispersion during the U.S. Great Inflation", *National Bureau of Economic Research, Working Paper 22505*, 2017
- Niedźwiedzińska, Joanna, "Inflation Targeting. Institutional features of the strategy in practice," No 299, *NBP Working Papers*, Narodowy Bank Polski, 2018
- Nicolini, Juan Pablo, "Tax Evasion and the Optimal Inflation Tax", *Journal of Development Economics* 55, 1998, 215-232
- Rationale for the Adoption of Inflation Targeting Strategy by the Central Bank of the Republic of Armenia, CBA, 2006
- Schmitt-Grohe, Stephanie and Martin Uribe, "Optimal Fiscal and Monetary Policy under Imperfect Competition", *Journal of Macroeconomics* 26, June 2004, 183-209
- Schmitt-Grohe, Stephanie and Martin Uribe, "Optimal Simple and Implementable Monetary and Fiscal Rules", *Journal of Monetary Economics* 54, 2007, 1702-1725
- Schmitt-Grohe, Stephanie and Martin Uribe, "Foreign Demand for Domestic Currency and Optimal Rate of Inflation", *National Bureau of Economic Research, Working Paper 15494*, 2009
- Schmitt-Grohe, Stephanie and Martin Uribe, "The Optimal Rate of Inflation", *National Bureau of Economic Research, Working Paper 16054*, 2010
- Witmer, Jonathan and Jing Yang, "Estimating Canada's Effective Lower Bound," *Bank of Canada Review*, Bank of Canada, vol. 2016(Spring), pages 3-14, 2016



Central Bank
of Armenia