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MIDDLE EAST AND CENTRAL ASIA DEPARTMENT

Central Bank Independence and Monetary Policy Effectiveness in the Middle East, Central Asia, and Caucasus

Prepared by an IMF team led by Dmitry Gershenson and comprising Omer Faruk Akbal, Mohamed Belkhir, Rhea Gupta, Koba Gvenetadze, Ashraf Khan, Fei Liu, Antonio Manzanera Escribano, Nasir Rao, Umang Rawat, and Xiaoqiao Shen, with guidance from Subir Lall

2026

DEPARTMENTAL PAPER

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Executive Summary

The subject of central bank independence (CBI) remains a keenly debated topic even decades after its adoption in a growing number of countries. CBI has recently come under renewed scrutiny, including in the Middle East and Central Asia (ME&CA) countries, as pressures for monetary policy to accommodate fiscal needs have intensified. To better inform the debate around CBI, this paper provides the first comprehensive analysis of its role in managing inflation, including when subject to shocks—a key indicator of the effectiveness of monetary policies—in ME&CA countries, using a novel data set and country deep dives. It further identifies institutional strengths and weaknesses of CBI in ME&CA countries and offers tailored policy recommendations to strengthen CBI. The key findings are as follows:

- CBI, alongside a robust monetary policy framework, is associated with effective inflation management and is particularly helpful when confronted with unanticipated shocks to inflation. Over the past four decades in the ME&CA countries, inflation was significantly reduced from an average of 9 percent between 1981 and 1999 to 5 percent subsequently through 2019. Concurrently, CBI has strengthened in the region, particularly since 2000.
- CBI momentum varies across ME&CA, in line with differing starting points and an uneven pace of institutional reforms. Inflation targeters, comprising mostly countries in the Caucasus and Central Asia, achieved higher *de jure* CBI, thanks to legal frameworks established after their independence in the early 1990s that followed international best practices of the time. Countries with fixed exchange rates also achieved higher CBI and demonstrated favorable inflation outcomes, with the currency peg serving as a credible nominal anchor. Although CBI improved in countries with other monetary policy frameworks, this subgroup, as well as the countries affected by fiscal dominance, found it more challenging to tackle inflationary pressures.
- CBI reforms take time to deliver their desired effect, in part reflecting implementation lags in legislative reforms. Empirical analysis finds that stronger CBI is associated with lower inflation, with the effect strengthening over time, particularly for the ME&CA countries. Moreover, fiscal positions improve when the macroeconomic situation improves in conjunction with stronger CBI. More recently, in tackling the postpandemic inflation surges in the ME&CA countries, stronger CBI is associated with better inflation outcomes, supported by well-anchored central bank credibility. Accordingly, greater CBI is associated with improved resilience to macroeconomic shocks.
- Carefully calibrated and sequenced reforms—covering legal frameworks, governance, and accountability—would further strengthen CBI in the ME&CA region. CBI can be strengthened through reforms that enhance both the legal frameworks and their effective implementation. First-order reform priorities include enhancing the central bank's legal framework, financial independence, and governance, which are key to shielding central banks from political influence and fiscal dominance. Over the short to medium term, reforms to enhance central banks' accountability and transparency mechanisms, as well as communication frameworks, should proceed in accordance with countries' own reform agenda and implementation capacity. Over the long run, central banks will need to firmly align their new responsibilities—including those related to climate change, fintech, and digital currencies—with their legal mandates of price and financial stability and ensure that their independence is preserved. The IMF stands ready to support country authorities in these efforts.

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Acronyms and Abbreviations

AE	advanced economy
CBDC	central bank digital currency
CBI	central bank independence
CCA	Caucasus and Central Asia
EMDE	emerging market and developing economy
EME	emerging market economy
ER	exchange rate
FSAP	Financial Sector Assessment Program
GCC	Gulf Cooperation Council
IT	inflation targeting
LIDC	low-income and developing country
ME&CA	Middle East and Central Asia
MENAP	Middle East, North Africa, Afghanistan, and Pakistan
TA	technical assistance

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1. Introduction

Central bank independence (CBI) has been considered critical to contain inflation and anchor inflation expectations. An independent central bank conducts monetary policy free from short-term political pressures that may run counter to the primary objectives of price and financial stability. This independence enhances the credibility of a central bank, which in turn helps anchor inflation expectations. Policy reforms to enshrine CBI gained momentum with the introduction of inflation targeting (IT) in the early 1990s, as an ever-larger group of countries accepted that reducing inflation in a sustainable way required resisting the temptation to exploit the short-term trade-off between higher output and lower inflation.

This widening consensus on the role of CBI experienced a setback in the aftermath of the 2008 global financial crisis, when central banks were often the target of criticism for either expanding their balance sheets too much or doing too little to support domestic economic activity.[1,2] The CBI debate was revived again in the aftermath of the COVID-19 pandemic. After the surge in inflation caused by a combination of supply and demand shocks—which were difficult to disentangle contemporaneously and even retrospectively—many central banks were criticized for being behind the curve in tightening monetary policies (for example, see Summers 2021; Haldane 2025; McGeever 2025).

Central banks in the Middle East and Central Asia (ME&CA) countries were also targets of these critiques. Over the past several decades, most central banks in the ME&CA countries have carried out their monetary policy functions with a relatively low degree of political interference, thereby supporting the fulfillment of their price stability mandate and anchoring inflation expectations. However, during the COVID-19 pandemic, the anemic growth and sharply deteriorating fiscal balances generated pressures on central banks in some countries to maintain a more accommodative monetary policy stance. This, in turn, was driven by the desire to mitigate the social effect of the pandemic and contain fiscal pressures, even though available indicators suggested that a tighter monetary stance was necessary to manage inflation dynamics.

Whether these criticisms were warranted requires an assessment of the role that CBI has played in the region. How has it affected inflation developments in ME&CA countries in the past decades? If it was beneficial, what can be done to strengthen CBI in ME&CA countries? In a world exposed to a high degree of uncertainty and successive shocks, answers to these questions would guide the appropriate direction of institutional reforms to central banking to ensure that policy priorities can be successfully met. Toward this end, this paper provides a comprehensive analysis of CBI in the ME&CA region by (1) providing a conceptual overview and looking in depth at crosscutting issues (Section II); (2) using a new panel data set to analyze empirically both the static and dynamic effects of CBI on inflation, a key indicator of the effectiveness of monetary policies, and fiscal outcomes (Section III);[3] and (3) investigating specific strengths and weaknesses of CBI in ME&CA countries and ways to improve CBI (Section IV).

[1] The global financial crisis prompted central banks—particularly in advanced economies (AEs)—to adopt unconventional policies. Postcrisis analyses concluded that (1) price stability must remain the core focus of monetary policy, with financial system risks integrated into policy formulation, and (2) financial stability should primarily be managed through macroprudential tools (IMF 2010).

[2] Using a data set on political pressure faced by 118 central banks from 2010 to 2018, Binder (2021) noted that political interference with central banks is a global phenomenon, occurring in all regions and in both developing and developed economies.

[3] The empirical analysis uses Romelli (2024) panel data set on *de jure* central bank independence (CBI). The availability of *de facto* CBI data on the Middle East and Central Asia (ME&CA) countries is limited, and this paper uses the findings from the IMF safeguards assessments to evaluate *de facto* CBI developments in selected ME&CA countries.

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2. The Rise of CBI in ME&CA

Coinciding with the expansion of CBI in ME&CA countries in recent decades, inflation declined from an average of about 9 percent between 1981 and 1999 to 5 percent thereafter through 2019. This progress in CBI was, however, uneven across countries and monetary policy frameworks. Countries that adopted versions of IT frameworks, mostly in the Caucasus and Central Asia (CCA) region, achieved higher de jure *CBI scores relative to other regions, reflecting the fact that their legal frameworks—established after independence in the early 1990s—followed international best practices. Countries with exchange rate (ER) anchor frameworks also achieved higher CBI and demonstrated favorable inflation outcomes, with the currency peg serving as an important nominal anchor contributing to central bank credibility and inflation stability. CBI also improved in countries with other monetary policy frameworks, but central banks in these countries often operated under capacity constraints and structural vulnerabilities that posed a challenging backdrop to managing inflationary pressures. More recently, since the outbreak of the COVID-19 pandemic, countries with a clearer price stability mandate and a more transparent monetary policy framework were better able to manage inflationary pressures. In this context, more independent central banks were associated with a lower prevalence of fiscal dominance and were better able to mitigate the negative effect of fiscal dominance on price stability.*

A. CBI—A Conceptual Overview

CBI can be divided into *de jure* and *de facto* components. *De jure* independence refers to CBI as enshrined in a central bank's legal framework.[4] This is the most visible and discussed part of CBI. On the other hand, *de facto* independence refers to the implementation of independence in practice, as well as how the central bank is perceived by its stakeholders in terms of its independence.[5]

CBI, whether *de jure* or *de facto*, has four dimensions: (1) functional independence, (2) operational independence, (3) financial independence, and (4) personal independence.[6]

- *Functional independence* grants the central bank the autonomy to work toward achieving its legal mandate without prior approval from the government. This allows the central bank to focus on its goals and insulates it from short-term political pressures. A further distinction can be made between "goal independence" and "instrument independence." The former would entrust "the central bank with responsibility for determining the monetary policy and exchange rate regime," and instrument independence implies that "the government or the legislature decides the monetary policy or target, in agreement with the central bank and the exchange rate regime, but the central bank retains sufficient authority to implement the monetary policy target using the instruments it sees fit" (Lybek 2009). Goal autonomy is the broadest degree of autonomy. Instrument independence implies that the "government or the legislature decides the monetary policy or target, in agreement with the central bank and the exchange rate regime, but the central bank retains sufficient authority to implement the monetary policy target using the instruments it sees fit" (Lybek 2009).

[4] That framework would primarily be the central bank law, but it could also include other laws, such as a constitution, a banking law, a budget law, and so on.

[5] It can be the case that although CBI is strong *de jure*, it is not safeguarded in practice. Conversely, existing *de facto* independence may not be safeguarded in law.

[6] For a more detailed discussion of these dimensions, see IMF (2020). "Independence" and "autonomy" are used interchangeably from here onward.

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- *Operational independence* implies that the central bank is prohibited from seeking or taking instructions from any private or public body.[7] This is reflected in the central bank's ability to, for instance, hire staff and secure other necessary resources. The central bank should also have sufficient legal protection for its decision makers and staff and have an effective governance structure. Operational independence of banking supervisors is also part of the Basel Core Principles for Effective Banking Supervision and thereby extends to central banks that are banking supervisors.[8]
- *Financial independence* implies that the central bank has sufficient resources available to fulfill its mandate. This includes a paid-up capital, reserves and provisions, a profit distribution mechanism, an automatic recapitalization mechanism in case the central bank's capital falls below a statutory threshold, the ability to set its own budget, and the application of internationally recognized accounting standards. Financial independence also precludes the central bank from providing (in)direct monetary financing, though temporary exceptions—for example, in case of a war or a natural disaster—could be possible.
- *Personal independence* entails security of tenure for the members of the central bank's decision-making bodies, including governors and board members. It includes clear eligibility and qualification criteria for the decision-making bodies' appointments, dismissal criteria and procedures, remuneration, duration of tenure, and sufficient legal protection.

The four dimensions of CBI safeguard an effective monetary policy framework, regardless of the nominal monetary policy anchor. A country can choose its monetary policy framework (for example, IT, a pegged ER, or monetary aggregate targeting) to suit specific social and economic circumstances. Central banks would then use relevant tools, such as policy rates, open market operations, or foreign exchange interventions, to achieve their respective policy objectives, which typically include price and financial stability. Notwithstanding the choice of the nominal monetary policy anchor, CBI underpins central bank operations and safeguards them from outside influence to achieve monetary objectives and shore up market confidence. Even in countries with the most restrictive forms of ER regime—such as currency boards or outright dollarization—CBI still plays an essential role in ensuring that appropriate policies continue to be followed.

The remainder of the paper mainly uses the CBI index constructed by Romelli (2022, 2024), which covers the four independence dimensions and is based on central bank charters (hence a *de jure* index). The Romelli CBI index assesses the degree of autonomy and freedom a central bank has in conducting its monetary policy and managing the financial system. This index builds on existing measures of *de jure* CBI, namely, Grilli, Masciandaro, and Tabellini (1991) and Cukierman and others (1992), and provides information on 42 criteria of central bank institutional design across six pillars (see Box 1).[9]

[7] Operational independence can also be referred to as "institutional independence" and can be used interchangeably, in line with the CBI definition outlined in IMF (2020).

[8] This refers to Basel Core Principle 2: Independence, Accountability, Resourcing, and Legal Protection for Supervisors.

[9] See Romelli (2022) for more details. The four dimensions of CBI overlap with the six pillars. Nonetheless, the four dimensions can be translated into the six pillars that highlight how CBI can be operationalized in practice.

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Box 1. The Six Pillars of the CBI Index

1. ***Governor and central bank board***: Central banks are considered more independent when (i) the executive branch has little or no legal authority in appointing the governor and other board members; (ii) the term of office exceeds the electoral cycle; (iii) reappointment is limited; (iv) dismissal is based on objective grounds; and (v) parallel activities of management bodies are limited.
2. ***Monetary policy and conflict resolution***: An independent central bank has the right to determine and implement monetary policy, including the authority to set interest rates. Further, the central bank legislation should specify clear procedures in case of conflict between the central bank and the government.
3. ***Objectives (that is, central banks' statutory goals)***: Central banks with clearly defined objectives and primacy of price stability are considered more independent.
4. ***Limitations on lending to the government***: Central banks for which legislation prohibits or introduces tighter limits (volume, terms, maturity, and so on) on lending to the public sector are considered more independent.
5. ***Financial independence***: A central bank is considered more financially independent when legislation clearly addresses issues related to its financial position, such as the conditions for capitalization and recapitalization, determination of the central bank budget, and arrangements for profit distribution and loss coverage.
6. ***Reporting and disclosure***: Central banks, which are required by law to report regularly on their policy targets and achievements and to publish financial statements that follow international accounting standards and are certified by an independent auditor, are more accountable, enhancing institutional credibility and independence.

Note: CBI = central bank independence.
Sources: Romelli (2022, 2024).

B. The Historical Evolution of CBI and Inflation

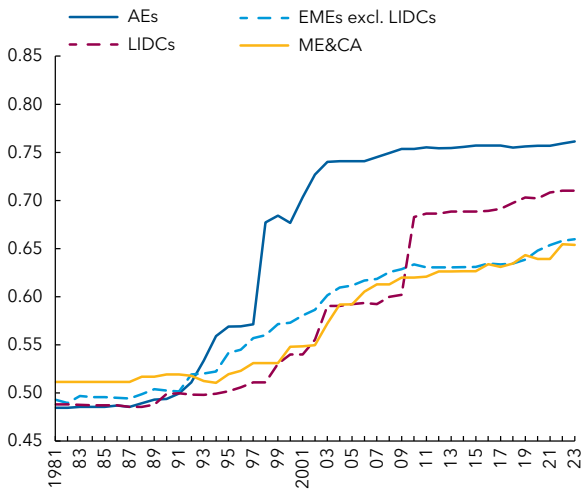
Evolution of CBI

The move toward greater CBI accelerated in the 1990s in advanced economies (AEs) and—to a lesser extent—in emerging market and developing economies. This was supported by legislative reforms embracing the belief that central banks free from political interference would be better able to contain inflation. Since the 1990s, central banks in the ME&CA region also accelerated their efforts to strengthen independence and caught up with their counterparts in emerging market and developing economies from the 2000s (Figure 1, panel 1). Since then, the ME&CA countries have continued to strengthen CBI, albeit at a slower pace, and still lag the average in AEs. Behind this overall trend of enhanced *de jure* CBI in ME&CA, important regional differences remain. The average CBI index in the Middle East, North Africa, Afghanistan, and Pakistan (MENAP) was comparable to that in AEs in the 1980s, yet MENAP central banks scored lower than the AE average by 2023, reflecting uneven progress on enhancing CBI, with substantial progress in some central banks, such as Morocco, Pakistan, and Iraq, but less so in others (Figure 1, panel 2).

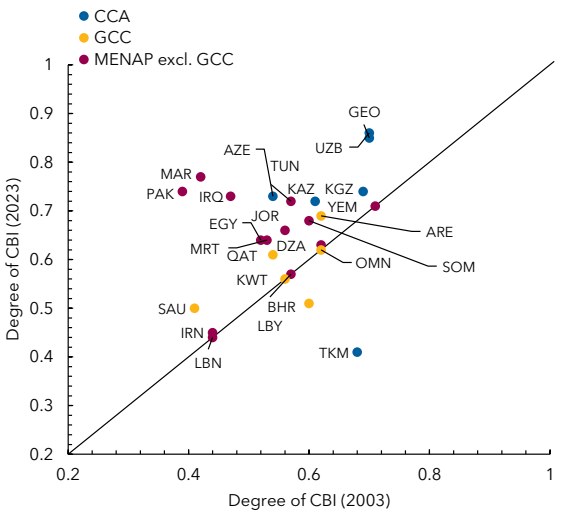
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Figure 1. Development of CBI

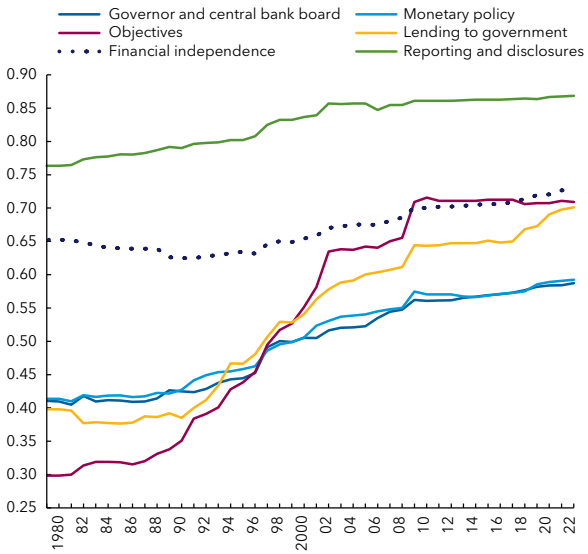
1. Evolution of CBI



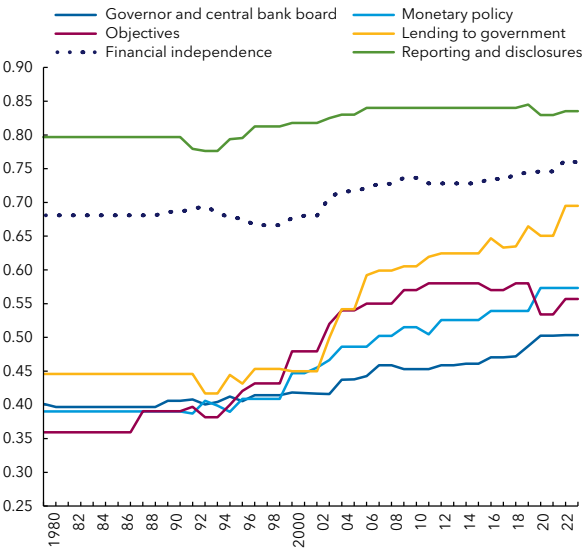
2. Change in CBI (2003 versus 2023)



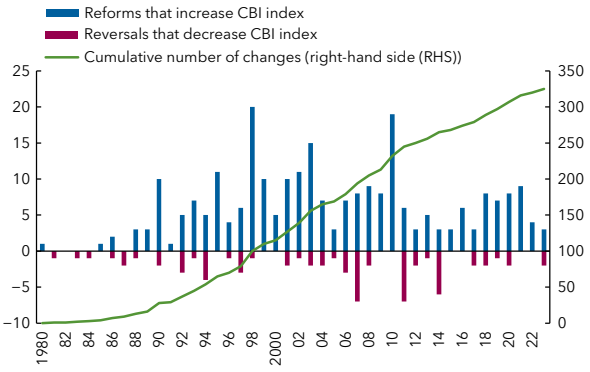
3. Evolution of CBI Pillars (World)



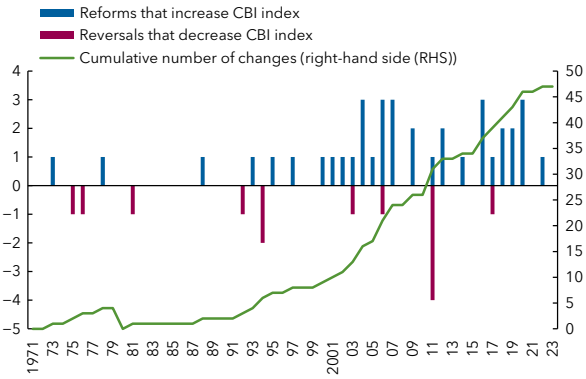
4. Evolution of CBI Pillars (ME&CA)



5. Legislative Changes Affecting CBI (World)



6. Legislative Changes Affecting CBI (ME&CA)



Sources: Romelli (2024); and IMF staff calculations.

Note: The calculation is based on Romelli (2024) *de jure* data, which may differ from the authorities' own assessment of their CBI. Data labels in the figure use International Organization for Standardization (ISO) country codes. AEs = advanced economies; CBI = central bank independence; EMEs = emerging market economies; LIDCs = low-income and developing countries; ME&CA = Middle East and Central Asia; RHS = right-hand side.

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For the global sample, the largest improvements in CBI are noted in the objectives and lending to government pillars. Some gains are also seen in the governor and central bank board and monetary policy pillars, particularly prior to the global financial crisis, after which progress has slowed. Financial independence and reporting and disclosure have been relatively strong since the 1980s and have thus seen only modest improvements (Figure 1, panel 3). In ME&CA countries, improvements related to the lending to government pillar and monetary policy have also been sizable, in line with the global experience. However, improvements related to objectives, as well as the governor and central bank board, have lagged, with several central banks serving multiple mandates without primacy for price stability (Figure 1, panel 4).

Overall, CBI changes slowly over time, reflecting amendments to central bank laws and charters. Over the period 1980–2023, more than 300 changes took place in the global sample and around 50 in the ME&CA sample (Figure 1, panels 5 and 6). The trend is toward reforming the central bank law and improving independence. However, there are also several episodes of reversals. In the ME&CA region, reversals are mostly related to policy independence, governor and board, and financial independence pillars.

CBI and Inflation

The expansion of CBI has been associated with more effective inflation management (Garriga and Rodríguez 2020; Georgieva 2024; Jácome and Pienknagura 2024). As central banks became more independent, they could carry out their monetary policy functions with less political interference, thereby supporting the fulfillment of their price stability mandate and better anchoring inflation expectations. Although there is no doubt that lower costs because of globalization and higher productivity over the past decades played a role in reducing inflation, the important role of CBI has been supported by both theoretical and empirical evidence (Balls, Howat, and Stansbury 2018).

Inflation across the ME&CA region declined over the past decades, with headline inflation declining from an average of about 9 percent in the 1980s and 1990s to 5 percent during the first two decades of the 21st century, up until the onset of the COVID-19 pandemic (Figure 2). In 1994, there were 57 countries with annual inflation above 40 percent, but this number declined to 15 in 2023, concurrent with the rise of CBI during the same period.[10]

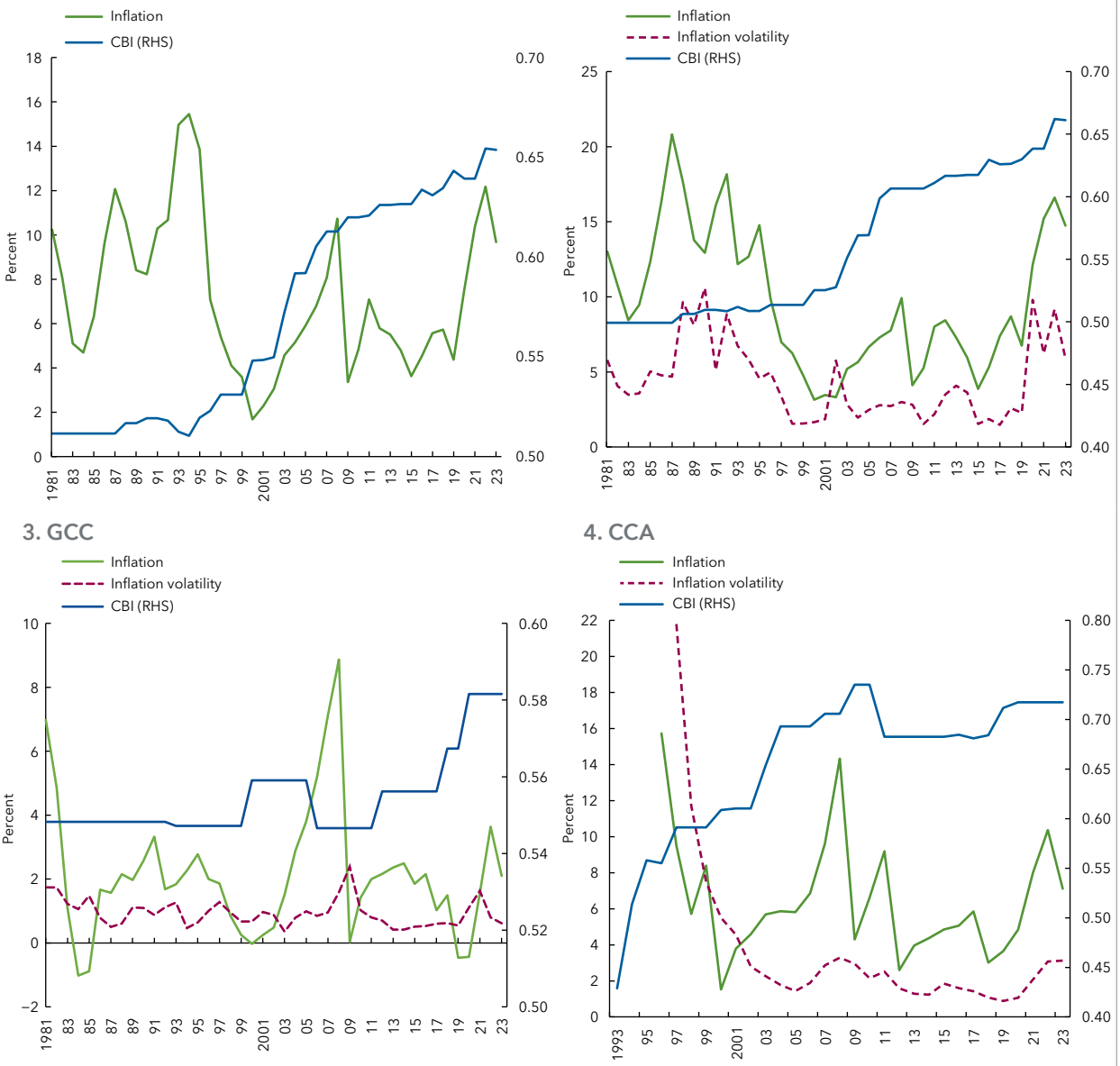
Inflation in MENAP countries, excluding the Gulf Cooperation Council (GCC) countries, fluctuated, especially before 2000, and declined afterward, mirroring the strengthening of CBI. The volatile environment facing these countries, fraught with external shocks (including commodity price fluctuations), wars, domestic conflicts, and macroeconomic instability, contributed to relatively high and unstable inflation.

In the GCC countries, *de jure* CBI started improving in the late 2010s as policy actions were taken to enhance central bank autonomy, especially in response to the need for more advanced monetary and financial policy frameworks, regulatory oversight, and the move toward more diversified economies. Inflation in the GCC countries has remained generally low and stable, supported by pegged ER regimes.

[10] Based on the IMF *World Economic Outlook* database, and excluding missing values, the sample size is 170 countries in 1994 and 190 in 2023.

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Figure 2. Development of CBI and Inflation
(Inflation, percent)



Sources: Romelli (2024); IMF, *World Economic Outlook*; and IMF staff calculations.

Note: Inflation volatility is calculated as standard deviation of monthly inflation rates for a certain country in a year. CBI = central bank independence; GCC = Gulf Cooperation Council; ME&CA = Middle East and Central Asia; MENAP = Middle East, North Africa, Afghanistan, and Pakistan.

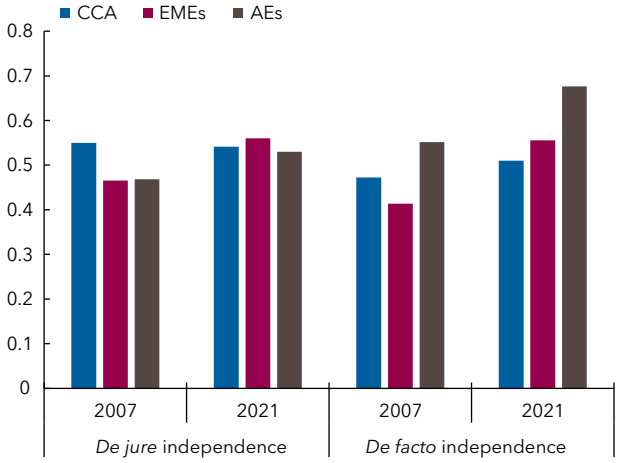
[1]The inflation spikes in 2008 and 2011 correspond to the global crude oil price hikes.

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Since their establishment in the early 1990s, central banks in the CCA region acquired a relatively high level of *de jure* independence, since much of the institutional design was modeled after international best practices through extensive technical support provided by the international community, including the IMF and the World Bank. The 1990s saw the passage of laws that granted formal independence to central banks in several countries, including Armenia, Georgia, and Kazakhstan. In the 2000s, CCA central banks gained even greater *de jure* independence after legislative reforms. Inflation and inflation volatility were both reduced substantially after this strengthening of CBI.

Nonetheless, the *de facto* CBI in CCA is less pronounced than the *de jure* measures (Figure 3). Moreover, the average of the *de facto* CBI measures in the CCA region is lower than the averages of both EMEs and AEs.[11] Although the divergence between *de facto* and *de jure* CBI is not uncommon, the gap between the *de facto* and *de jure* averages in the CCA region points to areas for improvement.[12]

Figure 3. *De Jure* and *De Facto* CBI



Sources: Romelli (2024) on *de jure* CBI; Unsal and Papageorgiou (forthcoming) on *de facto* CBI; and IMF staff calculations.

Note: Among all ME&CA countries, the de facto data are only available for selected CCA countries, which are Armenia, Georgia, Kazakhstan, and the Kyrgyz Republic. AEs = advanced economies; CBI = central bank independence; CCA = Caucasus and Central Asia; EMEs = emerging market economies; ME&CA = Middle East and Central Asia.

[11] Unsal and Papageorgiou (forthcoming) provide a joint account of independence and accountability and quantify both the legal arrangements (*de jure*) and the arrangements that exist in reality (*de facto*). Their paper uses the central bank's law (and other applicable laws, such as the constitution) for the *de jure* assessment and information from websites and annual reports for the *de facto* counterpart. They also find that more independent central banks tend to be more transparent and have stronger communication frameworks, which allow public to better comprehend the monetary policy frameworks and associated policy actions.

[12] Unsal and Papageorgiou (forthcoming) find that *de jure* arrangements are, on average, stronger than their *de facto* implementation in emerging market economies and low-income and developing countries, whereas the reverse holds for AEs.

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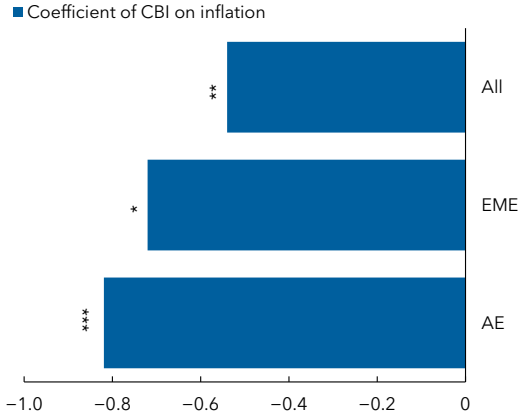
3. CBI—An Empirical Perspective

Empirical analysis demonstrates the inflation-reducing effect of CBI, which becomes stronger over time, particularly for ME&CA countries. This fundamental role of CBI in containing inflation can also be seen in the divergent inflation outcomes observed in countries with different monetary policy frameworks. In addition to the effect on inflation, stronger CBI contributes to better macroeconomic outcomes and thus indirectly helps improve fiscal positions.

A. The Dynamics of CBI and Inflation

The empirical analysis quantifies the effects of CBI on inflation, controlling for a range of explanatory variables and using country fixed effects (Annex 2). The estimated coefficients for the *de jure* CBI index are significant and economically meaningful, implying that higher levels of CBI are associated with lower inflation (Figure 4).[13] The effect of CBI on inflation varies across samples, with the strongest effect found for AEs, which can be attributed not only to high *de jure* independence but also to high *de facto* independence in those countries.[14,15]

Figure 4. Static Effects of CBI on Inflation by Country Groups



Source: IMF staff estimates.

Note: The figure shows the standardized coefficients of regressions of inflation on the CBI index with control variables. The regressions can be found in Annex Table 2.1. The standardization is done by multiplying the coefficient of the CBI index by one standard deviation (st. dev.) of itself in the respective regression sample across countries and time. The st. dev. is 0.17 for the AE sample, 0.15 for the EME sample, and 0.16 for the full sample.

*p < .10; **p < .05; ***p < .01.

AE = advanced economy; CBI = central bank independence; EME = emerging market economy.

[13] The *de jure* CBI index by Romelli (2024) is used as the main variable of interest. Other control variables include lagged inflation, exchange rate regimes as classified in the IMF Annual Report on Exchange Arrangements and Exchange Restrictions, a dummy for currency crisis (Laeven and Valencia 2012), and the output gap.

[14] Based on the Independence and Accountability, Policy and Operational Strategy, and Communications (IAPOC) data by Unsal and Papageorgiou (forthcoming), *de jure* arrangements of independence and accountability are assessed as being stronger than their *de facto* implementation in emerging market economies and especially in low-income and developing countries, whereas the reverse is true for AEs.

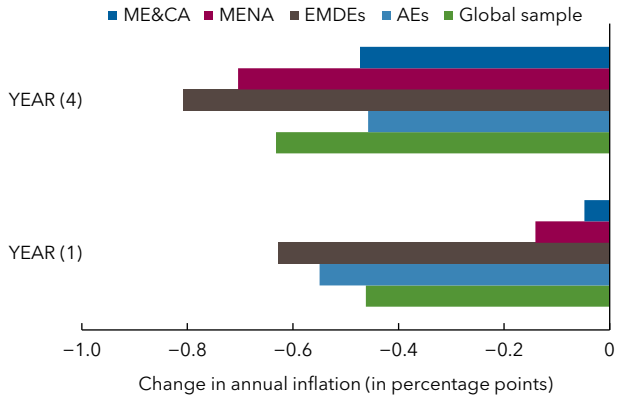
[15] An interaction term with an ME&CA dummy variable is added to the sample to capture the impact of the CBI index on ME&CA countries. However, the coefficient on the interaction term is not statistically significant. This finding holds when applying a similar regression to an ME&CA-country-only sample. This is likely because of large unobserved factors, including those stemming from domestic or regional conflicts, which further complicate the relationship between CBI and inflation. Fixed effects regressions are also applied to inflation volatility, as measured by the standard deviation of monthly inflation. No statistically significant results are found for the relationship between CBI index and inflation volatility.

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Institutional reforms, such as improvements in CBI, normally take time to produce their desired outcomes, particularly if inflation is persistent. As a result, the full effect of stronger CBI on inflation can only be captured by observing inflation behavior over a prolonged period.

The dynamic relationship between CBI and inflation using the local projection model of Jordà (2005) indicates that the full effect of changes in CBI on inflation outcomes indeed takes time to materialize. For the ME&CA countries, such a medium-term effect stands in strong contrast to the insignificant near-term effect (Figure 5).

Figure 5. Dynamic Effects of CBI on Inflation



Source: IMF staff estimates.

Note: The figure represents the cumulative decline in annual inflation after a one-standard-deviation increase in the CBI index. Bars represent the magnitude of cumulative inflation reduction one year and four years after the increase in the CBI index, with the fourth year being the horizon where the peak of the effect of CBI change is observed across the sample. The magnitude of inflation reduction is obtained by multiplying the coefficient estimates in the respective years from local projection estimations of Jordà (2005) by the standard deviation of the CBI index. Bars capture the overall effect of changes in the CBI index on inflation from the coefficient estimates of the CBI index and of an interaction term between the CBI index and a dummy variable for the relevant country group (except for the global sample). Except for the ME&CA and MENA groups in year (1), all estimated effects are statistically significant at the 10 percent level at least. AEs = advanced economies; CBI = central bank independence; EMDEs = emerging market and developing economies; ME&CA = Middle East and Central Asia; MENA = Middle East and North Africa.

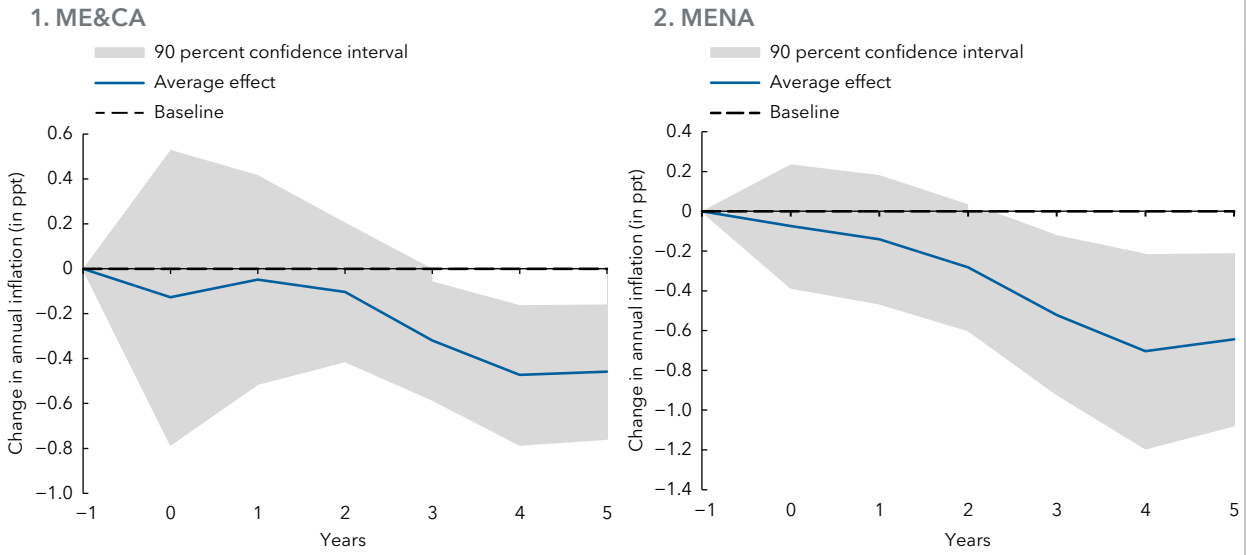
The local projection results suggest that inflation declines by about 0.5–0.6 percentage points a year after the CBI index increases by one standard deviation (Figures 5 and 6 and Annex 3).[16] This decline persists in the aftermath of the rise in the *de jure* CBI index, reaching its maximum in the fourth year, where it remains 0.5–0.8 percentage points below the baseline.[17]

This lagged effect can be explained by the relatively weak monetary transmission mechanism, particularly in some ME&CA countries; the possible lower *de facto* independence compared with *de jure* independence; and the time required to implement reforms after the laws go into effect. In addition to the analysis mentioned earlier, the relationship between higher levels of CBI and lower inflation can also be observed, to some extent, during the post-COVID-19 inflation surge (Box 2).

[16] This is equivalent to an increase of 3.3 in the rescaled CBI index (0–100), which is used throughout the analysis using local projections.
[17] That is, the rate associated with no change in the CBI index.

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Figure 6. Change in Annual Inflation



Source: IMF staff calculations.

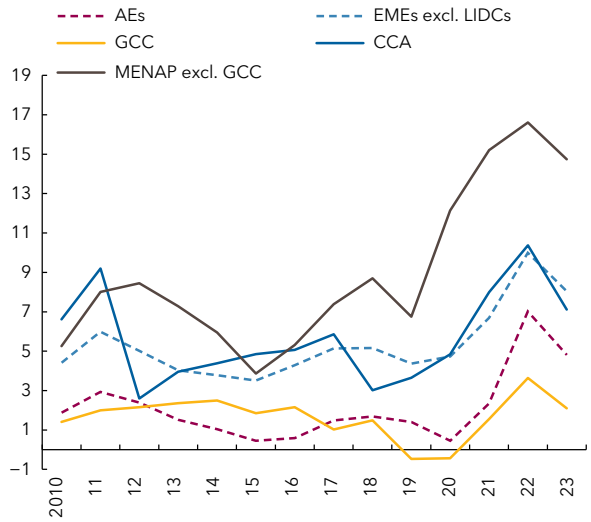
Note: Blue lines represent the estimated cumulative effect of a one-standard-deviation increase in the CBI index on inflation for each horizon. CBI = central bank independence; ME&CA = Middle East and Central Asia; MENA = Middle East and North Africa.

Box 2. Postpandemic Inflation Outcomes in ME&CA

In ME&CA countries, stronger CBI has been, to some extent, associated with better postpandemic inflation outcomes. This relationship is not direct, however, since other factors—such as the choice of monetary policy framework and the presence of fiscal dominance—have also been at play.

In the wake of the COVID-19 outbreak, inflation surged globally (Box Figure 2.1). The divergent postpandemic inflation outcomes observed across country groups with different monetary policy frameworks (that is, inflation targeting, ER anchor, and other monetary policy frameworks) reflected factors including the varied strength of monetary transmission mechanisms, structural challenges such as fiscal dominance, and the fundamental role of CBI.[1,2]

Box Figure 2.1. Inflation in ME&CA Subregions
(Percent)



Sources: IMF, *World Economic Outlook*; and IMF staff calculations.

Note: Inflation was transformed to reduce the effect of outliers, following Jácome and Pienknagura (2024) and Acemoglu and others (2008). Inflation is calculated as a simple average across countries. AEs = advanced economies; CCA = Caucasus and Central Asia; EMEs = emerging market economies; GCC = Gulf Cooperation Council; LIDCs = low-income and developing countries; ME&CA = Middle East and Central Asia; MENAP = Middle East, North Africa, Afghanistan, and Pakistan.

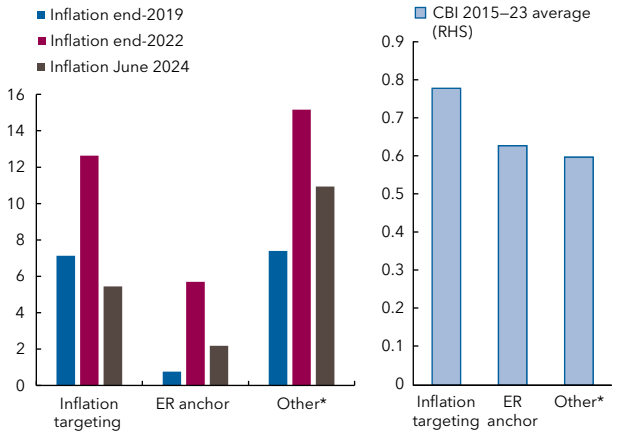
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Box 2. Postpandemic Inflation Outcomes in ME&CA (Concluded)

- Central banks with ***IT frameworks*** (Armenia, Georgia, Kazakhstan, Uzbekistan), driven by a clear price stability mandate and supported by well-developed monetary frameworks that are reflected in the CBI index, moved quickly to tighten monetary policy by raising interest rates. This prompt action was crucial in stabilizing inflation expectations and preventing price increases from becoming entrenched. By mid-2024, inflation in most IT countries had returned to prepandemic levels, underscoring the importance of central bank credibility associated with IT regimes (Box Figure 2.2).

Box Figure 2.2. Inflation Dynamics and CBI

(Inflation rate is in percent, year over year; CBI index ranges from 0 to 1)



Sources: Romelli (2024); IMF Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER, https://www.elibrary-areaer.imf.org/Pages/Home.aspx); and IMF staff calculations.

Note: Average CBI indies for 2015–23 by country groups are shown on the right-hand side.

Inflation targeting countries are Armenia, Georgia, Kazakhstan, and Uzbekistan; ER anchor countries are Azerbaijan, Algeria, GCC countries, Iraq, Jordan, Mauritania, and Morocco; and countries with other monetary policy frameworks include Egypt, the Kyrgyz Republic, Lebanon, Pakistan, Tajikistan, and Tunisia.

- Countries with ***ER anchor frameworks*** also managed the inflation surge effectively, supported by the credibility of the peg and a relatively strong CBI. Although the reduction in inflation was also helped by the food and fuel subsidies in these countries, it is important to emphasize that the currency pegs serve as a credible nominal anchor that contributes to central bank credibility and inflation stability, especially in countries with sizable FX buffers. In these countries, the credibility of the currency peg substitutes for *de facto* CBI to some extent, which is consistent with the findings of Selim (2018) and the observation that CBI indices in ER anchor countries average slightly lower than in IT countries.

- In countries with ***other monetary policy frameworks***, average inflation declined but remained substantially above the prepandemic level as of end-June 2024. On the one hand, the average CBI score in these countries is the lowest among the three country groups, reflecting relatively weaker *de jure* CBI. On the other hand, central banks in these countries operated under a variety of structural handicaps, such as fiscal dominance (see the following section), complicating the conduct and effectiveness of monetary policy.

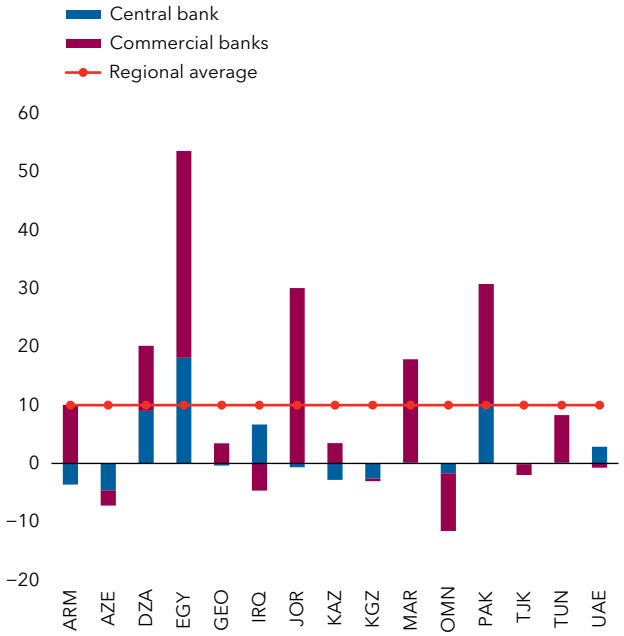
- In Lebanon, the economic crisis led to runaway inflation, which the central bank struggled to contain.[3] In Egypt and Pakistan, high levels of domestic debt may have complicated their respective central banks' ability to raise interest rates in a timely manner, leading to a persistent inflation, even as global supply pressures began to abate. In Pakistan, largely driven by long-delayed energy price adjustments, the inflation further spiked from an annual average of about 20 percent in 2022 to 38 percent in May 2023. In 2023, Pakistan raised the policy rate sharply, leading to a significant decline in inflation, with inflation reaching the pre-COVID-19 level by June 2024.[4]

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Box 2. Postpandemic Inflation Outcomes in ME&CA (Concluded)

Box Figure 2.3. Fiscal Dominance

(Net banking system claims on government, in percent of GDP, 2015–24 average)



Sources: IMF Integrated Monetary Database; and IMF staff calculations.

Note: Regional average refers to the simple average of the countries shown in this figure. Data labels in the figure use International Organization for Standardization (ISO) country codes.

The existence of fiscal dominance, which generates pressure to finance the government or keep interest rates artificially low, complicated monetary management in some ME&CA countries during the pandemic period.

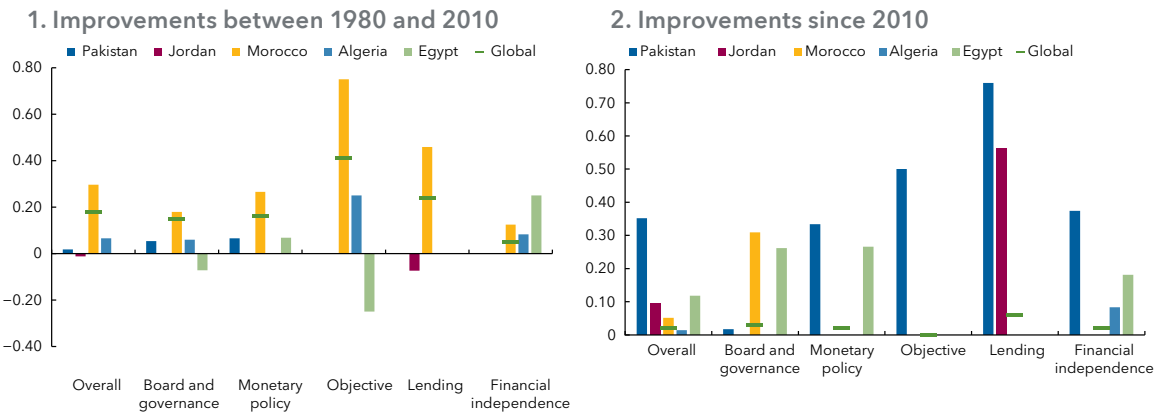
Using net claims of the banking system on the government (as a share of GDP) as a gauge of fiscal dominance, countries such as Algeria, Egypt, Jordan, Morocco, and Pakistan show relatively higher government borrowing from the banking system than the regional average (Box Figure 2.3), indicating some signs of fiscal dominance.[5] All five countries have implemented substantial reforms to improve CBI (Box Figure 2.4). From the 1980s to 2010, Morocco and Algeria implemented a range of legal and institutional reforms, enacting policies that emphasized price stability, enhanced personal and financial independence, and placed restrictions on deficit financing. Jordan achieved higher *de jure* CBI scores mostly after the 2008 global financial crisis, with improvements in limiting direct lending to government. Pakistan introduced amendments to the State Bank of Pakistan Act in 2015 and 2022, enhancing financial independence and reducing political interference in monetary decision making. Egypt approved a new central banking law in 2020, aiming to modernize its legislative framework.[6] These reforms contributed to improving central bank independence. However, structural vulnerabilities—chronic fiscal imbalances and reliance on subsidies or administered prices—persisted in Pakistan and Egypt, making it difficult for advances in CBI in these two countries to fully eliminate macroeconomic vulnerabilities caused by fiscal dominance. Such vulnerabilities manifested themselves during the COVID-19 pandemic. High levels of government

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Box 2. Postpandemic Inflation Outcomes in ME&CA (Concluded)

borrowing in Pakistan and Egypt may have complicated the central banks' ability to adopt proactive interest rate policies to curb inflation. Delayed adjustment of energy prices and food subsidies weakened monetary policy transmission mechanisms, forcing abrupt policy reversals when subsidies were eventually withdrawn.[7] Moreover, fiscal dominance exacerbated external vulnerabilities. Heavy reliance on external debt heightened currency depreciation risks, increasing the cost of imported goods and amplifying inflationary pressures.[8]

Box Figure 2.4. Evolution of CBI in Selected Countries



Sources: Romelli (2024); and IMF staff calculations.

Note: Global average refers to the simple average of all countries, including the five countries in the figure. CBI = central bank independence; ER = exchange rate; FX = foreign exchange; IT = inflation targeting; ME&CA = Middle East and Central Asia

Source: IMF staff.

[1] Monetary policy frameworks are categorized based on the IMF Annual Report on Exchange Arrangements and Exchange Restrictions reports and consist of three groups: (1) inflation targeting, which relies on a specific inflation rate as the nominal anchor, with central banks adjusting interest rates to achieve this target, while allowing for exchange rate (ER) flexibility; (2) ER anchor, which uses a pegged ER as the nominal anchor; and (3) other frameworks, which mainly include monetary aggregate targeting, where the central bank manages money supply growth, or hybrid approaches that combine multiple anchors, offering varying degrees of flexibility and autonomy.

[2] Monetary policy transmission in some Middle East and Central Asia countries is impaired by structural factors, including weak bank competition, the absence of a well-established benchmark yield curve, high dollarization, small and illiquid capital markets, and limited cross-border capital mobility. The ER channel—particularly for countries with a floating or managed ER—remains relatively strong (IMF 2023a; Poghosyan and others 2023).

[3] In Lebanon, the central bank's financial engineering program, which helped finance large twin deficits and maintain a massively overvalued ER, led to large losses of reserves and central bank equity, resulting in the collapse of the banking system in 2019. The continuation of unsustainable monetary and fiscal policies until mid-2023, when leadership at the central bank changed and fiscal reforms were implemented, contributed to rapid ER depreciation, triple-digit inflation, and further erosion of foreign exchange reserves.

[4] End-June 2024 inflation for Egypt, at 27 percent year over year, was still significantly higher than its pre-COVID-19 level.

[5] Excessive borrowing from the central bank disrupts monetary policy, leads to inflationary pressures, and impairs policy credibility. Borrowing from commercial banks can distort financial markets by crowding out private sector credit, hampering investment, and thus affecting economic growth. Ultimately, both types of borrowing could undermine macroeconomic stability and growth potential and adversely affect the independence of a central bank.

[6] The division of the sample into pre-2010 and post-2010 periods of CBI improvement is intended to account for the potential effect of the 2008 global financial crisis on monetary and institutional reforms.

[7] Although most countries in the region rely on some form of subsidies or administered prices to control inflation and support their populations, Pakistan and Egypt face significant resource constraints. Initially, both countries introduced subsidies at the onset of the inflation cycle, anticipating that it would be temporary. However, as inflation persisted longer than expected, these measures were rolled back because of resource constraints. This rollback delayed pass-through effects, resulting in higher overall inflation levels later (IMF Country Reports No. 22/288 and No. 22/237).

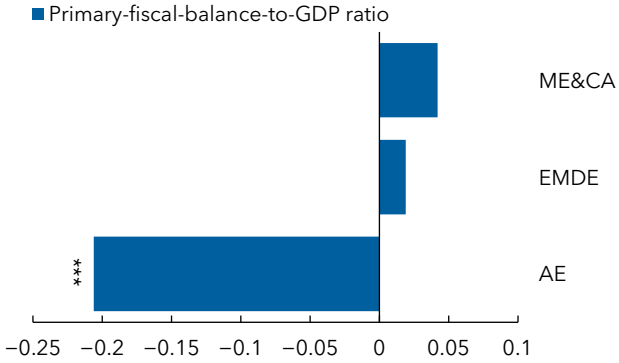
[8] Egypt faced significant ER pressure, and Pakistan's risk premiums surged because of waning investor confidence. See IMF Country Reports No. 22/288 and No. 22/237, respectively.

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B. CBI and Fiscal Balance

CBI could also affect fiscal outcomes, albeit indirectly through better macroeconomic outcomes, which are in turn associated with improving CBI. Fiscal outcomes, measured by the primary fiscal balance, show a strong correlation with the CBI index in the AE sample but are mixed for others, likely because of higher *de facto* independence and stronger fiscal frameworks in AEs (Figure 7). A regression analysis reveals that the co-movement between fiscal outcomes and the CBI index is mostly driven by country-specific macroeconomic variables (Annex 4). That is to say, the improvement in CBI does not directly cause an improvement in the fiscal position in the long run when one controls for country-specific characteristics. Instead, when the macroeconomic situation improves with stronger CBI, fiscal positions also improve as a result of better macroeconomic outcomes.

Figure 7. Correlation between CBI and Primary Fiscal Balance



Sources: Romelli (2024); IMF *World Economic Outlook*; and IMF staff calculations.

Note: Correlation coefficients are shown in the figure.

***$p < .01$.

AE = advanced economy; CBI = central bank independence; EMDE = emerging market and developing economy; ME&CA = Middle East and Central Asia.

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4. Road Map to Strengthening CBI

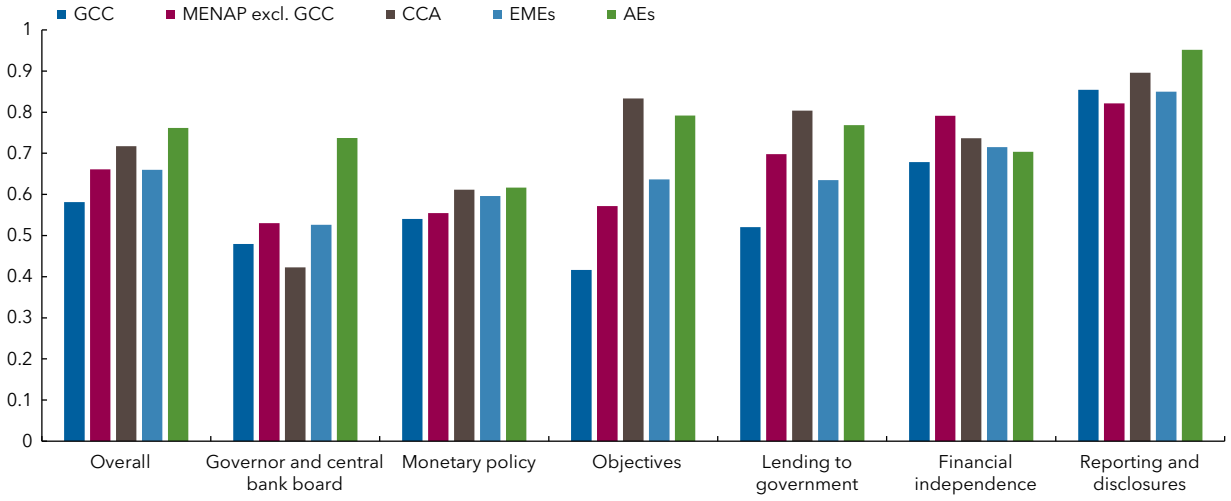
The ME&CA central banks have made significant strides toward strengthening de jure *independence, especially on provisions for financial independence and reporting practices to reinforce public trust. An analysis of ME&CA countries that have undergone the IMF's safeguards assessments reveals improvements in* de facto *CBI. Nonetheless, areas of weakness remain, particularly regarding the personal independence of central banks and limitations on lending to the government. To strengthen CBI, a series of well-tailored and appropriately paced reforms aiming at enhancing legislation (*de jure*) and implementation (*de facto*) are needed. The process will likely take time, during which political support and persistence will be critical. Looking ahead, the potential new mandates of central banks, such as addressing emerging challenges related to fintech, digital money, and climate change, should be firmly anchored in central banks' core responsibility of monetary and financial stability. The IMF's extensive technical assistance and a wide variety of tools can provide important support.*

A. Reinforcing Strengths and Shoring Up Weaknesses

De Jure CBI

Alongside the enhancement of overall CBI, central banks in the ME&CA region progressed well on the subpillars of *de jure* CBI, including the monetary policy framework, financial independence, and reporting and disclosure, compared with global averages (Figure 8). Nonetheless, relative to the AE average of independence of central banks' boards and governors, the ME&CA region lags, indicating that appointment, tenure length, and dismissal decisions for boards and governors can still be influenced by political power.

Figure 8. *De Jure* Subindices by Country Groups (2023)



Sources: Romelli (2024); and IMF staff calculations.

Note: AEs = advanced economies; CCA = Caucasus and Central Asia; EMEs = emerging market economies; GCC = Gulf Cooperation Council; MENAP = Middle East, North Africa, Afghanistan, and Pakistan.

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De Facto CBI

We use information from the IMF safeguards assessments to evaluate *de facto* CBI developments.[18]

In this context, *de facto* CBI has broadly improved in the CCA and MENAP countries, led by relatively large advances in the effectiveness of the audit committee (Figure 9, panel 1).[19] These improvements mainly reflect better implementation of existing legal and governance arrangements in the CCA countries and stronger implementation in the MENAP countries. Overall, the majority of countries in both CCA and MENAP samples have seen improvements in *de facto* CBI effectiveness since 2016 (Figure 9, panel 2).[20]

Some studies have examined the central bank governor turnover rate as a proxy to assess *de facto* CBI (Lybek 2009) and have argued that higher turnover rates of central bank governors are associated with lower independence of the central bank and vice versa. However, such *de facto* indices suffer from important limitations.[21]

[18] The IMF safeguards assessment provides a diagnostic review of a central bank's governance and control functions (https://www.imf.org/en/About/Factsheets/Sheets/2023/Protecting-IMF-resources-safeguards-assessments-of-central-banks). This analysis uses IMF safeguards assessment data, which are limited to countries with IMF-supported programs, and is based on *de facto* in the overall safeguards assessment data. Only aggregated results are presented, as country-level data remain confidential. Among other things, the IMF safeguards assessment reviews the *de facto* effectiveness of a central bank's governing bodies, including (1) board effectiveness (the central bank board should be fully constituted, comprise members with adequate backgrounds, meet frequently, oversee executives, and fulfill its responsibilities without external interference); (2) audit committee effectiveness (the audit committee should be fully constituted, comprise members with adequate backgrounds, meet frequently, and fulfill its responsibilities without interference from executives or outsiders); and (3) management effectiveness (for example, there should be no conflicting allocation of responsibilities between the policy formulation body and daily management, and daily management should not control or influence the central bank's oversight bodies). The scores are based on expert judgment applied to safeguards reports' qualitative assessments of board effectiveness, audit committee effectiveness, and management effectiveness—dimensions that are not formally rated in these safeguards reports.

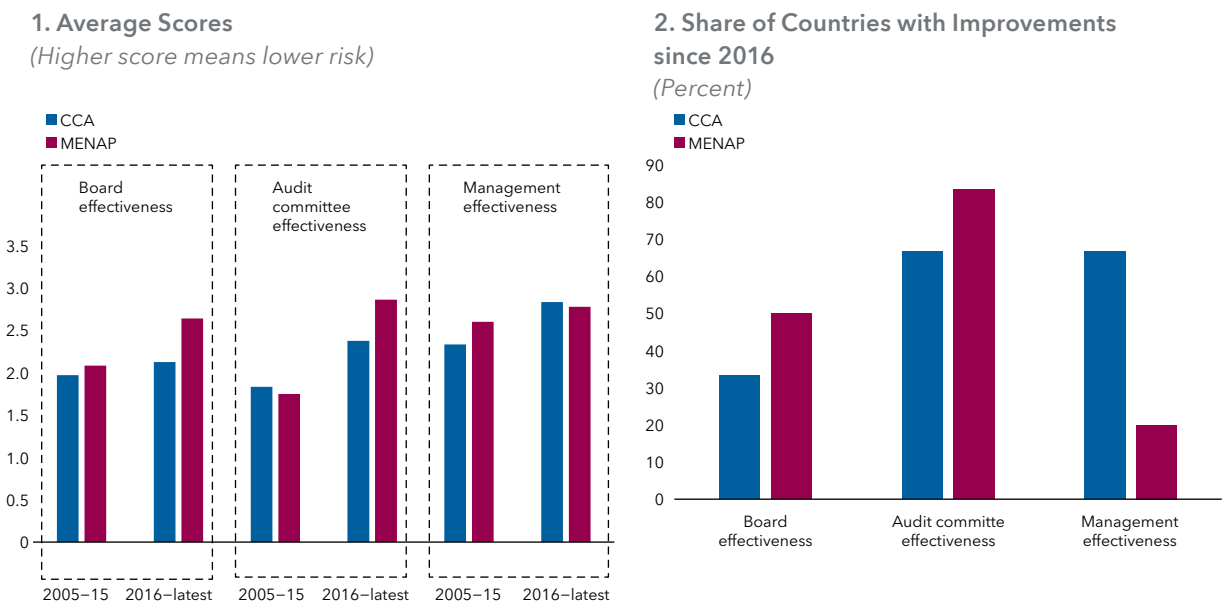
[19] A strong audit function will help enhance central banks' accountability and bolster their credibility. Central banks need to have an internal audit, which provides direct input to the monetary board on financial and nonfinancial risks of the central bank and contributes to stronger central bank governance, and an external audit, which reviews the financial statements and internal controls of the central bank. Central banks can also have government audit bodies examine whether they meet domestic standards for the performance of government and other public bodies (such as a Comptroller-General, an Independent Evaluation Office, or a National Audit Office). A recently developed measure of CBI (Adrian, Khan, and Menand 2024) has introduced a new CBI variable—the explicit prohibition for state audit bodies to review monetary policy actions—that has not been included in previous assessments or other indices. This criterion evaluates whether state audit bodies with oversight powers are explicitly restricted to examining the operational efficiency aspects of the central bank.

[20] The safeguards assessment applies four risk ratings, with higher values meaning higher risk. In this paper, the risk ratings are reversed so that higher values mean lower risk. Specifically, the risk ratings are as follows: 1—high risk; 2—medium-high risk; 3—medium-low risk; and 4—low risk.

[21] According to Romelli (2022), turnover indices do not consider the reasons behind the dismissal of the governor, and the focus is solely on the governor, overlooking the entire board of directors. Also, although political pressure can undermine the independence of central banks, quantifying the impact of such pressures in a comparable manner across a large sample of countries and over time is difficult. Bandaogo (2021) notes that the causal effect of the de facto governors' turnover rate on inflation has been harder to document, because in countries with a high turnover rate, inflation can be high because of political interference by the government, leading to more frequent firings of the central bank governor, and conversely, governors may be fired because they could not keep inflation low. De Haan and Kooi (2000), using a sample of 82 developing countries over the period 1980–89, found that higher turnover of governors is positively related to inflation only if high-inflation countries are included in the sample. Adrian, Khan, and Menand (2024) note that in some countries, the governor or board members voluntarily step down some time after a new government has been appointed—say, every five years—and it is not clear whether such turnover is different (either worse or better) than the situation where the governor or board members are officially dismissed for nonpolicy-related reasons every three or four years. They argue that further research is needed to ensure proper de facto variables, such as the governors' turnover indicator, are developed and included in the CBI analysis.

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Figure 9. *De Facto* CBI Effectiveness–Safeguards Assessment



Sources: IMF safeguards assessments and IMF staff calculations.

Note: The countries included in the safeguards assessments are Georgia, Armenia, the Kyrgyz Republic, and Tajikistan (CCA) and Tunisia, Pakistan, Egypt, Morocco, Jordan, and Djibouti (MENAP). Panel 1 compares average risk ratings over the 2005–15 period with those during the 2016–latest safeguard assessment period (2024H1). Panel 2 shows the share of countries (in each group) where ratings have improved since 2016 (comparing the latest assessment with the pre-2016 safeguard assessment). CBI = central bank independence; CCA = Caucasus and Central Asia; MENAP = Middle East, North Africa, Afghanistan, and Pakistan.

Snapshot of CBI Components

A more granular study of the components of the six *de jure* CBI pillars based on Romelli (2024) data further reveals specific areas of strength and weakness of CBI in ME&CA countries (Table 1).

- In general, central banks in the ME&CA region have strong financial independence. Most central banks in the region have well-defined provisions related to the payment and level of initial authorized capital, autonomy over their annual budgets (approval of the central bank budget is decoupled from that of the government), and sound legal arrangements regarding distribution of central bank's profits and losses. However, there are still some weaknesses, particularly related to central bank recapitalization, wherein it is not automatic but subject to approval by the executive branch or parliament.
- Accountability frameworks also remain sound, wherein the central bank reports annually to the executive branch and submits annual reports to parliament. Furthermore, detailed annual financial statements in accordance with international accounting standards are disclosed in most countries. In most cases, these financial statements are audited by an external auditor, in line with the IMF safeguards assessment recommendations, or certified internally or by a public sector authority (for example, Qatar).

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- ME&CA central banks are largely independent in formulating their monetary policies. This reflects recent reforms in some countries clarifying central banks' responsibility for formulating and implementing monetary policies (Pakistan 2022; Saudi Arabia 2020), as well as granting them final authority over actions related to achieving their respective monetary objectives (Tunisia 2016; Egypt 2020; Saudi Arabia 2020).[22] Nonetheless, a few countries lack clarity on final authority in monetary policy in central bank legislation.
- The main area of weakness relates to the central bank governance framework, particularly the governor and the central bank board. This is observed across CCA, MENAP, and GCC regions. Though provisions for dismissal are generally strong (allowed only for nonpolicy reasons, such as incapacity or violation of law), appointments of governors and central bank boards are often decided only by the executive branch.[23] Moreover, although most governors have a term of five years or longer, central bank board members' terms are four years or less in several countries, which could subject board members to political pressure from electoral cycles. Further, only a few countries in the region have staggered terms for board members. Finally, several countries in the region have mandatory participation of government representatives on the central bank board, which could weaken the board's independence (Cukierman 1992; Romelli 2022, 2024).
- Moreover, limited *de jure* safeguards through legislation on lending to the government in some countries, most notably in the GCC, risk muddling the core mandate of central banks and reducing the effectiveness of monetary policy. IT countries in the region do not allow for central bank advances or lending to the government, and the central bank is prohibited from buying or selling government securities in the primary market. However, on a *de jure* basis, central bank lending to the government, participation in the primary market, and temporary advances to the government are not clearly legislated with proper provisions, particularly in countries with ER anchors and other monetary policy frameworks.[24]
- Lastly, the clarity and primacy of the typical core objective—price stability—in central bank legislation show weaknesses and would need to be strengthened.[25]

[22] These legal reforms include the State Bank of Pakistan (Amendment) Act, 2022; adoption of the Saudi Central Bank Law by Royal Decree No. M/36; the new statutes of the Tunisia's Central Bank Law (Law No. 2016-35, 2016); and the new Central Bank of Egypt Law No. 194, 2020.

[23] In many countries, the governor and other senior officials of the central bank are appointed through a governmental process. However, to ensure some measure of balance, the appointment of the governor should be carried out by separate bodies (Romelli 2024).

[24] The assessment of *de jure* "lending to government" is based on the following criteria from Romelli (2024): (1) restriction on lending to government; (2) who decides financing conditions to government (maturity, interest, amount); and (3) limits on central bank lending. "Advances to government" is based on (1) limitation on advances, (2) maturity of advances, and (3) interest rate on advances. "Central bank in primary market" is based on "central bank prohibited from buying or selling government securities in the primary market."

[25] The subpillar of "objectives" in Romelli (2024) is assessed based on whether price stability is the single or primary objective; whether price stability comes together with nonconflicting objectives but without priority; whether price stability comes together with other goals such as financial stability that may conflict with it, without priority; whether price stability comes together with economic growth or development with no priority; and whether objectives do not include price stability.

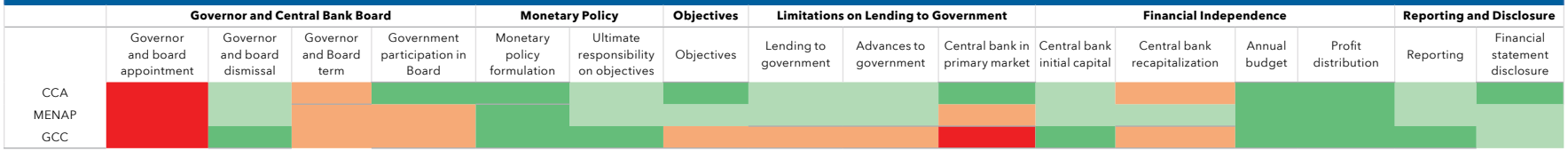
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Table 1. *De Jure* CBI Components in ME&CA Countries (2023)

1. *De Jure* CBI Components in ME&CA Countries (2023)



2. *De Jure* CBI Components in ME&CA–Regional Aggregates (2023)



Sources: Romelli (2024) *de jure* CBI data and IMF staff calculations.

Note: Dark green represents a strong degree of independence, whereas dark red represents the least degree of independence. The calculation uses Romelli (2024) *de jure* CBI data at a more disaggregated level and is based on simple averages of the more disaggregated subindicators. The latest data point is 2023. The Romelli data may differ from the authorities' own assessment. Details of the calculation approach for the color coding are in Annex 5. MENAP region excludes GCC countries.

CBI = central bank independence; CCA = Caucasus and Central Asia; GCC = Gulf Cooperation Council; ME&CA = Middle East and Central Asia; MENAP = Middle East, North Africa, Afghanistan, and Pakistan.

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Policy Recommendations

- CBI can be strengthened through reforms aimed at enhancing legislation (*de jure*) and *de facto* implementation (see Box 3 for country examples). The following recommendations outline a general direction for such reforms:
- ***Review and revise the legal framework.*** A comprehensive review of existing central bank legislation can identify necessary amendments to enhance its independence (Khan 2017; Bossu and Rossi 2019; Al Ajmi and others 2023; Adrian, Khan, and Menand 2024). Consensus building on amendments among stakeholders is crucial. Clearly shielding the central bank's independence from political influence will empower it to implement measures that anchor inflation and inflation expectations, thereby building credibility with economic agents. Given that central banks often carry additional mandates, such as ensuring financial stability or promoting economic growth, prioritizing price stability is essential (IMF 2015). The legislation should also grant the central bank the authority to develop and adopt necessary tools for implementing monetary policy. Central banks should refrain from lending to the government since such practices can undermine the central bank's mandate of price stability and risk delaying necessary policy measures to correct fiscal and macroeconomic imbalances. Although an absolute restriction on lending to the government may not always be possible depending on the country's level of development, it is critical for central bank legislation to specify provisions on the circumstances and conditions under which central bank financing is temporarily allowed.[26,27]
- ***Ensure financial independence.*** Granting the central bank the authority to approve its own budget will reduce dependence on the approving body, whether executive or legislative, and help prevent conflicts of interest. Clearly defined profit distribution rules that address the replenishment of a specialized loss coverage fund, alongside necessary recapitalization and provisioning, should be enshrined in legislation. As with all forms of independence, *ex post* accountability (through enhanced central bank transparency—see the bullet point on accountability and transparency) is critical to ensure that financial independence is not misused.
- ***Improve governance.*** Appointing the central bank governor and board members based on merit and expertise through transparent selection criteria and processes will enhance the institution's independence and credibility, thereby improving its capacity to maintain price stability (Dincer and Eichengreen 2014; IMF 2020). Having staggered terms for board members that exceed the terms of executive and legislative bodies will help minimize political influence and ensure consistent implementation of long-term price stability-oriented policies. Furthermore, the central bank board should have nonexecutive members who provide independent oversight of the central bank's management of policy decisions and day-to-day issues. Ideally, the number of nonexecutive members should exceed that of executive members for more robust board oversight (BIS 2009; Bossu and Rossi 2019).[28] Improving governance also encompasses strengthening internal organization, including risk management and cybersecurity (Khan 2016; Khan and Malaika 2021), internal audit, human resource management, and strategic planning.
- ***Establish strong accountability and transparency mechanisms.*** Central banks must be held accountable for achieving their objectives in a manner that does not compromise their operational autonomy (IMF 2015). Presenting annual reports alongside audited financial statements to parliament enhances the

[26] In developing countries without market access, central bank financing to the government may be warranted in the short run, with clear operational arrangements based on key principles, such as loans being provided at short-term maturity and the cost of central bank lending to the government being established by law and based on market interest rates, among other principles (Jácome and others 2012). Central bank lending to the government, or other quasi-fiscal interventions, could be necessary from a larger macroeconomic perspective in extreme crisis scenarios (Hooley and others 2023).

[27] Exceptions to the prohibition of monetary financing should be specified in the central bank law.

[28] A robust board oversight plays the critical role as enablers of high levels of transparency and strong accountability, which are also a critical counterbalance for high levels of central bank autonomy (see next bullet for discussion on independence and accountability being the two sides of the same coin).

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central bank's accountability to the public and can bolster its credibility. Additional tools include publication of meeting minutes of relevant decision-making or advisory bodies and disclosure of information on the central bank's code of conduct and human capital management (for details, see IMF 2020).

- ***Enhance communication.*** Central banks' communication serves to inform the public about policy decisions and should be transparent and timely (IMF 2015). This includes, but is not limited to, press releases, monetary policy reports, data publications, engagement with stakeholders, and the design of presentation methods and announcement frequencies. Establishing effective communication frameworks and channels aligned with the central bank's accountability function will also improve monetary policy transmission by reducing uncertainty and enhancing credibility (Unsal and Papageorgiou, forthcoming). Furthermore, creating outreach programs and tailoring communication to different target audiences to educate the public can improve understanding of central banks' roles and operations and foster broader social support for prudent monetary policies.

Enhancing CBI—both *de jure* and *de facto*—is an ongoing challenge, and the process will take time and require political support and persistent efforts. It will require changes in both legislation and implementation and involve a range of stakeholders from governments, the legislature, and central banks themselves.

It is also worth noting that when fiscal and monetary authorities work together to fight against the crisis, such as during the 2008 global financial crisis and the COVID-19 pandemic, the two authorities should remain independent (Chen and others 2022). Collaboration on crisis intervention should be accompanied by transparent reporting and explicit exit strategies and be conducted in a way that does not infringe on central banks' autonomy to fulfill their core mandates (Hooley and others 2023). Collaboration during a crisis period is not equivalent to co-decision making by government on monetary policy, and fiscal and monetary authorities should maintain independence to pursue their respective objectives.

Box 3. Strengthening CBI—Country Examples

Somalia

The Central Bank of Somalia (CBS) was reestablished in 2009, amid the civil war (1991–2012) that led to a complete state collapse. Prior to 1991, the CBS operated under the 1968 Central Bank Act, which set out the bank's three main functions: fiscal agent to the government, financial supervisor and regulator, and currency issuer. However, since the implosion of the financial system in the 1980s, high public expenditures by Somali governments and circulation of counterfeit banknotes fueled inflation. Inflation was estimated to be between 20 percent and 50 percent per year in South-Central Somalia during 2002–09 (African Development Bank 2010).

Beginning in 2009, the Transitional Federal Government (2004–12) attempted to reestablish the CBS with support from international partners. In April 2012, the CBS Act was passed, reaffirming the three main functions of the CBS and adding new mandates, including managing foreign exchange reserves, conducting monetary and exchange rate policies, and administering payment, clearing, and settlement systems. The institutional capacity of the CBS, however, was extremely limited, and it lacked capital to fund its operations. All government transactions were conducted in cash, and the CBS lacked connectivity with the international financial system, local commercial banks, and the Ministry of Finance. The economy was effectively dollarized, and counterfeit Somali shilling notes remained in circulation for low-value transactions.

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Box 3. Strengthening CBI—Country Examples (Concluded)

Concerns mounted in 2013 about the integrity of CBS governance and the bank's lack of independence from the government. That year, the bank experienced rapid leadership turnover, and no board of directors was appointed (Somalia Financial Governance Report 2023). The Federal Government of Somalia, which replaced the transitional government in 2012, initiated a series of reforms to strengthen the CBS and demonstrated sustained political commitment to its independence. Since November 2013, central bank leadership has stabilized, with only two governors serving over the past decade. The current governor has completed a full term and has been reappointed for a second term. The CBS Board meets regularly, has established board committees, and ensures compliance with annual financial reporting and audit responsibilities. The CBS adopted a new organizational structure to support its transformation into a policy-oriented institution organized by function.

The experience of the CBS illustrates the essential roles of political commitment and persistent reform efforts in strengthening CBI. Although there is still some way to go for the CBS to further strengthen its independence and operations, the country's reform efforts have effectively stabilized inflation at an average of about 3.6 percent during 2013–23.

CCA: From Formation to Modernization

Soon after the collapse of the Soviet Union in 1991, central banks in the CCA countries were created and national currencies were introduced.

After the first generation of reforms in the 1990s that established central bank legislation and independence following international best practices, most CCA countries made notable progress in developing market-based financial instruments, including abolishing interest rate controls and establishing interbank and government securities markets. Furthermore, most CCA countries (excluding Turkmenistan) transitioned to more flexible exchange rate regimes, paving the way for two oil importers—Armenia (2006) and Georgia (2009–10)—and later oil exporter Kazakhstan (2015) to initiate a transition to an IT framework. Uzbekistan joined the IT country group in 2020 following reforms aimed at transforming from a state-led to a market-oriented economy.

Backed by a relatively strong institutional setup, the central banks of Armenia and Georgia clearly identified inflation targets, established policy rates, and developed monetary policy instruments (Akbal and others 2023), all of which contributed to curbing the inflation surge during and after the COVID-19 pandemic.

Despite significant reforms and continuous progress over the past 25 years, structural weaknesses remain and have affected *de facto* CBI in CCA countries. Akbal and others (2023) identify factors that compromise *de facto* CBI in the region, including government influence over governors, the composition of monetary policy committees, and governance issues related to board members, such as a limited number of nonexecutive board members and relatively short terms of service. Moreover, underdeveloped capital markets, directed lending at below-market interest rates (Uzbekistan and Turkmenistan), and central bank lending to banks (Turkmenistan) and governments (Azerbaijan and Tajikistan), albeit with legal limits, are still allowed, weakening central banks' operational independence and the effectiveness of monetary policy.[3]

The evolution of CCA central banks shows that although development started from broadly similar conditions, progress in structural reforms largely shaped and reinforced central banks' effectiveness. Countries that were ahead in implementing reforms in governance, regulation, and anticorruption built stronger central banks, with more efficient monetary policy, deeper financial sectors, and greater capacity to manage economic distress.

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Box 3. Strengthening CBI—Country Examples (Concluded)

Recent Examples

ME&CA central banks have continued to improve their independence over the past decade. For instance, starting in 2019, a new central bank law enhanced the independence of the Central Bank of Uzbekistan and set price and banking sector stability as its mandate. In 2020, Egypt adopted a new central bank and banking sector law to improve the central bank's supervisory and regulatory roles and to foster financial stability and inclusion. The Saudi Central Bank Law, enacted under Royal Decree No. M/36 in 2020, replaced the Saudi Arabian Monetary Agency Law and granted the Saudi Central Bank expanded powers to issue regulations, manage financial institutions, and achieve its objectives. Building on this law, the Saudi authorities continue to strengthen operational independence, accountability framework, transparency, and legal protection. In January 2022, Pakistan passed amendments to the State Bank of Pakistan Act, granting the central bank greater financial independence and autonomy. The amended law prohibits any direct lending to the government and any purchases of government-issued securities in the primary market.

Source: IMF staff.

Note: CBI = central bank independence; CBS = Central Bank of Somalia; CCA = Caucasus and Central Asia; IT = inflation targeting; ME&CA = Middle East and Central Asia.

[1] Concerns over CBS integrity first emerged in July 2013, when a report by the UN Somalia and Eritrea Monitoring Group alleged that the CBS was at the heart of "systematic misappropriation, embezzlement, and outright theft of public resources." The governor resigned in September 2013, although strongly denying the allegations. The newly appointed governor then resigned within seven weeks, citing political interference with CBS operations.

[2] See IMF Country Report No. 24/210 (July 2024) on the Republic of Uzbekistan, and IMF Press Release No. 24/118 on Turkmenistan.

B. Central Banks in a Changing World

The lessons of the global financial crisis inform the discourse on expanding central bank responsibilities. More recently, during the COVID-19 pandemic, central banks in the ME&CA countries adapted and broadened their toolkits, which catalyzed discussions around additional central bank responsibilities, including fostering social equity and supporting economic transformation that typically fall under fiscal and structural policy domains.

Caution is essential in endorsing new central bank responsibilities while safeguarding independence. Embracing new responsibilities can enhance central banks' effectiveness in the rapidly evolving global economic and financial environment. However, it poses risks to CBI and may detract from central banks' primary mandates of monetary and financial stability. Authorities must carefully evaluate the implications of assigning new tasks to central banks, with particular attention to three key challenges.

- *Climate change.* Climate change considerations are influencing central banks' monetary policy frameworks. As climate change affects supply and demand dynamics, some central banks have begun to integrate climate risks into their monetary policy strategies (Tamez, Weenink, and Yoshinaga 2024). Regulatory changes have also been contemplated to encourage commercial banks to undertake greener investments (Skinner 2021; Cullen 2023), facilitated by the sustainable finance taxonomy, which identifies activities aligning with climate and sustainability goals. Understanding climate-related risks is important for both price and financial stability, and incorporating these analyses into monetary frameworks must be approached in a manner that does not compromise central banks' primary objective of price stability.

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- *Fintech.* The emergence of fintech is reshaping central bank operations and mandates. The swift progress in fintech, including advancements in artificial intelligence and cloud computing, alongside increased mobile and internet accessibility, is affecting how central banks function. This technological innovation presents an opportunity to deepen financial systems, enhance access to financial services, foster competition, and improve efficiency for consumers. However, without appropriate monitoring and regulation, fintech could contribute to financial stability risks. Establishing a regulatory framework for fintech infrastructure may require legislative amendments to broaden central banks' statutory objectives and functions, as well as to provide more flexible decision-making capabilities (IMF 2021).
- *Central bank digital currencies (CBDCs).* The exploration of CBDCs presents both opportunities and challenges for central banks. Numerous central banks, including those in 19 countries within the ME&CA region, are investigating the issuance of CBDCs to foster financial inclusion and improve cross-border payment efficiency (IMF 2024). However, CBDCs may have significant implications for financial stability, particularly for commercial banks reliant on deposits. Their introduction could alter central banks' monetary operations, affecting mechanisms such as open market operations and reserve requirements that underpin monetary policy transmission. The complexity of CBDCs' implications necessitates thorough research by central banks, international financial institutions, and academia, and their integration into the fintech landscape will likely require legislative adjustments.

Although central banks in the ME&CA countries will continue to tackle the monetary and financial challenges stemming from new and emerging issues, their actions should firmly align with their legal mandates of price and financial stability, which have proven instrumental to a country's macroeconomic stability, and they should refrain from quasi-fiscal activities such as direct lending for development.

Overall, a reform package to strengthen CBI should be tailored to each country's circumstances and sequenced in accordance with local capacity and political economy realities. Enhancing a central bank's legal framework, financial independence, and governance should be considered first-order priorities given their critical importance in shielding the central bank's independence from political influence and preventing fiscal dominance (Figure 10).

Figure 10. Sequence of Reforms—An Illustrative Road Map



Source: IMF staff.

C. IMF Tools for Strengthening CBI

The IMF offers a variety of tools to help member countries, and central banks in particular, strengthen *de jure* and *de facto* CBI. This includes capacity development that aims at enhancing technical capacity (such as the widely used capacity development on Forecasting and Policy Analysis System, which helps strengthen central banks' capacity for data-driven forecasting and analysis in support of monetary policymaking), technical assistance that supports country authorities in amending central bank laws in line with best practices, and Financial Sector Assessment Programs that assess the overall health of countries'

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financial sectors as well as the operational independence and sound governance of financial sector supervisors (see Annex 6). In addition, the IMF offers several capacity-building tools that can help strengthen CBI and enhance monetary policy effectiveness:

- *A Central Bank Balance Sheet Assessment* provides a forward-looking analysis of potential losses of a central bank (thus helping determine whether the central bank's capital level would remain adequate), determines profit distribution options, and establishes a risk-based maintenance mechanism. If risks of not meeting capital targets arise, the assessment tool identifies recapitalization needs, ultimately enhancing financial independence and credibility of the central bank, while managing expectations of its stakeholders.[29]
- *A Central Bank Operational Efficiency Review* employs stochastic frontier analysis to benchmark expenses across a data set of 90 central banks, identifying areas where costs exceed those of peers, thereby facilitating proactive engagement with stakeholders (Veyrune and Zerbo 2023). As central banks must effectively use resources to achieve policy objectives, rationalizing operational costs is essential to avoid the need for fiscal support and to maintain credibility. This approach enhances communication with the Ministry of Finance and informs cost management strategies.
- *A Central Bank Transparency Code* Review provides a framework to enhance transparency in central banks while considering their justified confidentiality needs. It consists of five pillars: governance, policies, operations, outcomes, and official relations. Enhanced transparency will ensure that stakeholders understand and support the need for CBI, while allowing the central bank to be held accountable for its actions—ultimately contributing to policy effectiveness.[30]
- *IMF Central Bank Board Workshops* offer closed-door and focused discussions on governance and independence issues for key decision makers, including governors and deputy governors, nonexecutive members, and ministers of finance. The workshops address tailored topics, such as legal frameworks, strategic planning, decision-making arrangements, audit, risk management and cybersecurity, as well as transparency, and foster informal discussions on the significance of CBI.

[29] An example can be found in IMF Country Report No. 23/363.

[30] The Central Bank Transparency Code can be applied by central banks themselves to review their existing transparency practices, or the IMF can be requested to perform a Central Bank Transparency Code Review. See also IMF (2015) and https://www.imf.org/external/datamapper/CBT/.

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5. Conclusions

The independence of ME&CA central banks has been strengthened through a series of legislative reforms over the past several decades, resulting in a steady decline in inflation rates in these countries regardless of their choice of monetary policy framework. More recently, the ME&CA countries' experience in curtailing the postpandemic inflation surge suggests that strong CBI, combined with clear price stability mandates, played an important role in supporting central banks' swift and decisive actions to tackle inflationary pressures.

The empirical analysis confirms the statistically significant effect of CBI on reducing inflation and finds that this effect strengthens over time. Stronger CBI contributes to maintaining a stable macroeconomic environment, which supports improvements in fiscal positions.

Further efforts are needed to strengthen CBI in ME&CA countries. Although many aspects of CBI—including setting clear objectives, formulating monetary policies, maintaining financial independence, and establishing transparent reporting frameworks—have improved substantially, areas concerning fiscal dominance and the appointment of governors and central bank board members will require additional efforts. In light of the critical importance of shielding the central bank's independence from political influence, first-order reform priorities should be given to enhancing a central bank's legal framework, financial independence, and governance. Reforms to enhance a central bank's accountability and transparency mechanisms, as well as communication frameworks, should proceed in accordance with a country's own reform agenda and implementation capacity. The process of enhancing CBI will likely take time as it requires changes in legislation and in its implementation and involves a range of stakeholders from the governments, the legislature, and the central banks.

More recently, central banks have been called upon to take an active role in addressing emerging issues such as climate change, fintech, and CBDCs. Caution is essential in endorsing new responsibilities while safeguarding independence, and any new mandates should be firmly anchored in the core mandates of price and financial stability. Furthermore, when countries fight against future crises, monetary policy should remain anchored in its core mandate of price stability, with any coordination between fiscal and monetary authorities conducted in a way that does not infringe on central banks' autonomy to fulfill their core mandates.

Strengthening CBI will help fight inflation and support stable long-term growth. The IMF stands ready to further assist the country authorities in these efforts.

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Annex 1. Data Sources and Summary Statistics

A. Country Group Composition

Throughout this paper, country groups, including AEs, EMDEs, and LIDCs, follow the IMF *World Economic Outlook* classification. Emerging market economies (EMEs) include emerging market and developing economies (EMDEs) as per the *World Economic Outlook* classification but exclude low-income and developing countries (LIDCs).

Middle East and Central Asia (ME&CA): Afghanistan (AFG), Algeria (DZA), Armenia (ARM), Azerbaijan (AZE), Bahrain (BHR), Djibouti (DJI), Egypt (EGY), Georgia (GEO), Islamic Republic of Iran (IRN), Iraq (IRQ), Jordan (JOR), Kazakhstan (KAZ), Kuwait (KWT), the Kyrgyz Republic (KGZ), Lebanon (LBN), Libya (LBY), Mauritania (MRT), Morocco (MAR), Oman (OMN), Pakistan (PAK), Qatar (QAT), Saudi Arabia (SAU), Somalia (SOM), Sudan (SDN), Syrian Arab Republic (SYR), Tajikistan (TJK), Tunisia (TUN), Turkmenistan (TKM), United Arab Emirates (UAE), Uzbekistan (UZB), West Bank and Gaza (WBG), Yemen (YEM).

Caucasus and Central Asia (CCA): Armenia (ARM), Azerbaijan (AZE), Georgia (GEO), Kazakhstan (KAZ), the Kyrgyz Republic (KGZ), Tajikistan (TJK), Turkmenistan (TKM), Uzbekistan (UZB).

Middle East and North Africa (MENA): Algeria (DZA), Bahrain (BHR), Djibouti (DJI), Egypt (EGY), Islamic Republic of Iran (IRN), Iraq (IRQ), Jordan (JOR), Kuwait (KWT), Lebanon (LBN), Libya (LBY), Mauritania (MRT), Morocco (MAR), Oman (OMN), Qatar (QAT), Saudi Arabia (SAU), Somalia (SOM), Sudan (SDN), Syrian Arab Republic (SYR), Tunisia (TUN), United Arab Emirates (UAE), West Bank and Gaza (WBG), Yemen (YEM).

MENAP: MENA including Afghanistan (AFG) and Pakistan (PAK).

Gulf Cooperation Council (GCC): Bahrain (BHR), Kuwait (KWT), Oman (OMN), Qatar (QAT), Saudi Arabia (SAU), United Arab Emirates (UAE).

B. Data Sources

CBI data. The CBI data are from Romelli (2024), who developed a new and comprehensive index of CBI that covers a wider range of central bank characteristics, building on measures of CBI developed by Cukierman and others (1992) and Grilli, Masciandaro, and Tabellini (1991). This index provides information on 42 criteria of central bank institutional design that fall into six dimensions: independence of governor and central bank board, objectives independence, limitations on lending to the government, financial independence, and reporting and disclosure. A score for each of the six dimensions of the index is obtained by assigning equal weights to each criterion in each dimension. The CBI index ranges from 0 (no independence) to 1 (full independence).

ME&CA countries covered under the Romelli (2024) data: Afghanistan (AFG), Algeria (DZA), Azerbaijan (AZE), Bahrain (BHR), Egypt (EGY), Georgia (GEO), Islamic Republic of Iran (IRN), Iraq (IRQ), Jordan (JOR), Kazakhstan (KAZ), Kuwait (KWT), Lebanon (LBN), Libya (LBY), Mauritania (MRT), Morocco (MAR), Oman (OMN), Pakistan (PAK), Qatar (QAT), Saudi Arabia (SAU), Somalia (SOM), Tunisia (TUN), Turkmenistan (TKM), United Arab Emirates (UAE), Uzbekistan (UZB), Yemen (YEM).

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***De jure* and *de facto* independence and accountability data.** The data used are from the Independence and Accountability, Policy and Operational Strategy, and Communications (IAPOC) measure on monetary policy frameworks (Unsal and Papageorgiou, forthcoming). This measure is available only for a few ME&CA countries.

Exchange rate regimes. The regime is classified as in the IMF Annual Report on Exchange Arrangements and Exchange Restrictions database. Hard pegs include exchange arrangements with no separate legal tender and currency board arrangements; soft pegs include conventional pegged arrangements, pegged exchange rate within horizontal bands, stabilized arrangements, crawling pegs, crawl-like arrangements, and other managed arrangements; and floating arrangements include floating and free-floating arrangements.

Bank and financial crises. The data are from Laeven and Valencia (2018). The database includes all systemic banking, currency, and sovereign debt crises during the period 1970–2017.

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Annex 2. Panel Regressions

A. Methodology

The panel regression results are obtained by estimating the following equation:

$$\pi_{i,t} = \alpha_c + \gamma\pi_{i,t-2} + \beta CBI_{i,t} + \delta X_{i,t-1} + v_i + \varepsilon_{i,t}, \quad (1)$$

where $\pi_{i,t}$ is the headline inflation rate in country i at time t, is the index of a central bank independence (CBI), $X_{i,t-1}$ represents a vector of variables that are often associated with inflation, including lagged inflation, exchange rate regime, a dummy for currency crisis, and the output gap. v_i is a country fixed effect, and $\varepsilon_{i,t}$ is the error term. To control for potential endogeneity problems, the inflation rate has been lagged twice when used as an explanatory variable. This regression equation generally follows the specification used in the literature, including Jácome and Pienknagura (2024) and Garriga and Rodríguez (2020).

B. Estimates

Inflation and Overall CBI Index

Annex Table 2.1 presents the results of fixed effects estimations of inflation on a set of explanatory variables, among which the variable of interest is the overall CBI index. The estimated coefficient for the CBI index is both statistically significant and economically meaningful. The coefficient implies that higher levels of CBI are negatively associated with inflation when other variables that affect inflation are controlled for. This finding broadly holds for the sample of advanced economies (column 1), the sample of emerging market economies (column 2), and the sample of all countries (column 3). For the sample of all countries, an interaction term with a Middle East and Central Asia (ME&CA) dummy variable is added to capture the effect of the CBI index on ME&CA countries. However, the coefficient on the interaction term is insignificant, indicating a statistically insignificant finding on the effect of CBI on inflation in ME&CA countries. This finding is consistent when applying a similar regression to an ME&CA-country-only sample. Fixed effects regressions are also applied to inflation volatility, as measured by the standard deviation of monthly inflation (columns 4–6). No statistically significant results are found for the relationship between CBI index and inflation volatility.

Annex Table 2.1. Panel Regression Estimates on the Overall CBI Index

Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)
Sample	**AE**	**EME**	**All**	**AE**	**EME**	**All**
	Dependent Variable: Inflation (Transformed)			**Dependent Variable: Standard Deviation of Monthly Inflation (Transformed)**		
CBI index (*t*–1)	–4.777***	–4.952*	–3.320**	0.410	0.489	–0.830**
	(1.667)	(2.718)	(1.663)	(0.248)	(0.787)	(0.418)
CBI index (*t*–1)* ME&CA			0.972			1.240**
			(3.010)			(0.601)
Inflation (*t*–2)[1]	0.215***	0.541***	0.398***	0.037	0.048***	0.061***
	(0.034)	(0.150)	(0.102)	(0.025)	(0.013)	(0.011)

(*continued*)

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Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)
Sample	**AE**	**EME**	**All**	**AE**	**EME**	**All**
	Dependent Variable: Inflation (Transformed)			**Dependent Variable: Standard Deviation of Monthly Inflation (Transformed)**		
Standard deviation of monthly inflation (*t*–1)				0.308***	0.214***	0.244***
				(0.038)	(0.058)	(0.037)
Output gap (*t*–1)	0.104***	−0.057*	−0.092**	−0.046***	−0.016***	−0.017***
	(0.032)	(0.032)	(0.045)	(0.008)	(0.006)	(0.005)
US inflation (*t*–1)	0.201***	0.376**	0.463***	0.077***	0.136***	0.103***
	(0.048)	(0.162)	(0.103)	(0.016)	(0.032)	(0.023)
Soft pegged ER regime (*t*–1)	−0.633*	0.815	0.542	0.115*	−0.975	−0.156
	(0.312)	(1.307)	(0.773)	(0.065)	(1.146)	(0.183)
Floating ER regime (*t*–1)	−0.635***	1.115	0.833	0.195***	−0.951	0.068
	(0.192)	(1.422)	(0.698)	(0.036)	(1.138)	(0.151)
Currency crisis dummy (*t*–1)	6.153***	4.445**	6.616***	0.644***	0.685	0.332
	(0.097)	(2.112)	(1.882)	(0.150)	(0.480)	(0.327)
Constant	5.306***	3.716*	3.291***	−0.306	0.921	0.922***
	(1.303)	(1.893)	(1.124)	(0.216)	(0.662)	(0.191)
R^2	0.204	0.366	0.202	0.253	0.181	0.214
Number of observations	714	1,542	3,117	704	1,605	3,153
Number of countries	34	75	151	32	75	147

Source: IMF staff estimates.

Note: Robust standard errors are in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively. AE = advanced economy; CBI = central bank independence; EME = emerging market economy; ER = exchange rate; ME&CA = Middle East and Central Asia.

[1] Lagged twice for the regressions on inflation to avoid potential endogeneity in a panel setting. It was lagged once for the regressions on standard deviations of monthly inflation.

Inflation and CBI Subindicators

Annex Table 2.2 presents the results of fixed effects estimations of inflation on CBI subindices while controlling for a set of explanatory variables. For each subcomponent, an aggregate index of all other subcomponents is constructed by reweighting them. For example, when constructing the aggregate index of subcomponents excluding central bank monetary policy, each subcomponent other than central bank governance is reweighted equally and aggregated by taking a simple average (following the same approach as Romelli 2024).

A broad observation based on the coefficients on the CBI subindices is that the subindices, when aggregated, tend to show significant effects on inflation outcomes, rather than the individual subindex. This finding broadly holds for both the sample of AEs and the sample of EMEs.

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Annex Table 2.2. Panel Regression Estimates on the CBI Subindices (Sample of Advanced Economies)

Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: Inflation (Transformed)						
Sub-CBI index: policy (*t*–1)	–1.914					
	(1.646)					
Sub-CBI index: excl. policy (*t*–1)	–1.523					
	(1.754)					
Sub-CBI index: Board (*t*–1)		0.625				
		(0.836)				
Sub-CBI index: excl. Board (*t*–1)		–4.093***				
		(1.196)				
Sub-CBI index: objective (*t*–1)			–1.480**			
			(0.706)			
Sub-CBI index: excl. objective (*t*–1)			–1.150			
			(1.714)			
Sub-CBI index: lending (*t*–1)				–0.108		
				(0.860)		
Sub-CBI index: excl. lending (*t*–1)				–3.497**		
				(1.564)		
Sub-CBI index: finances (*t*–1)					1.587	
					(2.236)	
Sub-CBI index: excl. finances (*t*–1)					–2.912***	
					(0.955)	
Sub-CBI index: report (*t*–1)						–1.131
						(1.074)
Sub-CBI index: excl. report (*t*–1)						–2.504**
						(1.049)
Inflation (*t*–2)	0.256**	0.254*	0.256*	0.255*	0.257**	0.254*
	(0.126)	(0.127)	(0.126)	(0.126)	(0.124)	(0.126)
Output gap (*t*–1)	0.085*	0.085*	0.085*	0.085*	0.086*	0.085*
	(0.042)	(0.042)	(0.042)	(0.042)	(0.043)	(0.042)

(*continued*)

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Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: Inflation (Transformed)						
US inflation (*t*–1)	0.620***	0.625***	0.625***	0.625***	0.619***	0.625***
	(0.077)	(0.080)	(0.079)	(0.080)	(0.078)	(0.080)
Soft pegged ER regime (*t*–1)	0.533	0.663*	0.611*	0.492*	0.602*	0.516
	(0.329)	(0.354)	(0.357)	(0.287)	(0.347)	(0.319)
Floating ER regime (*t*–1)	0.423	0.397	0.457*	0.441	0.442*	0.421
	(0.253)	(0.254)	(0.263)	(0.273)	(0.255)	(0.253)
Currency crisis dummy (*t*–1)	4.638***	4.633***	4.634***	4.668***	4.602***	4.663***
	(1.290)	(1.308)	(1.290)	(1.296)	(1.293)	(1.299)
Constant	2.244*	2.513**	1.823	2.541**	0.874	2.698**
	(1.106)	(1.036)	(1.233)	(0.994)	(1.513)	(1.215)
R^2	0.465	0.466	0.467	0.465	0.467	0.465
Number of observations	1,401	1,401	1,401	1,401	1,401	1,401
Number of countries	36	36	36	36	36	36

Source: IMF staff estimates.

Note: Robust standard errors are in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively. CBI = central bank independence; ER = exchange rate.

Annex Table 2.3. Panel Regression Estimates on the CBI Subindices (Sample of Emerging Market Economies)

Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: Inflation (Transformed)						
Sub-CBI index: policy (*t*–1)	2.319					
	(3.590)					
Sub-CBI index: excl. policy (*t*–1)	–11.202***					
	(4.233)					
Sub-CBI index: Board (*t*–1)		4.628				
		(4.673)				
Sub-CBI index: excl. Board (*t*–1)		–13.258*				
		(6.775)				
Sub-CBI index: objective (*t*–1)			–4.492**			
			(1.861)			
Sub-CBI index: excl. objective (*t*–1)			–1.275			
			(4.496)			

(*continued*)

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Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: Inflation (Transformed)						
Sub-CBI index: lending (*t*–1)				–5.229		
				(3.495)		
Sub-CBI index: excl. lending (*t*–1)				–1.703		
				(5.007)		
Sub-CBI index: finances (*t*–1)					6.264	
					(4.813)	
Sub-CBI index: excl. finances (*t*–1)					–9.995***	
					(3.438)	
Sub-CBI index: report (*t*–1)						7.022
						(4.253)
Sub-CBI index: excl. report (*t*–1)						–10.009***
						(3.565)
Inflation (*t*-2)	0.600***	0.593***	0.600***	0.595***	0.597***	0.600***
	(0.048)	(0.049)	(0.048)	(0.049)	(0.050)	(0.048)
Output gap (*t*–1)	–0.003	–0.003	–0.003	–0.003	–0.003	–0.003
	(0.035)	(0.034)	(0.035)	(0.035)	(0.035)	(0.035)
US inflation (*t*–1)	0.547***	0.537***	0.531***	0.549***	0.526***	0.542***
	(0.123)	(0.121)	(0.121)	(0.125)	(0.116)	(0.124)
Soft pegged ER regime (*t*–1)	0.903	0.816	1.000	0.731	1.130*	0.687
	(0.654)	(0.650)	(0.621)	(0.662)	(0.648)	(0.626)
Floating ER regime (*t*–1)	–0.468	–0.541	–0.434	–0.556	–0.358	–0.519
	(0.512)	(0.519)	(0.519)	(0.503)	(0.494)	(0.507)
Currency crisis dummy (*t*–1)	9.695***	9.474***	9.631***	9.570***	9.530***	9.696***
	(1.674)	(1.600)	(1.677)	(1.589)	(1.648)	(1.670)
Constant	6.465***	7.021**	4.150*	4.793*	1.975	0.767
	(2.372)	(2.698)	(2.471)	(2.507)	(2.622)	(3.514)
R^2	0.514	0.514	0.514	0.514	0.514	0.514
Number of observations	2,792	2,792	2,792	2,792	2,792	2,792
Number of countries	75	75	75	75	75	75

Source: IMF staff estimates.

Note: Robust standard errors are in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively. CBI = central bank independence; ER = exchange rate.

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Robustness Checks

Structural reforms could increase the resilience of the economy to shocks, promote competition, and enhance the private sector's capacity to absorb shocks, thus contributing to stabilizing inflation. Moreover, structural reforms that enhance legal and regulatory frameworks in the broader economy may also have spillover effects on CBI. To control for the potential effect of these pro-competition structural reforms on inflation (Jácome and Pienknagura 2024), reform indicators are used as additional control variables in the robustness checks, and the results are reported in Annex Table 2.4. The two structural reform indicators are from the Fraser Institute, which offers a comprehensive panel data set. One indicator is about legal system and property rights and encompasses eight areas: judicial independence, impartial courts, protection of property rights, military interference in the rule of law and politics, integrity of the legal system, legal enforcement of contracts, regulatory costs of the sale of real property, and reliability of police; and the other indicator is about regulation, which encompasses three broad areas: credit market regulations (ownership of banks, private sector credit, interest rate controls, or negative real interest rates); labor market regulations (hiring regulations and minimum wage, hiring and firing regulations, hours regulations, conscription); and business regulations (administrative requirements, bureaucracy costs, starting a business, impartial public administration, licensing restrictions, cost of tax compliance). Furthermore, robustness checks are also conducted with an additional explanatory variable—the percentage change in crude oil prices—controlled for. Crude oil price (US$ per barrel) is measured by the simple average of three spot prices: Dated Brent, West Texas Intermediate, and Dubai Fateh. Annex Table 2.5 shows the panel regression results. In both sets of robustness checks, the significantly negative relationship between CBI and inflation generally continues to hold, except in the emerging market sample.

Annex Table 2.4. Panel Regression Estimates on the CBI Index with Additional Explanatory Variables on Structural Reforms

Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)
Sample	**AE**	**EME**	**All**	**AE**	**EME**	**All**
	Dependent Variable: Inflation (Transformed)					
CBI index (*t*–1)	–4.953***	–4.606	–2.085	–4.114**	–3.219	–1.848
	(1.690)	(4.875)	(2.115)	(1.767)	(5.805)	(3.039)
CBI index (*t*–1)* ME&CA			1.714			1.309
			(2.806)			(2.952)
Inflation (*t*-2)[1]	0.220***	0.600***	0.414***	0.181***	0.573***	0.412***
	(0.035)	(0.194)	(0.126)	(0.041)	(0.174)	(0.119)
Output gap (*t*–1)	0.105***	–0.122***	–0.148**	0.119***	–0.106**	–0.143**
	(0.032)	(0.044)	(0.062)	(0.034)	(0.041)	(0.064)
US inflation (*t*–1)	0.195***	0.402**	0.548***	0.174***	0.331	0.532***
	(0.049)	(0.171)	(0.116)	(0.052)	(0.201)	(0.154)
Soft pegged ER regime (*t*–1)	–0.721**	2.228	0.670	–0.475	2.495	0.677
	(0.331)	(1.741)	(0.802)	(0.329)	(1.505)	(0.704)
Floating ER regime (*t*–1)	–0.683***	2.700	1.048	–0.519**	2.958*	1.072
	(0.200)	(1.736)	(0.715)	(0.208)	(1.525)	(0.663)

(*continued*)

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Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)
Sample	**AE**	**EME**	**All**	**AE**	**EME**	**All**
	Dependent Variable: Inflation (Transformed)					
Currency crisis dummy (*t*–1)	6.159***	4.760**	7.196***	5.438***	4.697*	7.178***
	(0.099)	(2.283)	(2.111)	(0.270)	(2.353)	(2.206)
Legal system (*t*–1)	0.413	–1.627*	–0.952			
	(0.406)	(0.925)	(0.618)			
Regulation (*t*–1)				–0.686**	–1.788	–0.525
				(0.266)	(1.145)	(0.973)
Constant	2.281	9.965***	7.091***	10.045***	12.341**	5.288
	(3.566)	(3.633)	(2.286)	(2.321)	(4.836)	(4.694)
R^2	0.206	0.374	0.201	0.219	0.379	0.201
Number of observations	714	1,243	2,668	714	1,243	2,668
Number of countries	34	66	140	34	66	140

Source: IMF staff estimates.

Note: Robust standard errors are in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively. AE = advanced economy; CBI = central bank independence; EME = emerging market economy; ER = exchange rate; ME&CA = Middle East and Central Asia.

Annex Table 2.5. Panel Regression Estimates on the Overall CBI Index with an Additional Explanatory Variable on Crude Oil Price Change

Explanatory Variables	(1)	(2)	(3)
Sample	**AE**	**EME**	**All**
	Dependent Variable: Inflation (Transformed)		
CBI index (*t*–1)	–4.934***	–4.668	–3.138*
	(1.714)	(2.864)	(1.668)
CBI index (*t*–1)* ME&CA			0.685
			(3.272)
Inflation (*t*-2)[1]	0.247***	0.549***	0.397***
	(0.030)	(0.150)	(0.103)
Output gap (*t*–1)	0.177***	–0.025	–0.062
	(0.031)	(0.036)	(0.046)
US inflation (*t*–1)	0.273***	0.466***	0.554***
	(0.052)	(0.168)	(0.102)

(*continued*)

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Explanatory Variables	(1)	(2)	(3)
Sample	**AE**	**EME**	**All**
Soft pegged ER regime (*t*–1)	–0.337	1.133	0.897
	(0.330)	(1.224)	(0.723)
Floating ER regime (*t*–1)	–0.232	1.268	1.058
	(0.193)	(1.343)	(0.660)
Currency crisis dummy (*t*–1)	7.315***	4.976**	6.927***
	(0.108)	(2.152)	(1.859)
Crude oil price change (percent)	0.029***	0.027***	0.024***
	(0.003)	(0.005)	(0.004)
Constant	4.646***	2.923	2.562**
	(1.368)	(1.876)	(1.078)
R^2	0.470	0.373	0.215
Number of observations	714	1,542	3,117
Number of countries	34	75	151

Source: IMF staff estimates.

Note: Robust standard errors are in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent levels, respectively. AE = advanced economy; CBI = central bank independence; EME = emerging market economy; ER = exchange rate; ME&CA = Middle East and Central Asia.

[1] Lagged twice for the regressions on inflation to avoid potential endogeneity in a panel setting. It was lagged once for the regressions on standard deviations of monthly inflation.

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Annex 3. Local Projections

A. Empirical Method

This annex describes the empirical method used to study the dynamic effect of central bank independence (CBI) on inflation. Specifically, we estimate the dynamic cumulative effect of changes in CBI on inflation. In the same spirit as Jácome and Pienknagura (2024), we specify the following model and estimate it using the local projection method proposed by Jordà (2005):

$$\pi_{i,t+h} - \pi_{i,t-1} = \alpha_i^h + \beta^h CBI_{i,t} + \gamma^h CBI_{i,t-1} + \sum_{j=1}^{2} \delta^{j,h} X_{i,t-j} + \varepsilon_{i,t+h}, \quad (2)$$

where equation (2) is estimated for each horizon $h = 0, 1, 2, 3, 4, 5$. $\pi_{i,t+h}$ is headline inflation in country i at horizon $t + h$. Note that we use a transformed measure of inflation to reduce outliers, where inflation is transformed to inflation / (100 + inflation).

α_i^h is a country fixed effect for each horizon h. CBI is the index of CBI as in Romelli (2024). $X_{i,t-j}$ includes lagged country-level variables with a potential effect on inflation, including the output gap, lagged inflation, exchange rate regime, net claims of the central bank on the central government normalized by the money base, a control for global inflation, proxied by US inflation, and a banking crisis dummy to account for the potential inflationary effects of systemic banking crises. In addition to these variables, $X_{i,t-j}$ also includes changes in CBI from $t + 1$ to $t + h$ to address potential biases because of future changes in CBI. The coefficient of interest is β^h, which measures the dynamic effect of differences in the CBI index on cumulative changes in headline inflation at horizon h.

Equation (2) is first estimated using a global sample of about 150 countries. To capture the potential effect of belonging to a specific country group on the relationship between CBI and inflation, we estimate equation (3), which is an augmented specification of equation (2), where we also include an interaction variable between CBI and a dummy variable (*Dummy*) that takes the value 1 if a country is part of a certain country group (emerging market and developed economies [EMDEs], Middle East and Central Asia [ME&CA], Middle East and North Africa, exchange rate peggers, and so on) and 0 otherwise:

$$\pi_{i,t+h} - \pi_{i,t-1} = \alpha_i^h + \beta^h CBI_{i,t} + \gamma^h CBI_{i,t-1} + \theta^h [CBI_{i,t-1} * Dummy] + \sum_{j=1}^{2} \delta^{j,h} X_{i,t-j} + \varepsilon_{i,t+h}. \quad (3)$$

A positive (negative) and significant θ^h indicates that being part of one of the country groups amplifies (lowers) the effect of CBI on inflation. The overall effect of CBI on inflation is captured by the sum of the coefficients on CBI and the interaction variable ($\gamma + \theta$).

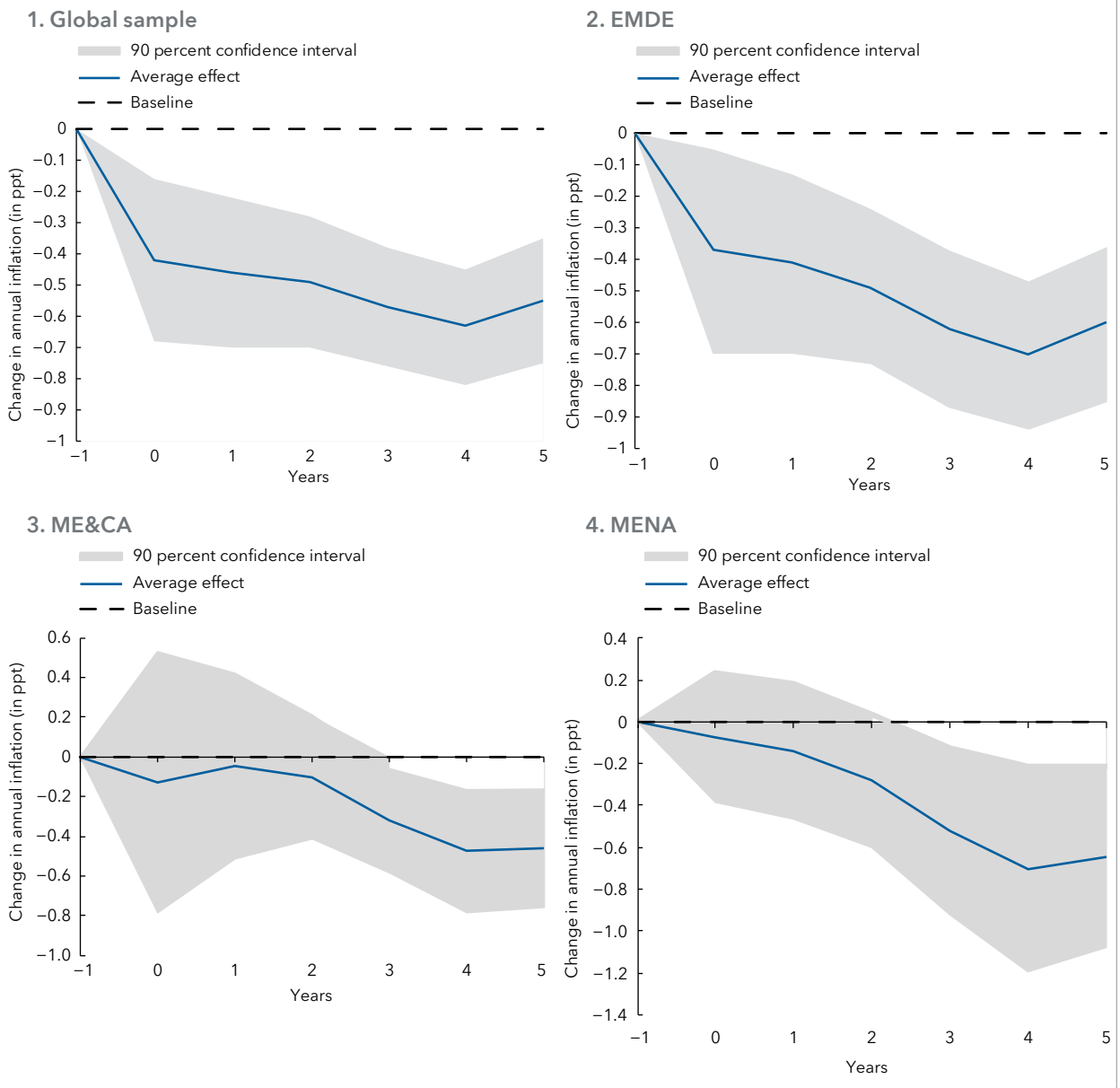
B. Results

Annex Figure 3.1 presents the estimated effect of a one-standard-deviation increase in the CBI index on inflation for each horizon. Panel 1 reports the results for the full (global) sample, suggesting that stronger CBI is associated with lower inflation, but that the full effect of CBI strengthening takes time to materialize. Inflation falls in the year after the increase in CBI by about 0.4 percentage points relative to the baseline of no change in CBI and continues on a downward path until four years later, when it reaches a peak decline of around 0.6 percentage points. Panel 2 represents the effect of stronger CBI on inflation in EMDEs. Although it shows the same trajectory as for the full sample, the magnitude of the decline in inflation is larger, particularly toward year 4, indicating that the inflation-reducing effect of CBI is stronger in EMDEs. Panels 3 and 4 show the dynamic relationship between CBI and inflation in the ME&CA and Middle East and North Africa

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regions, respectively. In both cases, improvements in CBI are not significantly associated with lower inflation in the early years. However, starting from year 3, higher CBI becomes significantly associated with lower inflation, suggesting that it takes more time for CBI reforms to produce the desired inflation effects across the ME&CA region relative to other country groups, including EMDEs. The lag with which CBI reforms produce their full effect on inflation can be explained by two factors: (1) inflation is sticky, and (2) institutional reforms, such as the strengthening of CBI, take time to materialize and have a material effect.

Annex Figure 3.1. Change in Annual Inflation Local Projection Estimates



Source: IMF staff calculations.

Note: Blue lines represent the estimated cumulative effect of a one-standard-deviation increase in the CBI index on inflation for each horizon. CBI = central bank independence; EMDE = emerging market and developed economy; ME&CA = Middle East and Central Asia; MENA = Middle East and North Africa.

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Annex 4. Co-Movements between Fiscal Outcomes and CBI Indices

Central bank independence (CBI) could be related to the fiscal position of countries through fiscal dominance. Fiscal dominance is measured by direct transfers from central bank to government as profit distributions, loans, and stock market transactions in the primary market. Since the data are not available at the preferred level of granularity, this section tests the relationship between fiscal position and CBI index (Romelli 2024) using the debt-to-GDP ratio and the primary-fiscal-balance-to-GDP ratio as dependent variables. Annex Table 4.1 shows the correlation across fiscal position measures and the CBI index (CBI index and with subindices, Romelli 2024). Although the evidence is mixed overall, the correlations suggest a linkage in some of the income groups.

Annex Table 4.1. Correlation across Fiscal Variables

	AEs		EMDEs		ME&CA	
Variables	**Debt-to-GDP Ratio**	**Primary-Fiscal-Balance-to-GDP Ratio**	**Debt-to-GDP Ratio**	**Primary-Fiscal-Balance-to-GDP Ratio**	**Debt-to-GDP Ratio**	**Primary-Fiscal-Balance-to-GDP Ratio**
CBI	−0.045*	−0.206***	0.046***	0.019	0.053	0.042
	(0.105)	(0.003)	(0.006)	(0.432)	(0.151)	(0.458)
CBI (policy)	0.073***	−0.072	−0.043**	0.043*	0.003	−0.033
	(0.008)	(0.307)	(0.010)	(0.079)	(0.945)	(0.553)
CBI (board)	−0.093***	−0.291***	0.032*	−0.074***	−0.064*	−0.185***
	(0.001)	(0.000)	(0.060)	(0.002)	(0.082)	(0.001)
CBI (objectives)	−0.013	−0.125*	0.104***	−0.001	0.105***	0.166***
	(0.645)	(0.075)	(0.000)	(0.959)	(0.004)	(0.003)
CBI (lending)	−0.060**	−0.225***	−0.009	0.026	−0.084**	0.061
	(0.032)	(0.001)	(0.584)	(0.291)	(0.022)	(0.274)
CBI (finances)	−0.200***	0.078	−0.023	0.051**	0.025	−0.004
	(0.000)	(0.270)	(0.178)	(0.035)	(0.488)	(0.949)
CBI (report)	0.115***	−0.223***	0.087***	0.016	0.234***	−0.011
	(0.000)	(0.001)	(0.000)	(0.506)	(0.000)	(0.848)

Source: IMF staff estimates.

Note: *p < .10; **p < .05; ***p < .01. p values are presented in parentheses. AEs = advanced economies; CBI = central bank independence; EMDEs = emerging market and developing economies; ME&CA = Middle East and Central Asia.

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To analyze the linkage between fiscal position and CBIE measures in more detail, a model is proposed with the same structure as equation (4):

$$F_{i,t} = \alpha_c + \gamma F_{i,t-p} + \beta CBI_{i,t} + \delta X_{i,t-1} + v_i + \varepsilon_{i,t}, \quad (4)$$

where $F_{i,t}$ is the debt-to-GDP ratio (or primary-fiscal-balance-to-GDP ratio), $CBI_{i,t}$ is the index of a CBI, and $X_{i,t}$ represents country business cycle fluctuation measures, including lagged inflation, exchange rate regime, and the output gap. The model is estimated with country fixed effects in each income group. The models are estimated under different specifications with lag $p = 1$ and $p = 2$, and with growth of CBIE instead of levels. The main results suggest that the co-movement observed in the correlation table is mostly explained by country-specific control variables $X_{i,t}$, and the coefficients on CBI (or subindices) are insignificant when the $X_{i,t}$ is included in the regression.

Annex Table 4.2. Regression Coefficients

	CBI Coefficient (β)				
Variables	**All Countries**	**AEs**	**EMEs**	**LIDCs**	**ME&CA**
Dependent Variable: Debt-to-GDP Ratio					
Model 1	−0.268	0.157	−3.381	1.747	−1.298
	(0.787)	(0.891)	(0.168)	(0.319)	(0.613)
Model 2	−0.252	1.598	−3.338	1.463	0.199
	(0.848)	(0.302)	(0.318)	(0.476)	(0.952)
Model 3	0.555	0.122	−2.386	3.15*	−1.282
	(0.668)	(0.967)	(0.531)	(0.051)	(0.803)
Model 4	0.097	−1.764	−4.762	2.796	−13.609*
	(0.948)	(0.565)	(0.251)	(0.147)	(0.094)
Dependent Variable: Primary-Fiscal-Balance-to-GDP Ratio					
Model 1	−2.468	−18.796	−7.13	−1.259	0.701
	(0.167)	(0.075)	(0.138)	(0.22)	(0.917)
Model 2	−3.148	−11.143	−7.812	−2.181*	9.594
	(0.118)	(0.410)	(0.228)	(0.060)	(0.280)
Model 3	1.778	−5.378	−0.836	5.954***	−10.29
	(0.385)	(0.744)	(0.874)	(0.007)	(0.298)
Model 4	2.800	19.719	−7.880	6.188***	−33.452*
	(0.123)	(0.195)	(0.260)	(0.007)	(0.088)

Source: IMF staff estimates.

Note: *$p < .10$; ***$p < .01$. p values are presented in parentheses.

Models 1 and 3 control for the first lag of the independent variable, whereas 2 and 4 control for the second lag. Models 1 and 2 use the level of CBIE as explanatory variables, whereas 3 and 4 use the first difference.

AEs = advanced economies; CBI = central bank independence; EMEs = emerging market economies; LIDCs = low-income and developing countries; ME&CA = Middle East and Central Asia.

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Annex 5. Technical Details on Color Coding

This annex explains the color coding for Table 1 in detail. Dark green represents a strong degree of independence, whereas dark red represents the least degree of independence. The calculation uses Romelli (2024) central bank independence data at a more disaggregated level and is based on a simple average. The color coding varies slightly for each indicator based on the distribution of the underlying data.

- *Governor and board appointment*: based on data on (1) who appoints the governor and (2) who appoints the rest of the board. Dark red: 0–0.24; light red: 0.25–0.49; light green: 0.50–0.74; and dark green: 0.75–1.
- *Governor and board dismissal*: based on data on (1) provisions for dismissal of the governor and (2) provisions for dismissal of the rest of the board. Color coding: same as earlier.
- *Governor and board term*: based on data on (1) term of office of the governor and (2) term of office of the rest of the board. Color coding: same as earlier.
- *Government participation in board*: based on data on "no mandatory participation of government representatives in the board." Color coding: dark red: 0 and dark green: 1.
- *Monetary policy formulation*: based on data on "who formulates monetary policy." Color coding: dark red: 0–0.3; light red: 0.67; and dark green: 1.
- *Ultimate responsibility for objectives*: based on data on "who has final word in resolution of conflicts." Color coding: dark red: 0; light red: 0.2–0.4; light green: 0.6–0.8; and dark green: 1.
- *Objectives*: based on data on "price stability objective." Color coding: dark red: 0; light red: 0.25–0.5; light green: 0.75; and dark green: 1.
- *Lending to government*: based on data on (1) restrictions on lending to government; (2) who decides financing conditions to government (maturity, interest, amount); and (3) limits on central bank lending. Color coding: dark red: 0–0.3; light red: 0.31–0.5; light green: 0.51–0.8; and dark green: 0.81–1.
- *Advances to government*: based on data on (1) limitation on advances; (2) maturity of advances; and (3) interest rate on advances. Color coding: dark red: 0–0.3; light red: 0.31–0.65; light green: 0.66–0.84; and dark green: 0.85–1.
- *Central bank in primary market*: based on data on "central bank prohibited from buying or selling government securities in the primary market." Color coding: dark red: 0 and dark green: 1.
- *Central bank initial capital*: based on data on (1) whether the statute precisely describes the provisions relating to the payment of the initial capital and (2) whether the statute precisely quantifies the authorized capital of the central bank. Color coding: dark red: 0; light red: 0.5; and dark green: 1.
- *Central bank recapitalization*: based on data on (1) financial autonomy; (2) whether the legal arrangements allow for automatic recapitalization; and (3) how transfers of money from the treasury to the central bank are managed. Color coding: dark red: 0–0.25; light red: 0.26–0.5; light green: 0.51–0.75; and dark green: 0.76–1.
- *Annual budget*: based on data on (1) the central bank has the exclusive right to determine and approve its annual budget and (2) adoption of the annual balance sheet of the central bank belongs exclusively to its decision-making body. Color coding: dark red: 0; light red: 0.25; light green: 0.5–0.75; and dark green: 1.

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- *Profit distribution*: based on data on (1) decision on allocation of the net profits of the central bank; (2) how the allocation of profits to the general reserve fund is handled by the central bank; (3) whether the state or the shareholders can receive partial payments before the end of the fiscal year; and (4) whether unrealized profits are included in the calculation of distributable profits. Color coding: dark red: 0–0.25; light red: 0.26–0.5; light green: 0.51–0.75; and dark green: 0.76–1.
- *Reporting*: based on data on "central bank reporting." Color coding: dark red: 0; light red: 0.25–0.5; light green: 0.75; and dark green: 1.
- *Financial statement disclosure*: based on data on "central bank financial statements." Color coding: dark red: 0; light red: 0.25–0.5; light green: 0.75; and dark green: 1.

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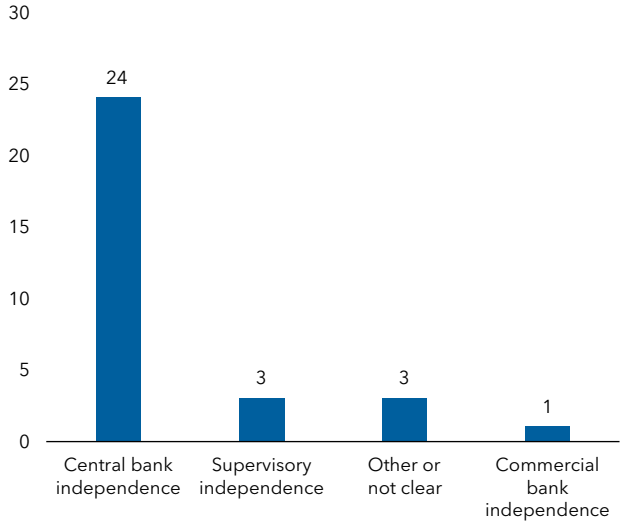
Annex 6. CBI in the IMF Technical Assistance and Financial Sector Assessment Programs

A. Technical Assistance

During 1985–2018, the IMF's Monetary and Capital Markets Department produced 148 technical assistance (TA) reports on Middle East and Central Asia (ME&CA) countries, of which 18 percent included findings and recommendations relating to central bank independence (CBI). The majority of these references focused on the independence of the central bank, with only a few cases noting findings or recommendations related to the independence of the supervisor (either inside or outside of the central bank; Annex Figure 6.1). Artificial intelligence–based analysis of the findings and recommendations suggests that most of the TAs for the ME&CA countries focused on shielding central banks from political influence and highlighted that CBI is vital for achieving price stability and fostering public trust in financial systems.

Annex Figure 6.1. CBI References in the IMF TA

(MENA or CCA region, in unique references, 1985–2018)



Source: Khan (forthcoming), based on the IMF eLibrary.

Note: CBI = central bank independence; CCA = Caucasus and Central Asia; MENA = Middle East and North Africa; TA = technical assistance.

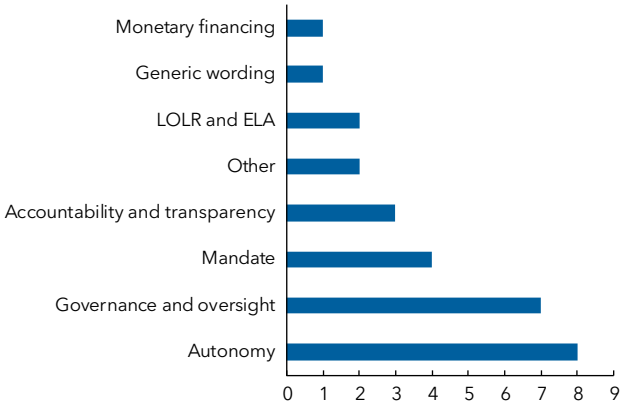
Furthermore, these TA reports stressed the need for legal reform, with a particular focus on establishing a clear mandate on price stability and independent monetary policy decision making, as well as appointment and dismissal procedures for the governor and other board members. From a financial independence perspective, many countries are found to face issues with monetary financing, profit distribution arrangements, treatment of unrealized gains, and (re)capitalization requirements. Communication, transparency, and overall accountability of the central bank are also highlighted as necessary conditions to continue safeguarding CBI.

From 2014 to 2024, the IMF's Legal Department (LEG) provided TA to 14 countries in the ME&CA region. This amounts to 25 percent of all LEG TA on central bank law reforms during the covered period. Out of the 14 countries, all but 2 had the IMF-supported programs with conditionality linked to central bank reforms. A further look into the conditionality design of the central bank law reforms shows that autonomy was the most prominent issue addressed in the conditionality (8 out of 12 times), closely followed by governance and oversight (7 times). Other issues mentioned are reform of the central bank mandate (4 times), improvements in the accountability and transparency framework (3 times), as well as other issues such as reform of the lender of last resort and emergency liquidity assistance framework, as well as reserve management provisions (Annex Figure 6.2).

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After receiving LEG TA on the areas mentioned earlier, seven ME&CA countries enacted a new central bank law between 2016 and 2022. In the remaining countries, one law reform is pending, whereas in other countries law reform did not proceed for different reasons, including political economy constraints, financial sector issues, or the IMF program going offtrack. Among members whose laws were enacted, approximately 25 months was the average time to pass a central bank law reform.[31] This is broadly in line with the average time of 24 months in countries from other regions.

Annex Figure 6.2. Conditionality in MCD countries, central bank law reform categories



Source: IMF staff calculations.

Note: ELA = emergency liquidity assistance; LOLR = lender of last resort; MCD = Middle East and Central Asia Department.

B. Financial Sector Assessment Program

The Financial Sector Assessment Program (FSAP) is a critical IMF surveillance instrument for in-depth assessments of countries' financial sectors. FSAPs are conducted every 5 or 10 years as a mandatory component of bilateral surveillance for systemically important financial sector countries. For other countries, they take place on a voluntary basis. FSAPs focus on (1) the resilience of the financial sector, (2) the quality of the regulatory and supervisory framework, and (3) the capacity to manage and resolve financial crises. For developing and emerging market economies, FSAPs are conducted jointly with the World Bank and include a financial development assessment.

For the prudential banking regulation and supervision part of the FSAP, the Basel Core Principles for Effective Banking Supervision are used as the *de facto* minimum standard. Among the 29 core principles, Principle 2 relates to independence, accountability, resourcing, and legal protection for supervisors. This includes the stipulation that the supervisor should possess operational independence, transparent processes, sound governance, and budgetary processes that do not undermine its autonomy.

A significant number of FSAPs on ME&CA countries published between 2001 and 2023 highlight issues related to supervisory independence, with recommendations focusing on enhancing the legal framework, protecting central bank board members, and ensuring the central bank's autonomy in budgetary matters and operational decisions. Given that most central banks are also financial supervisors, strengthening operational independence of the supervisor will also (positively) affect the independence of the central bank as a whole.[32]

Country authorities can access key resources to enhance their understanding of CBI. One essential resource is the IMF Central Bank Legislation Database, which provides comprehensive information on the legal frameworks governing central banks across various jurisdictions. This database serves as an important tool for understanding the legislative foundations of central bank operations and independence, offering insights into best practices and international standards. In addition, the IMF Annual Report on Exchange

[31] For the purposes of this calculation, the starting point is the date of program approval for the country, whereas the end point is when the law is enacted.

[32] Based on a sample of 26 ME&CA countries using Bank for International Settlements, IMF Central Bank Legislation Database (CBLD), and central bank websites (2023 data), nearly 90 percent of the sampled countries have a central bank with an integrated banking supervision function.

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Arrangements and Exchange Restrictions (https://www.elibrary-areaer.imf.org/Pages/Home.aspx) is another crucial resource that analyzes exchange rate policies and interventions undertaken by central banks. This report documents the exchange arrangements in place and assesses the effectiveness of these policies in promoting monetary stability and economic resilience. Together, these resources equip country authorities with the necessary information to foster informed discussions on the role and independence of central banks within their respective economies.

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