# Online Annex 3. Central Bank Independence and Inflation[1]

*This Annex presents technical details and background material for the analysis in Chapter 3 "Preserving Hard-Won Monetary Policy Gains amid Persistent Fiscal Risks" of the October 2025 Regional Economic Outlook for the Western Hemisphere.*

## 3.1. Literature Overview

The relationship between central bank independence (CBI) and inflation has been a central topic in macroeconomic research. Early theoretical and empirical studies (e.g., Rogoff 1985; Alesina and Summers 1993) emphasize that greater *de jure* independence—rooted in legal and institutional frameworks—reduces inflation by insulating monetary policy from political pressures. Cukierman, Webb, and Neyapti (1992) show that, while legal frameworks are important, *de facto* independence—proxied by central bank governor turnover—is more closely associated with lower inflation in countries with weaker institutional environments. Building on this, more recent work highlights the importance of *de facto* independence, particularly in emerging market and developing economies (EMDEs), where formal rules may not fully reflect actual central bank behavior. Masciandaro, Magurno, and Tarsia (2020) provide a comprehensive review of methods used to measure CBI, noting that *de facto* autonomy is especially relevant for analyzing inflation performance. Recent studies have further shifted focus toward the long-term effects of central bank reforms on inflation dynamics. Jácome and Pienknagura (2022) examine historical experiences in Latin America, highlighting how improvements in central bank autonomy contribute to better inflation outcomes, although gains often materialize gradually due to structural challenges and political economy constraints. Athanasopoulos, Masciandaro, and Romelli (2025) show that the disinflationary benefits of greater independence tend to unfold over time, particularly in developing economies. Their findings emphasize the role of inflation persistence and country-specific structural factors—such as institutional quality and fiscal dominance—in shaping the effectiveness of CBI reforms. Overall, the literature suggests that while CBI is crucial for achieving price stability, its effectiveness depends on actual institutional autonomy, the political context, and the time needed to build credibility.

## 3.2. Data

The empirical analysis is based on an unbalanced panel dataset covering 153 countries, including both advanced economies (AEs) and EMDEs, over the period 1980–2023, subject to data availability. Data on growth, inflation, and the output gap are sourced from the IMF's World Economic Outlook (WEO) database. These are complemented with information on sovereign debt from the IMF Historical Public Debt Database, fiscal rules from the IMF Fiscal Rule Dataset, exchange rate regimes from Ilzetzki, Reinhart, and Rogoff (2019), financial and sovereign crises from Laeven and Valencia (2020), and structural reforms from the IMF Structural Reform Database. CBI is measured using the de jure CBI index developed by Romelli (2024), which spans 155 countries from 1923 to 2023. Romelli's index incorporates yearly updates based on changes in central bank laws and tracks more than 370 institutional reforms. It is constructed from a larger set of sub-indicators organized into six equally weighted dimensions (Online Annex Table 3.1).

[1] Prepared by Agnese Carella, Dimitris Drakopoulos, and Juan Passadore.

**Online Annex Table 3.1. Comparison of Central Bank Independence Indices**

| | Cukierman, Webb, and Neyapti (CWN, 1992) | Romelli (2024) | Garriga (2025) |
|---|---|---|---|
| Country Coverage | 72 countries | 155 countries | 192 countries |
| Time Period | 1950s–1989 | 1923–2023 | 1970–2023 |
| Type of Independence | Primarily legal (de jure) | De jure | De jure |
| Dimensions Covered | Chief executive officer; Policy formulation; Objectives; Limitation on lending | Adds "Financial Independence" and "Reporting and Disclosure" to CWN | Similar to CWN |
| Weighting Scheme | Larger weight on Limitation on lending at 50 percent | Equal weights across dimensions and subcomponents | Similar to CWN |

Sources: Cukierman, Webb, and Neyapti (1992); Romelli (2024); Garriga (2025).

The indices range from 0 to 1, with higher values indicating greater legal autonomy. (Online Annex Table 3.2). These dimensions are composed of multiple sub-indicators, normalized to ensure comparability across countries and over time. Each sub-indicator is scored according to the legal provisions in force in a given year, and the final CBI score reflects the unweighted average of the six-dimension scores. This dynamic structure allows one to analyze how changes in CBI over time are associated with inflation outcomes in the empirical analysis.

**Online Annex Table 3.2. Components of the Central Bank Independence Index**

| Dimension | Description | Example Questions |
|---|---|---|
| 1. Chief Executive and Board | Rules governing the appointment, dismissal, term length, and reappointment of the governor and board members. | How is the central bank governor appointed? Are there restrictions on dismissal? What is the governor's term of office? |
| 2. Policy Formulation | Degree of autonomy in setting monetary policy, exchange rate policy, and supervisory functions. | Does the central bank have exclusive authority to set monetary policy? Is the central bank responsible for exchange rate policy? |
| 3. Central Bank Objectives | Whether price stability is designated as the primary objective and whether objectives are clearly specified in law. | Is price stability the primary statutory objective? Are there other objectives specified? |
| 4. Lending to Government | Legal limits or prohibitions on central bank lending to the government, both direct and indirect. | Are direct or indirect loans to the government prohibited or restricted by law? |
| 5. Financial Independence | Autonomy in budgeting, income retention, and control over the central bank's financial resources. | Does the central bank control its budget and finances independently? Can it retain earnings? |
| 6. Transparency and Accountability | Requirements for reporting, audit processes, publication of data, and communication with the public or parliament. | Are central bank reports made public? Is the bank subject to independent audits? Does it communicate regularly with the legislature? |

Source: Romelli (2024).

## 3.3. Methodology

Panel data regressions are estimated in the spirit of Acemoglu and others (2008) and Garriga and Rodríguez (2020). The baseline specification is a fixed-effects panel model:

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

where the dependent variable is the (transformed) annual percentage change in the consumer price index (CPI) in country *i* at time *t*. To reduce the influence of outliers, the inflation variable is transformed using the rescaled formula:[2]

[2] This transformation is commonly used in the literature. See for example Jácome and Vazquez (2008), Acemoglu and others (2008), and Jácome and Pienknagura (2022).

$$\pi_{i,t} = \frac{Inflation_{i,t}}{1 + Inflation_{i,t}}.$$

The model includes country fixed effects ($\alpha_i$) to control for unobserved, time-invariant heterogeneity across countries. The key explanatory variable is the CBI index by Romelli (2024), measured annually for each country. To assess robustness, we also use alternative measures of legal CBI from Cukierman, Webb, and Neyapti (1992) and Garriga (2025). In addition, the specification includes a vector of lagged control variables ($X_{i,t-1}$). Specifically, in the baseline specification, the lagged output gap is included to capture demand-driven inflationary pressures from previous periods, and lagged inflation to account for inflation persistence due to wage- and price-setting behavior or adaptive expectations. For robustness, the model is extended by including a broader set of control variables. These include the country's exchange rate regime, classified following Ilzetzki, Reinhart, and Rogoff (2019);[3] indicators of systemic banking crises from Laeven and Valencia (2020); international inflation, proxied by US CPI inflation; and measures of structural reforms. These additional controls help ensure that the estimated effect of CBI is not confounded by external shocks, financial instability, or broader policy environments[4] (Online Annex Box 3.1).

Given the persistence of inflation and the gradual effect of institutional reforms, long-run effects using the local projections method of Jordà (2005) are also estimated. This allows for tracing the dynamic response of inflation to changes in CBI over a ten-year horizon and assessing regional heterogeneity, particularly in Latin America and the Caribbean (Chapter 3, Figure 3.4). Specifically, the following set of regressions at horizon $h$ is estimated:

$$y_{i,t,t+h} = \alpha_i + \delta_t + +\beta_1 CBI_{i,t} + \beta_2 X_{it-1} + \varepsilon_{i,t} \quad (2)$$

where

$$y_{i,t,t+h} = \frac{CPI_{i,t+h}}{CPI_{i,t}} - 1 \approx \log(CPI_{i,t+h}) - \log\left(CPI_{i,t}\right)$$

is the approximate cumulative inflation rate between $t$ and $t+h$, with $h = 1, \ldots, 10$.

In addition to estimating average effects and dynamic responses, the analysis examines whether CBI contributes to reducing the risk of extreme inflation outcomes by estimating a panel quantile regression (Chapter 3, Figure 3.5). Specifically, it is assessed whether higher levels of CBI are associated with lower inflation in the upper tail of the distribution, where inflationary pressures are most acute. To this end, the following panel quantile regression model is estimated, following Gelos and others (2022):

$$\pi_{it}^{q} = \alpha_{it}^{q} + \beta^{q} CBI_{i,t} + \varepsilon_{it}^{q} \quad (3)$$

where $\pi_{it}^{q}$ represents the *q*- quantile of inflation for country $i$ at time $t$. This analysis is also extended to the main subcomponents of the CBI index to explore which dimensions—such as policy formulation or central bank objectives—are most influential in moderating inflation at different points of the distribution (Online Annex Box 3.1).

## 3.4. The Response to Monetary Policy Shocks

**Data.** Monetary policy shocks are from Checo, Grigoli, and Sandri (2024), and are computed as the difference from the realized policy rate decided by the central bank and the average of the forecast from market participants immediately before the meeting. Countries are included in the sample if (i) short-term policy rate movements can

[3] Ilzetzki, Reinhart, and Rogoff (2019) classification is used to create three exchange rate regime dummies: fixed (categories 1–4), semi-flexible (5–8), and flexible (9–13). Countries with free-falling or dual/multiple exchange rates serve as the excluded reference group.

[4] Similar controls have been employed in studies such as Acemoglu and others (2008) and Jácome and Pienknagura (2022).

be reliably tracked, (ii) they use conventional monetary policy tools with well-defined policy rate instruments, and (iii) they have sufficiently long forecast time series to construct meaningful measures of monetary policy surprises. The final sample is Brazil, Chile, Colombia, Egypt, Hungary, India, Indonesia, Malaysia, Mexico, Nigeria, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Türkiye.

Additional variables are at the monthly frequency: consumer price index, exchange rate (local currency per US dollar), long-term yields, which are from the WEO, and 12-month-ahead inflation expectations come from Consensus Economics. Debt and nominal GDP are also from WEO, which are used to compute debt-to-GDP ratio.

**Methodology.** As in Checo, Grigoli, and Sandri (2024), the impact of monetary policy shocks is obtained via local projections method as in Jordà (2005). The regression specification for the cumulative impulse response at each horizon $h$ is:

$$\mathrm{Y}_{c,t+h} - \mathrm{Y}_{c,t} = \alpha_c^h + \delta_t^h + \beta_I^h I_t + \gamma_I^h Interaction_{it} \times I_t + u_{it},$$

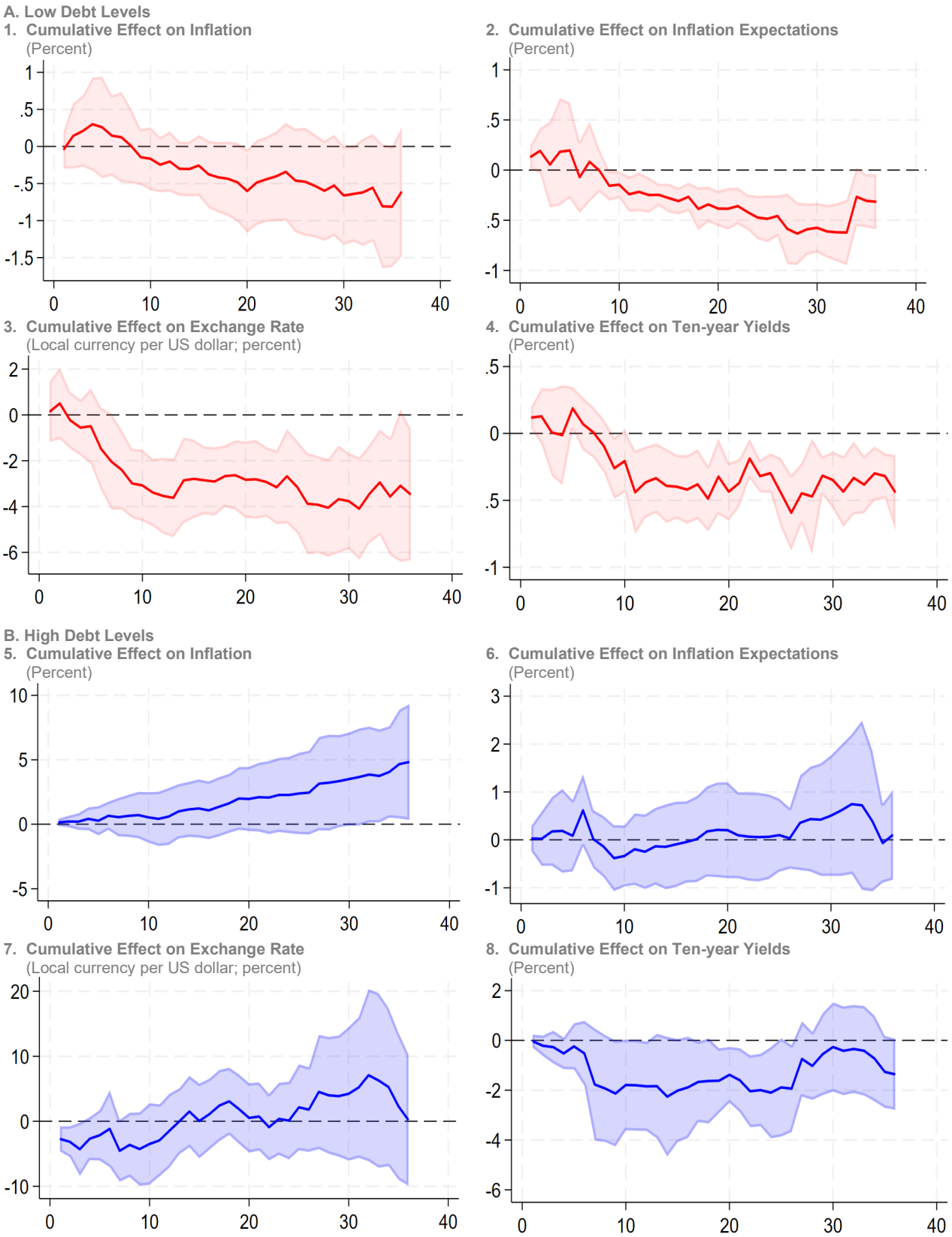
where $\mathrm{Y}_{c,t+h}$ , $\mathrm{Y}_{c,t}$ are the levels of the outcome variable of interest for country $c$ in time $t$ and $t+h$; $\alpha_c^h, \delta_t^h$ are country and time fixed effects for each horizon; $I_t$ is the monetary policy shock; and $Interaction_{it}$ is a dummy variable that takes the value of 1 if the debt-to-GDP ratio is higher than the 80$^{th}$ percentile for each country. The rationale for using the 80th percentile is to introduce a country-specific measure of high debt levels that accounts for differences in debt-carrying capacity. Although an imperfect proxy, this 80$^{th}$ percentile can be interpreted as representing a fraction of each country's debt ceiling; once debt exceeds this level, the probability of distress tends to rise. Outcome variables are inflation, 12-month-ahead inflation expectations, log exchange rates, 10-year nominal yields, credit as a share of GDP, and unemployment rate. Chapter 3, Figure 3.9 in the main text depicts $\mathrm{Y}_{c,t+h} - \mathrm{Y}_{c,t}$ at 18-month horizon for the four alternative outcomes variables.

**Robustness checks.** Qualitative results are robust to the inclusion of time and country fixed effects, lagged changes of the dependent variable to account for serial correlation, and for percentiles of debt at 70 percent and 85 percent. Results in Chapter 3, Figure 3.8 are qualitatively similar for other horizons, 12 months, 24 months, 36 months.

**Additional results.** Online Annex Figure 3.1 contains full impulse responses for a 36-month horizon. Panel A depicts the results when $Interaction_{it}$ is equal to zero and shows that upon monetary policy shock the exchange rate appreciates, the inflation rate decreases, long term yields drop, and inflation expectations decrease. On the other hand, panel B depicts the results when $Interaction_{it}$ is equal to one, and shows that upon a monetary policy shock the exchange does not rate appreciate, the inflation rate does not decrease, likewise with long-term yields drop, and inflation expectations decrease.

**Discussion.** The literature has found inflation increases after a monetary policy shock and termed the "price puzzle." One of the potential explanations is the "information effect," which shows that monetary policy makers have superior information than an econometrician and are responding by raising rates to an increase in inflation. For that reason, the econometrician will observe a positive correlation between rising rates and inflation. At the same time, an increase in inflation after a monetary policy contraction is consistent with fiscal policy implications of monetary policy. For example, an increase in risk premiums due to rising overall deficits, which leads to rising risk premiums, which in turn leads to an exchange rate depreciation; of expectations of higher deficits which lead to higher inflation expectations which translate to prices; or finally, rising total debt levels and an increase in nominal demand via wealth effects (Leeper 1991; Cochrane 2001; Woodford 1995; Bianchi and Melosi 2022; Bianchi, Faccini, and Melosi 2023; Caramp and Silva 2023). The key takeaway is that the evidence points towards the importance of a fiscal backing of monetary policy to guarantee that monetary policy objectives can be attained.

## Online Annex Figure 3.1. Debt Levels and the Response to Monetary Policy Shocks




Source: IMF staff calculations.
Note: Local Projections as: $Y_{c,t+h} - Y_{c,t} = \alpha_c^h + \delta_t^h + \beta_I^h I_t + \gamma_I^h Interaction_{it} \times I_t + u_{it}$. Monetary policy shocks identified as in Checo, Grigoli, and Sandri (2024) and follow their methodology for Local Projections. Sample: Brazil, Chile, Colombia, Egypt, Hungary, India, Indonesia, Malaysia, Mexico, Nigeria, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Türkiye. Interaction is an indicator for each country that debt is higher than 80 percentile. Exchange rate units are local currency per US dollar (decrease is an appreciation of local currency).

## 3.5. The Response to Fiscal Policy Shocks

**Data.** For results to be comparable, the sample of EMDEs is the same as the one of the exercises of monetary policy (Section 3.4) and includes Brazil, Chile, Colombia, Egypt, Hungary, India, Indonesia, Malaysia, Mexico, Nigeria, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Türkiye.

Fiscal deficit shocks are computed from WEO forecast errors on structural primary balance, using the April vintages of the WEO dataset. The fiscal policy shock for year *t* is the difference between the forecasted structural primary balance for year *t* in April, and the realized outturn for the structural primary balance.

In addition, data on real GDP and headline inflation from the WEO and 12-month-ahead inflation expectations from Consensus Economics are used. The frequency of the data is annual.

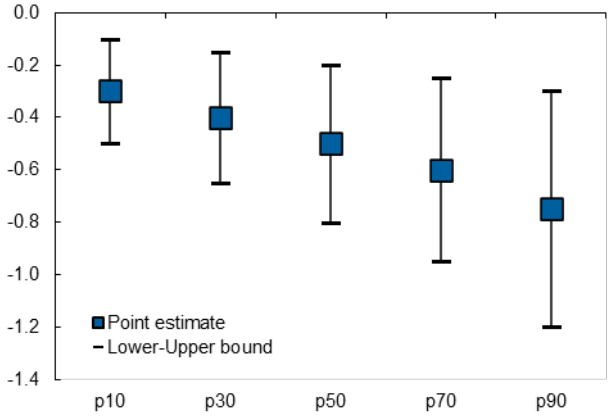
**Methodology.** The impact of fiscal policy shocks is obtained via local projections method as in Jordà (2005). The regression specification for the cumulative impulse response at each horizon h is:

$$\mathrm{Y}_{c,t+h} - \mathrm{Y}_{c,t} = \alpha_c^h + \delta_t^h + \beta_I^h FP_t + \sum_{k=0}^{1} \gamma^h Controls_{i,t-k} + u_{it},$$

where $\mathrm{Y}_{c,t+h}$ , $\mathrm{Y}_{c,t}$ are the levels of the outcome variable of interest for country $c$ in time $t$ and $t+h$; $\alpha_c^h, \delta_t^h$ are country and time fixed effects for each horizon; $FP_t$ is the fiscal policy shock; and $Controls_{i,t}$ are current and lagged real GDP growth and debt to GDP. The identifying assumption is that the error in the projection is uncorrelated to economic conditions, addressing the simultaneity bias which is pervasive in the fiscal multipliers literature (see, for example, Ramey 2011 and 2019 for a literature review). Chapter 3, Figure 3.11 depicts the impulse response of inflation at one- and two-year horizons and 95 percent confidence intervals.

**Additional results.** Arizala and others (forthcoming) compute the response of inflation and inflation expectations to changes in the cyclically adjusted primary balance, for different debt levels (Online Annex Figure 3.2).

**Online Annex Figure 3.2. Impact of Fiscal Consolidations on Two-year Ahead Inflation Expectations as a Function of Debt-to-GDP**




Sources: Arizala and others (forthcoming); Consensus Economics; IMF, World Economic Outlook database; and IMF staff calculations.
Note: Dots show cumulative responses over a three-year period following a 1-percent-of-GDP shock. Bars show 90th percentile.

## 3.6. Interest Rate Rules

**Data.** For results to be comparable, the sample of EMDEs is the same as the one of the exercises of monetary policy (Section 3.4) and includes Brazil, Chile, Colombia, Egypt, Hungary, India, Indonesia, Malaysia, Mexico, Nigeria, Peru, Philippines, Poland, Romania, Russia, South Africa, Thailand, Türkiye. Policy rates are from Haver and headline inflation, output gap and debt to GDP are from WEO (at the quarterly frequency). Given that some of the countries in the sample had varying degrees of intervention in the FX market, a variable capturing the FX regime is also included, following the classification Ilzetzki, Reinhart, and Rogoff (2019).

**Methodology.** The regression specification for the Taylor rule is:

$$i_{i,t} = \gamma_i + \alpha i_{i,t-1} + \beta_1 \pi_{i,t} + \beta_2 \pi_{i,t} Interaction_{it} + \gamma_i x_{i,t} + \epsilon_{i,t}.$$

where $\gamma_i$ is a country fixed effect, $i_{i,t}$ is the policy rate for country $i$ in quarter $t$, $\pi_{i,t}$ is the inflation rate for country $i$ in quarter $t$ and $x_{i,t}$ is the output gap for country $i$ in quarter $t$. $Interaction_{it}$ is an indicator for each country that debt is higher than the 80th percentile. $\alpha i_{i,t-1}$ measures the fact that there is smoothing in the choices of the policy rates. Note that the responses of policy rates to inflation is given by $\frac{\beta_1}{1-\alpha}$ and $\frac{\beta_1+\beta_2}{1-\alpha}$ , respectively, which are depicted in Chapter 3, Figure 3.9.

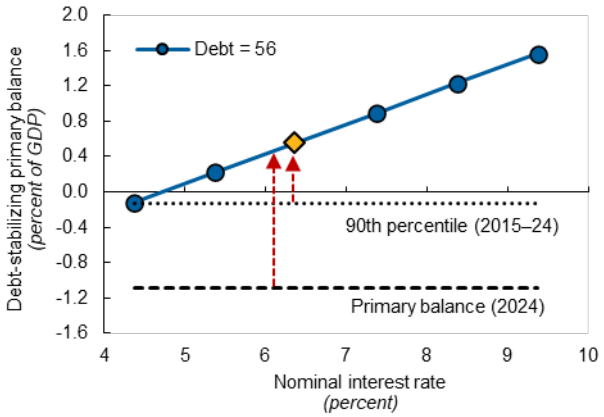
## 3.7. Fiscal Impact of Monetary Policy

**Theory.** Changes in marginal policy rates influence the average interest rate on government debt, thereby affecting the cost the government incurs. Consequently, these policy rate adjustments modify the overall fiscal balance. A key measure of the fiscal implications of monetary policy is the extent to which a different level of interest rates impacts the primary balance required to stabilize debt levels. Note that the debt-stabilizing primary balance is equal to:

$$pb^* = d^* \times (i - \pi - g),$$

where $pb^*$ is a constant primary balance that stabilizes debt at value $d^*$ given an average nominal interest rate on debt $i$, an inflation rate $\pi$ and growth $g$. Also, $i = \alpha \left(1 + i^f\right) + (1 - \alpha)\left(1 + i^d\right) - 1$ is the weighted average of local and foreign currency debt.

**Online Annex Figure 3.3. LA7: Debt-stabilizing Primary Balance, Gross Public Debt, and Nominal Interest Rate**




Source: IMF, World Economic Outlook database; and IMF staff calculations.
Note: Orange dot is the debt stabilizing primary balance given 2024 debt to GDP and medium run (2030's projection) growth and average interest payments minus inflation; equal to $pb = d \times (i - \pi - g)$. Blue dots are computed by increasing or decreasing the average nominal rate of local currency debt by 100 basis points, keeping growth, debt to GDP, and payments of foreign currency debt fixed. x-axis depicts the average nominal rate on government debt for the LA7 expressed as simple averages, while the y-axis depicts the debt-stabilizing primary balance as a fraction of GDP. LA7 = Latin America 7 (Brazil, Chile, Colombia, Mexico, Paraguay, Peru, Uruguay).

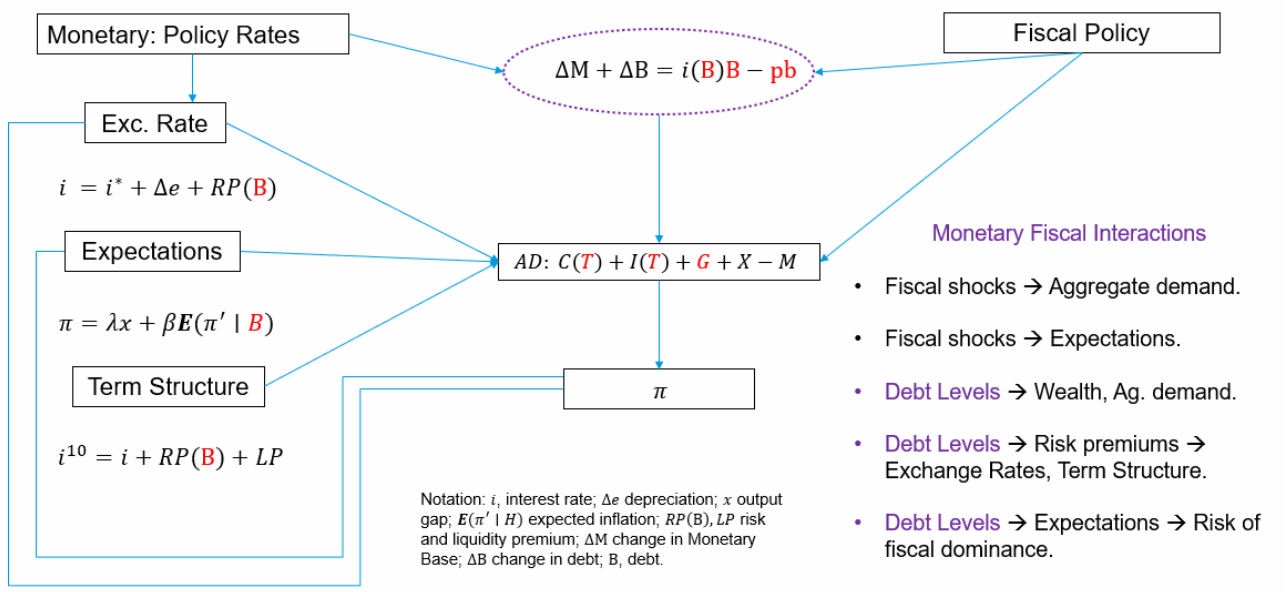
**Results.** Tight monetary policy affects structural primary balances and fiscal dynamics, as shown in Online Annex Figure 3.3. With medium run real interest rates around 3 percent, the debt-stabilizing primary balance is approximately 0.6 percent of GDP (orange square). The red arrow highlights that this balance exceeds both the primary balance for 2024 and the 90th percentile of primary balances over the past decade. The blue dots illustrate the effect of a 100-basis point increase in nominal interest rates on total interest payments, which, combined with a fixed growth rate and the 2024 debt level, results in higher debt-stabilizing primary balances. Furthermore, as interest rates rise, the gap between these balances and the current primary balances widens significantly.

**Discussion.** As interest rates increase, the primary balance to stabilize debt is larger. However, it is important to note that this is an approximate measure given that marginal rates are not equal to average rates, and if the maturity of government is long, marginal rates will feed slowly into average rates. At the same time, once indexed debt, debt tied to floating rates, and short maturities are factored in, these forces become more prevalent.

## 3.8. Monetary-Fiscal Interactions: A Framework

Monetary and fiscal policies interact through multiple channels, as outlined in Online Annex Figure 3.4. Monetary policy shocks influence the macroeconomy via exchange rates, expectations, the term structure of interest rates, credit, and asset prices—all of which contribute to aggregate demand and subsequently impact inflation. The exchange rate channel is influenced by interest rate differentials, expected depreciation, and the risk premium, which is positively affected by debt levels. These higher debt levels increase the risk of elevated and volatile inflation. Furthermore, monetary policy affects expected inflation, which guides firms' price-setting behavior, in line with the New Keynesian Phillips Curve. As demonstrated by Brandao and others (2024), these inflation expectations are shaped by debt levels and unexpected changes in debt. Additionally, monetary policy impacts the term structure of interest rates by altering short-term rates and risk premiums, both of which are contingent on debt levels. These three channels directly influence inflation and contribute to aggregate demand.

**Online Annex Figure 3.4. Monetary Fiscal Interactions**




Source: IMF staff.
Note: $i$, interest rate; $\Delta e$ depreciation; $x$ output gap; $\boldsymbol{E}(\pi' \mid H)$ expected inflation; $RP(B)$, $LP$ risk and liquidity premium; $\Delta M$ change in Monetary Base; $\Delta B$ change in debt; B, debt.

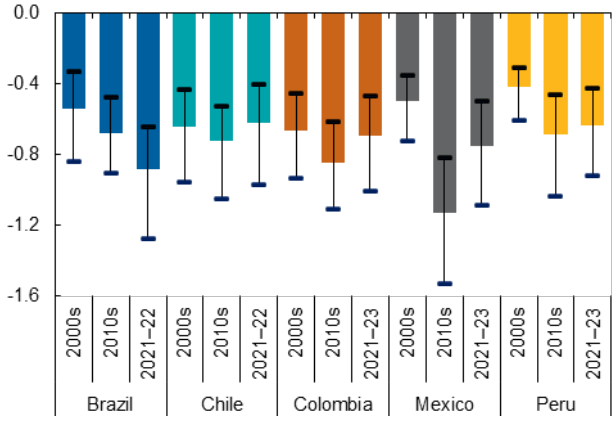
On the other hand, fiscal policy influences aggregate demand through a standard Keynesian aggregate demand channel, driven by the fiscal stance, which also affects inflation.

The interaction between monetary and fiscal policies is mediated by the government's budget constraint. Fiscal policy influences debt levels, which in turn affect local currency bond spreads, inflation expectations, and the exchange rate risk premium. Meanwhile, monetary policy affects debt accumulation through higher interest rates, impacting the overall fiscal balance. High debt levels amplify aggregate demand via wealth effects and heighten the risk of central bank's accommodating fiscal needs, as highlighted by Leeper (1991), Cochrane (2001), Caramp and Feilich (2024), and others.

## 3.9. Time Varying Response to Monetary Policy Shocks

See the methodology used in the Online Annex 2.3 of IMF (2024). The methodology was extended for a larger sample ending in 2024:Q4 and includes Brazil, Chile, Colombia, Mexico and Peru (Online Annex Figure 3.5).

**Online Annex Figure 3.5. Effect on Inflation of Monetary Tightening**




Source: Haver Analytics; IMF, World Economic Outlook database; and IMF staff calculations.

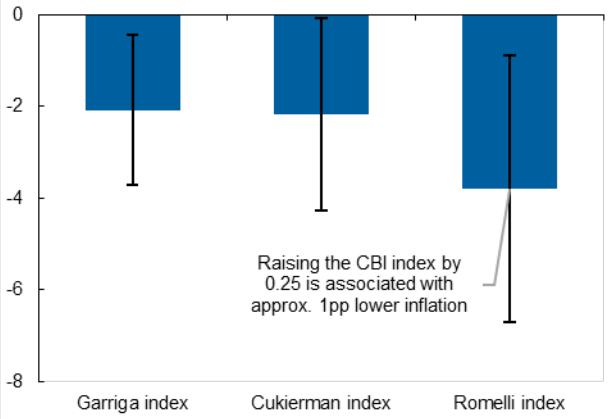
Note: Tightening impact of 100 basis points monetary policy shock to consumer price index. Tightening is defined as an increase in the policy rate. The analysis is based on IMF (2024), Analytical Chapter 2. The model is estimated with quarterly data for each country (starting with 1995:Q1 onwards covering through 2024:Q4) using standard Bayesian techniques following Del Negro and Primicieri (2015) and Gambetti and Musso (2017).

## Online Annex Box 3.1. Additional evidence from Panel and Quantile Regression

Estimating equation (1) using the Romelli index, a 0.25 increase in central bank independence is associated with a 1 percentage point reduction in inflation. This magnitude is comparable to the current gap between the 25th and 75th percentiles of the central bank independence (CBI) distribution, or between Latin America and the Caribbean (LAC) countries and the Organisation for Economic Co-operation and Development (OECD) average. It also aligns with the size of reforms implemented in many LAC countries during the 1990s. We find that this relationship is robust to the inclusion of a range of additional controls, including the country's exchange rate regime (classified according to Ilzetzki, Reinhart, and Rogoff 2019), indicators of systemic banking crises Laeven and Valencia (2020), international inflation, proxied by US consumer price index inflation, and measures of structural reforms (Online Annex Box Figure 3.1.1).

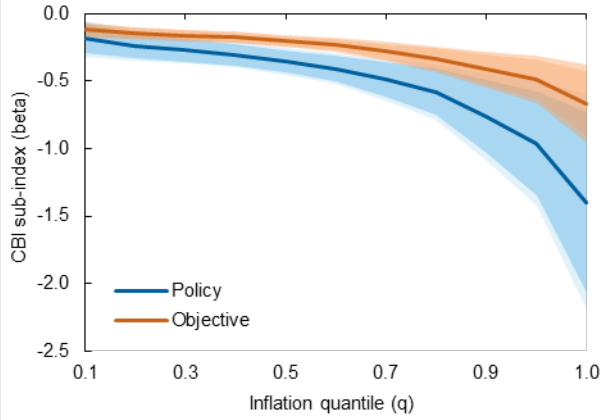
Quantile regression allows us to capture the heterogeneous effects of CBI across the inflation distribution and to assess its role in mitigating tail risks. As shown in Chapter 3, Figure 3.5, the overall CBI index has a stronger disinflationary impact at higher inflation levels—particularly in LAC, where inflation has historically been elevated. Within the region, the Policy dimension has the most pronounced effect, followed by the Objective dimension, likely because these represent foundational aspects of central bank independence necessary for other dimensions to be effective (Online Annex Box Figure 3.1.2).

**Online Annex Box Figure 3.1.1. Beta Coefficients of CBI Index on Annual Inflation**
*(Percentage points; 95 percent confidence intervals)*




Sources: Cukierman, Web, and Neyapti (1992); Romelli (2024); Garriga (2025); and IMF staff calculations.
Note: Results from baseline regression of inflation on central bank independence indices controlling for one-year lag of inflation and the output gap, country and time fixed effects. The dependent variable is the re-scaled CPI. Standards errors are clustered at the country level. CBI = central bank independence.

**Online Annex Box Figure 3.1.2. LAC: CBI Sub-Index Across the Inflation Distribution**
*(Δπ per CBI unit; re-scaled CPI; CBI index: 0–1)*




Sources: Romelli (2024); and IMF staff calculations.
Note: Quantile regression as in Gelos and others (2022) of transformed inflation on CBI index. The solid line is the point estimate; the dark and light-shaded areas are the 90 and 95 percent confidence bands, respectively. CBI = central bank independence; CPI = consumer price index; EMDE = emerging market and developing economies; LAC = Latin America and the Caribbean.

The author of this box is Agnese Carella.

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