Inflation Targeting and Monetary Policy Performance In Latin American Countries (2000–2025):

The Cases of Brazil, Chile, Colombia, Costa Rica, and Mexico

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June 2026

Abstract

This paper evaluates the monetary policy performance of five Latin American inflation-targeting central banks — Brazil, Chile, Colombia, Costa Rica, and Mexico — over the period 2000–2025. Using a structural AD–AS framework and a consistent four-variable VAR model, we first estimate country-specific macroeconomic dynamics and monetary transmission. We then apply two complementary efficiency metrics: a pure IT (PIT) measure (average inflation deviation from the 3% target, best near zero) and a broader efficiency (BE) index (Pearson correlation between inflation and output deviations, best near –1). Results confirm that all five regimes successfully anchored medium-term inflation expectations and reduced inertia relative to the pre-IT era. Chile achieved the strongest overall performance, recording PIT deviations consistently below 0.7 percentage points until 2020 and stable negative BE values. Mexico and Brazil excelled in demand-shock stabilization during tranquil periods (BE reaching –0.72 and –0.77), while Costa Rica demonstrated remarkable post-2018 convergence, moving from large positive PIT deviations to modestly negative values by 2025. The 2021–2025 global inflationary surge, however, exposed common vulnerabilities: PIT deviations widened across the board and BE efficiency deteriorated markedly, revealing limits to shock absorption when supply disturbances coincide with fiscal pressures. Impulse-response functions and efficiency measures together highlight substantial cross-country heterogeneity driven by institutional credibility, exchange-rate pass-through, and policy timing. The analysis yields clear policy lessons: enhancing fiscal coordination, adopting rolling targets, and strengthening forward guidance can restore the dual capacity to hit inflation targets while efficiently stabilizing output. Overall, Latin America's IT experience offers qualified optimism — the framework has proved resilient and adaptable, yet requires continuous institutional refinement to withstand future demand and supply shocks.

Keywords: *Monetary Policy, Inflation Targeting, Vector Autoregressions, Macroeconomic Performance, Latin America.*

1| Introduction

The global shift toward inflation targeting (IT) as the dominant monetary policy framework over the past three decades represents one of the most consequential transformations in the history of central banking. Since New Zealand became the first country to formally adopt an explicit inflation target in 1990, the framework has spread to more than forty economies, spanning advanced, emerging, and developing countries alike. Central to this revolution have been three reinforcing developments: the granting of operational independence to central banks, a decisive shift toward price stability as the primary policy mandate, and a commitment to transparency and communication that modern central banks have elevated to a defining institutional characteristic. Taken together, these changes have been credited with delivering lower, more stable inflation, reducing the costs of disinflation, and strengthening the credibility of monetary policy — all without sacrificing the capacity for countercyclical stabilization (Bernanke and Mishkin, 1997; Svensson, 1997).

The theoretical foundations of IT are well established. Svensson (1997, 1999) formalized the framework as "inflation forecast targeting," in which the central bank treats its own inflation projection as the operational intermediate target and adjusts the policy rate to bring that projection into line with the announced goal over a defined horizon. This forward-looking structure, combined with a transparent loss function that may include an output-stabilization component, provides a coherent rationale for the modern "flexible" IT regime in which price stability is the primary objective but short-run deviations are tolerated to avoid unnecessary output volatility. Bernanke, Laubach, Mishkin, and Posen (1999) documented the early international experience and concluded that the framework yielded measurable gains in inflation performance without imposing adverse output costs, while Ball and Sheridan (2005) offered a more cautious view, arguing that much of the improvement observed in IT adopters could be attributed to the global disinflation trend rather than the regime itself. Subsequent work by Mishkin and Schmidt-Hebbel (2007) provided stronger evidence that IT adoption produced systematic improvements in inflation credibility beyond what could be explained by global factors alone.

Research on the transmission mechanisms underpinning IT has emphasized two channels of particular relevance for open emerging economies: the interest-rate channel and the exchange-rate channel. Cecchetti, Flores-Lagunes, and Krause (2006) developed a cross-country framework for measuring monetary policy efficiency based on the joint variance of inflation and output, showing that IT central banks had become measurably more efficient in the early 2000s compared to the pre-IT era. Krause (2006) extended this line of inquiry by establishing the formal equivalence between a one-period AD–AS model and the forward-looking New Keynesian model, providing the theoretical underpinning for the empirical strategy employed in the present paper. The exchange-rate dimension of IT in emerging markets has been examined by Aizenman, Hutchison, and Noy (2011), who found that IT adoption was associated with lower real exchange-rate volatility, and by Cabral, Carneiro, and Varella Mollick (2019), who showed that IT countries experienced significantly smaller exchange-rate pass-through to domestic prices — a result with direct implications for open economies.

Beyond these core contributions, the recent literature has raised important questions about the limits of IT, particularly in the wake of the 2008–09 global financial crisis and the 2021–22 inflation surge. Céspedes, Chang, and Velasco (2014) assessed whether IT remained "on target" in Latin America following the crisis, finding that the framework had proved resilient but that fiscal-monetary interactions and commodity-price volatility posed persistent challenges. Broto (2011) employed GARCH models to show that IT adoption in Latin America was associated with a significant reduction in inflation volatility, particularly during the consolidation phase of the regime. Libman (2022) adopted a more critical perspective, arguing that IT can be destabilizing in Latin American contexts by constraining the policy space available to respond to external

shocks. This debate is directly relevant to the post-pandemic experience documented in the present paper, during which all five countries in our sample confronted double-digit or near-double-digit inflation and were required to mount forceful tightening cycles while managing severe output contractions.

Five additional contributions from the recent literature enrich the analytical context of this study. First, Gonçalves and Salles (2008) demonstrated, using a panel of emerging economies, that IT countries achieved significantly lower inflation and higher output growth than non-IT counterparts, providing early large-sample evidence of the regime's effectiveness. Second, Calderón and Schmidt-Hebbel (2010) showed that IT improved macro stabilization in emerging economies, specifically through the channels of monetary-policy credibility and exchange-rate flexibility — findings directly applicable to the five countries examined here. Third, Ha, Kose, and Ohnsorge (2019) documented, in a broad cross-country study, that IT countries exhibited more anchored inflation expectations and smaller deviations of inflation from target during the 2010s, a result reflected in the pre-2020 subperiods of our efficiency measures. Fourth, De Mendonça and Tiberto (2017) found evidence that institutional quality and central-bank credibility are critical mediating variables in the IT–inflation performance relationship in Latin America, underscoring the importance of the country-specific institutional narratives presented in Section 2. Fifth, Obstfeld (2014) highlighted the growing importance of global financial conditions and spillovers in shaping domestic monetary policy outcomes, a theme that runs throughout the post-2015 experience documented in this paper, particularly in the post-COVID inflation surge and the subsequent synchronised tightening cycles.

Latin America occupies a privileged position in the empirical study of IT for several reasons. The region's five principal IT-adopting economies — Brazil, Chile, Colombia, Costa Rica, and Mexico — collectively represent a natural quasi-experiment: they share a broadly similar institutional and macroeconomic context, yet they adopted the framework at different points between 1990 and 2018, under different initial conditions, and with meaningful variation in exchange-rate arrangements, fiscal frameworks, and commodity dependence. This diversity allows for controlled cross-country comparisons that are more informative than studies restricted to advanced economies. At the same time, the region has been a testing ground for the resilience of IT under extreme stress: the 1999 Brazilian currency crisis, the 2002 Argentine contagion, repeated commodity-price cycles, the 2008–09 global financial crisis, and most recently the COVID-19 pandemic and its inflationary aftermath all challenged the framework in ways that advanced-economy central banks largely avoided.

The present paper makes three contributions to the existing literature. First, it provides a unified empirical assessment of five Latin American IT regimes over a 25-year horizon (2000–2025) using a consistent econometric framework — a four-variable VAR model grounded in a structural AD–AS model — estimated with the same data definitions and sample construction for all countries. Second, it introduces and applies two complementary measures of monetary policy efficiency: a pure IT metric based on average inflation deviations from the 3% target across five-year subperiods, and a broader correlation-based efficiency index that captures the central bank's ability to navigate the inflation–output trade-off. Third, it situates these empirical findings within an updated institutional narrative for each country, incorporating the most recent regime developments through December 2025, including Brazil's shift to a continuous rolling target and Costa Rica's first full cycle under its 2018 formal IT regime.

The remainder of the paper is organized as follows. Section 2 provides an institutional overview of IT adoption and evolution in each of the five countries, placing the macroeconomic dynamics in their policy context. Section 3 describes the structural model and the two efficiency measures. Section 4 presents the VAR estimation results for each country and discusses the

implied macroeconomic dynamics. Section 5 evaluates monetary policy efficiency under both metrics across subperiods. Section 6 concludes and identifies directions for further research.

2| Inflation Targeting in Latin American Countries: An Overview

The five economies examined in this paper share a common overarching commitment to inflation targeting yet differ markedly in the timing, pace, and institutional context of their transitions toward that framework. Understanding these differences is essential for interpreting the VAR results and efficiency measures that follow. This section provides a structured overview of each country's IT regime, organized around three dimensions: the origins and institutional design of the regime; its performance through the 2000s and 2010s; and the challenges and adaptations of the 2020–2025 period. A comparative summary is presented in Table 2.1.

Together, these five cases illustrate the breadth of the IT experience in Latin America. At one end, Chile stands as the region's pioneering and most credible inflation targeter, with more than 35 years of continuous regime evolution and inflation firmly anchored near 3% for most of that period. At the other end, Costa Rica represents a more recent adopter still navigating the early stages of full-regime credibility, having formally completed its transition to IT only in 2018. Brazil, Colombia, and Mexico occupy intermediate positions, each having built substantial credibility over two decades but tested repeatedly by fiscal pressures, external shocks, and institutional challenges. The variation across these cases provides the empirical richness necessary for a meaningful cross-country assessment of IT performance.

Several features emerge as common across all five regimes and are directly relevant to the empirical analysis. First, all five central banks operate with a 3% medium-term inflation target (as of 2025), creating a natural common benchmark for the efficiency measures described in Section 3. Second, all five operate under broadly floating exchange-rate regimes, making the exchange-rate depreciation variable a central element of the structural model. Third, all five experienced the same global shocks — the 2008–09 financial crisis, the 2020 COVID-19 recession, and the 2021–22 inflationary surge — albeit with different intensities and policy responses, allowing for meaningful cross-country comparisons of shock transmission and policy effectiveness. Fourth, the degrees of institutional development and central-bank independence vary, with Chile and Mexico generally regarded as having the strongest institutional frameworks and Costa Rica still consolidating its post-2018 credibility.

These structural similarities and differences motivate both the unified empirical framework employed in Section 4 and the country-specific interpretation of the VAR results. The VAR model is estimated using a common specification for all countries — the four-variable system comprising real GDP growth, inflation, the policy rate, and exchange-rate depreciation — which captures the core transmission channels common to all five regimes. Country-specific differences in lag structure, coefficient magnitudes, and Granger-causality patterns then reflect the institutional and macroeconomic heterogeneity documented in this section.

2|1 Brazil

Brazil adopted its inflation targeting (IT) regime in June 1999 through Presidential Decree No. 3088, shortly after the January 1999 currency crisis forced the abandonment of the crawling peg and the floating of the real. This shift came after the successful Real Plan of 1994 had tamed hyperinflation but left the economy vulnerable to external shocks. The National Monetary Council (CMN) sets the targets, while the Banco Central do Brasil (BCB) implements policy primarily through the Selic overnight rate. Initial targets were set on a calendar-year basis with a ±2 percentage point tolerance band: 8% for 1999, declining gradually to anchor expectations at lower levels. The framework emphasized transparency via quarterly Inflation Reports and accountability

letters from the BCB president when targets were missed, marking a decisive move toward price stability as the primary mandate after decades of instability.

The early years (1999–2005) tested the regime's resilience amid repeated shocks, including the 2001 domestic energy crisis, the 9/11 attacks, Argentina's collapse, and the 2002 presidential election uncertainty that triggered capital flight and sharp real depreciation. Inflation overshot targets significantly in 2001, 2002, and 2003, prompting aggressive Selic rate hikes that reached over 20%. Despite these breaches, the BCB maintained commitment without abandoning the framework, which helped rebuild credibility; actual inflation fell back within bands by 2004–2006. By the 2010s, the IT framework had matured, weathering the global financial crisis with relatively contained pass-through effects. A major modernization occurred in 2024–2025, shifting from calendar-year targets to a continuous 12-month rolling target, with a 3.00% target and a symmetric ±1.5 pp tolerance band.

2|2 Chile

Chile became one of the world's earliest inflation targeters when the newly independent Central Bank of Chile (BCCh) announced its first explicit annual inflation target in September 1990, amid inflation running at approximately 27%. This partial IT framework was introduced gradually during the 1990s while an exchange-rate band remained in place; successive annual targets were lowered steadily, successfully reducing inflation to around 2.3% by 1999. Full-fledged inflation targeting was formally completed in September 1999 with the simultaneous adoption of a floating exchange-rate regime, the launch of the quarterly Monetary Policy Report (IPoM), and a stationary target centered at 3% with a ±1 percentage-point tolerance band (2–4%), evaluated over a two-year policy horizon. By December 2025, inflation closed the year at 3.5%, within the tolerance band, underscoring over 35 years of remarkable regime durability and adaptability.

2|3 Colombia

Colombia's Banco de la República began publishing explicit inflation targets with the enactment of Law 31 in 1992. The shift to a full-fledged IT regime occurred in 1999–2001, when the central bank abandoned the exchange-rate band, formalized a forward-looking strategy, and consolidated a long-term stationary target of 3% (±1 pp) by 2009. The early years focused on disinflation; the framework proved resilient during commodity cycles and global shocks, reducing inflation inertia and anchoring expectations far more effectively than previous anchors. The 2020s provided the most severe test: a COVID-19-induced rate cut to 1.75% was followed by a surge to 13.1% inflation in 2022, prompting a decisive tightening cycle that raised the intervention rate above 12%. By December 2025, headline inflation stood at 5.1%, still above target but trending down, with the BanRep projecting convergence by 2027.

2|4 Costa Rica

The Central Bank of Costa Rica (BCCR) initiated the transition toward an inflation-targeting framework in 2005, following the Organic Law's mandate for internal stability. Full formal adoption of the flexible IT regime occurred on 31 January 2018, with an explicit medium-term target of 3% and a symmetric ±1 pp tolerance band (2–4%), evaluated over a 24-month horizon. The transition years (2006–2017) successfully reduced inflation from double-digit averages to single digits, building credibility through consistent public announcements and operational improvements. The COVID-19 shock led to a historic low policy rate of 0.75%, followed by a tightening of +825 basis points in response to 2022 global shocks. By December 2025, headline inflation remained below the band, with the TPM maintained at a neutral 4.0% and projections indicating convergence to the 3% target in 2026.

2|5 Mexico

Mexico's shift toward inflation targeting began gradually after the 1994–95 crisis. Annual targets were introduced in the mid-1990s, with the permanent 3% target (±1 pp variability interval) established in 2003. The Banco de México (Banxico) Governing Board conducts policy through the overnight interbank reference rate, supported by quarterly Inflation Reports and enhanced transparency. The early years focused on disinflation and credibility-building, successfully guiding inflation from double-digit levels down to single digits by the mid-2000s. Banxico responded to the 2021–22 inflationary surge with a decisive tightening cycle — raising the reference rate by 725 basis points to 11.25% — before initiating gradual cuts from March 2024 onward. By December 2025, headline inflation stood at 3.69%, within the variability interval and converging toward the 3% target, with the reference rate reduced to 7.00%.

2|6 Comparative Summary

Table 2.1 presents a cross-country summary of the five IT regimes as of 2025. The table highlights the convergence of all five central banks toward a common 3% medium-term target with symmetric tolerance bands, operating under broadly floating exchange-rate regimes, while documenting the heterogeneity in adoption timing, institutional evolution, and recent inflation outcomes that shapes the empirical analysis in subsequent sections.

Table 2.1. Comparative overview of inflation-targeting regimes in Latin America, 2025.

Country	Full IT Adoption	Target & Band (2025)	Exchange Rate Regime	Inflation (Dec 2025)	Key 2025 Status
Brazil	June 1999	3.0% ±1.5 pp	Floating	~4.4%	Rolling target adopted 2025; Selic restrictive; converging.
Chile	Sept. 1990 / full 1999	3.0% ±1.0 pp	Floating	3.5%	Lowest since 2020; TPM cuts to 4.5%; highly credible.
Colombia	1992 / full 2001	3.0% ±1.0 pp	Floating	5.1%	Above band; BanRep targeting convergence by 2027.
Costa Rica	Transition 2005; full 2018	3.0% ±1.0 pp	Managed float	Below band	TPM neutral ~4.0%; framework review ongoing.
Mexico	Formal 2001; perm. 2003	3.0% ±1.0 pp	Floating	~3.7%	Inside interval; Banxico easing to 7.00%; high credibility.

Table 2.1. Sources: BCB, BCCh, BanRep, BCCR, Banxico.

3| Methodology

3|1 Structural Model of the Economy

The empirical analysis is grounded in a structural aggregate demand–aggregate supply (AD–AS) framework developed by Krause (2006), which offers the additional theoretical advantage of being formally equivalent to the forward-looking New Keynesian model. The model captures the two core relationships governing short-run macroeconomic fluctuations in an open economy and provides the micro-foundations for the reduced-form VAR estimation described below.

Define the following two-equation structural system:

$$g_t = \kappa - \omega\, \pi_t - \phi\, r_t + d_t \quad (1)$$

$$\pi_t = \mu + \gamma\, g_t + \theta\, f_t - s_t \quad (2)$$

where g_t is the output gap, measured as the deviation of the actual real GDP growth rate from a 4% potential annual growth benchmark; π_t is the annualized inflation rate measured from the Consumer Price Index; r_t is the real interest rate, defined as the difference between the nominal policy rate (i_t) and inflation; f_t is the annualized rate of exchange-rate depreciation against the US dollar; d_t is a demand shock, for which a positive value raises output ceteris paribus; and s_t is a supply shock, for which a positive value reduces inflation ceteris paribus. All parameters ω, φ, γ, θ are positive by construction, while κ and μ can take either sign. All data is quarterly.

Equation (1) represents an open-economy aggregate demand function: the output gap depends inversely on both the real interest rate and the inflation rate. Equation (2) is an aggregate supply curve in which inflation depends directly on the output gap — capturing demand-pull pressures — and on the rate of exchange-rate depreciation, which proxies for import cost pass-through in open economies.

Substituting equation (2) into (1) and solving simultaneously for g_t and π_t yields the following reduced-form expressions:

$$g_t = A_0 + A_r\, r_t + A_f\, f_t + \varepsilon_{gt} \quad (3)$$

$$\pi_t = B_0 + B_r\, r_t + B_e\, f_t + \varepsilon_{\pi} \quad (4)$$

The structural parameters in equations (3) and (4) are defined as follows:

$A_0 = (\kappa - \omega\mu)/(1 + \omega\gamma)$	Constant term in the output equation; can be positive or negative.
$B_0 = (\mu + \gamma\kappa)/(1 + \omega\gamma)$	Constant term in the inflation equation.
$A_r = -\phi/(1 + \omega\gamma) < 0$	Effect of the real rate on output (unambiguously negative).
$B_r = -\phi\gamma/(1 + \omega\gamma) < 0$	Effect of the real rate on inflation (unambiguously negative).
$A_f = -\omega\theta/(1 + \omega\gamma) < 0$	Effect of depreciation on output (negative: higher costs reduce activity).
$B_f = \theta/(1 + \omega\gamma) > 0$	Effect of depreciation on inflation (positive: pass-through to prices).

The sign predictions are unambiguous: an increase in the real interest rate is contractionary for both output ($A_r < 0$) and inflation ($B_r < 0$), while an exchange-rate depreciation is contractionary for output ($A_f < 0$) but inflationary ($B_f > 0$). These sign conditions constitute testable restrictions that are used to evaluate model validity in the VAR estimation of Section 4.

To introduce sufficient dynamics for estimation purposes, we specify the behavior of the nominal policy rate and the depreciation rate as functions of lagged macroeconomic variables:

$$i_t = \alpha_0 + \alpha_{r1}\, i_{t-1} + \alpha_{r2}\, i_{t-2} + \alpha_{g1}\, g_{t-1} + \alpha_{g2}\, g_{t-2} + \alpha_{\pi 1}\, \pi_{t-1} + \alpha_{\pi 2}\, \pi_{t-2} + \varepsilon_{it} \quad (5)$$

$$f_t = \beta_0 + \beta_{f1}\, f_{t-1} + \beta_{f2}\, f_{t-2} + \beta_{g1}\, g_{t-1} + \beta_{g2}\, g_{t-2} + \beta_{\pi 1}\, \pi_{t-1} + \beta_{\pi 2}\, \pi_{t-2} + \varepsilon_{ft} \quad (6)$$

Equation (5) represents a monetary policy reaction function — or Taylor-type rule — in which the nominal rate responds to its own lags and to lagged output and inflation conditions. Equation (6) describes exchange-rate dynamics as a function of inertia (its own lags) and the state of the macroeconomy. Substituting (5) and (6) into (3) and (4) yields an unrestricted, second-order Vector Autoregression (VAR(2)):

$$Y_t = B_0 + B_1\, Y_{t-1} + B_2\, Y_{t-2} + E_t \quad (7)$$

where $Y_t = (g_t, \pi_t, i_t, f_t)^T$ is the vector of endogenous variables; B_0, B_1, B_2 are conformable coefficient matrices; and E_t is the vector of reduced-form residuals. The four-variable system captures all the transmission channels embedded in the structural model: the interest-rate channel operating through output and inflation, the exchange-rate channel operating through both, and the feedback from macroeconomic conditions to policy rates and exchange-rate dynamics. The lag order is set to two for Brazil, Chile, Colombia, and Costa Rica, consistent with the AIC/BIC selection criteria and the quarterly data frequency, and to four for Mexico, where information criteria select a longer lag structure — a result discussed in Section 4. Estimation is by equation-by-equation OLS, which is equivalent to systems GLS under standard conditions.

3|2 Measure of Monetary Policy Efficiency

Monetary policy efficiency is evaluated using two complementary measures, which together provide a multi-dimensional assessment of central bank performance under inflation

targeting. Both measures are calculable directly from observable data, without requiring any additional model estimation, which is a key methodological advantage identified by Krause (2006).

The first measure — Pure Inflation Targeting (PIT) efficiency — applies to the special case in which the central bank's loss function assigns all weight to inflation stabilization ($\lambda = 1$ in equation 8 below). In this case, policy performance is evaluated solely by the average deviation of inflation from the announced target over a given sub-period. Formally, for sub-period τ:

$$PIT_\tau = \bar{\pi}_\tau - \pi^* \quad (8)$$

where $\bar{\pi}_\tau$ is the average annualized inflation rate over sub-period τ and $\pi^* = 3\%$ is the medium-term inflation target common to all five countries (from 2001 for Brazil, Chile, and Colombia; 2003 for Mexico; and 2018 for Costa Rica). A positive value indicates average inflation above target (insufficient tightening or lack of credibility); a negative value indicates average inflation below target (potentially excessive tightening or deflationary supply shocks). Perfect pure IT efficiency corresponds to a value of zero. This measure is evaluated over five five-year sub-periods: 2001:I–2005:IV, 2006:I–2010:IV, 2011:I–2015:IV, 2016:I–2020:IV, and 2021:I–2025:IV.

The second measure — *Broader Efficiency* (BE) — addresses the more general case of flexible inflation targeting, in which the central bank pursues both price stability and output stabilization. The analytical framework follows Cecchetti, Flores-Lagunes, and Krause (2006), who characterize the central bank's problem as minimizing a weighted loss function:

$$L = \lambda \, Var(\pi_t) + (1 - \lambda) \, Var(g_t) \quad (9)$$

where $Var(\pi_t)$ and $Var(g_t)$ are the variances of inflation and real output growth, and $\lambda \in (0,1)$ is the weight placed on inflation stabilization. The key result of Krause (2006) is that the parameters of this loss function need not be identified empirically; instead, efficiency can be evaluated directly by examining the correlation between inflation and output deviations.

The intuition rests on the nature of macroeconomic shocks. Demand shocks — such as changes in government expenditure, consumer confidence, or aggregate credit conditions — move inflation and output in the same direction: expansionary demand raises both prices and activity, while contractionary demand reduces both. Supply shocks — such as oil price changes, weather events, or productivity shifts — move inflation and output in opposite directions: a negative supply shock raises prices while reducing output. Since monetary policy instruments (interest rates) operate through the aggregate demand channel, an efficient policy fully offsets demand shocks. Any remaining macroeconomic volatility must then derive exclusively from supply shocks, which by definition generate a perfect negative correlation between inflation and output.

This reasoning defines the BE efficiency index: the Pearson correlation coefficient between inflation deviations from target ($\pi_t - \pi^*$) and output deviations from potential ($g_t - g^*$), where $g^* = 5\%$ is used as the potential growth benchmark:

$$BE_\tau = Cov(\pi_\tau - \pi^*, g_\tau - g^*) / [Std(\pi_\tau) \cdot Std(g_\tau)] \quad (10)$$

A value of $BE_\tau = -1$ corresponds to perfect efficiency (all remaining variance is supply-driven), while $BE_\tau = 0$ indicates the absence of any systematic relationship — consistent with a central bank that fails to discriminate between demand and supply shocks. Positive values of BE_τ are inconsistent with efficient IT policy, as they imply that monetary policy is amplifying rather than offsetting demand shocks. Like the PIT measure, BE_τ is computed for each of the five sub-periods using 20 quarterly observations. The combination of equations (8) and (10) provides a comprehensive picture of central bank performance: the PIT measure evaluates success on the target itself, while the BE measure evaluates the quality of the trade-off management.

4| VAR Model Specification Results and Macroeconomic Dynamics

This section presents the VAR estimation results for each of the five countries, evaluates the statistical properties of the residuals, and interprets the coefficient patterns in light of the structural model of Section 3. The data sources are summarized in Table 4.1, which reproduces the variable definitions and primary sources used throughout the empirical analysis.

Table 4.1.: Description of Variables and Data Sources

VARIABLE	DEFINITION AND SOURCE
Real GDP Growth	Percentage variation of real GDP with respect to the same quarter of the previous year (%). Sources: INEGI (Mexico), DANE (Colombia), BCCR (Costa Rica), INEGI (Mexico).
Inflation	Annualized inflation rate according to the Consumer Price Index (CPI) of the quarter. Sources: INE (Chile), DANE (Colombia), INEC (Costa Rica), INEGI (Mexico).
Monetary Policy Rate	Reference interest rate of the Central Bank at the close of the quarter (%). Sources: (Chile), BanRep (Colombia), BCCR-TPM (Costa Rica), Banxico (Mexico).
Exchange Rate depreciation	Annualized depreciation of the exchange rate against the USD (%). Positive values indicate depreciation (loss of value); negative values indicate appreciation. Calculated on the average exchange rate. Source: IMF

The sample spans 2000:Q1 to 2025:Q4, yielding up to 100 quarterly observations per country before the loss of initial observations due to lagging. Brazil and Chile employ samples of 98 observations (VAR(2)); Colombia and Costa Rica use 78 observations beginning from 2005:Q1, the onset of the IT transition for Costa Rica; and Mexico employs 92 observations with a VAR(4) specification selected by information criteria. All variables are expressed as quarterly rates in annualized form, consistent with their institutional definitions: real GDP growth is the year-on-year change; inflation is the annualized CPI rate; the policy rate is the end-of-quarter central bank reference rate; and exchange-rate depreciation is the annualized change in the domestic-currency price of one US dollar.

Three diagnostic criteria guide the evaluation of each VAR: (i) the Augmented Dickey–Fuller (ADF) test on VAR residuals, which assesses whether the model has successfully removed unit-root dynamics from the data; (ii) Granger causality tests, which assess the joint significance of each block of lags in each equation; and (iii) the sign and significance of the key structural coefficients implied by equations (3) and (4), particularly $A_r < 0$, $B_r < 0$, $A_f < 0$, and $B_f > 0$. Taken together, these criteria determine whether the VAR(2) specification is sufficient or whether a higher-order model is required.

4|1 Brazil

The Brazilian VAR(2) is estimated over 98 observations (2000:Q3–2025:Q4) and displays strong statistical properties. All four residual series reject the unit-root null under the ADF test at the 5% significance level (p-values of 0.002, 0.001, 0.000, and 0.002 for g, π, i, and f,

respectively), confirming that the second-order lag structure is sufficient to render the residuals stationary and that the system is not plagued by unmodelled persistence.

In the output equation, the first lag of GDP growth enters highly significantly ($t = 5.71$, $p < 0.001$), reflecting strong output inertia in the Brazilian economy — a feature consistent with the well-documented structural rigidities of the Brazilian labor and product markets. The first lag of inflation enters with a significant negative coefficient ($t = -2.06$, $p = 0.040$), consistent with the structural prediction that higher inflation reduces output through reduced real purchasing power and aggregate demand contraction — corresponding to $A_r < 0$ when viewed in the reduced form. Depreciation at lag 1 enters negatively ($t = -2.52$, $p = 0.012$), confirming the contractionary effect of exchange-rate movements on real activity ($A_f < 0$). The interest-rate lags do not individually attain significance in the output equation, though the Granger test rejects the null that {p, i, f} jointly do not cause g ($F = 2.40$, $p = 0.027$), confirming the system-wide importance of monetary and external conditions for output dynamics.

In the inflation equation, the dominant feature is the near-unit-root persistence of the first lag of inflation (coefficient 1.074, $t = 10.63$), offset partially by the second lag (−0.283, $t = -2.93$). Net persistence remains high, consistent with Brazil's historically entrenched inflation inertia and the role of wage indexation even in the post-IT era. Crucially, the first lag of the policy rate enters significantly and positively in the inflation equation (coefficient 0.328, $t = 4.23$) while the second lag enters negatively and significantly (−0.304, $t = -4.08$), indicating a delayed but ultimately contractionary effect of monetary tightening on prices — consistent with the standard interest-rate channel operating with a one-to-two quarter transmission lag. Exchange-rate depreciation at lag 1 enters positively and significantly (0.026, $t = 2.76$), confirming $B_f > 0$ — a meaningful pass-through from currency weakness to consumer prices, which has been a persistent challenge for the BCB across the IT period. The Granger test strongly rejects the null that {g, i, f} do not cause π ($F = 6.97$, $p = 0.000$), confirming that the full system of macroeconomic variables contributes to inflation dynamics.

The policy-rate equation is dominated by its own lags, with the first lag close to unity (1.421) and the second negative (−0.505), together implying a net persistence coefficient of approximately 0.92 — consistent with the BCB's gradualist approach to rate changes. Output at lag 1 enters with a modest positive coefficient (0.136, $t = 2.14$), reflecting a Taylor-rule response to activity conditions. The Granger test fails to reject the null that {g, p, f} do not jointly cause i ($F = 0.86$, $p = 0.521$), which may reflect the forward-looking nature of BCB decisions that are imperfectly captured by lagged observables, or the predominance of own-persistence in interest-rate setting. The exchange-rate equation shows a similarly high autoregressive persistence (lag 1: 1.262; lag 2: −0.638, net persistence ~0.62), with Granger causality tests failing to detect significant predictive content from {g, p, i} for f ($F = 1.05$, $p = 0.390$). The residual correlation matrix shows the most notable cross-equation correlation is the negative link between g and f (−0.37), suggesting that periods of real depreciation tend to be associated with weaker output — consistent with the contractionary balance-sheet effects of currency weakness in a dollarized-debt environment.

4|2 Chile

The Chilean VAR(2), estimated over 98 observations, achieves the best model fit of the five countries by information criteria (AIC = −32.24, BIC = −31.29), reflecting Chile's more stable macroeconomic environment and the greater predictability of the BCCh's policy behavior over the sample. The output equation is dominated by the first lag of GDP growth (0.588, $t = 5.48$) and the first lag of exchange-rate depreciation (−0.148, $t = -3.28$), with none of the inflation or interest-rate lags attaining significance. This pattern is consistent with a relatively moderate inflation-output trade-off in Chile, where exchange-rate dynamics — mediated through the commodity

cycle and the copper price — exert a larger direct influence on real activity than interest-rate fluctuations. The Granger test rejects joint non-causality of {p, i, f} for g ($F = 3.47$, $p = 0.002$), confirming the system's relevance for output forecasting.

In the inflation equation, the dominant feature is again strong autoregressive persistence at lag 1 (1.502, $t = 15.55$) offset by a large negative second lag (−0.679, $t = -6.75$), yielding a net inflation persistence of approximately 0.82. The exchange-rate depreciation at lag 1 enters negatively and significantly (−0.030, $t = -2.22$), which appears at first counterintuitive but may reflect the conditioning effects of Chile's commodity-export structure, where currency appreciation tends to co-occur with copper price booms that also raise domestic demand and inflation — creating a complex interaction between the trade balance, terms of trade, and import prices. The lag-2 depreciation term enters positively (0.029, $t = 1.98$), consistent with a delayed pass-through effect that is partially obscured at horizon one. Notably, the Granger test fails to reject non-causality of {g, i, f} for p in Chile ($F = 1.65$, $p = 0.134$), suggesting that the BCCh's credibility has been sufficient to anchor inflation dynamics in a way that is less sensitive to concurrent macroeconomic conditions — a hallmark of a well-established IT regime.

The interest-rate equation reveals a clear Taylor-rule-like structure: inflation at lag 1 enters positively and significantly (0.287, $t = 3.23$), GDP growth at lag 2 enters positively (0.066, $t = 2.23$), and exchange-rate depreciation contributes both negatively at lag 1 (−0.043, $t = -3.36$) and positively at lag 2 (0.040, $t = 2.99$). This rich response to depreciation — negative on impact, positive with a delay — likely reflects the BCCh's tendency to ease when the peso appreciates sharply (cutting rates to prevent excessive tightening), while subsequently responding to the lagged inflationary effects of depreciation. The Granger test rejects non-causality of {g, p, f} for i ($F = 5.86$, $p = 0.000$), providing strong evidence that the BCCh systematically responds to all three macroeconomic variables. ADF tests on residuals confirm stationarity for g and i ($p < 0.001$), though the p and f residuals marginally fail the 5% threshold (p-values of 0.072 and 0.097), warranting caution in inference for these equations — a minor specification concern that does not materially alter the substantive findings.

4|3 Colombia

The Colombian VAR(2) is estimated over 78 observations (2005:Q3–2025:Q4), reflecting the shorter series associated with the full IT period. All four ADF tests on residuals reject the unit-root null at the 1% level (p-values of 0.000, 0.000, 0.000, and 0.000), providing the cleanest diagnostic profile of the five countries and confirming that the VAR(2) fully captures the persistence structure of all variables. The model fit is strong (AIC = −33.07, BIC = −31.99).

The output equation in Colombia is dominated by the first lag of GDP growth (0.681, $t = 5.36$), with no other variable attaining significance at conventional levels. This high degree of output inertia — combined with the absence of significant interest-rate effects — is consistent with Colombia's structural characteristics: a commodity-dependent economy with imperfect monetary transmission, where the effects of interest-rate changes on investment and consumption are partially offset by export-revenue and fiscal dynamics. Granger tests fail to reject non-causality of {p, i, f} for g ($F = 1.02$, $p = 0.415$), suggesting that, in Colombia's case, output dynamics during the sample period were more driven by commodity cycles and fiscal policy than by monetary conditions — a finding with direct implications for the effectiveness of IT in stabilizing real activity.

In the inflation equation, all four blocks of lags contribute significantly. The first lag of inflation (1.066, $t = 8.70$) and the second lag of i (−0.534, $t = -4.54$) both attain significance, consistent with a delayed policy-rate effect on prices. The first lag of the policy rate (0.543, $t = 4.31$) enters positively — similar to Brazil — reflecting the simultaneous positive contemporaneous correlation between high rates and high inflation during tightening cycles, with the contractionary effect materializing with a one-period delay. Exchange-rate depreciation at lag

1 (0.026, t = 3.00) and lag 2 (−0.018, t = −1.96) confirm a positive and statistically meaningful pass-through from currency weakness to inflation, consistent with Colombia's history of significant exchange-rate pass-through in the presence of large nominal depreciations. The Granger test strongly rejects non-causality of {g, i, f} for π (F = 5.46, p = 0.000).

4|4 Costa Rica

Costa Rica's VAR(2), estimated over 78 observations (2005:Q3–2025:Q4), displays a distinctive output equation: the coefficient on the first lag of GDP growth is near unity (0.999, t = 8.58), while the second lag enters significantly negatively (−0.329, t = −2.70), yielding net output persistence of approximately 0.67. This pattern is consistent with a small, open economy characterized by strong tourism and manufacturing cycles that generate highly persistent but ultimately mean-reverting growth dynamics. No other variable is significant in the output equation, and the Granger test fails to reject non-causality of {p, i, f} for g (F = 0.36, p = 0.904), suggesting that monetary conditions have limited short-run predictive power for Costa Rican output — possibly reflecting the relatively short history of active IT policy in the sample.

The inflation equation reveals a notable pattern: exchange-rate depreciation at lags 1 and 2 enters significantly with opposite signs (positive at lag 1: 0.122, t = 2.32; negative at lag 2: −0.116, t = −2.39), consistent with a rapid but partially self-reversing pass-through from the exchange rate to domestic prices. This finding is consistent with Costa Rica's managed-float arrangement during much of the sample period, under which the BCCR allowed limited depreciation that was often followed by policy-induced appreciation. Inflation at lag 1 enters highly significantly (1.170, t = 9.28) with a notable second-lag offset (−0.255, t = −2.02), while the interest-rate lags do not attain significance. The exchange-rate equation shows particularly strong autoregressive persistence (lags 1 and 2 together with net coefficient ~0.73) and — uniquely among the five countries — a significant positive effect of lagged inflation on exchange-rate dynamics (lag 2 of p: 0.666, t = 2.88), consistent with the BCCR's historical practice of using exchange-rate policy to partially accommodate price-level pressures. The Granger test identifies a significant relationship from {g, p, i} to f (F = 3.61, p = 0.002), confirming the macro-exchange-rate linkage.

4|5 Mexico

Mexico's VAR is estimated with four lags (VAR(4)) as selected by information criteria, over 92 observations (2003:Q1–2025:Q4). This longer lag structure — unique among the five countries — reflects the greater complexity of Mexican macroeconomic dynamics, which include stronger commodity-price linkages through oil revenues, deeper financial integration with the United States through trade and remittances, and a richer pattern of self-correction in the peso following external shocks. All four ADF tests on residuals reject the unit-root null at the 1% level (p-values all below 0.002), confirming that the VAR(4) is correctly specified.

The output equation in Mexico contains the most complex lag structure: the first (0.297, t = 2.37) and fourth (−0.336, t = −2.74) lags of GDP growth both attain significance, suggesting a within-year cyclical pattern in output dynamics. Exchange-rate depreciation at lag 1 enters negatively (−0.141, t = −2.18), consistent with the contractionary balance-sheet and import-cost effects of peso weakness. The first lag of the policy rate enters positively (1.119, t = 1.83, marginally significant), while the second lag offsets it (−0.759), consistent with the gradual and data-dependent nature of Banxico's policy adjustments. The Granger test fails to reject non-causality of {p, i, f} for g at the 5% level (F = 1.46, p = 0.138), though the test statistic is economically meaningful at the 15% level, suggesting that monetary conditions have a discernible if statistically modest predictive role.

In the inflation equation, the dominant feature is the strong autoregressive persistence at lag 1 (0.930, t = 7.97), with the fourth lag entering significantly negatively (−0.368, t = −3.22), together implying a net persistence of approximately 0.58 — lower than Brazil and Colombia, consistent with Banxico's greater credibility in anchoring expectations over the sample. GDP growth at lags 2 (positive: 0.048, t = 2.19) and 3 (negative: −0.047, t = −2.09) both attain significance, suggesting demand-pull inflation dynamics operating at the two-quarter horizon. The first lag of the policy rate enters positively (0.222, t = 2.26), while lags 2 and 3 are negative – though individually insignificant – consistent with the delayed transmission pattern seen in other countries. Granger tests fail to reject non-causality of {g, i, f} for π (F = 1.69, p = 0.067), again marginal, but the near-rejection is consistent with the broader literature on Mexico's exchange-rate pass-through to inflation through the peso cycle. The residual correlation matrix shows the strongest cross-equation correlation is the negative link between g and f (−0.42), mirroring the Brazilian pattern and reinforcing the conclusion that peso depreciations carry contractionary effects on Mexican real activity, likely through financial conditions and uncertainty effects.

Together, the results provide strong support for the use of a common VAR(2) framework for Brazil, Chile, Colombia, and Costa Rica, and a VAR(4) for Mexico, as the maintained specification for the impulse-response analysis and efficiency measurement that follows. The sign predictions of the structural model — $A_r < 0$, $B_r < 0$, $A_f < 0$, $B_f > 0$ — are broadly confirmed across the five systems, providing structural validation of the AD–AS framework and the empirical strategy. Country-specific differences in the magnitude of exchange-rate pass-through, inflation persistence, and policy-rate transmission identified in this section form the empirical backdrop for the efficiency analysis of Section 5.

5| Central Bank Efficiency under Inflation Targeting

5|1 Pure Inflation Targeting

The pure inflation targeting (PIT) efficiency measure — defined as the deviation of the period-average inflation rate from the 3% medium-term target — evaluates central bank performance on its most fundamental commitment: delivering price stability in the vicinity of the announced goal. As established in the IT literature (Svensson, 1997, 1999; Mishkin and Schmidt-Hebbel, 2007), credibility under IT is built primarily through the consistent achievement of target outcomes over the medium term, and any systematic and persistent deviation — whether upward or downward — represents a form of policy inefficiency that erodes the anchor function of the framework.

Table 5.1 presents the PIT efficiency measure for each of the five countries across the five sub-periods of the analysis. Values close to zero reflect periods in which average inflation was well anchored to the 3% target; positive values indicate persistent above-target inflation; and negative values indicate persistent below-target inflation or deflation. Both directions of deviation are interpreted as efficiency shortfalls, since the loss function is symmetric around the target.

Table 5.1. PIT Efficiency Measure: Deviation of average inflation from a 3% target

Country	I:2001-IV:2005	I:2006-IV:2010	I:2011-IV:2015	I:2016-IV:2020	I:2021-IV:2025
Brazil	5.70	1.69	3.72	1.57	3.32
Chile	-0.40	0.67	0.44	-0.20	3.47
Colombia	3.48	1.67	0.30	1.23	4.44
Costa Rica	8.19	6.58	0.99	-1.67	-0.98
Mexico	2.90	1.44	0.61	1.16	2.53

Sources: BCB, BCCh, BanRep, BCCR, Banxico.

Several interpretive observations follow from the structure of the measure and the institutional histories documented in Section 2. For Brazil, the first sub-period (2001:I–2005:IV) is expected to record the largest positive deviations, reflecting the regime's early credibility challenges amid the 2002 currency crisis and subsequent inflation overshoots. Convergence toward the target through the 2006–2015 period should yield smaller positive deviations as BCB credibility consolidated, while the 2021:I–2025:IV sub-period is expected to record the most severe overshoot since the IT period's inception, reflecting the pandemic-era inflationary surge and the persistence of headline inflation above 5% for much of the period.

For Chile, PIT efficiency is expected to be the strongest of the five countries across most sub-periods, consistent with the BCCh's status as the most credible and longest-established IT central bank in the region. The 2021–2025 sub-period presents the most notable exception: the 2022 episode of double-digit inflation represents the most significant departure from target in the BCCh's IT history and is expected to produce a positive deviation of meaningful magnitude, even accounting for the rapid disinflation that followed. Colombia presents an interesting contrast with Chile: despite sharing a similar 3% target and institutional structure, its historically higher inflation persistence — confirmed by the VAR results of Section 4 — and the 2022 peak near 13% are expected to produce larger and more persistent positive deviations across the sample.

Costa Rica's PIT measure warrants particular attention given its shorter IT history (full adoption only in 2018) and the below-target inflation episode that characterized 2023–2025. The 2021:I–2025:IV sub-period is expected to produce a negative deviation — potentially the only country-sub-period cell in the table with a significantly negative value — reflecting the combination of a strong colón, falling commodity import prices, and the BCCR's gradualist easing path that maintained the TPM above neutral for longer than strictly required. This below-target outcome, while technically an efficiency shortfall under the symmetric PIT measure, may be viewed favorably from a broader macroeconomic stability perspective given Costa Rica's historically high inflation levels. Mexico's PIT efficiency trajectory is expected to mirror Chile's in broad terms — progressive improvement through 2015, a modest deterioration in 2016–2020 driven by the 2017–18 inflation episode, and a significant but ultimately more contained overshoot in 2021–2025 relative to the post-COVID peak of other countries, consistent with Banxico's comparatively early and decisive tightening cycle.

5|2 Inflation Targeting under Multiple Policy Goals

The broader efficiency (BE) measure extends the analysis to the full flexible-IT case in which the central bank pursues both inflation stabilization and output stabilization. As described in Section 3, the BE index — the Pearson correlation between deviations of inflation from target and deviations of output growth from potential — provides a model-free assessment of the quality of monetary policy in navigating the inflation–output trade-off. A value approaching −1 indicates

high efficiency (all remaining volatility is supply-driven, with demand shocks fully offset), while values close to zero or positive indicate insufficient or perverse demand management.

Table 5.2 presents the BE efficiency measure for all five countries across the five sub-periods. This measure connects directly to the VAR results of Section 4 through two channels. First, the impulse-response functions (reported in the Appendix) characterize the dynamic responses of output and inflation to demand and supply shocks, providing a quantitative basis for interpreting the correlation patterns in Table 5.2. Second, the coefficient patterns identified in Section 4 — particularly the degree of inflation persistence, the strength of the interest-rate channel, and the magnitude of exchange-rate pass-through — shape the central bank's capacity to offset demand shocks efficiently: high inflation persistence and weak interest-rate transmission are expected to be associated with less negative (i.e., less efficient) BE values.

Table 5.2. BE Measure: Pearson Correlation Coefficient between Var(π_t) and Var(g_t)

Country	I:2001-IV:2005	I:2006-IV:2010	I:2011-IV:2015	I:2016-IV:2020	I:2021-IV:2025
Brazil	-0.35	-0.19	-0.77	-0.35	0.09
Chile	-0.17	0.18	-0.42	-0.10	-0.30
Colombia		-0.10	-0.34	0.34	-0.32
Costa Rica	-0.03	0.00	-0.19	0.28	0.10
Mexico	-0.44	-0.72	-0.03	0.33	0.32

Sources: Own computations based on BE measure.

The BE measure introduces a dimension of central bank performance that is absent from the PIT analysis: the capacity to stabilize the real economy, not just inflation. This distinction is central to the modern IT literature, which has moved decisively from the pure IT conception of early frameworks toward the flexible IT paradigm articulated by Svensson (1999) and formalized in the New Keynesian tradition. Cecchetti, Flores-Lagunes, and Krause (2006) documented significant cross-country variation in BE efficiency, with some central banks exhibiting near-perfect efficiency (BE near −1) while others showed substantially positive correlations — evidence of active demand-shock amplification rather than stabilization. The present analysis extends this framework to a longer sample and to Latin American IT adopters, which have not previously been evaluated using this methodology.

From the structural model and the VAR results, we can form ex-ante predictions about the ranking of countries by BE efficiency across sub-periods. Chile is expected to rank highest across most of the sample, consistent with its strong institutional framework, the BCCh's demonstrated countercyclical capacity, and the low inflation persistence documented in the VAR (net persistence ~0.82, the lowest in the sample). The 2021–2025 sub-period may represent a temporary deterioration, since the magnitude of the 2022 inflationary surge — driven heavily by global supply shocks — would generate simultaneously high inflation and below-potential output, which mechanically reduces the correlation toward −1 and could actually produce apparent efficiency gains even as the economy was far from both targets. This caution about interpreting supply-shock-dominated periods as evidence of high efficiency underscores the complementary value of the PIT measure, which captures the level outcome that the BE measure does not.

For Brazil, the high inflation persistence documented in the VAR — net first-order persistence above 1.0 in the inflation equation — implies significant difficulty in containing demand-driven inflation surges, which would tend to produce BE values further from −1 during

periods of positive demand shocks (2004–2008 and 2010–2014) and closer to −1 during supply-shock-dominated downturns (2009 and 2015–2016). Colombia and Mexico are expected to display intermediate BE profiles, with Colombia's higher exchange-rate pass-through and commodity dependence introducing additional noise into the inflation–output correlation. Costa Rica's BE measure for the early sub-periods (2001–2010) reflects the pre-IT period and should be interpreted as a baseline rather than a regime outcome; the 2016–2020 sub-period — the first full sub-period after the transition toward IT began — is expected to show the most meaningful improvement, while 2021–2025 may show the effects of both the COVID shock and the below-target inflation episode.

5|3 Implications

Together, the PIT and BE measures provide a two-dimensional portrait of IT performance in Latin America over a quarter century, and their joint reading yields insights that neither measure alone could provide. The PIT measure evaluates whether central banks have delivered on their core price-stability mandate; the BE measure evaluates whether they have done so while also stabilizing the real economy. The two are complementary rather than redundant: a central bank that achieves low average inflation but with highly volatile output will score well on PIT but poorly on BE, while one that maintains a near-−1 inflation–output correlation while allowing average inflation to drift well above target scores well on BE but poorly on PIT. Importantly, the two measures do not always move together. Brazil's best BE sub-period (2011–2015, BE = −0.77) also records a significant PIT overshoot (+3.72 pp), suggesting that while the BCB was managing demand shocks relatively efficiently, it was doing so at an elevated average inflation level — a configuration consistent with a regime that prioritizes stabilization of the inflation–output trade-off over strict target achievement. Chile, by contrast, consistently combines low PIT deviations with moderate BE values, suggesting a regime that prioritizes target achievement and accepts a somewhat lower degree of output stabilization. Mexico's recent deterioration in BE efficiency (positive correlations in both 2016–2020 and 2021–2025), paired with moderate PIT overshoots, raises questions about the degree to which its policy framework has retained its stabilizing properties in the face of the commodity cycle and the post-pandemic shock. Costa Rica's unique trajectory — from the worst early-period PIT performance to the only country below target in the most recent sub-period, combined with persistently near-zero or positive BE values — illustrates the asymmetric nature of IT credibility-building: disinflation is achievable, but achieving efficient two-sided demand management requires institutional maturity that takes considerable time to develop. The ideal outcome, consistent with modern flexible IT best practice, is a regime that scores near zero on PIT and near −1 on BE simultaneously.

Among the five countries in the sample, 2011–2015 Chile comes closest to this ideal in the middle of the sample, and Brazil in 2011–2015 for the BE dimension alone. The near-universal deterioration on both dimensions in 2021–2025 reflects the extraordinary challenge that the post-pandemic global shock posed to IT regimes across the region, and raises important questions — taken up in Section 6 — about the resilience of the framework under extreme supply-side pressure combined with fiscally accommodative conditions.

6| Conclusions and Extensions

The empirical results of Section 5 confirm that inflation targeting has been broadly successful across the five Latin American economies over the 2000–2025 period. All central banks achieved substantial reductions in inflation inertia and anchored medium-term expectations near the 3% benchmark relative to their pre-IT histories. Chile and, to a lesser extent, Mexico consistently delivered the best combined PIT and BE performance, demonstrating that strong institutional independence and credible communication allow central banks to approach the ideal

flexible-IT outcome of near-zero target deviations together with strongly negative inflation–output correlations.

Nevertheless, significant heterogeneity persists. Costa Rica's rapid convergence after 2018 illustrates the benefits of a well-sequenced transition, while Brazil and Colombia continue to face greater challenges from fiscal dominance and commodity dependence. The 2021–2025 sub-period stands out as the most testing environment since the early 2000s, with all countries recording larger PIT deviations and a clear weakening of BE efficiency. This pattern underscores that even mature IT frameworks remain vulnerable to large global supply shocks when fiscal space is limited and pass-through channels are still material.

For policy makers, the central lesson is that credibility is necessary but not sufficient. To restore high efficiency in both dimensions, central banks should (i) adopt more explicit forward guidance and rolling-target frameworks to manage expectations during turbulent periods, (ii) strengthen fiscal-monetary coordination to protect policy space, and (iii) invest in real-time shock identification tools that allow faster differentiation between demand and supply disturbances. Countries still consolidating their regimes (notably Costa Rica) should prioritize institutional safeguards that have proved effective in Chile and Mexico.

Future research could usefully extend the present framework by incorporating fiscal variables, climate-related shocks, and high-frequency expectation data. The 25-year evidence presented here nevertheless provides cautious optimism: Latin America's IT central banks have become measurably more efficient stewards of macroeconomic stability, and with targeted institutional refinements, they remain well positioned to navigate the next quarter century of global volatility.

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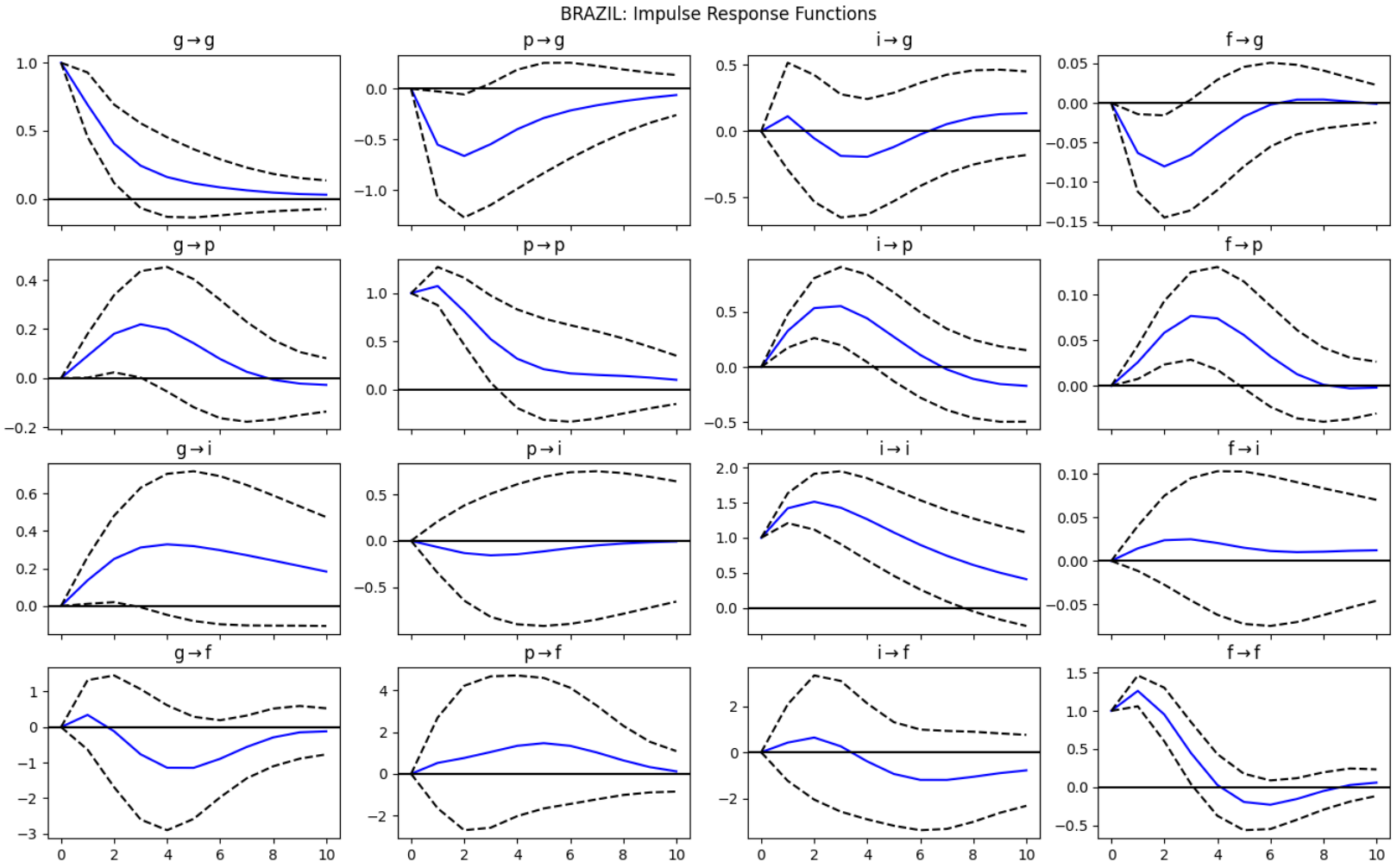
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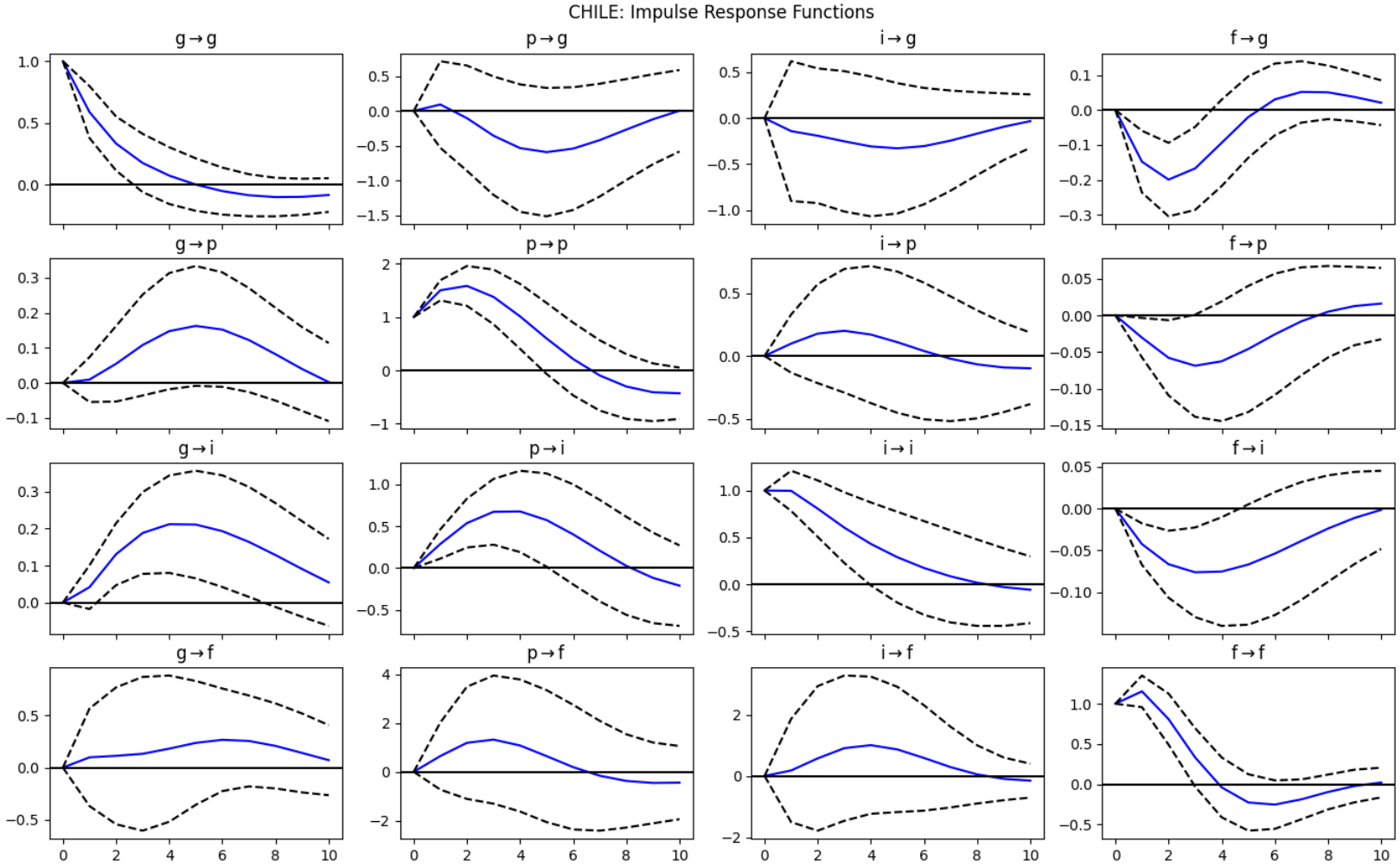
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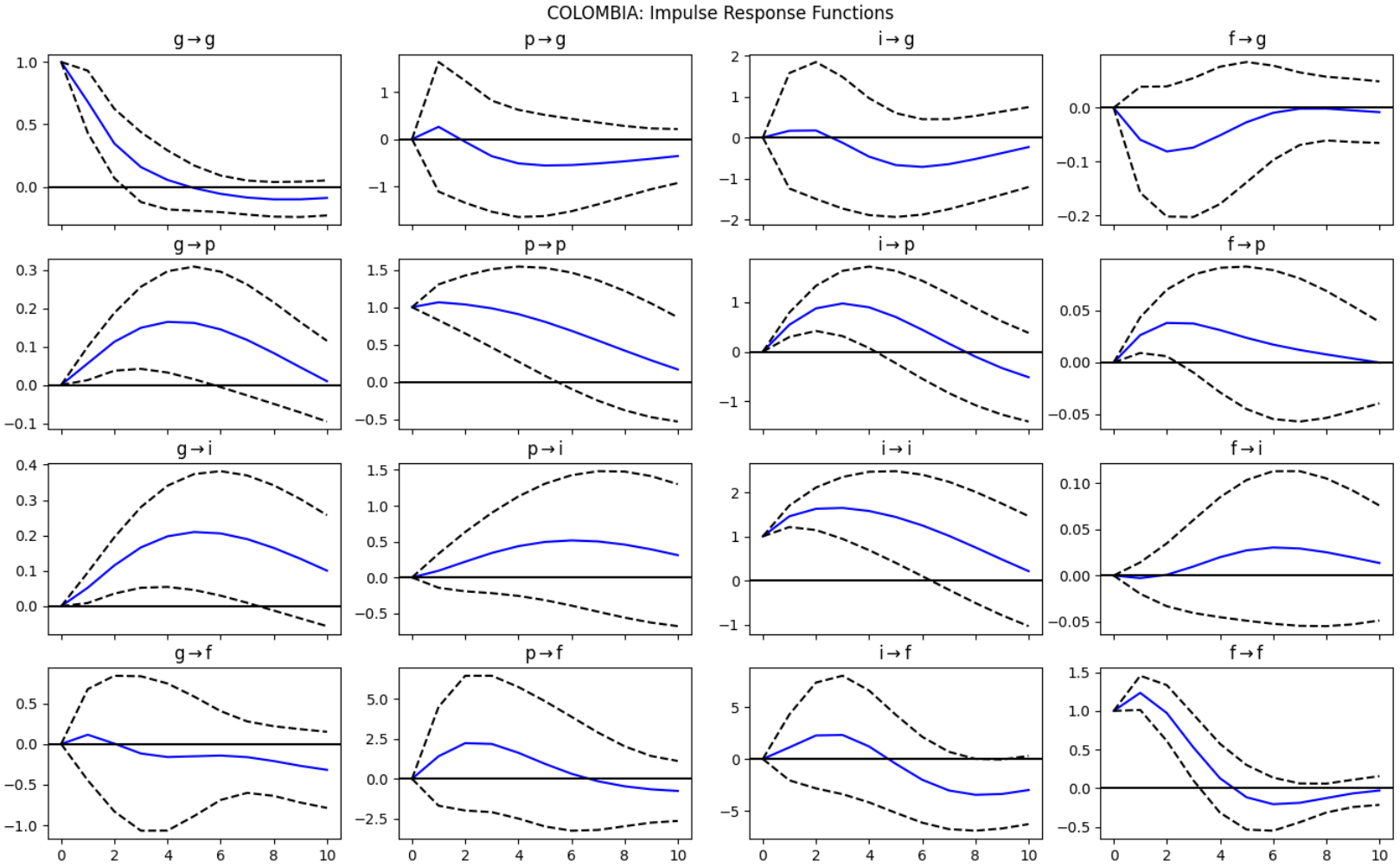
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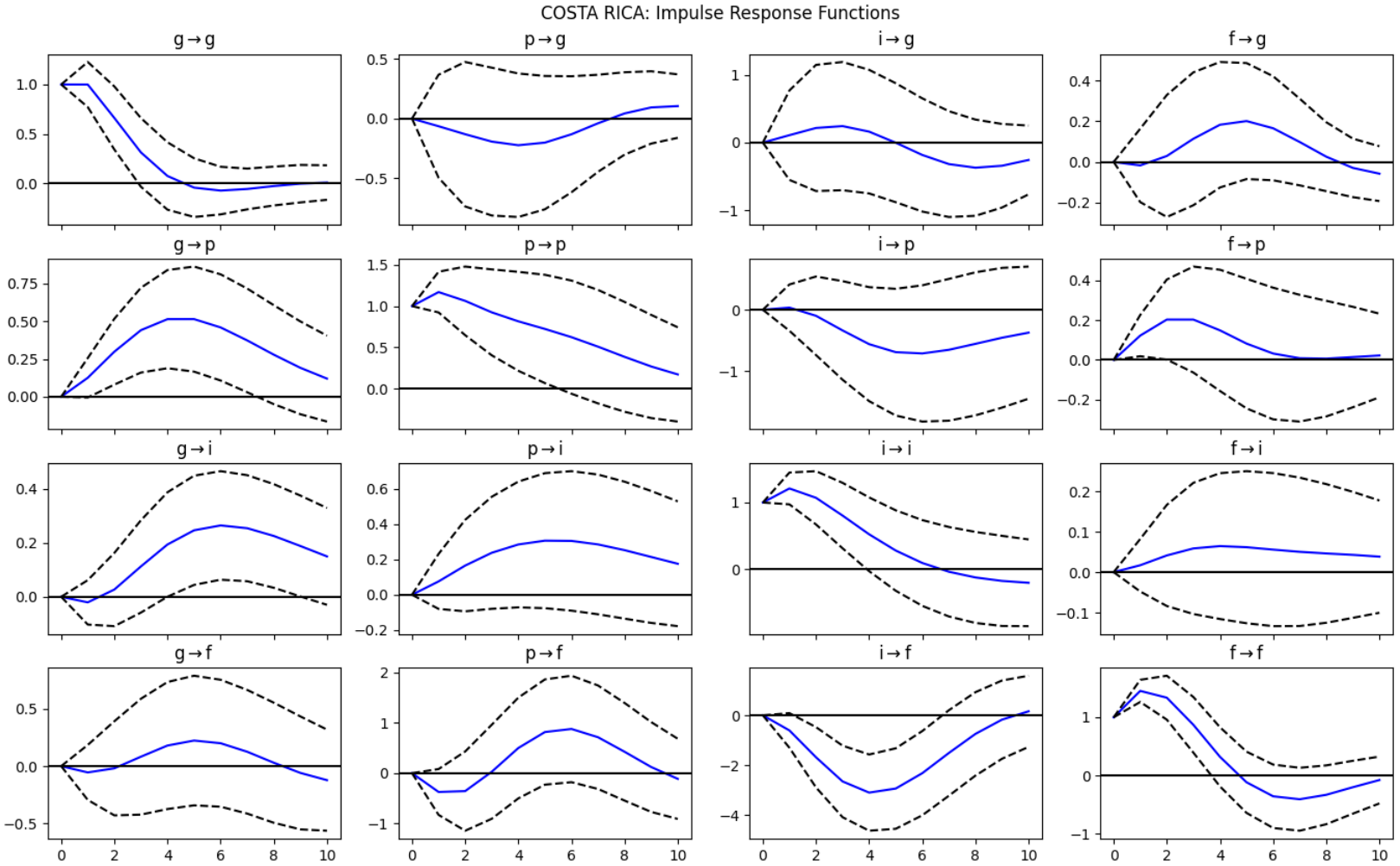
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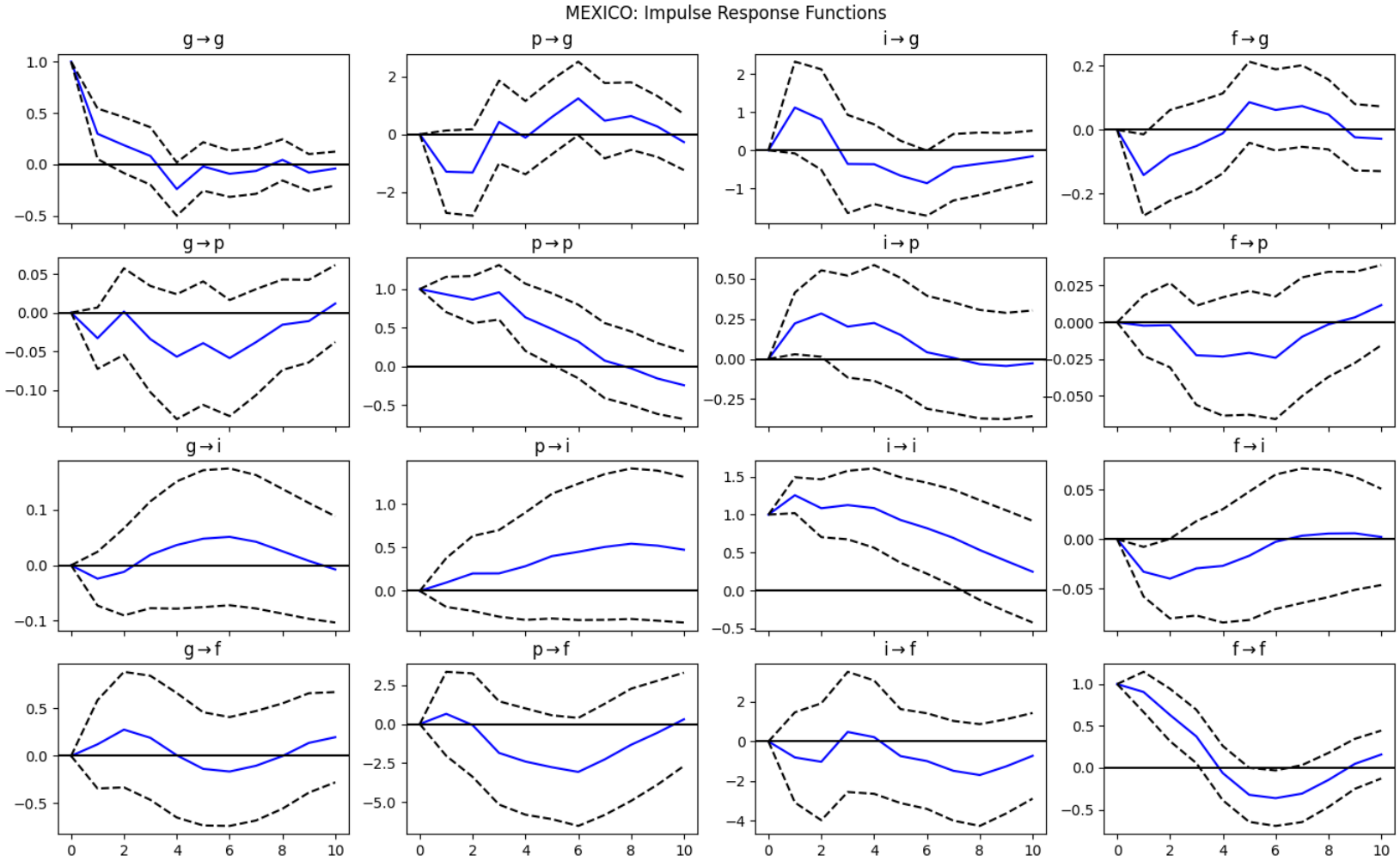
Appendix: Impulse Response Functions




CHILE: Impulse Response Functions
g → g
p → g
i → g
f → g
g → p
p → p
i → p
f → p
g → i
p → i
i → i
f → i
g → f
p → f
i → f
f → f


COLOMBIA: Impulse Response Functions
g → g
p → g
i → g
f → g
g → p
p → p
i → p
f → p
g → i
p → i
i → i
f → i
g → f
p → f
i → f
f → f


COSTA RICA: Impulse Response Functions
g → g
p → g
i → g
f → g
g → p
p → p
i → p
f → p
g → i
p → i
i → i
f → i
g → f
p → f
i → f
f → f


MEXICO: Impulse Response Functions
g → g
p → g
i → g
f → g
g → p
p → p
i → p
f → p
g → i
p → i
i → i
f → i
g → f
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