The Macroeconomic Consequences of U.S. Monetary Policy Shocks in Latin America

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Abstract

I study the macroeconomic and financial spillovers of U.S. monetary policy to Latin America using monthly data for Brazil, Chile, Colombia, Mexico, and Peru (1994–2019). Identification relies on the set of state-of-the-art high-frequency U.S. monetary policy shocks identified by Bauer and Swanson (2023b). I use local projections in panel and country-specific settings to trace dynamic responses over short and long horizons. I find that a Fed tightening depresses commodity prices and global risk appetite, widens sovereign spreads, depreciates Latin American currencies, and triggers equity sell-offs. Central banks cut policy rates, yet medium- and long-term yields and short-term market rates rise, steepening the yield curve and generating a "short-rate disconnect," consistent with a risk-premium channel. Activity and trade contract, trade balances exhibit J-curve dynamics, and inflation and inflation expectations fall persistently as a result of the strong contraction in import and commodity prices. Sign-dependent local projections reveal strong asymmetries: tightenings drive large spillovers, while easings have modest effects.

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1 Introduction

How does a U.S. monetary shock affect Latin American countries? Standard textbook sticky-price *Old* and *New Keynesian* models that embed *Producer Currency Pricing* (PCP) predict an expansionary effect due to *expenditure switching* (Fleming, 1962; Mundell, 1963; Obstfeld and Rogoff, 1996; Galí and Monacelli, 2005).[1] However, as shown by Gopinath et al. (2020), when export and import prices are sticky and invoiced in U.S. dollars, the appreciation of the dollar caused by a Fed tightening increases the small open economy's (SOE) export prices in the destination market, which lowers export demand. Imports become more expensive in local currency, leading to a switch in expenditures away from them.[2] Lower aggregate demand in the U.S. may also lower export demand and hence domestic output. This is the *Dominant Currency Pricing* (DCP) paradigm.[3]

In addition to this *international trade* channel, a growing literature has emphasized the role of U.S. monetary policy as a driver of the *Global Financial Cycle*[4] (GFC) through an *international financial* channel (Rey, 2013; Kalemli-Özcan, 2019). Monetary contractions in the U.S. lead to a tightening in global financial conditions and a rise in aggregate risk aversion (Kalemli-Özcan, 2019; Miranda-Agrippino and Rey, 2022). Global asset prices, capital flows and global credit contract, corporate bond spreads and VIX spikes up and commodity prices decline. Higher risk premia and the exchange rate depreciation can also put upward pressure on Latin American long-term rates through the presence of global investors in public debt markets (Hofmann et al., 2020). Tighter dollar credit conditions and reduced risk-taking may adversely affect credit availability for working capital of exporting firms (Bruno and Shin, 2023).[5]

Finally, the currency depreciation can have a negative *balance sheet* effect on economic activity due to unhedged dollar-denominated debt and imported inputs (i.e., currency and/or maturity mismatches) (Krugman, 1999; Aghion et al., 2001; Céspedes et al., 2004; Aguiar, 2005; Devereux et al., 2006; Gertler et al., 2007; Braggion et al., 2009; Ottonello, 2021; Casas et al., 2023; Medellín and Restrepo, 2025). A negative *real income* effect may also arise in the short run while the trade elasticity is low (Auclert et al., 2024).[6] Currency mismatches, in turn,

[1] When exports are invoiced in the domestic currency, the exchange rate depreciation caused by a Federal Reserve tightening shock increases the demand for the small open economy's exports and domestic agents substitute their consumption away from foreign goods towards home-produced goods, which spurs local economic activity. Imported goods inflation may increase and, conditional on the degree of exchange rate *pass-through*, this may require a domestic monetary tightening that ends up reducing economic activity.

[2] The net effect on output from the decline in exports (negative) and imports (positive) will depend on the difference between the share of an economy's non-US exports and imports that are subject to sticky-dollar-pricing, as shown by Georgiadis and Schumann (2021). The effect of the dollar appreciation on global trade is negative, as both export and import quantities decline.

[3] A third pricing paradigm, *Local Currency Pricing*, proposed by Betts and Devereux (2000), assumes firms set prices in the currency of the destination market. Expenditure switching is muted under this paradigm, but income effects persist.

[4] A high degree of co-movement in risky asset prices, capital flows, leverage and financial aggregates around the world (Miranda-Agrippino and Rey, 2022).

[5] Following a dollar appreciation, banks with a higher reliance on US dollar short-term funding reduce the supply of credit to exporting firms, which may require working capital credit (Bruno and Shin, 2023). This can have a negative impact on exports (and imports, if exports and imports are complementary goods).

[6] Rising import prices after an exchange rate depreciation reduce real income and hence consumption and output. The magnitude of the effect is increasing in the degree of exchange rate pass through and the extent to which households at the bottom of the income distribution consume a larger share of imported goods than households at the top, as in Mexico (Cravino and Levchenko, 2017). Drenik et al. (2018) find for Uruguay that high-income households have a larger fraction of their wealth in foreign currency than low-income households, so an exchange rate depreciation increases wealth and potentially consumption inequality.

have often led emerging market policymakers to exhibit a "fear of floating" (Calvo and Reinhart, 2002) and increasing interest rates when the Fed tightens monetary policy, which might intensify the contraction in their own economies (Gourinchas, 2018; Kalemli-Özcan, 2019; Mendoza-Fernández and Pelin, 2026).

Empirically identifying the net effect of U.S. monetary policy spillovers in Latin America is difficult because monetary policy is endogenous to present and future (anticipated/expected) economic conditions. Most variation in the federal funds rate by the Federal Reserve represents systematic, predictable responses to the state of the U.S. economy, so separating the effects of monetary policy from the effects of the non-policy disturbances to which the Fed is responding is difficult (Sims, 2010).

To illustrate this point, consider a period during which the U.S. faced a recession, such as the dot-com or the 2008 financial crises. The Fed acted countercyclically and reduced its policy rate during these episodes. Using this variation in the policy rate to estimate the effect of U.S. monetary policy on Latin American macroeconomic outcomes will yield misleading results since the direct effect of the negative financial/demand shock on the economy is a confounder (which in this case would bias results towards finding that fed funds rate reductions induce recessions in Latin America).

My approach to tackle this identification issue is to use the set of monetary policy shocks constructed by Bauer and Swanson (2023a). They measure monetary policy surprises using interest rate changes over 30-minute windows around Federal Open Market Committee (FOMC) announcements[7] and remove the component of the surprises that is correlated with public economic and financial data that pre-dates the announcement.[8] This allows them to control for the *Fed Response to News* effect, which consists in the systematic underestimation by the public of the strength with which the Federal Reserve responds to economic news. The presence of this effect leads to monetary policy surprises being biased, as they identify not only the exogenous component of the monetary policy rule, but also the systematic component on which financial markets have incomplete information.

I then use these shocks to study the effects of U.S. monetary policy on financial and macroeconomic variables in the U.S., the spillovers of this policy to Latin America, and whether the responses are sign-dependent (tightenings versus loosenings). To this end, I employ the local projections technique developed by Jordà (2005). My sample covers Brazil, Chile, Colombia, Mexico, and Peru from February 1994 to December 2019. However, given the different availability of data across countries, the estimation sample used in the panel and the individual estimation exercises varies. Tables A1 and A2 in the appendix list all variables in my dataset and provide details on the sources and sample periods.

My responses for the U.S. deliver four main findings. First, a Fed tightening shock produces an inversion of the U.S. yield curve: short-term yields rise while long-term yields fall, alongside an appreciation of

[7] Over such a short window, movements in interest rates are dominated by the monetary announcement (Nakamura and Steinsson, 2018b). This allows for a discontinuity-based identification strategy of the exogenous component of the monetary policy rule.

[8] I focus on the exogenous component of conventional monetary policy because of the additional complications related to identifying alternative dimensions of monetary policy, such as quantitative easing.

the dollar. These patterns are consistent with a flight-to-safety into U.S. assets and the U.S. "exorbitant privilege." Second, financial conditions tighten sharply: equity prices drop and measures of risk and systemic stress spike in the short run. Third, real activity responds with delay but strong persistence: industrial production and monthly real GDP display hump-shaped contractions that last up to eight years and unemployment rises persistently. Fourth, prices and trade adjust in ways consistent with standard transmission mechanisms and DCP: CPI declines gradually but persistently over long horizons, and trade flows contract with asymmetric timing—exports fall immediately with dollar appreciation whereas imports decline with a lag as domestic demand weakens—yielding an improvement in the trade balance over time as imports end up falling more than exports. Overall, the impulse responses align with the conventional effects of high-frequency exogenous U.S. monetary shocks and do not exhibit price or activity puzzles.

Regarding the international spillovers of U.S. monetary policy in Latin America, a contractionary Fed shock reduces oil and copper prices, and produces a strong and persistent decline in global risk appetite. Latin American monetary policy authorities react countercyclically: policy rates fall and short-term sovereign yields eventually decline as well. However, this domestic easing coexists with an increase in medium- and long-term yields, so the yield curve steepens. The shock generates an immediate tightening in Latin American financial conditions: the exchange rate depreciates and equity prices drop sharply, while sovereign risk premia widen substantially. This risk-premium channel helps rationalize the rise in long yields and the "short-rate disconnect" whereby short-term market rates increase even as the policy rate declines.

Latin American real economic activity contracts and trade volumes weaken. Trade prices also decline, with export prices falling more than import prices, leading to a short-run deterioration in the terms of trade and a trade-balance response that resembles a J-curve: an initial worsening followed by an improvement at medium horizons. These trade patterns are broadly consistent with DCP, in which dollar strength and weaker U.S. demand compress Latin American export values and volumes, and tighter financial conditions depress import volumes even when import prices fall. Finally, CPI exhibits little impact response but then falls persistently, even at long horizons; inflation expectations also fall persistently. Overall, the evidence indicates that U.S. monetary tightening transmits to Latin America primarily through risk premia and global financial conditions—raising longer-term yields and market rates even as central banks ease—and through trade and commodity-price channels that ultimately deliver sustained disinflation.

My empirical findings add to a recent literature (Degasperi et al., 2026) that contradicts the conventional narrative that Fed tightenings are inflationary for emerging markets—via depreciation, higher import prices, and rising inflation expectations—and that central banks respond by raising policy rates out of "fear of floating" (Mendoza-Fernández and Pelin, 2026). I find that inflation expectations fall and the cumulative decline in import prices dominates the cumulative depreciation, so import prices in local currency fall on net, exerting downward pressure on inflation. A second key result is that Latin American central banks *cut* policy rates following Fed tightenings. I argue that this countercyclical response is fundamentally shaped by the exchange-

rate regime and the monetary-policy framework. Rolling-sample estimates show a sharp regime-dependent discontinuity: during periods of heavily managed regimes (e.g., crawling bands), monetary authorities tended to *follow* the Fed and raise policy rates after U.S. tightenings; under inflation targeting with greater exchange-rate flexibility, the response flips sign and central banks instead ease.

Rolling-sample evidence for the 90-day deposit rate reveals a similar pre/post inflation-targeting discontinuity, but also highlights delayed and sometimes incomplete pass-through. Hence, I revisit the "Short-Rate Disconnect" found by De Leo et al. (2022). Additionally, separating local- and foreign-currency deposits shows that dollarization materially weakens policy transmission: foreign-currency deposit rates exhibit smaller, delayed, or even opposite-signed responses relative to local-currency deposits.

I also investigate the cross-country heterogeneity to the Fed tightening and find that across countries, a Fed tightening is associated on impact with a (i) rise in risk premia, (ii) depreciation of the exchange rate, and (iii) an immediate equity sell-off. The central dimensions of heterogeneity are (a) the persistence of the depreciation (Mexico being the clear outlier), (b) the strength and persistence of the real contraction (Mexico again being the most affected due to its trade and financial proximity to the U.S.; and Peru being the least affected), (c) whether long yields rise on impact and thus steepen the curve via term premia (strong in Brazil/Colombia/Mexico; weak and imprecise in Chile; delayed in Peru), and (d) whether disinflation is persistent (strong in Brazil/Chile/Colombia/Peru) or muted (Mexico). On the external side, several countries exhibit J-curve-like or sudden-stop-like trade-balance dynamics, with export and import values declining in response to the Fed tightening shock.

Finally, I allow for sign-dependent responses and find substantial nonlinearities. In Latin America, policy reacts countercyclically—rates fall after U.S. tightenings and rise after U.S. easings. Real activity and trade exhibit the clearest asymmetry: U.S. tightenings produce large contractions in industrial production and trade values, whereas easings generate only modest, short-lived expansions. Overall, the evidence suggests that U.S. monetary contractions transmit far more forcefully to real variables than U.S. monetary expansions. The results indicate that Fed spillovers are mostly due to monetary contractions, while expansions generate little spillovers.

On the policy implications of this paper, my findings indicate that although flexible exchange rates allow monetary authorities to adopt a countercyclical stance to Fed tightenings by reducing their policy rate, they cannot completely insulate the economy because increases in risk premia may rise long term yields and short term market rates despite the domestic monetary easing. This may call for additional interventions that support financial conditions and stabilize the yield curve. In the absence of strong exchange-rate pass-through to inflation and currency mismatches in the real and financial sector, allowing the exchange rate to depreciate may still be optimal to cushion exports against the decline in commodity prices and external demand.

2 Related Literature

My analysis connects to an extensive literature that has sought to estimate the effects of changes in U.S. conventional monetary policy on emerging markets' macroeconomic outcomes[9] and commodity prices.[10] I complement these studies by adopting a state-of-the-art high-frequency identification strategy that controls for the *Fed response to news* effect of monetary policy by employing the monetary policy shocks constructed by Bauer and Swanson (2023b). Additionally, I employ local projections techniques, which allow me to impose minimal structure and directly estimate the impulse response function with single-equation methods and without further assumptions on the underlying data generating process (Jordà and Taylor, 2024). Hence, my estimates do not suffer from the extrapolation bias that vector auto-regression models (VAR) with low lag-lengths suffer (Montiel Olea et al., 2025).

The work of Cesa-Bianchi et al. (2024), Camara et al. (2024), Camara (2025) and Degasperi et al. (2026) stand out as the most similar to my work and therefore deserve a separate mention. First, Cesa-Bianchi et al. (2024) estimate a panel VAR identified with the high-frequency monetary policy surprises constructed by Jarociński and Karadi (2020), which control for information effects. They include data for 15 countries (including Brazil, Chile, Colombia and Mexico, but not Peru because it does not have a flexible exchange rate regime) at the monthly frequency between 1997 and 2019. Hence, they cover similar countries and time span as I do. They also find that flexible exchange rates do not insulate countries from the consequences of the GFC. In response to a contractionary monetary policy shock in the US, the nominal exchange rate depreciates and credit conditions tighten in emerging markets. Yet, exports and real GDP fall. They conclude that the expenditure-switching channel does not fully offset the negative consequences of tighter financial conditions and lower global aggregate demand, as I do.

In contrast to my estimates, they find that inflation responds weakly to a contractionary U.S. monetary policy shock. This difference may reflect heterogeneity across countries in their sample or sensitivity to VAR-based identification. Because the analysis is conducted at an aggregated level and no country-specific estimates are presented, the contribution of individual countries to the reported responses remains unclear.

Second, Camara et al. (2024) estimate a VAR using monthly data from 2006–2019 for a panel that includes the five economies in my sample as well as additional countries, and they employ the monetary policy shocks of Bauer and Swanson (2023b). They conclude that, following a Federal Reserve tightening shock, economic activity in the non-U.S. economies declines more than in the United States. My results point in the opposite direction: in my sample, the contraction in activity is both smaller and less persistent than in the United States,

[9] Early contributions to this literature include: Canova (2005),Neumeyer and Perri (2005),Uribe and Yue (2006),Ehrmann and Fratzscher (2006),Mackowiak (2007),Wongswan (2009),Hausman and Wongswan (2011),Ramos-Francia and García-Verdú (2014),Stavrakeva and Tang (2015),Edwards (2015). More recent contributions include: Dedola et al. (2017),Ahmed et al. (2017),Albagli et al. (2018),Vicondoa (2019),Cuaresma et al. (2019),Iacoviello and Navarro (2019),Dées and Galesi (2019),Andres Escayola et al. (2023),Lastauskas and Nguyen (2024),Alba et al. (2024),Cesa-Bianchi et al. (2024),Chowdhury and Serletis (2025),Beltrán (2025),Arbatli-Saxegaard et al. (2025),Boeck and Mori (2025).

[10] (Frankel, 2008; Akram, 2009; Anzuini et al., 2012; Rosa, 2014)

where the responses exhibit hysteresis.

They further document a decline in U.S. imports and argue that this import channel is the primary mechanism through which U.S. monetary contractions transmit internationally. Consistent with an international trade mechanism, they also show that import prices in other economies fall after U.S. tightening, which they interpret as reflecting weaker U.S. demand for foreign goods.

In contrast to my results, they find that EMEs tend to raise policy rates in response to Fed tightening, whereas I estimate expansionary policy responses. This discrepancy is unlikely to be attributable to differences in the sample period, since their analysis is restricted to intervals in which my sample economies operate under inflation targeting. Notably, they report a country-specific estimate for Peru and, consistent with my findings, show that Peru reduces its policy rate. This suggests that the panel estimates may be sensitive either to the set of additional countries included or to features of the estimation approach. They also find that Peruvian activity, exports, and imports decline following Fed tightening.

Regarding inflation, they estimate that the U.S. monetary policy shock increases inflation, although the effect is not statistically distinguishable from zero. However, in their Figure 6—where they compute country-specific impulse responses they show that the price level declines in EMEs with a lag.

Third, Camara (2025) emphasizes that controlling for the Fed response to news effect is critical for the accurate identification of international spillovers from U.S. interest-rate shocks. Using monthly data from 1998–2021, he assembles a cross-country panel consisting of all economies with available observations on five key variables. He employs the U.S. monetary policy shocks of Bauer and Swanson (2023b) and estimates responses using both local projections and SVAR methods.

Consistent with my results, he finds that a contractionary Fed shock appreciates the U.S. dollar and raises long-term interest rates for other countries on impact. He also documents declines in industrial production and equity prices. In addition, he reports that Fed tightening reduces international trade, as reflected in falling commodity price indices and declines in total trade values. In contrast to my findings, however, he obtains a gradual increase in consumer prices and policy-rate increases following the shock.

A further contribution of Camara (2025) is the presentation of country-specific impulse responses, which highlights substantial heterogeneity across economies. For industrial production, his estimates imply positive impact responses in Brazil and Chile that subsequently reverse. By contrast, my results for Brazil show no contemporaneous response, followed by a hump-shaped contraction, while for Chile I estimate an immediate and persistent decline with a similarly hump-shaped profile. For Colombia, he reports effects statistically indistinguishable from zero, whereas I estimate a negative and persistent response. Both his results and mine point to a sharp contraction in Mexico. For Peru, he finds a large decline, in contrast to the more muted response I found.

A central point of divergence concerns the price responses. Whereas my estimates indicate a uniform and quantitatively sizable decline in CPI across all countries, his CPI impulse responses vary by economy. Specifi-

cally, Brazil exhibits an initial decline that reverses and turns positive at longer horizons; Chile shows little to no impact response followed by a decline; Colombia displays an initial fall that dissipates, leaving longer-horizon effects indistinguishable from zero; Mexico features a persistent increase, which may reflect differences in the estimation window relative to my sample; and Peru shows a response near zero throughout.

Equity-price responses are comparatively closer across the two analyses. While I estimate declines in equity indices for all economies in my sample, his results indicate negative effects in Brazil and Chile, no response in Colombia (in contrast to my estimates), and large contractions in Mexico and Peru. Finally, with respect to long-term interest rates, he finds increases across countries, broadly consistent with my results except for Chile, where I find that long term interest rates do not respond on impact.

Finally, Degasperi et al. (2026) study international spillovers of U.S. monetary policy using the shocks of Miranda-Agrippino and Ricco (2021), which purge Fed information effects. They compile a monthly panel of 15 advanced economies and 15 emerging market economies over 1990:1–2018:12 and estimate impulse responses in a Bayesian VAR framework. Consistent with my findings, their results point to a Fed tightening being a world negative demand shock, i.e., it reduces quantities and prices globally. They show that a contractionary Fed shock lowers commodity prices and reduces CPI inflation abroad, arguing that the commodity-price channel accounts for a substantial share of the decline in headline inflation outside the US. Real activity contracts in most economies.

As in my results, they find that central banks typically respond to weaker activity and disinflationary pressures by easing monetary policy, and that this policy easing transmits primarily to the short end of the yield curve, with longer-term yields moving in the opposite direction. They interpret this short–long disconnect as evidence that U.S. monetary spillovers operate importantly through risk premia, just as I do.

They further document a broad deterioration in global financial conditions following a Fed tightening. Global risk appetite declines and equity exposures fall, consistent with portfolio rebalancing toward safe assets. This puts downward pressure on foreign asset prices and contributes to declines in global equity valuations. This international financial channel is also present in my results.

Regarding the international trade channel, they find that the demand-reducing effect prevails over any expenditure-switching forces, and gross trade volumes contract sharply, while changes in export–import ratios are negligible, consistent with a broadly symmetric contraction of exports and imports. This contrasts with my results, as I find that Fed shocks induce global imbalances through its effects on the terms of trade of emerging markets.

3 Data and Empirical Specification

I build a dataset that contains information on 19 macroeconomic and financial variables for the U.S., 18 variables for Brazil, Chile, Colombia, Mexico and Peru, and 3 global variables. All series are monthly. My main

data source is Haver Analytics. However, some data comes from international organizations (BIS), national statistical offices and central banks. The dataset contains over 31,000 data-points.

Subject to data availability, the starting sample period is $1994m2$. The end of the sample period is $2019m12$ for every series. I use 1994 as the starting date because, as highlighted by Bauer and Swanson (2023a), from 1994 onward the FOMC communicated clearly to the markets through a press release its monetary announcement. Before 1994, the FOMC typically did not issue press releases, so "market participants had to infer whether there had been a change in the federal funds rate from the size and type of open market operation conducted by the Fed each morning" (Bauer and Swanson, 2023a). I end my sample in December 2019 because this is the period when Bauer and Swanson (2023a) end the sample of the monetary policy shocks and to minimize the noise that the COVID-19 pandemic crisis might introduce to my results.

The 3 global variables are the Oil Brent price, Copper Price and the Global Risk Factor built by Miranda-Agrippino and Rey (2020). The sample for the three variables is 1994m2-2019m12. Studying the effect of U.S. monetary policy on commodity prices, oil and copper in particular, is crucial because every country in my sample is a net commodity exporter (crude petroleum for Brazil, Colombia and Mexico, and copper for Peru and Chile). They are price takers on global markets and have common destination markets (China and the United States) (Esquivel et al., 2021), so the developments in the U.S. economy might impact directly the demand for their exports and also indirectly through the price at which they sell their exports to other markets. Additionally, evaluating the effect of U.S. monetary policy on international risky asset prices is crucial to determine the presence of the *international financial* channel.[11] As far as I have been able to determine, this is the first work that estimates whether monetary policy surprises that control for the *Fed Response to news* effect affect the Miranda-Agrippino and Rey (2020) Global Risk Factor.

For United States all series are monthly and the sample period is $1994m2$ to $2019m12$. I collect 19 variables: policy rate, 1 and 10-year treasury bond yields, nominal and real effective exchange rates, S&P 500 and NASDAQ 100 index, CBOE VIX index[12], a financial stress indicator given by the Composite Indicator of Systemic Stress (CISS) constructed by Kremer and Chavleishvili (2021)[13], industrial production, monthly real GDP from S&P, unemployment rate, value of goods and services exports and imports, import prices excluding fuel, price index of total exports and imports, net exports and Consumer Price Index. Table A2 of the appendix lists the data sources for each variable.

For the five Latin American countries I collect 18 variables: policy rate, 1, 5 and 10-year treasury bond

[11] Miranda-Agrippino and Rey (2020) collected monthly data from 1990 to 2012 for 858 different prices series around the globe, estimated a Dynamic Factor Model and found that a single global factor explains over 20% of the variance in the data of risky asset prices. They also found this global factor contracts significantly after a Fed tightening.

[12] di Giovanni et al. (2022) show that booms in the Global Financial Cycle lead to increased capital inflows and reductions in global risk aversion measured by the VIX, which in turn lead to declines in real borrowing rates and sizeable expansions in credit supply.

[13] The index uses 15 components and aims to capture stress symptoms in money, bond, equity and foreign exchange markets. It covers the "main flows of financial funds channeled either indirectly through financial intermediaries or directly via short-term and long-term securities markets from ultimate lenders to final borrowers" (Kremer and Chavleishvili, 2021), as well as measures of historical volatility and interest rate differentials such as risk spreads (e.g., corporate bond spreads) and cumulative valuation losses to capture strains in equity markets.

yields in local currency, 90-day deposit interest rate in local currency[14], 5-year Credit Default Swaps, nominal exchange rate against US dollar, stock price index, industrial production, an economic activity index, value of goods exports and imports, export and import prices, terms of trade index, net exports, CPI and expected CPI. Table A1 in the appendix lists the variables for each country and their sample dates.

I use the series of U.S. monetary shocks identified by Bauer and Swanson (2023a) and Bauer and Swanson (2023b), who argue that high frequency monetary policy surprises may be capturing a *Fed Response to News* effect, whereby monetary policy surprises identify not only monetary policy shocks but also the incomplete information about the Fed's monetary policy rule that financial markets have.[15] Hence, they orthogonalize the high frequency Nakamura and Steinsson (2018a) surprises against Industrial Production, Unemployment, Commodity Prices, Consumer Price Index, Excess Bond Premium and 2-year treasury rate data.[16]

Regarding the empirical specification, I am interested in characterizing how a U.S. monetary policy shock affects financial and macroeconomic variables in the U.S. and Latin America in the future relative to a baseline scenario of no-intervention. This Impulse Response Function (IRF) can be estimated with the cumulative local projection of $y_{t+h} - y_{t-1}$ on s_t, given by:

$$y_{t+h} - y_{t-1} = \alpha_h + \beta_h s_t + \sum_{j=1}^{12} \phi_{h,j} \Delta y_{t-j} + \nu_{t+h}; \quad h = 0, 1, ..., H, \tag{1}$$

where $\Delta y_{i,t} = y_{i,t} - y_{i,t-1}$ so the specification includes $p = 12$ lags of the monthly change, i.e., $\{\Delta y_{i,t-1}, \ldots, \Delta y_{i,t-12}\}$, as controls. H specifies the forecast horizon, which ranges from 18 to 96 in order to study the short and long-run consequences of U.S. monetary policy. The coefficient of interest is β_h. If we assume that $\mathbb{E}(s_t \nu_{t+h}) = 0$, because s_t is exogenous, then the local projection is identified and might be estimated by OLS. The error term incorporates Newey–West correction for serial correlation and the confidence intervals are increasing in the forecast horizon. Equation 1 is the specification that I will use in the individual country-by-country estimation exercise in order to identify the heterogeneity of the dynamic response of the dependent variable of interest to a monetary policy shock.

Additionally, for Latin America I perform a panel local projections estimation exercise with country-fixed-effects, denoted by $\alpha_{c,h}$. To this end, let $y_{c,t}$ denote the dependent variable of interest at time t in country c. The

[14] I also collect a foreign currency deposit rate for Peru in order to determine if there is a differential effect of U.S. monetary policy on local vs. foreign currency deposit rates.

[15] For example, the Fed may respond more strongly to an Industrial Production data release that reflected a cooling economy by lowering its policy rate more than the market expected. Using this variation in the policy rate as a monetary policy shock would bias results towards finding that lower policy rates generate recessions in the U.S.

[16] Bauer and Swanson (2023b) also argue that the predictability of monetary surprises is not due to a *Fed Information* effect, which indicates that, e.g., a contractionary monetary policy surprise may indicate that the central bank is expecting/anticipating stronger activity or price dynamics, which would lead agents to react by raising their prices in anticipation (Romer and Romer, 2000; Nakamura and Steinsson, 2018a; Miranda-Agrippino and Ricco, 2021). They argue that the Fed does not have private information and that forecasters do not revise their forecasts in response to FOMC announcements in a way consistent with the Fed information effect.

specification is:

$$y_{c,t+h} - y_{c,t-1} = \alpha_{c,h} + \beta_h s_t + \sum_{j=1}^{12} \phi_{h,j} \Delta y_{c,t-j} + \varepsilon_{c,t+h}, \quad h = 0, 1, ..., H. \tag{2}$$

The coefficient of interest is β_h. For the baseline specification I will use 12 lags of the dependent variable, whenever it is specified.[17]

4 Revisiting the Domestic Macroeconomic Consequences of U.S. Monetary Policy Shocks

Figure 1 shows the U.S. domestic impulse responses to a contractionary monetary policy shock normalized to induce a maximum increase of 100 basis points in the monetary policy rate. This results in an 82 bps shock on impact. The response turns statistically insignificant thereafter and remains so through the end of the horizon.[18] Following a tightening of US monetary policy, the US treasury 1-year bond yield increases 44 bps on impact. Consistent with the response of the policy rate, the IRF turns statistically insignificant until month 58, when the point estimate turns negative and an easing cycle appears. Long-term interest rates, measured by the 10-year treasury bond yield, are not affected on impact, but the point estimate turns negative and statistically significant starting in the third month of the response, when it reaches -1.08pps. As short-term rates rise while long-term rates fall, the slope of the yield curve declines and turns negative (i.e., an "inverted" yield curve).[19]

The dollar appreciates against its trading partners, as measured by the nominal and real effective exchange rates, by 3.8, 6.1 and 5% over the first three months. The decline in long-term yields and the appreciation of the dollar may reflect the *exorbitant privilege* of the U.S., as emphasized by Jiang et al. (2021). US Treasuries provide a convenience yield to investors, so when an episode of global financial instability occurs (even if the source of instability is in the U.S., as in the case of a monetary contraction by the Fed), there is a "flight to the safety" of US securities, which drives up their prices and reduces their yields. This surge in demand for US assets is reflected in a contemporaneous appreciation of the US dollar.

[17] The choice of lag length is not innocuous. Soosalu (2024) provides an overview of the lag-length used in various papers, ranging from two lags Soosalu (2024), six lags (Brennan et al., 2024), up to twelve lags (Gertler and Karadi, 2015; Miranda-Agrippino and Ricco, 2021; Bauer and Swanson, 2023b). My results are robust to using 3, 6, 9, and 12 lags of the dependent variable. The responses are qualitatively similar but sometimes are attenuated towards zero. I also tested for the inclusion of 0, 1, 2, 3 and 4 lags of the shocks and found that the results remain virtually the same.

[18] In Panel (a) of Figure B1 in the appendix, I report the results from estimating the response of the policy rate but replacing the baseline Bauer and Swanson (2023b) shocks with the Miranda-Agrippino and Ricco (2021) and Romer and Romer (2004) shocks (updated by Degasperi and Ricco (2021) and Miguel Acosta), which remove the *Fed Information Effect* from policy surprises. The Bauer and Swanson (2023b) shocks are distinctive in that they do not generate a persistent response of the policy rate. Instead, the estimated response appears erratic and is very imprecisely estimated from period 1 onward. By contrast, the other two shock measures produce a smooth response that continues to rise after the initial impact before gradually reverting to its pre-shock level. In particular, the Miranda-Agrippino and Ricco (2021) shocks display a "second-round" hump-shaped tightening cycle that emerges after the second year of the response.

[19] Short-term yields being higher than long-term yields often signals recession risk because it signals a tight current monetary policy stance combined with market expectations of future rate cuts, which usually happen when growth and inflation are expected to slow materially.

The S&P 500 index drops sharply by 12.8% on impact and continues to decline until month 36, when it reaches its trough. It then gradually recovers through month 84, at which point the response turns positive.[20] The VIX, a widely used measure of risk aversion, increases on impact and continues to rise over the next two months, reaching a peak of 29 points above its pre-shock level. It then reverts to its pre-shock level by month 6. A similar pattern is observed for the CISS, which measures systemic financial stress and ranges between 0 and 1. It spikes during the first two months, peaking at around 0.4, and subsequently returns to its pre-shock level by month 10.

Industrial production does not react on impact to the contractionary shock, but the effect accumulates over time and reaches a trough after five years, where it stands 13% below its initial value. Then, it starts recovering, but at the end of the horizon is 3.5% below its initial level. The response of industrial production to the monetary policy shock has a hump-shaped pattern, which is consistent with the conventional view that monetary policy has little immediate effects on real variables and its full effects can only be seen with a lag (Woodford, 2003).

Panel (c) of Figure B1 in the appendix reports the results for the Monthly Real GDP constructed by S&P. The response is statistically insignificant for the first eleven months. After a year the response turns -1.5% and accumulates over time until reaching -7.7% 70 months after the shock. Then it recovers and the response turns a statistical-zero eight years after the shock. These results are consistent with the findings of Jordà et al. (2024), who show that monetary policy has long-run hysteresis effects, where tight monetary policy creates lasting damage to the capital stock and total factor productivity (TFP).[21]

As implied by Okun's law, unemployment rises and peaks at 1.35% about 18 months after the shock. It remains persistently elevated over most of the horizon and returns to its pre-shock level only after roughly 6.5 years. Exports fall by 6.2% on impact and reach a trough of 11.8% around 10 months after the shock. The response remains negative until month 28, after which it turns positive but stays statistically insignificant for the remainder of the horizon. Imports also decline on impact, but the response is smaller in magnitude than that of exports and is not statistically significant. The contraction nonetheless cumulates over time, with imports reaching a trough of about -21% around 19 months after the shock. Imports then recover temporarily before declining again. By the end of the horizon, the response is statistically insignificant, but the point estimate does not return to its initial level.

Consistent with the relative responses of exports and imports, the trade balance does not move on impact. However, the effect builds over time and the response turns positive, remaining so throughout the entire horizon. Export and import prices decline temporarily, but subsequently recover and become positive. However, the response is estimated imprecisely. This pattern suggests that both export and import volumes fall, with

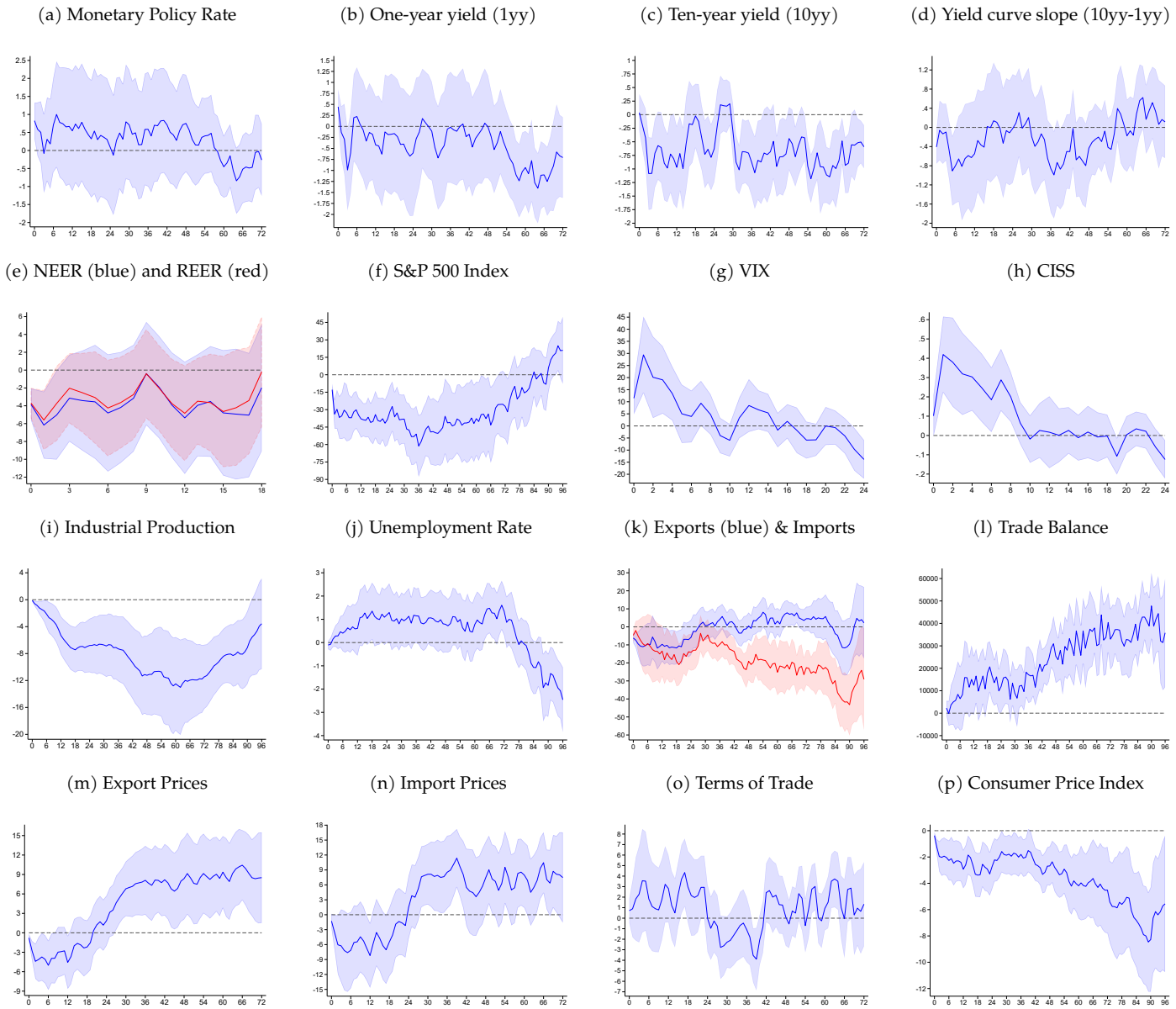
[20] Panel (b) of Figure B1 in the appendix reports the results for the Nasdaq 100, which typically exhibits more volatile dynamics than the S&P 500 because it is more concentrated. Consistent with this, the Nasdaq 100 falls by more than the S&P 500 and recovers roughly six years after the shock.

[21] Panel (c) of Figure B1 in the appendix reports the results for Industrial Production but using the Miranda-Agrippino and Ricco (2021) and the Romer and Romer (2004) shocks. The Romer and Romer (2004) shocks exhibit an "activity puzzle", while the Miranda-Agrippino and Ricco (2021) shocks also show long-run effects of monetary policy on economic activity. Notably, the Bauer and Swanson (2023b) shocks have a very strong and persistent effect relative to the other shocks.

imports contracting by more than exports. Terms of trade have a positive but insignificant response throughout the horizon. This pattern is consistent with Dominant Currency Pricing (DCP). DCP for the United States resembles producer-currency pricing (PCP) for exports and local-currency pricing (LCP) for imports, so the exchange-rate appreciation associated with a monetary contraction does not affect imports in the short run. Exports, instead, decline because the appreciation raises the foreign-currency price of U.S. exports, reducing external demand. As the contraction in domestic economic activity materializes, imports eventually fall as well, and the import response turns negative and remains so over the horizon.

Finally, CPI falls slightly on impact and the decline accumulates over time. It reaches its trough more than seven years after the shock, at about 8.5% below its pre-shock level. The temporary decline in import prices, together with the sharp contraction in economic activity, may have contributed to this disinflationary response. Overall, the responses I found are broadly in line with the conventional view on the macroeconomic consequences of high-frequency exogenous monetary shocks in the U.S. (Gertler and Karadi, 2015; Ramey, 2016; Nakamura and Steinsson, 2018b; Plagborg-Møller and Wolf, 2021; Miranda-Agrippino and Ricco, 2021; Miranda-Agrippino and Rey, 2022; Plagborg-Møller and Wolf, 2022; Zorzi et al., 2023; Bauer and Swanson, 2023b,a; Jordà et al., 2024; Camara et al., 2024; Degasperi et al., 2026). The orthogonalized monetary policy surprises eliminate "price" or "activity" puzzles.

Figure 1: Effects of U.S. Monetary Policy in the U.S.



Note: This figure plots the response of 18 U.S. variables upon an identified exogenous Federal Reserve monetary shock of up to 100 basis points for the individual estimation exercise. These are my estimates of β_h in Equation 1. For interest rates, VIX, CISS, unemployment and trade balance the dependent variable is the *h+1*-period change in the level of the variable. For the rest of the variables, the dependent variable is the *h+1*-period change in the natural logarithm of the variable. The specification has 12 lags of the dependent variable except for interest rates. The time series of industrial production is smoothed using one month moving averages. The shaded areas show a 68% confidence interval.

5 New Evidence on the Macroeconomic Spillovers of U.S. Monetary Policy to Latin America

Figure 2 reports the responses of commodity prices and the Global Risk Factor of Miranda-Agrippino and Rey (2020) to a contractionary Federal Reserve shock that raises the policy rate by 82 basis points on impact. Oil and copper prices fall immediately, by 8.1% and 4.1%, respectively. Both responses deepen over the subsequent

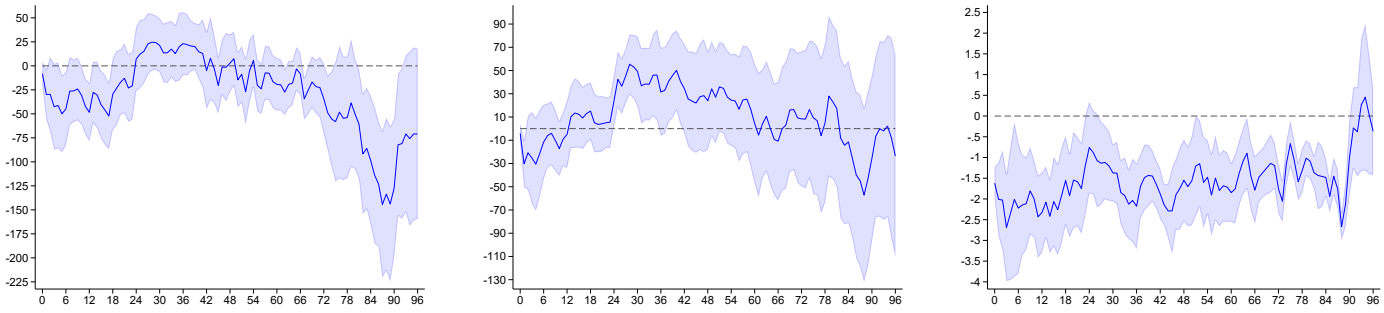
months: the oil-price IRF reaches a trough of roughly -50% at month 5, while copper bottoms out at month 4, about 30.6% below its pre-shock level. The declines are not permanent. Oil prices recover to baseline after about two years, and copper prices return to baseline after roughly one year.

These findings are consistent with Frankel (2008), who emphasizes the role of interest rates in shaping the demand for inventories and, through that channel, commodity prices. In his framework, higher interest rates raise the opportunity cost of carrying storable commodities: investors and firms have stronger incentives to run down inventories and reallocate from commodity positions toward interest-bearing safe assets such as Treasury bills. In the U.S. responses shown above, this mechanism maps naturally into the decline in long-term safe assets' yields. In addition, the contraction in U.S. real activity reduces aggregate demand for industrial inputs and energy, further compressing commodity demand and putting downward pressure on commodity prices.

Global asset prices, summarized by the global risk factor, also contract on impact, falling by 1.4 points—about three times the impact magnitude reported by Miranda-Agrippino and Rey (2022). The response continues to deteriorate in the short run, reaching a minimum of approximately -2.3 points at month 4. The effect is persistent: the global risk factor remains below its pre-shock level for about two years. The estimated response is uniformly negative over the horizon. This indicates that the Federal Reserve monetary policy has important spillovers on commodity prices and global financial markets. It is a driver of the Global Financial Cycle, as argued by Miranda-Agrippino and Rey (2022).

Figure 2: Effects of U.S. Monetary Policy on Commodity Prices and Global Risk Factor

(a) Brent oil price (b) Copper Price (c) Global Risk Factor



Note: This figure plots the response of the Brent oil price, copper price and Global Risk Factor upon an identified exogenous Federal Reserve monetary shock of up to 100 basis points for the individual estimation exercise. These are my estimates of β_h in Equation 1. For oil and copper prices the dependent variable is the *h+1*-period change in the natural logarithm of the variable. For global risk factor, the dependent variable is the *h+1*-period change in the level of the variable. The specification has 12 lags of the dependent variable. The shaded areas show a 68% confidence interval.

I now turn to the effects of U.S. monetary policy in Latin America. Figure 3 plots my estimates of β_h from Equation 2 for 19 outcome variables. Following a Fed tightening shock, the domestic policy rate in Latin America falls modestly on impact (about 15 bps).[22] The response is not statistically distinguishable from zero at

[22]The responses reflect the general equilibrium effects of the exogenous Fed shock, and hence reveal the endogenous policy responses of monetary authorities.

short horizons, but it becomes statistically significant by month 5, when the cumulative easing reaches roughly 260 bps. Thereafter, the policy rate gradually reverts toward its pre-shock level, returning to baseline by month 27. The estimation is imprecise, as indicated by the wide confidence bands.

In line with the decline in policy rates, the 1-year sovereign yield exhibits little reaction over the first three months and then falls from month 4 onward. It reaches a trough around month 10, at approximately -3.8 percentage points relative to its pre-shock level, before gradually reverting to baseline by the end of the forecast horizon (month 33). In this sense, the domestic easing is transmitted to the short end of the yield curve.

By contrast, the easing is not transmitted to medium- and long-maturity yields. The 5- and 10-year yields rise on impact by 56 and 110 basis points, respectively, and peak one month after the shock at roughly 210 and 275 basis points above their initial levels. These increases are short-lived, with both yields returning to baseline within about four months. Taken together, whereas a contractionary U.S. monetary policy shock tends to flatten or invert the U.S. yield curve, in Latin America it steepens the curve—despite the contemporaneous reduction in the policy rate.[23]

A similar pattern emerges for short-term market rates. The 90-day deposit rate rises by about 200 bps on impact and continues to increase over the forecast horizon. This "disconnect" between the policy rate and market rates can be rationalized by looking at the behavior of risk premia. Panel (g) shows that sovereign risk, proxied by the 5-year CDS spread, widens sharply on impact—by 177 bps—and continues to rise, peaking at roughly 318 bps around month 5. The CDS spread then gradually returns to its pre-shock level about two years after the shock. The increase in risk premia may be linked to the lower commodity prices, which may weaken expected fiscal surpluses and deteriorate sovereign creditworthiness.

Consistent with an interest-parity condition augmented by a time-varying risk premium, the exchange rate depreciates on impact by 7.5% and peaks at 11.2% in month 2. The response then gradually mean-reverts toward its pre-shock level. Stock prices contract sharply on impact, falling by 27.4%. The decline deepens further to a trough of -38.8% at month 1, after which equity prices recover gradually, returning to baseline roughly two years after the shock.

The responses of industrial production and an economic activity index show signs of a contraction in real activity due to the higher interest rate in the U.S and exhibit a hump-shaped pattern.[24] The decline is modest to begin with, but builds over time and reaches a trough of -6.1% at month 12 for industrial production and of -3.6% at month 11 for economic activity. By month 28 both variables are back to pre-shock levels.

Exports and imports weaken following the Fed tightening, with the bulk of the adjustment occurring with a lag. Exports fall by 3.3% on impact, whereas imports show no contemporaneous response. The contraction

[23] Albagli et al. (2019) also find that increases in US short term rates increase long term rates in emerging markets. Degasperi et al. (2026) find that the short-run monetary policy easing by emerging markets only transmits to the short-end of the yield curve, while the long-end moves in the opposite direction of the policy impulse. They argue that this might happen because term premia increases in response to the Fed tightening shock.

[24] I smooth the time series of industrial production and the economic activity index using one month moving averages. The results with the raw data are similar but much more volatile.

then builds over time: exports reach a trough at month 11, about 17.5% below their pre-shock level, and imports bottom out at month 13, roughly 13.9% below baseline. Both series recover and return to their initial levels two years after the shock. Overall, the responses of exports and imports display a hump-shaped pattern.[25]

Export and import prices both decline following the Fed tightening shock. Export prices fall by 5.1% on impact and continue to decline over the subsequent months, reaching a trough of -13.12% at month 5 relative to their pre-shock level. Thereafter, export prices gradually recover, returning to baseline by month 21. Beyond that point, the response turns positive, indicating an increase in export prices above their pre-shock level. This pattern is consistent with the strengthening in export values observed from the second year onward.

Import prices also decline on impact, though by less: the initial response is -1.6%. The decline then cumulates over time, with import prices reaching a trough of -9.35% at month 8. Import prices subsequently mean-revert, recovering their pre-shock level by month 27. From that horizon onward, the estimated response is statistically zero.

The decline in export prices is consistent with the fall in oil and copper prices documented above. This price channel contributes to the observed decline in export values. Notably, export values fall by more than export prices, which implies that export volumes contract as well. Similarly, import values decline despite a fall in import prices, indicating a contraction in import volumes.

Because export prices fall by more than import prices, the terms of trade deteriorate. They decline by 2.6% on impact, and the negative effect accumulates in the short run, reaching about -7.1% by month 3. The trade balance exhibits similar dynamics: it deteriorates on impact, then gradually recovers and eventually turns positive. In this sense, the trade-balance response is reminiscent of a *J-curve*—a short-run worsening followed by an improvement at medium horizons. Moreover, the deterioration in Latin America's trade balance can be interpreted as the mirror image of the trade-balance improvement I document for the United States following a Fed tightening.

The export and import dynamics are broadly in line with DCP. The strengthening of the dollar lowers global imports and the weakening of US demand further affects Latin American exports. The decline in dollar-denominated prices of commodities further compresses export values on top of the volume adjustment. In this environment, the depreciation of the domestic currency is insufficient to offset the adverse external shock: export volumes contract despite domestic monetary easing. On the import side, volumes fall even though import prices decline, reflecting a weaker domestic currency, higher slack and tighter financial conditions.

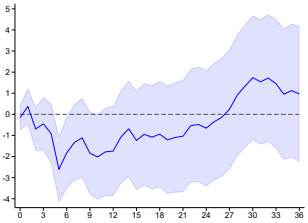
Finally, CPI exhibits little reaction over the first three months. It then declines modestly—by about 0.74%—and the disinflationary effect cumulates over time. The response is large and precisely estimated, reaching a trough roughly four years after the shock at about 10.5% below its pre-shock level. Thereafter, the CPI IRF flattens, oscillating around this trough and remaining broadly stable even at the longest horizon (96 months).

[25] I smooth the time series of exports and imports using one month moving averages. The results with the raw data are similar but much more volatile.

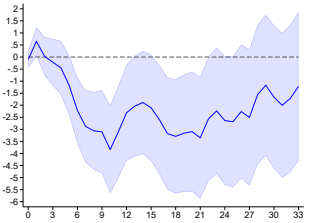
The temporary decline in traded-goods prices, together with the sharp contraction in domestic activity, likely contributes to this sustained disinflationary response. One-year-ahead inflation expectations also decline persistently, by about 1.8 percentage points, and return to their pre-shock level only around year 7. Degasperi et al. (2026) also find that a US monetary policy tightening is deflationary overseas and argue that this is explained by the contraction in commodity prices resulting from lower global demand for commodities.

Figure 3: Effects of U.S. Monetary Policy in Latin America

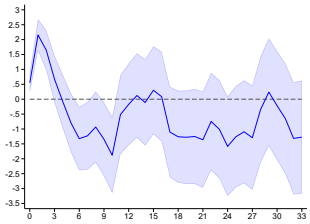
(a) Monetary Policy Rate



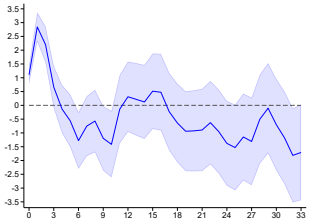
(b) One-year yield



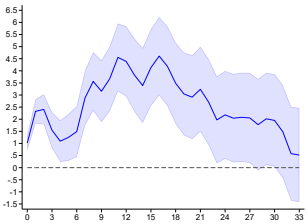
(c) Five-year yield



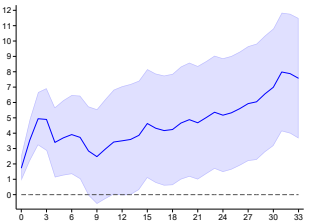
(d) Ten-year yield



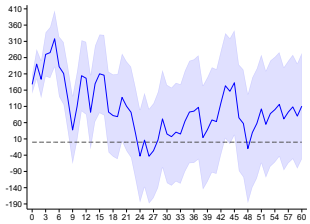
(e) Yield curve slope (10yy-1yy)



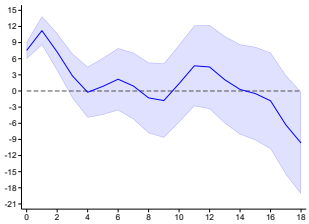
(f) 90-day Deposit Interest Rate



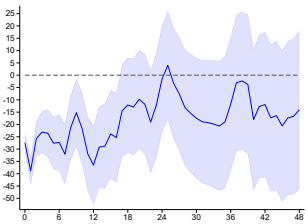
(g) 5-year Credit Default Swaps



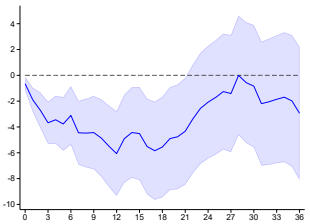
(h) Nominal Exchange Rate



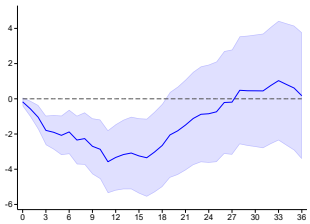
(i) Equity Index Price



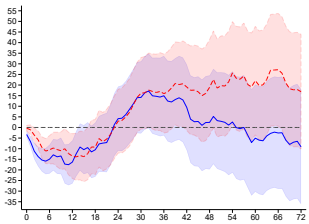
(j) Industrial Production



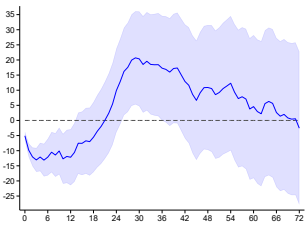
(k) Economic Activity Index



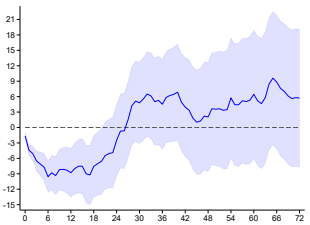
(l) Exports (blue) and Imports



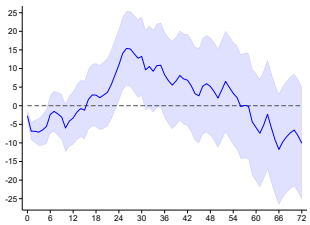
(m) Export Price



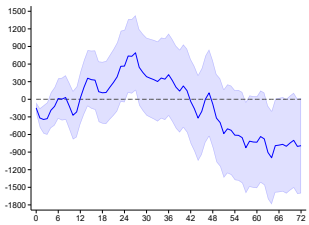
(n) Import Price



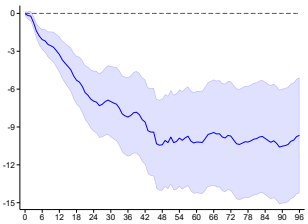
(o) Terms of Trade



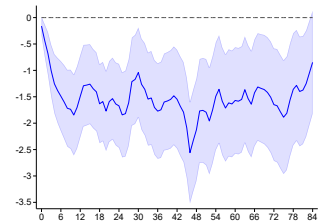
(p) Trade Balance



(q) Consumer Price Index (CPI)



(r) Expected CPI



Note: This figure plots the response of 19 Latin American variables upon an identified exogenous Federal Reserve monetary shock of up to 100 basis points for the panel estimation exercise. These are my estimates of β_h in Equation 2. For interest rates, CDS, trade balance and expected CPI the dependent variable is the h+1-period change in the level of the variable. For the rest of the variables, the dependent variable is the h+1-period change in the natural logarithm of the variable. The specification has 12 lags of the dependent variable except for interest rates. The time series of industrial production, economic activity index, exports and imports are smoothed using one month moving averages. The shaded areas show a 68% confidence interval.

The disinflationary effects of a Fed tightening in Latin America warrant further discussion, since the conven-

tional view is that Fed tightenings are inflationary for emerging markets: the domestic currency depreciates, imported-goods prices rise, and inflation expectations go up (Mendoza-Fernández and Pelin, 2026).[26] In that environment, central banks often respond by raising policy rates, reflecting a form of "fear of floating". This precautionary response is stronger when currency mismatches are larger and exchange-rate pass-through is higher (Kalemli-Özcan, 2019).

My results depart from this conventional view. As shown previously, a Fed tightening is followed by a decline in dollar-denominated import prices and a reduction in expected inflation. The exchange rate depreciates as well, but only briefly—for roughly three months—whereas import prices remain depressed for about three years. Moreover, the cumulative decline in import prices exceeds the cumulative exchange-rate depreciation.[27] As a result, import prices in domestic currency fall on net, which exerts downward pressure on inflation.

Additionally, my estimates indicate that central banks in the region *cut* policy rates in response to the Fed tightening shock. This stands in contrast to the conventional view that emerging markets raise interest rates to defend their currencies and to anchor inflation expectations (Mendoza-Fernández and Pelin, 2026). Why, then, do policy rates fall in my estimations? I argue that the exchange-rate regime and monetary policy strategy is a first-order determinant of the domestic policy response to U.S. monetary tightening. Periods in which countries in my sample operated under heavily managed exchange-rates (e.g., crawling bands), as defined by Table C1 in the appendix, are associated with policy-rate *increases* following Fed tightenings. By contrast, during periods of greater exchange-rate flexibility and inflation targeting, these same countries are able to respond to Fed tightenings by *easing* domestic monetary policy.

Panels (c) and (d) from Figure 4 show a sharp discontinuity in the domestic policy-rate response to Fed tightenings in Chile and Colombia between 1994-1998 and 1999-2003. The difference between these periods is that Chile and Colombia adopted inflation targeting in 1999 (De Gregorio, 2019). When the rolling-sample start date includes the former periods, in which the exchange rate was heavily managed as classified in Table C1 in the appendix, the IRF is positive: monetary authorities *followed* the Fed. In contrast, once the sample start date is shifted to 1999m1 or later (up to 2003m1), the sign reverses: the central bank cuts the policy rate in response to the Fed shock, and the magnitude of easing becomes larger as the start date moves further forward.

The responses for Mexico and Peru begin in 2003m2 and 2003m9 because these are the earliest periods for which data on policy rates is available. As a result, the estimation period coincides with periods in which both countries had already adopted inflation targeting—Mexico in 2001 and Peru in 2002 (De Gregorio, 2019). This fact helps rationalize why the estimated policy-rate responses are negative throughout the forecast horizon: central banks in Latin America adopt a countercyclical monetary stance in response to negative external shocks, such as a Federal Reserve tightening. Brazil exhibits a related pattern. Brazil adopted inflation targeting in 1999, and my rolling windows include data starting in 1998m1. The notably erratic and large response for the

[26] The 1982–1983 Latin American debt crisis, associated with the Volcker disinflation, is the classic example. See Chapter 9 of Friedman (1994) for the case of Chile. The Latin American sudden-stops of the 1990s also reflect this view; see Kehoe and Nicolini (2022).

[27] The average depreciation over one year is 2.8% versus an average decline in import prices of 7%.

window beginning in 1998 likely reflects the extraordinary external financial turbulence Brazil faced in the wake of the 1998 Russian crisis and the subsequent speculative attack on the real (Ayres et al., 2019), which led to the adoption of a flexible exchange rate regime and inflation targeting.

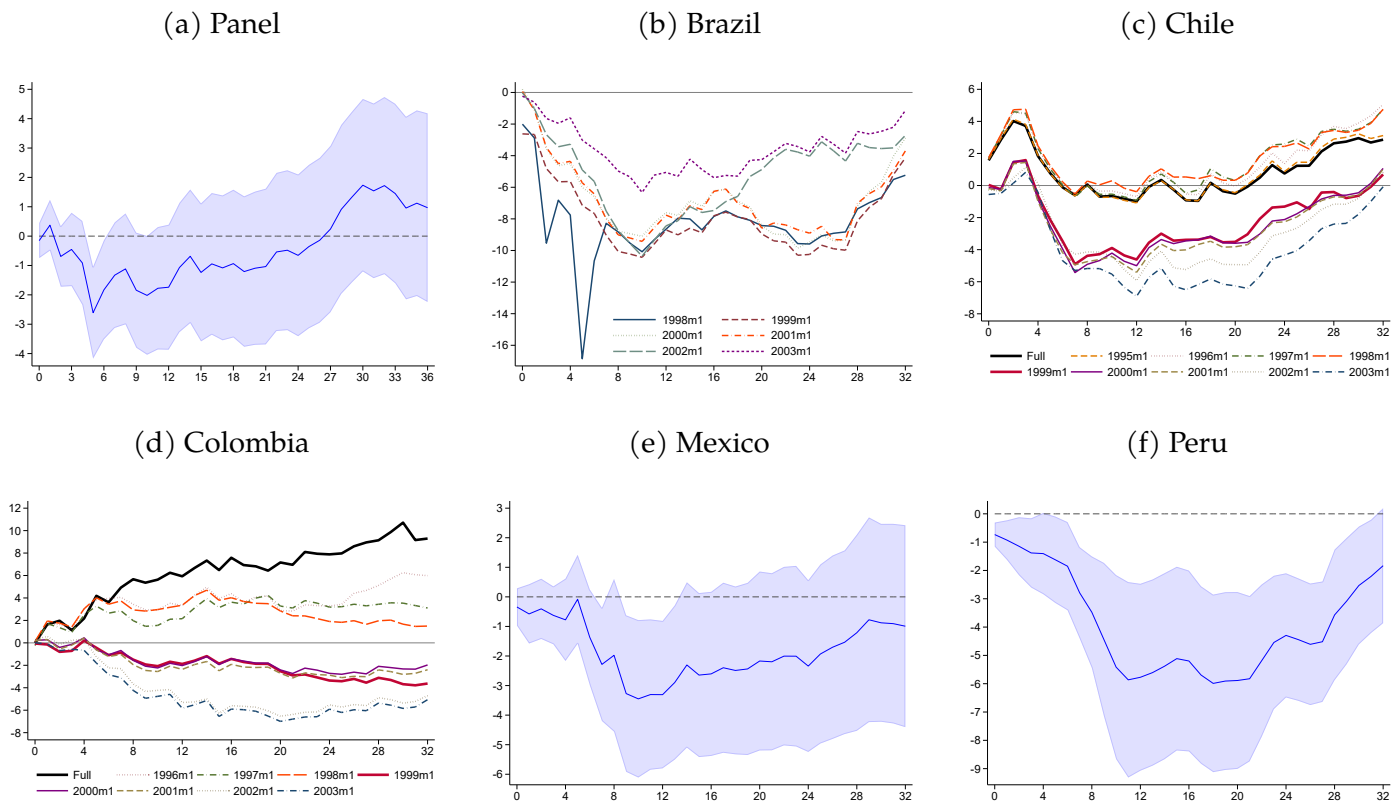
Standard *trilemma*-type reasoning allows to rationalize these responses. Countries operating under a heavily managed exchange rate regime, such as a crawling band, tend to follow the monetary policy of the anchor country (the US). With a sufficiently open capital account, maintaining the currency band requires sacrificing monetary independence, so domestic interest rates must adjust to limit capital outflows and reduce pressure on the parity.[28] Additionally, as argued by Vargas (2011), a flexible exchange rate regime is necessary for a countercyclical monetary policy response to external shocks. Nonetheless, two conditions must be met in order for a flexible exchange rate to allow monetary policy to be countercyclical. First, the absence of sizable currency mismatches. Second, the absence of a large pass-through from the exchange rate to domestic prices. Vargas (2011) argues that Colombia attained these conditions after the nineties[29].

This interpretation is reinforced by the recent work of De Leo et al. (2022). They show that, in emerging markets operating under inflation targeting, policy rates comove positively with domestic activity and inflation, consistent with the application of Taylor-type policy rules that are broadly comparable to those estimated for advanced economies.

[28] Rogoff (2025) discusses Sweden in late 1992, when the Riksbank raised policy rates to 50% in an attempt to defend the currency, a policy that contributed to severe financial stress and was ultimately reversed. A similar dynamic arose in Colombia in 1998, when defending the crawling band required large interest rate hikes, resulting in a procyclical tightening even as the financial system was under stress (Perez-Reyna, 2023).

[29] According to Vargas (2011), the following factors allowed Colombia to attain a flexible exchange rate and conduct countercyclical monetary policy: 1) A reduction in exchange rate pass-trough due to lower inflation and a more credible inflation target, which led to anchored inflation expectations; 2) the increased volatility of the exchange rate after the abandonment of the crawling band in 1999, which reduced pass-through because movements in the exchange rate are now often perceived as transitory; 3) the higher FX volatility in turn incentivizes agents to internalize currency risk in their decisions, which reduced currency mismatches and increased the use of hedging instruments; and 4) "prudential regulation limiting financial intermediaries' currency and external liquidity mismatches has also improved the resilience of the financial system in the presence of large external shocks." (Vargas, 2011).

Figure 4: Effects of U.S. Monetary Policy on Latin American Monetary Policy Interest Rates



Note: This figure plots the response of the monetary policy interest rate upon an identified exogenous Federal Reserve monetary shock of up to 100 basis points for the individual estimation exercise and for the panel estimation. These are my estimates of β_h in Equation 1 for the country estimates and 2 for the panel estimation. The dependent variable is the *h+1*-period change in the level of the policy rate. The specification has no lags of the dependent variable. For Brazil, Chile, and Colombia, I conduct rolling-sample estimations. Each regression uses a subsample that ends in 2019m12, while the start date is shifted forward across windows. The start date ranges from 1994m2 (the longest sample, which is only available for Chile) to 2003m1 (the shortest sample). The legend of each panel specifies the start date for each impulse response. The shaded areas for Mexico, Peru and the panel estimation show a 68% confidence interval.

I perform the same rolling-sample exercise for the 90-day deposit rate and report the results in Figure 5. The estimates reveal a pattern similar to that highlighted above: short-term market rates IRFs exhibit a marked discontinuity between the pre and post inflation-targeting era. For Colombia (Panel (d)), when the rolling sample begins in the earlier subsamples (1994–1998), the response of short-term market rates to a Fed tightening is positive. When the start date is shifted forward to the later subsamples (1999–2003), the response turns negative. Relative to the policy-rate responses, however, the market-rate adjustment appears delayed. The point estimates suggest an essentially flat response for Colombia for roughly the first five months following the shock. Taken together, these dynamics suggest that the pass-through from domestic policy rates to short-term market rates operates with a lag.

For Mexico (Panel (e)), I present the rolling-sample results in two subpanels to highlight the break between early and late sample start dates. The left subpanel reports responses for windows beginning between 1994 and 2000. Over this range, the estimated response of the 90-day deposit rate to a Fed tightening is positive and eco-

nomically large, with the strongest increase occurring for the window starting in 1994. This early subsample includes the Tequila crisis, an episode that has been linked in part to the 1994 U.S. tightening and the resulting increase in global interest rates faced by Mexico (Meza, 2022; Ahmed et al., 2024). The right subpanel reports responses for later start dates. For windows beginning after 2004, the response to the Fed tightening is essentially zero. An exception is the window starting in 2002, which still displays a positive response. Notably, this movement goes in the opposite direction of the monetary policy rate response, suggesting the presence of a wedge between market rates and the policy rate.

For Peru (Panel (f)), I split the responses along two dimensions: the sample start date and the currency denomination of the deposit. This decomposition provides evidence that the transmission of monetary policy to domestic short-term market rates depends not only on the exchange-rate and monetary-policy regime, but also on the extent to which deposits are dollarized. As in the other countries, the IRFs display a clear shift around the adoption of inflation targeting, indicating a change in the systematic response of domestic rates to a Fed tightening shock.

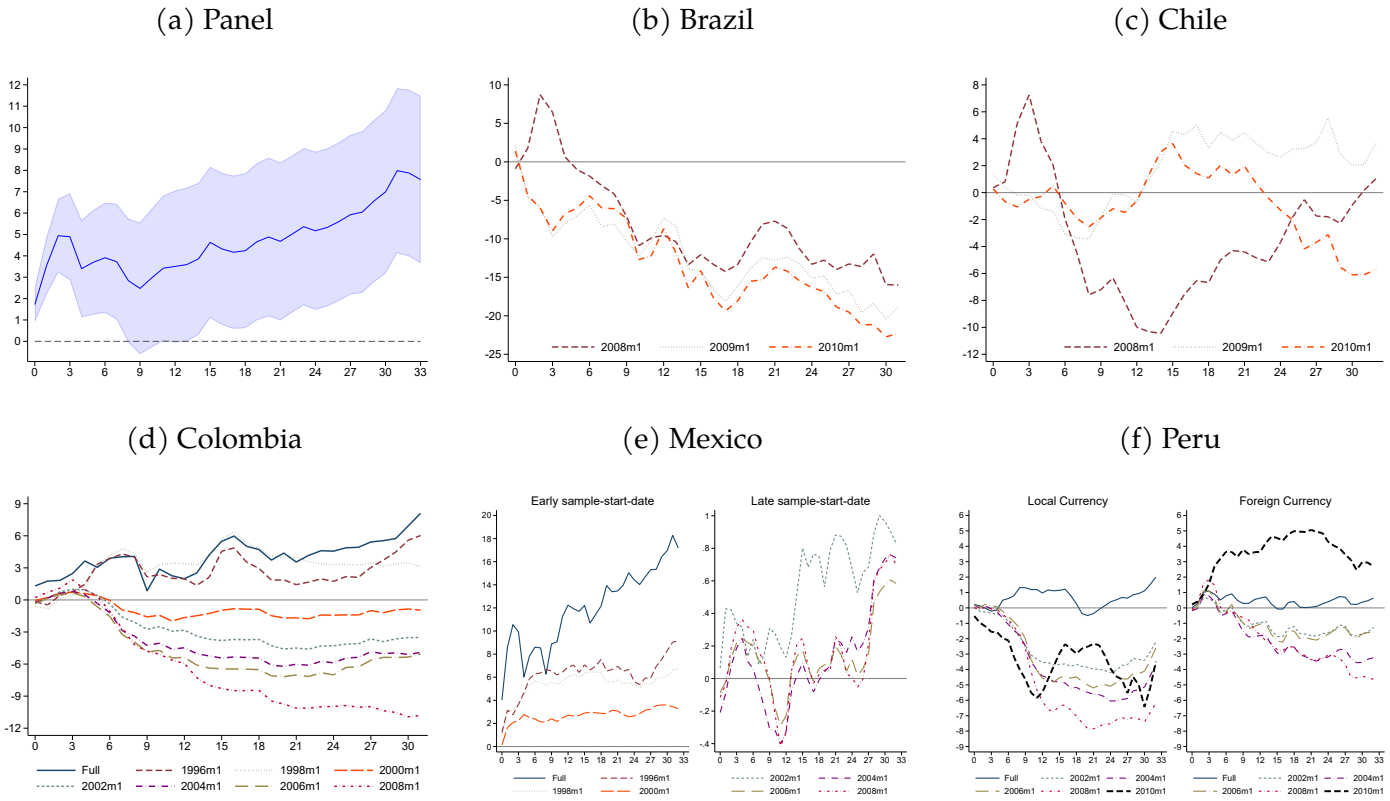
A distinctive feature of Peru is the differential pass-through across currencies. Giraldo et al. (2025) report that foreign-currency deposits represent 50.9% of total deposits in Peru, compared to 13.6% in Chile. The right subpanel shows that foreign-currency deposit rates exhibit weaker transmission from domestic policy relative to local-currency deposit rates. In particular, local-currency deposit rates decline by an amount broadly comparable to the reduction in the policy rate, whereas foreign-currency deposit rates display either the opposite sign (notably for the rolling window starting in 2010) or a more delayed and incomplete adjustment. This pattern is consistent with the view that dollarization can attenuate the effectiveness of domestic monetary easing when a tightening in U.S. monetary policy raises the relevant funding cost faced by intermediaries.

This evidence aligns with the mechanism emphasized by Giraldo et al. (2025). They argue that in economies with low levels of dollarization, domestic credit conditions may be relatively insulated from U.S. monetary policy. By contrast, in more dollarized financial systems, increases in U.S. interest rates tend to slow credit expansion. When banks rely on U.S.-dollar funding—either through local dollar deposits or external borrowing—higher U.S. rates raise their marginal funding costs (Giraldo et al., 2025). Moreover, if banks lend predominantly in local currency while funding in dollars, a Fed tightening can exacerbate balance-sheet mismatches, particularly when accompanied by a local currency depreciation, leading intermediaries to retrench and become more cautious in extending new credit.

Finally, Panels (b) and (c) show that for Brazil and Chile the 90-day deposit rate rises sharply in the rolling window that begins in 2008. An interpretation might be that the Global Financial Crisis was a pronounced *risk-off* episode that amplified the wedge between policy rates and short-term market rates. De Leo et al. (2022) label this phenomenon the "Short-Rate Disconnect". They document that, even when emerging-market central banks adopt countercyclical stances in downturns—including episodes triggered by external shocks such as Fed tightenings that induce global risk-off conditions—short-term market rates often fail to track the policy rate and

may instead move in the opposite direction. They argue that this disconnect reflects the *Global Financial Cycle*: when external financing conditions tighten, increases in risk premia raise the marginal cost of funding for banks with U.S.-dollar liabilities. These higher funding costs are then transmitted to the pricing of short-term local-currency deposits, generating an increase in market deposit rates despite domestic monetary easing.

Figure 5: Effects of U.S. Monetary Policy on Latin American 90-day Deposit Interest Rates



Note: This figure plots the response of the 90-day short term market interest rate upon an identified exogenous Federal Reserve monetary shock of up to 100 basis points for the individual estimation exercise and for the panel estimation. These are my estimates of β_h in Equation 1 for the country estimates and 2 for the panel estimation. The dependent variable is the *h+1*-period change in the level of the deposit rate. The specification has no lags of the dependent variable. I conduct rolling-sample estimations for every country. Each regression uses a subsample that ends in 2019m12, while the start date is shifted forward across windows, as shown by the legend in every subpanel. I also distinguish between the responses of local versus foreign currency deposits for Peru. The shaded areas for the full-sample panel estimation show a 68% confidence interval.

5.1 Uncovering the cross-sectional heterogeneity

The panel estimation allowed me to estimate the macroeconomic consequences of U.S. monetary policy shocks on the "average" country in Latin America. However, individual heterogeneity across countries may provide a richer narrative of the transmission of U.S. monetary policy and its effects on Latin America. Therefore, in this section I estimate Equation 1 by country and describe the cross-country heterogeneity in the responses to a Fed tightening shock across Brazil (Figure 6), Chile (Figure 7), Colombia (Figure 8), Mexico (Figure 9), and Peru (Figure 10).

Short- and long-term yields; yield-curve slope. Brazil's 1-year yield falls with a lag and drifts down for roughly two years; Chile's falls on impact and continues declining before converging back around month 20; Colombia's is essentially unchanged for several months and then declines, remaining below baseline through the two-year horizon. Mexico's 1-year yield rises modestly on impact and in Peru it rises before undershooting and eventually returning to baseline. Colombia and Mexico show large contemporaneous jumps in 5- and 10-year yields that revert within a few months; Peru also exhibits an impact increase at 5 and 10 years that dissipates quickly and then undershoots. Chile is the exception on the long end: 5- and 10-year yields show weak impact effects and drift down only with delay, with wide uncertainty. Taken together, these maturity-specific movements imply a steepening of the yield curve in most cases. Brazil, Colombia, and Mexico experience a sharp steepening on impact, as long yields rise more than short yields. Chile's curve also steepens, but for a different reason: the short end declines by more than the long end, compressing short rates relative to long rates. Peru is the notable outlier: the slope does not rise on impact, but increases later (around month 9) because the subsequent undershooting of the 1-year yield is more pronounced than that of the 10-year yield.

Risk premia (5-year CDS). All countries experience an increase in risk premia on impact, with Brazil and Colombia showing the highest and most persistent increases in the point estimates. Chile, Mexico, and Peru display transitory risk episodes. This cross-country variation aligns closely with the heterogeneity in long-maturity yields and with the existence of a "short-rate disconnect".

Exchange rate and equity prices. Exchange rates depreciate on impact in all five countries, but the duration and magnitude of the depreciation differs markedly. Peru exhibits the smallest and most short-lived depreciation, reverting by month 2, consistent with a more active exchange-rate management regime. Colombia and Chile also revert quickly (around two months), while Brazil's depreciation unwinds within about four months. Chile and Brazil depreciate on impact by a similar amount (around 10%). Mexico is the clear outlier: the peso remains depreciated for a prolonged period and returns only after roughly a year and a half to its pre-shock level. Equity prices fall sharply on impact across the board, but the recovery profiles differ. Chile is the unique case in which equities not only recover but end the horizon above the pre-shock level, indicating a reversal of the initial tightening in financial conditions. Peru's equities recover back to baseline after about two years. Brazil, Colombia, and especially Mexico display more persistent equity drawdowns: Brazil and Mexico remain below baseline even four years out, while Colombia recovers only very gradually (around month 40).

Real activity (industrial production and activity index). Industrial production contracts in most countries, but with meaningful heterogeneity in magnitude and persistence. Mexico stands out as the most severely affected: industrial production falls sharply, remains far below baseline for an extended period and does not return to baseline by the end of an eight-year horizon. Brazil and Chile exhibit more standard hump-shaped

contractions, with recovery within the forecast window (Brazil around 27 months; Chile near the end of a three-year horizon). Colombia shows a comparatively fast adjustment: both industrial production and the activity index fall on impact and revert within roughly 18 months. Peru is the key exception: industrial production does not exhibit a statistically meaningful response, and the activity index shows only a modest delayed contraction, suggesting weaker real-side transmission than in the rest of the sample.

Prices (CPI) and inflation expectations. CPI and expected CPI responses display a persistent disinflationary pattern. Brazil, Chile, Colombia, and Peru all experience sustained CPI declines that deepen over time and remain below baseline even at long horizons (up to eight years). Mexico is the outlier: CPI responses are statistically insignificant, despite a substantial and persistent contraction in real activity and a persistent decline in inflation expectations. The explanation is sample-coverage differences across series (CPI spans the Tequila crisis, which was characterized by a sharp increase in inflation and currency depreciation, while expectations are available only from 2002 onward), which can attenuate the CPI response.

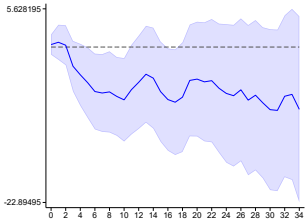
Trade values, trade prices, terms of trade, and the trade balance. Brazil exhibits a statistically insignificant response in trade *values*, while trade *prices* fall on impact, with larger import-price declines plausibly contributing to the disinflationary CPI response. Chile shows declines in export and import values over roughly two years (imports appearing to fall somewhat more in point estimates), while export prices fall more clearly than import prices, leaving the trade balance close to unchanged over most horizons.

In Colombia, exports decline with a hump-shaped profile while imports are close to a statistical zero for an extended period, producing an initial trade-balance deterioration that later reverses into a mild improvement—a response reminiscent of a J-curve. Mexico's export and import values also fall strongly with a pronounced trough around 18 months, recover toward baseline by roughly 30 months, and then weaken again at longer horizons; export prices fall more than import prices, generating a pronounced terms-of-trade deterioration in the first year that gradually unwinds by around month 30. The trade balance in Mexico deteriorates modestly on impact but displays a sharp reversal after roughly two years, a pattern suggestive of sudden-stop-type adjustment dynamics (Ferretti and Razin, 2000; Edwards, 2007).

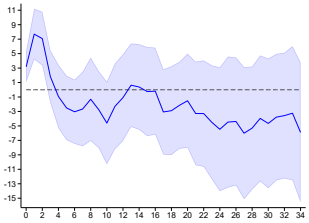
Peru's export value adjustment comes through a reduction of export prices. In contrast, the point estimate for import prices is negative but statistically insignificant. Export values fall on impact and remain depressed for about two years, while import values fall less initially. This generates an impact trade-balance deterioration followed by a subsequent improvement above baseline (a *J-curve*). In Peru, as in Mexico, terms-of-trade and trade-balance responses follow a similar dynamic: a short-run deterioration followed by a recovery that coincides with an increase in export prices relative to import prices.

Figure 6: Effects of U.S. Monetary Policy in Brazil

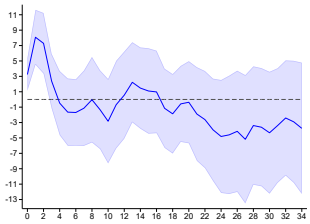
(a) One-year yield (1yy)



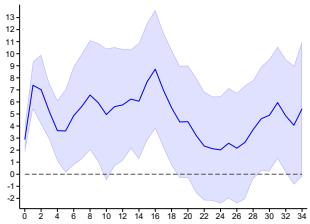
(b) Five-year yield (5yy)



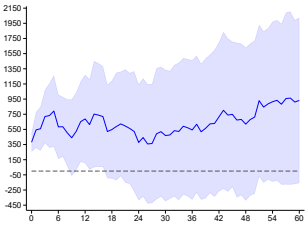
(c) Ten-year yield (10yy)



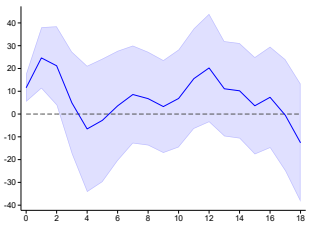
(d) Yield curve slope (10yy-1yy)



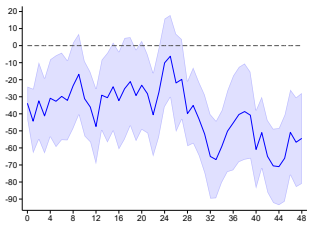
(e) 5-year Credit Default Swaps



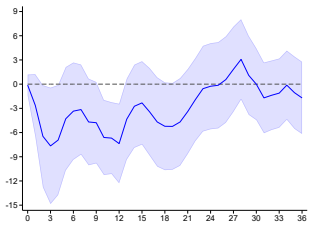
(f) Nominal Exchange Rate



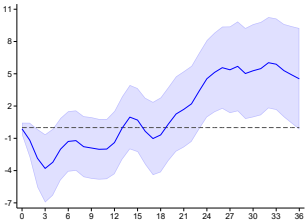
(g) Equity Index Price



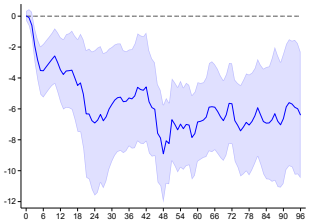
(h) Industrial Production



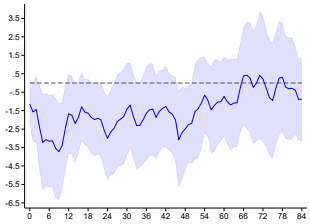
(i) Economic Activity Index



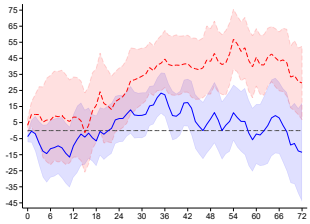
(j) Consumer Price Index (CPI)



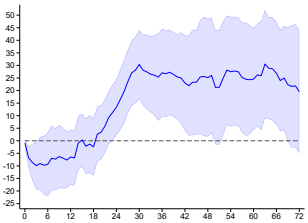
(k) Expected CPI



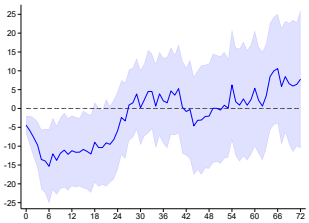
(l) Exports (blue) & Imports



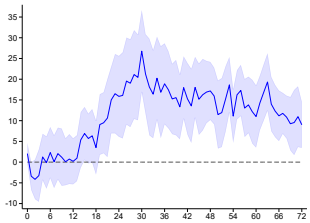
(m) Export Prices



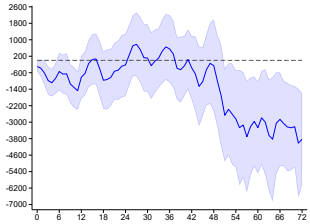
(n) Import Prices



(o) Terms of Trade



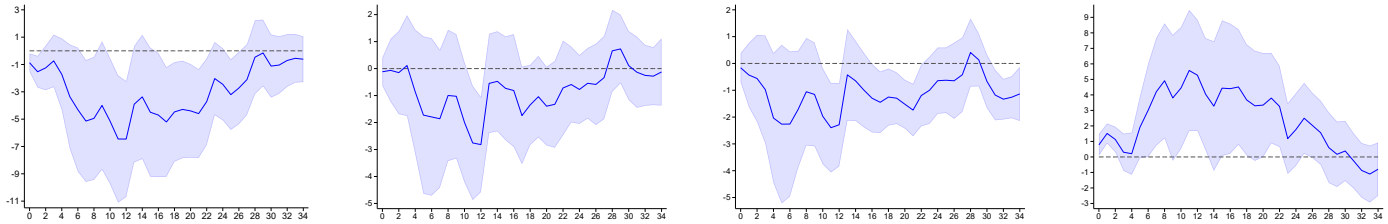
(p) Trade Balance



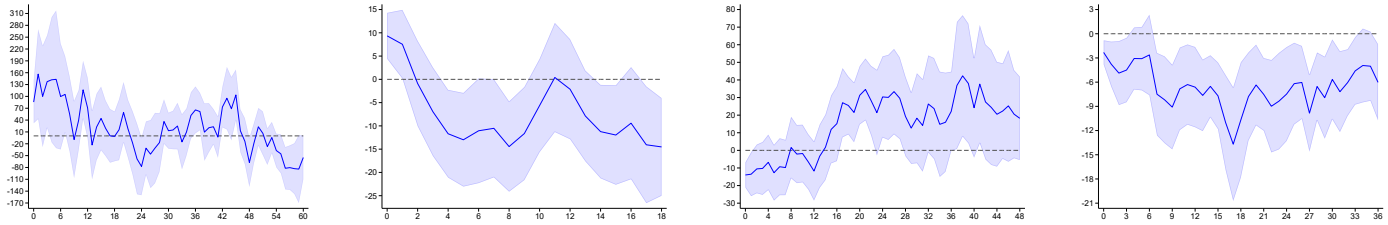
Note: This figure plots the response of 17 Brazilian variables upon an identified exogenous Federal Reserve monetary shock of up to 100 basis points for the individual estimation exercise. These are my estimates of β_h in Equation 1. For interest rates, CDS, expected inflation and trade balance the dependent variable is the *h+1*-period change in the level of the variable. For the rest of the variables, the dependent variable is the *h+1*-period change in the natural logarithm of the variable. The specification has 12 lags of the dependent variable, except for interest rates. The time series of industrial production, economic activity, exports, imports and the trade balance is smoothed using one month moving averages. The shaded areas show a 68% confidence interval.

Figure 7: Effects of U.S. Monetary Policy in Chile

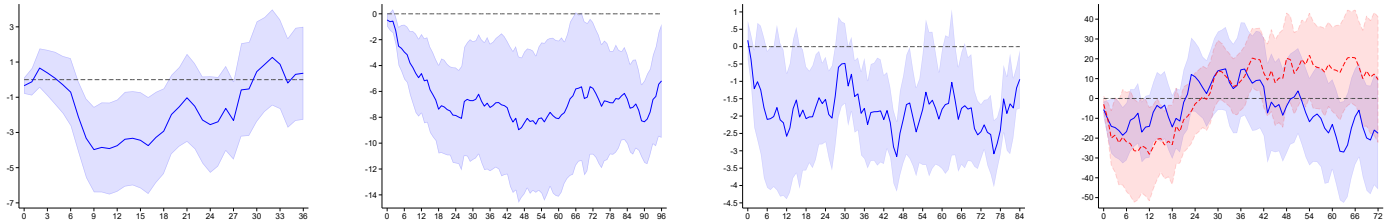
(a) One-year yield (1yy) (b) Five-year yield (5yy) (c) Ten-year yield (10yy) (d) Yield curve slope (10yy-1yy)



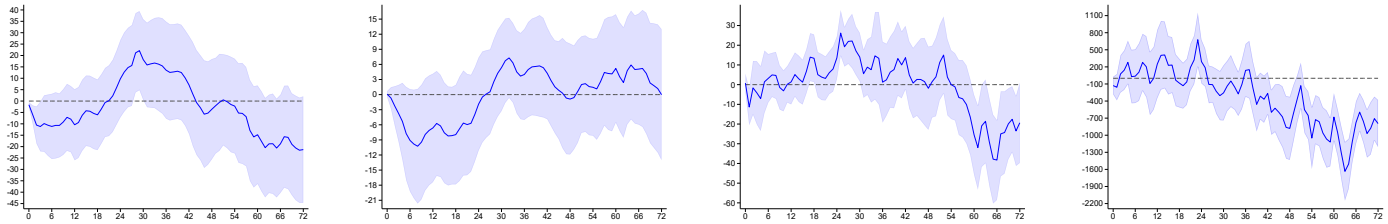
(e) 5-year Credit Default Swaps (f) Nominal Exchange Rate (g) Equity Index Price (h) Industrial Production



(i) Economic Activity Index (j) Consumer Price Index (CPI) (k) Expected CPI (l) Exports (blue) & Imports

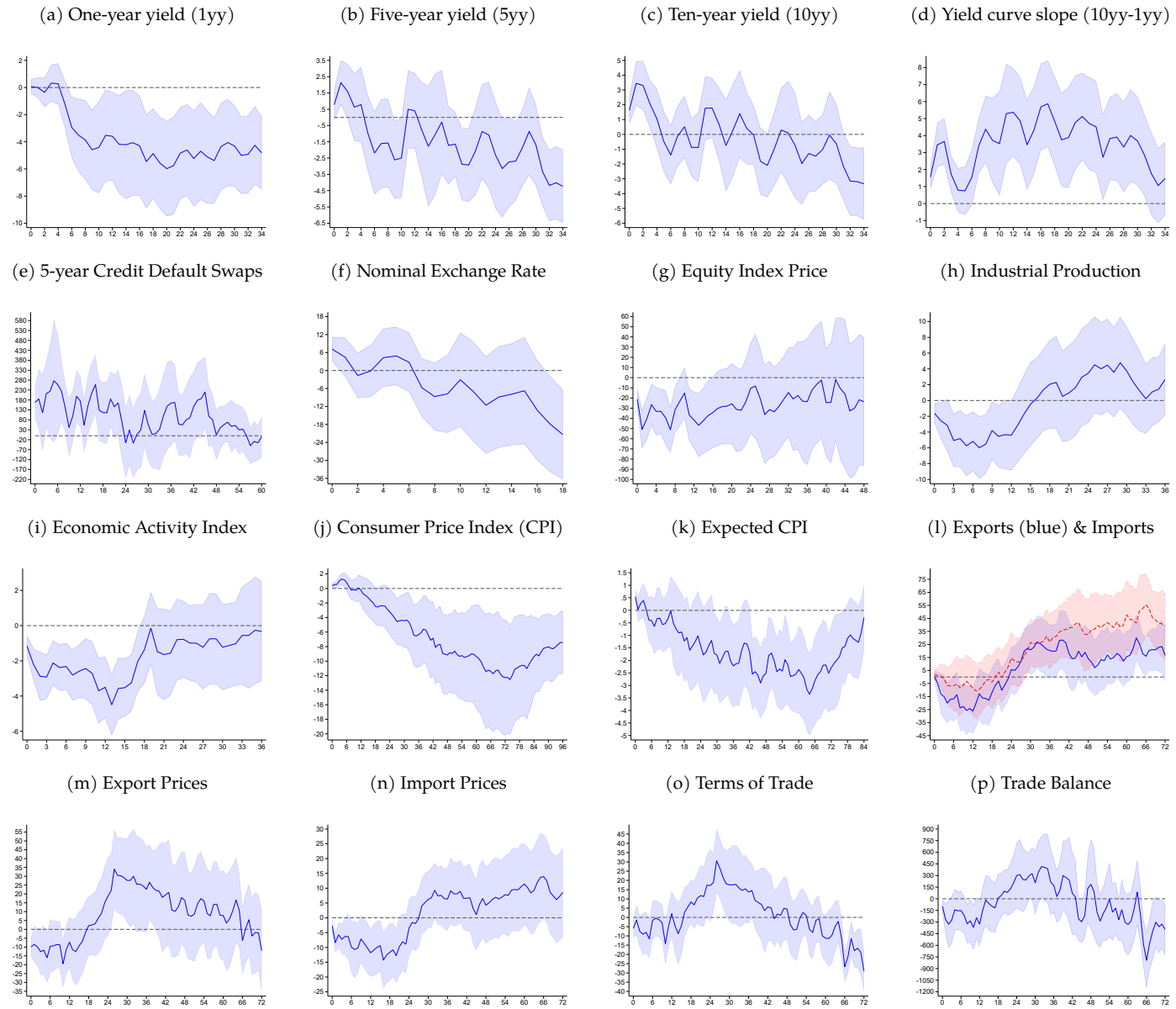


(m) Export Prices (n) Import Prices (o) Terms of Trade (p) Trade Balance



Note: This figure plots the response of 17 Chilean variables upon an identified exogenous Federal Reserve monetary shock of up to 100 basis points for the individual estimation exercise. These are my estimates of β_h in Equation 1. For interest rates, CDS, expected inflation and trade balance the dependent variable is the *h+1*-period change in the level of the variable. For the rest of the variables, the dependent variable is the *h+1*-period change in the natural logarithm of the variable. The specification has 12 lags of the dependent variable, except for interest rates. The time series of industrial production, economic activity, exports, imports and the trade balance is smoothed using one month moving averages. The shaded areas show a 68% confidence interval.

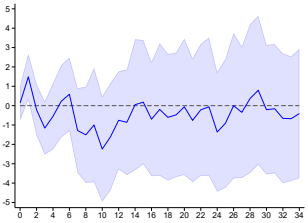
Figure 8: Effects of U.S. Monetary Policy in Colombia



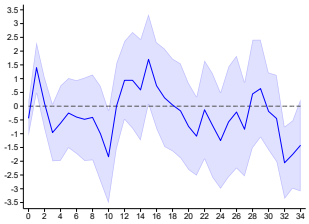
Note: This figure plots the response of 17 Colombian variables upon an identified exogenous Federal Reserve monetary shock of up to 100 basis points for the individual estimation exercise. These are my estimates of β_h in Equation 1. For interest rates, CDS, expected inflation and trade balance the dependent variable is the *h+1*-period change in the level of the variable. For the rest of the variables, the dependent variable is the *h+1*-period change in the natural logarithm of the variable. The specification has 12 lags of the dependent variable, except for interest rates. The time series of industrial production, economic activity, exports, imports and the trade balance is smoothed using one month moving averages. The shaded areas show a 68% confidence interval.

Figure 9: Effects of U.S. Monetary Policy in Mexico

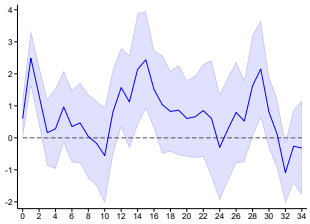
(a) One-year yield (1yy)



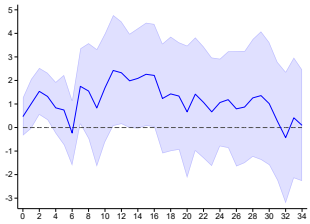
(b) Five-year yield (5yy)



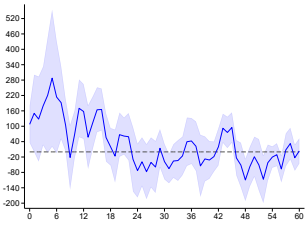
(c) Ten-year yield (10yy)



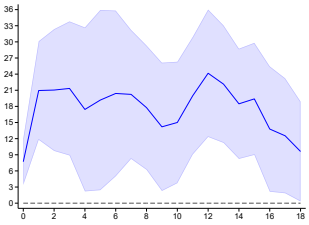
(d) Yield curve slope (10yy-1yy)



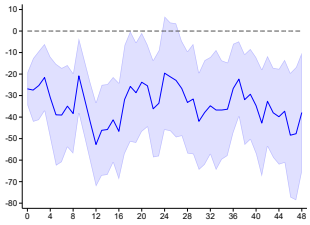
(e) 5-year Credit Default Swaps



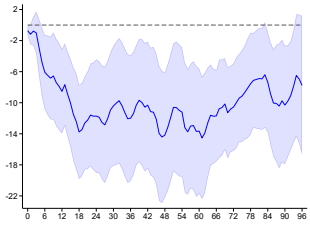
(f) Nominal Exchange Rate



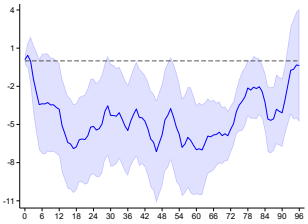
(g) Equity Index Price



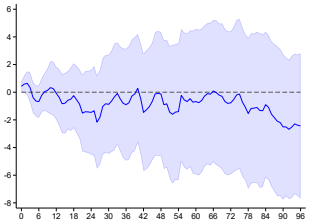
(h) Industrial Production



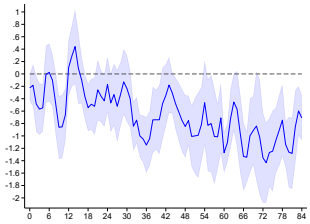
(i) Economic Activity Index



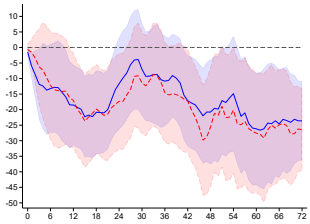
(j) Consumer Price Index (CPI)



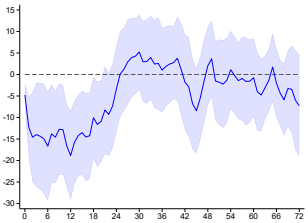
(k) Expected CPI



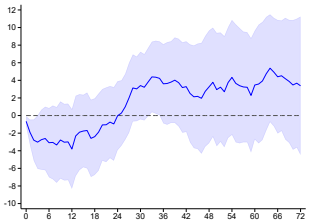
(l) Exports (blue) & Imports



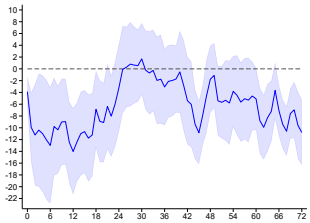
(m) Export Prices



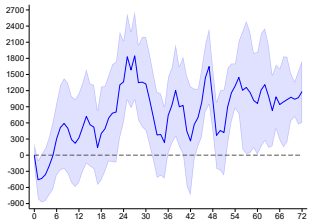
(n) Import Prices



(o) Terms of Trade

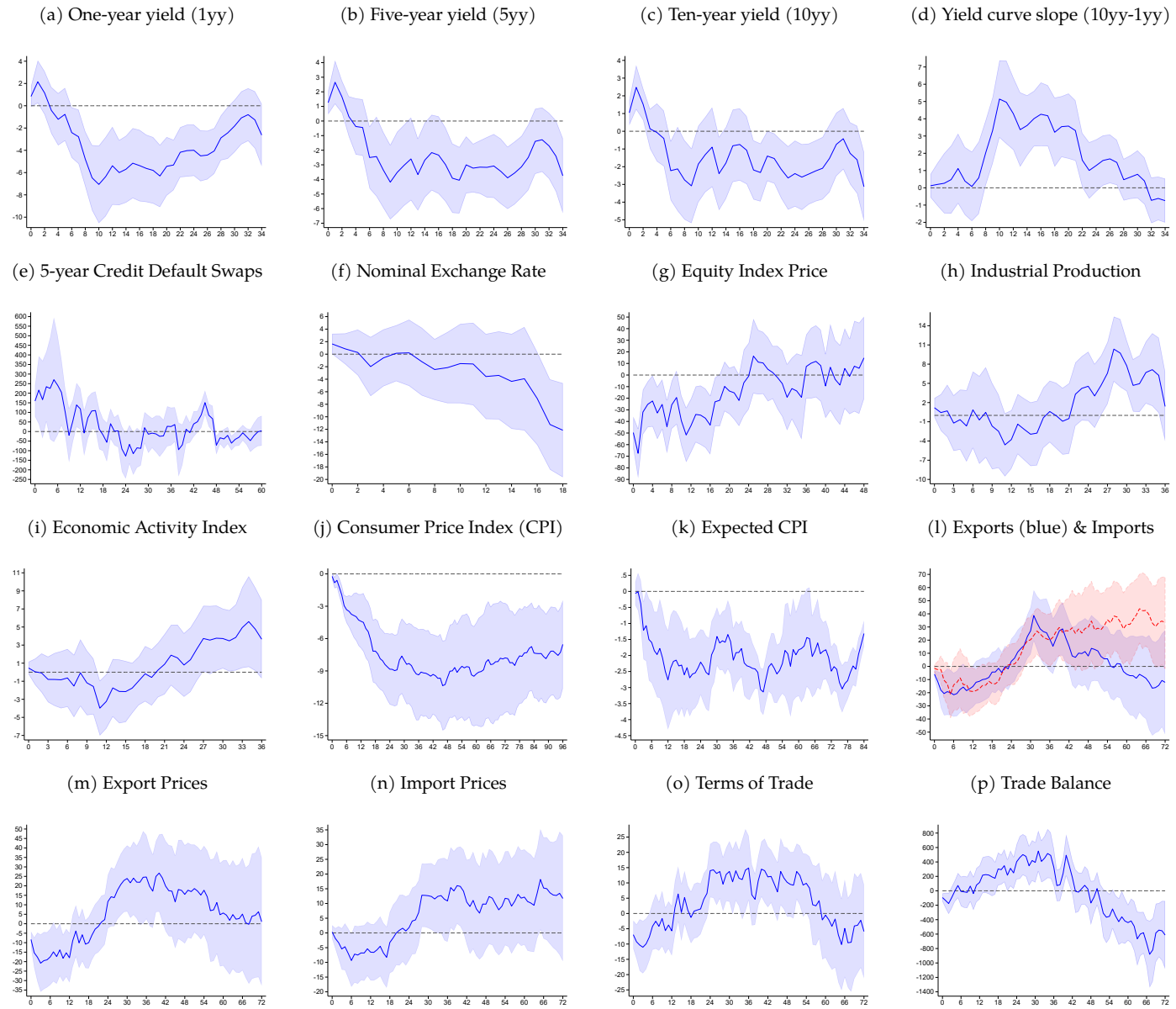


(p) Trade Balance



Note: This figure plots the response of 17 Mexican variables upon an identified exogenous Federal Reserve monetary shock of up to 100 basis points for the individual estimation exercise. These are my estimates of β_h in Equation 1. For interest rates, CDS, expected inflation and trade balance the dependent variable is the *h+1*-period change in the level of the variable. For the rest of the variables, the dependent variable is the *h+1*-period change in the natural logarithm of the variable. The specification has 12 lags of the dependent variable, except for interest rates. The time series of industrial production, economic activity, exports, imports and the trade balance is smoothed using one month moving averages. The shaded areas show a 68% confidence interval.

Figure 10: Effects of U.S. Monetary Policy in Peru



Note: This figure plots the response of 17 Peruvian variables upon an identified exogenous Federal Reserve monetary shock of up to 100 basis points for the individual estimation exercise. These are my estimates of β_h in Equation 1. For interest rates, CDS, expected inflation and trade balance the dependent variable is the *h+1*-period change in the level of the variable. For the rest of the variables, the dependent variable is the *h+1*-period change in the natural logarithm of the variable. The specification has 12 lags of the dependent variable, except for interest rates. The time series of industrial production, economic activity, exports, imports and the trade balance is smoothed using one month moving averages. The shaded areas show a 68% confidence interval.

6 Tightenings vs. Loosenings: Sign-Dependent Effects of U.S. Monetary Policy

My analysis so far has relied on a linear local projection framework that imposes symmetry, i.e., it assumes that the effects of U.S. monetary policy in Latin America are independent of whether the Fed is increasing or reducing its policy interest rate (Jordà and Taylor, 2024). However, recent research has found that the sign of the monetary shock might be consequential for the evaluation of the effects of monetary policy on macroeconomic

outcomes (Tenreyro and Thwaites, 2016; Angrist et al., 2018; Alessandri et al., 2025; Camara, 2026). Therefore, in this section I test this hypothesis by using a sign-dependent local projections framework. I extend Equation 1 for the U.S. and 2 for Latin America in order to obtain the responses for positive (contractionary) shocks as follows:

$$y_{c,t+h} - y_{c,t-1} = \alpha_{c,h} + \beta_h s_{c,t} + \gamma_h s^+_{c,t} + \sum_{j=1}^{12} \phi_{h,j} \Delta y_{c,t-j} + \nu_{c,t+h}, \quad h = 0, 1, ..., H. \tag{3}$$

Note that I have only added another regressor, $s^+_{c,t} = \max\{s_{c,t}, 0\}$, to my baseline specification. The coefficient of interest is $\beta_h + \gamma_h$. This allows me to capture the extra effect that positive shocks induce to the response. Similarly, I estimate the following equation to obtain responses for negative (loosening) shocks:

$$y_{c,t+h} - y_{c,t-1} = \alpha_{c,h} + \beta_h s_{c,t} + \gamma_h s^-_{c,t} + \sum_{j=1}^{12} \phi_{h,j} \Delta y_{c,t-j} + \nu_{c,t+h}, \quad h = 0, 1, ..., H \tag{4}$$

where $s^-_{c,t} = \min\{s_{c,t}, 0\}$. The coefficient of interest is $\beta_h + \gamma_h$.[30]

Figure 11 reports the sign-dependent impulse responses of four U.S. variables. Contractionary U.S. monetary policy shocks generate substantially larger and more persistent real effects than expansionary shocks of comparable magnitude. Following a contractionary shock, industrial production exhibits little contemporaneous response, but the contraction accumulates over time: the point estimate reaches roughly -25% at about 18 months, and then gradually mean-reverts, returning to its pre-shock level after around three years. By contrast, after an expansionary shock industrial production is also flat on impact, then increases and peaks at about 5% around month 15, and reverts to baseline after roughly 27 months. The implied asymmetry is therefore pronounced: the contractionary response dominates the expansionary one, so that the net response (the green line) is negative.

A similar asymmetry emerges for GDP. Positive shocks (monetary tightenings) are associated with markedly larger output losses than the output gains implied by negative shocks. Moreover, the output effects of contractionary shocks appear more persistent for GDP than for industrial production: the GDP point estimate does not return to its pre-shock level within the forecast horizon. At the same time, the responses are estimated imprecisely, as indicated by wide confidence bands, so the magnitude and persistence of these asymmetries should be interpreted with caution.

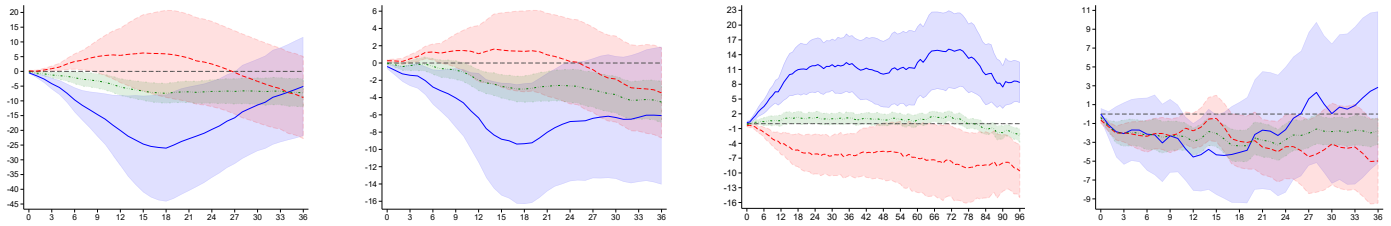
Labor-market responses reinforce the asymmetry on the real side. Panel (c) shows that contractionary shocks raise unemployment by substantially more than expansionary shocks reduce it. Finally, inflation responses are less straightforward. Contractionary shocks reduce inflation with a lag, but the inflation IRFs are

[30] My results are robust to two alternative specifications. First, I use the specification of Caravello and Martinez-Bruera (2024) and Camara (2026), who estimate $y_{c,t+h} - y_{c,t-1} = \alpha_{c,h} + \beta_h s_{c,t} + \gamma_h |s_{c,t}| + \sum_{j=1}^{12} \phi_{h,j} \Delta y_{c,t-j} + \nu_{c,t+h}$. For positive shocks the response is $\beta_h + \gamma_h$ and for negative shocks the response is $\gamma_h - \beta_h$. Second, Alessandri et al. (2025) estimate $y_{c,t+h} - y_{c,t-1} = \alpha_{c,h} + \beta_h s_{c,t} + \gamma_h D_{s,t} s_{c,t} + \sum_{j=1}^{12} \phi_{h,j} \Delta y_{c,t-j} + \nu_{c,t+h}$, where $D_{s,t} = \mathbf{1}\{s_{c,t} > 0\}$. The response for positive shocks is $\beta_h + \gamma_h$ and for negative shocks is only β_h.

also imprecisely estimated. More puzzlingly, expansionary shocks are estimated to reduce inflation as well, implying the wrong sign relative to the conventional prediction. Taken together, the asymmetry in output is therefore interesting in its own right, while the inflation response to expansionary shocks calls for additional scrutiny.

Figure 11: Sign-Dependent Effects of U.S. Monetary Policy in the U.S.

(a) Industrial Production (b) Monthly GDP (c) Unemployment rate (d) CPI



Note: This figure plots the response of 4 U.S. variables upon Fed tightenings (solid, blue) and easings (red, dashed). I also plot the baseline linear responses for comparison (green, two dots and dash). These are my estimates of $\beta_h + \gamma_h$ in Equations 3 and 4. For unemployment the dependent variable is the *h+1*-period change in the level of the variable. For the rest of the variables, the dependent variable is the *h+1*-period change in the natural logarithm of the variable. The specification has 12 lags of the dependent variable. The time series of industrial production and monthly GDP are smoothed using two month moving averages. The shaded areas show a 68% confidence interval.

Turning to the sign-dependent impulse responses for Latin America, Panel (a) of Figure 12 shows that domestic monetary policy reacts strongly and countercyclically to U.S. monetary shocks. Following a contractionary U.S. monetary shock, central banks cut policy rates forcefully, whereas expansionary U.S. shocks elicit policy-rate increases. In absolute value, the easing response to contractionary shocks is larger than the tightening response to expansionary shocks, indicating that monetary authorities react more aggressively to adverse external conditions triggered by U.S. tightenings.

Short-term market yields comove closely with the policy rate. In particular, the 1-year yield largely mirrors the policy-rate dynamics across shock signs, suggesting meaningful pass-through to the short end of the yield curve. Longer maturities, however, display less conventional behavior. The 10-year yield rises on impact following both contractionary and expansionary U.S. shocks. At longer horizons the responses diverge, drifting apart in a roughly mirror-image fashion, which contributes to the 10-year linear IRF becoming statistically insignificant at long horizons.

Exchange-rate dynamics also reveal an asymmetry. Contractionary U.S. shocks depreciate Latin American currencies. However, expansionary U.S. shocks are also followed by an impact depreciation, which contradicts conventional wisdom.

Real activity responses further underscore the asymmetry between contractionary and expansionary U.S. shocks. Following a tightening shock, industrial production falls by about 3% on impact, continues to decline, and reaches a trough around month 10 at approximately -14%. The contraction then unwinds, with industrial production returning to its pre-shock level by about month 22. Expansionary shocks, in contrast, raise industrial

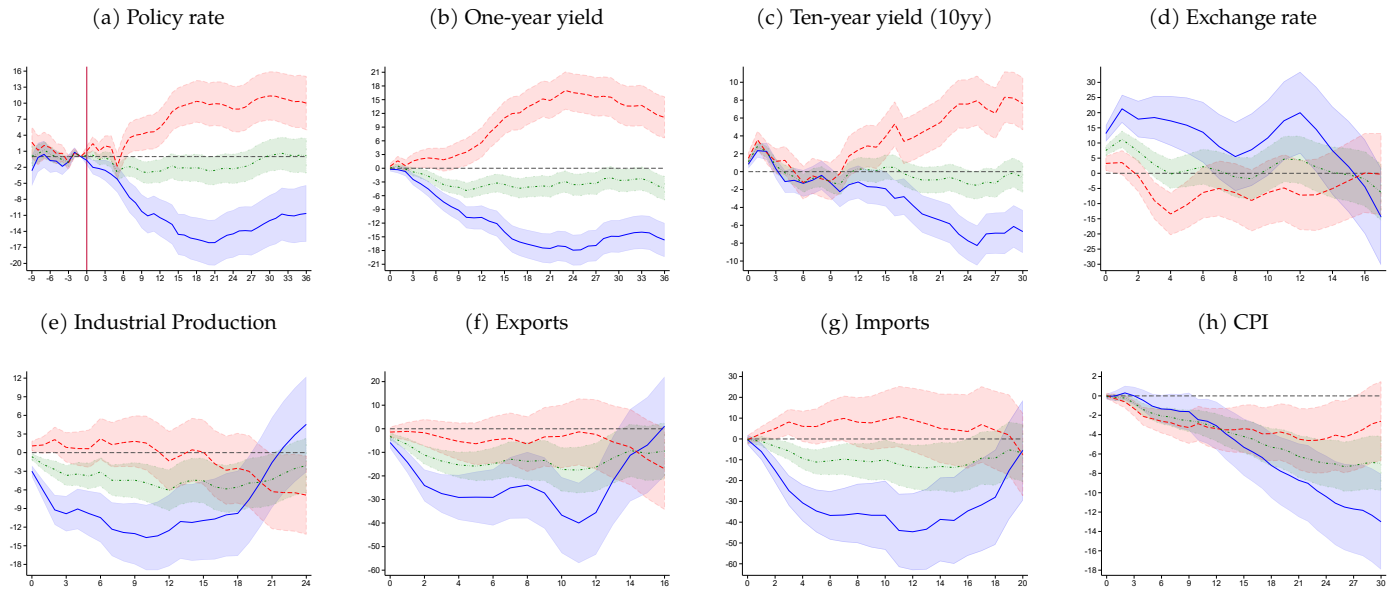
production only modestly: the response is about 2% on impact and then quickly flattens, becoming statistically insignificant after roughly three months. Overall, contractionary U.S. shocks have substantially larger and more persistent real effects than expansionary shocks.

Trade responses exhibit an even sharper sign asymmetry. Export values fall by about 7% on impact after a contractionary U.S. shock and continue declining, reaching roughly -40% around month 11, before recovering rapidly and returning to baseline by month 16. By contrast, exports display essentially no response to expansionary U.S. shocks. That is, U.S. monetary contractions depress Latin American exports, but U.S. monetary expansions do not generate a corresponding export expansion.

Imports show a related pattern. Imports exhibit little contemporaneous response to either tightening or loosening shocks, but following a contractionary shock they decline with delay, reaching approximately -45% around month 11, and then recover, returning to baseline by about month 20. Expansionary shocks raise imports, but only modestly (peaking around 10%), and the response becomes statistically insignificant thereafter. Taken together, the magnitude of the trade response is considerably larger for contractions than for expansions.

Finally, prices adjust with delay and exhibit pronounced asymmetry. CPI shows little impact response to contractionary shocks, but begins to fall after roughly 10 months and then declines sharply; by month 30 CPI is about 13% below its initial level. More puzzlingly—and consistent with the pattern documented for the United States—an expansionary U.S. shock is also followed by lower inflation in Latin America. The disinflationary effect of expansionary shocks is, however, much less persistent, with CPI returning to baseline around month 33. Overall, the sign-dependent evidence suggests that U.S. monetary tightenings transmit strongly to Latin American real activity, trade, and inflation, whereas the effects of U.S. easings are weaker and in some dimensions display non-standard signs, particularly for the exchange rate and inflation.

Figure 12: Sign-Dependent Effects of U.S. Monetary Policy in Latin America



Note: This figure plots the response of 8 Latin American variables upon Fed tightenings (solid, blue) and easings (red, dashed). I also plot the baseline linear responses for comparison (green, two dots and dash). These are my estimates of $\beta_h + \gamma_h$ in Equations 3 and 4. For interest rates the dependent variable is the *h+1*-period change in the level of the variable. For the rest of the variables, the dependent variable is the *h+1*-period change in the natural logarithm of the variable. The specification has 12 lags of the dependent variable. The time series of industrial production, exports and imports are smoothed using one month moving averages. The shaded areas show a 68% confidence interval.

7 Conclusion

I estimate the effects of U.S. monetary policy on macroeconomic and financial outcomes in Brazil, Chile, Colombia, Mexico and Peru for the period 1994-2019. This question is theoretically ambiguous. Therefore, it is fundamentally an empirical question and poses serious identification issues because monetary policy is endogenous to the state of the economy. My approach to tackle this identification challenge is to employ the high-frequency monetary policy shocks identified by Bauer and Swanson (2023b) in a local projection setting.

I first revisit the effects of Federal Reserve monetary policy in the U.S., and find that a contractionary Fed shock generates a yield-curve inversion, dollar appreciation, and a sharp tightening of financial conditions, followed by persistent contractions in real activity and a gradual but long-lasting decline in prices. In line with recent evidence by Jordà et al. (2024), but contrary to conventional wisdom, I find signs of long-run effects of monetary policy on various macroeconomic and financial variables. Trade adjusts asymmetrically, with exports contracting immediately and imports responding with a lag, leading to an eventual improvement in the trade balance. Overall, the responses are relatively consistent with standard high-frequency monetary shocks and exhibit no price or output puzzles.

Second, I perform a panel local projection estimation for the five Latin American countries in my sample and find that a U.S. tightening transmits forcefully to Latin America through international trade and financial chan-

nels. Commodity prices fall and global risk appetite deteriorates persistently, triggering currency depreciation, equity sell-offs, and a sharp widening of sovereign risk spreads. While central banks respond countercyclically by cutting policy rates, this easing coexists with rising medium- and long-term yields, yielding a pronounced steepening of the yield curve and a "short-rate disconnect" between policy and market rates, in line with the findings of De Leo et al. (2022). Real activity contracts and trade volumes weaken, while prices adjust with a delayed but persistent disinflation, and trade balances display J-curve–type dynamics consistent with dominant currency pricing and tighter financial conditions.

These findings challenge the conventional view that U.S. tightenings are inflationary for emerging markets and induce defensive monetary tightening. Instead, inflation expectations fall persistently, and cumulative declines in import prices dominate the effects of exchange rate depreciation, generating net disinflationary pressures. A key contribution of the paper is to show that the monetary-policy response in Latin America is regime dependent: under managed exchange-rate regimes, central banks historically followed the Fed, whereas under inflation targeting with greater exchange-rate flexibility, they ease following U.S. tightenings. Financial system dollarization further weakens monetary transmission, contributing to market-rate increases despite policy easing.

Finally, the paper highlights substantial heterogeneity and nonlinearities. I estimate individual, country-by-country, local projection models and find that countries differ markedly in the persistence of depreciation, the strength of real contractions, the behavior of long yields, and the durability of disinflation. I conjecture in turn that this heterogeneity may depend on financial and trade proximity to the U.S. Moreover, when allowing for non-linear, sign-dependent local projections instead of imposing linearity, I find that spillovers are strongly asymmetric: U.S. tightenings generate large and persistent contractions in real activity and trade, while U.S. easings produce only modest and short-lived expansions.

From a policy perspective, I argue that while flexible exchange rates enable countercyclical monetary responses, they do not fully insulate economies from adverse financial spillovers driven by risk premia. This suggests a potential role for complementary policies aimed at stabilizing financial conditions and the yield curve, while allowing exchange-rate adjustment to buffer external demand and commodity-price shocks only if balance-sheet risks are limited and exchange-rate pass-through to inflation is low.

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Appendix

A Appendix of the section *Data and Empirical Specification*

Table A1: Data sources and sample periods by variable and country

Variable	Brazil	Chile	Colombia	Mexico	Peru
1. Monetary Policy Interest Rate	Haver N223RD 1998m1-2019m12	Haver C228RD 1994m2-2019m12	Haver N233RDE 1995m4-2019m12	BIS Policy Rates dataset 2003m2-2019m12	Haver N293RTA 2003m9-2019m12
2. 1, 5, and 10-year Treasury Bond Yields (Local Currency)	Haver R223M1Y; R223M5Y; R223MA 2008m1-2019m12	Banco Central de Chile 2003m3-2019m12; 2003m3-2019m12; 2004m7-2019m12	Haver, codes N233RZ1Y; N233RZ5Y; N233RZA 2003m1–2019m12	Haver, C273RC1Y; N273RG5 and R273M5Y; R273MA and N273RG10 2001m10-2019m12	Superintendencia de Banca, Seguros y AFP 2005m11-2019m12
3. 90-day Deposit Interest Rate	Haver L223M3M 2008m8-2019m12	Haver L228M3M 2008m8-2019m12	Haver C233RC9 1994m2-2019m12	Haver C273RC90 1994m2-2019m12	Haver C293RDD6 for LC and C293RDF6 for FC 2000m1-2019m12
4. 5-year Credit Default Swaps	Bloomberg 2001m10-2019m12	Bloomberg 2003m1-2019m12	Bloomberg 2003m1-2019m12	Bloomberg 2001m10-2019m12	Bloomberg 2003m10-2019m12
5. US Dollar Nominal Exchange Rate	Haver N223XUSV 1994m7-2019m12	Haver N228XUSV 1994m2-2019m12	Haver C233XLDV 1994m2-2019m12	Haver C273XLDV 1994m2-2019m12	Haver N293XUSV 1994m2-2019m12
6. MSCI Share Price Index ex Div LC	Haver N223KML 1994m2-2019m12	Haver N228KML 1994m2-2019m12	Haver N233KML 1994m2-2019m12	Haver N273KML 1994m2-2019m12	Haver N293KML 1994m2-2019m12
7. Industrial Production	Haver G223D and S223D 1994m2-2001m11 and 2001m12-2019m12	Haver H228IS 1994m2-2019m12	Haver H233DM 1994m2-2019m12	HaverS273DW 1994m2-2019m12	Haver H293DVM 1994m2-2019m12
8. Economic Activity Index	*FGV GDP Monitor*, Haver S223GVV 1999m12-2019m12	*IMACEC*, Haver S228GVI 1995m12-2019m12	*ISE*, Haver S233GVI 1999m12-2019m12	*INEGI*, Haver S273GVI 1994m2-2019m12	*Monthly GDP*, Haver H293GVQ 1994m2-2019m12
9. Export Value US dollars	Haver H223TXD 1994m2-2019m12	Haver H228IXD 1994m2-2019m12	Haver H233IXD 1994m2-2019m12	Haver S273TXD 1994m2-2019m12	Haver H293IXD 1994m2-2019m12
10. Import Value US dollars	Haver H223TMD 1994m2-2019m12	Haver H228IMD 1994m2-2019m12	Haver H233IMFD 1994m2-2019m12	Haver S273TMD 1994m2-2019m12	Haver H293IMD 1994m2-2019m12

Table A1 continued from previous page

Variable	Brazil	Chile	Colombia	Mexico	Peru
11. Export Price Index	Haver H223PFXI 1994m2-2019m12	Haver C228PFXI and H228PFXI 1996Q1-2019Q4, interpol.	Haver N233IUX 1994m12-2019m12	Haver H273PX 1994m2-2019m12	Haver H293PFXI 1994m2-2019m12
12. Import Price Index	Haver H223PFMI 1994m2-2019m12	Haver C228PFMI and H228PFMI 1996Q1-2019Q4, interpol.	Haver N233IUM 1994m12-2019m12	Haver H273PM 1994m2-2019m12	Haver H293PFMI 1994m2-2019m12
13. Terms of Trade Index	Haver N223PFTT 1994m2-2019m12	Haver V228CTT 1996m2-2019m12	Haver N233IUTT 1994m12-2019m12	Haver H273PFTT 1994m2-2019m12	Haver H293PFTT 1994m2-2019m12
14. Net Exports US dollars	Haver H223TBD 1994m2-2019m12	Haver H228IBD 1994m2-2019m12	Haver, code H233IBD 1994m2-2019m12	Haver S273TBD 1994m2-2019m12	Haver H293IBD 1994m2-2019m12
15. Consumer Price Index	Haver H223PC 1994m2-2019m12	Haver H228PC 1994m2-2019m12	Haver H233PC 1994m2-2019m12	Haver H273PJ 1994m2-2019m12	Haver H293PC 1994m2-2019m12
16. Inflation Expectations	*Focus, 1y*, Haver I223ICA 2001m11-2019m12	*Economic Expectations Survey, 1y*, Haver N228VEC1 2001m1-2019m12	*Economic Expectations Survey, 1y* Haver N233VCPY 2003m9-2019m12	*Bank of Mexico Survey Expectations Private Sector, 1y*, Haver N273VEPY 2002m2-2019m12	*Central Reserve Bank of Peru Survey of Macro. Expectations, 1y*, Haver N293VCPY 2002m1-2019m12

Notes: This table reports my data sources and sample periods by variable and country. All series are monthly and end in 2019m12. The earliest start-date is 1994m2. Haver is my main data source, so I report the code to the variable in Haver. For Chile, export and import price indices are quarterly series that were interpolated to monthly frequency and linked across sources. Inflation expectations are one-year ahead CPI inflation expectations.

Table A2: Data sources for U.S. variables

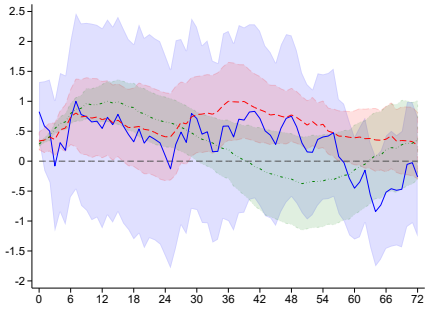
Variable	**United States**
1. Monetary Policy Interest Rate	Haver FFEDTARE
2. 1-year and 10-year Treasury Bond Yield	Haver FCM1E and FCM10
3. NEER and REER	BIS
4. S&P 500 Index	Haver SP500
5. Cboe Volatility Index (VIX)	Haver SPVIX
6. CISS	Haver V111CSS
7. Industrial Production	Haver IP
8. Unemployment Rate	Haver LR
9. Exports Value	Haver BGSX
10. Imports Value	Haver BGSM
11. Export Price Index	Haver PXEA
12. Import Price Index	Haver PMEA
13. Net Exports	Haver BGSB
14. Consumer Price Index	Haver PCUN
15. Oil Price	Haver PEBRT
16. Copper Price	Haver GSIC
17. Global Risk Factor	Miranda-Agrippino and Rey
18. Nasdaq 100	Haver SPNA1
19. Monthly Real GDP (S&P)	Haver MGDP
20. Import Prices Excluding Fuel	Haver PMEXF

Notes: This table reports my data sources by variable for the U.S.. All series are monthly and span 1994m2-2019m12. NEER stands for Nominal Effective Exchange Rate and REER for Real Effective Exchange Rate (REER). CISS stands for Composite Indicator of Systemic Stress.

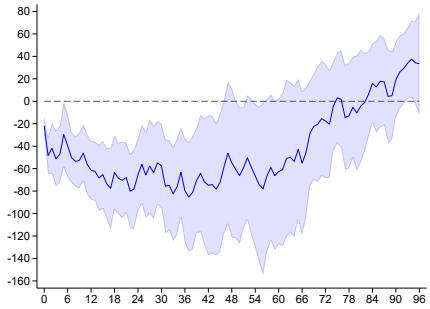
B Appendix of the section *Effects of U.S. Monetary Policy in the U.S.*

Figure B1: Responses of Additional Variables for the U.S.

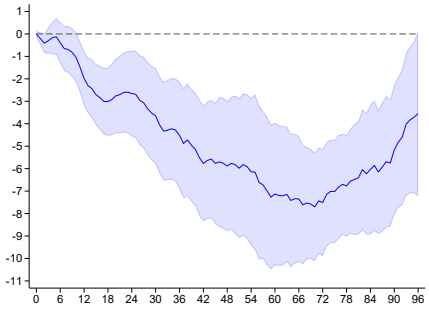
(a) Monetary Policy Rate



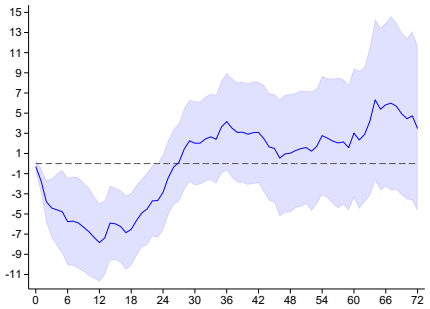
(b) NASDAQ 100 Index



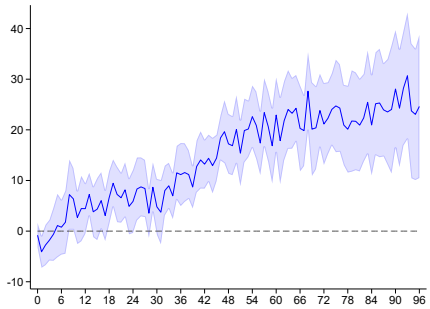
(c) Monthly Real GDP S&P



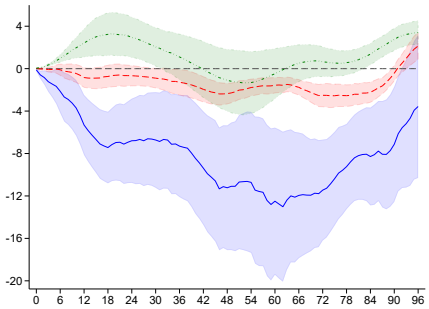
(d) Import Prices ex-fuel



(e) Exports/Imports



(f) Industrial Production



Note: This figure plots the response of the policy rate, Nasdaq 100 index, Monthly Real GDP, import prices ex-fuel, the ratio of exports over imports and industrial production upon an identified exogenous monetary shock that reaches a maximum increase of 100 basis points in the U.S. policy rate for a specification analogous to my baseline specification except that for Panels (a) and (f) I use the monetary shocks estimated by Miranda-Agrippino and Ricco (2021) and updated by Degasperi and Ricco (2021) until 2019m6 (red, dashed line) and the Romer and Romer (2004) shocks updated by Miguel Acosta (green line with two dots and dashes) until 2019m12. I also plot the baseline responses for comparison (blue solid line). The shaded areas show a 68% confidence interval.

C Appendix of the section *U.S. Monetary Policy Spillovers to Latin America*

C.1 Details on Exchange Rate Regime Classification

Table C1 updates the table constructed by Laborde (2026) to include the periods before 1999. The table lists the exchange rate regime of Brazil, Chile, Colombia, Mexico and Peru for the periods 1994m2-2019m12 based on Ilzetzki et al. (2019). The authors define a *managed floating* regime as one where the central bank conducts "reserve operations or restrictions on capital mobility that have the clear intent to affect exchange rate's level, path, or volatility" (Ilzetzki et al., 2019), whereas *freely floating* exchange rates are those in which the central bank "only looks at the effect of exchange rate changes through their effects on output and inflation"(Ilzetzki et al., 2019). A *moving band* refers to the cases where "periods of sustained appreciations are also evident"(Ilzetzki et al., 2019); with *crawling bands*, "changes are always in the direction of depreciation"(Ilzetzki et al., 2019). Fi-

nally, *freely falling* is associated to periods of economic crises, where annual inflation exceeds 40% for one year, or to currency crashes, where the exchange rate depreciates by "25 percent (month on month) and this rate of depreciation was 10 percentage points greater than that of the previous month" (Ilzetzki et al., 2019).

Table C1: Exchange Rate Arrangement Classification 1994m2-2019m12

	Brazil	Chile	Colombia	Mexico	Peru
Managed float	1999.9-2002, 2008.10-end	1999.9-end	1999.10-end	1996.–2015	-
Free float	2003-2008.9	-	-	2016-end	-
Freely falling	1994.2-1994.6, 1999.2-1999.8	-	-	1995.1-1996.3	-
Moving band	-	-	-	-	2003-2012.6
Crawling band	1994.7- 1999	1994.2-1999.8	1994.2-1999.9	1994.2-1994.12	94.2-03,2012.7-end
Anchor currency	USD	USD	USD	USD	USD

Note: The table updates Table B1 constructed by Laborde (2026) and lists the exchange rate arrangement classification and anchor currencies for Brazil, Chile, Colombia, Mexico, and Peru based on the Ilzetzki et al. (2019) Fine De Facto Exchange Rate Arrangement Classification. 1999.9 indicates year 1999 month 9. The word "end" means 2019.12. 2003 is equivalent to 2003.1. USD means US dollar.