Same Shock, Different Institutions: Monetary Architecture and the Allocation of Macroeconomic Adjustment

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Abstract

How do monetary institutions shape the allocation of adjustment to external shocks? This paper reframes the standard shock-absorption question by treating monetary architectures as institutional systems that distribute adjustment across prices, real activity, exchange rates and international reserves. We combine quarterly data for 2000Q1-2023Q4 with country-specific import-cost and export-income shocks from the IMF Commodity Terms of Trade database and classify monetary arrangements as monetary unions, pegs, intermediate regimes and floats. Panel local projections show that institutional heterogeneity is strongest in the CPI response. In the stable common sample, regime differences in the response to import-cost shocks are significant at most horizons, and joint estimation of import-cost and export-income shocks rejects equality of the institutional response profiles at eight of thirteen horizons. These results are materially weaker under fixed trade weights, which defines an important scope condition. Monetary-union versus national-peg differences become imprecise after conditioning on anchor-relative exchange-rate flexibility, while central-bank independence and reserve governance do not act as universal stabilizers. Published narrative instruments strongly predict external commodity-price movements, but they do not randomize monetary institutions. We therefore interpret cross-regime differences as institutional heterogeneity conditional on externally generated shocks, not as causal effects of regime adoption. The results support a comparative-institutional view of monetary systems as shock-allocation architectures whose adjustment profiles are shock-contingent.

Keywords: monetary architecture; commodity-price shocks; exchange-rate regimes; monetary unions; local projections

JEL codes: E32; E42; F31; F33; F44

1. Introduction

External shocks are a central test of monetary institutions. When import prices rise, export prices fall or global commodity markets move abruptly, policymakers cannot generally neutralise the disturbance on every margin at once. Domestic prices may adjust, output may contract, the nominal exchange rate may move, international reserves may be used, or monetary conditions may tighten. The empirical question is therefore not only whether an economy is insulated from an external shock, but where the adjustment takes place and how the institutional design of monetary policy shapes that allocation.

The classic literature frames this question primarily through exchange-rate flexibility. Friedman (1953) argued that nominal exchange-rate adjustment can facilitate relative-price adjustment. Broda (2004) and Edwards and Levy Yeyati (2005) subsequently documented that terms-of-trade shocks propagate differently under fixed and flexible exchange-rate arrangements. This remains a powerful benchmark. Yet three developments make a broader comparative-institutional approach necessary. First, a monetary union and a national peg can display similar exchange-rate rigidity while differing fundamentally in the location of monetary authority, access to common liquidity and the governance of reserves. Second, recent work shows that export-price and import-price shocks are not mirror images of one another (Di Pace, Juvenal and Petrella, 2025). Third, modern economies operate under institutional combinations - exchange-rate rules, central-bank autonomy, reserve buffers and external anchors - rather than under a single regime label.

This paper develops the concept of a monetary architecture as a shock-allocation system. The key object is not a scalar measure of performance but a vector of dynamic responses across inflation, real activity, the exchange rate and reserves. An external shock creates an adjustment burden. Institutional design changes the relative cost of placing that burden on each margin. A float makes nominal exchange-rate adjustment comparatively feasible; a national peg raises the cost of exchange-rate movement but retains domestic monetary and reserve governance; a monetary union delegates monetary authority and may centralise liquidity or reserve management. These institutional differences need not imply that one architecture is unconditionally superior. They imply that the same shock can be transmitted through different margins.

The empirical design combines quarterly data for 2000Q1-2023Q4. Country-specific import-cost and export-income shocks are constructed from the IMF Commodity Terms of Trade database, using recent rolling weights based on preceding trade flows as the baseline and fixed weights as a robustness check. Monetary architectures are drawn from the IMF Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER), with the institutional state lagged to avoid look-ahead. CPI inflation, quarterly real GDP, bilateral exchange rates and international reserves form the four core adjustment margins. Central-bank independence is measured using the Romelli index; for H2, exchange-rate flexibility is re-measured relative to the likely anchor currency rather than mechanically against the US dollar.

The paper uses panel local projections following Jordà (2005). The baseline H1 exercise asks whether the dynamic response vector differs across monetary union, peg, intermediate and floating architectures. H5 then estimates import-cost and export-income shocks jointly and tests whether institutional response differences themselves depend on shock type. H2 isolates the institutional-

delegation question by comparing monetary unions and national pegs conditional on anchor-relative pre-shock exchange-rate flexibility. H4 examines whether central-bank independence modifies transmission within national monetary regimes. H3 is intentionally limited to a diagnostic on reserve governance because the available cross-country reserve data do not measure pooled reserve capacity uniformly.

The main empirical result is that institutional heterogeneity is strongest and most stable in the price response. In the common stable-regime H1 sample, joint regime differences in the cumulative CPI response to an import-cost shock are significant at 11 of 13 horizons. Once import-cost and export-income shocks are estimated jointly, import-shock heterogeneity is significant at 12 of 13 horizons and the equality of the institutional response profiles across the two shock types is rejected at 8 of 13 horizons. The estimated pattern is economically meaningful: import-cost shocks generate persistent positive price-level responses under monetary unions, pegs and intermediate arrangements, while floating regimes display a smaller and less persistent response. Export-income shocks generate a different configuration. This contrast is precisely what a shock-allocation interpretation predicts.

The secondary tests sharpen rather than overturn that conclusion. H2 shows that the monetary-union versus national-peg differential becomes imprecise for CPI and exchange-rate responses once flexibility is measured relative to the relevant anchor and anchor-by-time conditions are absorbed. H4 does not support a monotone claim that greater legal central-bank independence universally dampens inflation transmission. H3 suggests that reserve-management location may matter in some monetary unions, particularly the CEMAC, but the pattern does not generalise to the ECCU and cannot be interpreted as a universal reserve-pooling effect. Finally, a published narrative instrument for export-price movements has an extremely strong first stage in the merged annual sample, but institutional differences remain imprecise in 2SLS. This reinforces the distinction between relevance of an external instrument for the shock and causal identification of regime adoption; the exclusion restriction itself rests on the published narrative design.

The paper makes four contributions. First, it shifts the empirical object from shock absorption to shock allocation by studying a vector of adjustment margins and treating monetary institutions as bundles of constraints rather than as labels. Second, it integrates shock nature into comparative institutional analysis: the same architecture can produce different adjustment profiles after import-cost and export-income shocks. Third, it separates institutional delegation from observed exchange-rate rigidity by constructing an anchor-adjusted flexibility measure for the monetary-union versus national-peg comparison. Fourth, it imposes a deliberately conservative identification hierarchy: external commodity-price variation is treated as the source of the shock, narrative instruments are used as external-identification stress tests, and no claim is made that cross-regime differences identify the causal effect of adopting a particular monetary regime.

This institutional framing also speaks directly to comparative economics. The central question is not which monetary regime is best in the abstract, but how alternative institutional arrangements redistribute the macroeconomic consequences of the same external disturbance. That comparative perspective is especially relevant for emerging and developing economies, where commodity exposure, exchange-rate commitments, reserve constraints and delegated monetary authority often coexist. The rest of the paper is organized as follow: section 2 and 3 present literature and conceptual

framework respectively. Section 4 indicates data measurement and descriptives statistics. Section 5 justify empirical strategy. Section 6 comment the results. Section 7 made External identification and robustness. Section 8 write discussion and section 9 Concludes.

2. Literature, institutional perspective, and contribution

2.1 Exchange-rate regimes and external shocks

Broda (2004) provides a foundational empirical comparison of terms-of-trade shocks under alternative exchange-rate regimes, showing that real GDP, real exchange rates and prices respond differently under fixed and flexible arrangements. Edwards and Levy Yeyati (2005) similarly find that terms-of-trade disturbances tend to be amplified under more rigid exchange-rate systems. These studies establish the importance of exchange-rate adjustment for shock transmission, but their main comparison is organised around rigidity versus flexibility rather than the broader institutional bundle through which adjustment occurs.

Recent work has deepened the shock side of the problem. Fernández, Schmitt-Grohé and Uribe (2017) show that multiple world prices transmit global shocks more strongly than single-price specifications suggest. Schmitt-Grohé and Uribe (2018), in contrast, emphasise that conventional terms-of-trade shocks explain a relatively small fraction of output movements in country-specific SVARs. Juvenal and Petrella (2024) separate commodity-specific price disturbances from the global financial cycle using narrative commodity events. Gazzani, Herrera and Vicondoa (2026) show that positive and negative commodity-price shocks generate asymmetric responses in emerging economies and that financial conditions are central to those asymmetries. These contributions make the identification and nature of commodity shocks central empirical issues.

2.2 Why monetary architecture is broader than the exchange-rate regime

Exchange-rate classifications remain indispensable because they capture a central nominal commitment. Yet an exchange-rate category does not fully specify the institutional environment. Monetary unions delegate policy to a common authority; national pegs retain domestic monetary institutions even when the bilateral exchange rate is highly stable. Intermediate regimes combine managed exchange-rate adjustment with varying monetary autonomy. Floats allow greater nominal exchange-rate movement but still differ substantially in central-bank design and reserve use. The macroeconomic trilemma literature formalises the trade-offs between exchange-rate stability, monetary independence and capital mobility (Obstfeld, Shambaugh and Taylor, 2005; Aizenman, Chinn and Ito, 2010), while Ilzetzki, Reinhart and Rogoff (2019) emphasise the continued empirical relevance of anchor currencies and limited flexibility.

This motivates a comparative-institutional distinction between form and capacity. Formal architecture determines where monetary authority resides and how strongly the exchange rate is constrained. Institutional capacity - including legal central-bank independence and the availability or governance of reserves - can modify how that architecture operates. Romelli (2022) documents large cross-country variation and reform dynamics in central-bank institutional design. The present paper treats these dimensions as potential moderators rather than assuming that a regime label fully summarises monetary institutions.

2.3 Shock nature: import costs and export income

Di Pace, Juvenal and Petrella (2025) show that a positive export-price shock is not the mirror image of a negative import-price shock. This distinction is essential for institutional analysis. An adverse import-cost shock works directly through domestic production costs, consumer prices and real purchasing power. A positive export-income shock instead raises external income and potentially reserves, fiscal space and domestic demand. A net terms-of-trade index can combine these channels and obscure their different mappings into domestic adjustment.

The paper therefore treats shock nature as a first-order state variable. H5 does not ask only whether import and export shocks have different average effects. It asks whether the difference between monetary architectures itself changes with shock type. This is the empirical meaning of shock contingency.

2.4 Contribution relative to existing work

Relative to the classic exchange-rate-regime literature, the paper therefore adds a different empirical object rather than another regime ranking. Broda (2004) and Edwards and Levy Yeyati (2005) establish that exchange-rate arrangements condition adjustment to external disturbances, but they do not organise the evidence around a multi-margin Institutional Adjustment Profile. Relative to recent commodity-shock work, including Di Pace, Juvenal and Petrella (2025) and Gazzani, Herrera and Vicondoa (2026), the contribution is to make monetary architecture itself the comparative institution and to test whether cross-architecture differences change with the nature of the shock. The paper also separates institutional delegation from measured exchange-rate rigidity and imposes an explicit identification hierarchy in which external-instrument exercises discipline the shock interpretation without converting regime membership into a treatment effect.

3. Conceptual framework: monetary institutions as shock-allocation systems

3.1 Adjustment burden

Let an external disturbance create an adjustment burden S_{it} that can be absorbed through four broad margins: nominal exchange-rate adjustment, reserve adjustment, domestic-price adjustment and real-output adjustment. Denote these components by a^{e}_{it}, a^{R}_{it}, a^{pi}_{it} and a^{y}_{it} A stylised accounting constraint is:

$$S_{it} = a^{e}_{it} + a^{R}_{it} + a^{pi}_{it} + a^{y}_{it} \quad (1)$$

The equation is not intended as a national-accounts identity. It is a reduced-form representation of the idea that adjustment cannot disappear: institutions influence the margin through which the disturbance is accommodated.

Suppose architecture r associates a quadratic cost with each adjustment margin:

$$L^{r}_{it} = \tfrac{1}{2}[c^{er}(a^{e}_{it})^2 + c^{Rr}(a^{R}_{it})^2 + c^{pir}(a^{pi}_{it})^2 + c^{yr}(a^{y}_{it})^2] \quad (2)$$

Minimising this loss subject to the adjustment-burden constraint yields institution-specific allocation weights. For margin $m \in \{e,R,\pi,y\}$:

$$a^{m}_{it} = \omega^{mr} S_{it}, \quad \omega^{mr} = (1/c^{mr}) / \Sigma_j(1/c^{jr}) \quad (3)$$

An institution therefore matters by changing the relative shadow cost of the margins. A peg raises the cost of nominal exchange-rate adjustment. A monetary union also constrains the national exchange rate but additionally delegates monetary policy and may alter liquidity and reserve governance. A float reduces the institutional cost of nominal depreciation but may expose domestic prices to exchange-rate pass-through. Reserve buffers can lower the short-run cost of defending a nominal commitment, while central-bank credibility can raise the cost of tolerating persistent inflation.

3.2 Institutional Adjustment Profiles

The empirical counterpart of the theoretical allocation weights is an Institutional Adjustment Profile: a horizon-specific vector of impulse responses across macroeconomic margins. For architecture r and shock j, define:

$$\Omega^{r}{}_{j}(h) = [\mathrm{IRF}^{pir}{}_{j}(h), \mathrm{IRF}^{yr}{}_{j}(h), \mathrm{IRF}^{er}{}_{j}(h), \mathrm{IRF}^{Rr}{}_{j}(h)]' \quad (4)$$

H1 states that these vectors need not be identical across monetary architectures. This is a stronger and more informative proposition than testing one output coefficient at one horizon.

3.3 Shock contingency

The mapping from external disturbance to adjustment is also shock-specific. Import-cost shocks directly increase the domestic-currency cost of imported consumption and intermediate goods, whereas export-income shocks affect external receipts and balance-sheet space. Let B_M and B_X denote the corresponding transmission maps. Then:

$$B_{j}\,\Omega^{r}{}_{j}(h) = S^{j}{}_{it}, \quad j \in \{M, X\} \quad (5)$$

H5 follows directly: even within the same monetary architecture, Ω^{r}_M(h) need not equal Ω^{r}_X(h). In words, an institution does not have one invariant "shock-absorption coefficient"; it has a shock-contingent allocation profile.

3.4 Institutional delegation and capacity

H2 distinguishes a monetary union from a national peg after conditioning on effective pre-shock exchange-rate rigidity. H4 distinguishes formal institutional architecture from legal central-bank independence. H3 asks whether reserve-management location changes reserve responses, but the empirical implementation is deliberately treated as diagnostic because reserve pooling is not observed consistently across unions.

4. Data and measurement

4.1 Sample construction

The empirical window is 1999Q1-2023Q4 at the raw-data stage. Because the baseline institutional state is lagged by one calendar year to avoid contemporaneous regime assignment, the strict estimation window begins in 2000Q1. The foundation panel contains 177 economies and 16,795 country-quarters with CTOT shocks, lagged AREAER architecture and BIS bilateral exchange rates. Adding CPI leaves 171 economies, adding real quarterly GDP leaves 104, and adding reserves leaves 166. The common four-outcome H1 sample contains 101 economies and 7,507 country-quarters; 53 countries are observed in all 96 quarters. The common H4 sample including lagged central-bank independence

contains 91 economies and 6,819 country-quarters. Exact country coverage, sample membership and the full sample-flow are reported in Supplementary Appendix Tables A1-A4; exact country lists for the common H1, H4 and clean H2 samples are in Tables M1-M3.

Block	Source	Frequency	Construction
Commodity-price exposure	IMF Commodity Terms of Trade (CTOT)	Monthly → quarterly	Country-specific import, export and net commodity-price indices; rolling and fixed weights.
Monetary architecture	IMF AREAER	Annual → quarterly	Lagged classification recoded as MU, PEG, INT, FLOAT; stable-regime indicator.
Exchange rate	BIS WS_XRU	Monthly → quarterly	Bilateral USD end-of-period rate; anchor-relative flexibility constructed separately.
Prices	IMF CPI	Monthly → quarterly	All-items CPI; quarterly average; annualised quarterly and year-on-year inflation.
Real activity	IMF QNEA	Quarterly	Real GDP at constant prices; official seasonally adjusted series preferred, NSA fallback.
International reserves	IMF International Liquidity	Monthly → quarterly	Reserves excluding gold, USD millions; quarter-end stock.
Central-bank independence	Romelli CBIE	Annual → quarterly	Lagged legal CBI index; ECB index used for euro-area members after accession.

Table 1. Data architecture and variable construction

4.2 External shocks

The baseline treatment uses the IMF CTOT "recent, rolling weights" indices. These weights are based on average trade flows over the preceding three years, making the exposure measure predetermined relative to the contemporaneous quarterly price movement while allowing trade structure to evolve over a long sample. Fixed-weight CTOT variants are retained as a robustness check. Import and export shocks are standardised to facilitate interpretation as one-standard-deviation disturbances.

The conceptual commodity-price innovation and country-specific exposure can be written as follows:

$$\Delta \ln P_{kt}^{G} = a_k + \sum_{\ell=1}^{L} \phi_{k\ell}\, \Delta \ln P_{k,t-\ell}^{G} + \boldsymbol{\Lambda}_k' \mathbf{G}_{t-1} + \varepsilon_{kt}^{G}, \tag{6}$$

$$S_{it}^{M} = \sum_{k=1}^{K} w_{ik}^{M,0}\, \varepsilon_{kt}^{G}. \tag{7}$$

$$S_{it}^{X} = \sum_{k=1}^{K} w_{ik}^{X,0}\, \varepsilon_{kt}^{G}. \tag{8}$$

In the actual CTOT implementation, these commodity-level price movements and exposures are embedded in the IMF country-specific indices. The rolling-weight and fixed-weight variants allow the analysis to distinguish current predetermined trade composition from a more rigid long-run exposure structure. The CTOT construction, sources and measurement rules are documented in Supplementary Appendix Sections C.1-C.2 and Table B1.

4.3 Monetary architectures

AREAER categories are harmonised into four broad states: monetary union (MU), peg (PEG), intermediate arrangement (INT) and float (FLOAT). The raw AREAER classification is retained in the data. Monetary-union membership is coded separately for the euro area, WAEMU, CEMAC and ECCU. The baseline institutional state is lagged by one year; a stricter robustness exercise requires the same broad architecture for the preceding three years. The complete AREAER-to-architecture mapping and monetary-union membership coding are reported in Supplementary Appendix Tables C2 and A3.

The four-way coding deliberately does not treat monetary unions as ordinary hard pegs. The distinction is institutional: in a union, national monetary policy is delegated to a common authority and reserve/liquidity governance may also differ from national pegs.

4.4 Outcomes and institutional moderators

The main outcome vector contains the CPI price level, real GDP, the bilateral nominal exchange rate and international reserves. Positive level variables are expressed in logs and the local-projection response is a cumulative percentage change from the last pre-shock quarter. CPI inflation is also summarised descriptively in quarterly annualised and year-on-year form. Central-bank independence is lagged one year. H2 additionally uses an anchor-adjusted measure of exchange-rate flexibility constructed from monthly BIS rates.

For every country-quarter, the likely anchor is inferred from the preceding 36 months by selecting the candidate anchor that minimises cross-rate volatility; flexibility is then measured as the standard deviation of the country/anchor cross-rate change over the preceding 12 months. For monetary unions the anchor is imposed institutionally: EUR for the euro area, WAEMU and CEMAC, and USD for the ECCU. National pegs are retained only when the inferred anchor passes a confidence screen. This prevents a CFA-franc/euro peg from being misclassified as flexible merely because the euro moves against the US dollar. The full variable dictionary, outcome construction rules and anchor-currency set are reported in Supplementary Appendix Table B1 and Sections C.4-C.5, including Table C3.

4.5 Descriptive evidence and empirical motivation

The descriptive analysis has two purposes. First, it documents whether the institutional comparison is empirically supported by sufficient cross-country and time-series variation. Second, it shows why import-cost and export-income shocks must be separated rather than collapsed into a single terms-of-trade innovation. These figures are descriptive and are not interpreted causally. Supplementary Appendix Section D provides the extended descriptive statistics, regime-specific summaries, correlation matrix and additional figures.

Sample coverage and institutional composition

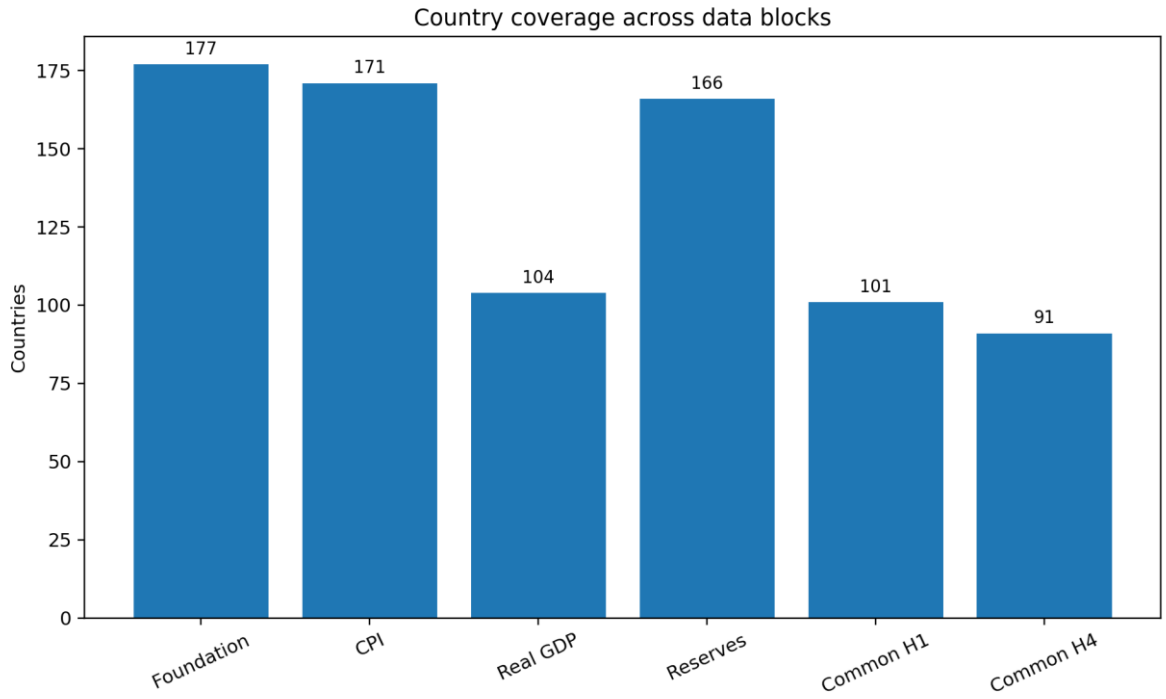


Figure 1. Country coverage across the main data blocks

Notes: The GDP block is the principal source of attrition. The common four-outcome sample still contains 101 economies, which permits a genuinely comparative institutional design.

Figure 1 makes clear that quarterly real GDP, rather than CPI, reserves or exchange rates, is the binding data constraint. Importantly, the common sample remains large enough to represent all four monetary architectures. In the 7,507 common-sample country-quarters, FLOAT accounts for 37.6 per cent, INT for 23.9 per cent, MU for 21.3 per cent and PEG for 17.2 per cent.

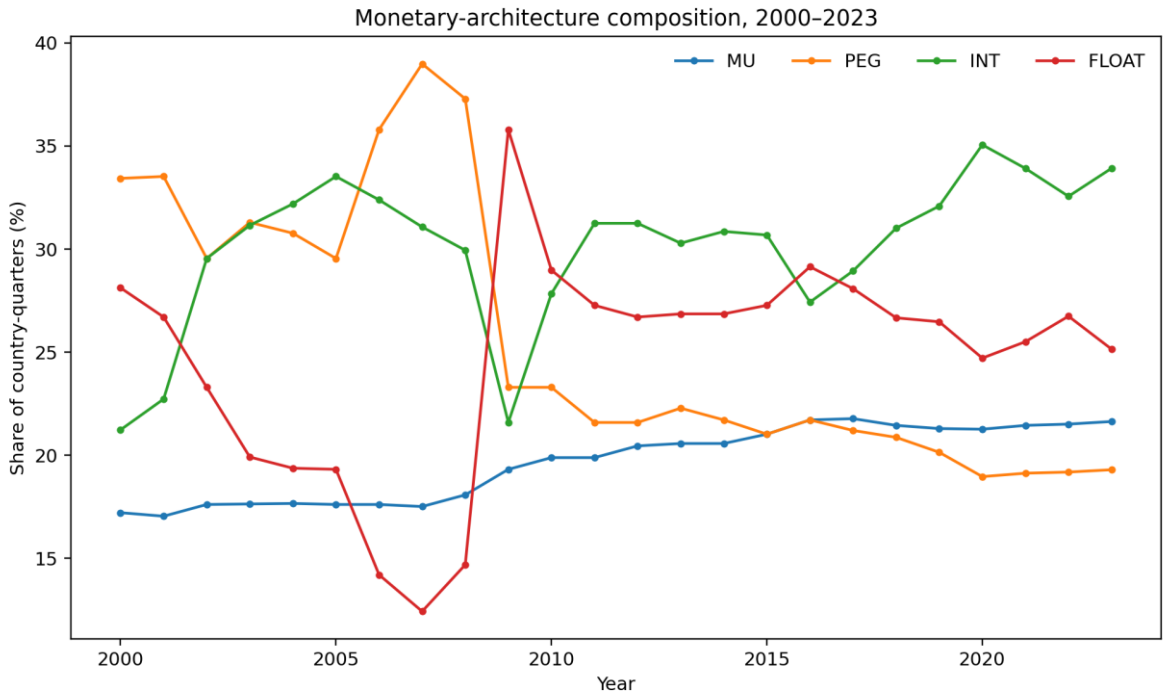


Figure 2. Monetary-architecture composition, 2000-2023 Notes: Shares are calculated within the H1 foundation sample. The figure documents persistent representation of all four institutional states rather than a comparison driven by a narrow historical episode.

The institutional composition changes over time but no architecture disappears from the sample. This matters because H1 is identified from differential responses to common external price movements across countries operating under distinct pre-existing institutions, not from a single cross-section.

Shock dispersion and the case for joint import/export estimation

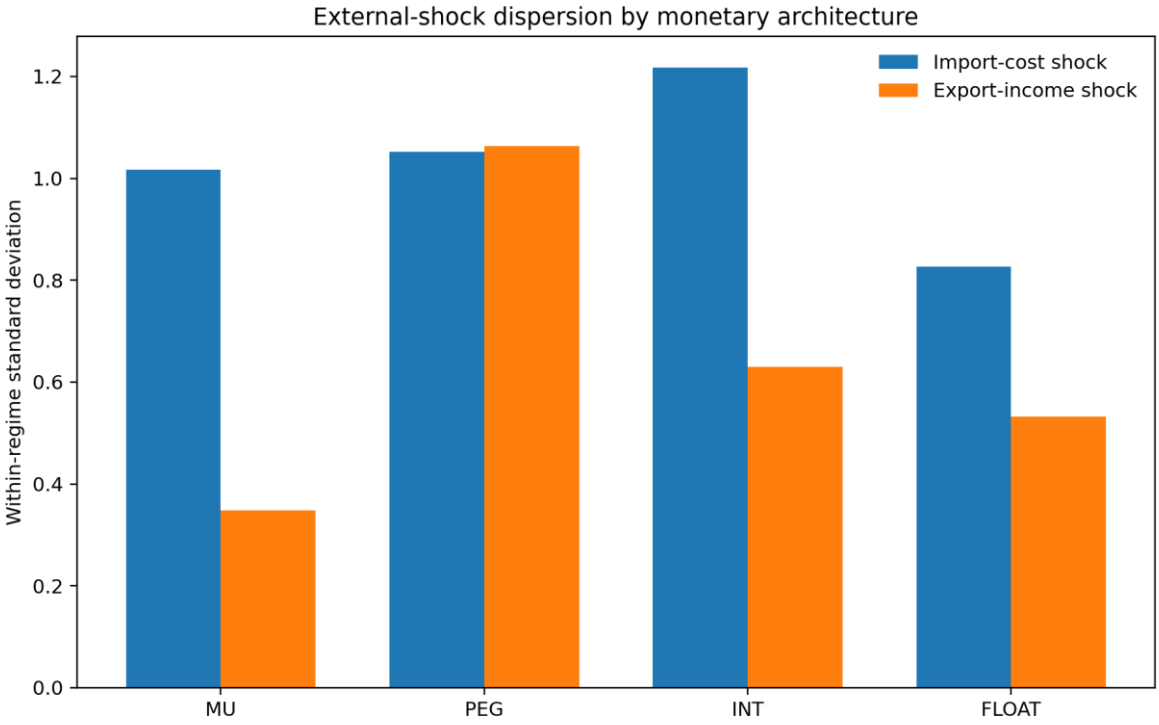


Figure 3. External-shock dispersion by monetary architecture

Notes: Bars report within-regime standard deviations of the standardised CTOT import-cost and export-income shocks in the common four-outcome sample.

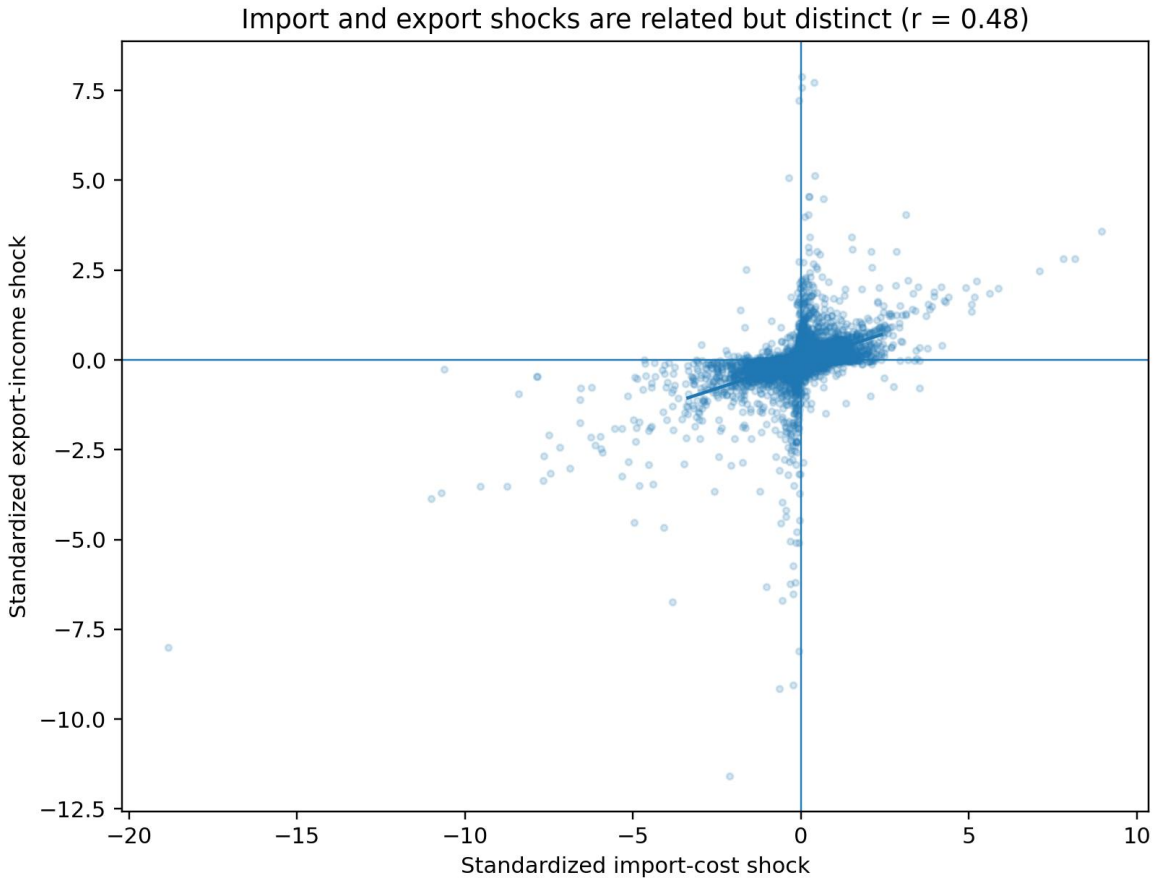


Figure 4. Import-cost and export-income shocks are related but distinct ***Notes:*** *Common four-outcome sample. The correlation between the two standardised shocks is approximately 0.48. Their non-equivalence motivates the joint H5 specification.*

The two shocks are positively correlated because world commodity markets can move together, but the correlation is far from unity. Treating one as a proxy for the other would therefore impose an empirically false restriction. The positive correlation also means that estimating either shock in isolation can confound import-cost pressure with contemporaneous export-income movements, particularly for diversified commodity exporters.

Inflation patterns across architectures

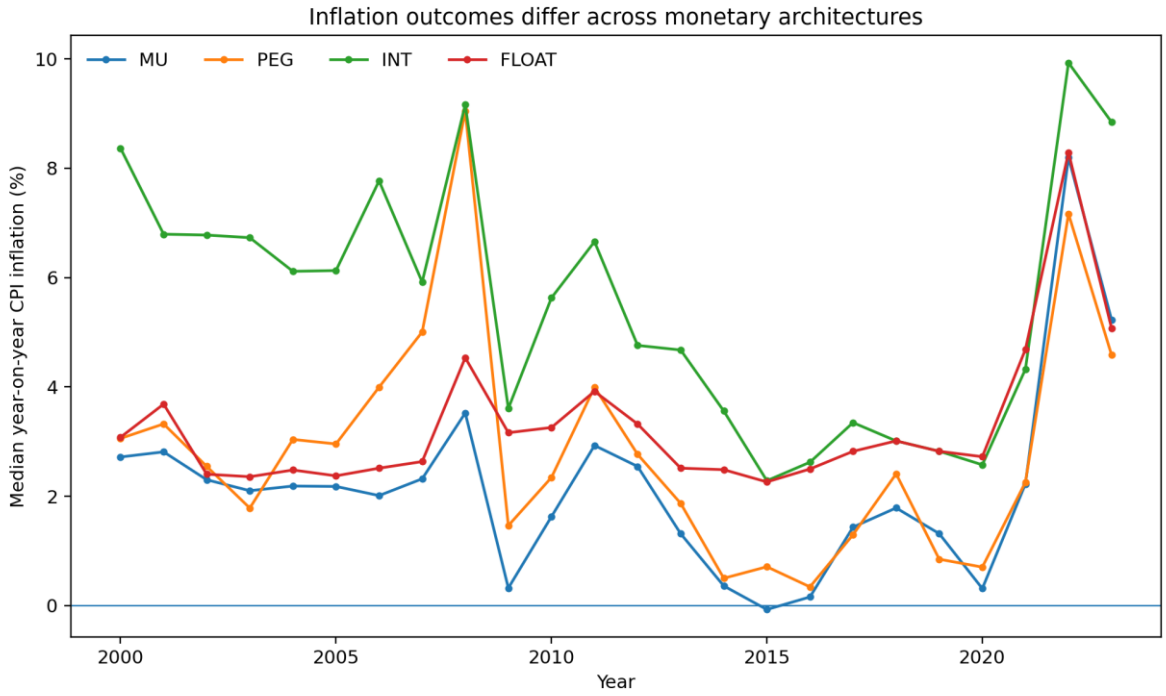


Figure 5. Median year-on-year inflation by monetary architecture, Notes: Unconditional medians by year and architecture in the common four-outcome sample. The graph is descriptive; global and country fixed effects are introduced in the local-projection analysis.

Unconditional inflation paths differ across architectures and across global episodes. The figure does not establish institutional effects, but it reinforces the need for quarter fixed effects, country fixed effects and dynamic controls. It also motivates the focus on prices as an adjustment margin rather than treating output alone as the summary measure of shock absorption. The corresponding regime-level descriptive statistics and correlations are reported in Supplementary Appendix Tables D1-D3 and Figures D1-D2.

Variable	N	Mean	SD	P25	Median	P75
Quarterly annualised inflation (%)	7,505	4.321	7.179	0.766	3.133	6.355
Year-on-year inflation (%)	7,499	4.314	5.584	1.446	3.031	5.777
Log real GDP	7,507	26.184	3.185	24.212	26.169	27.768
Log bilateral FX vs USD	7,507	2.269	2.504	-0.083	1.819	3.984
Log reserves (USD mn)	7,507	9.363	2.028	7.895	9.322	10.813
Import-cost shock (std.)	7,507	-0.024	1.011	-0.279	0.034	0.342
Export-income shock (std.)	7,507	-0.034	0.650	-0.110	-0.030	0.067

Variable	N	Mean	SD	P25	Median	P75
Lagged CBI index	6,819	0.722	0.164	0.604	0.733	0.870
Anchor-relative FX flexibility	7,507	0.010	0.016	0.000	0.004	0.016

Table 2. Descriptive statistics: common four-outcome sample

Notes: The common sample contains 101 economies and 7,507 country-quarters over 2000Q1-2023Q4. CBI is unavailable for part of the common sample, hence its smaller N.

Architecture	Country-quarters	Share (%)	Countries ever observed
MU	1,596	21.3	21
PEG	1,293	17.2	31
INT	1,792	23.9	49
FLOAT	2,826	37.6	61

Table 3. Institutional composition of the common sample

5. Empirical strategy

5.1 Response operator and baseline local projections

For positive level outcomes, the response operator is the cumulative log change from the last pre-shock observation:

$$\mathcal{R}_h(Y_{it}) = 100\big[\ln\big(Y_{i,t+h}\big) - \ln\big(Y_{i,t-1}\big)\big]. \tag{9}$$

The baseline local projection at each horizon h includes country fixed effects, quarter fixed effects, four lags of the outcome change and four lags of the relevant shock. The general specification is:

$$\begin{aligned} \mathcal{R}_h(Y_{it}) &= \alpha_i^h + \lambda_t^h + \beta_h S_{it} \\ &+ \sum_{\ell=1}^{L} \rho_{\ell,h}\, \Delta y_{i,t-\ell} + \sum_{\ell=1}^{L} \delta_{\ell,h}\, S_{i,t-\ell} \\ &+ \boldsymbol{\Gamma}_h' \mathbf{X}_{i,t-1} + u_{i,t+h}^h, \qquad h = 0,1,\dots,H. \end{aligned} \tag{10}$$

Quarter fixed effects absorb global macroeconomic disturbances common to all countries in a given quarter. Identification comes from the fact that the same world commodity-price movement maps into different country-specific import and export exposures. The use of predetermined exposure weights permits time fixed effects without eliminating the treatment.

5.2 H1: institutional shock-allocation hypothesis

The principal H1 specification interacts the external shock with the lagged four-way monetary architecture. FLOAT is the omitted category:

$$\begin{aligned}\mathcal{R}_h(Y_{it}) &= \alpha_i^h + \lambda_t^h + \beta_h S_{it} \\ &+ \sum_{r \neq FLOAT} \theta_{r,h} \left(S_{it} D_{i,t-1}^r\right) \\ &+ \sum_{r \neq FLOAT} \kappa_{r,h} D_{i,t-1}^r \\ &+ \sum_{\ell=1}^{L} \rho_{\ell,h} \Delta y_{i,t-\ell} + \sum_{\ell=1}^{L} \delta_{\ell,h} S_{i,t-\ell} \\ &+ \boldsymbol{\Gamma}_h' \mathbf{X}_{i,t-1} + u_{i,t+h}^h.\end{aligned} \tag{11}$$

The regime-specific impulse response is $\beta_{_h}$ for FLOAT and $\beta_{_h} + \theta_{_r,h}$ for architecture r. H1 is evaluated using horizon-by-horizon joint Wald tests of the regime interactions and by comparing the full response profiles across outcomes. The headline comparison uses the common four-outcome sample; outcome-specific samples are reported as robustness checks. Full H1 Wald-test diagnostics and selected regime-specific cumulative responses are reported in Supplementary Appendix Tables E1-E2.

5.3 H5: shock contingency

H5 is the central extension. Import-cost and export-income shocks are estimated jointly, with separate architecture interactions:

$$\begin{aligned}\mathcal{R}_h(Y_{it}) &= \alpha_i^h + \lambda_t^h \\ &+ \beta_{M,h} S_{it}^M + \beta_{X,h} S_{it}^X \\ &+ \sum_{r \neq FLOAT} \theta_{M,r,h} \left(S_{it}^M D_{i,t-1}^r\right) \\ &+ \sum_{r \neq FLOAT} \theta_{X,r,h} \left(S_{it}^X D_{i,t-1}^r\right) \\ &+ \boldsymbol{\Gamma}_h' \mathbf{X}_{i,t-1} + u_{i,t+h}^h.\end{aligned} \tag{12}$$

The null of no shock contingency is that the institutional interaction vector is identical for import and export shocks at a given horizon. In the notation of the empirical model:

$$H_0\colon\ \theta_{M,r,h} = \theta_{X,r,h} \tag{13}$$

$$H_1\colon\ \theta_{M,r,h} \neq \theta_{X,r,h}. \tag{14}$$

Because both shocks enter the same regression, the estimated import response is conditional on the contemporaneous export-income shock and vice versa. This is particularly important for reserve responses and commodity exporters. Full H5 significance diagnostics and selected CPI responses are reported in Supplementary Appendix Tables F1-F2 and Figures F1-F2.

5.4 H2: institutional delegation beyond exchange-rate rigidity

To distinguish delegation from observed rigidity, H2 restricts attention to monetary unions and national pegs with EUR or USD anchors and stable pre-shock regimes. The specification conditions on anchor-relative exchange-rate flexibility and absorbs country fixed effects and anchor-by-quarter fixed effects. Conceptually:

$$\mathcal{R}_h(Y_{it}) = \alpha_i^h + \lambda_t^h + \beta_h S_{it} + \theta_h\left(S_{it} MU_{i,t-1}\right) + \phi_h\left(S_{it} FXFLEX_{i,t-1}\right) + \eta_h MU_{i,t-1} + \xi_h FXFLEX_{i,t-1} + \boldsymbol{\Gamma}_h' \mathbf{X}_{i,t-1} + u_{i,t+h}^h. \quad (15)$$

The empirical implementation further allows the baseline shock slope to differ by anchor. The coefficient on Shock × MU is therefore interpreted as a conditional monetary-union versus national-peg differential, not as the causal effect of joining a monetary union. The clean H2 sample composition, anchor-adjusted flexibility distribution and selected MU-minus-PEG estimates are reported in Supplementary Appendix Tables G1-G2 and Figure G1.

5.5 H4 and H3: capacity and reserve governance as secondary diagnostics

H4 interacts the shock with lagged central-bank independence and, in the richer specification, allows that moderation to differ across national monetary architectures. Because monetary-union observations occupy a narrow high-CBI support, the preferred H4 comparison excludes the monetary-union triple interaction and restricts national regimes to common CBI support. The conceptual specification is: CBIE support diagnostics and H4 significance-count results are reported in Supplementary Appendix Tables H1-H2 and Figure H1.

$$\mathcal{R}_h(Y_{it}) = \alpha_i^h + \lambda_t^h + \beta_h S_{it} + \sum_{r \neq FLOAT} \theta_{r,h} S_{it} D_{i,t-1}^r + \phi_h S_{it} CBI_{i,t-1}^* + \sum_{r \neq FLOAT} \psi_{r,h} S_{it} D_{i,t-1}^r CBI_{i,t-1}^* + \boldsymbol{\Gamma}_h' \mathbf{X}_{i,t-1} + u_{i,t+h}^h. \quad (16)$$

H3 is narrower. The global data do not provide a harmonised reserve-adequacy metric, and observed national reserves within a monetary union do not necessarily equal pooled union reserves. The paper therefore uses H3 only as a targeted reserve-governance diagnostic. A within-country lagged reserve-position proxy is used in the auxiliary exercise, but it is not labelled reserve adequacy. Reserve coverage, pooled-governance diagnostics and the CEMAC/ECCU decomposition are reported in Supplementary Appendix Tables I1-I3 and Figure I1.

5.6 Inference and identification: external shocks versus institutional selection

The CTOT treatments inherit common global commodity-price shifters, so conventional country clustering can understate dependence across similarly exposed countries. The audit therefore uses Driscoll-Kraay covariance estimates with a Bartlett kernel and horizon-dependent lag length for H5 and the secondary interaction exercises; two-way country-by-quarter clustering is retained as a robustness check. This concern is related to the shift-share inference issues analysed by Adão, Kolesár and Morales (2019) and Borusyak, Hull and Jaravel (2022). The complete robustness architecture is summarised in Supplementary Appendix Table K2.

The identification hierarchy is deliberately conservative. The quarterly design combines global commodity-price movements with predetermined country exposures. Published narrative instruments are used only as annual external-identification stress tests. Their strong first stages establish instrument relevance; their exclusion restrictions are inherited from the published narrative constructions rather than demonstrated by the first stage. When a shock interaction is treated as endogenous, the corresponding instrument interaction must also be included. For example:

$$\mathbf{Q}_{it} = \begin{bmatrix} S_{it} \\ S_{it} D_{i,t-1}^{MU} \\ S_{it} D_{i,t-1}^{PEG} \\ S_{it} D_{i,t-1}^{INT} \end{bmatrix}. \quad (17)$$

$$\mathbf{Z}_{it} = \begin{bmatrix} Z_{it} \\ Z_{it} D_{i,t-1}^{MU} \\ Z_{it} D_{i,t-1}^{PEG} \\ Z_{it} D_{i,t-1}^{INT} \end{bmatrix}. \tag{18}$$

A strong first stage for the external shock neither proves the exclusion restriction nor makes monetary architecture randomly assigned. Accordingly, the paper describes cross-regime differences as institutional heterogeneity conditional on externally generated commodity-price movements under maintained identification assumptions, rather than as causal effects of regime adoption.

6. Results

6.1 H1: monetary architectures generate different adjustment profiles

Table 4 reports the horizon-count audit for H1. The clearest result is the CPI response. With rolling CTOT weights in the common sample, regime heterogeneity is significant at 8 of 13 horizons; requiring a stable pre-shock regime raises this to 11 of 13. The corresponding GDP and reserve evidence is substantially weaker in the stable common sample. Exchange-rate heterogeneity appears at selected horizons, but bilateral USD responses are not used as the headline regime-flexibility result because non-USD pegs require anchor adjustment. The underlying H1 horizon-by-horizon audit is reported in Supplementary Appendix Tables E1-E2.

Specification	Outcome	Significant horizons (5%)	Minimum Wald p	Median countries
Common, rolling	CPI	8	0.0013	101
Common, rolling	GDP	2	0.0055	100
Common, rolling	FX	2	0.0003	101
Common, rolling	RES	0	0.1639	101
Common, stable, rolling	CPI	11	0.0000	100
Common, stable, rolling	GDP	0	0.1289	100
Common, stable, rolling	FX	2	0.0051	100
Common, stable, rolling	RES	0	0.1860	100
Common, fixed	CPI	2	0.0141	101
Common, fixed	GDP	3	0.0000	100
Common, fixed	FX	7	0.0019	101
Common, fixed	RES	0	0.1072	101
Outcome-specific, rolling	CPI	6	0.0194	171
Outcome-specific, rolling	GDP	2	0.0000	103
Outcome-specific, rolling	FX	6	0.0000	177

Specification	Outcome	Significant horizons (5%)	Minimum Wald p	Median countries
Outcome-specific, rolling	RES	2	0.0000	165

Table 4. H1 audit: joint regime heterogeneity across horizons 0-12. Notes: Counts refer to horizon-specific joint tests of regime differences. "Stable" requires the pre-shock architecture to remain unchanged over the preceding three years.

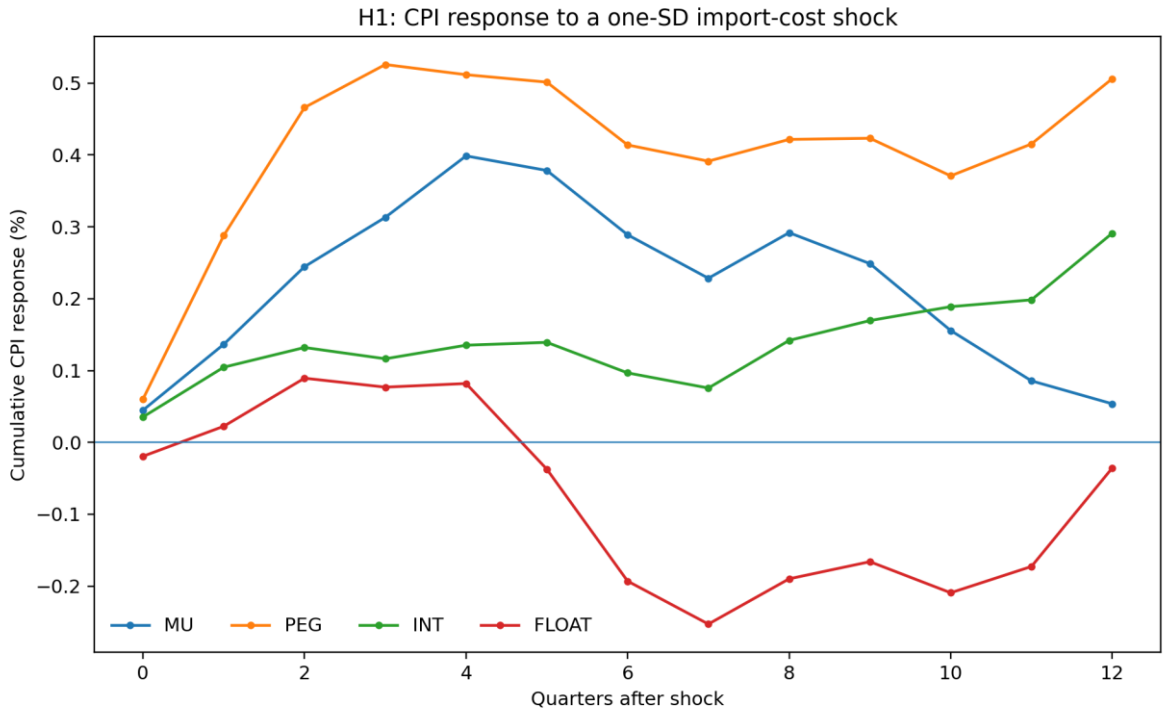


Figure 6. H1: cumulative CPI response to a one-standard-deviation import-cost shock. ***Notes:*** *Common four-outcome sample, stable regimes, rolling CTOT weights. The figure plots point estimates; formal inference is reported in Table 4 and the H5 joint-shock analysis.*

The weight sensitivity is informative. Fixed-weight CPI heterogeneity is significant at only 2 of 13 horizons in the common sample, compared with 8 under rolling weights. This limits any claim of regime invariance across alternative exposure constructions. It also indicates that evolving but predetermined trade structure is economically relevant over a 24-year global sample. We therefore treat rolling weights as the baseline and fixed weights as a demanding robustness exercise rather than presenting both as interchangeable estimands.

6.2 H5: institutional adjustment is shock-contingent

H5 substantially clarifies the CPI result. When import-cost and export-income shocks enter jointly, import-cost regime heterogeneity is significant at 12 of 13 horizons in the stable common sample. Export-income heterogeneity is significant at only 2 of 13 horizons, but the relevant H5 test is whether the institutional interaction vectors are the same across the two shocks. That equality is rejected at 8 of 13 horizons. Supplementary Appendix Tables F1-F2 report the full H5 horizon-count audit and selected CPI responses; Figures F1-F2 reproduce the corresponding dynamic profiles.

Outcome	Import heterogeneity	Export heterogeneity	Import vs export contingency	Minimum contingency p

Outcome	Import heterogeneity	Export heterogeneity	Import vs export contingency	Minimum contingency p
CPI	12	2	8	0.0004
GDP	0	0	0	0.1390
FX	3	6	1	0.0285
RES	0	2	1	0.0300

Table 5. H5 shock-contingency audit: significant horizons out of 13. ***Notes:*** *Stable common sample, rolling CTOT weights, Driscoll-Kraay inference. The contingency test compares the institutional interaction vectors for import-cost and export-income shocks.*

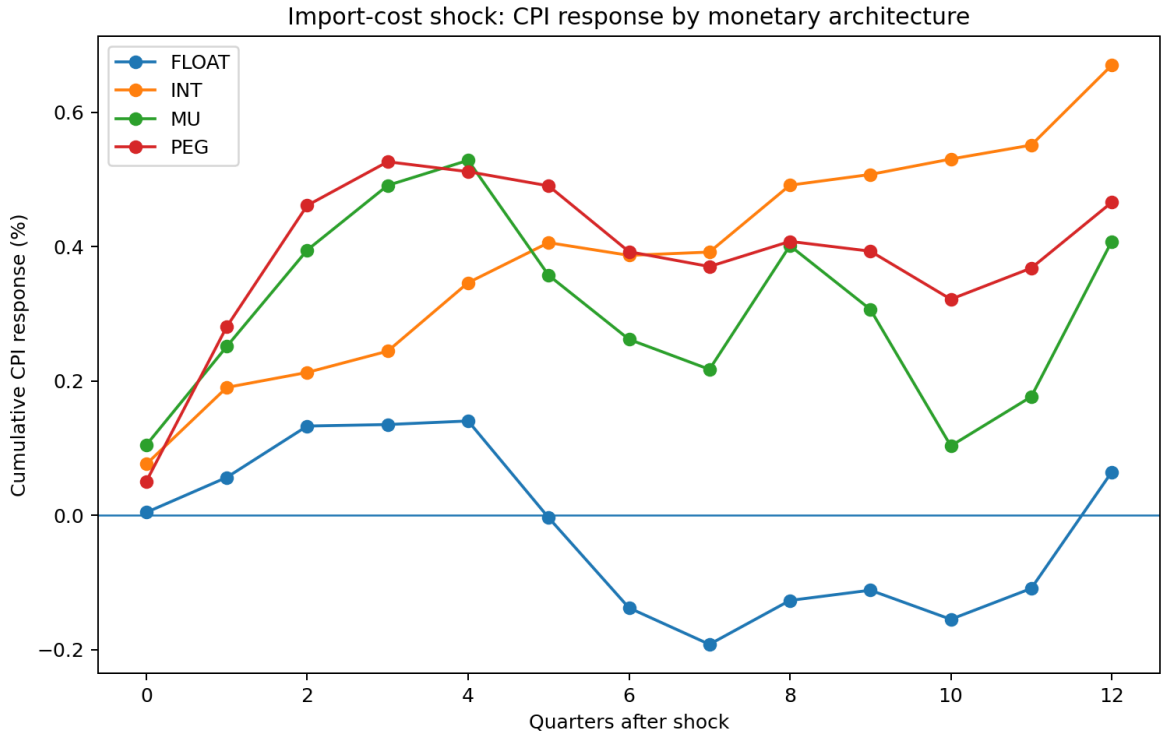


Figure 7. CPI response to an import-cost shock by monetary architecture

Notes: Stable common sample; both import-cost and export-income shocks are included jointly.

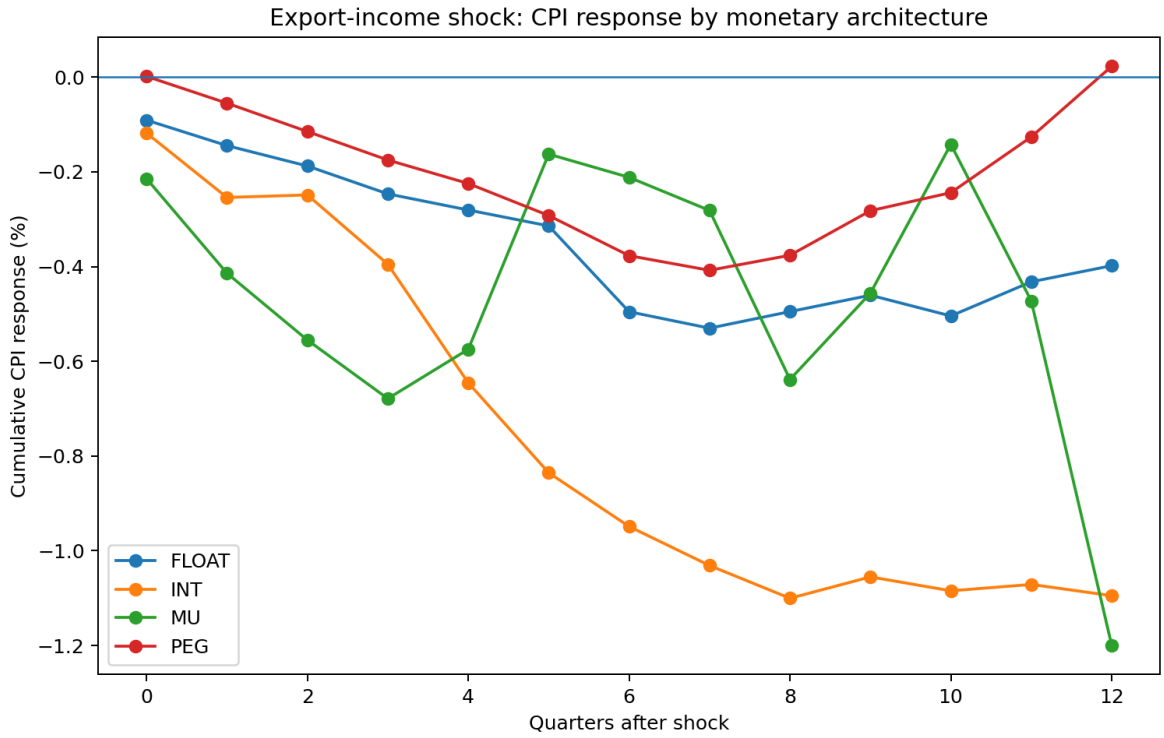


Figure 8. CPI response to an export-income shock by monetary architecture. ***Notes:*** *Stable common sample; both shocks are estimated jointly.*

The contrast between Figures 7 and 8 is central. Four quarters after an import-cost shock, the cumulative CPI responses are approximately 0.53 per cent in MU, 0.51 in PEG, 0.35 in INT and 0.14 in FLOAT. By horizon 12, PEG and INT still show positive cumulative price responses, while the FLOAT estimate is close to zero. Export-income shocks produce a qualitatively different pattern: at horizon 12 the point estimates are about -1.20 per cent for MU, -1.09 for INT, -0.40 for FLOAT and approximately zero for PEG. The confidence intervals are wide for some architectures, especially MU, so these point estimates are interpreted jointly with the Wald tests rather than as a deterministic ranking.

The fixed-weight robustness is materially weaker for CPI: import heterogeneity and contingency are significant at only 2 of 13 horizons in the common fixed-weight specification. This is an important scope condition. The headline result is therefore that shock contingency is strongly present when exposure reflects recent predetermined trade structure, not that every conceivable exposure weighting produces identical inference.

For real GDP, the common stable sample does not provide robust H5 evidence. Reserve responses show selected export-shock differences but not a uniform pattern. This is consistent with the idea that the price margin is the most reliably measured and broadly comparable adjustment margin in the current global quarterly sample.

6.3 H2: delegation versus rigidity

The anchor-adjusted H2 exercise substantially narrows the comparison. About 77 per cent of PEG country-quarters pass the current anchor-confidence screen, and 73 national-peg countries have a high-

confidence EUR or USD anchor at some point in the full foundation sample. In the strict common-sample H2 regression, approximately 35 countries remain at the main horizons. Supplementary Appendix Tables G1-G2 and Figure G1 document the support restrictions and selected conditional differentials.

Outcome	h	MU - PEG differential	SE	p-value	Countries
CPI	0	-0.036	0.038	0.352	35
CPI	4	-0.077	0.167	0.649	35
CPI	8	-0.173	0.242	0.480	35
CPI	12	-0.376	0.187	0.053	35
GDP	0	-0.071	0.134	0.597	35
GDP	4	-0.761	0.388	0.058	35
GDP	8	-0.760	0.428	0.085	35
GDP	12	-0.779	0.241	0.003	34
FX	0	-0.031	0.019	0.108	35
FX	4	0.002	0.000	nan	35
FX	8	-0.105	0.077	0.178	35
FX	12	0.029	0.023	0.205	35
RES	0	0.678	0.626	0.286	35
RES	4	-2.092	2.507	0.410	35
RES	8	-1.229	2.808	0.664	35
RES	12	-4.255	2.241	0.066	35

Table 6. H2: monetary-union versus national-peg differential conditional on anchor-relative flexibility. ***Notes:*** *Stable regimes, EUR/USD anchors, country fixed effects and anchor-by-quarter fixed effects. These estimates are exploratory institutional differentials, not causal effects of monetary-union membership.*

For CPI and FX, the MU-PEG differential is generally imprecise. At horizon 12, the CPI difference is -0.376 percentage points with p≈0.053; most earlier CPI horizons are far from conventional significance. GDP and reserve differences become larger at long horizons, but the strict sample is small and those outcomes are more sensitive to dynamic specification. H2 therefore does not overturn H1/H5; it qualifies the interpretation by showing that observed nominal rigidity alone does not yield a clean and stable MU-versus-peg separation in the current data.

6.4 H4: no universal central-bank-independence stabiliser

H4 asks whether legal central-bank independence systematically dampens shock transmission. A pooled stable-common model with Shock × CBI but without regime-specific triple interactions finds

no significant import-cost moderation for CPI at any horizon and only 2 of 13 horizons for export-income moderation. In the preferred national-regime common-support design, richer regime-specific capacity effects appear, especially for export shocks, but they are sensitive to rolling versus fixed CTOT weights and to sample definition. Supplementary Appendix Tables H1-H2 and Figure H1 document common support and the sensitivity of the capacity results.

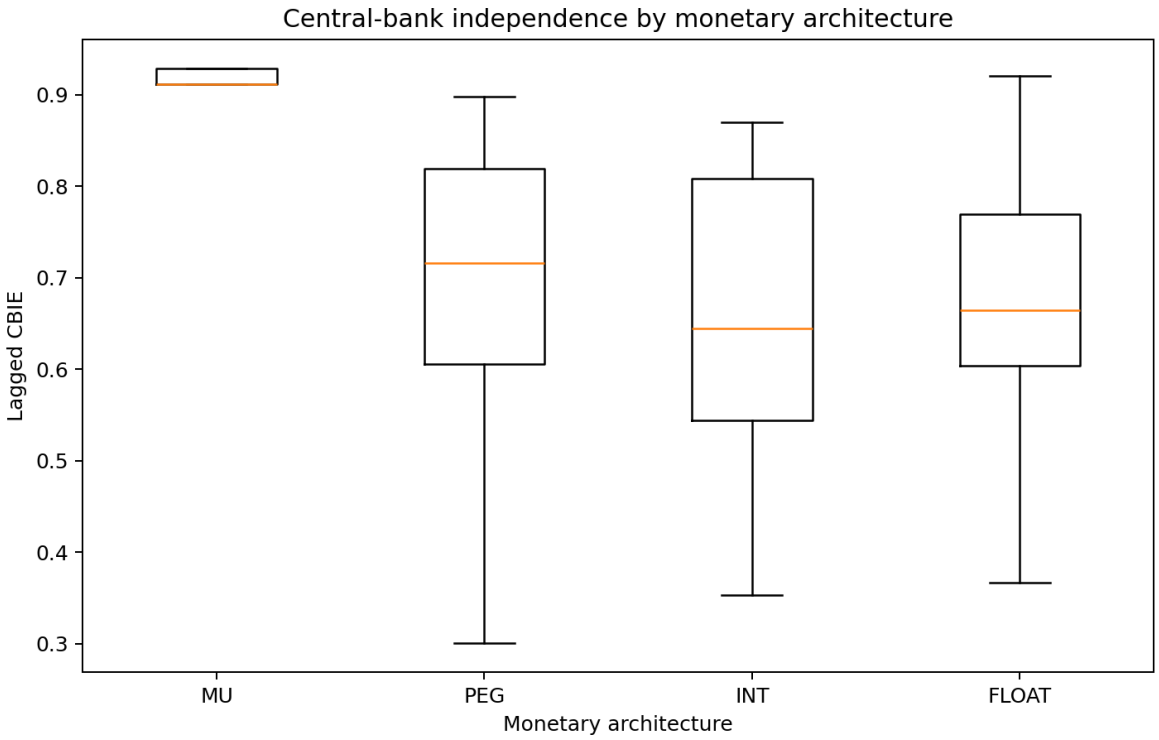


Figure 9. Support of the central-bank-independence index by monetary architecture. ***Notes:*** *The limited overlap between monetary-union observations and national regimes motivates the common-support national-regime H4 specification and prevents a headline Shock × MU × CBI interpretation.*

The substantive conclusion is therefore negative but useful: the data do not support a monotone proposition that greater legal central-bank independence universally attenuates inflation transmission. Institutional capacity appears to interact with architecture and shock type in some specifications, but it is not a general stabilising scalar that can replace the broader shock-allocation framework.

6.5 H3: reserve governance as a targeted diagnostic

Reserve governance is empirically difficult because national reserve observations inside a monetary union do not necessarily measure the common pool available to the union. Coverage is also asymmetric: the current merge contains reserve observations for euro-area, CEMAC and ECCU members but none for WAEMU members. The global H3 claim is therefore not testable with sufficient measurement consistency.

A targeted comparison of CEMAC and ECCU pooled systems against national pegs yields significant joint pooled-governance differences at 10 of 13 horizons under both rolling and fixed weights, mainly after export-income shocks. However, decomposition shows that the signal is driven largely by CEMAC: CEMAC versus national pegs is significant at 10 of 13 horizons with rolling

weights, whereas the ECCU does not display a comparable general differential. H3 is therefore retained as an appendix-style diagnostic rather than evidence for a universal reserve-pooling mechanism. Supplementary Appendix Tables I1-I3 and Figure I1 show the reserve-coverage limitation and union-specific decomposition.

7. External identification and robustness

7.1 Published narrative export-price instrument

The first external-identification exercise imports the exact narrative instrument of Juvenal and Petrella (2024). In the merged 2000-2019 annual sample, the first-stage regression of the authors' transformed export-price change on the narrative instrument, two lags, country fixed effects and year fixed effects yields a coefficient of approximately 0.113, a country-clustered t-statistic of 30.7 and a robust single-instrument F-statistic of about 943, based on 964 observations from 54 countries. This establishes exceptionally strong first-stage relevance in the merged sample. The exclusion restriction is not inferred from this statistic; it rests on the authors' narrative identification of commodity-price events. Supplementary Appendix Table J1 and Figure J1 report the first-stage evidence; Table J2 reports the annual CPI IV comparison by monetary architecture.

When the shock is interacted with MU, PEG, INT and FLOAT and each endogenous interaction is instrumented by the corresponding narrative-instrument interaction, first stages remain strong by conventional metrics. Yet the Wald test of equal CPI responses across the four architectures is never rejected at annual horizons 0-4; p-values range from roughly 0.60 to 0.93. Thus, the external-instrument exercise shows that the published narrative instrument remains highly relevant for export-price variation in our merged sample, but it does not provide precise evidence that cross-regime response differences are causal effects of institutional assignment.

7.2 Narrative import/export events and H5 external validation The AEJ import/export first-stage audit and the fully interacted weak-identification diagnostics are reported in Supplementary Appendix Tables J3-J4.

The second exercise reconstructs the 27 final narrative commodity-price episodes used by Di Pace, Juvenal and Petrella (2025) and maps them into separate signed export and import instruments. In the full 38-country price panel, the own-instrument first stages are strong: approximately F=45.8 for export prices and F=56.9 for import prices over 1982-2019. On 2000-2019, they remain around 16.9 and 18.6, and the two-instrument system has full rank.

However, after merging with the macro-institutional CPI sample and adding dynamic controls, the sample falls to roughly 23 countries and the first-stage F-statistics decline to about 4.5-8 depending on horizon. A fully interacted export/import × MU/PEG/INT/FLOAT system is formally rank-complete but poorly conditioned, with a condition number roughly 372-509 and some regime-shock first stages around 1-2. We therefore reject this fully interacted narrative IV as a headline design. It remains a useful stress test showing that import and export shocks can be separately instrumented in a broad price panel, but not with enough effective variation to identify eight institutional interaction coefficients reliably.

Validation design	Sample	First-stage diagnostic	Interpretation
Juvenal-Petrella exact export-price instrument	2000-2019; 54 countries	F≈943	Extremely strong first-stage relevance for the published narrative instrument; exclusion rests on the authors' narrative design; regime-response equality is not rejected.
AEJ narrative export instrument	2000-2019 price panel	F≈16.9	Strong in broad price panel; weakens after macro/institution merge.
AEJ narrative import instrument	2000-2019 price panel	F≈18.6	Strong in broad price panel; weakens after macro/institution merge.
Fully interacted AEJ H5 system	~23-country macro sample	Weak cells; condition no. ≈372-509	Not suitable as headline IV for institutional heterogeneity.

Table 7. External-identification audit

7.3 Additional robustness and scope conditions A claim-by-claim interpretation hierarchy and robustness map are provided in Supplementary Appendix Tables K1-K2; the replication sequence and file inventory are in Tables L1-L2 and the submission-completeness checklist in Table N1.

Three robustness dimensions are carried through the project. First, rolling CTOT weights are compared with fixed weights. The weaker fixed-weight CPI evidence is reported transparently and interpreted as a limit on invariance to the exposure definition. Second, regime-stability restrictions reduce contamination from contemporaneous switching and generally strengthen the rolling-weight CPI result. Third, common-sample estimates are compared with larger outcome-specific samples to separate comparability from statistical power.

The analysis also distinguishes an exchange-rate outcome from an exchange-rate-regime measure. Bilateral USD movements are useful as a macroeconomic response variable but are not an adequate measure of policy flexibility for a country pegged to the euro or another non-USD anchor. H2 therefore relies on anchor-relative pre-shock volatility rather than raw USD volatility.

Finally, the empirical interpretation is deliberately limited. The external-shock construction and narrative instruments support the exogeneity of commodity-price movements under maintained assumptions. They do not randomise monetary institutions. Country fixed effects absorb time-invariant institutional selection; lagged and stable regime definitions reduce simultaneity; but these devices do not turn regime assignment into an experiment.

8. Discussion: from shock absorption to institutional shock allocation

The results suggest that the usual question - whether fixed or flexible exchange rates absorb shocks better - is too compressed for the data. The most robust empirical difference in this study appears in the price margin, and it changes with the nature of the external shock. This is consistent with an allocation interpretation in which institutional constraints determine the relative ease with which adjustment can occur through exchange rates, prices, reserves or real activity.

The strong import-cost CPI heterogeneity under rolling predetermined exposures is economically intuitive. When nominal exchange-rate adjustment is institutionally constrained, the economy has fewer nominal margins through which an external price disturbance can be accommodated. Domestic prices can therefore bear more of the adjustment. This mechanism is compatible with, but broader than, the Friedman-Broda shock-absorber argument because the object is the full institutional bundle rather than exchange-rate flexibility alone.

The export-income result shows why regime rankings should not be transported mechanically from one shock to another. A positive export-price innovation changes external income and, for many countries, the availability of foreign currency. Its macroeconomic mapping can therefore involve reserves, domestic demand and policy reactions that differ from an import-cost shock. The H5 evidence indicates that the same architecture can respond differently depending on which side of the trade-price system moves.

The H2 findings add an important qualification. Monetary unions are not simply hard pegs, but the data do not show a uniformly precise MU-versus-peg differential after conditioning on anchor-relative flexibility. This means the paper should not rely on a strong delegation claim unsupported by the strict comparison. Instead, delegation is treated as a theoretically meaningful institutional distinction whose empirical effect is secondary to the broader H1/H5 pattern.

The H4 and H3 audits reinforce the same methodological lesson. Institutional capacity and reserve governance matter in some settings, but neither operates as a universal scalar modifier. Central-bank independence has limited common support with monetary-union status, and reserve pooling is not measured consistently in country-level reserve data. These results favour a parsimonious paper in which H1 and H5 are central and the other hypotheses discipline interpretation rather than multiply headline claims.

Implications for comparative institutional analysis

For comparative economics, the evidence supports analysing monetary institutions as systems of delegated authority and constrained adjustment. Two countries exposed to the same global commodity-price movement can face different domestic transmission not simply because one “fixes” and the other “floats”, but because their policy authority, anchor, reserve governance and institutional capacities differ. The appropriate comparison is therefore multidimensional and dynamic.

This perspective also changes the policy question. The evidence does not justify a universal recommendation to adopt one monetary architecture. Instead, it suggests that institutional design should be evaluated against the shocks an economy is likely to face and the margins through which adjustment is socially and politically feasible. A regime that limits nominal exchange-rate movement may stabilise one margin while shifting adjustment toward prices, reserves or output. Those trade-offs are precisely what the Institutional Adjustment Profile is designed to reveal.

9. Conclusion

This paper asks how monetary institutions allocate the macroeconomic consequences of common external shocks. Using a quarterly panel covering 2000Q1-2023Q4, it combines country-specific

commodity-price exposure with monetary-architecture classifications and four adjustment margins: prices, real GDP, exchange rates and reserves.

The strongest result is not a universal ranking of regimes. It is that monetary architectures are associated with different dynamic adjustment profiles and that these profiles are shock-contingent. CPI responses to import-cost shocks display persistent regime heterogeneity in the stable rolling-weight sample, while the institutional response to export-income shocks is different. This finding survives a demanding common-sample design and is reinforced by joint import/export estimation, although fixed-weight exposure measures weaken the CPI evidence and therefore define an important scope condition.

Secondary analyses show that monetary-union versus national-peg differences become imprecise once exchange-rate flexibility is measured relative to the relevant anchor; legal central-bank independence is not a universal stabiliser; and reserve-governance differences cannot be generalised across monetary unions with the present data. Narrative-instrument replications provide strong first-stage support for published external commodity-price instruments but do not make regime assignment causal.

The broader conclusion is therefore institutional rather than classificatory. Monetary systems should be understood by how they distribute adjustment across macroeconomic margins and by how that distribution changes with the source of the external disturbance. Future work can extend this framework with harmonised pooled-reserve data, policy-rate and external-balance outcomes, and research designs that generate stronger quasi-experimental variation in institutional architecture itself.

Supplementary material. A separate Supplementary Appendix reports exact country lists, the complete variable dictionary, construction rules, extended descriptive evidence, full H1-H5 diagnostics, H2-H4 support checks, reserve-governance diagnostics, external-instrument audits, claim discipline and the replication-file inventory (Supplementary Appendices A-N).

Declaration of competing interests

The author declares no competing interests.

Data availability and reproducibility

All source datasets used in the study are publicly documented. The replication package accompanying the submission contains the analysis master file, a master Stata do-file, component scripts, derived external-validation panels, and a file inventory. Raw third-party source files remain subject to their original providers' terms of use.

Declaration of generative AI and AI-assisted technologies in the manuscript preparation process

During the preparation of this work, the author used ChatGPT (OpenAI) to assist with manuscript organization, language editing, reference cross-checking, and the drafting and documentation of reproducibility code. All data transformations, estimations, statistical outputs, references, and substantive interpretations were reviewed and validated by the author, who takes full responsibility for the content of the article.

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Online Supplementary Appendix

Same Shock, Different Institutions: Monetary Architecture and the Allocation of Macroeconomic Adjustment

This supplementary appendix documents sample composition, variable construction, descriptive evidence, complete diagnostic tables, robustness checks, identification audits and the reproducibility architecture underlying the manuscript. It is intentionally more expansive than the main text. The empirical claims in the manuscript should be read together with the measurement and identification limitations documented here.

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Appendix A. Country coverage, sample construction and monetary-union membership

The raw quarterly spine covers 1999Q1-2023Q4. Because the baseline AREAER institutional state is lagged by one calendar year, the strict estimation period begins in 2000Q1. Table A1 lists all 177 economies entering the H1 foundation sample and indicates whether each economy enters the common four-outcome sample, the H4 common sample and the clean H2 comparison.

Table A1. H1 foundation countries and sample membership

Economy	ISO3	Observed baseline regimes	Union	H1 foundation qtrs	Common-4 qtrs	H4 qtrs	H2 clean qtrs
Afghanistan, Islamic Republic of	AFG	FLOAT, INT		85	0	0	0
Albania	ALB	FLOAT		96	96	96	0
Algeria	DZA	INT, FLOAT		96	0	0	0
Angola	AGO	FLOAT, INT, PEG		96	0	0	0
Antigua and Barbuda	ATG	MU	ECCU	96	0	0	0
Argentina	ARG	PEG, INT, FLOAT		96	28	28	0
Armenia, Republic of	ARM	FLOAT, INT		96	92	0	0
Australia	AUS	FLOAT		96	0	0	0
Austria	AUT	MU	EURO	96	96	96	88
Azerbaijan, Republic of	AZE	INT, PEG		96	0	0	0
Bahamas, The	BHS	PEG		96	36	36	36
Bahrain, Kingdom of	BHR	PEG		96	0	0	0
Bangladesh	BGD	PEG, INT		96	0	0	0
Barbados	BRB	PEG		96	0	0	0
Belarus, Republic of	BLR	INT, PEG, FLOAT		96	40	40	0
Belgium	BEL	MU	EURO	96	96	96	88
Belize	BLZ	PEG		96	0	0	0
Benin	BEN	MU	WAEMU	96	0	0	0

Economy	ISO3	Observed baseline regimes	Union	H1 foundation qtrs	Common-4 qtrs	H4 qtrs	H2 clean qtrs
Bhutan	BTN	PEG		96	0	0	0
Bolivia	BOL	INT, PEG		96	0	0	0
Bosnia and Herzegovina	BIH	PEG		96	76	76	76
Botswana	BWA	PEG, INT		95	72	72	0
Brazil	BRA	FLOAT		96	96	96	0
Brunei Darussalam	BRN	PEG		96	38	38	0
Bulgaria	BGR	PEG		96	96	96	88
Burkina Faso	BFA	MU	WAEMU	96	0	0	0
Burundi	BDI	INT, FLOAT		96	0	0	0
Cabo Verde	CPV	PEG		96	68	0	49
Cambodia	KHM	INT, FLOAT		96	0	0	0
Cameroon	CMR	MU	CEMAC	96	0	0	0
Canada	CAN	FLOAT		96	96	96	0
Central African Republic	CAF	MU	CEMAC	96	0	0	0
Chad	TCD	MU	CEMAC	96	0	0	0
Chile	CHL	FLOAT		96	96	96	0
China, People's Republic of	CHN	PEG, INT		96	52	52	0
Colombia	COL	FLOAT, INT		96	76	76	0
Comoros, Union of the	COM	PEG		96	0	0	0
Congo, Democratic Republic of the	COD	FLOAT, INT		96	0	0	0
Congo, Republic of	COG	MU	CEMAC	96	0	0	0
Costa Rica	CRI	INT, FLOAT		96	96	96	0

Economy	ISO3	Observed baseline regimes	Union	H1 foundation qtrs	Common-4 qtrs	H4 qtrs	H2 clean qtrs
Croatia, Republic of	HRV	INT, PEG, FLOAT	EURO	96	96	96	0
Cyprus	CYP	PEG, FLOAT, MU	EURO	96	96	96	76
Czech Republic	CZE	INT, FLOAT		96	96	96	0
Côte d'Ivoire	CIV	MU	WAEMU	96	0	0	0
Denmark	DNK	PEG		96	96	96	88
Djibouti	DJI	PEG		96	0	0	0
Dominica	DMA	MU	ECCU	96	0	0	0
Dominican Republic	DOM	INT, FLOAT		96	96	96	0
Egypt, Arab Republic of	EGY	PEG, INT, FLOAT		96	17	17	0
El Salvador	SLV	PEG		72	72	0	64
Eritrea, The State of	ERI	FLOAT, PEG		96	0	0	0
Estonia, Republic of	EST	PEG, FLOAT, MU	EURO	96	96	96	76
Eswatini, Kingdom of	SWZ	PEG		95	0	0	0
Ethiopia, The Federal Democratic Republic of	ETH	INT, PEG		96	0	0	0
Fiji, Republic of	FJI	PEG		96	0	0	0
Finland	FIN	MU	EURO	96	96	96	88
France	FRA	MU	EURO	96	96	96	88
Gabon	GAB	MU	CEMAC	96	0	0	0
Gambia, The	GMB	FLOAT, INT		96	40	40	0
Georgia	GEO	FLOAT, INT		96	16	16	0
Germany	DEU	MU	EURO	96	96	96	88
Ghana	GHA	FLOAT, INT		96	40	40	0
Greece	GRC	PEG, MU	EURO	96	96	96	80
Grenada	GRD	MU	ECCU	96	0	0	0

Economy	ISO3	Observed baseline regimes	Union	H1 foundation qtrs	Common-4 qtrs	H4 qtrs	H2 clean qtrs
Guatemala	GTM	INT, FLOAT		96	44	44	0
Guinea	GIN	FLOAT, INT, PEG		85	0	0	0
Guinea-Bissau	GNB	MU	WAEMU	72	0	0	0
Guyana	GUY	FLOAT, INT, PEG		80	0	0	0
Haiti	HTI	FLOAT, INT		96	0	0	0
Honduras	HND	INT, PEG		96	96	0	4
Hong Kong Special Administrative Region, People's Republic of China	HKG	PEG		96	0	0	0
Hungary	HUN	INT, PEG, FLOAT		96	96	96	0
Iceland	ISL	PEG, FLOAT		96	96	96	0
India	IND	FLOAT, INT		96	79	79	0
Indonesia	IDN	FLOAT, INT		96	96	96	0
Iran, Islamic Republic of	IRN	PEG, INT		96	0	0	0
Iraq	IRQ	PEG, INT		95	0	0	0
Ireland	IRL	MU	EURO	96	96	96	88
Israel	ISR	INT, FLOAT		96	96	0	0
Italy	ITA	MU	EURO	96	96	96	88
Jamaica	JAM	INT, FLOAT		96	96	96	0
Japan	JPN	FLOAT		96	96	96	0
Jordan	JOR	PEG		96	96	96	88
Kazakhstan, Republic of	KAZ	FLOAT, INT, PEG		96	96	96	0
Kenya	KEN	INT, FLOAT		96	60	60	0

Economy	ISO3	Observed baseline regimes	Union	H1 foundation qtrs	Common-4 qtrs	H4 qtrs	H2 clean qtrs
Kiribati	KIR	PEG		96	0	0	0
Korea, Republic of	KOR	FLOAT		96	96	96	0
Kuwait	KWT	PEG, INT		96	0	0	0
Kyrgyz Republic	KGZ	INT		96	0	0	0
Lao People's Democratic Republic	LAO	INT		96	0	0	0
Latvia, Republic of	LVA	PEG, FLOAT, MU	EURO	96	96	96	58
Lebanon	LBN	PEG, INT		96	0	0	0
Lesotho, Kingdom of	LSO	PEG		95	68	0	0
Liberia	LBR	FLOAT, INT		96	0	0	0
Libya	LBY	PEG, INT		96	0	0	0
Lithuania, Republic of	LTU	PEG, FLOAT, MU	EURO	96	96	96	67
Luxembourg	LUX	MU	EURO	96	96	96	88
Madagascar, Republic of	MDG	FLOAT, INT		96	0	0	0
Malawi	MWI	INT, FLOAT, PEG		96	0	0	0
Malaysia	MYS	PEG, INT, FLOAT		96	12	12	0
Maldives	MDV	PEG, INT		96	84	84	25
Mali	MLI	MU	WAEMU	96	0	0	0
Malta	MLT	PEG, FLOAT, MU	EURO	96	96	96	70
Mauritania, Islamic Republic of	MRT	INT, PEG		94	0	0	0
Mauritius	MUS	FLOAT, INT		96	44	44	0
Mexico	MEX	FLOAT		96	96	96	0
Moldova, Republic of	MDA	FLOAT, INT		96	32	32	0

Economy	ISO3	Observed baseline regimes	Union	H1 foundation qtrs	Common-4 qtrs	H4 qtrs	H2 clean qtrs
Mongolia	MNG	FLOAT, INT, PEG		96	36	36	0
Montenegro	MNE	PEG		68	67	67	60
Morocco	MAR	PEG, INT		96	40	40	21
Mozambique, Republic of	MOZ	FLOAT, INT		96	8	0	0
Myanmar	MMR	PEG, INT		96	0	0	0
Namibia	NAM	PEG		96	44	44	0
Nepal	NPL	PEG		96	0	0	0
Netherlands, The	NLD	MU	EURO	96	96	96	88
New Zealand	NZL	FLOAT		96	0	0	0
Nicaragua	NIC	INT		96	72	0	0
Niger	NER	MU	WAEMU	96	0	0	0
Nigeria	NGA	INT, PEG		96	56	56	0
North Macedonia, Republic of	MKD	PEG, INT		96	96	96	28
Norway	NOR	INT, FLOAT		96	96	96	0
Oman	OMN	PEG		96	0	0	0
Pakistan	PAK	PEG, INT, FLOAT		96	32	32	0
Panama	PAN	PEG		96	0	0	0
Papua New Guinea	PNG	FLOAT, INT		96	0	0	0
Paraguay	PRY	INT, FLOAT		96	96	96	0
Peru	PER	FLOAT, INT		96	68	68	0
Philippines	PHL	FLOAT, INT		96	96	96	0
Poland, Republic of	POL	FLOAT		96	96	96	0

Economy	ISO3	Observed baseline regimes	Union	H1 foundation qtrs	Common-4 qtrs	H4 qtrs	H2 clean qtrs
Portugal	PRT	MU	EURO	96	96	96	88
Qatar	QAT	PEG		96	16	16	16
Romania	ROU	INT, FLOAT		96	96	96	0
Russian Federation	RUS	FLOAT, INT, PEG		96	52	52	0
Rwanda	RWA	FLOAT, INT, PEG		96	72	72	0
Samoa	WSM	PEG		96	44	0	0
Saudi Arabia	SAU	PEG		96	56	56	56
Senegal	SEN	MU	WAEMU	96	0	0	0
Serbia, Republic of	SRB	INT, FLOAT		92	72	0	0
Seychelles	SYC	PEG, FLOAT		96	40	40	0
Sierra Leone	SLE	FLOAT, INT, PEG		96	0	0	0
Singapore	SGP	INT, FLOAT		96	96	96	0
Slovak Republic	SVK	INT, PEG, FLOAT, MU	EURO	96	96	96	48
Slovenia, Republic of	SVN	INT, PEG, FLOAT, MU	EURO	96	96	96	60
Solomon Islands	SLB	PEG, INT		96	0	0	0
South Africa	ZAF	FLOAT		96	96	96	0
Spain	ESP	MU	EURO	96	96	96	88
Sri Lanka	LKA	INT, FLOAT, PEG		96	56	56	0
St. Kitts and Nevis	KNA	MU	ECCU	96	0	0	0
St. Lucia	LCA	MU	ECCU	96	72	72	72
St. Vincent and the Grenadines	VCT	MU	ECCU	96	24	24	24
Sudan	SDN	FLOAT, INT, PEG		92	0	0	0
Suriname	SUR	INT, PEG, FLOAT		96	0	0	0

Economy	ISO3	Observed baseline regimes	Union	H1 foundation qtrs	Common-4 qtrs	H4 qtrs	H2 clean qtrs
Sweden	SWE	FLOAT		96	96	96	0
Switzerland	CHE	FLOAT, INT		96	96	96	0
Syrian Arab Republic	SYR	PEG, INT		70	0	0	0
São Tomé and Príncipe, Democratic Republic of	STP	FLOAT, INT, PEG		96	0	0	0
Tajikistan, Republic of	TJK	INT, FLOAT, PEG		96	0	0	0
Tanzania, United Republic of	TZA	FLOAT, INT		96	0	0	0
Thailand	THA	FLOAT, INT		96	84	84	0
Togo	TGO	MU	WAEMU	96	0	0	0
Tonga	TON	PEG, INT		96	0	0	0
Trinidad and Tobago	TTO	PEG, INT		96	48	48	0
Tunisia	TUN	INT, PEG, FLOAT		96	0	0	0
Turkmenistan	TKM	PEG		96	0	0	0
Türkiye, Republic of	TUR	INT, FLOAT		96	96	96	0
Uganda	UGA	FLOAT, INT		96	30	30	0
Ukraine	UKR	INT, PEG, FLOAT		96	56	56	0
United Arab Emirates	ARE	PEG		96	0	0	0
United Kingdom	GBR	FLOAT		96	96	96	0
United States	USA	FLOAT		96	96	96	0
Uruguay	URY	INT, FLOAT		96	32	32	0
Vanuatu	VUT	PEG, INT		96	0	0	0
Venezuela, República Bolivariana de	VEN	INT, FLOAT, PEG		93	0	0	0

Economy	ISO3	Observed baseline regimes	Union	H1 foundation qtrs	Common-4 qtrs	H4 qtrs	H2 clean qtrs
Vietnam	VNM	PEG, INT		96	0	0	0
Yemen, Republic of	YEM	FLOAT, INT, PEG		96	0	0	0
Zambia	ZMB	FLOAT, INT		96	56	56	0
Zimbabwe	ZWE	PEG, INT, FLOAT		56	0	0	0

Notes: A country can display more than one baseline regime over 2000-2023 because AREAER classifications change over time. H1 foundation requires CTOT shocks, lagged AREAER and BIS FX. The common-4 sample additionally requires CPI, real GDP and reserves. H4 adds lagged CBIE. H2 clean is restricted to stable MU/PEG observations with EUR/USD anchors and anchor-relative flexibility available.

A.2 Economies excluded from the H1 foundation sample

Table A2. Economies in the master spine but outside the H1 foundation sample

Economy	ISO3	Primary missing input
Anguilla	AIA	CTOT shock coverage; lagged AREAER regime
Aruba	ABW	CTOT shock coverage
Cayman Islands	CYM	CTOT shock coverage; lagged AREAER regime
Ecuador	ECU	BIS FX
Equatorial Guinea, Republic of	GNQ	CTOT shock coverage
Macao SAR	MAC	CTOT shock coverage
Micronesia	FSM	CTOT shock coverage
Montserrat	MSR	CTOT shock coverage; lagged AREAER regime
Netherlands Antilles (former)	ANT	CTOT shock coverage; lagged AREAER regime
San Marino	SMR	CTOT shock coverage
South Sudan	SSD	CTOT shock coverage
Taiwan	TWN	CTOT shock coverage; lagged AREAER regime
Timor-Leste, Democratic Republic of	TLS	BIS FX
Tuvalu	TUV	BIS FX
Uzbekistan, Republic of	UZB	CTOT shock coverage

Notes: The exclusions are data-driven and refer to absence of a required foundation input over the strict 2000-2023 estimation window.

A.3 Monetary-union membership used in the analysis

Table A3. Monetary-union membership and accession year

Union	Economy	ISO3	Accession / coding year
CEMAC	Cameroon	CMR	1,999
CEMAC	Central African Republic	CAF	1,999
CEMAC	Chad	TCD	1,999
CEMAC	Congo, Republic of	COG	1,999
CEMAC	Equatorial Guinea, Republic of	GNQ	1,999

Union	Economy	ISO3	Accession / coding year
CEMAC	Gabon	GAB	1,999
ECCU	Antigua and Barbuda	ATG	1,999
ECCU	Dominica	DMA	1,999
ECCU	Grenada	GRD	1,999
ECCU	St. Kitts and Nevis	KNA	1,999
ECCU	St. Lucia	LCA	1,999
ECCU	St. Vincent and the Grenadines	VCT	1,999
EURO	Austria	AUT	1,999
EURO	Belgium	BEL	1,999
EURO	Finland	FIN	1,999
EURO	France	FRA	1,999
EURO	Germany	DEU	1,999
EURO	Ireland	IRL	1,999
EURO	Italy	ITA	1,999
EURO	Luxembourg	LUX	1,999
EURO	Netherlands, The	NLD	1,999
EURO	Portugal	PRT	1,999
EURO	Spain	ESP	1,999
EURO	Greece	GRC	2,001
EURO	Slovenia, Republic of	SVN	2,007
EURO	Cyprus	CYP	2,008
EURO	Malta	MLT	2,008
EURO	Slovak Republic	SVK	2,009
EURO	Estonia, Republic of	EST	2,011
EURO	Latvia, Republic of	LVA	2,014
EURO	Lithuania, Republic of	LTU	2,015

Union	Economy	ISO3	Accession / coding year
EURO	Croatia, Republic of	HRV	2,023
WAEMU	Benin	BEN	1,999
WAEMU	Burkina Faso	BFA	1,999
WAEMU	Côte d'Ivoire	CIV	1,999
WAEMU	Guinea-Bissau	GNB	1,999
WAEMU	Mali	MLI	1,999
WAEMU	Niger	NER	1,999
WAEMU	Senegal	SEN	1,999
WAEMU	Togo	TGO	1,999

Notes: Membership is overlaid on AREAER classifications so that monetary union is separated from national pegs. Euro-area accession years vary; WAEMU, CEMAC and ECCU are coded as already in force at the start of the analysis window for the listed members.

A.4 Sample-flow summary

Table A4. Successive data requirements and resulting sample size

Sample definition	Country-quarters	Countries
H1 foundation: CTOT + lagged AREAER + BIS FX	16,795	177
H1 + CPI	15,584	171
H1 + real GDP	7,832	104
H1 + reserves	15,467	166
Common four-outcome H1 sample	7,507	101
Common H4 sample (+ lagged CBIE)	6,819	91
H2 clean common sample	2,298	35

Appendix B. Complete variable dictionary

Table B1 documents every field retained in the empirical master plus the three growth variables constructed for descriptive reporting. The distinction between source variables, transformations and sample flags is explicit so that each manuscript quantity can be traced to its underlying data block.

Table B1. Variable dictionary

Variable	Source	Frequency	Definition	Construction	Empirical role
iso3	Crosswalk / merged master	Quarterly	ISO-3 country/economy identifier	Harmonized across all sources	Panel identifier
country	Source crosswalk	Quarterly	Country/economy name	Merged descriptive label	Documentation
year	Calendar	Quarterly	Calendar year	Extracted from quarterly date	Time identifier
q	Calendar	Quarterly	Quarter number 1–4	Extracted from quarterly date	Time identifier
quarter	Calendar	Quarterly	Quarter label	Year-quarter string	Documentation
fx_qend	BIS WS_XRU	Quarterly	Bilateral exchange rate against the U.S. dollar at quarter end	Monthly end-of-period observation retained for final month of quarter	Outcome / H2 input
ln_fx_qend	BIS WS_XRU	Quarterly	Log bilateral USD exchange rate	Natural log of fx_qend	FX outcome
dln_fx_q	BIS WS_XRU	Quarterly	Quarterly change in log bilateral USD exchange rate	First difference of ln_fx_qend	Diagnostic
fxflex_pre12m	BIS WS_XRU	Quarterly	Pre-shock bilateral USD exchange-rate volatility	SD of monthly log exchange-rate changes over the 12 months ending before the quarter	Initial H2 diagnostic
ifs_code	IMF AREAER	Annual mapped to quarterly	IMF/IFS jurisdiction code	Imported from AREAER query	Crosswalk
country_areaer	IMF AREAER	Annual mapped to quarterly	AREAER country/jurisdiction name	Imported directly	Documentation
regime_raw	IMF AREAER	Annual mapped to quarterly	Raw AREAER exchange-arrangement classification	Active Status=yes category	Institution measurement
regime4	IMF AREAER	Annual mapped to quarterly	Four-group contemporaneous classification	Raw AREAER category recoded to MU/PEG/INT/FLOAT with union membership overlaid	Institution measurement
monetary_union	AREAER + union membership table	Annual mapped to quarterly	Indicator for monetary-union membership	Euro area, WAEMU, CEMAC, ECCU membership by accession date	Institution measurement
mu_type	AREAER + union membership table	Annual mapped to quarterly	Monetary-union identifier	EURO, WAEMU, CEMAC or ECCU where applicable	Institution measurement
position_date	IMF AREAER	Annual mapped to quarterly	AREAER position/reference date	Imported from report output	Audit field
regime4_lag1y	Constructed from AREAER	Annual mapped to quarterly	One-calendar-year lagged four-group regime	Lag of regime4 by one year	Predetermined institution state
regime_raw_lag1y	Constructed from AREAER	Annual mapped to quarterly	One-year lagged raw AREAER regime	Lag of regime_raw by one year	Audit field
monetary_union_lag1y	Constructed	Annual mapped to quarterly	One-year lagged monetary-union indicator	Lag of monetary_union by one year	Predetermined institution state
stable_regime3y_pre	Constructed	Quarterly	Stable pre-shock regime indicator	Equals one when the institutional category is unchanged over the pre-specified preceding three-year window	Robustness/sample restriction
regime_baseline	Constructed from AREAER	Quarterly	Baseline monetary architecture	Predetermined lagged classification used in	Main moderator

Variable	Source	Frequency	Definition	Construction	Empirical role
				estimation: MU/PEG/INT/FLOAT	
mu_baseline	Constructed	Quarterly	Baseline monetary-union indicator	Indicator implied by regime_baseline	H2/H3 moderator
cbie	Romelli CBIE (2025 vintage)	Annual mapped to quarterly	Central Bank Independence Extended index	Headline CBIE; ECB value used for euro members after accession	H4 institutional-capacity measure
cbie_lag1y	Constructed from CBIE	Annual mapped to quarterly	Lagged CBIE index	One-year lag of policy-authority CBIE	Predetermined H4 moderator
imp_rw_qavg	IMF CTOT	Quarterly	Import commodity price index, recent rolling-weight, quarterly-average	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness
imp_rw_eoq	IMF CTOT	Quarterly	Import commodity price index, recent rolling-weight, quarter-end	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness
imp_fw_qavg	IMF CTOT	Quarterly	Import commodity price index, fixed-weight, quarterly-average	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness
imp_fw_eoq	IMF CTOT	Quarterly	Import commodity price index, fixed-weight, quarter-end	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness
exp_rw_qavg	IMF CTOT	Quarterly	Export commodity price index, recent rolling-weight, quarterly-average	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness
exp_rw_eoq	IMF CTOT	Quarterly	Export commodity price index, recent rolling-weight, quarter-end	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness
exp_fw_qavg	IMF CTOT	Quarterly	Export commodity price index, fixed-weight, quarterly-average	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness
exp_fw_eoq	IMF CTOT	Quarterly	Export commodity price index, fixed-weight, quarter-end	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness
net_rw_qavg	IMF CTOT	Quarterly	Net-export commodity price index, recent rolling-weight, quarterly-average	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness
net_rw_eoq	IMF CTOT	Quarterly	Net-export commodity price index, recent rolling-weight, quarter-end	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness
net_fw_qavg	IMF CTOT	Quarterly	Net-export commodity price index, fixed-weight, quarterly-average	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness

Variable	Source	Frequency	Definition	Construction	Empirical role
net_fw_eoq	IMF CTOT	Quarterly	Net-export commodity price index, fixed-weight, quarter-end	Aggregated from monthly IMF CTOT series; rolling weights use average trade flows over the preceding three years	Shock construction / robustness
shock_imp_rw_qavg	Constructed from IMF CTOT	Quarterly	Import-cost shock from rolling-weight quarterly-average CTOT index	100 × log change in imp_rw_qavg	External shock
shock_imp_rw_eoq	Constructed from IMF CTOT	Quarterly	Import-cost shock from rolling-weight quarter-end CTOT index	100 × log change in imp_rw_eoq	External shock
shock_imp_fw_qavg	Constructed from IMF CTOT	Quarterly	Import-cost shock from fixed-weight quarterly-average CTOT index	100 × log change in imp_fw_qavg	External shock
shock_imp_fw_eoq	Constructed from IMF CTOT	Quarterly	Import-cost shock from fixed-weight quarter-end CTOT index	100 × log change in imp_fw_eoq	External shock
shock_exp_rw_qavg	Constructed from IMF CTOT	Quarterly	Export-income shock from rolling-weight quarterly-average CTOT index	100 × log change in exp_rw_qavg	External shock
shock_exp_rw_eoq	Constructed from IMF CTOT	Quarterly	Export-income shock from rolling-weight quarter-end CTOT index	100 × log change in exp_rw_eoq	External shock
shock_exp_fw_qavg	Constructed from IMF CTOT	Quarterly	Export-income shock from fixed-weight quarterly-average CTOT index	100 × log change in exp_fw_qavg	External shock
shock_exp_fw_eoq	Constructed from IMF CTOT	Quarterly	Export-income shock from fixed-weight quarter-end CTOT index	100 × log change in exp_fw_eoq	External shock
shock_net_rw_qavg	Constructed from IMF CTOT	Quarterly	Net commodity-price shock from rolling-weight quarterly-average CTOT index	100 × log change in net_rw_qavg	External shock
shock_net_rw_eoq	Constructed from IMF CTOT	Quarterly	Net commodity-price shock from rolling-weight quarter-end CTOT index	100 × log change in net_rw_eoq	External shock
shock_net_fw_qavg	Constructed from IMF CTOT	Quarterly	Net commodity-price shock from fixed-weight quarterly-average CTOT index	100 × log change in net_fw_qavg	External shock
shock_net_fw_eoq	Constructed from IMF CTOT	Quarterly	Net commodity-price shock from fixed-weight quarter-end CTOT index	100 × log change in net_fw_eoq	External shock
shock_imp_rw_qavg_z	Constructed from IMF CTOT	Quarterly	Standardized Import-cost shock, rolling-weight quarterly-average index	Standardized version of shock_imp_rw_qavg	Main shock / robustness
shock_imp_fw_qavg_z	Constructed from IMF CTOT	Quarterly	Standardized Import-cost shock, fixed-weight quarterly-average index	Standardized version of shock_imp_fw_qavg	Main shock / robustness
shock_exp_rw_qavg_z	Constructed from IMF CTOT	Quarterly	Standardized Export-income shock, rolling-weight quarterly-average index	Standardized version of shock_exp_rw_qavg	Main shock / robustness
shock_exp_fw_qavg_z	Constructed from IMF CTOT	Quarterly	Standardized Export-income shock, fixed-weight quarterly-average index	Standardized version of shock_exp_fw_qavg	Main shock / robustness
shock_net_rw_qavg_z	Constructed from IMF CTOT	Quarterly	Standardized Net commodity-price shock, rolling-weight quarterly-average index	Standardized version of shock_net_rw_qavg	Main shock / robustness
shock_net_fw_qavg_z	Constructed from IMF CTOT	Quarterly	Standardized Net commodity-price shock, fixed-weight quarterly-	Standardized version of shock_net_fw_qavg	Main shock / robustness

Variable	Source	Frequency	Definition	Construction	Empirical role
			average index		
cpi_qavg	IMF CPI	Quarterly	All-items CPI quarterly average	Monthly all-items CPI averaged within quarter; standardized 2010=100 series preferred when it extends history	Price-level outcome
ln_cpi_qavg	IMF CPI	Quarterly	Log quarterly-average CPI	Natural log of cpi_qavg	Main CPI LP outcome
infl_q_ann	Constructed from IMF CPI	Quarterly	Annualized quarterly inflation	400 × first difference of ln_cpi_qavg	Descriptive outcome
infl_yoy	Constructed from IMF CPI	Quarterly	Year-on-year inflation	100 × [ln(CPI_t) − ln(CPI_t−4)]	Descriptive outcome
cpi_nmonths	IMF CPI	Quarterly	Number of monthly CPI observations entering quarter	Count of nonmissing monthly CPI observations	Data-quality diagnostic
rgdp	IMF QNEA	Quarterly	Real GDP	Constant-price domestic-currency GDP; official seasonally adjusted series preferred, production-approach / NSA fallback retained for coverage	Real-activity outcome
ln_rgdp	IMF QNEA	Quarterly	Log real GDP	Natural log of rgdp	Main GDP LP outcome
rgdp_sa_flag	IMF QNEA	Quarterly	Official seasonally adjusted GDP indicator	Equals one when observation comes from official SA series	Robustness flag
reserves_qend	IMF International Liquidity	Quarterly	Reserves excluding gold, millions of U.S. dollars	Monthly series sampled at quarter end	Reserve outcome
ln_reserves_qend	IMF International Liquidity	Quarterly	Log reserves excluding gold	Natural log of reserves_qend	Main reserve LP outcome
L1_shock	Constructed	Quarterly	Lag 1 of baseline shock variable	Created for preliminary LP controls	Dynamic control / legacy field
L2_shock	Constructed	Quarterly	Lag 2 of baseline shock variable	Created for preliminary LP controls	Dynamic control / legacy field
L3_shock	Constructed	Quarterly	Lag 3 of baseline shock variable	Created for preliminary LP controls	Dynamic control / legacy field
L4_shock	Constructed	Quarterly	Lag 4 of baseline shock variable	Created for preliminary LP controls	Dynamic control / legacy field
h1_foundation	Constructed	Quarterly	H1 foundation: CTOT + lagged AREAER + BIS FX available	Boolean sample-eligibility flag based on nonmissing required variables	Sample selection
h1_all4	Constructed	Quarterly	H1 common four-outcome sample: CPI + real GDP + FX + reserves plus foundation inputs	Boolean sample-eligibility flag based on nonmissing required variables	Sample selection
h1_cpi	Constructed	Quarterly	H1 CPI outcome-specific sample	Boolean sample-eligibility flag based on nonmissing required variables	Sample selection
h1_gdp	Constructed	Quarterly	H1 real-GDP outcome-specific sample	Boolean sample-eligibility flag based on nonmissing required variables	Sample selection
h1_res	Constructed	Quarterly	H1 reserves outcome-specific sample	Boolean sample-eligibility flag based on nonmissing required variables	Sample selection
h4_all4	Constructed	Quarterly	H4 common sample: H1 common four-outcome inputs plus lagged CBIE	Boolean sample-eligibility flag based on nonmissing required variables	Sample selection
anchor_inferred36	Constructed from BIS FX	Quarterly	Data-inferred likely currency anchor	Candidate anchor minimizing cross-rate volatility over preceding 36 months	H2 diagnostic
anchor_h2	Constructed / institutionally	Quarterly	Anchor used in H2	Institutional anchor imposed	H2 moderator/control

Variable	Source	Frequency	Definition	Construction	Empirical role
	imposed			for monetary unions; otherwise high-confidence inferred anchor	
anchor_vol36	Constructed from BIS FX	Quarterly	Volatility relative to best anchor candidate over prior 36 months	SD of country/anchor monthly cross-rate changes	Anchor inference
anchor2_36	Constructed from BIS FX	Quarterly	Second-best anchor candidate	Candidate with second-lowest prior-36-month cross-rate volatility	Anchor-confidence diagnostic
anchor2_vol36	Constructed from BIS FX	Quarterly	Volatility relative to second-best anchor	SD of country/second-anchor monthly cross-rate changes	Anchor-confidence diagnostic
anchor_conf_ratio36	Constructed	Quarterly	Anchor-confidence ratio	Relative separation between best and second-best candidate volatility	H2 sample diagnostic
anchor_confident	Constructed	Quarterly	High-confidence inferred-anchor indicator	Confidence rule applied to national pegs; union anchors imposed separately	H2 sample restriction
fxflex_anchor_pre12m	Constructed from BIS FX	Quarterly	Anchor-adjusted pre-shock exchange-rate flexibility	SD over preceding 12 months of monthly changes in the country/anchor cross rate	Preferred H2 flexibility measure
gdp_growth_q	Constructed from QNEA	Quarterly	Quarterly real-GDP log growth	100 × first difference of ln_rgdp	Descriptive statistic
res_growth_q	Constructed from IMF International Liquidity	Quarterly	Quarterly reserve log growth	100 × first difference of ln_reserves_qend	Descriptive statistic
fx_change_q	Constructed from BIS FX	Quarterly	Quarterly bilateral USD exchange-rate log change	100 × first difference of ln_fx_qend	Descriptive statistic

Notes: CTOT = IMF Commodity Terms of Trade; AREAER = IMF Annual Report on Exchange Arrangements and Exchange Restrictions; QNEA = IMF Quarterly National Economic Accounts; CBIE = Central Bank Independence Extended index. “Rolling” CTOT weights use average trade flows over the preceding three years.

Appendix C. Data sources, measurement and construction rules

C.1 Data-source architecture

Table C1. Data sources and processing

Source	Raw frequency	Content	Processing	Use
IMF CTOT	Monthly	Import, export and net commodity-price indices	Quarterly average / quarter-end; rolling and fixed weights	Main external shocks
IMF AREAER	Annual	Exchange arrangement classification and position date	Lagged one calendar year; recoded MU/PEG/INT/FLOAT	Monetary architecture
BIS WS_XRU	Monthly EOP	Bilateral exchange rates vs USD	Quarter-end outcome; 12m/36m cross-rate calculations	FX outcome and H2 flexibility
Romelli CBIE	Annual	Central-bank independence	Lagged one year; ECB policy-authority value after euro accession	H4 capacity
IMF CPI	Monthly	All-items consumer price index	Quarterly average; logs and inflation rates	Price outcome
IMF QNEA	Quarterly	Constant-price real GDP	Official SA preferred, fallback retained	Output outcome
IMF International Liquidity	Monthly	Reserves excluding gold, USD millions	Quarter-end stock; log	Reserve outcome

C.2 Shock construction

The baseline CTOT treatment uses the IMF recent rolling-weight import and export indices averaged within the quarter. Rolling weights are predetermined because they are based on average trade flows over the preceding three years. Fixed-weight versions are retained as robustness checks.

$$S^{M}_{it} = 100 \times [\ln(CTOT^{M}_{it}) - \ln(CTOT^{M}_{i,t-1})] \quad (C.1)$$

$$S^{x}_{it} = 100 \times [\ln(CTOT^{x}_{it}) - \ln(CTOT^{x}_{i,t-1})] \quad (C.2)$$

The manuscript reports one-standard-deviation shocks using the standardized quarterly series. Import and export shocks enter jointly in H5 because the two components are conceptually distinct and can move together for commodity exporters.

C.3 AREAER mapping

Table C2. AREAER categories mapped to the four architecture groups

AREAER category	Baseline architecture
No separate legal tender	PEG unless monetary-union member
Exchange arrangement with no separate legal tender	PEG unless monetary-union member
Currency board	PEG
Currency board arrangement	PEG
Conventional peg	PEG
Conventional pegged arrangement	PEG
Pegged exchange rate within horizontal bands	PEG
Stabilized arrangement	INT
Crawling peg	INT
Crawl-like arrangement	INT

AREAER category	Baseline architecture
Other managed arrangement	INT
Managed floating with no pre-announced path for the exchange rate	INT
Managed floating with no pre-determined path for the exchange rate	INT
Managed floating with no pre-determined path for the exchange rate	INT
Crawling band	INT
Floating	FLOAT
Free floating	FLOAT
Independently floating	FLOAT

Notes: Monetary-union membership is imposed separately. Consequently, "no separate legal tender" and related categories are not mechanically treated as national pegs when the economy belongs to a coded monetary union.

C.4 Outcome construction

$$\text{Inflation}^{q}_{it} = 400 \times \Delta\ln(\text{CPI}_{it}) \quad \text{(C.3)}$$

$$\text{Inflation}^{yoy}_{it} = 100 \times [\ln(\text{CPI}_{it}) - \ln(\text{CPI}_{i,t-4})] \quad \text{(C.4)}$$

$$R^{y}_{it}(h) = 100 \times [\ln(Y_{i,t+h}) - \ln(Y_{i,t-1})] \quad \text{(C.5)}$$

For CPI, real GDP, bilateral FX and reserves, the local-projection dependent variable is the cumulative log change from t−1 to t+h. This places the four adjustment margins on a comparable percentage-change interpretation.

C.5 Anchor-adjusted exchange-rate flexibility

For H2, USD volatility is replaced by anchor-relative volatility. Candidate anchors are evaluated over the preceding 36 months; monetary-union anchors are imposed institutionally (euro area/WAEMU/CEMAC → EUR; ECCU → USD). National pegs are retained only when the inferred anchor is sufficiently distinct from the second-best candidate.

$$\text{FXFLEX}^{\text{Anchor}}_{i,t-1} = \text{SD}_{12m}\{\Delta\ln[(e_i/\text{USD})/(e^{\text{Anchor}}/\text{USD})]\} \quad \text{(C.6)}$$

Table C3. Candidate anchor currencies

Code	Candidate anchor
USD	U.S. dollar
EUR	euro
GBP	pound sterling
JPY	Japanese yen
CHF	Swiss franc
AUD	Australian dollar
NZD	New Zealand dollar
ZAR	South African rand
SGD	Singapore dollar
INR	Indian rupee
CNY	Chinese yuan
RUB	Russian ruble

Appendix D. Descriptive statistics and additional empirical motivation

The descriptive appendix serves two purposes. First, it documents the distribution and coverage of the four adjustment margins. Second, it demonstrates why the empirical design requires both a common sample and separate import/export shocks rather than a single net terms-of-trade treatment.

Table D1. Descriptive statistics in the common four-outcome sample

Variable	N	Mean	SD	P10	Median	P90	Min	Max
Annualized quarterly inflation (%)	7,505	4.321	7.179	-1.248	3.133	10.632	-82.028	144.26
Year-on-year inflation (%)	7,499	4.314	5.584	0.218	3.031	9.077	-27.200	100.36
Quarterly real-GDP log growth (%)	7,410	0.649	17.751	-1.912	0.777	4.308	-1,381.17	393.54
Quarterly bilateral USD log change (%)	7,453	0.482	5.414	-4.909	0.007	6.348	-49.691	83.720
Quarterly reserve log growth (%)	7,451	1.466	13.470	-7.812	1.105	11.562	-430.11	169.11
Import-cost shock (rolling, standardized)	7,507	-0.024	1.011	-0.868	0.034	0.784	-18.825	8.955
Export-income shock (rolling, standardized)	7,507	-0.034	0.650	-0.341	-0.030	0.327	-11.593	7.895
Import-cost shock (fixed, standardized)	7,507	-0.031	1.047	-0.831	0.012	0.774	-21.239	10.361
Export-income shock (fixed, standardized)	7,507	-0.041	0.677	-0.354	-0.042	0.326	-11.180	8.014
Lagged CBIE index	6,819	0.722	0.164	0.506	0.733	0.929	0.142	0.929
Anchor-adjusted pre-shock FX flexibility	7,507	0.010	0.016	0.000	0.004	0.027	0.000	0.175

Notes: The GDP growth distribution includes crisis observations and cross-country data breaks retained in the raw common sample; medians and percentile ranges are therefore more informative than extrema. Estimation uses log levels in cumulative local-projection responses rather than relying on these summary growth moments.

Table D2. Descriptive statistics by baseline monetary architecture

Regime	Country-quarters	Countries	Mean inflation	Median inflation	Median GDP growth	Median FX change	Median reserve growth	SD import shock	SD export shock	Mean CBIE	Median anchor flex.
FLOAT	2,826	61	4.554	3.396	0.814	0.044	1.174	0.826	0.533	0.668	0.016
INT	1,792	49	6.620	4.948	1.117	0.488	1.351	1.218	0.630	0.649	0.006
MU	1,596	21	2.247	1.846	0.467	0.000	0.635	1.017	0.348	0.899	0.000
PEG	1,293	31	3.182	2.697	0.878	0.000	1.422	1.052	1.063	0.699	7.85e-04

Notes: Regime groups are time-varying baseline classifications. These descriptive contrasts are not causal and are used only to motivate the multivariate local-projection design.

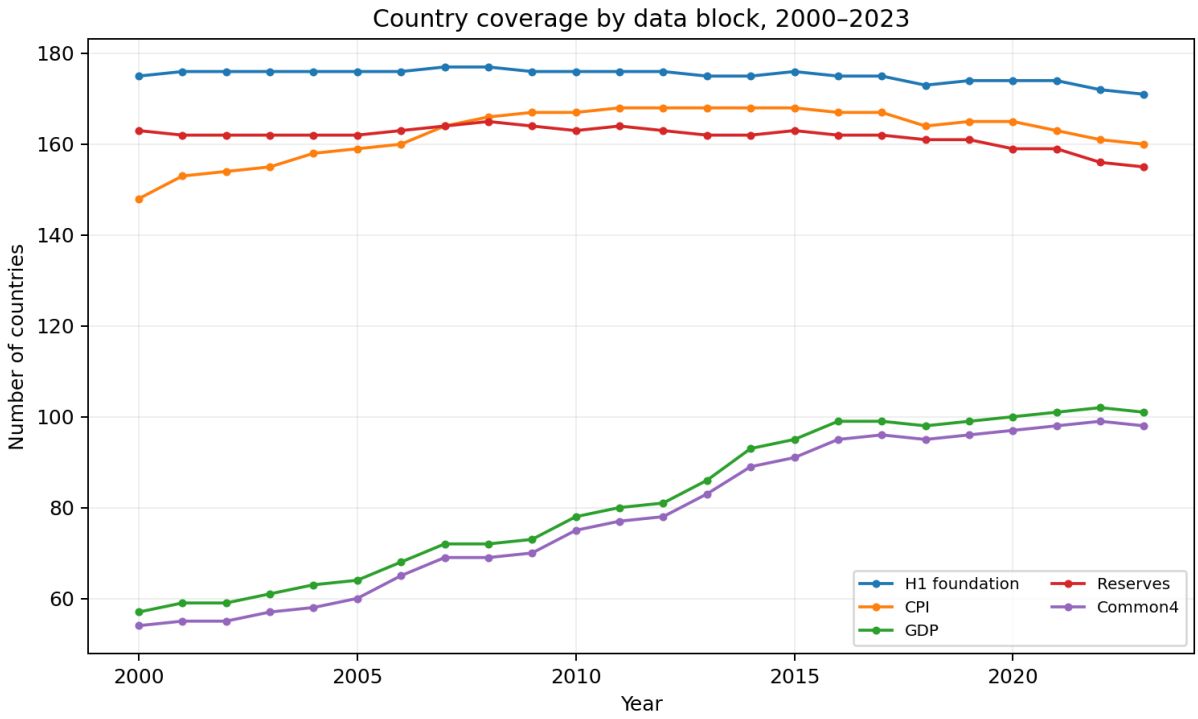


Figure D1. Country coverage by data block, 2000-2023

Notes: The real-GDP block is the principal constraint on the common sample. The headline Institutional Adjustment Profile therefore uses a common sample, while outcome-specific samples are retained as robustness checks.

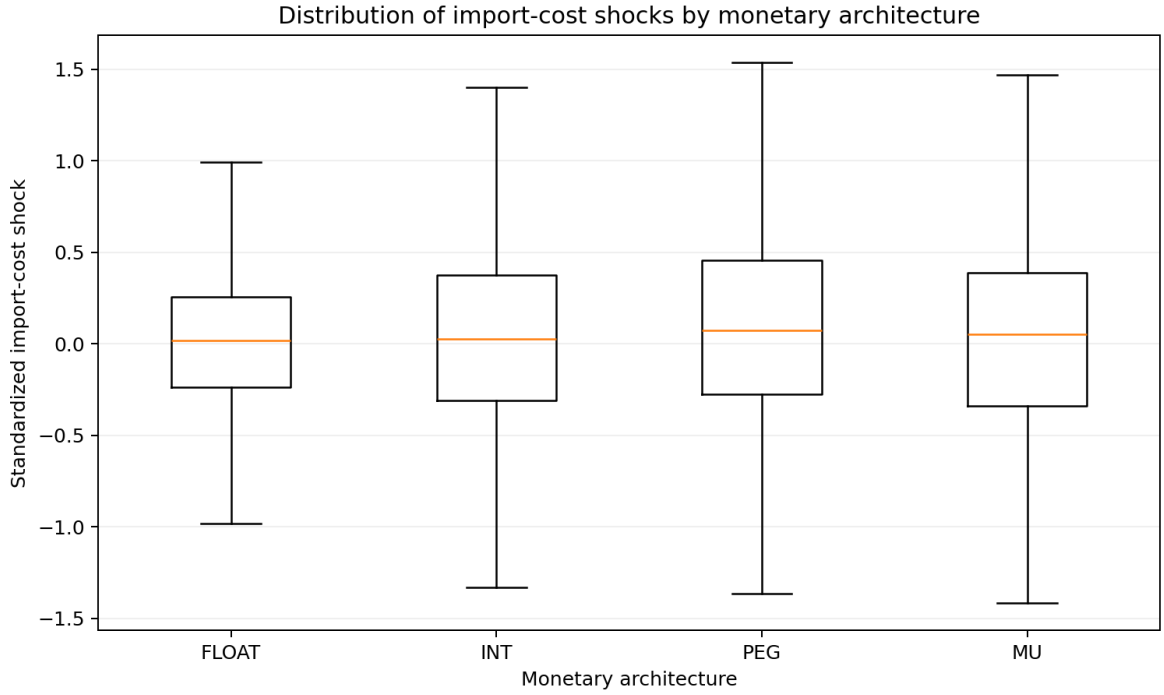


Figure D2. Distribution of standardized import-cost shocks by architecture

Notes: The figure displays the realized shock distribution in the common sample. Overlap across architecture groups supports comparative estimation but does not remove institutional selection.

Table D3. Correlation matrix for key variables in the common sample

variable	shock_imp_rw_qavg_z	shock_exp_rw_qavg_z	infl_q_ann	gdp_growth_q	fx_change_q	res_growth_q	cbie_lag1y	fxflex_anchor_pre12m
shock_imp_rw_qavg_z	1.000	0.476	0.085	0.031	-0.136	0.072	4.86e-04	0.006
shock_exp_rw_qavg_z	0.476	1.000	0.038	0.020	-0.113	0.052	3.75e-04	0.022
infl_q_ann	0.085	0.038	1.000	-0.030	0.218	-0.040	-0.100	0.337
gdp_growth_q	0.031	0.020	-0.030	1.000	-0.014	0.022	0.011	0.003
fx_change_q	-0.136	-0.113	0.218	-0.014	1.000	-0.177	-0.050	0.068
res_growth_q	0.072	0.052	-0.040	0.022	-0.177	1.000	-0.009	0.021
cbie_lag1y	4.86e-04	3.75e-04	-0.100	0.011	-0.050	-0.009	1.000	-0.126
fxflex_anchor_pre12m	0.006	0.022	0.337	0.003	0.068	0.021	-0.126	1.000

Appendix E. H1: Institutional Adjustment Profiles - full diagnostics

H1 asks whether the dynamic adjustment vector differs across MU, PEG, INT and FLOAT architectures. The audit considers the common four-outcome sample, stable-regime restrictions, fixed-weight CTOT shocks and outcome-specific samples. Table E1 reports the number of horizons (0-12) at which the joint Wald test of regime heterogeneity is significant at 5%.

Table E1. H1 joint-regime Wald-test summary

Specification	Outcome	Significant horizons (5%)	Minimum p	Median N	Median countries
common_fw	CPI	2	0.014	6,792.00	101.00
common_fw	FX	7	0.002	6,800.00	101.00
common_fw	GDP	3	1.79e-10	6,607.00	100.00
common_fw	RES	0	0.107	6,792.00	101.00
common_rw	CPI	8	0.001	6,792.00	101.00
common_rw	FX	2	2.93e-04	6,800.00	101.00
common_rw	GDP	2	0.005	6,607.00	100.00
common_rw	RES	0	0.164	6,792.00	101.00
common_stable_rw	CPI	11	7.43e-06	5,668.00	100.00
common_stable_rw	FX	2	0.005	5,673.00	100.00
common_stable_rw	GDP	0	0.129	5,532.00	100.00
common_stable_rw	RES	0	0.186	5,669.00	100.00
specific_rw	CPI	6	0.019	14,290	171.00
specific_rw	FX	6	2.20e-05	15,516	177.00
specific_rw	GDP	2	3.81e-09	6,906.00	103.00
specific_rw	RES	2	4.54e-05	14,260	165.00

Table E2. H1 regime-specific cumulative responses at selected horizons, stable common sample

Outcome	h	FLOAT	INT	PEG	MU

Notes: Entries are coefficient (standard error). Shock: one-standard-deviation rolling-weight import-cost shock. The strongest and most persistent institutional heterogeneity is in the CPI response. GDP and reserves are less stable across specifications. FX responses should be interpreted cautiously because the outcome is bilateral versus USD.

Appendix F. H5: Shock contingency - full diagnostics

H5 estimates import-cost and export-income shocks jointly and tests whether institutional heterogeneity differs by shock type. Driscoll-Kraay inference is the preferred audit because country treatments inherit common global commodity-price shifters; two-way country×quarter clustering is retained as robustness.

Table F1. H5 significance summary across horizons

Specification	Outcome	Import heterogeneity 5%	Export heterogeneity 5%	Contingency 5%	Min p import	Min p export	Min p contingency
common_rw	cpi	11	1	2	1.88e-04	0.007	0.042
common_rw	gdp	0	0	0	0.065	0.207	0.075
common_rw	fx	9	2	5	5.23e-07	0.014	0.003
common_rw	res	0	1	2	0.061	0.032	0.003
stable_common_rw	cpi	12	2	8	3.74e-05	6.74e-04	4.14e-04
stable_common_rw	gdp	0	0	0	0.084	0.249	0.139
stable_common_rw	fx	3	6	1	0.007	0.009	0.028
stable_common_rw	res	0	2	1	0.058	0.014	0.030
outcome_rw	cpi	5	6	2	0.003	0.002	1.73e-04
outcome_rw	gdp	1	0	1	0.048	0.150	0.043
outcome_rw	fx	1	12	6	0.021	2.41e-06	3.90e-04
outcome_rw	res	1	4	2	0.002	0.016	0.033
common_fw	cpi	2	2	2	0.012	0.013	0.018
common_fw	gdp	0	0	0	0.058	0.251	0.144
common_fw	fx	9	4	5	4.23e-04	0.010	0.020
common_fw	res	0	2	2	0.054	0.006	0.002

Table F2. CPI responses to import-cost and export-income shocks, stable common sample

Shock	h	FLOAT	INT	PEG	MU
export	0	-0.091 (0.044)	-0.118 (0.051)	0.002 (0.019)	-0.214 (0.111)
export	4	-0.280 (0.145)	-0.645 (0.215)	-0.224 (0.085)	-0.575 (0.568)
export	8	-0.495 (0.186)	-1.100 (0.387)	-0.376 (0.224)	-0.638 (0.832)
export	12	-0.398 (0.256)	-1.095 (0.379)	0.023 (0.141)	-1.200 (0.598)
import	0	0.004 (0.062)	0.076 (0.029)	0.051 (0.043)	0.105 (0.054)
import	4	0.141 (0.155)	0.346 (0.139)	0.512 (0.132)	0.528 (0.201)
import	8	-0.127 (0.226)	0.491 (0.246)	0.408 (0.134)	0.401 (0.324)
import	12	0.064 (0.165)	0.670 (0.198)	0.466 (0.202)	0.408 (0.301)

Notes: Entries are cumulative CPI response coefficient (Driscoll-Kraay standard error). The central H5 result is that the institutional profile following an import-cost shock differs from the profile following an export-income shock.

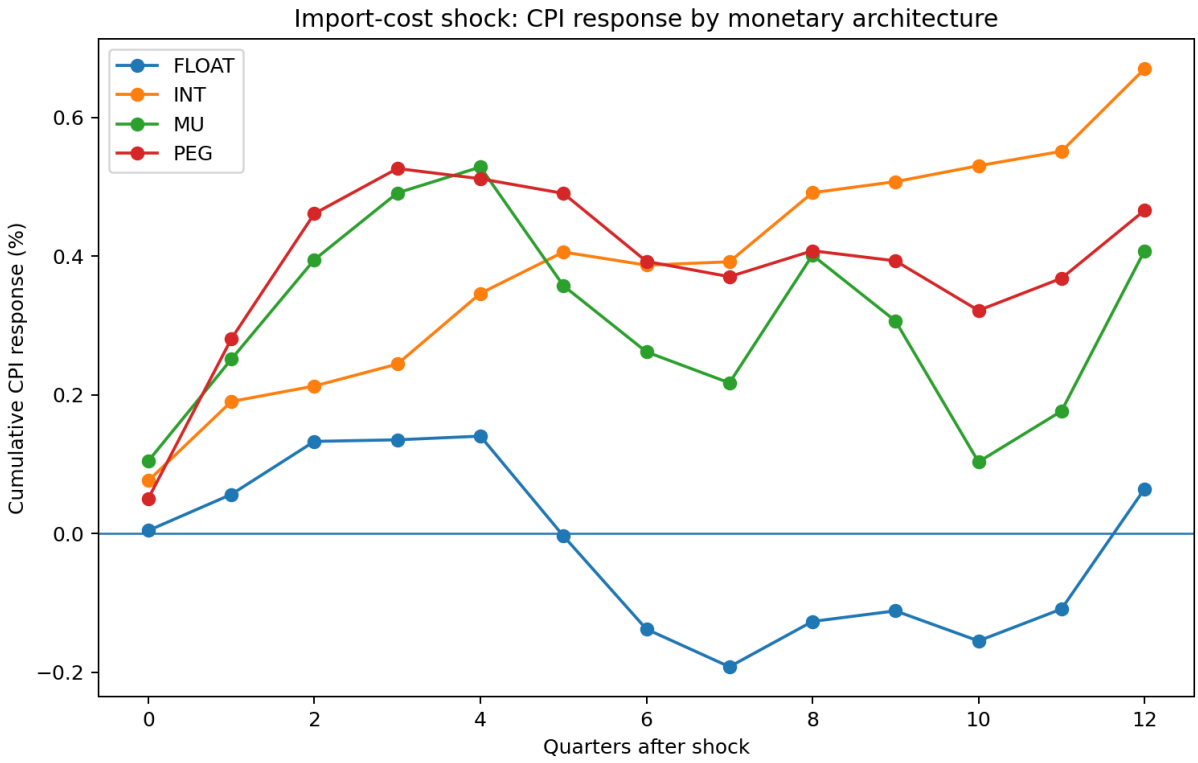


Figure F1. CPI response to an import-cost shock by monetary architecture

Notes: Stable-regime common sample; rolling CTOT weights.

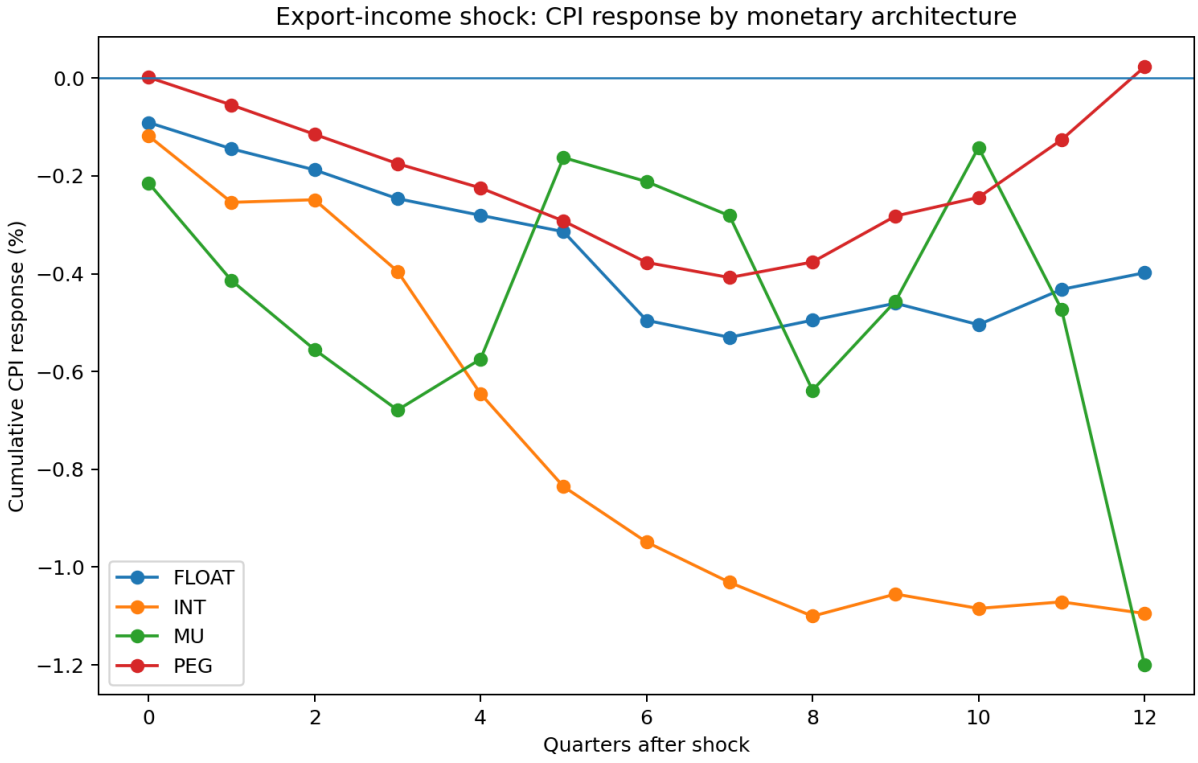


Figure F2. CPI response to an export-income shock by monetary architecture

Notes: Stable-regime common sample; rolling CTOT weights.

Appendix G. H2: Institutional delegation and anchor-adjusted flexibility

H2 compares monetary unions with national pegs conditional on pre-shock exchange-rate flexibility measured relative to the economically relevant anchor. The clean design retains stable MU/PEG observations, EUR or USD anchors, and country plus anchor×quarter fixed effects.

Table G1. Composition of the clean H2 sample by architecture and anchor

Regime	Anchor	Country-quarters	Countries	Median flexibility	Mean flexibility
MU	EUR	1,348	19	0.000	0.000
MU	USD	96	2	0.000	0.000
PEG	EUR	564	13	6.58e-04	0.003
PEG	USD	290	8	0.000	5.04e-05

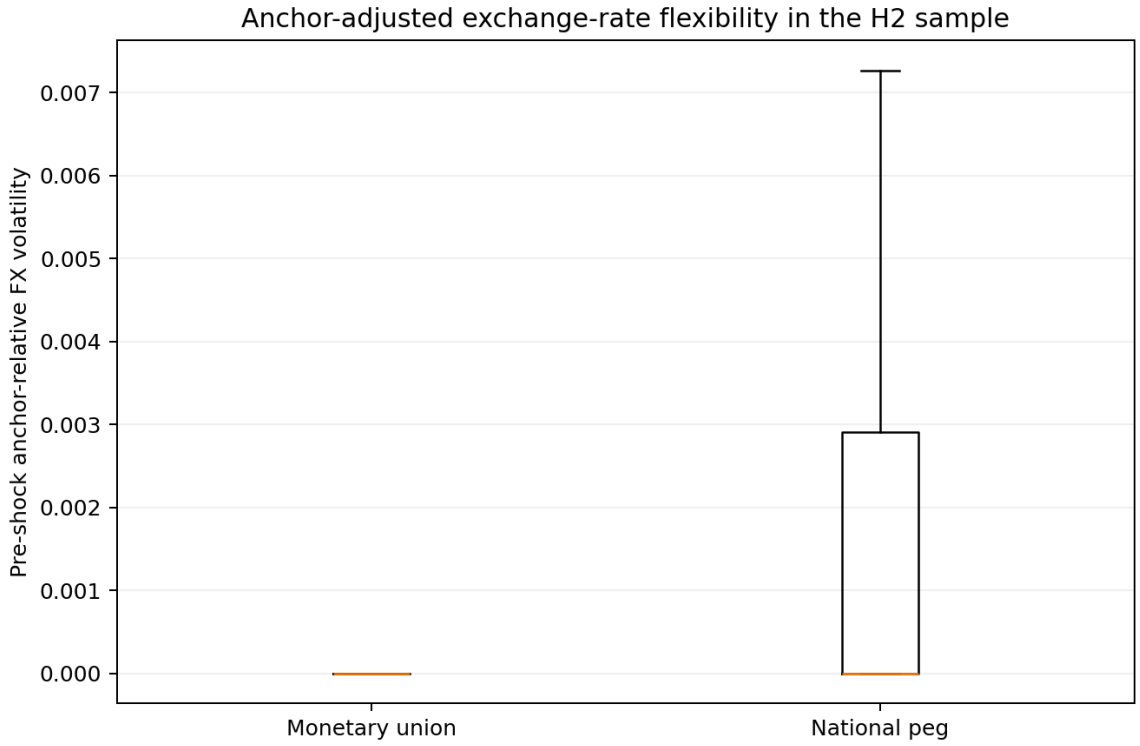


Figure G1. Anchor-adjusted exchange-rate flexibility in the H2 sample

Notes: The monetary-union distribution is concentrated near zero by construction of a common currency. National pegs show more variation even within the same nominal anchor.

Table G2. Conditional MU-minus-PEG difference at selected horizons

Outcome	h	MU-PEG conditional	SE	p	N	Countries
CPI	0	-0.036	0.038	0.352	2,286	35
CPI	4	-0.077	0.167	0.649	2,161	35
CPI	8	-0.173	0.242	0.480	2,037	35
CPI	12	-0.376	0.187	0.053	1,913	35
GDP	0	-0.071	0.134	0.597	2,262	35
GDP	4	-0.761	0.388	0.058	2,137	35

Outcome	h	MU-PEG conditional	SE	p	N	Countries
GDP	8	-0.760	0.428	0.085	2,013	35
GDP	12	-0.779	0.241	0.003	1,890	34
FX	0	-0.031	0.019	0.108	2,290	35
FX	4	0.002	0.000		2,165	35
FX	8	-0.105	0.077	0.178	2,041	35
FX	12	0.029	0.023	0.205	1,917	35
RES	0	0.678	0.626	0.286	2,290	35
RES	4	-2.092	2.507	0.410	2,165	35
RES	8	-1.229	2.808	0.664	2,041	35
RES	12	-4.255	2.241	0.066	1,917	35

Notes: The H2 coefficients are exploratory and generally imprecise for CPI and FX. They are presented as evidence on institutional delegation conditional on anchor-relative rigidity, not as the causal effect of monetary-union membership.

Appendix H. H4: Institutional capacity and CBIE support

H4 tests whether lagged central-bank independence modifies shock transmission. The key design problem is limited common support between CBIE and monetary-union status. Consequently, the preferred capacity diagnostic excludes monetary unions and restricts national regimes to common CBIE support.

Table H1. CBIE support by monetary architecture

Regime	Country-quarters	Countries	Mean	SD	P10	Median	P90	Min	Max
FLOAT	2,206	43	0.667	0.131	0.467	0.665	0.834	0.366	0.921
INT	1,143	36	0.649	0.155	0.465	0.645	0.835	0.142	0.870
MU	1,444	21	0.896	0.093	0.912	0.912	0.929	0.549	0.929
PEG	886	21	0.700	0.150	0.536	0.716	0.873	0.301	0.899

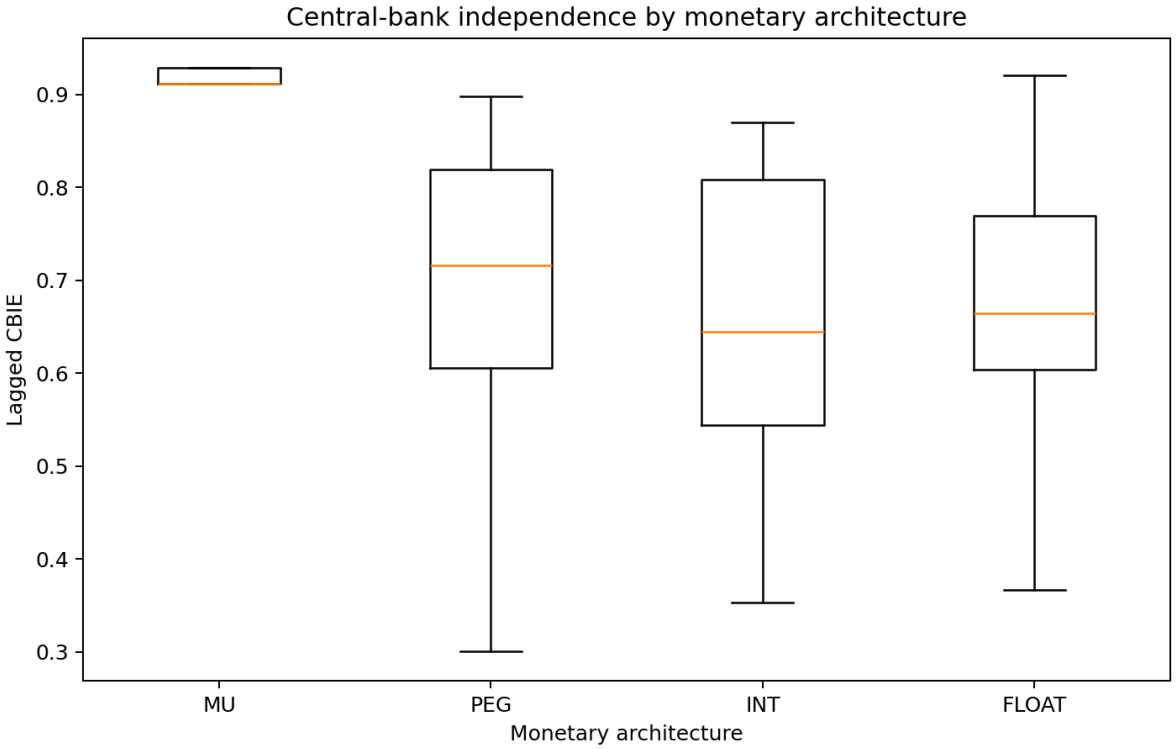


Figure H1. CBIE support by monetary architecture

Notes: The concentration of monetary-union observations at very high CBIE values makes a Shock×MU×CBIE headline specification poorly supported.

Table H2. H4 significance-count diagnostics

Specification	Outcome	Test	Significant horizons (5%)	Min p	Median N	Median countries	Median condition
national_stable_common_support_fw	cpi	capacity_contingency	3	0.002	2,677.00	63.000	42.070
national_stable_common_support_fw	cpi	export_capacity_joint	9	1.70e-04	2,677.00	63.000	42.070
national_stable_common_support_fw	cpi	import_capacity_joint	0	0.059	2,677.00	63.000	42.070
national_stable_common_support_fw	fx	capacity_contingency	2	0.040	2,678.00	63.000	118.21
national_stable_common_support_fw	fx	export_capacity_joint	5	9.34e-04	2,678.00	63.000	118.21
national_stable_common_support_fw	fx	import_capacity_joint	9	0.003	2,678.00	63.000	118.21

Specification	Outcome	Test	Significant horizons (5%)	Min p	Median N	Median countries	Median condition
national_stable_common_support_fw	gdp	capacity_contingency	10	6.44e-06	2,574.00	62.000	148.66
national_stable_common_support_fw	gdp	export_capacity_joint	10	6.04e-05	2,574.00	62.000	148.66
national_stable_common_support_fw	gdp	import_capacity_joint	12	8.42e-07	2,574.00	62.000	148.66
national_stable_common_support_fw	res	capacity_contingency	9	2.18e-07	2,678.00	63.000	256.16
national_stable_common_support_fw	res	export_capacity_joint	7	2.65e-04	2,678.00	63.000	256.16
national_stable_common_support_fw	res	import_capacity_joint	8	0.002	2,678.00	63.000	256.16
national_stable_common_support_rw	cpi	capacity_contingency	3	0.006	2,677.00	63.000	38.905
national_stable_common_support_rw	cpi	export_capacity_joint	10	9.38e-04	2,677.00	63.000	38.905
national_stable_common_support_rw	cpi	import_capacity_joint	7	0.001	2,677.00	63.000	38.905
national_stable_common_support_rw	fx	capacity_contingency	10	1.14e-04	2,678.00	63.000	118.17
national_stable_common_support_rw	fx	export_capacity_joint	12	8.27e-06	2,678.00	63.000	118.17
national_stable_common_support_rw	fx	import_capacity_joint	11	5.57e-04	2,678.00	63.000	118.17
national_stable_common_support_rw	gdp	capacity_contingency	12	3.58e-08	2,574.00	62.000	148.58
national_stable_common_support_rw	gdp	export_capacity_joint	12	1.16e-08	2,574.00	62.000	148.58
national_stable_common_support_rw	gdp	import_capacity_joint	11	1.97e-06	2,574.00	62.000	148.58
national_stable_common_support_rw	res	capacity_contingency	5	2.33e-05	2,678.00	63.000	256.08
national_stable_common_support_rw	res	export_capacity_joint	2	0.010	2,678.00	63.000	256.08
national_stable_common_support_rw	res	import_capacity_joint	6	3.22e-05	2,678.00	63.000	256.08

Notes: There is no robust monotone result that higher CBIE uniformly attenuates inflation transmission. Capacity effects are specification- and shock-dependent, especially for export-income shocks. H4 is therefore secondary to H1/H5.

Appendix I. H3: Reserve governance diagnostic

H3 is deliberately presented as a targeted diagnostic rather than a global reserve-pooling test. The master lacks a harmonized reserve-adequacy ratio, and national reserve observations inside monetary unions do not necessarily equal the common reserve pool. The reserve-buffer measure used in the diagnostic is a within-country predetermined position relative to the country's own recent reserve distribution and must not be interpreted as reserve adequacy.

Table I1. Reserve coverage by monetary union

Union	Members in master	Members with reserves	Reserve country-quarters	Measurement note
EURO	19	19	1,500	National reserve observations do not necessarily equal the common monetary-union reserve pool.
CEMAC	6	6	576	National reserve observations do not necessarily equal the common monetary-union reserve pool.
ECCU	6	6	576	National reserve observations do not necessarily equal the common monetary-union reserve pool.
WAEMU	8	0	0	National reserve observations do not necessarily equal the common monetary-union reserve pool.

Table I2. H3 pooled-governance diagnostics

sample	weights	pool_governance_joint_5pct	buffer_pool_joint_5pct	imp_pool_5pct	exp_pool_5pct	imp_pool_buffer_5pct	exp_pool_buffer_5pct	min_joint_pool_p	min_joint_triple_p	median_countries	median_pool_countries
all_pools_vs_national	fixed	6	4	1	7	0	4	0.005	0.001	165.00	30.000
all_pools_vs_national	rolling	9	5	3	10	7	6	3.39e-04	4.37e-04	165.00	30.000
cemac_eccu_vs_national_peg	fixed	10	9	0	8	8	4	0.002	0.001	74.000	11.000
cemac_eccu_vs_national_peg	rolling	10	9	0	10	4	5	6.62e-04	0.001	74.000	11.000
exclude_euro_pool	fixed	7	7	1	7	1	4	0.010	0.001	153.00	11.000
exclude_euro_pool	rolling	10	8	0	10	1	5	6.32e-04	7.12e-04	153.00	11.000

Table I3. CEMAC/ECCU decomposition

Union	Weights	Joint pool 5%	Joint triple 5%	Export pool 5%	Export×buffer 5%	Pool countries
CEMAC	fixed	7	3	8	1	5.000
CEMAC	rolling	10	5	10	7	5.000
ECCU	fixed	0	8	0	2	6.000
ECCU	rolling	0	9	0	1	6.000

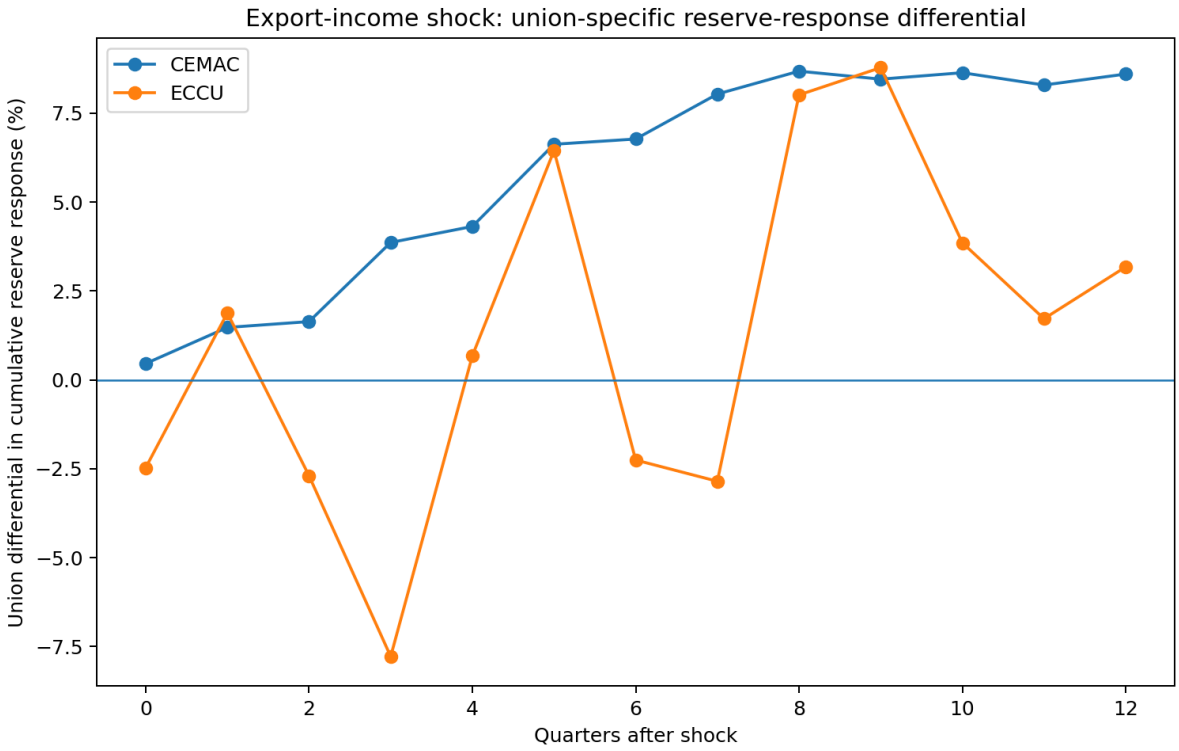


Figure I1. Export-income shock reserve-response differential: CEMAC and ECCU

Notes: The apparent pooled-governance signal is largely driven by CEMAC and does not generalize uniformly to ECCU.

Appendix J. External identification and narrative-IV audits

The identification strategy deliberately separates the maintained external-shock assumptions from causal identification of monetary-regime adoption. Published narrative instruments are therefore used as external-identification stress tests of shock transmission, not as instruments for institutional choice. Their first stages establish relevance; exclusion rests on the published narrative event construction.

Table J1. Juvenal-Petrella narrative export-price first stage, 2000-2019

window	countries	observations	z_coefficient	cluster_se	cluster_t	cluster_p	robust_F_single_excluded_instrument	nonzero_instrument_observations
2000-2019	54	964	0.113	0.004	30.710	4.22e-207	943.09	101

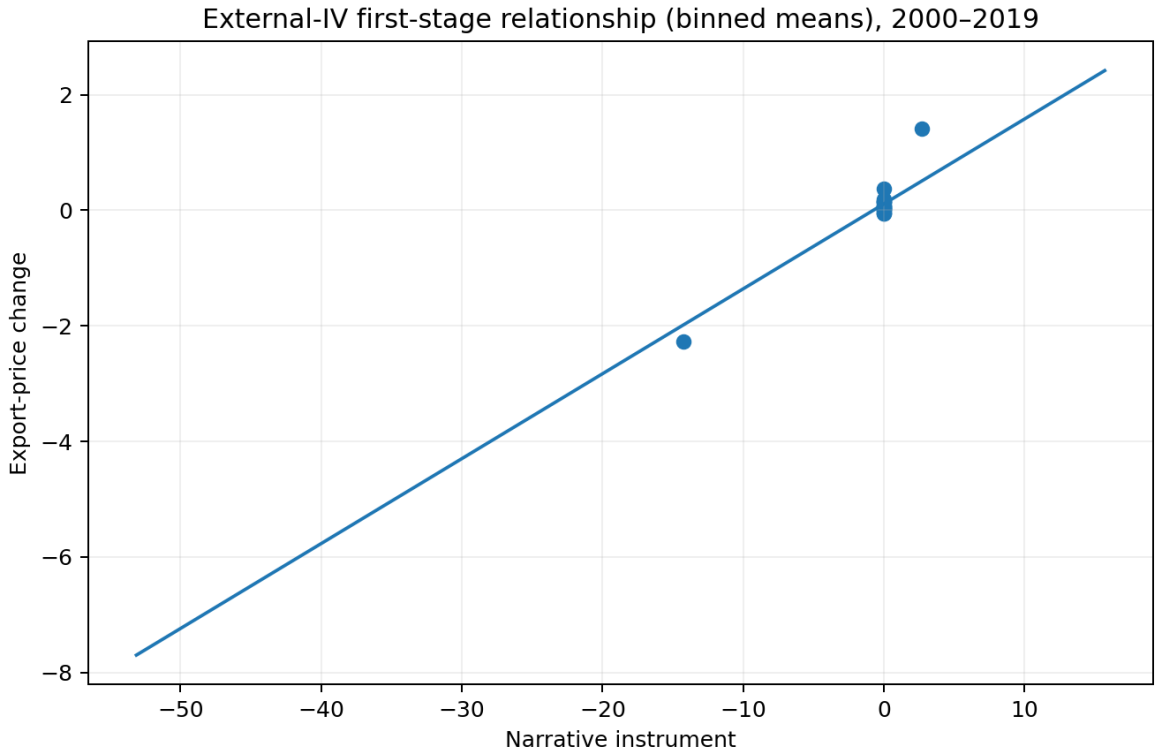


Figure J1. Narrative-IV first-stage relationship

Notes: Binned means are shown only for visual diagnosis. Formal first-stage inference uses country and year fixed effects and country-clustered standard errors.

Table J2. Annual CPI IV by monetary architecture

h	N	Countries	Rank	Condition no.	Wald F equal regimes	p	FS F MU	FS F PEG	FS F INT	FS F FLOAT
0.000	648.00	53.000	4.000	10.744	0.234	0.872	180.16	126.15	331.49	30.233
1.000	605.00	53.000	4.000	10.845	0.471	0.703	375.09	238.81	436.11	34.676
2.000	561.00	53.000	4.000	11.057	0.622	0.604	175.86	100.81	404.74	36.117
3.000	517.00	53.000	4.000	11.666	0.154	0.927	428.11	38.499	354.99	45.113
4.000	469.00	53.000	4.000	12.265	0.155	0.926	427.49	78.016	493.24	52.776

Notes: The external instrument strongly predicts export-price variation, but the equality of institutional CPI responses is not rejected at annual horizons 0-4. This establishes strong relevance of the published instrument in the merged sample without, by itself, proving exclusion or establishing causal effects of architecture.

J.2 AEJ Macro import/export narrative validation

Table J3. Import/export narrative first-stage audit

window	outcome	n	countries	b_zx	p_zx	b_zm	p_zm	joint_F	joint_p	own_F	own_p	event_x_n	event_m_n	system_rank	system_condition_number
1982-2019	dlnPx	1,406	38	9.852	1.34e-11	-1.140	0.283	22.894	3.38e-07	45.760	1.34e-11	170	136	2	8.663
1982-2019	dlnPm	1,406	38	-0.110	0.686	2.096	4.50e-14	32.466	7.21e-09	56.939	4.50e-14	170	136	2	8.663
2000-2019	dlnPx	760	38	10.807	4.01e-05	-2.412	0.387	9.411	4.96e-04	16.866	4.01e-05	45	39	2	7.813
2000-2019	dlnPm	760	38	0.069	0.916	2.757	1.62e-05	10.993	1.79e-04	18.591	1.62e-05	45	39	2	7.813

Table J4. Fully interacted import/export × regime IV diagnostics

h	n	countries	rank	cond	zx_MU	zm_MU	zx_PEG	zm_PEG	zx_INT	zm_INT	zx_FLOAT	zm_FLOAT	min_joint_F	median_joint_F
0.000	308.00	23.000	8.000	509.33	4.000	5.000	1.000	2.000	10.000	5.000	4.000	7.000	1.068	23.127
1.000	289.00	23.000	8.000	466.73	4.000	5.000	1.000	2.000	7.000	5.000	3.000	7.000	1.259	23.108
2.000	270.00	23.000	8.000	425.70	4.000	5.000	1.000	2.000	7.000	5.000	3.000	7.000	0.994	23.154
3.000	250.00	23.000	8.000	371.98	4.000	5.000	1.000	2.000	7.000	5.000	3.000	7.000	2.080	26.015
4.000	228.00	23.000	8.000	396.64	4.000	5.000	1.000	2.000	7.000	5.000	3.000	7.000	1.984	41.842

Notes: The separate import and export instruments are informative in the 38-country price panel, but the institutional system becomes weak and ill-conditioned after the sample is partitioned across MU/PEG/INT/FLOAT. The AEJ narrative exercise is therefore an identification stress test rather than a headline IV design.

Appendix K. Claim hierarchy, robustness map and interpretation discipline

Table K1. Empirical claim hierarchy

Component	Question	Design	Inference / controls	Role in manuscript	Allowed interpretation
H1	Institutional Adjustment Profiles	Quarterly Panel LP; import-cost shock; common four-outcome sample	Country + quarter FE; dynamic controls; robust inference	Headline empirical result; strongest current margin is CPI	Institutional heterogeneity, not causal regime adoption
H5	Shock contingency	Joint import-cost and export-income Panel LP	Driscoll–Kraay preferred audit; two-way cluster robustness	Central contribution	External shock transmission conditional on pre-existing architecture
H2	Institutional delegation	MU vs national PEG conditional on anchor-relative flexibility	Country FE + anchor×quarter FE; stable same-anchor sample	Secondary extension	Comparison conditional on observables, not regime-treatment effect
H4	Institutional capacity	CBIE moderation of joint import/export shocks	National regimes + common CBIE support preferred	Secondary diagnostic	No universal monotone CBIE stabilizer
H3	Reserve governance	CEMAC/ECCU vs national pegs; reserve-buffer proxy	Stable regimes; joint shocks; Driscoll–Kraay	Appendix diagnostic	Do not generalize to reserve pooling
External IV	External-instrument relevance and identification stress test	Juvenal–Petrella narrative export-price IV	Annual country + year FE; strong first stage	Identification stress test	Strong first-stage relevance under published narrative exclusion assumptions; no causal architecture effect
AEJ narrative H5	Import/export external validation	Di Pace–Juvenal–Petrella narrative episodes	Annual; limited institutional sample	Identification stress test	Weak after regime interactions; no headline IV claim

The hierarchy is substantive rather than cosmetic. H1 and H5 are the paper's empirical core. H2 asks a narrower institutional-delegation question. H4 and H3 are diagnostics with explicit support and measurement limitations. Narrative-IV exercises provide external-identification checks on shock variation under the published exclusion assumptions, but do not turn regime membership into a randomized treatment.

Table K2. Robustness architecture

Robustness / design choice	Purpose	Use
Common four-outcome sample	Ensures that differences across adjustment margins do not reflect changing country composition	Headline H1/H5
Outcome-specific samples	Checks external validity beyond the common sample	Robustness
Stable pre-shock regimes	Reduces contamination from regime transitions	Preferred robustness
Rolling CTOT weights	Predetermined three-year trade exposures	Baseline shock
Fixed CTOT weights	Tests sensitivity to changing exposure weights	Robustness
Two-way country×quarter clustering	Allows serial and common-time dependence in preliminary audits	Robustness
Driscoll-Kraay	Addresses cross-sectional dependence from common global shifters	Preferred H5/H3/H4 audit
Anchor-adjusted flexibility	Avoids misclassifying non-USD pegs as flexible because their anchor moves against USD	H2
Common CBIE support	Avoids extrapolation across non-overlapping capacity distributions	H4
Narrative external IV	Checks relevance and external	Identification stress test

Robustness / design choice	Purpose	Use
	identification of price-shock variation under published narrative assumptions	

Appendix L. Reproducibility architecture and file inventory

The empirical workflow is checkpointed so that each stage can be reproduced independently. The final replication package should contain the raw-source manifest or download instructions, processed master data where redistribution permits, do-files/scripts, all appendix tables, and a README recording the exact execution order.

Table L1. Empirical checkpoint inventory

Stage	Checkpoint package	Purpose
Master foundation	PLP_Foundation_Master_v1_ACTUAL.zip	Raw-to-foundation CTOT/AREAER/BIS/CBIE processing
Core master	PLP_Core_Master_v1.zip	Adds CPI/QNEA/reserves and core sample flags
H1/H2 audit	PLP_H1_H2_Audit_v2.zip	H1 audit and anchor-adjusted H2 design
H5	PLP_H5_Shock_Contingency_v1.zip	Joint import/export Panel LP and DK inference
H4	PLP_H4_Institutional_Capacity_v1.zip	CBIE support and capacity diagnostics
External IV	PLP_External_IV_Validation_v2.zip	Juvenal–Petrella external IV audit
AEJ H5 validation	PLP_AEJ_H5_External_Validation_v1.zip	Narrative import/export external validation
H3	PLP_H3_Reserve_Governance_Audit_v1.zip	Reserve-governance diagnostic

Table L2. Recommended replication order

Order	Stage	Action	Checkpoint
1	Foundation build	CTOT + AREAER + BIS FX + CBIE	PLP_Foundation_Master_v1_ACTUAL.zip
2	Core outcomes	Add CPI + QNEA real GDP + international reserves	PLP_Core_Master_v1.zip
3	H1/H2 audit	Build common sample, H1 diagnostics, anchor-adjusted H2	PLP_H1_H2_Audit_v2.zip
4	H5	Joint import/export PLPs with DK inference	PLP_H5_Shock_Contingency_v1.zip
5	H4	CBIE support and institutional-capacity diagnostics	PLP_H4_Institutional_Capacity_v1.zip
6	External IV	Juvenal-Petrella narrative export-price validation	PLP_External_IV_Validation_v2.zip
7	AEJ H5 validation	Narrative import/export shock stress test	PLP_AEJ_H5_External_Validation_v1.zip
8	H3	Reserve-governance diagnostic	PLP_H3_Reserve_Governance_Audit_v1.zip

Data-availability note. Several raw series originate from IMF and BIS platforms and may be subject to provider redistribution conditions. A submission-ready replication package should therefore include either redistributable extracts or deterministic download/construction scripts plus a source manifest. The public narrative-IV replication inputs should retain their original citations and license/readme files.

Interpretation note. No table in this appendix should be read as establishing the causal effect of adopting a monetary architecture. Any causal language concerning commodity-price shocks remains conditional on the maintained external-shock and exclusion assumptions; cross-architecture differences are not interpreted as causal effects of institutional adoption. Cross-architecture differences are reported as conditional institutional heterogeneity.

End of Supplementary Appendix.

Appendix M. Exact estimation-sample country lists

This appendix reports the exact country composition of the three estimation samples most frequently referenced in the manuscript. The lists are derived from the same country-coverage audit used in Appendix A. Sample membership is data-driven and may still vary slightly by horizon in local projections because forward outcomes are required.

M1. Common four-outcome H1 sample (101 economies)

Economy	ISO3	Observed regime(s)	Monetary union	First common year	Last common year
Albania	ALB	FLOAT		2000	2023
Argentina	ARG	PEG, INT, FLOAT		2017	2023
Armenia, Republic of	ARM	FLOAT, INT		2001	2023
Austria	AUT	MU	EURO	2000	2023
Bahamas, The	BHS	PEG		2015	2023
Belarus, Republic of	BLR	INT, PEG, FLOAT		2014	2023
Belgium	BEL	MU	EURO	2000	2023
Bosnia and Herzegovina	BIH	PEG		2005	2023
Botswana	BWA	PEG, INT		2006	2023
Brazil	BRA	FLOAT		2000	2023
Brunei Darussalam	BRN	PEG		2014	2023
Bulgaria	BGR	PEG		2000	2023
Cabo Verde	CPV	PEG		2007	2023
Canada	CAN	FLOAT		2000	2023
Chile	CHL	FLOAT		2000	2023
China, People's Republic of	CHN	PEG, INT		2011	2023
Colombia	COL	FLOAT, INT		2005	2023
Costa Rica	CRI	INT, FLOAT		2000	2023
Croatia, Republic of	HRV	INT, PEG, FLOAT	EURO	2000	2023
Cyprus	CYP	PEG, FLOAT, MU	EURO	2000	2023
Czech Republic	CZE	INT, FLOAT		2000	2023
Denmark	DNK	PEG		2000	2023
Dominican Republic	DOM	INT, FLOAT		2000	2023
Egypt, Arab Republic of	EGY	PEG, INT, FLOAT		2019	2023
El Salvador	SLV	PEG		2000	2017
Estonia, Republic of	EST	PEG, FLOAT, MU	EURO	2000	2023
Finland	FIN	MU	EURO	2000	2023
France	FRA	MU	EURO	2000	2023
Gambia, The	GMB	FLOAT, INT		2014	2023
Georgia	GEO	FLOAT, INT		2020	2023
Germany	DEU	MU	EURO	2000	2023
Ghana	GHA	FLOAT, INT		2014	2023
Greece	GRC	PEG, MU	EURO	2000	2023
Guatemala	GTM	INT, FLOAT		2013	2023
Honduras	HND	INT, PEG		2000	2023
Hungary	HUN	INT, PEG, FLOAT		2000	2023
Iceland	ISL	PEG, FLOAT		2000	2023
India	IND	FLOAT, INT		2004	2023
Indonesia	IDN	FLOAT, INT		2000	2023
Ireland	IRL	MU	EURO	2000	2023
Israel	ISR	INT, FLOAT		2000	2023
Italy	ITA	MU	EURO	2000	2023

Economy	ISO3	Observed regime(s)	Monetary union	First common year	Last common year
Jamaica	JAM	INT, FLOAT		2000	2023
Japan	JPN	FLOAT		2000	2023
Jordan	JOR	PEG		2000	2023
Kazakhstan, Republic of	KAZ	FLOAT, INT, PEG		2000	2023
Kenya	KEN	INT, FLOAT		2009	2023
Korea, Republic of	KOR	FLOAT		2000	2023
Latvia, Republic of	LVA	PEG, FLOAT, MU	EURO	2000	2023
Lesotho, Kingdom of	LSO	PEG		2007	2023
Lithuania, Republic of	LTU	PEG, FLOAT, MU	EURO	2000	2023
Luxembourg	LUX	MU	EURO	2000	2023
Malaysia	MYS	PEG, INT, FLOAT		2021	2023
Maldives	MDV	PEG, INT		2003	2023
Malta	MLT	PEG, FLOAT, MU	EURO	2000	2023
Mauritius	MUS	FLOAT, INT		2013	2023
Mexico	MEX	FLOAT		2000	2023
Moldova, Republic of	MDA	FLOAT, INT		2016	2023
Mongolia	MNG	FLOAT, INT, PEG		2015	2023
Montenegro	MNE	PEG		2007	2023
Morocco	MAR	PEG, INT		2014	2023
Mozambique, Republic of	MOZ	FLOAT, INT		2022	2023
Namibia	NAM	PEG		2013	2023
Netherlands, The	NLD	MU	EURO	2000	2023
Nicaragua	NIC	INT		2006	2023
Nigeria	NGA	INT, PEG		2010	2023
North Macedonia, Republic of	MKD	PEG, INT		2000	2023
Norway	NOR	INT, FLOAT		2000	2023
Pakistan	PAK	PEG, INT, FLOAT		2016	2023
Paraguay	PRY	INT, FLOAT		2000	2023
Peru	PER	FLOAT, INT		2007	2023
Philippines	PHL	FLOAT, INT		2000	2023
Poland, Republic of	POL	FLOAT		2000	2023
Portugal	PRT	MU	EURO	2000	2023
Qatar	QAT	PEG		2013	2016
Romania	ROU	INT, FLOAT		2000	2023
Russian Federation	RUS	FLOAT, INT, PEG		2011	2023
Rwanda	RWA	FLOAT, INT, PEG		2006	2023
Samoa	WSM	PEG		2013	2023
Saudi Arabia	SAU	PEG		2010	2023
Serbia, Republic of	SRB	INT, FLOAT		2006	2023
Seychelles	SYC	PEG, FLOAT		2014	2023
Singapore	SGP	INT, FLOAT		2000	2023
Slovak Republic	SVK	INT, PEG, FLOAT, MU	EURO	2000	2023
Slovenia, Republic of	SVN	INT, PEG, FLOAT, MU	EURO	2000	2023
South Africa	ZAF	FLOAT		2000	2023
Spain	ESP	MU	EURO	2000	2023
Sri Lanka	LKA	INT, FLOAT, PEG		2010	2023
St. Lucia	LCA	MU	ECCU	2006	2023

Economy	ISO3	Observed regime(s)	Monetary union	First common year	Last common year
St. Vincent and the Grenadines	VCT	MU	ECCU	2017	2022
Sweden	SWE	FLOAT		2000	2023
Switzerland	CHE	FLOAT, INT		2000	2023
Thailand	THA	FLOAT, INT		2003	2023
Trinidad and Tobago	TTO	PEG, INT		2012	2023
Türkiye, Republic of	TUR	INT, FLOAT		2000	2023
Uganda	UGA	FLOAT, INT		2016	2023
Ukraine	UKR	INT, PEG, FLOAT		2010	2023
United Kingdom	GBR	FLOAT		2000	2023
United States	USA	FLOAT		2000	2023
Uruguay	URY	INT, FLOAT		2016	2023
Zambia	ZMB	FLOAT, INT		2010	2023

Notes: Regime labels may contain multiple entries because the AREAER classification is time-varying. Monetary-union membership is coded separately from national exchange-rate arrangements.

M2. H4 common sample with lagged CBIE (91 economies)

Economy	ISO3	Observed regime(s)	Monetary union	First common year	Last common year
Albania	ALB	FLOAT		2000	2023
Argentina	ARG	PEG, INT, FLOAT		2017	2023
Austria	AUT	MU	EURO	2000	2023
Bahamas, The	BHS	PEG		2015	2023
Belarus, Republic of	BLR	INT, PEG, FLOAT		2014	2023
Belgium	BEL	MU	EURO	2000	2023
Bosnia and Herzegovina	BIH	PEG		2005	2023
Botswana	BWA	PEG, INT		2006	2023
Brazil	BRA	FLOAT		2000	2023
Brunei Darussalam	BRN	PEG		2014	2023
Bulgaria	BGR	PEG		2000	2023
Canada	CAN	FLOAT		2000	2023
Chile	CHL	FLOAT		2000	2023
China, People's Republic of	CHN	PEG, INT		2011	2023
Colombia	COL	FLOAT, INT		2005	2023
Costa Rica	CRI	INT, FLOAT		2000	2023
Croatia, Republic of	HRV	INT, PEG, FLOAT	EURO	2000	2023
Cyprus	CYP	PEG, FLOAT, MU	EURO	2000	2023
Czech Republic	CZE	INT, FLOAT		2000	2023
Denmark	DNK	PEG		2000	2023
Dominican Republic	DOM	INT, FLOAT		2000	2023
Egypt, Arab Republic of	EGY	PEG, INT, FLOAT		2019	2023
Estonia, Republic of	EST	PEG, FLOAT, MU	EURO	2000	2023
Finland	FIN	MU	EURO	2000	2023
France	FRA	MU	EURO	2000	2023
Gambia, The	GMB	FLOAT, INT		2014	2023
Georgia	GEO	FLOAT, INT		2020	2023
Germany	DEU	MU	EURO	2000	2023
Ghana	GHA	FLOAT, INT		2014	2023
Greece	GRC	PEG, MU	EURO	2000	2023
Guatemala	GTM	INT, FLOAT		2013	2023

Economy	ISO3	Observed regime(s)	Monetary union	First common year	Last common year
Hungary	HUN	INT, PEG, FLOAT		2000	2023
Iceland	ISL	PEG, FLOAT		2000	2023
India	IND	FLOAT, INT		2004	2023
Indonesia	IDN	FLOAT, INT		2000	2023
Ireland	IRL	MU	EURO	2000	2023
Italy	ITA	MU	EURO	2000	2023
Jamaica	JAM	INT, FLOAT		2000	2023
Japan	JPN	FLOAT		2000	2023
Jordan	JOR	PEG		2000	2023
Kazakhstan, Republic of	KAZ	FLOAT, INT, PEG		2000	2023
Kenya	KEN	INT, FLOAT		2009	2023
Korea, Republic of	KOR	FLOAT		2000	2023
Latvia, Republic of	LVA	PEG, FLOAT, MU	EURO	2000	2023
Lithuania, Republic of	LTU	PEG, FLOAT, MU	EURO	2000	2023
Luxembourg	LUX	MU	EURO	2000	2023
Malaysia	MYS	PEG, INT, FLOAT		2021	2023
Maldives	MDV	PEG, INT		2003	2023
Malta	MLT	PEG, FLOAT, MU	EURO	2000	2023
Mauritius	MUS	FLOAT, INT		2013	2023
Mexico	MEX	FLOAT		2000	2023
Moldova, Republic of	MDA	FLOAT, INT		2016	2023
Mongolia	MNG	FLOAT, INT, PEG		2015	2023
Montenegro	MNE	PEG		2007	2023
Morocco	MAR	PEG, INT		2014	2023
Namibia	NAM	PEG		2013	2023
Netherlands, The	NLD	MU	EURO	2000	2023
Nigeria	NGA	INT, PEG		2010	2023
North Macedonia, Republic of	MKD	PEG, INT		2000	2023
Norway	NOR	INT, FLOAT		2000	2023
Pakistan	PAK	PEG, INT, FLOAT		2016	2023
Paraguay	PRY	INT, FLOAT		2000	2023
Peru	PER	FLOAT, INT		2007	2023
Philippines	PHL	FLOAT, INT		2000	2023
Poland, Republic of	POL	FLOAT		2000	2023
Portugal	PRT	MU	EURO	2000	2023
Qatar	QAT	PEG		2013	2016
Romania	ROU	INT, FLOAT		2000	2023
Russian Federation	RUS	FLOAT, INT, PEG		2011	2023
Rwanda	RWA	FLOAT, INT, PEG		2006	2023
Saudi Arabia	SAU	PEG		2010	2023
Seychelles	SYC	PEG, FLOAT		2014	2023
Singapore	SGP	INT, FLOAT		2000	2023
Slovak Republic	SVK	INT, PEG, FLOAT, MU	EURO	2000	2023
Slovenia, Republic of	SVN	INT, PEG, FLOAT, MU	EURO	2000	2023
South Africa	ZAF	FLOAT		2000	2023
Spain	ESP	MU	EURO	2000	2023
Sri Lanka	LKA	INT, FLOAT, PEG		2010	2023
St. Lucia	LCA	MU	ECCU	2006	2023

Economy	ISO3	Observed regime(s)	Monetary union	First common year	Last common year
St. Vincent and the Grenadines	VCT	MU	ECCU	2017	2022
Sweden	SWE	FLOAT		2000	2023
Switzerland	CHE	FLOAT, INT		2000	2023
Thailand	THA	FLOAT, INT		2003	2023
Trinidad and Tobago	TTO	PEG, INT		2012	2023
Türkiye, Republic of	TUR	INT, FLOAT		2000	2023
Uganda	UGA	FLOAT, INT		2016	2023
Ukraine	UKR	INT, PEG, FLOAT		2010	2023
United Kingdom	GBR	FLOAT		2000	2023
United States	USA	FLOAT		2000	2023
Uruguay	URY	INT, FLOAT		2016	2023
Zambia	ZMB	FLOAT, INT		2010	2023

Notes: Regime labels may contain multiple entries because the AREAER classification is time-varying. Monetary-union membership is coded separately from national exchange-rate arrangements.

M3. Clean H2 MU/PEG sample (35 economies)

Economy	ISO3	Observed regime(s)	Monetary union	First common year	Last common year
Austria	AUT	MU	EURO	2000	2023
Bahamas, The	BHS	PEG		2015	2023
Belgium	BEL	MU	EURO	2000	2023
Bosnia and Herzegovina	BIH	PEG		2005	2023
Bulgaria	BGR	PEG		2000	2023
Cabo Verde	CPV	PEG		2007	2023
Cyprus	CYP	PEG, FLOAT, MU	EURO	2000	2023
Denmark	DNK	PEG		2000	2023
El Salvador	SLV	PEG		2000	2017
Estonia, Republic of	EST	PEG, FLOAT, MU	EURO	2000	2023
Finland	FIN	MU	EURO	2000	2023
France	FRA	MU	EURO	2000	2023
Germany	DEU	MU	EURO	2000	2023
Greece	GRC	PEG, MU	EURO	2000	2023
Honduras	HND	INT, PEG		2000	2023
Ireland	IRL	MU	EURO	2000	2023
Italy	ITA	MU	EURO	2000	2023
Jordan	JOR	PEG		2000	2023
Latvia, Republic of	LVA	PEG, FLOAT, MU	EURO	2000	2023
Lithuania, Republic of	LTU	PEG, FLOAT, MU	EURO	2000	2023
Luxembourg	LUX	MU	EURO	2000	2023
Maldives	MDV	PEG, INT		2003	2023
Malta	MLT	PEG, FLOAT, MU	EURO	2000	2023
Montenegro	MNE	PEG		2007	2023
Morocco	MAR	PEG, INT		2014	2023
Netherlands, The	NLD	MU	EURO	2000	2023
North Macedonia, Republic of	MKD	PEG, INT		2000	2023
Portugal	PRT	MU	EURO	2000	2023
Qatar	QAT	PEG		2013	2016
Saudi Arabia	SAU	PEG		2010	2023
Slovak Republic	SVK	INT, PEG, FLOAT, MU	EURO	2000	2023
Slovenia, Republic of	SVN	INT, PEG, FLOAT, MU	EURO	2000	2023
Spain	ESP	MU	EURO	2000	2023

Economy	ISO3	Observed regime(s)	Monetary union	First common year	Last common year
St. Lucia	LCA	MU	ECCU	2006	2023
St. Vincent and the Grenadines	VCT	MU	ECCU	2017	2022

Notes: Regime labels may contain multiple entries because the AREAER classification is time-varying. Monetary-union membership is coded separately from national exchange-rate arrangements.

Appendix N. Manuscript-completeness and reproducibility checklist

Table N1 records the items that should accompany the submission or final replication archive. It separates material required for the scientific argument from material required for reproducibility and editorial compliance.

Item	Required content	Location	Status
Main manuscript	Complete structured paper with abstract, contributions, theory, descriptive evidence, empirical strategy, H1/H5 headline results, secondary extensions, discussion, conclusion and references	Main submission	Prepared
Supplementary appendix	Country lists, variable dictionary, measurement rules, descriptives, full diagnostics, robustness and identification audits	Supplementary file	Prepared
Country/sample crosswalk	Exact H1 foundation, common-4, H4 and H2 membership, regime histories and union membership	Supplementary/replication	Prepared
Variable dictionary	Variable name, source, frequency, definition, construction and empirical role	Supplementary/replication	Prepared
Raw-data source manifest	IMF CTOT, AREAER, CPI, QNEA, IL; BIS FX; Romelli CBIE; external-IV replication sources	Replication README	Required for final archive
Processing code	Deterministic cleaning/merging scripts from raw inputs to master panel	Replication archive	Required for final archive
Estimation code	H1, H5, H2, H4, H3 and external-IV scripts with fixed seeds/settings where relevant	Replication archive	Prepared across checkpoints; consolidate
Figure/table source files	CSV inputs and publication figures corresponding to every reported table/figure	Replication archive	Prepared across checkpoints; consolidate
Data availability statement	Statement distinguishing redistributable processed outputs from provider-restricted raw data	Title page / submission system	Draft at submission stage
Code availability statement	Repository/archive location and execution order	Title page / submission system	Draft at submission stage
AI/competing-interest/funding statements	Journal-specific declarations	Submission system	Add once target journal format is fixed
Table/figure cross-references	Every table and figure cited in text and placement unambiguous	Main + supplement	Audit before submission
Claim discipline	No causal claim for regime adoption; shock-level causal language conditional on maintained external-shock/exclusion assumptions	Main + supplement	Locked

End of Supplementary Appendix.