KIEP Working Paper 26-01

Korea Institute for International Economic Policy

Explosive Depreciation and Expectation-Driven Overshooting: Evidence from the GSADF Test

Jee Won Park
Hyo Sang Kim

KIEP Korea Institute for International Economic Policy

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Price USD 3

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Published August 28, 2026 in Korea by KIEP
ISBN 978-89-322-4314-6 94320
978-89-322-4026-8 (set)
Price USD 3

This publication is printed on eco-friendly paper under
KIEP's ESG policy.

Executive Summary

This paper examines whether episodes of sharp depreciation in East and Southeast Asian currencies reflect currency-specific instability or the regional transmission of the global dollar cycle. We apply the generalized supremum augmented Dickey–Fuller (GSADF) test of Phillips et al. (2015) to U.S.-dollar exchange rates for ten Asian economies over 2006–2025 under three benchmark definitions: the raw bilateral rate, a PPP-adjusted misalignment measure, and a DXY-adjusted measure. We find recurrent explosive episodes across the region: the raw bilateral measure clusters around both the 2015–2017 U.S. monetary normalization cycle and 2022, whereas the PPP-based measure displays its strongest regional burst in 2022. However, regional clustering weakens substantially after DXY adjustment, especially in the periods centered on the main regional depreciation waves. These results indicate that much of the apparent explosiveness in bilateral U.S.-dollar exchange rates reflects common dollar-driven regional pressure rather than simultaneous episodes of currency-specific instability. Once broad dollar movements are removed, the remaining late-sample evidence is much narrower and concentrated mainly in the Japanese yen and, more briefly, the Korean won.

Keywords: Exchange Rate, Explosive Depreciation, Dollar Cycle, GSADF test
JEL Classification: C12, F31

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Explosive Depreciation and Expectation-Driven Overshooting: Evidence from the GSADF Test

Jee Won Park* and Hyo Sang Kim†

1. Introduction

Recent years have witnessed repeated episodes of broad-based currency depreciation across East and Southeast Asia, most visibly during the 2015–2016 U.S. monetary normalization cycle and again during the sharp dollar upswing of 2022. Such episodes are often discussed currency by currency, with emphasis on domestic macroeconomic fundamentals, policy credibility, or country-specific vulnerabilities. Yet their timing raises a broader interpretive question. When several Asian currencies weaken sharply against the U.S. dollar within a relatively narrow window, should these movements be understood as distinct episodes of currency-specific instability or as the regional manifestation of a common external force? The distinction matters for both empirical interpretation and policy. A region-wide episode driven mainly by common dollar conditions calls for a different reading, and potentially a different policy response, than simultaneous domestic crises across multiple economies.

A broad literature on the global financial cycle suggests that this distinction is first-order. Work on U.S. monetary policy, global risk conditions, and dollar dominance implies that bilateral U.S.-dollar exchange rates may embed a sizable common component associated with broad dollar conditions (Rey 2015; Bruno and Shin 2015; Miranda-Agrippino and Rey 2020; Gopinath et al. 2020). If so, statistical evidence of explosiveness in raw bilateral exchange rates need not map cleanly into currency-specific instability. What appears, in bilateral terms, as a cluster of separate depreciation episodes may instead reflect common regional exposure to the global dollar cycle.

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East and Southeast Asia provides a particularly informative setting in which to examine this issue. The ten economies in our sample span a wide range of exchange-rate arrangements, from relatively freely floating currencies such as the Japanese yen and Korean won, through various forms of managed floating, to the crawl-like arrangements of the Chinese yuan and Vietnamese dong and the basket-based framework of the Singapore dollar (Ilzetzki et al. 2019). This institutional heterogeneity reduces the plausibility of a single domestic explanation for region-wide exchange-rate pressure. At the same time, the region has repeatedly experienced clustered depreciations against the U.S. dollar during periods of broad dollar strength. That combination of cross-country heterogeneity and recurrent regional synchronization makes Asia-10 a natural laboratory for distinguishing between common dollar-driven movements and residual currency-specific dynamics.

This paper examines whether recent depreciation episodes in Asian currencies exhibit signs of statistical explosiveness and, if so, how those episodes should be interpreted once broad dollar movements are explicitly taken into account. We apply the generalized supremum augmented Dickey–Fuller (GSADF) test of Phillips et al. (2015) to the currencies of ten East and Southeast Asian economies over 2006–2025. The GSADF framework is well suited to this setting because exchange-rate pressure need not take the form of a single sustained episode; explosive dynamics may instead arise in recurrent, short-lived bursts separated by partial reversals. Our empirical strategy compares GSADF evidence across three measures of exchange-rate displacement: the raw nominal bilateral rate, a PPP-adjusted misalignment measure, and a measure adjusted for fluctuations in the U.S. Dollar Index (DXY). This design makes it possible to trace how the incidence and synchronization of explosive episodes change once relative-price movements and, more importantly, the common dollar component are filtered out. Our baseline adopts a no-drift specification so that persistent depreciations are not absorbed mechanically by a deterministic component.

The paper is motivated by a gap between two strands of the literature that have rarely been brought together explicitly. On one side, recursive ADF and GSADF studies have provided increasingly sophisticated tools for detecting explosive exchange-rate behavior, but most applications continue to evaluate explosiveness using raw bilateral U.S.-dollar exchange rates. On the other side, the global financial cycle literature implies that those same bilateral rates contain a strong common component associated with broad dollar conditions. The resulting tension is straightforward but important: if the benchmark series itself embeds a powerful common external force, then GSADF detections based on that series may overstate the extent of currency-specific instability. Existing work has not systematically examined how exchange-rate explosiveness inferences change when the benchmark is redefined to remove broad dollar movements. This paper addresses that omission directly.

We find recurrent episodes of statistically explosive depreciation across the region, but their interpretation depends crucially on benchmark choice. The raw bilateral measure exhibits its broadest clustering during the 2015–2017 normalization cycle, whereas the PPP-based measure records its sharpest regional burst in 2022. By contrast, regional clustering weakens markedly after DXY adjustment. The attenuation is especially clear in the two windows that bracket the main region-wide depreciation waves. Over 2013–2019, explosive currency-months fall from 242 in the raw bilateral measure to 43 in the PPP-based measure and to 38 in the DXY-adjusted measure. Over 2020–2025, they fall from 143 in the raw bilateral measure and 117 in the PPP-based measure to 34 after DXY adjustment. Overall, these patterns indicate that much of the broad, synchronized depreciation observed across East and Southeast Asia is better understood as the regional manifestation of the global dollar cycle than as a common wave of currency-specific instability.

This paper makes three contributions. First, it offers a substantive reinterpretation of exchange-rate explosiveness in Asia by showing that much of the apparent region-wide clustering in bilateral U.S.-dollar exchange rates reflects common dollar-driven regional pressure rather than simultaneous episodes of currency-specific instability. Second, it delineates the boundary of that interpretation. Once broad dollar movements are removed, the later-sample evidence is no longer region-wide but concentrated mainly in JPY and, more briefly, KRW, pointing to a much narrower residual set of country-specific mechanisms. Third, it shows that benchmark construction fundamentally shapes GSADF-based inference in exchange-rate applications. Relative to recursive ADF studies on raw bilateral U.S.-dollar rates, including Bettendorf and Chen (2013) and Hu and Oxley (2017), the paper demonstrates that inferences about the timing, breadth, and persistence of explosive episodes depend materially on whether broad dollar movements are explicitly removed.

The policy implication follows directly from this reinterpretation. If synchronized explosive depreciations mainly reflect common dollar shocks, the relevant policy margin is not to treat each bilateral depreciation wave as a separate domestic crisis requiring level defense. Rather, the emphasis should fall on resilience to global tightening through reserve adequacy, FX liquidity management, hedging capacity, and macroprudential buffers that slow the transmission of external dollar shocks to domestic balance sheets and financial conditions.

The remainder of the paper is organized as follows. Section 2 reviews the related literature. Section 3 describes the exchange-rate dynamics for Asian currencies. Section 4 presents the empirical methodology. Section 5 reports the empirical results, including robustness checks. Section 6 concludes.

2. Related Literature

This paper relates to several strands of the literature. It is most directly connected to research on explosive asset-price dynamics and to empirical applications of recursive right-tailed tests to exchange rates. These studies provide the econometric tools for detecting and dating episodes of locally explosive behavior, especially when such episodes are recurrent and short-lived. The paper also builds on work on exchange-rate fundamentals and exchange-rate dynamics, where the choice of benchmark is central to the interpretation of deviations from equilibrium. In addition, it is closely related to the international macro-finance literature on the global financial cycle and dollar dominance, which emphasizes that bilateral U.S.-dollar exchange rates contain not only currency-specific information but also a common dollar component shaped by U.S. monetary policy, global risk appetite, and international dollar liquidity conditions.

The econometric foundation of the paper comes from the literature on rational bubbles and explosive asset-price behavior. Early contributions such as Flood and Garber (1980) show how asset prices may deviate explosively from fundamentals, while Evans (1991) demonstrates that periodically collapsing bubbles can be difficult to detect using conventional full-sample tests. This concern motivates recursive testing procedures that allow explosive behavior to emerge only over particular subsamples. Phillips et al. (2011) develop the supremum augmented Dickey–Fuller (SADF) test for detecting explosive dynamics, and Phillips et al. (2015) extend the framework to the generalized supremum ADF (GSADF) test by allowing both the start and end points of the recursive estimation window to vary. This extension is particularly useful in exchange-rate applications because depreciation pressure often appears in repeated bursts separated by partial reversals. More recent work by Phillips and Shi (2020) propose a wild-bootstrap implementation of the procedure of Phillips et al. (2015) designed to mitigate the effects of unconditional heteroskedasticity and to account for the multiplicity issue inherent in recursive testing.

Applications of these methods to exchange rates have shown that evidence of explosiveness can be present but is sensitive to the definition of the exchange-rate benchmark. Bettendorf and Chen (2013) study the sterling–dollar exchange rate and show that evidence of bubbles becomes less straightforward once economically meaningful benchmarks are considered. Hu and Oxley (2017) apply recursive right-tailed tests to G10 and emerging-market currencies and find stronger evidence of exchange-rate bubbles in some emerging-market cases, while also showing that results depend on specification choices (with or without an intercept). These studies establish the relevance of GSADF-type methods for exchange-rate analysis. However, most existing applications focus on nominal and real exchange rates. This paper extends that literature by asking whether apparent explosiveness in bilateral exchange rates survives when exchange-rate movements are evaluated relative to alternative benchmarks, including a PPP-based measure and a DXY-adjusted measure that removes broad dollar movements.

The benchmark issue is closely related to a broader literature on exchange-rate fundamentals and exchange-rate regimes. The seminal work of Meese and Rogoff (1983) shows that structural exchange-rate models have difficulty outperforming a random walk, highlighting the empirical difficulty of identifying exchange-rate fundamentals. Rogoff (1996) reviews the purchasing-power-parity puzzle and emphasizes the persistence of real exchange-rate deviations, while Engel and West (2005) show that exchange rates may behave approximately like random walks even in models where they are linked to fundamentals. These contributions imply that deviations from a benchmark should be interpreted with caution. In the present paper, this point is central: evidence of explosive depreciation is not independent of the benchmark used to define exchange-rate pressure. Comparing raw bilateral rates, PPP-adjusted misalignment measures, and DXY-adjusted measures therefore provides a way to distinguish currency-specific depreciation pressure from movements driven by common dollar conditions.

Exchange-rate regimes further shape the interpretation of detected explosiveness. Calvo and Reinhart (2002) document the "fear of floating," showing that many economies that officially float their currencies nevertheless intervene heavily in foreign-exchange markets. Reinhart and Rogoff (2004) and Levy-Yeyati and Sturzenegger (2005) develop *de facto* approaches to classifying exchange-rate regimes, emphasizing that actual exchange-rate behavior may differ from official regime descriptions. Ilzetzki et al. (2019) provide an updated classification of exchange-rate arrangements and anchor choices, which is especially relevant for the East and Southeast Asian countries sample studied here. The region includes relatively flexible currencies, managed floats, crawl-like arrangements, and basket-based exchange-rate framework. As a result, the same GSADF signal may have different economic interpretations across countries. In more flexible regimes, residual explosiveness may more directly reflect market-driven depreciation pressure; in managed or crawl-like regimes, it may also reflect policy smoothing, administered adjustment, or the release of accumulated pressure.

The paper is also connected to the international macro-finance literature on the global financial cycle and the international role of the dollar. Rey (2015) argues that U.S. monetary policy and global risk conditions generate a global financial cycle that synchronizes capital flows, leverage, and asset prices across countries. Bruno and Shin (2015) identify dollar-denominated bank lending as an important transmission channel through which U.S. monetary conditions affect global financial conditions. Miranda-Agrippino and Rey (2020) document a dominant global factor in risky asset returns closely linked to U.S. monetary policy, while Gopinath et al. (2020) show that the dollar's dominant role in invoicing and pricing gives dollar fluctuations systemic effects beyond bilateral trade relationships. Related work by Avdjiev et al. (2019) links dollar strength to bank leverage and deviations from covered interest parity, and Lustig et al. (2011) identifies common risk factors in currency markets. Taken together, these studies imply that bilateral U.S.-dollar exchange rates are not simply country-specific relative prices; they also embed a common component associated with broad dollar conditions. This paper brings these literatures together by placing benchmark construction at the center of GSADF-based inference. Rather than treating explosiveness detected in raw bilateral U.S.-dollar exchange rates as direct evidence of currency-specific instability, the analysis evaluates how that inference changes across two alternative benchmark definitions: a PPP-based adjustment for relative-price movements and, more importantly, a DXY-based adjustment for the common dollar factor.

3. Exchange Rate Dynamics and Stylized Facts in East and Southeast Asia

This section motivates the formal tests by documenting three descriptive regularities for the 10 sample countries in East and Southeast Asia (Asia-10). Bilateral U.S.-dollar exchange rates contain a strong regional component associated with broad dollar movements; depreciation pressure appears in two main windows, around the 2015–2016 U.S. monetary-normalization cycle and the 2022 dollar upswing; and the persistence of depreciation differs materially across currencies and exchange-rate regimes. Figure 1 presents the full-sample regional pattern, while Figures 2 and 3 compare the two subperiods used in the empirical analysis.[1]

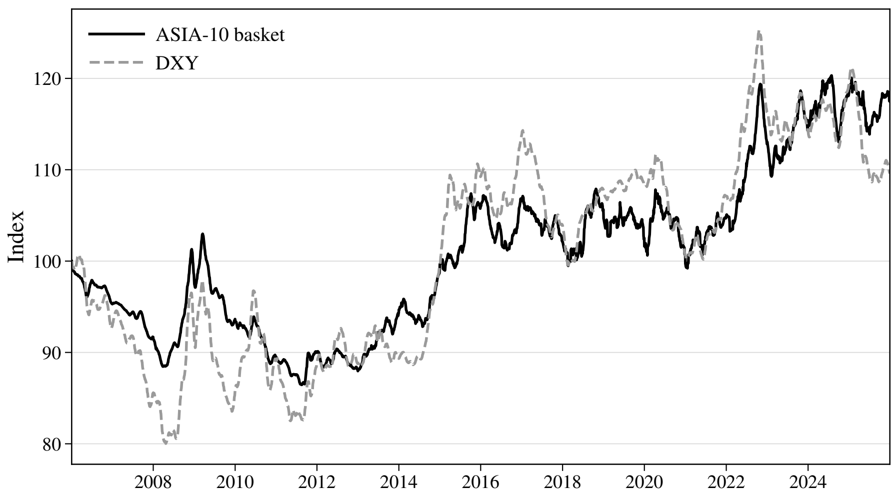
Figure 1 plots an equal-weighted Asia-10 currency basket against the U.S. Dollar Index (DXY), with both daily series rebased to January 3, 2006 = 100 and smoothed with a 20-business-day moving average. The two series co-move closely, with a level correlation of 0.94 over 2006–2025. The common component is especially visible during the 2015–2016 dollar upswing and the 2022 tightening episode, when broad dollar appreciation coincides with synchronized Asian-currency depreciation. This pattern is consistent with the global financial cycle view that U.S. monetary conditions and global risk sentiment generate common financial fluctuations across open economies (Rey, 2015, Bruno and Shin, 2015, Miranda-Agrippino and Rey, 2020). The relationship is not mechanical, however: after the late-2022 peak, the DXY partly retraces while the Asia-10 basket remains elevated, pointing to both a common external component and residual cross-country variation.

Figure 2 turns from the regional aggregate to individual currencies. Panel (a) shows a broad but heterogeneous depreciation wave around 2015–2016: Indonesia, Malaysia, and the Philippines carry more of the depreciation through to the end of the subperiod, whereas Japan, Korea, Thailand, and Taiwan display sharper interim stress followed by more visible reversal. Panel (b) shows a more synchronized run-up around 2022, followed by substantial cross-country divergence. The yen records the largest and most persistent depreciation, the won and rupiah also remain noticeably weaker, and the baht, ringgit, and Singapore dollar exhibit greater subsequent retracement. Thus, the two windows share a common regional component but differ in the persistence and country-level distribution of depreciation.

[1] The 2013–2019 and 2020–2025 windows bracket the two major regional depreciation waves: the taper-tantrum/normalization cycle centered on 2015–2016 and the post-pandemic tightening cycle centered on 2022. They also align with the formal evidence in Section 5, where synchronized explosive depreciation is most prevalent around 2016 and 2022.

Figure 3 summarizes the same distinction by comparing end-of-period cumulative depreciation with the maximum depreciation reached within each window. In 2013–2019, peak–end gaps are sizable for Thailand, Taiwan, and Japan, whereas Malaysia, Indonesia, and the Philippines carry more of the depreciation through to the end of the subperiod. The figure therefore shows that a common regional wave can combine temporary stress in some currencies with more durable repricing in others.

Figure 1: Asia-10 Currency Basket and the U.S. Dollar Index (DXY)



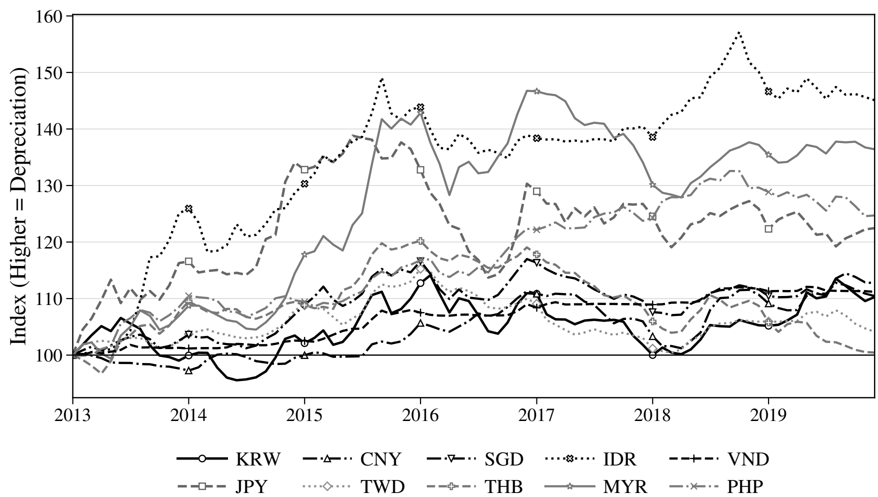
Notes: Daily series are rebased to January 3, 2006 = 100. The Asia-10 basket is the equal-weighted average of bilateral USD exchange-rate indices for China, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Taiwan, Thailand, and Vietnam, computed on common trading days (balanced panel). A 20-business-day moving average is applied to emphasize persistent comovement. Higher values indicate either a stronger U.S. dollar (DXY) or a weaker Asia-10 currency basket against the U.S. dollar.

In 2020–2025, the contrast is sharper. Japan, Korea, and Indonesia show persistent end-of-period depreciation, whereas Thailand and Malaysia experience sizable 2022 weakness followed by partial reversal. The Singapore dollar is again distinctive: it is not insulated from the 2022 dollar shock, but the initial depreciation is more than offset later in the sample. The main cross-country difference is therefore not only the peak amplitude of depreciation, but also the persistence of that depreciation after the immediate dollar shock subsides.

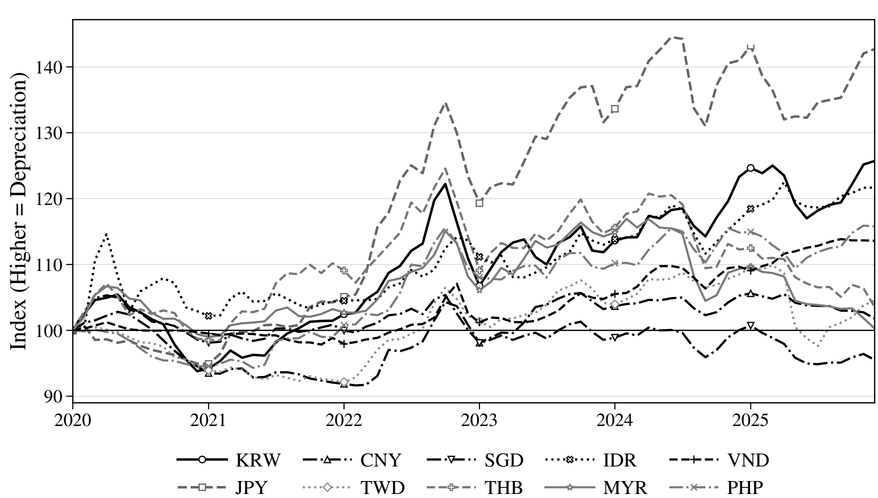
The contrast is sharper in the 2020–2025 window. Japan combines a very large cumulative depreciation of 42.7% with a negligible peak–end gap of 1.8 percentage points, indicating that most of the depreciation persisted rather than being rapidly unwound. Korea and Indonesia show a similar, though less extreme, pattern, with peak–end gaps of 0.0 and 0.8 percentage points, respectively. By contrast, Thailand and Malaysia display much larger peak–end gaps of 21.0 and 16.7 percentage points: both currencies undergo substantial depreciation during the 2022 episode, yet

Figure 2: Asia-10 Bilateral Exchange-Rate Indices against the U.S. Dollar

(a) 2013–2019



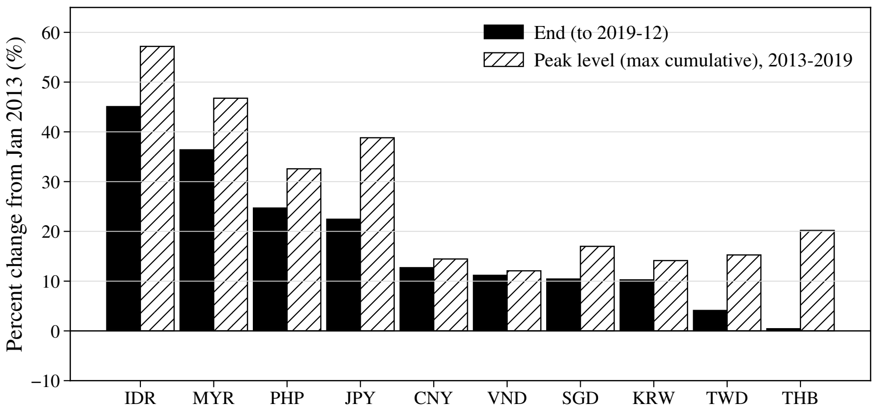
(b) 2020–2025



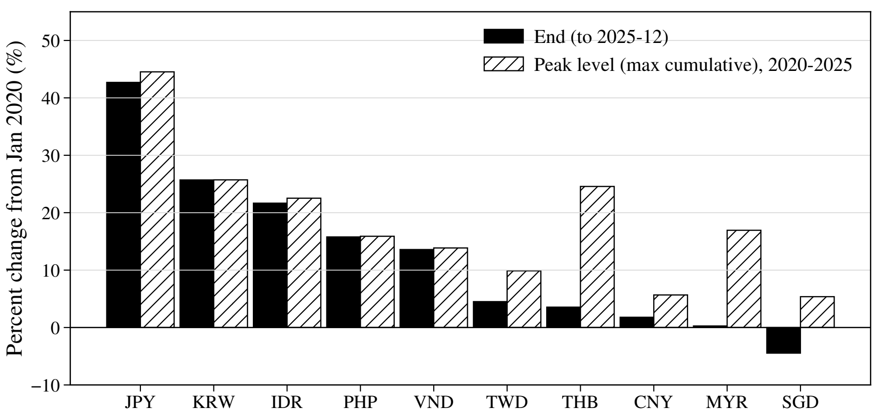
Notes: Monthly averages of bilateral nominal exchange rates (local currency units per U.S. dollar) are converted into index form. In panel (a), each series is rebased to January 2013 = 100; in panel (b), each series is rebased to January 2020 = 100. Formally, $I_{i,t} = 100 \times \bar{S}_{i,t}/\bar{S}_{i,0}$, where the base month 0 is panel-specific. Higher values indicate depreciation against the U.S. dollar.

Figure 3: Cumulative and Peak Depreciation of Asia-10 Currencies against the USD

(a) 2013–2019



(b) 2020–2025



Notes: Based on monthly averages. In panel (a), solid bars report the cumulative percent change from January 2013 to December 2019, while hatched bars report the maximum cumulative depreciation reached at any point during 2013–2019, both relative to January 2013. In panel (b), solid bars report the cumulative percent change from January 2020 to December 2025, while hatched bars report the maximum cumulative depreciation reached at any point during 2020–2025, both relative to January 2020. Negative values indicate net appreciation relative to the panel-specific base month.

a meaningful part of that weakness is subsequently reversed. The Singapore dollar is again an informative benchmark case. Its peak level of 5.4% above the January 2020 baseline indicates that it was not insulated from the regional dollar shock, but its end-of-period change of −4.5% shows that the shock was ultimately more than offset over the remainder of the sample. Thus, Figure 3 suggests that the main cross-country difference lies not merely in the amplitude of depreciation at the height of stress, but in the persistence of those movements once the immediate dollar shock subsides.

The heterogeneity of exchange-rate arrangements across the region provides useful context for interpreting these patterns. Table 1 summarizes the latest available IMF AREAER de facto exchange-rate arrangement classifications for the economies in the sample. As of the 2023 AREAER classification, Japan is classified as free floating; Indonesia, Korea, Malaysia, the Philippines, and Thailand are classified as floating; China is classified as an other managed arrangement; Vietnam is classified as a stabilized arrangement; and Singapore is classified as a crawl-like arrangement with a composite exchange-rate anchor. The IMF classification is complemented by the de facto regime chronologies of Ilzetzki et al. (2019), which are useful for identifying exchange-rate anchors and regime behavior over longer historical periods.

This institutional heterogeneity also matters because similar bilateral movements against the U.S. dollar may have different economic meanings across regimes. In floating regimes, persistent depreciation can be interpreted more directly as market-driven exchange-rate pressure, although intervention and smoothing may still occur. In managed or stabilized regimes, long sequences of one-sided movements in the bilateral U.S.-dollar rate may partly reflect policy management, crawl-like adjustment, or the release of accumulated pressure.

In summary, the descriptive evidence motivates three stylized facts. Bilateral Asian exchange rates contain a strong common dollar component; regional depreciation waves appear both in the mid-2010s and in 2022; and country-level dynamics differ in persistence and regime interpretation. These facts motivate the GSADF analysis below, which asks whether visually synchronized depreciation episodes remain explosive once relative-price movements and the common dollar factor are filtered out.

Table 1: Exchange-Rate Regime Classifications of Asia-10 Countries

Currency	IMF AREAER *de facto* arrangement (2005–2023)	IRR(2019)	Anchor or monetary framework
CNY	Crawl-like (2005–2008, 20102019); Stabilized / de facto USD peg (20082010); Other managed (2020–Present)	2 (narrow band, peg vs. USD)	Monetary aggregate target
IDR	Floating	3 (Managed floating)	Inflation-targeting
JPY	Free floating	4 (Free floating)	Inflation-targeting
KRW	Floating	4 (Free floating)	Inflation-targeting
MYR	Floating	3 (Managed floating vs. basket)	Other framework
PHP	Floating	3 (Managed floating)	Inflation-targeting
SGD	Crawl-like / Stabilized	2 (De facto band vs. basket)	Composite exchange-rate anchor
THB	Floating	3 (Managed floating)	Inflation-targeting
TWD	Not reported	3 (Managed floating vs. USD)	Monetary aggregate target
VND	Crawling peg (–2015); Stabilized arrangement(2016–Present)	2 (De facto crawling peg, stabilized arrangement)	Composite exchange-rate anchor

Notes: IMF AREAER 2023 reports the latest available de facto exchange-rate arrangement classification used in this paper. The IRR (2019) column summarizes the de facto exchange-rate-regime characterization in Ilzetzki et al. (2019).
Sources: IMF AREAER (2023); Ilzetzki et al. (2019).

4. Empirical Methodology

4.1 Exchange Rates, Fundamentals, and Explosive Dynamics

We allow the nominal exchange rate to contain an explosive deviation from a benchmark value. Following the standard asset-pricing framework, the exchange rate can be decomposed as

$$s_t = s_t^f + e_t \tag{1}$$

where s_t denotes the logarithm of the nominal exchange rate, s_t^f represents the equilibrium exchange rate determined by economic fundamentals, and e_t is a residual component that may display explosive behavior.

The residual component is assumed to follow

$$e_t = (1 + \rho)e_{t-1} + \varepsilon_t \tag{2}$$

where $\rho > 0$ and ε_t is an error. Under this specification, the residual component follows an explosive autoregressive process, with an autoregressive root greater than unity. As a result, the observed exchange rate may exhibit locally explosive behavior over some subsamples.

In what follows, however, the term *statistical explosiveness* is used in a deliberately statistical rather than structural sense. A GSADF rejection identifies temporary right-tailed explosiveness in the observed exchange-rate series or in a benchmark-adjusted deviation from fundamentals; it does not, by itself, distinguish among speculative expectations, policy-regime shifts, discrete administrative devaluations, or other mechanisms that may also generate locally explosive behavior. For that reason, the empirical objective of the paper is to detect and date episodes of *statistical explosiveness* and then interpret their sensitivity to alternative benchmark definitions.

The specification of the benchmark component s_t^f depends on the economic benchmark used in the analysis. In this paper we consider three alternative specifications. First, s_t^f can be treated as a constant, in which case the nominal exchange rate itself is tested for explosive dynamics. Second, s_t^f is defined by price differentials between the domestic economy and the United States, consistent with the purchasing power parity (PPP) framework. Third, s_t^f incorporates a common dollar factor proxied by the U.S. Dollar Index (DXY), which captures broad dollar movements and the external financial environment shared by all bilateral exchange rates in the sample.

To make these alternatives operational, let $S_{i,t}$ denote the bilateral nominal exchange rate (local currency units per U.S. dollar), P_t^{US} the U.S. price index, $P_{i,t}$

the domestic price index, and DXY_t the U.S. Dollar Index. We then examine three variables:

$$x_{i,t}^{N} = \log S_{i,t}, \tag{3}$$
$$x_{i,t}^{PPP} = \log S_{i,t} + \log P_t^{US} - \log P_{i,t}, \tag{4}$$
$$x_{i,t}^{DXY} = \log S_{i,t} - \log DXY_t. \tag{5}$$

The raw nominal rate $x_{i,t}^{N}$ captures bilateral depreciation against the U.S. dollar in its most direct form. The PPP-based measure $x_{i,t}^{PPP}$ evaluates exchange-rate pressure relative to a relative-price benchmark, while the DXY-adjusted measure $x_{i,t}^{DXY}$ isolates exchange-rate pressure relative to the global dollar cycle rather than merely against the dollar in absolute terms. This three-way comparison is central to the empirical design: if apparent explosiveness in the raw or PPP-based measure weakens materially once DXY_t is removed, the evidence points to a dominant common dollar factor rather than to a purely idiosyncratic currency-specific mechanism.

4.2 The GSADF Test

To examine whether exchange rate movements exhibit episodically explosive behavior, we employ the generalized supremum augmented Dickey–Fuller (GSADF) test developed by Phillips et al. (2015). The procedure is well suited to the present application because exchange-rate pressure need not take the form of a single sustained episode; instead, it may arise in recurrent bursts separated by partial corrections. Recursive right-tailed tests are designed to detect and date such episodic departures from unit-root behavior. The empirical strategy interprets those detections across benchmark definitions. Rather than treating every rejection in a raw bilateral exchange rate as direct evidence of a currency-specific source of explosiveness, we examine whether the timing and duration of detected episodes survive progressively stricter benchmark adjustments.

Let x_t denote the time series variable of interest at time t. In the baseline specification, a rise in x_t corresponds to a depreciation of the domestic currency against the U.S. dollar. Following the recursive ADF framework, we estimate

$$\Delta x_t = d_{r_1,r_2} + \beta_{r_1,r_2} x_{t-1} + \sum_{j=1}^{k} \psi_{j,r_1,r_2} \Delta x_{t-j} + \varepsilon_t, \tag{6}$$

over subsamples indexed by the fractional window $[r_1, r_2]$, where $0 \leq r_1 < r_2 \leq 1$. The null hypothesis is a unit root, $H_0 : \beta_{r_1,r_2} = 0$, against the right-tailed alternative of local explosiveness, $H_1 : \beta_{r_1,r_2} > 0$. For each estimation window, the corresponding right-tailed ADF statistic is denoted by $ADF_{r_1}^{r_2}$. Because an increase in each benchmark variable corresponds to a stronger U.S. dollar or a weaker domestic currency, the right-tailed alternative is directly aligned with the notion of explosive depreciation.

Two deterministic specifications are considered. In the baseline *no-drift* specification, $d_{r_1,r_2} = 0$. In the alternative *drift* specification, $d_{r_1,r_2} = \alpha_{r_1,r_2}$ is estimated freely. This distinction is economically important in exchange-rate applications because including a constant can make the right-tailed test more conservative by absorbing part of a gradual upward shift that might otherwise contribute to explosive detection (Hu and Oxley, 2017). For transparency, the baseline results are reported under the no-drift specification, while drift-inclusive results are used to assess whether the paper's central inference remains robust across benchmark definitions.

The GSADF statistic generalizes the SADF test by allowing both the starting point and the endpoint of the recursive window to vary, rather than fixing the initial observation at the beginning of the sample.[2] The resulting GSADF statistic is given by

$$GSADF(r_0) = \sup_{\substack{r_2 \in [r_0, 1] \\ r_1 \in [0, r_2 - r_0]}} \left\{ ADF_{r_1}^{r_2} \right\}. \tag{7}$$

For episode dating, we use the backward SADF sequence,

$$BSADF_{r_2}(r_0) = \sup_{r_1 \in [0, r_2 - r_0]} \left\{ ADF_{r_1}^{r_2} \right\}, \tag{8}$$

and date an episode as beginning when the $BSADF$ statistic first exceeds its corresponding pointwise critical value and as ending when it subsequently falls below that threshold. In the empirical implementation, the paper focuses on positive episodes because the object of interest is explosive depreciation, and the minimum episode duration is set to one month.

The GSADF procedure is designed to identify locally explosive behavior, and the economic interpretation therefore turns on how detections change across the three benchmark variables. The discussion in Section 5 accordingly places greatest weight on the pattern of attenuation across benchmarks.

[2] The SADF test of Phillips et al. (2011) is nested as the special case in which the recursive window always begins at the start of the sample.

4.3 Data and Model Specification

The empirical analysis focuses on bilateral nominal exchange rates against the U.S. dollar for ten East and Southeast Asian economies: China, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Thailand, Taiwan, and Vietnam. Daily exchange rate data are obtained from Bloomberg and converted to monthly frequency by taking monthly averages. The sample period spans January 2006 to December 2025. The exchange rate variable is defined as the logarithm of the domestic currency price of one U.S. dollar, so that an increase in the series corresponds to a depreciation of the domestic currency.

The benchmark variables in equations (4) and (5) are constructed on the same monthly calendar as the exchange-rate data. The PPP-based series uses the domestic CPI and the U.S. CPI to proxy the relative-price component, yielding a real-misalignment measure $\log(S_{i,t}P_t^{US}/P_{i,t})$. The DXY-adjusted series is defined as $\log S_{i,t} - \log DXY_t$, where DXY_t corresponds to the ICE U.S. Dollar Index obtained from Bloomberg. All constituent series are converted to monthly averages prior to construction.

The GSADF test is implemented with a parsimonious no-lag structure ($k = 0$) in the recursive ADF regressions. As noted by Bettendorf and Chen (2013), overfitting the lag order may reduce the power of right-tailed unit root tests and distort their finite-sample size. The minimum window size follows the data-dependent rule of Phillips et al. (2015),

$$m_0 = \left\lfloor \left(0.01 + \frac{1.8}{\sqrt{T}}\right) T \right\rfloor, \tag{9}$$

where T is the total number of monthly observations. For the full 2006–2025 sample of $T = 240$ months, this yields $m_0 = 36$ months. Baseline critical values are obtained using the wild-bootstrap procedure proposed by Phillips and Shi (2020), which is designed to lessen the effects of unconditional heteroskedasticity and to account for the multiplicity problem in recursive testing. Monte Carlo critical values are retained for appendix material and robustness comparisons, but the tables and figures in the main text are anchored to the no-drift, no lag, and wild-bootstrap design.

As described above, the main text emphasizes the no-drift, no lag, and wild-bootstrap baseline; a later robustness subsection within Section 5 reports drift-inclusive results, alternative lag choices, and the no-drift Monte Carlo benchmark. The central empirical claim is that synchronized explosiveness is prominent in the raw and PPP-based measures around the main dollar-tightening episodes, but attenuates materially once the DXY component is removed.

4.4 Benchmark-Based Interpretation Strategy

The paper's interpretation strategy relies on benchmark variation. The GSADF test is applied to the same currency under three benchmark definitions, and differences in episode timing and duration are used to infer whether detected explosiveness primarily reflects raw bilateral depreciation, relative-price misalignment, or the common dollar factor. The first comparison is between the raw nominal rate and the PPP-based measure. If explosiveness appears in both, the evidence is less likely to be an artifact of nominal bilateral scaling alone. The second, and more important, comparison is between the raw or PPP-based measure and the DXY-adjusted measure. If an episode is prominent in $x_{i,t}^{N}$ or $x_{i,t}^{PPP}$ but weakens materially in $x_{i,t}^{DXY}$, the evidence points to a broad dollar shock common to many bilateral rates. If, by contrast, explosiveness survives DXY adjustment, the residual episode is more plausibly associated with country-specific or regional forces that lie beyond the common dollar cycle.

This strategy also helps discipline the interpretation of mechanically strong detections in raw nominal rates. In some currencies, especially under managed or crawling arrangements, a long sequence of positive monthly changes in the raw bilateral rate may produce lengthy detections under no-drift specifications. Such findings are still informative, but they should not automatically be read as evidence of a country-specific explosive depreciation episode. For that reason, the discussion in Section 5 places greatest weight on patterns that are economically interpretable across benchmarks: synchronized explosiveness around common dollar-tightening episodes in the raw and PPP-based measures, substantial attenuation after DXY adjustment, and a narrower set of residual episodes that remain after the common dollar component is removed.

Accordingly, the key empirical question for the next section is not whether some explosive-looking episodes can be found in the Asia-10 sample. Rather, it is whether the broad synchronization documented in Section 3 continues to appear once one moves from the raw bilateral rate to benchmark-adjusted measures. The next section applies this benchmark-based framework to the Asia-10 sample and evaluates the resulting episode patterns across the three benchmark definitions.

5. Main Results

5.1 Baseline Episode Dating and Regional Synchronization

Figure 4 presents the main empirical results of the paper by summarizing the timing of explosive depreciation episodes across the 10 East and Southeast Asian currencies identified using the GSADF procedure. Each shaded cell indicates a month in which the corresponding currency is classified as exhibiting locally explosive depreciation under the baseline specification. Unless otherwise noted, the results in this section refer to the baseline no-drift, no lag design with wild-bootstrap critical values. The figure reports results under three alternative specifications of the benchmark variable: the nominal exchange rate itself, the PPP-based misalignment measure, and the misalignment measure adjusted for movements in the U.S. dollar index (DXY).

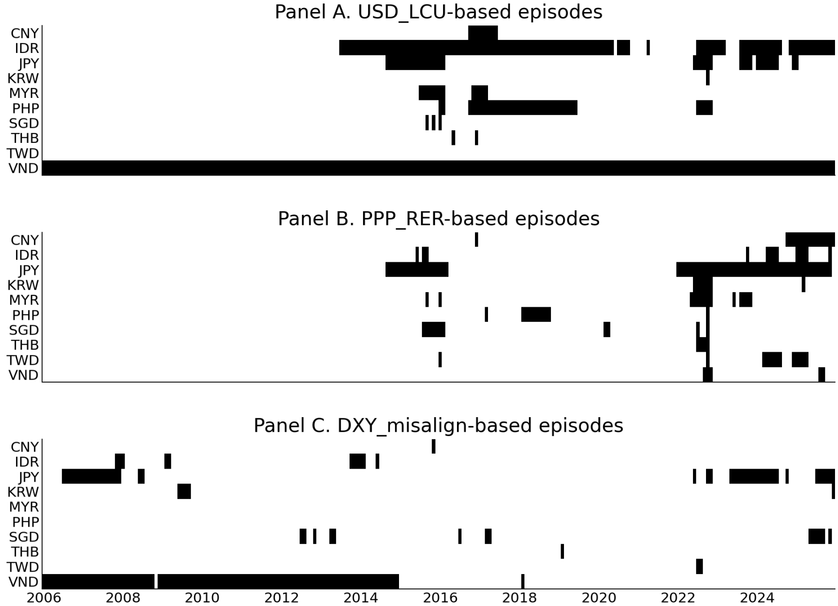
A striking feature of Figure 4 is the recurrence of synchronized explosive episodes around major dollar-tightening phases. In the raw USD/LCU block, synchronization rises sharply during the 2015–2017 normalization cycle, reaching six currencies in January and December 2016, and rises again to five currencies in October 2022. In the PPP-based block, the mid-2010s cluster is more limited, peaking at four currencies, but the 2022 burst is markedly sharper and broader, reaching eight currencies in October 2022. The DXY-adjusted block, by contrast, remains much sparser in both episodes. The figure therefore suggests that region-wide explosive depreciation is not purely idiosyncratic: it is episodic, synchronized, and closely aligned with broad external pressure.

The exchange-rate regime information discussed in Section 3 helps qualify this baseline pattern. For currencies classified as floating or free floating, such as JPY, KRW, IDR, PHP, and THB, detected episodes in raw or PPP-based measures can be interpreted more directly as market-driven depreciation pressure, although intervention and smoothing may still occur. For more managed, stabilized, or basket-based regimes, the interpretation is less direct. In CNY and VND, one-sided movements in the bilateral dollar rate may partly reflect policy management or gradual adjustment rather than purely market-based explosiveness.

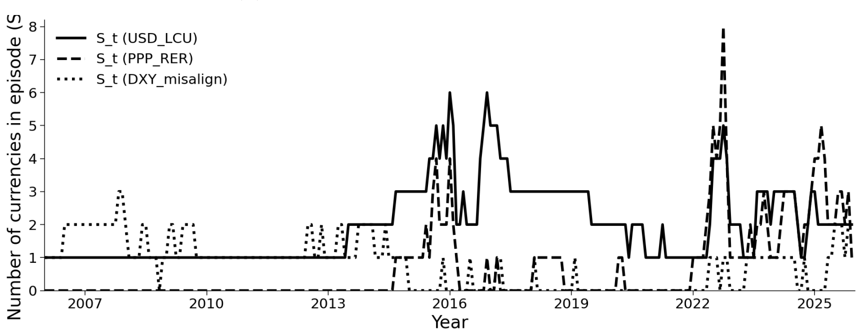
This regime distinction can be particularly important for the raw nominal measure. Long sequences of gradual depreciation in managed or stabilized arrangements can generate right-tailed GSADF detections even when the underlying mechanism is closer to crawl-like or administered adjustment than to a speculative currency

Figure 4: Explosive Depreciation Episodes (Baseline: No Drift)

(a) By Currencies



(b) Number of Currencies in Episodes



Notes: A shaded cell indicates that the currency is classified as being in an explosive episode in that month under the baseline GSADF specification (no drift, wild-bootstrap critical values). Within each subfigure, the first block corresponds to the nominal USD/LCU measure, the second to the PPP-based misalignment measure, and the third to the DXY-adjusted measure.

episode. For that reason, the baseline heatmap can be interpreted as evidence of statistical explosiveness in the observed series, not as direct evidence of a common wave of currency-specific crises. The benchmark comparisons below provide a more disciplined interpretation by asking whether detected episodes remain after relative-price movements and broad dollar movements are filtered out.

5.2 Attenuation after DXY Adjustment

Regional synchronization weakens sharply once the common dollar component is removed. Figure 4 shows this attenuation visually, and Table 2 reports the corresponding incidence statistics by currency, benchmark, and sample window. The table consolidates the aggregate and country-level evidence by reporting explosive currency-months for each of the three exchange-rate measures.

The attenuation is most transparent in the two windows that contain the main regional depreciation waves. In 2013–2019, explosive currency-months fall from 242 under the raw nominal measure to 43 under the PPP-based measure and 38 under the DXY-adjusted measure. This sharp raw-to-PPP compression is informative. Since

$$x_{i,t}^{PPP} = \log S_{i,t} + \log P_t^{US} - \log P_{i,t}, \tag{10}$$

nominal dollar appreciation contributes to PPP-based explosiveness only to the extent that it is not offset by relative-price movements. In the mid-2010s, U.S. inflation was low, and the relative-price term did not systematically amplify bilateral dollar appreciation across the region. The raw USD/LCU series therefore captures a broad dollar-strength episode in 2015–2017, whereas the PPP-based series displays a much weaker and less synchronized signal.

The post-2020 window differs in an important respect. In 2020–2025, PPP adjustment leaves 117 explosive currency-months, while DXY adjustment reduces the count to 34. The 2022 episode combined sharp dollar appreciation with a global inflation shock and unusually high U.S. inflation relative to the low-inflation mid-2010s. Through the term $\log P_t^{US} - \log P_{i,t}$, the PPP transformation can therefore reinforce, rather than offset, nominal depreciation for a broad set of currencies. This helps explain why PPP-based explosiveness is concentrated in 2022 rather than appearing with comparable strength in both regional depreciation waves. Yet the subsequent DXY adjustment removes most of this regional co-movement. During calendar year

2022, the raw and PPP-based measures reach five and eight simultaneous currencies, respectively, whereas the DXY-adjusted index never exceeds one. The relevant conclusion is therefore not that PPP-based explosiveness is absent, but that its broad 2022 synchronization is largely associated with the common dollar cycle.

The full-sample comparison requires more caution. Although the raw nominal measure produces the largest number of detections over 2006–2025, at 469 currency-months, the full-sample DXY-adjusted total, 187, exceeds the PPP-based total, 160. This inversion is driven primarily by VND, with a smaller contribution from SGD, rather than by a broad residual regional wave after DXY adjustment. PPP and DXY adjustments are not nested filters: the former removes relative-price differentials, whereas the latter removes the common dollar factor. Under managed or basket-based exchange-rate arrangements, the two transformations need not reduce detected episodes in the same order. For this reason, cross-benchmark attenuation is most informative when evaluated within the two regional-depreciation windows identified in Section 3, rather than in an undifferentiated full-sample total that pools distinct historical regimes.

The attenuation is also not confined to the initial 2022 shock. In March 2025, the PPP-based measure identifies five currencies in explosive episodes, whereas the DXY-adjusted measure identifies none. More generally, the DXY-adjusted synchronization index never exceeds two currencies in any month of the 2020–2025 window. Removing the common dollar component therefore attenuates not only the late-2022 cluster, but also later bursts that appear regionally synchronized under the PPP benchmark.

Overall, the evidence indicates that much of the broad regional explosiveness observed in raw bilateral exchange rates, and in the later sample in PPP-based exchange rates, reflects the regional transmission of the global dollar cycle rather than a common wave of currency-specific instability.

Table 2: Explosive Currency-Months by Benchmark and Sample Period under the Baseline Wild-Bootstrap Specification

	2006–2025			2013–2019			2020–2025		
Currency	Raw	PPP	DXY	Raw	PPP	DXY	Raw	PPP	DXY
CNY	9 (3.8)	16 (6.7)	1 (0.4)	9 (10.7)	1 (1.2)	1 (1.2)	0 (0.0)	15 (20.8)	0 (0.0)
IDR	124 (51.7)	13 (5.4)	11 (4.6)	78 (92.9)	3 (3.6)	6 (7.1)	46 (63.9)	10 (13.9)	0 (0.0)
JPY	37 (15.4)	66 (27.5)	45 (18.8)	18 (21.4)	19 (22.6)	0 (0.0)	19 (26.4)	47 (65.3)	25 (34.7)
KRW	1 (0.4)	7 (2.9)	5 (2.1)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.4)	7 (9.7)	1 (1.4)
MYR	13 (5.4)	14 (5.8)	0 (0.0)	13 (15.5)	2 (2.4)	0 (0.0)	0 (0.0)	12 (16.7)	0 (0.0)
PHP	40 (16.7)	11 (4.6)	0 (0.0)	35 (41.7)	10 (11.9)	0 (0.0)	5 (6.9)	1 (1.4)	0 (0.0)
SGD	3 (1.3)	11 (4.6)	14 (5.8)	3 (3.6)	7 (8.3)	5 (6.0)	0 (0.0)	4 (5.6)	6 (8.3)
THB	2 (0.8)	4 (1.7)	1 (0.4)	2 (2.4)	0 (0.0)	1 (1.2)	0 (0.0)	4 (5.6)	0 (0.0)
TWD	0 (0.0)	13 (5.4)	2 (0.8)	0 (0.0)	1 (1.2)	0 (0.0)	0 (0.0)	12 (16.7)	2 (2.8)
VND	240 (100.0)	5 (2.1)	108 (45.0)	84 (100.0)	0 (0.0)	25 (29.8)	72 (100.0)	5 (6.9)	0 (0.0)
Total	469 (19.5)	160 (6.7)	187 (7.8)	242 (28.8)	43 (5.1)	38 (4.5)	143 (19.9)	117 (16.3)	34 (4.7)

Notes: Each entry reports explosive currency-months, with the corresponding within-period share in parentheses, under the baseline GSADF specification (no drift, no lag, wild-bootstrap critical values at the 95% level). For individual currencies, denominators are 240 months for 2006–2025, 84 months for 2013–2019, and 72 months for 2020–2025. In the total row, denominators are the corresponding counts of currency-month observations (2,400; 840; and 720). Detailed dated episodes for each benchmark variable and period are reported in Appendix Tables A1–A3.

5.3 Country-Level Heterogeneity across Regimes and Periods

Table 2 reveals substantial heterogeneity in the extent to which attenuation varies across currencies and periods. This heterogeneity is economically informative because it depends systematically on both the benchmark used to define misalignment and the exchange-rate regime under which the bilateral rate is observed. In 2013–2019, the raw bilateral measure identifies extensive episodes for IDR, PHP, VND, JPY, and MYR. After PPP and DXY adjustment, however, the residual set narrows sharply. DXY-adjusted detections are concentrated mainly in VND, IDR, and SGD, while the JPY cluster visible in the raw and PPP-based measures during 2014–2016 disappears once the common dollar component is removed.

For floating currencies, this pattern indicates that much of the mid-2010s raw depreciation pressure reflected broad dollar strength rather than persistent currency-specific explosiveness. The disappearance of the JPY cluster after DXY adjustment is particularly useful in this respect. Since the yen is classified as free floating, its mid-2010s raw and PPP-based detections might otherwise be read as evidence of Japan-specific depreciation pressure. The DXY-adjusted evidence suggests instead that this episode was primarily part of the global dollar cycle. A similar logic applies to IDR: the compression of rupiah detections after PPP and DXY adjustment cautions against interpreting the large raw signal in 2013–2019 as continuous domestic instability, despite Indonesia's floating classification in the latest IMF AREAER framework.

For managed, stabilized, or basket-based regimes, the residual detections require a different interpretation. VND records 25 DXY-adjusted months in 2013–2019, but Vietnam's exchange-rate arrangement is better characterized as stabilized or crawl-like over much of the sample. A prolonged sequence of gradual adjustments can therefore generate right-tailed evidence in a no-drift recursive test without implying the same mechanism as a market-driven depreciation episode in a freely floating currency. SGD records five DXY-adjusted months in 2013–2019, but Singapore's monetary framework targets a trade-weighted exchange-rate basket rather than the bilateral USD/SGD rate. Detections in USD/SGD should therefore be interpreted as bilateral deviations against the U.S. dollar, not as evidence of pressure on a bilateral dollar target.

The post-2020 residual map is markedly different. In 2020–2025, CNY, IDR, MYR, PHP, THB, and VND record no DXY-adjusted months; KRW and TWD record only one and two months, respectively; SGD records six; and JPY alone accounts for 25. The later-sample residual evidence is therefore not regional in scope. It is concentrated primarily in the yen, with only short-lived signals elsewhere. This concentration is central to the attenuation result: the broad synchronization observed in the raw and PPP-based panels collapses to a narrow and uneven residual set once the common dollar factor is removed.

The yen result warrants additional interpretation. In 2020–2025, JPY records more DXY-adjusted explosive months than raw nominal explosive months, 25 versus 19. The DXY-adjusted series is therefore not simply a mechanically attenuated version of the raw yen-dollar rate. It measures yen depreciation relative to the broad dollar cycle. If the yen weakens more persistently than the dollar index, or remains weak after the DXY partially retraces, removing the common dollar component can make the Japan-specific residual more pronounced rather than less pronounced.

The economic background is consistent with this interpretation. The yen had depreciated in earlier episodes, but the mid-2010s JPY cluster largely disappears after DXY adjustment, indicating that the earlier episode was mainly dollar-cycle driven. The post-2020 residual is different. It coincides with a sharp widening of monetary-policy divergence between Japan and other major economies, the persistence of highly accommodative Japanese financial conditions despite gradual policy normalization, and a deterioration in Japan's external price environment during the 2022 energy shock. IMF assessments emphasize that yen depreciation since 2022 was closely related to policy-rate differentials and, later, carry-trade positions, while Japan's 2022 trade deficit was amplified by resource-price increases and yen depreciation (International Monetary Fund, 2024, Ministry of Economy, Trade and Industry, 2024). The JPY residual is therefore best interpreted as an episode of excess yen weakness associated with Japan-specific monetary and external-sector conditions, rather than as evidence against the region-wide dollar-cycle interpretation.

The regime-based evidence reinforces this reading. The strongest late-sample residual signal appears in JPY, a free-floating currency, where the DXY-adjusted evidence has a clearer country-specific interpretation. By contrast, the short-lived SGD residuals should be read more cautiously because USD/SGD is not the policy target. The absence of DXY-adjusted detections for CNY and VND in 2020–2025 is also informative: even for currencies with managed or stabilized arrangements, the late-sample regional depreciation wave largely disappears once the common dollar component is removed. Overall, the country-level evidence supports the view that the 2022 regional episode was primarily a dollar-cycle event, with the yen representing a salient country-specific residual rather than a broader regional exception.

5.4 Late-2025 Residual Episodes

The most recent residual cluster is narrow and uneven. In 2025Q4, the baseline DXY-adjusted detections include JPY, KRW, and SGD, but the three currencies carry different empirical weight. JPY is detected from July through December 2025 and dominates the late-sample residual evidence. KRW appears only in December 2025, while SGD is episodic and disappears once either an intercept or lag augmentation is introduced. Given Singapore's basket-based exchange-rate framework, the short-lived SGD detection is best read as a transient bilateral residual against the U.S. dollar rather than as an independent late-sample episode.

The JPY residual is consistent with Japan-specific monetary-normalization frictions. Although the Bank of Japan raised its policy rate to 0.75 percent in December 2025, it also emphasized that real short-term interest rates remained significantly negative and that accommodative financial conditions were still in place (BOJ, 2026, pp. 9–10). Yen weakness can therefore persist after the common dollar component is removed, producing a DXY-adjusted signal that is both economically interpretable and statistically persistent.

The KRW residual is more limited but also economically meaningful. The Bank of Korea links the late-2025 divergence between USD/KRW and the DXY to unusually strong resident overseas equity-investment demand and to expectations of continued won weakness (BOK, 2026). The U.S. Treasury similarly highlights public-pension diversification outflows and notes that the won's weakness was difficult to reconcile with Korea's strong fundamentals (U.S. Treasury, 2026, pp. 34–36). The KRW episode is therefore better interpreted as a Korea-specific capital-flow and expectations episode than as part of a renewed regional dollar wave.

Thus, the yen and the won exhibit similar residual patterns only at the surface. The JPY residual reflects Japan's gradual monetary normalization and persistently accommodative real financial conditions; the KRW residual reflects Korea-specific spot-market dollar demand, resident overseas equity outflows, and one-sided depreciation expectations. Similar DXY-adjusted residuals therefore need not imply a common mechanism or a common policy problem.

5.5 Robustness Checks

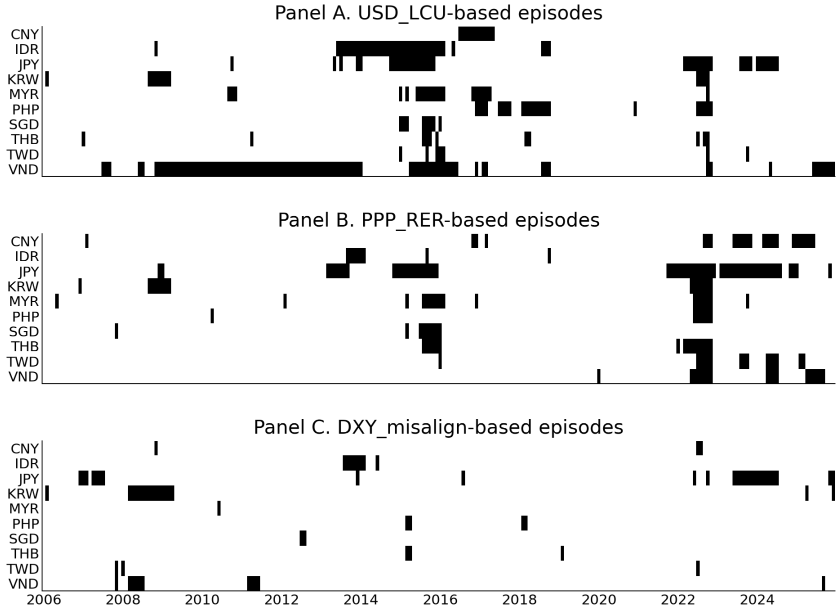
Drift-Inclusive Specification. As a robustness exercise, we re-estimate the GSADF tests by allowing for a deterministic intercept term in the recursive ADF regression while retaining the wild-bootstrap critical values. Figure 5 reports episode dating under this drift-inclusive specification.

Allowing for an intercept changes the margin on which the right-tailed statistic loads. Relative to the baseline wild-bootstrap specification, raw nominal detections fall from 469 to 269 currency-months in the full sample and from 143 to 46 in 2020–2025; DXY-adjusted detections fall from 187 to 79 and from 34 to 24, respectively. PPP-based detections instead rise modestly, from 160 to 192 in the full sample and from 117 to 121 in 2020–2025, with peak synchronization unchanged at eight currencies in the later window.

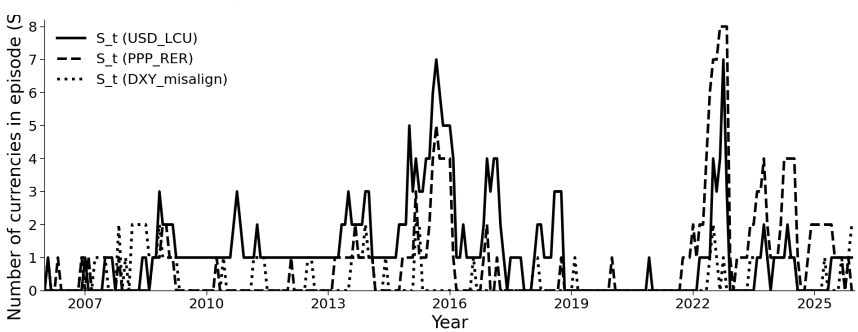
The difference is informative. Without a drift term, the recursive regression cannot absorb persistent local depreciation, so gradual one-sided nominal crawls may contribute to right-tailed rejections. With an intercept, this local average depreciation is partialled out, and the test is more likely to retain only accelerations relative to the fitted trend. This explains the sharp decline in raw nominal detections. PPP-based series are less affected because relative-price adjustment has already removed part of the low-frequency nominal component. The remaining signal is concentrated in shorter real-misalignment bursts, especially around 2022, some of which cross the drift-inclusive wild-bootstrap threshold. The drift exercise therefore separates gradual nominal depreciation from sharper real-misalignment episodes rather than merely reducing statistical power.

Figure 5: Explosive Depreciation Episodes (Robustness: Drift-Inclusive)

(a) By Currencies



(b) Number of Currencies in Episodes



Notes: The figure reports drift-inclusive GSADF results with wild-bootstrap critical values. Within each subfigure, the first block corresponds to the nominal USD/LCU measure, the second to the PPP-based misalignment measure, and the third to the DXY-adjusted measure.

Alternative Lag Lengths and Monte Carlo Critical Values. Table 3 summarizes peak synchronization across periods under the remaining alternative specifications.

Two results stand out. First, lag augmentation under wild-bootstrap critical values dramatically thins the PPP-based signal. In 2020–2025, the peak PPP synchronization falls from 8 under the baseline to 1 at lag 1 and remains only 1 at lag 3; in 2013–2019 it falls from 4 to 1 and 2, respectively. This suggests that much of the broad PPP-based co-occurrence is concentrated in low-order dynamics and is sensitive to richer short-run filtering. Economically, adding lags partials out more short-run serial correlation and uses degrees of freedom, so short synchronized bursts are less likely to cross the explosive threshold once richer short-run dynamics are admitted. The DXY-adjusted panel, by contrast, remains sparse throughout: its peak synchronization is 2 in the baseline later window, 1 at lag 1, and 2 at lag 3.

Second, switching from wild-bootstrap to Monte Carlo critical values densifies detections across all three sample windows. Peak synchronization rises to 7, 8, and 4 in the full sample and to 7, 8, and 4 in 2020–2025 for the raw, PPP-based, and DXY-adjusted measures, respectively. This does not imply that wild-bootstrap critical values are always more conservative in general. Rather, the wild-bootstrap and Monte Carlo procedures generate different critical-value surfaces once heteroskedasticity and recursive multiple testing are taken into account. In the present no-drift, no-lag application, the wild-bootstrap values are more conservative than the Monte Carlo values, so fewer months cross the explosive threshold. Importantly, however, the later-sample residual ranking is not overturned: JPY remains present in 2025 Q4 under all four alternative specifications considered, KRW survives the drift-inclusive wild-bootstrap and lag 3 wild-bootstrap variants, and SGD does not.

Overall, the robustness exercises reinforce the same substantive conclusion. What varies across deterministic specifications, lag choices, and critical-value procedures is the exact density of detected episodes. What remains stable is that, in the windows centered on the main regional depreciation waves, the raw and PPP-based measures display much broader synchronization than the DXY-adjusted measure. The robustness exercises therefore strengthen the paper's central inference: the synchronized depreciation episodes observed across East and Southeast Asia are driven predominantly by the global dollar cycle rather than by a common wave of country-specific instability.

Table 3: Peak Synchronization across Sample Periods under Alternative Specifications

	2006–2025			2013–2019			2020–2025		
Specification	Raw	PPP	DXY	Raw	PPP	DXY	Raw	PPP	DXY
Baseline WB (no lag)	6	8	3	6	4	2	5	8	2
Drift WB (no lag)	7	8	2	7	5	2	7	8	2
No drift WB (lag 1)	3	1	2	3	1	0	1	1	1
No drift WB (lag 3)	3	2	3	3	2	1	2	1	2
No drift MC (no lag)	7	8	4	7	6	3	7	8	4

Notes: Entries report the maximum number of currencies simultaneously classified as explosive within each period. WB denotes wild-bootstrap critical values and MC denotes Monte Carlo critical values.

6. Conclusion

This paper examines whether recurrent depreciation episodes in East and Southeast Asian currencies should be interpreted as separate episodes of currency-specific instability or as the regional manifestation of common dollar shocks. Using the GSADF test of Phillips et al. (2015) and Phillips and Shi (2020), we study ten Asian currencies against the U.S. dollar over 2006–2025 under three benchmark definitions: the raw bilateral rate, a PPP-based misalignment measure, and a DXY-adjusted measure.

Three conclusions stand out. First, much of the apparent region-wide explosiveness in bilateral U.S.-dollar exchange rates is better understood as the regional manifestation of the global dollar cycle than as a common wave of currency-specific instability. The key evidence is the sharp attenuation after DXY adjustment. Over 2013–2019, explosive currency-months fall from 242 in the raw measure to 43 in the PPP-based measure and to 38 in the DXY-adjusted measure; over 2020–2025, they fall from 143 in the raw measure and 117 in the PPP-based measure to 34 after DXY adjustment. During calendar year 2022, the raw and PPP-based panels reach peaks of five and eight simultaneous currencies, respectively, whereas the DXY-adjusted index never exceeds one. These comparisons indicate that a substantial share of the broad regional clustering observed in bilateral rates reflects common dollar-driven pressure.

Second, once broad dollar movements are removed, the remaining late-sample evidence is much narrower. The residual detections are concentrated mainly in JPY and, more briefly, KRW rather than in a renewed region-wide wave. These residual episodes should therefore be read as defining the boundary of the dollar-cycle interpretation rather than overturning it. The common dollar factor explains much of the broad regional synchronization, but it does not exhaust all remaining variation. The empirical focus consequently shifts from a putative region-wide episode to a smaller set of country-specific residual cases that warrant separate investigation.

Third, benchmark construction fundamentally shapes GSADF-based inference in exchange-rate applications. Explosive episodes are not identified independently of the benchmark against which exchange-rate pressure is measured. The raw bilateral rate, the PPP-adjusted measure, and the DXY-adjusted measure produce materially different conclusions about the timing, breadth, and persistence of explosive depreciation episodes. For exchange-rate applications, benchmark choice is therefore part of the economic interpretation rather than a secondary robustness detail. The exchange-rate regime perspective reinforces this conclusion. In floating regimes, residual DXY-adjusted explosiveness can be interpreted more directly as market-driven depreciation pressure. In managed, stabilized, or crawl-like regimes, long one-sided movements in the bilateral exchange rate may arise from policy management or gradual adjustment.

The policy implication is that synchronized explosive depreciations should not be read mechanically as parallel domestic currency crises. If these episodes largely reflect common dollar shocks, the relevant policy margin is resilience to global tightening rather than the defense of particular bilateral exchange-rate levels. Reserve adequacy, foreign-exchange liquidity provision, hedging capacity, and macroprudential buffers are therefore central to limiting the transmission of external dollar shocks to domestic financial conditions. More generally, regional exchange-rate stress should be decomposed into common dollar movements and residual country-specific pressure before drawing conclusions about domestic vulnerability.

The Korean residual in the late sample points to a narrower policy issue. It is less consistent with a conventional foreign-currency funding shortage than with spot-market dollar demand associated with resident overseas equity investment, portfolio rebalancing by large institutional investors, and expectations of further won weakness. The relevant policy margin is therefore not only liquidity insurance, but also the monitoring of resident foreign-asset demand, the development of hedging capacity for overseas investment, and the management of self-reinforcing depreciation expectations. The comparison with Japan underscores this point. Yen and won residual episodes look similar in the DXY-adjusted heatmap, but the underlying mechanisms differ: the yen residual reflects Japan-specific monetary-normalization frictions and external-price shocks, whereas the won residual reflects Korea-specific capital-flow and expectations channels. Similar residual exchange-rate patterns need not imply similar policy problems.

Future work can use this decomposition to relate residual explosive episodes to policy regimes, capital-flow structures, and regional spillovers.

A Appendix

Appendix Tables A1–A3 report detailed baseline dated episodes for each benchmark variable and for each of the three sample windows emphasized in the main text. For ease of comparison, the appendix tables are organized by sample window, with Panel A reporting the raw nominal USD/LCU measure, Panel B the PPP-based measure, and Panel C the DXY-adjusted measure.

Appendix Figure A1 collects the currency-level GSADF episode plots. Each panel corresponds to one currency and, within each page, the left-hand plots report the no-drift baseline while the right-hand plots report the drift-inclusive wild-bootstrap robustness. Appendix Figures A2–A4 reserve space for the robustness heatmaps and synchronization graphs under the no-drift WB lag-1, no-drift WB lag-3, and no-drift MC no-lag specifications, respectively.

Table A1: Detailed Baseline Episodes, 2006–2025 — Panel A. Raw Nominal USD/LCU Measure

Currency	Months	Share (%)	Dated episodes
CNY	9/240	3.8	2016M10–2017M06 (9)
IDR	124/240	51.7	2013M07–2020M05 (83); 2020M07–2020M10 (4); 2021M04–2021M04 (1); 2022M07–2023M03 (9); 2023M08–2024M08 (13); 2024M11–2025M12 (14)
JPY	37/240	15.4	2014M09–2016M02 (18); 2022M06–2022M11 (6); 2023M08–2023M11 (4); 2024M01–2024M07 (7); 2024M12–2025M01 (2)
KRW	1/240	0.4	2022M10–2022M10 (1)
MYR	13/240	5.4	2015M07–2016M02 (8); 2016M11–2017M03 (5)
PHP	40/240	16.7	2016M01–2016M02 (2); 2016M10–2019M06 (33); 2022M07–2022M11 (5)
SGD	3/240	1.3	2015M09–2015M09 (1); 2015M11–2015M11 (1); 2016M01–2016M01 (1)
THB	2/240	0.8	2016M05–2016M05 (1); 2016M12–2016M12 (1)
TWD	0/240	0.0	
VND	240/240	100.0	2006M01–2025M12 (240)
Total	469/2400	19.5	

Notes: Baseline GSADF date-stamping uses the no-drift, no lag, wild-bootstrap specification at the 95% level. Episode dates are clipped to the corresponding sample window.

Table A1: Detailed Baseline Episodes, 2006–2025 — Panel B. PPP-Based Measure

Currency	Months	Share (%)	Dated episodes
CNY	16/240	6.7	2016M12–2016M12 (1); 2024M10–2025M12 (15)
IDR	13/240	5.4	2015M06–2015M06 (1); 2015M08–2015M09 (2); 2023M10–2023M10 (1); 2024M04–2024M07 (4); 2025M01–2025M04 (4); 2025M11–2025M11 (1)
JPY	66/240	27.5	2014M09–2016M03 (19); 2022M01–2025M11 (47)
KRW	7/240	2.9	2022M06–2022M11 (6); 2025M03–2025M03 (1)
MYR	14/240	5.8	2015M09–2015M09 (1); 2016M01–2016M01 (1); 2022M05–2022M11 (7); 2023M06–2023M06 (1); 2023M08–2023M11 (4)
PHP	11/240	4.6	2017M03–2017M03 (1); 2018M02–2018M10 (9); 2022M10–2022M10 (1)
SGD	11/240	4.6	2015M08–2016M02 (7); 2020M03–2020M04 (2); 2022M07–2022M07 (1); 2022M10–2022M10 (1)
THB	4/240	1.7	2022M07–2022M10 (4)
TWD	13/240	5.4	2016M01–2016M01 (1); 2022M10–2022M10 (1); 2024M03–2024M08 (6); 2024M12–2025M04 (5)
VND	5/240	2.1	2022M09–2022M11 (3); 2025M08–2025M09 (2)
Total	160/2400	6.7	

Notes: Baseline GSADF date-stamping uses the no-drift, no lag, wild-bootstrap specification at the 95% level. Episode dates are clipped to the corresponding sample window.

Table A1: Detailed Baseline Episodes, 2006–2025 — Panel C. DXY-Adjusted Measure

Currency	Months	Share (%)	Dated episodes
CNY	1/240	0.4	2015M11–2015M11 (1)
IDR	11/240	4.6	2007M11–2008M01 (3); 2009M02–2009M03 (2); 2013M10–2014M02 (5); 2014M06–2014M06 (1)
JPY	45/240	18.8	2006M07–2007M12 (18); 2008M06–2008M07 (2); 2022M06–2022M06 (1); 2022M10–2022M11 (2); 2023M05–2024M07 (15); 2024M10–2024M10 (1); 2025M07–2025M12 (6)
KRW	5/240	2.1	2009M06–2009M09 (4); 2025M12–2025M12 (1)
MYR	0/240	0.0	
PHP	0/240	0.0	
SGD	14/240	5.8	2012M07–2012M08 (2); 2012M11–2012M11 (1); 2013M04–2013M05 (2); 2016M07–2016M07 (1); 2017M03–2017M04 (2); 2025M05–2025M09 (5); 2025M11–2025M11 (1)
THB	1/240	0.4	2019M02–2019M02 (1)
TWD	2/240	0.8	2022M07–2022M08 (2)
VND	108/240	45.0	2006M01–2008M10 (34); 2008M12–2014M12 (73); 2018M02–2018M02 (1)
Total	187/2400	7.8	

Notes: Baseline GSADF date-stamping uses the no-drift, no lag, wild-bootstrap specification at the 95% level. Episode dates are clipped to the corresponding sample window.

Table A2: Detailed Baseline Episodes, 2013–2019 — Panel A. Raw Nominal USD/LCU Measure

Currency	Months	Share (%)	Dated episodes
CNY	9/84	10.7	2016M10–2017M06 (9)
IDR	78/84	92.9	2013M07–2019M12 (78)
JPY	18/84	21.4	2014M09–2016M02 (18)
KRW	0/84	0.0	
MYR	13/84	15.5	2015M07–2016M02 (8); 2016M11–2017M03 (5)
PHP	35/84	41.7	2016M01–2016M02 (2); 2016M10–2019M06 (33)
SGD	3/84	3.6	2015M09–2015M09 (1); 2015M11–2015M11 (1); 2016M01–2016M01 (1)
THB	2/84	2.4	2016M05–2016M05 (1); 2016M12–2016M12 (1)
TWD	0/84	0.0	
VND	84/84	100.0	2013M01–2019M12 (84)
Total	242/840	28.8	

Notes: Baseline GSADF date-stamping uses the no-drift, no lag, wild-bootstrap specification at the 95% level. Episode dates are clipped to the corresponding sample window.

Table A2: Detailed Baseline Episodes, 2013–2019 — Panel B. PPP-Based Measure

Currency	Months	Share (%)	Dated episodes
CNY	1/84	1.2	2016M12–2016M12 (1)
IDR	3/84	3.6	2015M06–2015M06 (1); 2015M08–2015M09 (2)
JPY	19/84	22.6	2014M09–2016M03 (19)
KRW	0/84	0.0	
MYR	2/84	2.4	2015M09–2015M09 (1); 2016M01–2016M01 (1)
PHP	10/84	11.9	2017M03–2017M03 (1); 2018M02–2018M10 (9)
SGD	7/84	8.3	2015M08–2016M02 (7)
THB	0/84	0.0	
TWD	1/84	1.2	2016M01–2016M01 (1)
VND	0/84	0.0	
Total	43/840	5.1	

Notes: Baseline GSADF date-stamping uses the no-drift, no lag, wild-bootstrap specification at the 95% level. Episode dates are clipped to the corresponding sample window.

Table A2: Detailed Baseline Episodes, 2013–2019 — Panel C. DXY-Adjusted Measure

Currency	Months	Share (%)	Dated episodes
CNY	1/84	1.2	2015M11–2015M11 (1)
IDR	6/84	7.1	2013M10–2014M02 (5); 2014M06–2014M06 (1)
JPY	0/84	0.0	
KRW	0/84	0.0	
MYR	0/84	0.0	
PHP	0/84	0.0	
SGD	5/84	6.0	2013M04–2013M05 (2); 2016M07–2016M07 (1); 2017M03–2017M04 (2)
THB	1/84	1.2	2019M02–2019M02 (1)
TWD	0/84	0.0	
VND	25/84	29.8	2013M01–2014M12 (24); 2018M02–2018M02 (1)
Total	38/840	4.5	

Notes: Baseline GSADF date-stamping uses the no-drift, no lag, wild-bootstrap specification at the 95% level. Episode dates are clipped to the corresponding sample window.

Table A3: Detailed Baseline Episodes, 2020–2025 — Panel A. Raw Nominal USD/LCU Measure

Currency	Months	Share (%)	Dated episodes
CNY	0/72	0.0	
IDR	46/72	63.9	2020M01–2020M05 (5); 2020M07–2020M10 (4); 2021M04–2021M04 (1); 2022M07–2023M03 (9); 2023M08–2024M08 (13); 2024M11–2025M12 (14)
JPY	19/72	26.4	2022M06–2022M11 (6); 2023M08–2023M11 (4); 2024M01–2024M07 (7); 2024M12–2025M01 (2)
KRW	1/72	1.4	2022M10–2022M10 (1)
MYR	0/72	0.0	
PHP	5/72	6.9	2022M07–2022M11 (5)
SGD	0/72	0.0	
THB	0/72	0.0	
TWD	0/72	0.0	
VND	72/72	100.0	2020M01–2025M12 (72)
Total	143/720	19.9	

Notes: Baseline GSADF date-stamping uses the no-drift, no lag, wild-bootstrap specification at the 95% level. Episode dates are clipped to the corresponding sample window.

Table A3: Detailed Baseline Episodes, 2020–2025 — Panel B. PPP-Based Measure

Currency	Months	Share (%)	Dated episodes
CNY	15/72	20.8	2024M10–2025M12 (15)
IDR	10/72	13.9	2023M10–2023M10 (1); 2024M04–2024M07 (4); 2025M01–2025M04 (4); 2025M11–2025M11 (1)
JPY	47/72	65.3	2022M01–2025M11 (47)
KRW	7/72	9.7	2022M06–2022M11 (6); 2025M03–2025M03 (1)
MYR	12/72	16.7	2022M05–2022M11 (7); 2023M06–2023M06 (1); 2023M08–2023M11 (4)
PHP	1/72	1.4	2022M10–2022M10 (1)
SGD	4/72	5.6	2020M03–2020M04 (2); 2022M07–2022M07 (1); 2022M10–2022M10 (1)
THB	4/72	5.6	2022M07–2022M10 (4)
TWD	12/72	16.7	2022M10–2022M10 (1); 2024M03–2024M08 (6); 2024M12–2025M04 (5)
VND	5/72	6.9	2022M09–2022M11 (3); 2025M08–2025M09 (2)
Total	117/720	16.3	

Notes: Baseline GSADF date-stamping uses the no-drift, no lag, wild-bootstrap specification at the 95% level. Episode dates are clipped to the corresponding sample window.

Table A3: Detailed Baseline Episodes, 2020–2025 — Panel C. DXY-Adjusted Measure

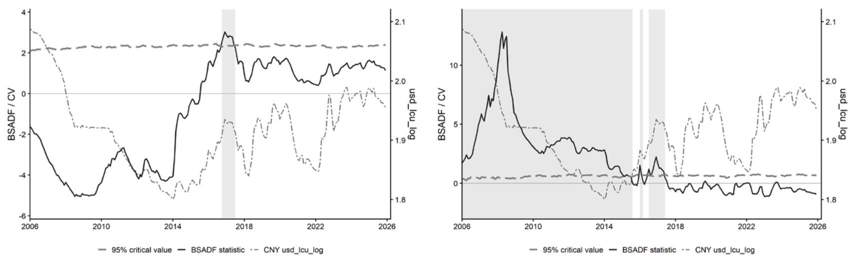
Currency	Months	Share (%)	Dated episodes
CNY	0/72	0.0	
IDR	0/72	0.0	
JPY	25/72	34.7	2022M06–2022M06 (1); 2022M10–2022M11 (2); 2023M05–2024M07 (15); 2024M10–2024M10 (1); 2025M07–2025M12 (6)
KRW	1/72	1.4	2025M12–2025M12 (1)
MYR	0/72	0.0	
PHP	0/72	0.0	
SGD	6/72	8.3	2025M05–2025M09 (5); 2025M11–2025M11 (1)
THB	0/72	0.0	
TWD	2/72	2.8	2022M07–2022M08 (2)
VND	0/72	0.0	
Total	34/720	4.7	

Notes: Baseline GSADF date-stamping uses the no-drift, no lag, wild-bootstrap specification at the 95% level. Episode dates are clipped to the corresponding sample window.

Appendix Figure A1 reports the currency-level GSADF episode plots. The ten currency pages are treated as panels of a single appendix figure for compact presentation.

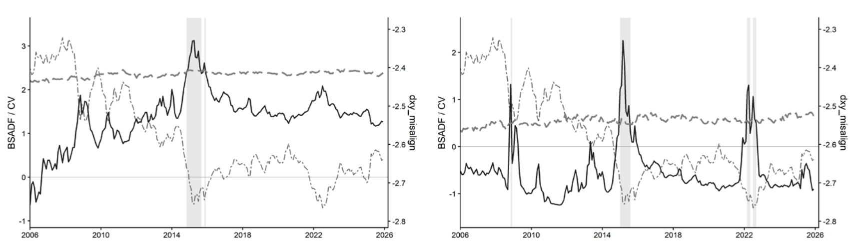
Figure A1: Currency-Level GSADF Episode Plots — Panel A. Chinese yuan

(a) LCU-based Episodes



(b) PPP-based Episodes

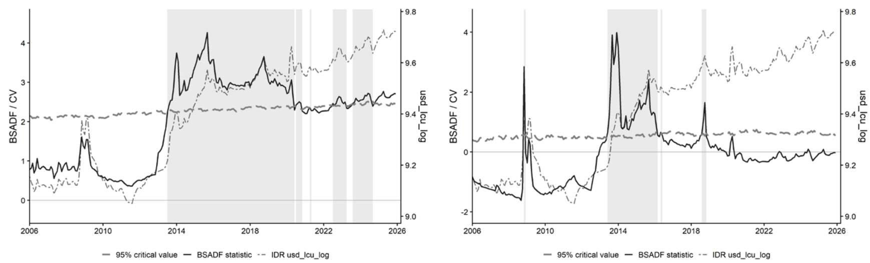
(c) DXY-misalignment Episodes



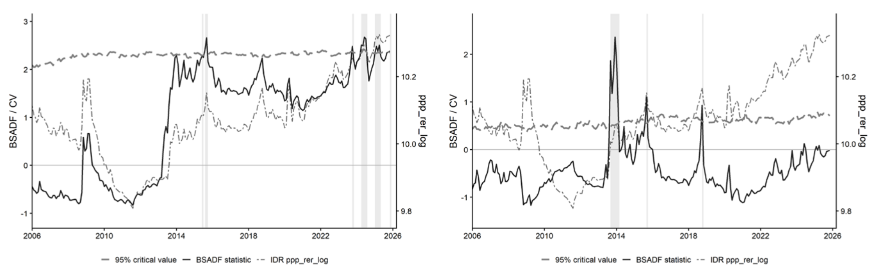
Notes: Left (right) figure reports the no-drift baseline (drift-inclusive robustness) using wild-bootstrap critical values under the common no lag design.

Figure A1: Panel B. Indonesian rupiah

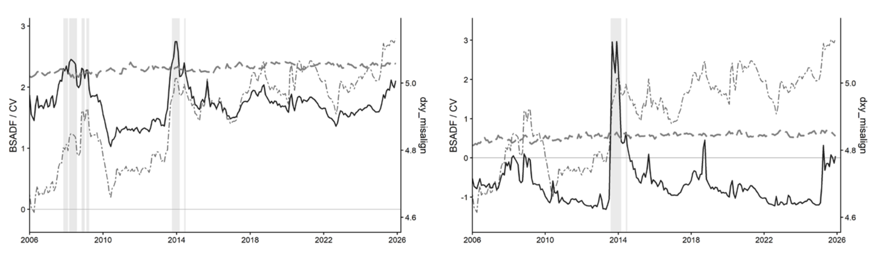
(a) LCU-based Episodes



(b) PPP-based Episodes



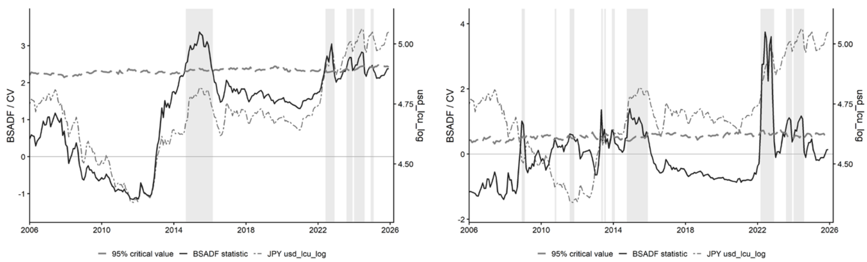
(c) DXY-misalignment Episodes



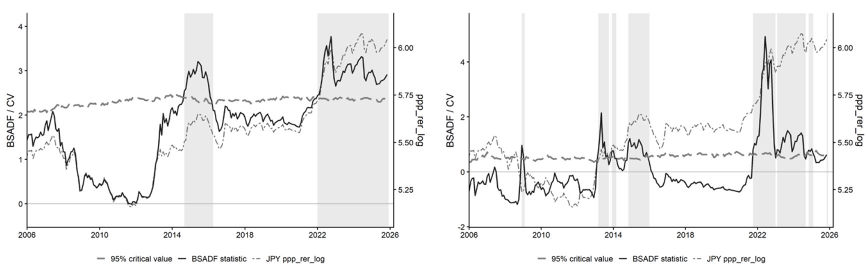
Notes: Left (right) figure reports the no-drift baseline (drift-inclusive robustness) using wild-bootstrap critical values under the common no lag design.

Figure A1: Panel C. Japanese yen

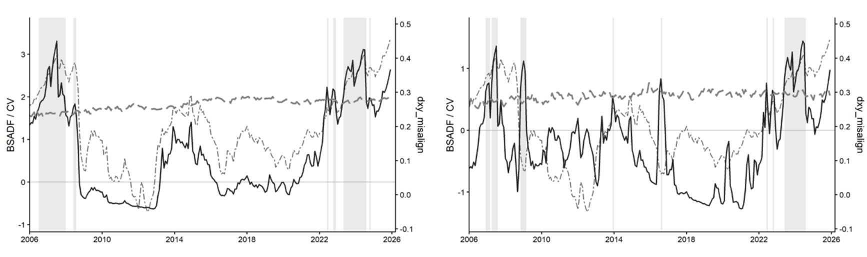
(a) LCU-based Episodes



(b) PPP-based Episodes



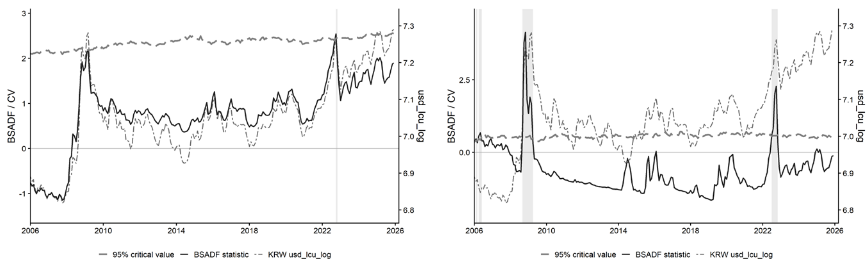
(c) DXY-misalignment Episodes



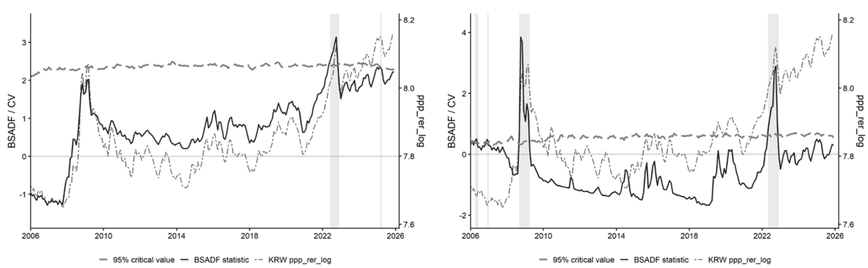
Notes: Left (right) figure reports the no-drift baseline (drift-inclusive robustness) using wild-bootstrap critical values under the common no lag design.

Figure A1: Panel D. Korean won

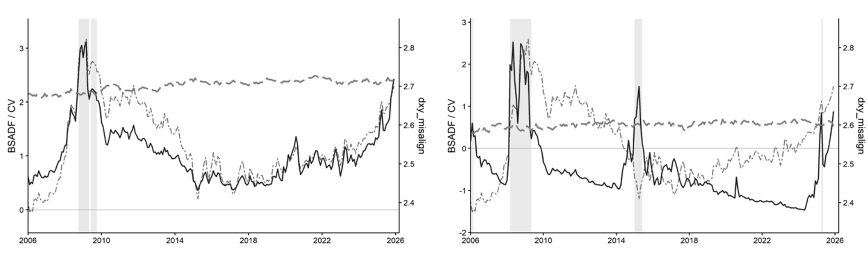
(a) LCU-based Episodes



(b) PPP-based Episodes



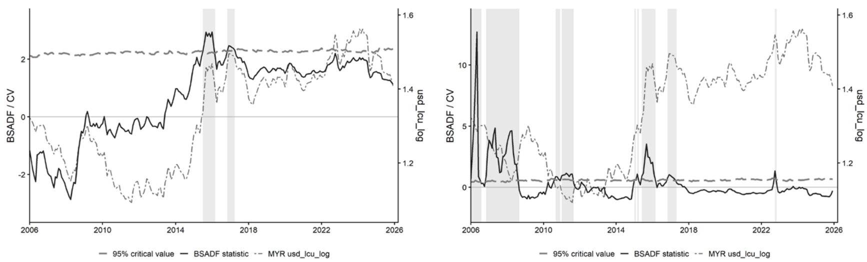
(c) DXY-misalignment Episodes



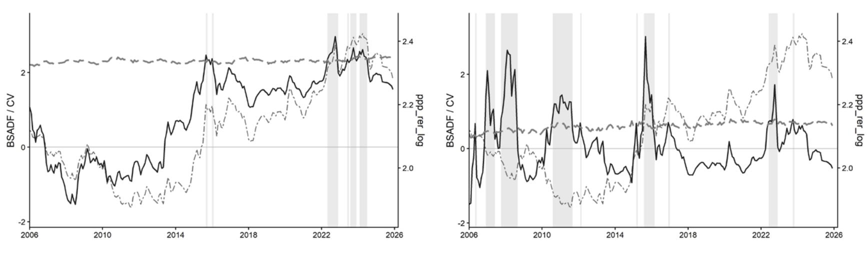
Notes: Left (right) figure reports the no-drift baseline (drift-inclusive robustness) using wild-bootstrap critical values under the common no lag design.

Figure A1: Panel E. Malaysia ringgit

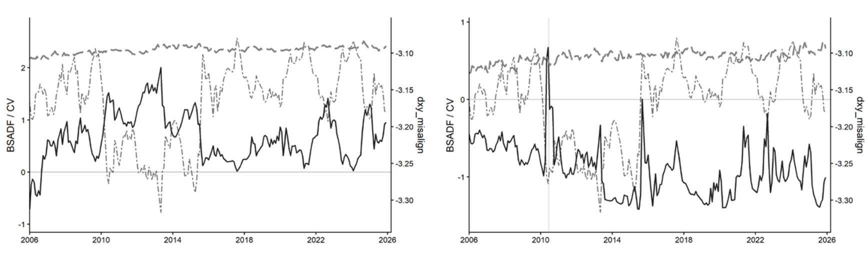
(a) LCU-based Episodes



(b) PPP-based Episodes



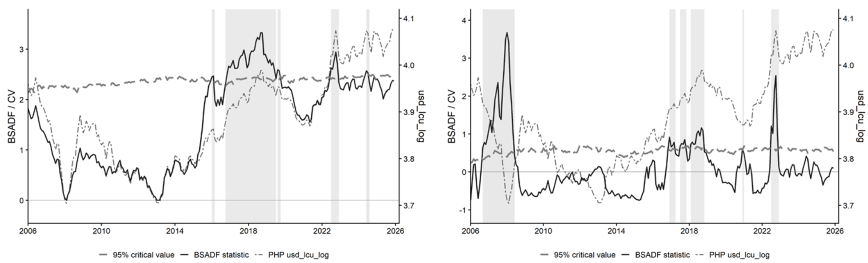
(c) DXY-misalignment Episodes



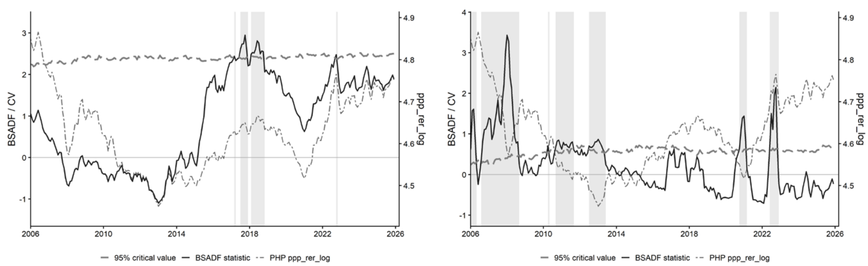
Notes: Left (right) figure reports the no-drift baseline (drift-inclusive robustness) using wild-bootstrap critical values under the common no lag design.

Figure A1: Panel F. Philippine peso

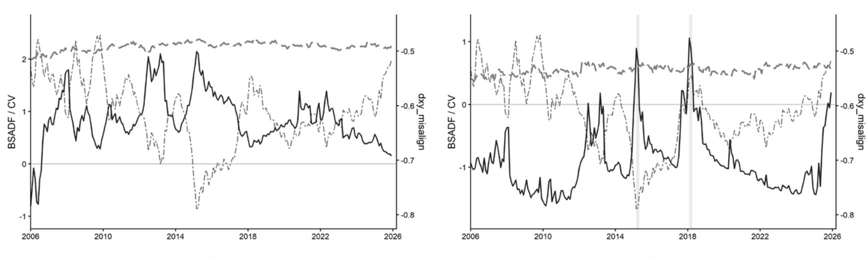
(a) LCU-based Episodes



(b) PPP-based Episodes



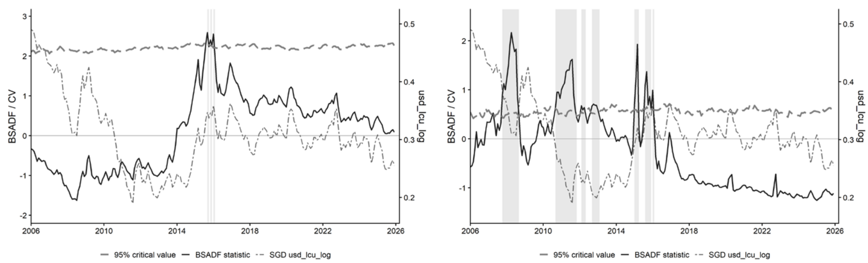
(c) DXY-misalignment Episodes



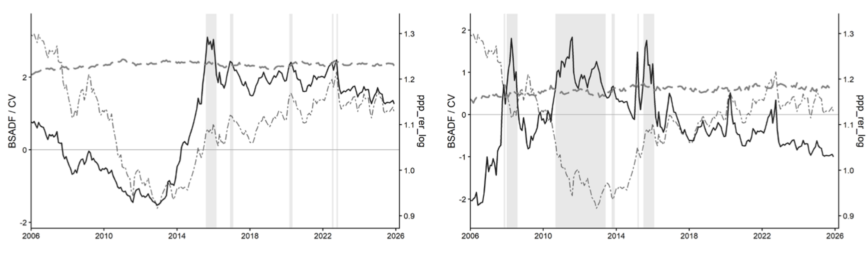
Notes: Left (right) figure reports the no-drift baseline (drift-inclusive robustness) using wild-bootstrap critical values under the common no lag design.

Figure A1: Panel G. Singapore dollar

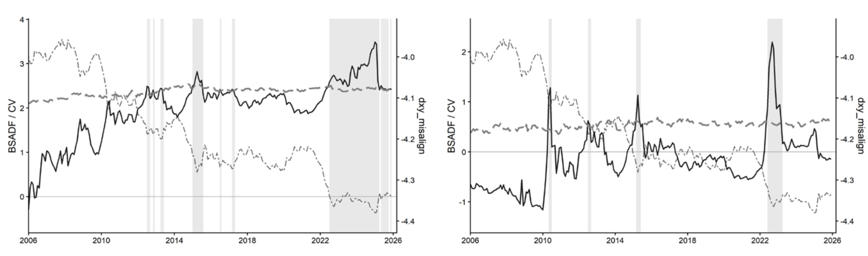
(a) LCU-based Episodes



(b) PPP-based Episodes



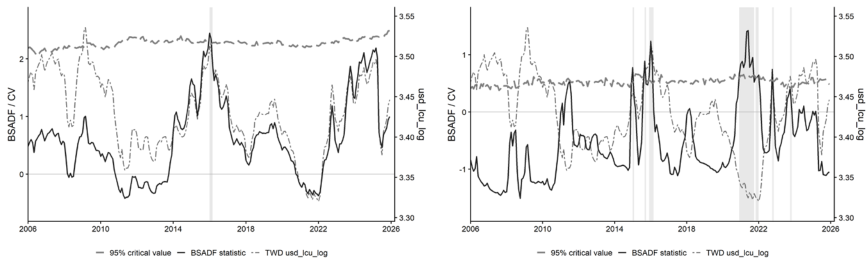
(c) DXY-misalignment Episodes



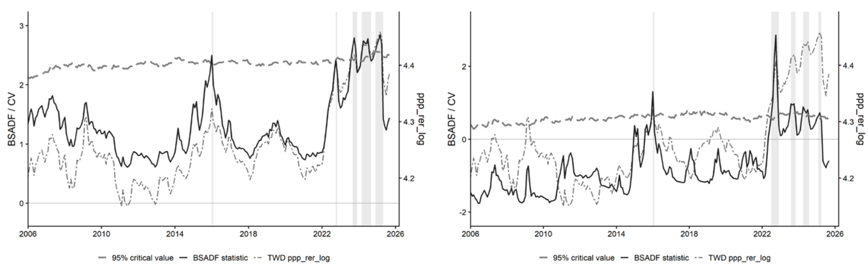
Notes: Left (right) figure reports the no-drift baseline (drift-inclusive robustness) using wild-bootstrap critical values under the common no lag design.

Figure A1: Panel H. Taiwan dollar

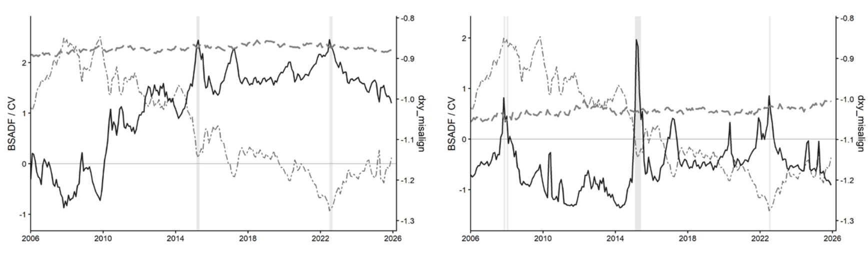
(a) LCU-based Episodes



(b) PPP-based Episodes



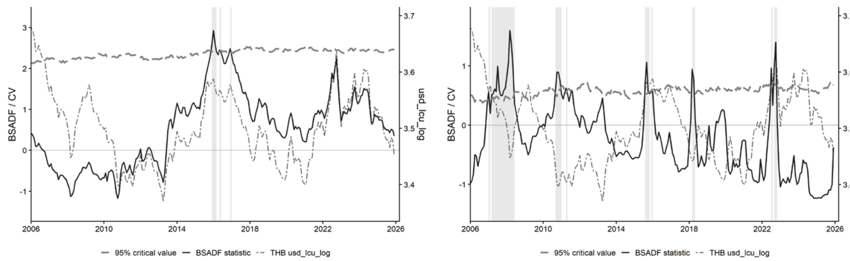
(c) DXY-misalignment Episodes



Notes: Left (right) figure reports the no-drift baseline (drift-inclusive robustness) using wild-bootstrap critical values under the common no lag design.

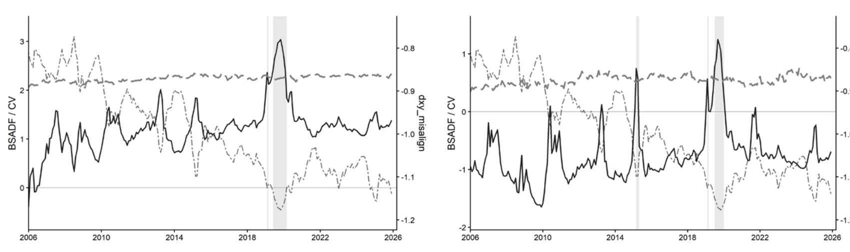
Figure A1: Panel I. Thai baht

(a) LCU-based Episodes



(b) PPP-based Episodes

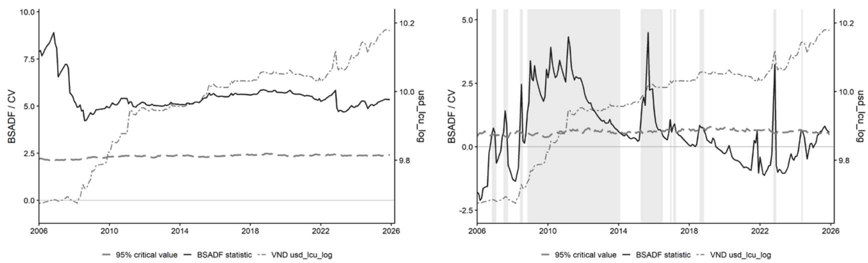
(c) DXY-misalignment Episodes



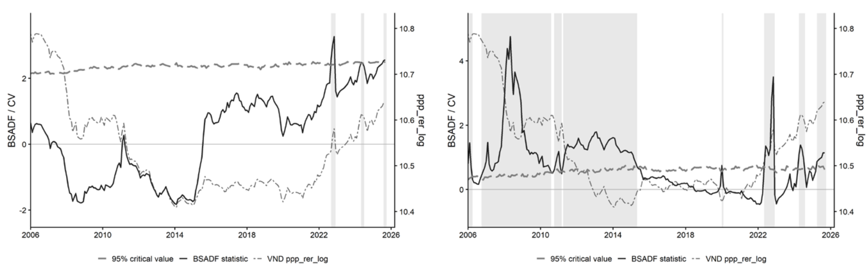
Notes: Left (right) figure reports the no-drift baseline (drift-inclusive robustness) using wild-bootstrap critical values under the common no lag design.

Figure A1: Panel J. Vietnamese dong

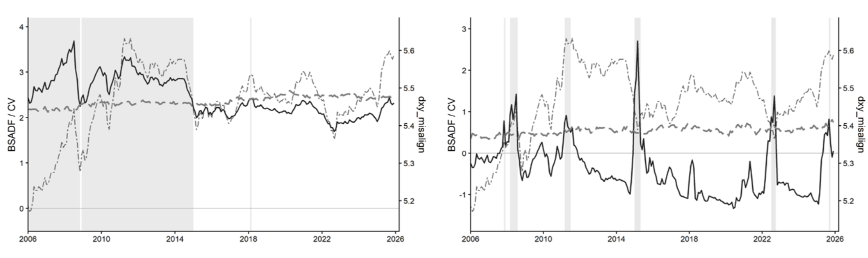
(a) LCU-based Episodes



(b) PPP-based Episodes



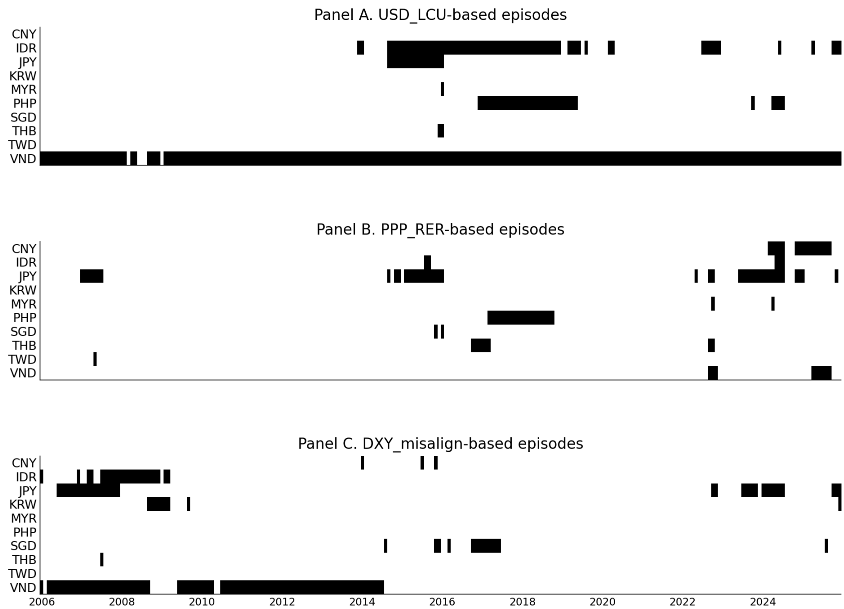
(c) DXY-misalignment Episodes

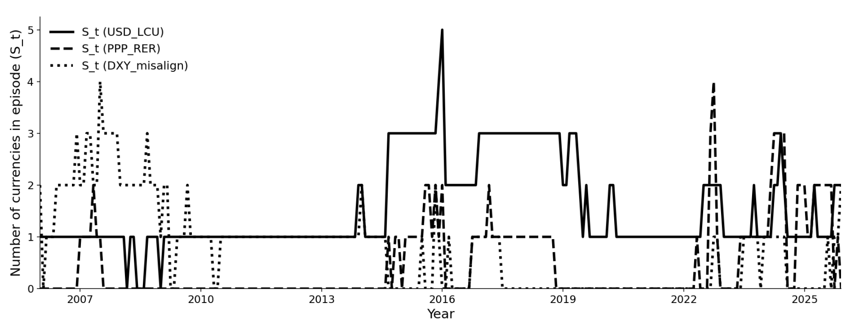


Notes: Left (right) figure reports the no-drift baseline (drift-inclusive robustness) using wild-bootstrap critical values under the common no lag design.

Appendix Figures A2–A4 are reserved for the robustness heatmaps and synchronization graphs discussed in Section 5.5. The corresponding image files can be inserted directly by replacing the placeholders below.

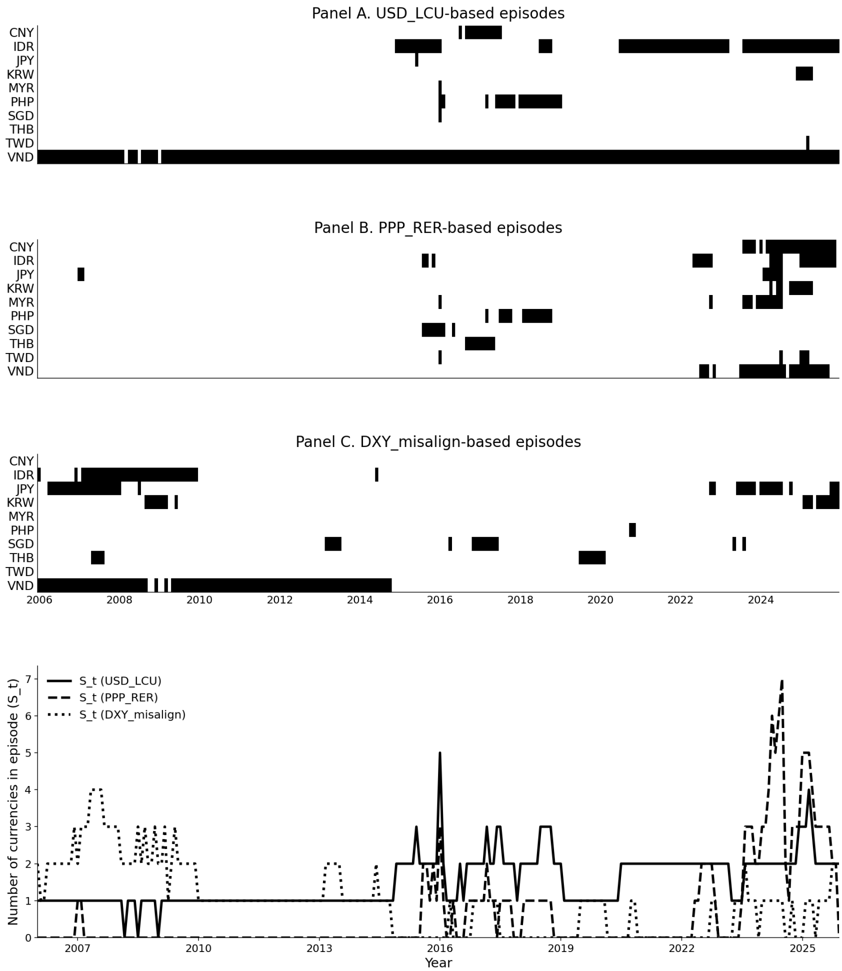
Figure A2: Robustness Heatmap and Synchronization — No Drift, WB, Lag 1





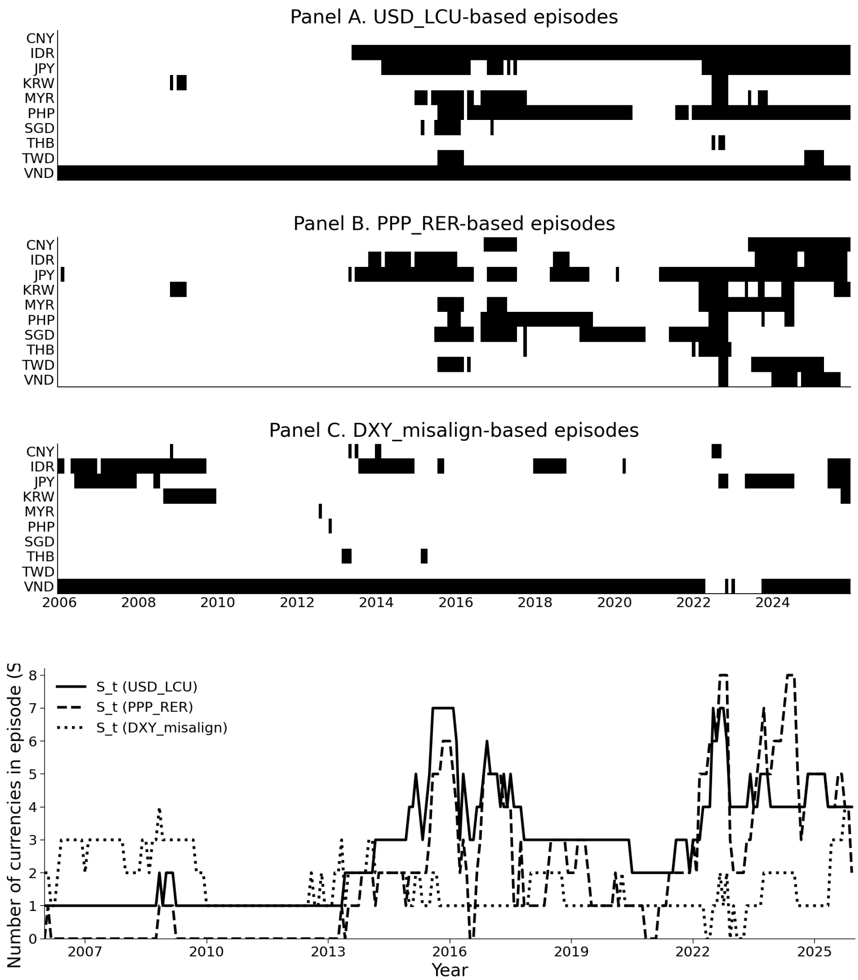
Notes: Replace the two placeholder boxes with the no-drift, WB, lag-1 heatmap and synchronization images.

Figure A3: Robustness Heatmap and Synchronization — No Drift, WB, Lag 3



Notes: Replace the two placeholder boxes with the no-drift, WB, lag-3 heatmap and synchronization images.

Figure A4: Robustness Heatmap and Synchronization — No Drift, MC, No Lag



Notes: Replace the two placeholder boxes with the no-drift, MC, no-lag heatmap and synchronization images.

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국문요약

본 연구는 동아시아 및 동남아시아 통화의 급격한 평가절하 현상이 해당 통화의 고유한 불안정성에 기인한 것인지, 아니면 글로벌 달러 사이클이 지역적으로 전파된 결과인지를 검토한다. 우리는 Phillips *et al*.(2015)이 제안한 GSADF 검정을 2006년부터 2025년까지 10개 아시아 국가의 미국 달러 대비 환율에 적용하였으며, 분석 지표로는 명목 기준 환율 지표, 구매력 평가지수(PPP)로 조정된 환율 불균형 지표, 달러인덱스(DXY) 지수로 조정된 지표 세 가지를 사용했다.

분석 결과, 동아시아 및 동남아시아 지역 전반에 걸쳐 반복적으로 발생하는 급격한 변동 현상을 확인했다. 명목 환율 지표 기준으로 2015~17년 미국 통화정책 정상화 국면과 2022년에 급격한 평가절하 현상이 집중되는 반면, PPP 기준 지표에서도 2022년에 강한 지역적 급등 현상이 나타났다. 그러나 DXY 지수 조정을 거친 후에는 이러한 지역적 평가절하 집중 현상이 현저히 약화되었고, 특히 주요 역내 통화의 급등 현상이 집중된 기간에 그 약화가 두드러졌다. 명목 환율에서 나타나는 명백한 통화 약세 파동이 개별 통화의 동시다발적 불안정성보다는 달러강세에 의해 주도된 공통적인 지역적 압력에 기인함을 시사한다. 전반적인 달러 변동 요인을 제거하고 남은 통화 약세 현상은 훨씬 제한적이며, 주로 일본 엔화에 집중되고, 보다 일시적으로는 한국 원화에서도 관찰된다.

핵심용어: 환율, 동아시아, 급격한 평가절하, 달러 사이클, GSADF 검정

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Jee Won Park and Hyo Sang Kim

This paper investigates whether sharp depreciations in East and Southeast Asian currencies represent currency-specific instability or the regional transmission of the global dollar cycle. Applying the GSADF test of Phillips et al. (2015) to U.S.-dollar exchange rates for ten Asian economies over 2006–2025, we compare raw bilateral, PPP-adjusted, and DXY-adjusted measures. The evidence reveals recurrent explosive episodes, but regional clustering attenuates markedly after controlling for broad dollar movements. This suggests that apparent bilateral explosiveness largely reflects common dollar-driven pressures, with residual instability confined mainly to the yen and, briefly, the won.

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ISBN 978-89-322-4314-6
978-89-322-4026-8(set)

Price USD 3