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Facts**

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Capital Flow Management in the ASEAN+3: A High-Frequency Database and Its Stylized Facts

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Abstract

This paper constructs a monthly, action-level database of capital flow management measures (CFMs) and macroprudential measures (MPMs) for the fourteen ASEAN+3 economies from the March 2024 compilation of the ASEAN+3 Macroeconomic Research Office (AMRO), and uses it to replicate, for the region, the principal stylized facts of Binici, Das and Pugacheva (2024, *IMF Economic Review*; hereafter BDP). Following BDP, we code each action by instrument, by the direction of the flow it targets and the direction of the policy (tightening or easing), and by balance-of-payments functional category, and we build the net inflow, net outflow and cumulative net tightening indices. The instrument-level and functional-category regularities of BDP reappear almost exactly in the region: price-based CFMs are oriented towards inflows and tightening, administrative measures dominate and are mostly outflow easing, and “Other Investment” (banks) is the most heavily targeted category. Because our regional sample is not the same as BDP’s, the picture differs in three ways: inflow and outflow measures are more evenly balanced, the crisis-driven outflow controls that are prominent in BDP are mostly absent, and the data show a steady, long-run easing of restrictions on residents investing abroad. The timing of actions lines up with BDP’s global tightening waves of 2010–11 and 2015–17, with one exception: the region’s COVID-19 response consisted entirely of easings. Most actions (77 percent) adjust an existing measure rather than introduce a new one. A stock-taking, walls/gates classification reproduces BDP’s classification of China and Malaysia as “walls,” but we show that a high in-force count need not signal a tightening stance: Malaysia carries the region’s largest CFM stock (nineteen measures in force) yet has eased most of it and records the most open cumulative stance in the region. Two economies are classified differently from BDP, for two different reasons: Indonesia becomes a “wall” once its record is read over a longer observation window, and Hong Kong, a structurally open financial centre, is “open” in BDP but a “gate” here, because the regional record captures its residency-based property measures more fully, and two of them remain in force.

1 Introduction

Capital flow management measures (CFMs)—policies designed to limit or influence cross-border capital flows, from residency-based capital controls to currency-based measures—are now a standard part of the

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policy toolkit in emerging and advanced economies alike,¹ yet their empirical study has long been limited by the low frequency of the available data. The conventional capital-control and openness indices—Quinn (1997), Chinn and Ito (2006), Fernández et al. (2016)—are annual and, by construction, record the *presence* of a restriction rather than the *change* in policy, so they tend to find years of apparent inaction even when the capital account was being actively managed within the year. To better capture the frequency and intensity of policy changes, a number of studies instead count individual policy actions rather than aggregating CFM subcategories into a single index, including Ahmed and Zlate (2014) at quarterly frequency for a cross-country panel, and, at monthly frequency, Chen and Qian (2016) for China and Pandey et al. (2021) for India.

Binici, Das and Pugacheva (2024, hereafter BDP) take this count-based approach furthest, with a monthly, action-level database built from the IMF Taxonomy of CFMs—the IMF’s catalogue of the capital flow management measures identified in its surveillance documents, published in 2023—covering 49 economies over 2008–2021. They show that a high-frequency, directional record of policy actions conveys information that annual indices cannot, and they document a set of stylized facts about which instruments are used, in which direction, and on which segments of the balance of payments.

This paper undertakes the analogous exercise for the fourteen ASEAN+3 economies,² using the compilation of CFMs and macroprudential measures (MPMs; prudential tools aimed at risks in the domestic financial system rather than at cross-border flows) by the ASEAN+3 Macroeconomic Research Office (AMRO), version 4, March 2024, as the source. The regional source adds to what the BDP database can show for the region in three ways. Seven of the fourteen economies—Japan, the Philippines, Vietnam, Brunei, Cambodia, Lao PDR and Myanmar—are not in BDP’s sample, so the database constructed here extends the monthly, action-level record to half of the region. Coverage runs to March 2024, past BDP’s end-2021, and reaches back before 2008 for the economies with longer records, which is what allows the classification of Section 7 to read each economy over its own observation window. And for the seven economies the two databases share, the regional compilation records measures that the IMF Taxonomy does not separately record, as the month-by-month reconciliation in Section 2 shows. Our aims are twofold. First, we construct a monthly database with index definitions identical to BDP’s, so that the region’s experience can be read in the same terms as the original study. Second, and throughout, we compare the ASEAN+3 results with BDP: where the region reproduces the original stylized facts, where it departs from them, and why those departures follow from the regional composition of the sample. The paper is therefore organized around the comparison itself.

Section 2 describes the source and the coding. Section 3 defines the indices. Section 4 presents the cumulative “stance” of policy, in aggregate and by economy. Section 5 reports the incidence of instruments and functional categories. Section 6 turns to the high-frequency recalibration of CFMs. Section 7 presents a stock-taking, walls/gates classification and discusses its limits. Section 8 concludes. Appendix A records the coding conventions and the data-construction details, including the classification rules for borderline measures and the sources used to verify effective months.

2 Data and Coding

The source is the AMRO database of CFMs and MPMs in the ASEAN+3, version 4 (March 2024). Like the IMF Taxonomy that underlies BDP, the AMRO compilation records *changes* to policy rather than the

¹A large theoretical literature analyzes CFMs as a policy response to volatile capital flows and their implications for macro-financial stability, including the pecuniary-externality rationale for prudential capital controls (Jeanne and Korinek, 2010; Bianchi, 2011), their interaction with exchange-rate regimes and nominal rigidities (Farhi and Werning, 2014; Schmitt-Grohé and Uribe, 2016), and their comparison with macroprudential policy as an alternative stabilization tool (Ostry et al., 2010; Korinek and Sandri, 2016), as well as their welfare effects and interaction with monetary and macroprudential policy in a small-open-economy setting (Kitano, 2011; Kitano and Takaku, 2018, 2020; Zhou and Kitano, 2025).

²The fourteen economies are the ten ASEAN members—Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam—together with China, Japan and Korea, with Hong Kong, China treated as a separate economy.

standing stock of restrictions; the database is therefore, at its core, a directional record of policy actions. We code each action with: a classification (CFM, including CFM/MPM, versus pure MPM); the direction of the flow targeted (inflow, outflow, or both); the direction of the policy (a sign, +1 for an introduction or tightening, -1 for an easing or removal); one of fourteen instrument types, grouped into price-based and administrative; and flags for the balance-of-payments functional categories affected. Pure macroprudential measures—those that do not, by design, act on cross-border flows—are excluded from the CFM indices and aggregated separately.

Actions that carry a policy direction—an introduction, tightening, easing or removal—are *index-affecting*; entries that only document a standing measure, with no dated change, do not enter the indices. Of the 446 index-affecting actions in the region, 230 are CFMs (including CFM/MPMs) and 216 are pure MPMs. All figures and tables in this paper, like BDP’s, are based on the CFMs. Throughout, the advanced economies are Brunei, Hong Kong, Japan, Korea and Singapore; the low-income economies are Cambodia, Lao PDR and Myanmar; and the emerging markets are China, Indonesia, Malaysia, the Philippines, Thailand and Vietnam. The sample is dominated numerically by the region’s emerging markets, which account for 190 of the 230 CFM actions, against 28 for the region’s advanced economies and 12 for its low-income economies—a composition that matters for several of the comparisons below.

Effective-month dating for monthly-frequency use

A distinctive feature of the database, and the step that makes it usable at monthly and quarterly frequency, is a sustained effort to recover the *effective month* of measures that the AMRO source dates only to a year. Each index-affecting action carries a month-known flag *mk*: $mk=1$ when the month is stated in the source; $mk=0$ when only the year is given, in which case the month is imputed to June as a neutral convention and is *not* a reliable monthly date; and $mk=2$ when an originally year-only date has been verified against an external public record—a central-bank regulation or circular number, an official legal-gazette database, a central-bank press release, or BIS/IMF documentation—and the true effective month substituted. Both $mk=1$ and $mk=2$ are reliable monthly dates.

In the raw source only 334 of the 446 index-affecting actions (75 percent) carried a stated month; the other 112 were year-only. Verification re-dated 59 of these to their documented effective month ($mk: 0 \rightarrow 2$), cutting the year-only count from 112 to 53 and raising reliable monthly coverage from 75 to 88 percent (393 of 446). Each verified action records the underlying regulation number and date in its notes field, so the dating is traceable. A clear pattern governs what is recoverable: discrete regulatory acts—anti-speculation measures, crisis responses, major prudential regulations—are datable, because they are implemented through a numbered circular whose effective date is on public record; gradual liberalization programs, in which a quota is widened step by step over several years, often have no single effective month and are properly left at $mk=0$. The residual year-only actions are concentrated in Thailand’s multi-year outward-investment liberalization, for which no single month exists. Table 1 reports the verified and remaining year-only actions by economy; raising the $mk=2$ count and lowering $mk=0$ is the database’s central improvement over a year-only reading of the same source.

Validation against BDP over the overlapping sample

Seven of the fourteen economies—China, Hong Kong, Indonesia, Korea, Malaysia, Singapore and Thailand—also appear in BDP, so the two databases can be reconciled month by month over BDP’s window (November 2012–December 2021), both as a validation and to locate where the independent coding of two related but distinct source documents diverges. Table 2 reports the comparison. Over the window BDP records 48 CFM action-months (economy-months with at least one CFM action) for these seven economies and the present database records 52. Twenty months carry an action in both; the two agree on the net direction of the action in eighteen of them, and the two disagreements are documented coder-judgment differences (the treatment of a 2015 Korean levy reform and a 2016 Malaysian measure). The remaining action-months appear in only one database—28 in BDP alone and 32 here.

Table 1: Effective-month dating by economy: index-affecting actions verified from year-only to a documented month ($mk=2$) and those that remain year-only ($mk=0$). Economies already month-dated in the source (mainly Japan, Korea and Lao PDR) need no verification and do not appear. Columns sum to the regional totals of 59 verified and 53 year-only.

Economy	Verified ($mk=2$)	Year-only ($mk=0$)
Indonesia	24	7
Thailand	14	34
China	8	3
Cambodia	3	2
Malaysia	3	2
Singapore	3	0
Philippines	2	1
Vietnam	2	1
Brunei	0	1
Hong Kong	0	1
Myanmar	0	1
Total	59	53

Table 2: Reconciliation against BDP over the overlapping sample: CFM action-months by economy, November 2012–December 2021. “Both” counts months in which both databases record an action; “Agree” is the subset on which the two agree on the net direction; “BDP-only” and “AMRO-only” count action-months recorded in only one database. “BDP” and “AMRO” are the column totals (Both plus the respective one-sided count).

Economy	BDP	AMRO	Both	Agree	BDP-only	AMRO-only
China	23	11	2	2	21	9
Hong Kong	4	4	4	4	0	0
Indonesia	2	12	1	1	1	11
Korea	5	4	4	3	1	0
Malaysia	9	11	6	5	3	5
Singapore	3	2	2	2	1	0
Thailand	2	8	1	1	1	7
Total	48	52	20	18	28	32

These one-sided records are expected rather than errors: the two compilations apply different macro-criticality filters (judgments about which measures are significant enough to record) and cover slightly different scopes. The AMRO source dates and includes regional measures the IMF Taxonomy does not separately record—most visibly for Indonesia and Thailand, where the present database carries 12 and 8 action-months against BDP’s two each—while the Taxonomy includes staff-assessed measures the AMRO source treats differently or omits, most visibly for China, where BDP records 23 action-months against 11 here. Where the two databases see the same measure they agree on its net direction in all but two cases, and the financial centres whose coding is least ambiguous (Hong Kong, Singapore) reconcile almost exactly; the economies with the largest scope gaps—China on the Taxonomy side, Indonesia and Thailand on the AMRO side—are where the two records diverge most. Two readings follow. The divergences reflect the sources rather than coding error: the IMF Taxonomy and the AMRO compilation rest on different documents and apply different macro-criticality filters, so neither record contains the other. In addition, the AMRO database contains information that BDP does not—most clearly the regional inflow and outflow measures for Indonesia and Thailand that the Taxonomy does not separately record—so for the ASEAN+3 it is not merely consistent with BDP on the common measures but a fuller record. The exercise thus validates the coding where the two overlap while making transparent, economy by economy, where and why they differ. The reconciliation sheet of the workbook lists every action-month with a short explanatory note.

3 Indices

From the coded actions we construct a monthly panel of indices defined to match BDP. Each action is a tightening (or introduction) or an easing (or removal) of a measure on inflows, on outflows, or on both. For economy i in month t , let T_{it}^{in} and E_{it}^{in} be the *numbers* of inflow-directed tightenings and easings, and T_{it}^{out} and E_{it}^{out} the numbers of outflow-directed tightenings and easings. Following BDP, the *net inflow index* counts the measures that work to limit net inflows—inflow tightenings together with outflow easings—and the *net outflow index* counts those that work to limit net outflows—outflow tightenings together with inflow easings:

$$\text{NII}_{it} = T_{it}^{\text{in}} + E_{it}^{\text{out}}, \quad \text{NOI}_{it} = T_{it}^{\text{out}} + E_{it}^{\text{in}}.$$

Both are counts of actions and so are non-negative by construction, exactly as in BDP. Each draws on *both* sides of the capital account: an outflow easing adds to NII, and an inflow easing adds to NOI. The *cumulative net tightening index* is the running difference of the two,

$$\text{CI}_{it} = \sum_{k=t_0}^t (\text{NII}_{ik} - \text{NOI}_{ik}), \quad (1)$$

so CI rises as the measures that limit net inflows accumulate and falls as the measures that promote net inflows accumulate. This is the index that BDP call the “stance” and plot in their Figure 4.

Two distinct cumulative conventions appear below and should not be conflated. The first is CI in (1), which distinguishes inflow from outflow measures and is used for the stance figures. The second, used for the high-frequency figure (Section 6), is the simple cumulative sum of the monthly CFM index, which does *not* distinguish inflow from outflow and instead counts tightening against easing of any direction; following BDP it is inverted so that positive denotes easing, for comparability with annual openness indices. The same economy can have a CI of one sign and an inverted-cumulative-CFM line of the other, because the two series weight inflow and outflow measures differently.

4 The Stance of Policy

Before turning to the cumulative indices, Figure 1 shows *when* the region acted and through which margin. It is the analogue of BDP Figure 2, at annual frequency; we use annual rather than quarterly counts because the fourteen-economy counts are small at quarterly frequency. The upper panel plots the net inflow measures, decomposing NII into its two components—inflow tightenings and outflow easings—as stacked bars, with introductions and removals shown as outlined bars, changes to existing measures as solid bars, and the annual NII as the dashed line. The lower panel does the same for the components of NOI: outflow tightenings and inflow easings. Following BDP’s colour convention, actions on inflows are green and actions on outflows are red in both panels. Because economies enter the sample at different dates (Section 2), counts in the early years cover fewer economies; the annual counts are unaffected by the June convention for year-only dates.

The figure shares the arc that BDP describe for their Figure 2: in the region as well, both indices are driven mainly by tightening in the earlier part of the window—green tightening bars dominate the upper panel through the mid-2010s—and almost entirely by easing at the end. The one regional departure is in the middle of the window, where NOI rises above NII in 2015–16, and the lower panel shows that this is a tightening episode, not an easing one: the bars are solid red, China’s tightening of existing outflow controls. The timing of these swings matches the global episodes documented by BDP, with one clear exception. Tightenings cluster in 2010–11 (twelve actions against six easings, eleven of them on inflows), when the post-crisis surge of inflows into emerging markets prompted new inflow measures—Korea’s cap on banks’ foreign-exchange derivative positions and its levy on non-deposit foreign-currency liabilities date from these years—and again in 2015–17, when China’s response to sustained outflow pressure accounts for ten of the sixteen tightenings of 2015–16 (thirteen of the sixteen fall on outflows). Both waves have

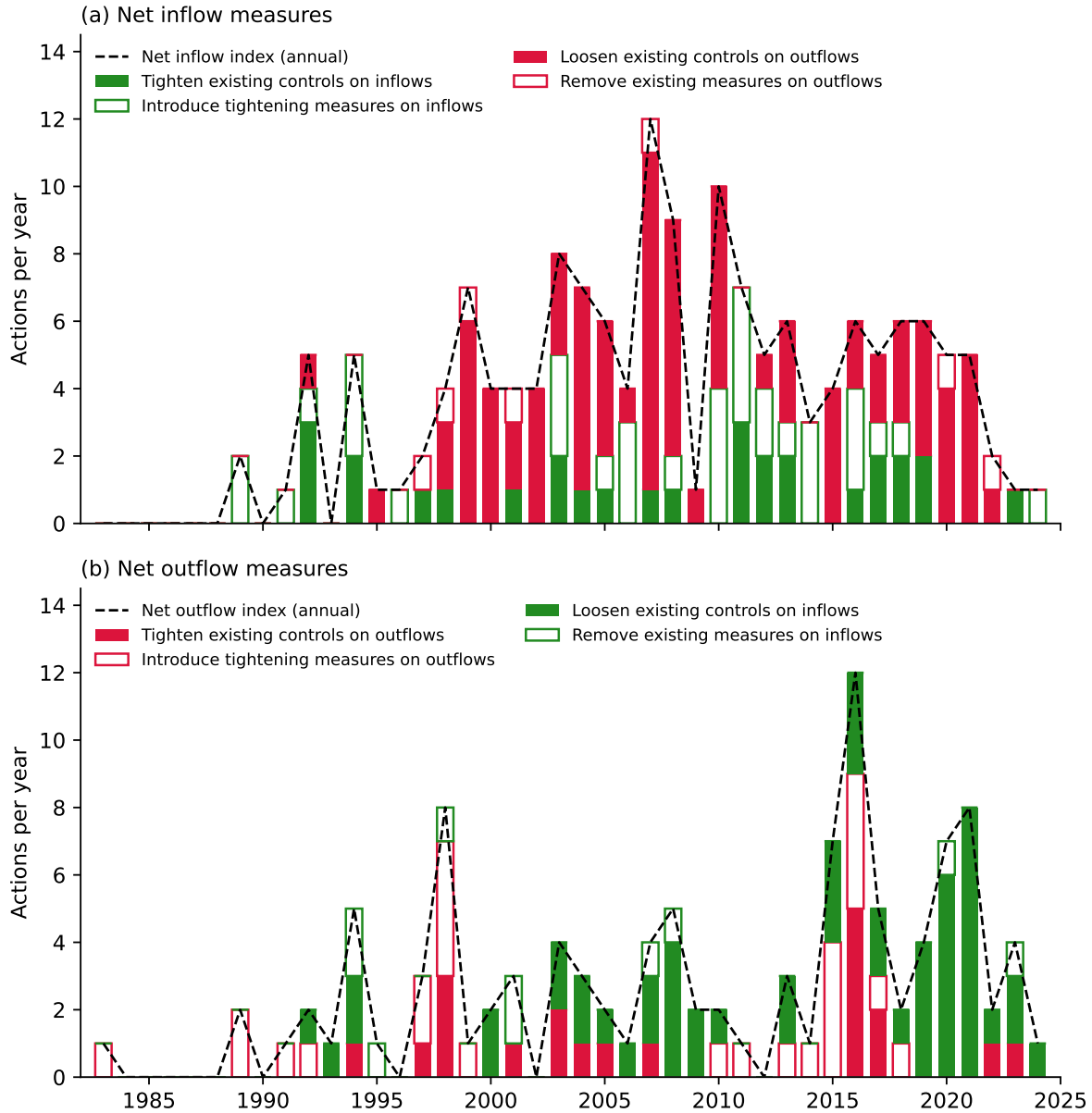


Figure 1: Annual profile of CFM actions, all fourteen economies, 1983–2024: the analogue of BDP Figure 2, at annual frequency. The upper panel decomposes the net inflow measures into the components of NII (inflow tightenings, green, and outflow easings, red); the lower panel decomposes the net outflow measures into the components of NOI (outflow tightenings, red, and inflow easings, green). Solid bars are changes to existing measures; outlined bars are introductions and removals; the dashed line is the annual index, the sum of the components. Measures directed at both sides enter both panels. Counts in early years cover fewer economies because coverage windows differ.

direct counterparts in BDP. The 2013 taper tantrum, by contrast, leaves little trace in the region: nine actions, almost evenly split between the two directions. The clear exception is the pandemic. In 2020 and 2021 the region recorded nineteen CFM actions and every one of them was an easing or a removal, spread across six economies in 2020 alone: over these two years the upper panel shows only red bars (outflow easings) and the lower panel only green bars (inflow easings), with no tightening component of either kind. Where BDP’s global sample combines crisis-driven outflow tightening with easing, the ASEAN+3 response to COVID-19 was easing throughout—of inflow restrictions to support access to foreign funding,

and of outflow restrictions as a continuation of liberalization already under way. The global financial crisis itself left only a modest mark on the region’s CFMs: 2008–09 brought twelve easings and two tightenings, consistent with the region having been affected by, but not at the centre of, that crisis.

Figure 2 aggregates NII, NOI and CI over all fourteen economies, at quarterly frequency, rebased to zero in 2010q1. As in BDP’s Figure 4, the upward trend in the stance indicates that the region’s authorities actively adjusted the scope of CFMs over the cycle rather than leaving the capital account untouched. Over 2010q1–2024q1 the cumulative net inflow index rises by about 70 and the cumulative net outflow index by about 56, so both sides of the capital account were actively managed. Because the net inflow index stays above the net outflow index throughout, the cumulative stance $CI = \sum(NII - NOI)$ trends upward over the sample. The same ordering—a cumulative net inflow index that rises to about 70 and stays above a cumulative net outflow index near 55—characterizes BDP’s Figure 4(A) for their full 49-economy sample, so the ASEAN+3 aggregate tracks the global picture closely; what the region adds, as the next paragraphs show, is that its upward stance comes mostly from outflow easing rather than inflow tightening.

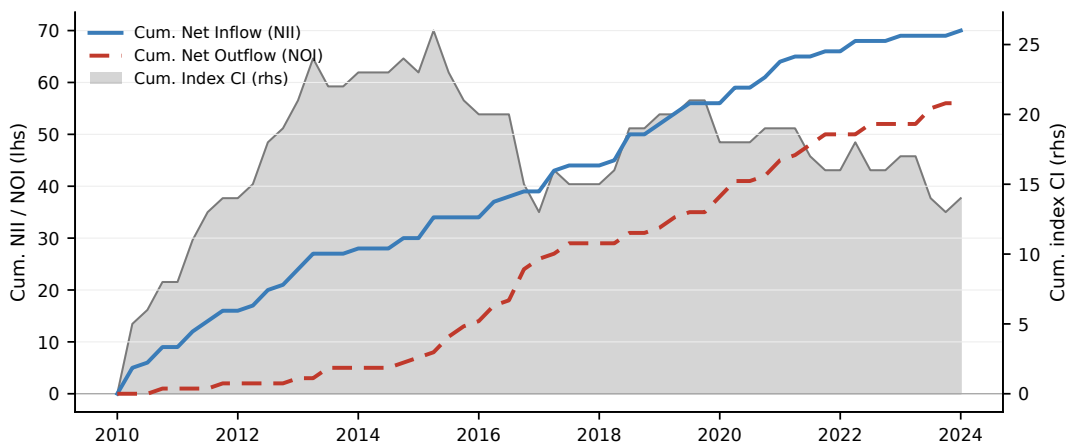


Figure 2: Cumulative net inflow (NII), net outflow (NOI) and net tightening (CI) indices, ASEAN+3 sample aggregate, 2010q1–2024q1, rebased to zero at 2010q1. Lines: left axis; shaded CI: right axis. The analogue of BDP Figure 4(A).

The composition of the trend is informative and illustrates a subtlety in (1). The NII line is driven in part by the region’s residency-differentiated property measures—Hong Kong’s and Singapore’s stamp duties and Malaysia’s stamp duty on non-citizen purchases—and by the gradual liberalization of resident outward investment, led by Thailand—an outflow easing, which by definition adds to NII. The NOI line is flat until the mid-2010s and rises thereafter, reflecting outflow *tightening*—most prominently China’s strengthening of capital-outflow controls—together with some easing of inflow restrictions. The aggregate CI dips over 2015–17; this dip is driven by China, but by outflow-tightening measures (controls to keep capital at home), not by an easing of inflows. Because outflow tightening adds to NOI and so subtracts from CI, China’s controls push the aggregate stance down before it rises again.

Figure 3 disaggregates the same window by economy, with each panel rebased to zero in 2010q1; the per-economy CI series sum to the aggregate. The decomposition is the main message: the sign of CI gives the net stance, but only the separate NII and NOI lines reveal whether an economy reached it by acting on inflows or on outflows. Thailand’s strongly positive CI is driven almost entirely by outflow easing (the liberalization of resident outward investment), not by inflow tightening, whereas China’s negative CI is driven by outflow tightening, not by inflow easing. The two reach opposite net stances by acting on the same side of the account—the outflow side. This shows that economies at opposite ends of the CI scale can arrive there through the same class of measures. More broadly, the per-economy CI splits by sign across the region. Most economies sit on the positive, net-inflow-limiting side—Thailand much the largest at about

+19, with Hong Kong, Singapore, Indonesia, Korea and Cambodia modestly positive—while China is the main economy on the negative side (about -11), joined mildly by the Philippines and Lao PDR; Malaysia, despite holding the region’s largest stock of measures, is close to zero because its many tightenings and easings cancel out. This dispersion of signs is the key point: a single regional aggregate conceals economies moving in opposite directions, and only the per-economy decomposition recovers them.

The NII/NOI decomposition classifies each action, following BDP, by the direction of the *net* flow it works toward: an outflow easing, for example, adds to NII because it promotes net outflows and so limits net inflows. A complementary reading, which goes beyond BDP, classifies each action instead by the side of the capital account it regulates. Measures on inflows regulate cross-border transactions by foreign agents, and measures on outflows regulate those by domestic agents; this is the same distinction the capital-flow literature draws between *gross inflows* and *gross outflows* (Forbes and Warnock, 2012; Zhou and Kitano, 2026c). Define the *inflow-directed* index as the net tightening of inflow rules, $T^{\text{in}} - E^{\text{in}}$, and the *outflow-directed* index as the net tightening of outflow rules, $T^{\text{out}} - E^{\text{out}}$, with measures that regulate both sides entering both indices, as in Table 3. The cumulative versions of these two series satisfy an exact identity with the stance:

$$CI_{it} = \sum_{k=t_0}^t (T_{ik}^{\text{in}} - E_{ik}^{\text{in}}) - \sum_{k=t_0}^t (T_{ik}^{\text{out}} - E_{ik}^{\text{out}}), \quad (2)$$

because $\text{NII} - \text{NOI} = (T^{\text{in}} + E^{\text{out}}) - (T^{\text{out}} + E^{\text{in}}) = (T^{\text{in}} - E^{\text{in}}) - (T^{\text{out}} - E^{\text{out}})$; measures directed at both sides cancel in the difference. The two figures are therefore two decompositions of the same CI.

Figure 4 plots the two cumulative directed indices by economy, with the same CI as Figure 3 shown as the shaded area; all three series share one scale, so the shaded area equals the solid line minus the dashed line at every date. The figure shows directly what the NII/NOI decomposition of Figure 3 can only state in words. Thailand’s inflow-directed line is flat over the window while its outflow-directed line falls to -19 : its positive stance is a net easing of the rules that apply to domestic agents investing abroad. China’s inflow-directed line barely moves ($+2$) while its outflow-directed line rises to $+13$: its negative stance is a net tightening of the same side of the account. The two economies sit at opposite ends of the CI scale, yet in both panels it is the outflow-directed line that moves. The Thailand–China comparison is therefore clearer here than in Figure 3, and the reason lies in the construction of the indices: NII and NOI each combine measures on the two sides of the account—a rise in NII can be inflow tightening or outflow easing, and a rise in NOI can be outflow tightening or inflow easing—so no line in Figure 3 isolates the outflow side, and the comparison there could only be stated in the text. Here it is read directly from a single line: the outflow-directed index, which falls for Thailand and rises for China. Malaysia’s panel adds a fact that the NII/NOI panels of Figure 3 cannot show, for the same reason. There, both of Malaysia’s lines rise, so the activity itself is visible, but not which side of the account it acts on or in which direction. The directed indices show it: over this window Malaysia eased the rules on both sides of the account by the same amount (-9 and -9), and its flat CI is the difference of two equal liberalizations. Cumulative directed indices of this kind are also the form in which the database enters empirical work: Zhou and Kitano (2026a) construct direction- and category-specific cumulative CFM indices from the BDP data to estimate the response of the corresponding gross flows for India, and Kitano and Zhou (2022) conduct a parallel category-level exercise for China.

5 Incidence of Instruments and Functional Categories

Table 3 cross-tabulates the instruments against the direction of policy, with the lower block split by income group; Table 4 does the same for the balance-of-payments functional category. Both cover CFMs and CFM/MPMs only and are the analogues of BDP Tables 6 and 7.

The core regularities of BDP reappear almost exactly. Administrative measures account for the large majority of CFMs (187 of 230). Limits are the single most common instrument (98 actions) and are mostly

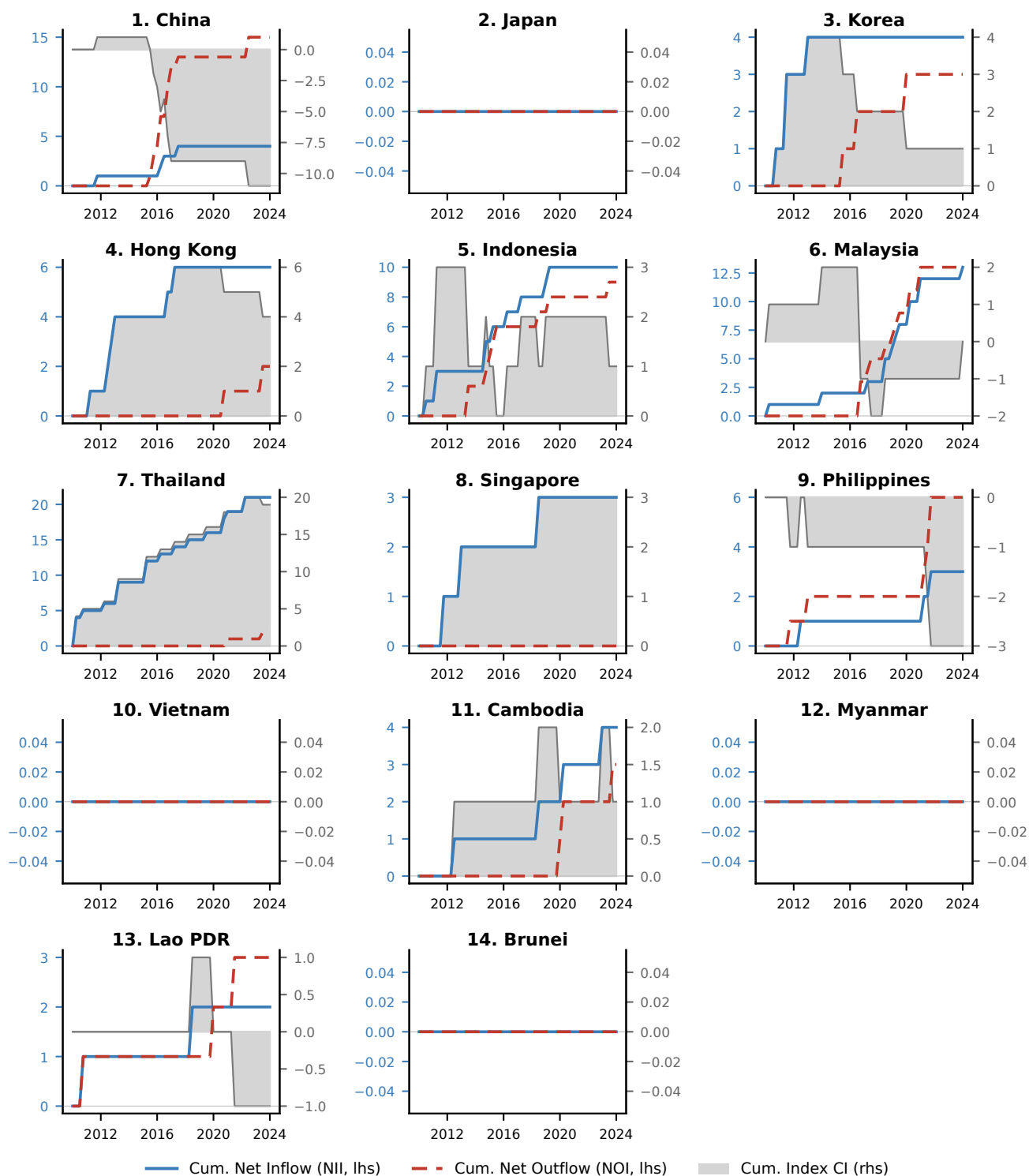


Figure 3: Cumulative NII, NOI and CI by economy, 2010q1–2024q1, each panel rebased to zero at 2010q1 (the analogue of BDP Figure 4, by economy). Lines: left axis; shaded CI: right axis. Per-economy CI series sum to the aggregate of Figure 2.

outflow easing (45 of their actions), which reflects the region's gradual liberalization of resident outward investment. Price-based measures go the other way, towards inflows and tightening: 82 percent target inflows and two-thirds of those tighten (eighteen of twenty-seven), close to the roughly 80 percent and

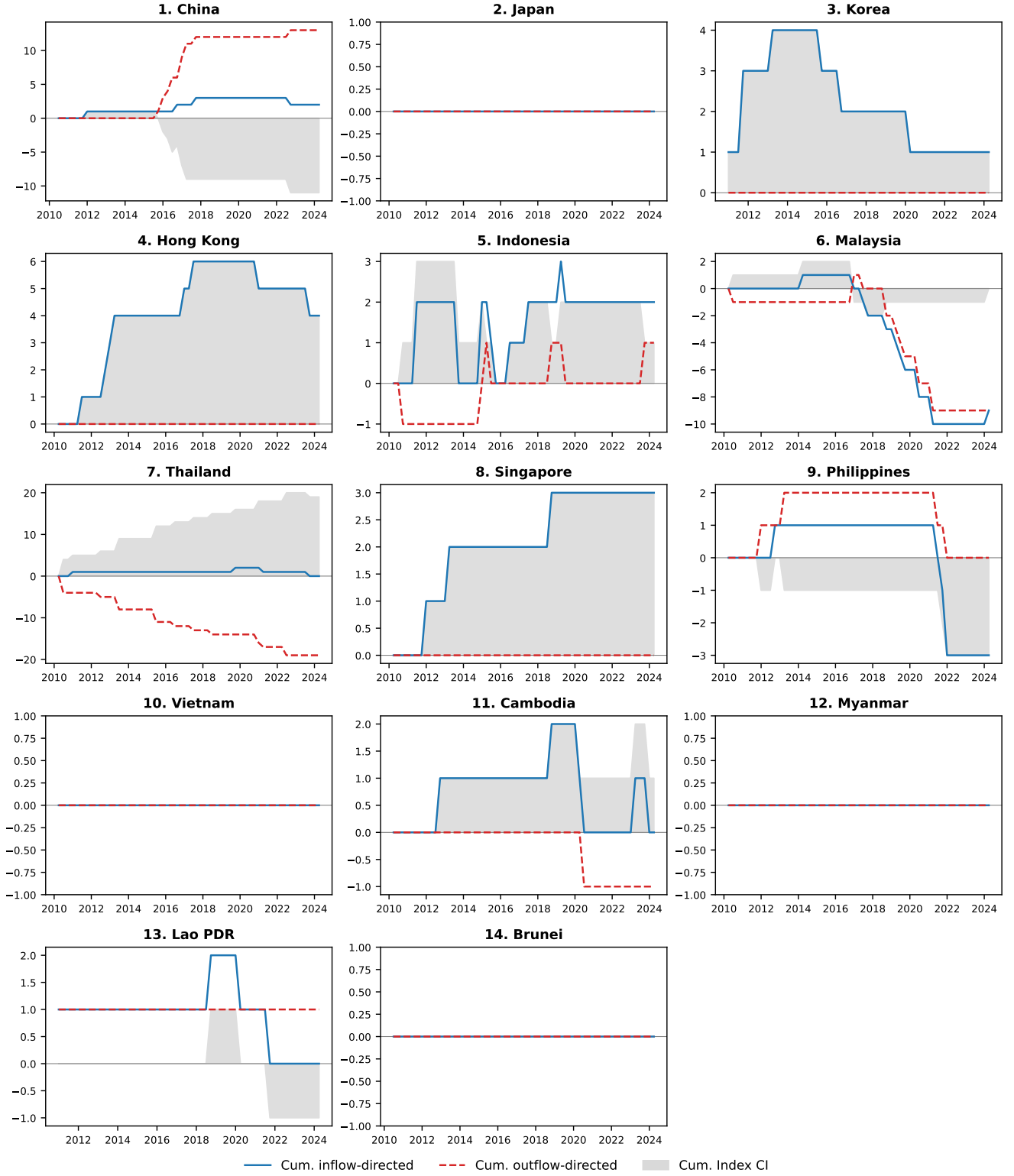


Figure 4: Cumulative inflow-directed and outflow-directed CFM indices by economy, 2010q1–2024q1, with the cumulative net tightening index CI (identical to Figure 3) as the shaded area. All series share one scale; by the identity in (2), the shaded area equals the solid line minus the dashed line at every date. Measures directed at both sides enter both lines and cancel in CI. Panels are rebased to zero at 2010q1 where coverage includes 2010q1; economies whose coverage begins later are shown at raw levels. This decomposition goes beyond BDP.

two-thirds reported by BDP. All but one of the region’s property stamp duties tighten inflows into the property market, and they are an advanced-economy instrument, exactly as in the original study.

Table 3: Instruments and the direction of capital account policies (the analogue of BDP Table 6). CFMs and CFM/MPMs only. A measure acting on both inflows and outflows is counted in both direction columns but once in “All,” so rows need not sum across.

	All	Inflow		Outflow	
Instrument	meas.	Tight.	Ease	Tight.	Ease
<i>Administrative</i>					
Approval req.	29	2	17	9	14
Limit	98	27	25	20	45
Limit / approval	10	0	0	1	9
Ban	29	8	7	6	10
Loan-to-value	3	2	1	0	0
Holding period	8	3	2	1	2
Repatriation req.	3	0	0	2	1
Surrender req.	4	0	0	1	3
Surrender/repatriation	3	0	0	0	3
<i>Price-based</i>					
Fee	2	1	1	0	0
Reserve req.	16	8	7	1	0
Stamp duty	9	8	1	0	0
Tax	6	1	0	1	4
<i>Other</i>					
Other	10	5	3	4	3
Administrative	187	42	52	40	87
<i>Advanced</i>	17	6	4	1	6
<i>Emerging</i>	168	35	47	38	80
<i>Low-income</i>	2	1	1	1	1
Price-based	33	18	9	2	4
<i>Advanced</i>	10	8	2	0	0
<i>Emerging</i>	13	5	2	2	4
<i>Low-income</i>	10	5	5	0	0
Other	10	5	3	4	3
Total	230	65	64	46	94

By income group, emerging markets account for the bulk of administrative measures (168 of 187, or 90 percent). The advanced economies account for the largest single share of the inflow-tightening price-based measures—eight of eighteen, reflecting Hong Kong’s and Singapore’s property stamp duties—with the remainder split evenly between emerging-market and low-income economies, the latter through Cambodia’s and Lao PDR’s reserve requirements.

On the functional categories (Table 4), the ASEAN+3 results align closely with BDP: “Other Investment,” dominated by banking-sector flows, is the most heavily targeted category; portfolio debt and equity follow; and direct investment and financial derivatives attract the fewest measures. The one regional nuance is that outflow easing is especially prominent in the portfolio categories, reflecting the gradual opening of residents’ access to foreign securities.

The instrument mix also differs by income group (Figure 5). The emerging markets rely overwhelmingly on administrative instruments (88 percent), and the region’s advanced economies use price-based measures far more (36 percent), reflecting Hong Kong’s and Singapore’s property stamp duties; both patterns match BDP. The low-income group, however, runs opposite to BDP. In BDP the low-income economies used almost no price-based measures (a single reserve requirement in the entire sample) and relied almost wholly on administrative controls; the region’s low-income economies are the reverse, overwhelmingly

Table 4: Direction of policy by functional category of the balance of payments (the analogue of BDP Table 7). A measure can affect several categories, so columns exceed the count of distinct measures.

Category	Inflow		Outflow	
	Tight.	Ease	Tight.	Ease
Direct Investment	2	8	6	9
Portfolio Debt	17	14	7	26
Portfolio Equity	4	4	7	27
Financial Derivatives	8	18	6	18
Other Investment	55	42	37	55
<i>of which: Banks</i>	<i>40</i>	<i>35</i>	<i>20</i>	<i>37</i>
Total	86	86	63	135

price-based—ten of their twelve CFM actions are Cambodia’s and Lao PDR’s currency-differentiated reserve requirements. This difference comes from which economies make up the two low-income groups, not from a general difference in how low-income economies choose their instruments.

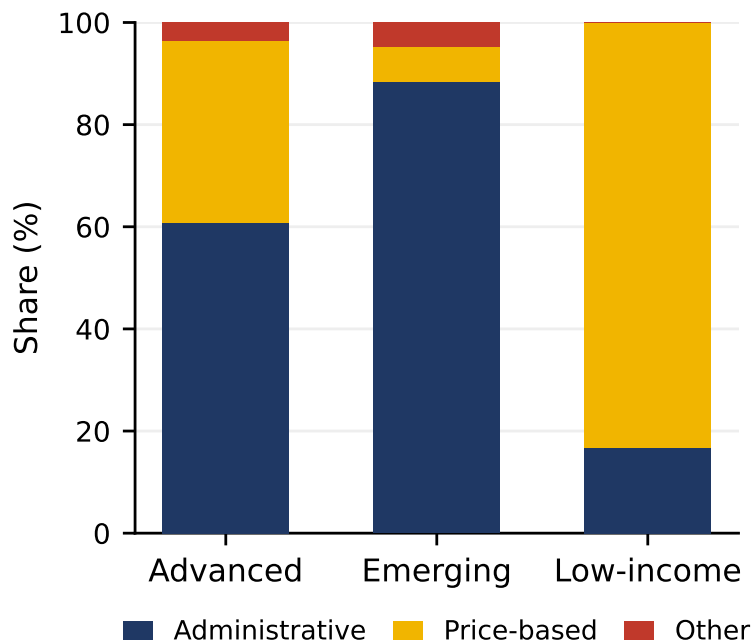


Figure 5: Price-based, administrative and other CFMs by income group, as a share of the group’s CFMs (the analogue of BDP Figure 6(a)).

Where the samples agree, and where they diverge

Four main differences from BDP emerge, and each can be traced to the regional composition of the sample rather than to a coding inconsistency. First, administrative measures are directed at outflows less strongly than in the full sample (67 percent here versus about 80 percent in BDP), because the crisis-era outflow controls of Greece, Iceland and Ukraine that drive BDP’s skew toward outflows are absent from the region. Second, bans are not exclusively an outflow instrument here—16 of 29 target outflows and 15 target inflows—because the region used prohibitions on the inflow side as well (for example Thailand’s ban on non-deliverable forwards), whereas in BDP every ban targeted outflows in a crisis. Third, the low-income direction pattern is reversed (all twelve low-income CFM actions target inflows—two of them

outflows as well—against about 15 percent in BDP), but the count is tiny and comes almost entirely from Cambodia’s and Lao PDR’s currency-differentiated reserve requirements; with so few actions, the reversal says more about which economies are in the group than about low-income policy in general. Fourth, taxes are less inflow-oriented, as the region relies on reserve requirements and stamp duties instead. These are differences in what the two samples contain, not in how the measures are coded. On the main patterns—which instruments are used most, which balance-of-payments categories are targeted most often, and how the advanced and emerging groups differ—the two databases agree, even though each was built separately from a different source; the low-income group is the one exception, for the compositional reason above.

6 High-Frequency Recalibration

Figure 6 plots, for each economy, the monthly CFM index as bars and its cumulative sum as a line, following BDP Figure 7. CFMs are inverted so that positive values indicate more openness: a positive bar counts measures eased or removed in the month, a negative bar counts measures introduced or tightened, and the line is the running cumulative sum of the bars. This is deliberately the undirected convention of Section 3, chosen so the line can be compared with annual openness indices; it is distinct from the CI of Figure 2.

The central observation parallels BDP: there are significant intra-year changes to capital account policies, and most economies use both tightening and easing measures, often within a single year. The pattern can be quantified. Of the 230 CFM actions, only 54 are introductions of new measures; the remaining 176 (77 percent) adjust, ease or remove a measure already on the books. The 230 actions are spread over 83 distinct measures, an average of 2.8 actions per measure, and 29 measures record three or more actions. The most-adjusted measures show the style of policy: Thailand’s ceiling on outward portfolio investment by mutual funds was changed thirteen times over the sample, and Malaysia’s restrictions on ringgit credit between residents and nonresidents eleven times. As in BDP, capital account policy in the region works mainly by recalibrating existing instruments rather than by creating new ones.

This two-directional recalibration is precisely the high-frequency feature that annual indices, by construction, obscure. In the ASEAN+3 record, 17 of the 110 economy-years with at least one CFM action contain both a tightening and an easing—these years account for 75 of the 230 actions—and in six measure-years the *same* measure is tightened and eased within a single year. A year-end snapshot would record little or no net change in these years despite active management. The cumulative stance lines show how much the economies differ: Thailand and Malaysia move strongly toward openness, driven by the liberalization of outward investment; China’s stance falls over the sample as its outflow controls accumulate; Indonesia and the Philippines move in the opposite direction, their lines falling as reserve requirements and other measures accumulate; Hong Kong’s line falls with its residency-based property measures of 2011–2017; Korea is close to flat, its introductions and later easings roughly offsetting; Singapore moves slightly toward openness; and Japan, Brunei, Myanmar and Vietnam show essentially flat panels, having relied on macroprudential rather than capital flow management tools.

Figure 7 completes the instrument picture by showing, for each income group, the share of each instrument in the group’s CFM actions by year. As in BDP, limits are the main instrument of the emerging markets and property stamp duties the typical instrument of the advanced economies. The low-income panel, though sparse, differs from BDP in kind: BDP’s low-income group relied heavily on surrender and repatriation requirements to build foreign-exchange reserves, whereas the region’s low-income economies use none of these—their few measures are the reserve requirements of Cambodia and Lao PDR. Both groups act on foreign exchange, but with different instruments.

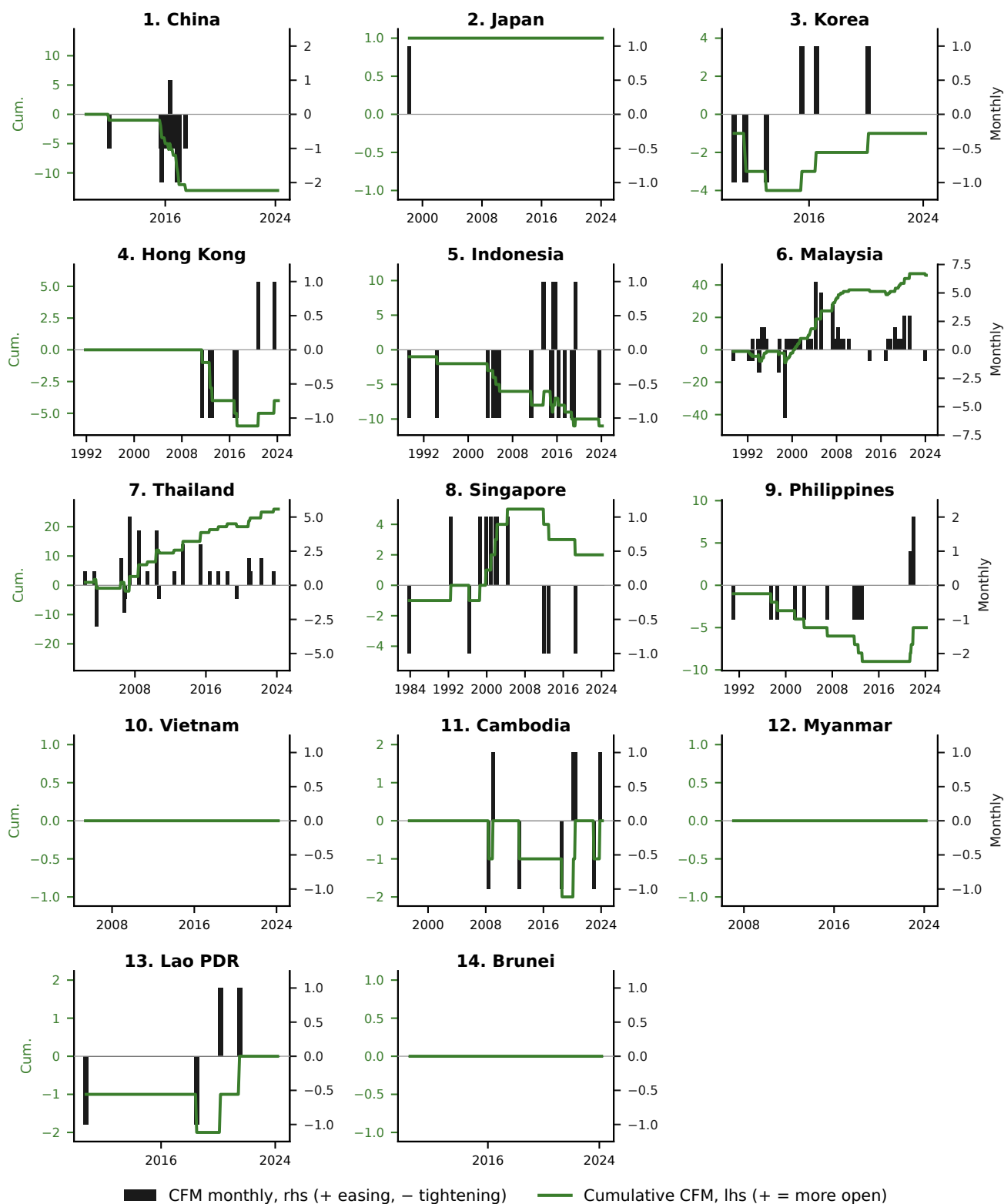


Figure 6: Monthly CFM index (bars) and its cumulative sum (line) by economy, following BDP Figure 7. CFMs are inverted so that positive values indicate more openness (easing or removal). Each panel uses the economy's own coverage span.

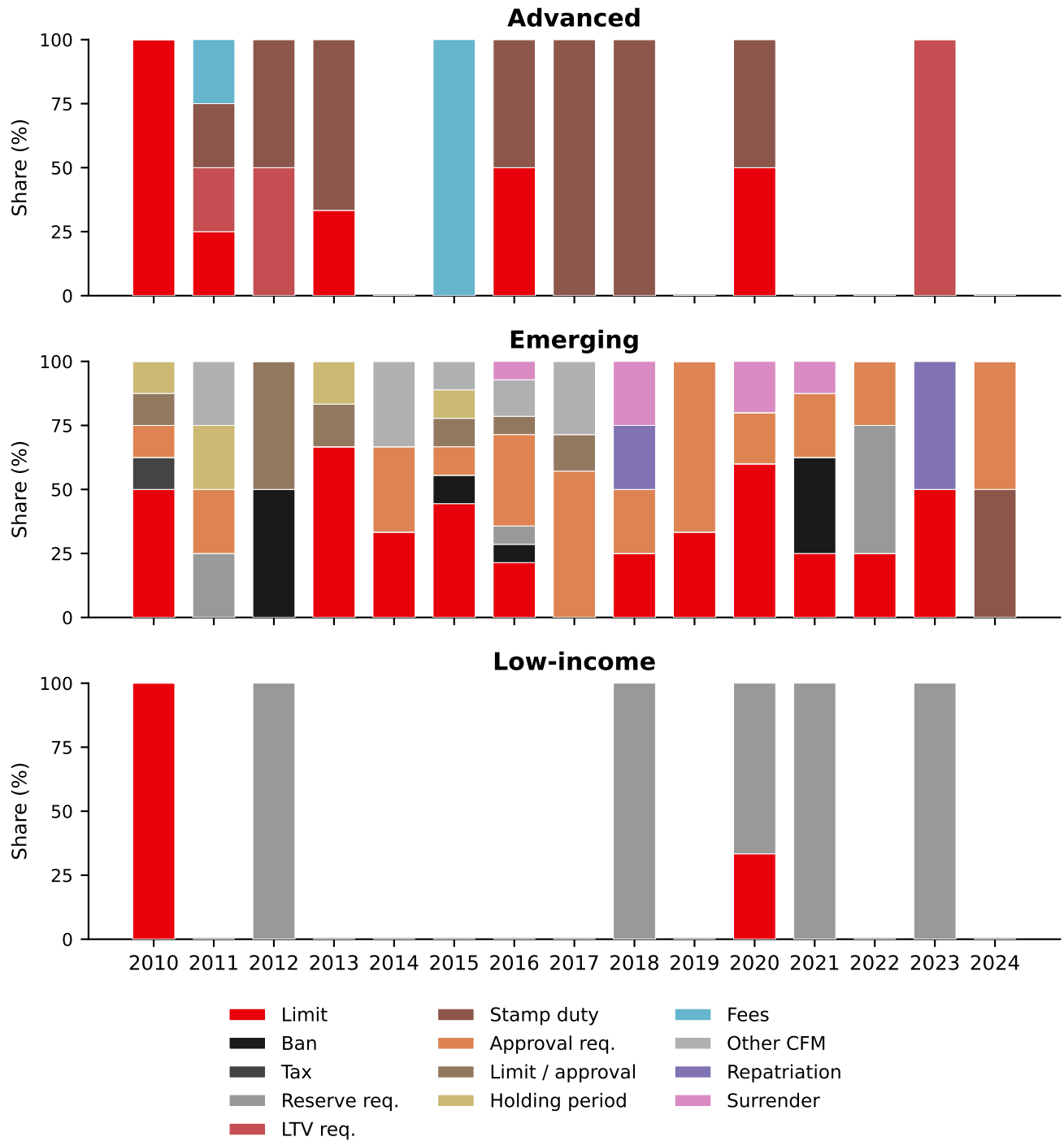


Figure 7: Relative use of CFM instruments by income group over time, as a share of the group’s CFM actions each year (the analogue of BDP Figure 6(b)).

7 Walls, Gates, and the Limits of Stock-Taking

BDP examine the characterization of capital-account regimes as “walls” or “gates,” concepts due to Klein (2012) and applied by Fernández et al. (2016).³ Their Table 9 classifies each economy by the number of years its CFMs were in place over the 2008–2021 sample: *All* (a wall) if a CFM in place at the start of

³Zhou and Kitano (2026b) examine whether the effectiveness of capital controls differs between walls and gates.

the sample is still in place at the end; *Some* (a gate) if a CFM introduced during the sample is in place at the end; and *Few* (open) if in-sample CFMs were removed before the end. The thresholds 2008 and 2021 are the first and last years of BDP’s sample, not absolute dates; what matters is whether a measure was already in place when observation began.

Because the ASEAN+3 database does not share a single common window—coverage begins as early as 1983 for Singapore and as late as 2010–11 for China, Hong Kong, Korea and Lao PDR—a fixed calendar threshold would misclassify economies whose record starts late: a structural control already in place when observation began, but first recorded only later, would be read as a within-sample introduction. We therefore adapt the BDP logic to each economy’s own observation window. A measure is treated as predating observation—a structural “wall” element—when its first recorded action is not an introduction but a tightening, easing or removal (left-censored), or when it is a standing measure; such measures must already have existed when the record opens. Table 5 reports the result. This adaptation reproduces BDP’s classification of China and Malaysia as walls, which a fixed-2008 threshold would not, because it correctly treats China’s pre-observation controls—recorded from 2011 as tightenings of existing rules—as structural.

Table 5: Walls, gates and open regimes in the ASEAN+3 (stock-taking classification, adapted to each economy’s observation window; the analogue of BDP Table 9). “Origin” records whether the economy’s standing CFMs predate its observation window (*predates* = wall), were introduced within it (*in-window* = gate), or were introduced and then removed (*removed* = open). “Of which: eased” counts in-force measures eased at least once; “Cum. CFM” is the endpoint of the cumulative line of Figure 6 (positive = more open).

Economy	Class	Origin	CFM meas.	In force	of w. eased	Cum. CFM
China	Wall	predates	13	13	2	−13
Hong Kong	Gate	in-window	4	2	0	−4
Indonesia	Wall	predates	10	10	4	−11
Korea	Gate	in-window	2	2	2	−1
Malaysia	Wall	predates	27	19	16	+46
Singapore	Gate	in-window	3	2	1	+2
Thailand	Wall	predates	14	11	7	+26
Philippines	Wall	predates	14	14	4	−5
Vietnam	Wall	predates	5	5	0	0
Cambodia	Wall	predates	2	2	2	0
Lao PDR	Gate	in-window	2	2	1	0
Myanmar	—	—	0	0	0	0
Japan	Open	removed	1	0	0	+1
Brunei	—	—	0	0	0	0

The “Origin” column makes the classification easy to interpret, because the counts alone do not. Korea and Cambodia are the clearest case: each has two CFMs, both still in force and both eased at least once, and their stance columns are almost identical, yet Korea is a gate and Cambodia a wall. The difference is one of timing, not size. Both of Korea’s measures were introduced within its observation window—the cap on banks’ foreign-exchange derivative positions in October 2010 and the macroprudential levy on non-deposit FX liabilities in August 2011—so its standing stock is entirely “Some,” a gate. Cambodia’s stock, by contrast, includes a standing limit on banks’ net open positions whose only recorded action is an easing in June 2020, when the restriction on positions in the national currency was removed: the limit itself predates the record and is observed solely as an easing (left-censored), which counts as “All,” a wall. It is the origin of the in-force stock, not its count or its current stance, that places an economy on one side or the other.

Two caveats, both arising from the nature of the stock measure, should be read alongside the table. First, the classification turns on whether measures are still formally in force, not on whether they still bind. The stock does not distinguish tightening from easing: a measure that has been substantially eased but not

formally repealed still counts as one in force. The right-hand columns show this. Malaysia and Thailand are classified as walls, yet sixteen of Malaysia’s nineteen in-force measures and seven of Thailand’s eleven have been eased at least once, and the cumulative stance of both is strongly toward openness (+46 and +26). Malaysia is the clearest example of this problem: it built up many controls during the 1997–98 Asian financial crisis and then removed them gradually over the 2000s, without formally repealing every one. A high in-force count therefore reflects the breadth of the standing regulatory apparatus, not the current restrictiveness of the capital account; classifying an economy as a wall on the strength of its stock alone can be misleading.

Second, two economies are classified differently from BDP, and the two divergences have different causes. Indonesia is a “wall” here but a “gate” in BDP. This difference comes from the length of the record, not from the coding: BDP’s record begins in 2008 and first sees Indonesian CFMs as introductions in 2010–11, so Indonesia’s standing stock reads as in-window; the record here is longer and shows that part of Indonesia’s standing apparatus—the foreign-exchange reserve requirement, whose first recorded action is a 2011 tightening of an existing rule, and its standing withholding tax—predates observation. This is the same left-censoring that the per-economy adaptation is designed to detect. Hong Kong, by contrast, is a “gate” here but “open” in BDP, and this divergence is a difference in what each record contains, not in the window. The present record carries four Hong Kong CFMs, all residency-differentiated property measures—the Buyer’s Stamp Duty, the doubled ad valorem duty and its successor, the New Residential Stamp Duty, and a non-resident loan-to-value limit—introduced from 2011 to counter a housing boom, with two still in force at the March 2024 cutoff, which makes Hong Kong a gate under a rule that counts in-force CFMs. Hong Kong’s capital account itself is structurally and almost completely open: it maintains no exchange controls or restrictions on cross-border capital movement, which is why Fernández et al., whose classification measures the share of capital-account transaction subcategories subject to controls, classify it as open—and why the “gate” label of a structurally open financial centre should not be read as evidence of a closed capital account. The divergence from BDP itself is explained by the coverage of the two records, and here the regional database is the fuller one. BDP classify Hong Kong as open under their years-with-CFM rule because their source, the IMF Taxonomy, records few CFMs for Hong Kong, and those few were in place for only a few years. The AMRO database records more: it contains the full set of Hong Kong’s residency-based property measures, and two of them are still in force at the end of the window. When the same counting rule is applied to this fuller record, Hong Kong becomes a gate. The divergence is therefore a gain from the regional database rather than a disagreement: the AMRO record captures a sustained residency-based tightening of the property market that the global Taxonomy does not, and the “gate” classification carries that additional information.

8 Conclusion

A monthly, action-level CFM database for the ASEAN+3 reproduces the instrument-level and functional-category regularities that Binici, Das and Pugacheva (2024) document for a broader sample: price-based measures are directed mostly at inflows and tightening, administrative measures dominate and are mostly outflow easing, and bank-oriented “Other Investment” is the most heavily targeted category. Because our regional sample is not the same as BDP’s, the picture differs in three ways: inflow and outflow measures are more evenly balanced, the crisis-driven outflow controls that are prominent in BDP are mostly absent, and a steady, long-run easing of restrictions on residents investing abroad appears throughout the stance figures. The timing of actions follows BDP’s global waves—tightening in 2010–11 and again in 2015–17—with the pandemic as the exception: the region’s COVID-19 response consisted entirely of easings. And, as in BDP, policy works mainly by recalibrating existing instruments: 77 percent of the region’s CFM actions adjust a measure already on the books.

The comparison also clarifies the interpretation of a “stock-taking” view of the data. A walls/gates classification adapted to each economy’s observation window reproduces BDP’s classification of China and Malaysia as walls, but the exercise shows that an in-force count says nothing about whether measures still

bind: Malaysia is the region’s clearest “wall” by stock yet its most liberalizing economy by flow. The two economies classified differently from BDP illustrate two distinct sources of divergence: Indonesia becomes a “wall” once its record is read over a longer observation window, and Hong Kong’s “gate”—“open” in BDP—reflects the fuller coverage of the regional record, which carries Hong Kong’s residency-based property measures, two of them still in force, while Hong Kong’s capital account itself remains structurally open. In both cases the regional record adds information rather than contradicting BDP. The high-frequency flow indices and the stock-taking classification are complementary, capturing the cyclical and the structural dimensions of capital account policy respectively; neither alone can determine how open an economy is. For the ASEAN+3, the regional database makes both dimensions observable at monthly frequency for all fourteen economies—including the seven that BDP’s sample does not cover—over a window that runs through March 2024, and, where the two databases overlap, it is the fuller record.

Appendix A: Coding conventions and data construction

Quantifying a textual compilation requires judgment at several points. The conventions below were applied consistently and are recorded in the per-action notes, so that any user can audit or revise them.

A.1 CFM versus MPM

Each measure is classified as a CFM or a pure MPM from the AMRO narrative. Pure macroprudential measures—those that do not, by design, act on cross-border flows—are excluded from the CFM indices and aggregated into a separate MPM index and MPM in-force stock. Measures that discriminate by residency or currency, or that otherwise bear on the cross-border flow of capital, are treated as CFMs (or CFM/MPMs) and enter the CFM indices. Of the 446 index-affecting actions, 230 are CFMs and 216 are MPMs.

A.2 Currency-differentiated reserve requirements

Reserve requirements that fall differentially on foreign-currency deposits or on certain debt inflows are treated as price-based inflow CFMs, consistent with BDP; uniform reserve-requirement changes that do not discriminate by currency or residency are treated as MPMs. The Indonesian foreign-exchange reserve requirement and the Cambodian reserve requirement on foreign-currency deposits are coded as CFMs on this basis.

A.3 Net open foreign-exchange position limits

Limits on banks’ net open foreign-exchange position are coded as in/out-flow CFMs (instrument: limit), following BDP, since they constrain banks’ ability to intermediate cross-border currency flows. The Indonesian net-open-position series, recalibrated repeatedly between 2003 and 2015, is the leading regional example.

A.4 Property transfer taxes and stamp duties

A distinction is drawn between residency-differentiated and uniform property taxes. Residency-differentiated duties—Hong Kong’s Buyer’s Stamp Duty and its residency-differentiated ad valorem duties (the doubled duty and the New Residential Stamp Duty), Singapore’s Additional Buyer’s Stamp Duty, and Malaysia’s non-citizen stamp duty—are coded as price-based inflow CFMs, matching BDP over the overlapping window. Uniform anti-speculation duties that do not discriminate by residency—Hong Kong’s Special Stamp Duty and Singapore’s Seller’s Stamp Duty—are coded as MPMs, consistent with BDP’s treatment of the Singapore duty. This convention is what places the two Hong Kong Special-Stamp-Duty actions among the MPMs rather than the CFMs, and so underlies the 230/216 split.

A.5 Anti-speculation measures on the domestic currency

Measures aimed at curbing offshore speculation against the domestic currency—limits on non-resident local-currency accounts, caps on local-currency lending to non-residents without an underlying transaction, and bans on non-deliverable forwards against the domestic currency—are coded as inflow CFMs, again following BDP. The Thai non-resident-baht-account and baht-lending measures of 2003, and the Singapore-dollar non-internationalization policy, are coded on this basis.

A.6 Effective-month verification: sources and two by-products

The month verification of Section 2 drew on national legal and regulatory records: Bank Indonesia PBI and PADG regulations cross-checked in the BPK and OJK gazette databases; National Bank of Cambodia Prakas; the State Council notices and PBOC and NDRC circulars behind China’s housing measures; State Bank of Vietnam resolutions and directives; Monetary Authority of Singapore notices; Bangko Sentral ng Pilipinas circulars and memoranda; and Bank of Thailand circulars, alongside central-bank research and BIS country papers. Each verified action records the regulation number and date in its notes field. Two by-products of the exercise are worth recording. First, several long-standing measures were tied to their founding regulation: the Indonesian net-open-position series to its sequence of PBI amendments (2003–2015), the Singapore-dollar non-internationalization policy to the Monetary Authority’s November 1983 statement and its July 1992 revision, and China’s housing measures to the named State Council and PBOC packages (the “Ten Articles” of 2010, the “Eight Measures” and the Shanghai–Chongqing property-tax pilot of 2011, the “Five Articles” of 2013, the “330” easing of 2015, and the “three red lines” of August 2020). Second, the cross-checking exposed a dating error in the source: the Indonesian green-property loan-to-value relaxation, listed under 2020, was in fact effective in December 2019 under PBI 21/13/PBI/2019; it was corrected in the database, with the correction recorded in the notes.

A.7 One announced measure at the sample boundary

One action lies outside the monthly panel. The relaxation of the conditions of the Malaysia My Second Home programme is listed in the AMRO source under 2024 with no effective month, and with wording that indicates a change announced but not yet implemented at the database’s March 2024 cutoff. The action is included in the action counts of this paper—it is one of the 230 CFM actions and appears in Tables 3 and 4—but, with its year-only date imputed to June 2024, it falls after the end of the monthly panel (March 2024) and therefore does not enter the monthly indices, Figure 6, or the cumulative column of Table 5. If it were included, Malaysia’s cumulative stance in Table 5 would be +47 rather than +46; no other statistic in the paper is affected. The action is flagged in the notes field of the Actions sheet.

Data availability

The database is released as an accompanying Excel workbook (`asean3_cfm_mpm_index_ver35.xlsx`). It contains an **Actions** sheet with every coded action—its instrument, direction, sign, functional-category flags, month-known flag and a notes field citing the underlying regulation for each verified date—together with a monthly **Data** panel and an annual **Data_Annual** panel of the net inflow, net outflow, cumulative and in-force stock indices used throughout this paper, a **Readme** documenting the coding conventions and the dating change-log, and a **BDP_Reconciliation** sheet giving the month-by-month comparison of Table 2. The **Data** panel also carries the cumulative directed indices of Figure 4 (columns `inflow_index_cum` and `outflow_index_cum`, which include measures directed at both sides), so the identity $ci_cum = inflow_index_cum - outflow_index_cum$ holds row by row. All figures and tables in this paper are computed from that workbook, so the results are fully reproducible from the released data. For monthly or quarterly work we recommend restricting to actions with $mk=1$ or $mk=2$, or using the

year-end values of the cumulative and stock columns, which are invariant to the June imputation; the annual panel is unaffected by it. One boundary case is recorded in Appendix A.7.

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