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Beyond Binary: A Policy-Intensity Measure of Capital Flow Management

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ABSTRACT: This paper introduces the *FinOpen* index, a novel measure of capital flow management for 193 countries from 1996 to 2022. Using information from the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER), the index is constructed by estimating the level of openness annually and updating it daily by incorporating changes in capital flow management measures (CFMs). Therefore, this index goes beyond the traditional indexes that rely on binary labels that only distinguish between full capital openness and any control. Within the range of [0, 1], the *FinOpen* index quantifies granular policy intensity and allows comparisons across countries (with higher values indicate greater capital openness). In addition, the dataset extends back to 1960 for 42 emerging and developing countries, and the methodology can be applied to construct long-term series for other countries.

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WORKING PAPERS

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Prepared by Wenjie Li[1]

[1] "I am deeply indebted to my advisors Ugo Panizza and Beatrice Weder di Mauro at Geneva Graduate Institute for their guidance and supports. Thanks for the excellent research assistance from Kyun Suk Chang. I am grateful for valuable comments and suggestions from Gian Maria Milesi-Ferretti, Nathan Sussman, Cédric Tille as well as the insightful contributions of seminar participants at the International Monetary Fund, IHEID, and the SSES Annual Congress 2023. The paper has also benefited from helpful comments from Martin Sommer, Andrés Fernández, Povilas Lastauskas, Xufeng Jiang, Geoffrey Michael Heenan, Yunhui Zhao and Margaux MacDonald during the interdepartmental review.

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Wenjie Li
International Monetary Fund

February 2, 2026

Abstract

This paper introduces the FinOpen index, a novel measure of capital flow management for 193 countries from 1996 to 2022. Using information from the IMFs *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER), the index is constructed by estimating the level of openness annually and updating it daily by incorporating changes in capital flow management measures (CFMs). Therefore, this index goes beyond the traditional indexes that rely on binary labels that only distinguish between full capital openness and any control. Within the range of [0, 1], the FinOpen index quantifies granular policy intensity and allows comparisons across countries (with higher values indicate greater capital openness). In addition, the dataset extends back to 1960 for 42 emerging and developing countries, and the methodology can be applied to construct long-term series for other countries.

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The views expressed in this paper are those of the authors, and do not necessarily represent the views of the IMF, its Executive Board, or IMF management. Any errors or omissions are attributed to the author. I am deeply indebted to my advisors Ugo Panizza and Beatrice Weder di Mauro at Geneva Graduate Institute for their guidance and supports. Thanks for the excellent research assistance from Kyun Suk Chang. I am grateful for valuable comments and suggestions from Gian Maria Milesi-Ferretti, Nathan Sussman, Cédric Tille as well as the insightful contributions of seminar participants at the International Monetary Fund, IHEID, and the SSES Annual Congress 2023. The paper has also benefited from helpful comments from Martin Sommer, Andrés Fernández, Povilas Lastauskas, Xufeng Jiang, Geoffrey Michael Heenan, Yunhui Zhao and Margaux MacDonald during the interdepartmental review.

1 Introduction

The effects of international capital flows on domestic economies are widely acknowledged to be complex. Cross-border investments can bring high returns and risk diversification, but the volatility of such flows also poses risks to economic stability (Montiel 2020, Ostry et al. 2012). These risks are especially pronounced in emerging and developing economies (EMDEs), which lack the "safe-haven" status of dominant-currency countries and thus find it harder to attract foreign capital during downturns.

This underscores the importance of evaluating the effectiveness of capital flow management measures (CFMs) in mitigating such risks.[1] However, despite extensive debate, empirical research has not reached consensus on the role of CFMs (Magud et al. 2011, Ötker et al. 2000). A key reason lies in policy measurement. Unlike monetary policy, which can be proxied by a policy rate (despite its broader toolkit in recent years), CFMs vary across several dimensions: changing directions (i.e., easing or tightening), flow residency (i.e., nonresidents and residents), directions of flows (i.e., inflows and outflows), categories of flows (i.e., direct, portfolio and other investments) as well as measure types (i.e., administrative approval, price, quantity and foreign exchange). This complexity has made it difficult to build a standardized index.

To address this gap, I construct a new measure of CFMs, the FinOpen index, which captures granular changes in policy intensity. The main data source is the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER). This report contains narrative descriptions of external sector regulations and records policy measures with enforcement dates. AREAER also provides binary labels for categories of capital transactions ("yes" for full openness and "no" for any control). Before explaining the construction of the FinOpen index, it is helpful to briefly review how previous indexes were built.

The first strand of indexes, such as the Chinn-Ito index and the FKRSU index are aggregated over binary labels of categories of capital transactions (Chinn and Ito 2006, Fernández et al. 2016). While these approaches ensure consistency across countries, their

[1] Although much of the earlier literature used "capital control", the IMF has adopted a neutral term capital flow management measures (CFMs) to avoid the negative connotation of "control" (Arora et al. 2013). CFMs are defined as "measures that are designed to affect cross-border capital flows, including measures that discriminate between residents and nonresidents and other measures also affecting flows" (IMF 2022). The name change mirrors a broader shift in researchers' and policymakers' views on cross-border capital mobility. During the 1980s and 1990s, the dominant view was that the capital accounts openness improved access to foreign capital and increased economic growth. Many countries actively reduced restrictions on cross-border capital flows until crises uncovered the potential negative consequences of flows. For example, during Asian financial crises, enormous capital reversals in the most successful emerging countries provoked a large depreciation in exchange rates and the distortion of economic systems. Those experiences made researchers wary of full liberalization as well as consider the use of CFMs to mitigate shock effects and even to avoid potential crises.

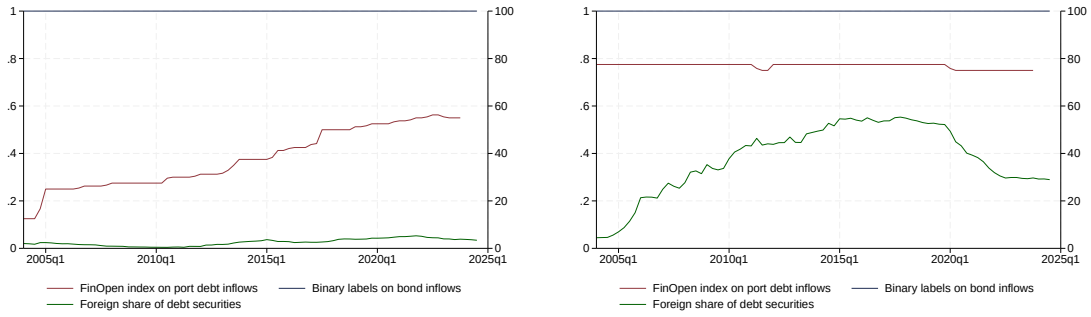
reliance on binary labels makes them to coarse to capture granular policy changes. The second strand is to quantify the narrative descriptions of policies on a 0-4 scale (Quinn 1997, Quinn 2003). For example, a country that allows foreign investments but require approval would get an intermediate score, not just "0" (open) or "1" (restricted). The scale values capture the policy intensity that binary labels miss, but still lack granular changes within years. The third strand counts the number of easing and tightening measures at a quarterly frequency (Pasricha et al. 2018). Although this method captures within-year policy changes, it treats the number of actions as a proxy for regulatory intensity. It is therefore unclear whether policy counts adequately reflect the intensity of capital flow management or yield a measure that is meaningfully comparable across countries. The fourth strand develops event-based databases. Forbes et al. (2015) established a weekly database of 220 CFMs events between 2009 and 2011. IMF CFMs taxonomy records around 500 instances of CFMs across 44 countries from 2008 to 2022 (IMF 2024, Binici et al. 2023). These datasets classify measures along several dimensions but stop short of integrating them into a unified, continuous index.

In parallel with this paper, two recent studies aim to improve measurement and transparency in capital account restrictions. First, Baba et al. (2026) develops the Financial Account Restriction Index (FARI) for the period 1999–2022 using AREAER categories related to capital transactions, with binary labels reconfirmed through IMF staff review, and complements this with a classification of policy measures as tightening or easing. Second, Bergant et al. (ming) develops a comprehensive, AI-based framework to quantify a broad set of exchange and trade-related restrictions over 1950–2022, with the objective of extracting and measuring policy actions from historical narratives.

Against this background, the FinOpen index bridges discrete policy changes with the level of openness, with its key advantage being its ability to measure granular changes in policy intensity. The first step is to quantify the openness level annually on a 0-4 scale, adapting the coding framework of Quinn (1997) to different categories of capital flows. The second step is to label policy measures across five dimensions (flow category, flow residency, flow direction, measure direction, and measure type), drawing on the labeling scheme of Pasricha et al. (2018). For example, on October 4, 2010, Brazil increased the tax rate from 2% to 4% on inflows into fixed-income instruments. This action was classified as a tightening measure targeting nonresident portfolio debt inflows, employing a price-based approach. The third step is to assign weights to reflect policy intensity and to be consistent with level shifts in the 0-4 scale. The resulting framework yields 12 subindexes: for each flow category (FDI, portfolio equity, portfolio debt and other investment), three subindexes are built on nonresidents' inflows, nonresidents' outflows, and residents' outflows. A subindex for residents' inflows is not available as authorities

do not impose restrictions on the repatriation of domestic capitals held abroad. These subindexes are aggregated using both simple and weighted averages, and standardized to [0,1], with higher values indicating greater openness.

The FinOpen index provides several notable improvements over existing measures of CFMs. First, it captures variation in policy intensity rather than replying on binary classifications. With data spanning 193 countries from 1996 to 2022, the index provides a solid foundation for cross-country empirical analysis. Second, unlike earlier datasets that measure the level of capital openness only at annual frequency, FinOpen is constructed at a daily frequency. This high-frequency structure makes it possible to track gradual adjustments in CFMs intensity and study the short-term policy dynamics. Third, the index disaggregates CFMs into 12 subcomponents and classifies each measure by type (administrative, price-based, quantity-based, and FX-related). This detailed information supports assessments of how different instruments operate and how their effects may diverge across different types of flows. Figure 1 shows its superiority: binary AREAER labels indicate identical treatment of bond purchases by nonresidents in China and Indonesia, but FinOpen differentiates between the two. It shows relatively relaxed management in Indonesia, which is consistent with the higher foreign holding of sovereign bonds in Indonesia. The main limitation is its historical coverage. The Chinn-Ito index extends back to 1970, while FinOpen begins in 1996. However, for 42 EMDEs, the FinOpen series has been extended to 1960, and the methodology can be easily applied to other countries as well.



(a) China (b) Indonesia

Figure 1: **Foreign holding of sovereign bonds**

The red line is the FinOpen index on nonresidents' portfolio debt inflows. The dark blue line is the binary label of "yes" for two countries to reflect control existed about the foreign purchase in the bond market. The green line is the foreign share of government debt securities from Arslanalp and Tsuda (2014).

Based on the FinOpen index, I present several stylized facts. While most countries have steadily moved toward more open capital markets in recent decades, the FinOpen index provides a more nuanced view of capital flow managements: (i) differentiation by

flow types (nonresidents' outflows are the most liberalized, followed by nonresidents' inflows, while residents' outflows being the most restricted);[2] (ii) liberalization sequence (countries tend to liberalize equity flows before debt flows, both for nonresidents inflows and residents outflows); (iii) region heterogeneity (Asian and Latin America countries are particularly active users of CFMs); (iv) frequency of policy changes (CFMs are not as sticky as often assumed. While adjusted less frequently than monetary policy instruments, they are changed more often than exchange rate regimes).

The credibility of the FinOpen index is further supported by comparing with existing de-jure indexes. The scatter plots show that in terms of country ordering of openness, the FinOpen index broadly aligns with other binary-label measures such as Chinn-Ito index. Moreover, case studies highlight its added value. In China, for example, where authorities frequently implement small adjustments of CFMs, FinOpen captures the gradual liberalization process that binary indexes overlook. This superiority is reinforced by higher correlations between FinOpen and the de-facto index (external assets and liabilities as a share of GDP) in Asia and Latin America. These correlations indicate that FinOpen co-moves more closely with observed cross-border positions in regions with active CFM use, suggesting that it captures policy variation that is not reflected in binary labels.

The reminder of paper is organized as follows. Section 2 presents the methodology of constructing the FinOpen index. Section 3 provides some stylized facts about CFMs. Section 4 compares the FinOpen index with other de jure and de facto indexes on CFMs. Section 5 concludes, and the appendix contains supporting material.

2 The construction of the FinOpen index

The construction of the FinOpen index proceeds in four stages: first, identifying the coverage of capital flows management measures (CFMs); second, labeling policy measures; third, constructing subindexes for corresponding flows by quantifying the labels; and fourth, aggregating them across the subindexes. Together, these four subsections document the methodology used to construct the FinOpen index, enabling the measurement of CFMs on a daily basis and allowing systematic comparison across countries.

2.1 The coverage of CFMs

This paper adopts the IMF's definition of CFMs as "measures that are designed to affect cross-border capital flows, including measures that discriminate between residents and nonresidents and other measures also affecting flows" (IMF 2022). This definition

[2]To my knowledge, it is the first paper that differentiates CFMs on outflows by residency. The discrepancy highlights the need to analyze policy effects for these groups separately.

is broader than the conventional concept of capital controls, which typically focuses on residency-based CFMs (IMF 2012). For example, during the Chinese stock market turbulence of 2015-2016, the People's Bank of China suspended the approval of new RMB Qualified Domestic Institutional Investor (RQDII) quota applications through window guidance. This policy restricted residents ability to move capital abroad and represents a traditional form of residency-based capital control. In contrast, non-residency-based CFMs designed to affect capital flows are mainly foreign exchange (FX) management policies, such as reserve requirements on FX deposits or limits on FX positions. For instance, measures capping net FX positions of financial institutions aim to mitigate the risks linked to foreign currency exposure. Notably, there is a overlap between non-residency-based CFMs and macrorpudential policies (MPMs), although their objectives differ (MPMs are intended to mitigate financial stability risks) (IMF 2011, Qureshi et al. 2011, Alam et al. 2019).[3]

Once the scope of CFMs is defined, the next step is to identify the data source. This paper draws on the IMF's *Annual Report on Exchange Arrangements and Exchange Restrictions* (AREAER), which systematically documents regulations on external accounts across eleven categories (IMF 2021).[4] Within each category, AREAER contains two sections: (i) a narrative description of existing regulations, and (ii) a record of new measures introduced during the reporting year. In the first section, pre-1996 reports provide concise descriptions of regulations, such as "capital flows in the form of financial loans are subject to ceilings and require the prior approval of the Central Bank" (Brazil in 1978). From 1996 onward, regulations in capital transactions have been classified into more granular asset classes, with separate identification of inflow and outflow controls. Each subcategory is coded with a binary label, where "yes" if any level of control exists, and "no" otherwise. Widely-used indexes of capital openness, such as the Chinn-Ito index and the FKRSU index, are based on this binary coding (Chinn and Ito, 2006; Fernández et al., 2016). The second section records new policy measures with enforcement dates, which enables the index construction at higher frequency. If only the month is provided, I assume the measure takes effect on the first day of that month.[5]

[3] IMF (2020) notes that pre-emptive CFM/MPMs on capital inflows can help mitigate financial-stability risks. Although the dataset does not provide a label for measures that fall in the overlap between CFMs and MPMs, most price-based instruments, such as taxes on inflows and reserve requirements, align with this definition.

[4] The eleven categories in AREAER includes exchange measures, exchange arrangement, arrangements for payments and receipts, resident accounts, nonresident account, imports and import payments, exports and export proceeds, payments for invisible transactions and current transfers, proceeds from invisible transactions and current transfers, capital transactions and provisions specific to commercial banks and institutional investors. The AREAER reports prior to 1996 adopts a more aggregated categorization of external regulations.

[5] In most cases, the announcement date and the enforcement date are the same. When measures have different announcement and enforcement dates, I use the enforcement dates. There is an argument that

My approach to construct the FinOpen index has two steps. First, I estimate the annual level of capital openness from 1996 to 2022 using narrative information. Second, I update the index at daily frequency by incorporating new measures. I will elaborate on these details in the following sections. For the measure coverage, this paper includes all measures from AREAER under "XI. Capital Transactions", and any measure that affects capital flows under "IV.A.1.b. Controls on the use of domestic currency for capital transactions", "IV.A.2. Use of foreign exchange among residents", "V. Resident Accounts", "VI. Nonresident Accounts", "VIII. Exports and Export Proceeds", "IX.A.2. Investment-related payments", "X. Proceeds from Invisible Transactions and Current Transfer", "XII. Provisions Specific to the Financial Sector".

I apply specific inclusion and exclusion criteria for this coverage. For example, while capital income is classified under "current transactions", restrictions on its repatriation can affect foreign outflows by signaling tighter outflow control on existing capital. Such measures are therefore included. Appendix 6.1 lists the full coverage criteria. Besides, the IMF taxonomy compiles macro-critical CFMs that are assessed in published IMF staff reports between 2012 and 2023 (IMF 2024). Any measures recorded in this taxonomy but absent from the AREAER are also included.[6]

The FinOpen index covers 193 countries from 1996 to 2022. For a subset of 42 EMDEs chosen by 2022 nominal GDP, the series is extended back to 1960, and the methodology can also be applied to other countries.[7] Table A1 presents the country sample for the extended time-series.

2.2 Labelling measures

I label residency-based CFMs along five dimensions: flow category, flow residency, flow direction, measure direction, and measure type, shown in Table 1 as a summary. Flow categories are designated according to the IMF BMP6 definition for capital flows. CFMs are labelled as affecting direct investment, portfolio equity, portfolio debt, or other investment. Direct investment includes equity capital, reinvested earnings, intercompany debt transactions and real estate. Lending or borrowing from foreign parent companies or subsidiaries is counted as direct investment. Portfolio equity is about equity securi-

investors may promptly react to the CFMs announcements by anticipating the planned measures and adjusting their cross-border investments accordingly. However, a CFMs screening across 193 countries reveals that authorities seldom announce tightening measures in advance. Most measures with different dates were announced in late December, and enforced at the beginning of the next year. Consequently, the anticipation effect is likely inconsequential.

[6]Previous studies summarizes measures from regulators' websites and official news releases (Forbes et al. 2015, Ahmed and Zlate 2014). A cross-check analysis of CFMs in China shows that between 1979 July and 2020 April, 199 CFMs are published in official government sources, whereas AREAER only records 97 items. Future work could integrate such complementary sources.

[7]Some countries do not start from 1960 due to later accession to IMF membership.

ties, and portfolio debt covers debt securities, such as bonds, notes, and money market instruments. Collective instrument securities are classified as both portfolio equity and portfolio debt. Other investment includes commercial credits and financial credits.

Flow category	**Flow residency**	**Flow direction**	**Measure direction**	**Measure type**
- Direct investment - Portfolio equity - Portfolio debt - Other investment	- Nonresidents - Residents	- Inflows - Outflows	- Tightening - Easing	- Administrative-based - Price-based - Quantity-based - FX-based

Table 1: **Measure labels in five dimensions**

Flow residency distinguishes between measures affecting nonresidents or residents. It is based on owners of cross-border investments rather than the direct target of policy measure. For example, measures limiting residents' ability to lend abroad are labeled as affecting nonresidents, since they aim to restrict foreign debt inflows. When a policy affects more than one of flow category or residency, all concerned flow categories and residency are labelled as affected. For example, Argentina announced a policy in July 2017 that "all individuals, legal entities, equity concerns, and other estates may operate freely on the foreign exchange market through authorized institutions". This measure applies to all flow categories for both residents and nonresidents.

With respect to flow direction, CFMs affecting nonresidents are labelled as affecting either gross inflows or gross outflows. Policies on nonresidents' inflows aim to liberalize or tighten the entry of foreign capital, while those on nonresidents' outflows intend to ease or restrict the liquidation and repatriation of foreign capital.[8] CFMs on residents exclusively pertain to gross outflows, based on the assumption that the home countries do not impose restrictions on the repatriation of domestic capital held abroad. Residents are generally free to bring funds back into the country; there is no policy that limits or discourages such inflows.[9] Previous literatures seldom differentiate CFMs on nonresidents' outflows and residents' outflows (Binici and Das 2021, Forbes et al. 2015, Pasricha et al. 2018). However, the significant differences between these two categories (shown in section 3) underscore the importance of treating them separately.

Measure direction records whether a policy liberalizes or tightens capital flows. A "+" refers to a policy easing and a "-" indicates a policy tightening. Measure type categorizes CFMs into four main types. *Administrative-based measures*: regulatory allowances or prohibitions on capital transactions (e.g., in August 1989, Turkey allowed residents to

[8]Measures on nonresidents outflows can influence both the repatriation of existing capital and the entry of new inflows, as investors may be deterred by potential barriers to repatriation. To avoid double counting, I classify these measures as affecting outflows only

[9]Repatriation requirements operate in the opposite direction: they *mandate* that residents bring foreign exchange back and therefore function as outflow controls.

purchase foreign securities freely). *price-based measures*: taxes or reserve requirements applied to cross-border capital (e.g., Brazil's financial tax on foreign capital between 2008 and 2013). *Quantity-based measures*: ceilings or quotas on affected capital transactions (e.g., Chinas 2016 limit of RMB 100,000 per year on overseas RMB withdrawals). *FX-based measures*: regulations on access to the foreign exchange market (e.g., Argentinas removal of FX market restrictions in July 2017). Table A2 summarizes these types in detail.

Some labeling scenarios requires further explanation. First, since foreign direct capitals are registered as resident legal entity, their local bank loans are not considered as cross-border loans. Measures related to domestic credit support are labelled as affecting nonresidents' FDI.[10] Second, repatriation or surrender requirements can restrict capital outflows by curbing investors' ability to hold foreign exchange. When the source of proceeds is specified, assigning flow residency is straightforward; when not specified, both residents and nonresidents outflows are classified as affected. Third, capital flows arise only when cross-border guarantees are fulfilled. However, I interpret these measures as guarantees provided by residents to nonresidents facilitating external borrowing, while those from nonresidents to residents helping nonresidents borrow locally.

CFMs without residency-based discrimination mainly targets the use of foreign exchanges and have an ambiguous effects on capital flows.[11] For example, restrictions on local FX lending could reduce external borrowing as well as residents outward investment by limiting FX-denominated financing. Given this uncertainty, such measures are labeled only for flow direction and measure direction, and are excluded from the construction of the index. Although excluded from the index calculation, recording these measures provides a broader perspective on how authorities employ FX-related policies within the broader toolkit of CFMs, highlighting the complexity of managing capital flows in practice.

2.3 Constructing subindexes

Using labels for residency-based CFMs, I calculate four subindexes for each flow category (FDI, portfolio equity, portfolio debt and other investment). Specifically, these three subindexes pertain to CFMs affecting gross inflows and gross outflows for nonresidents, as well as gross outflows for residents. In total, there are 12 subindexes.

[10] Allowing foreign subsidiaries to borrow locally may also reduce intercompany lending from their foreign parent, but the easier access to local credit is assumed to have a net positive effect on FDI.

[11] They include FX regulations on financial institutions (the cap on net FX position or FX holding, the FX reserve requirement, restrictions on local FX lending and FX accounts), and surrender/repatriation requirement on current account proceeds. Derivative-related measures are also labelled under this category as it is a small category of flows under BMP6 methodology.

The first step is to estimate the annual level of capital openness from 1996 to 2022 using narrative information provided in the AREAER. Inspired by the methodology of the Quinn index (Quinn 1997 and Quinn 2003), I use a five-point scale (Table 2) to quantify each subindex. Values range from 0 (completely closed) to 4 (fully open), with higher values indicating greater freedom for cross-border capital flows. Since post-1996 AREAER reports record regulations in capital transactions in more detailed subcategories, Table A5 shows the mapping between AREAER's subcategories with the FinOpen subindexes. For example, the FinOpen subindex for nonresident portfolio equity inflows corresponds to four AREAER subcategories: (1) purchasing locally and (2) issuing abroad, each for two asset types (equities and collective investment securities).[12] By systematically applying this coding scheme to these narratives, I obtain annual values for each subindex from 1996 to 2022.

The next step is to systematically link between the "levels" derived from the stance section and the "changes" quantified from policy measure section. The annual level of openness is intended to capture the CFM status at a point in time and is assessed using the stance narrative and binary labels. The policy measures reported in the narratives, in turn, represent discrete policy actions that drive changes in the stance over time. The link between these two components relies on the assumption that transitions in the index level are equal to the cumulated annual changes of the underlying policy measures.[13] Easing measures increase the previous years index level, while tightening measures reduce it.

When a transition between categories occurs, two scoring scenarios are considered. In the first scenario, if one measure is clearly the primary driver of the transition, defied as a measure that decisively determines the category switch, it is assigned the bulk

[12]I rely on narrative information when it is available. When narrative assessments are missing, I instead rely on the binary labels, as a value of 4 corresponds to a "no" label. However, if a change in a binary label is not supported by evidence of corresponding policy measures (either from the AREAER or from alternative sources such as official government websites or news reports), it is not treated as a valid policy change and is therefore excluded from the index. In some cases, AREAER may label "no information available" as "no", and such labels are also excluded from coding. For example, Argentinas outward investment regulations for residents are not described before 2003, yet the AREAER assigned a no label between 1996 and 2002. A policy change in 2003 introducing restrictions on FX purchases, accompanied by a yes label, confirms that the earlier "no" reflected missing information rather than true openness.

[13]When the index level changes without no corresponding CFMs recorded for the same year, I follow a three-step validation procedure. First, I examine whether relevant CFMs were implemented within a two-year window around the observed level change. If so, I use the implementation dates of those measures to infer the timing of the actual policy changes, recognizing that narrative updates may occur with delay. Second, if no related measures are found in the AREAER, I check alternative sources, such as government websites and news reports, to assess whether relevant policies were omitted; any identified measures are added to the database. Third, if no corresponding measures can be identified, I introduce an "assumed" policy change dated to the first day of the year to align the index with the observed narrative shift. This step is applied only when the narrative change represents a persistent shift in the regulatory stance, rather than a transitory or one-off reclassification, as evidenced by the continuation of the revised narrative in subsequent years.

Value	Narratives information
4	No approval or exchange restrictions; unrestricted capital transfers
3	Approval or foreign exchanges generally granted; minor quantitative thresholds or limited price-based measures
2	Approval, licensing, or exchange control for most transactions; moderate price-based or amount control
1	Strict approval or exchange control; beginning approval for a closed economy; strict quantitative caps or prohibitive price-based measures
0	General prohibition of capital transactions; capital account closed

Table 2: **Coding AREAER narrative information**

1) In cases where the primary transactions are free, I assign a index level of 3.5. This includes scenarios like normal loan repayments without allowing prepayment for foreign debt, portfolio investment restrictions only concerning issuance of securities, or direct investment restrictions solely on sensitive industries. Additionally, European countries, allowing free capital transactions among themselves, also receive a score of 3.5. 2) AREAER reports regulatory operations under the category of "capital transactions" and narratives in Table 2 cover most cases. But sometimes, AREAER, especially in years prior to 1996, does not provide complete, detailed information for every flow category or residency status. In such cases, I treat "foreign investment" as an overarching category and assign the same level of capital openness across all of them. When narratives for portfolio investment are missing, the subindex on portfolio equity is aligned with that on direct investment, while the one on portfolio debt is aligned with that on other investment. This way of treating missing information is under the assumption that missing information is because authorities imposed restrictions to all capital transactions and they were less likely to implement highly differentiated controls across flow types in early years. For 42 EMDEs with extended historical series, assumptions to estimate missing information in certain flow categories or nonresidents/residents are available in Table A3 and Table A4.

of the score, while the remaining measures receive smaller scores.[14] For example, in the case of portfolio equity inflow regulations in China, the stance is assessed to move from level 1 to level 2 between 2018 and 2019. At level 1, qualified foreign institutional investors (QFII) were permitted to invest domestically but subject to quota limits. In 2019, the elimination of investment quotas for QFII and Renminbi QFII (RQFII) marked a shift to level 2, reflecting substantially fewer restrictions for registered institutional investors, despite remaining limitations for unregistered investors. During this transition, 17 easing measures were identified. Most measures were classified as incremental and assigned a score of 0.05. However, the measure implemented on September 10, 2019, which eliminated the quota limits for QFII and RQFII, was identified as the primary driver of the stance change and was therefore assigned a score of 0.2 to reflect its decisive role in the category transition.

In the second scenario, when multiple measures have comparable impacts and jointly contribute to the transition, the total score associated with the level change is distributed evenly across measures. For instance, in Argentina, restrictions on residents capital outflows were assessed at level 3 in 2015, when residents were allowed to purchase up to USD 2 million per month for foreign savings and investment without approval. By 2017, the stance shifted to level 4, reflecting the removal of all restrictions on residents outflows. During this period, five major easing measures were announced, including: (i) allowing residents access to the free and unified foreign exchange market for the formation of foreign assets; (ii) increasing the monthly purchase limit to USD 5 million; (iii) relaxing transaction modalities beyond debits to demand accounts; (iv) subsequently removing remaining amount limits; and (v) eliminating all residual restrictions. As each measure played a significant and complementary role in achieving the final stance, each was assigned an equal score of 0.2.

Between the last category transition and 2022, new policy measures are assigned the same score as the latest recorded measure, under the assumption that authorities tend to maintain a similar capital flow management style over time. For example, in countries such as China and India, where capital account liberalization typically proceeds through incremental adjustments, subsequent measures are assigned small scores (e.g., 0.05 or 0.025) consistent with the intensity observed at the last transition. In other cases where the most recent measure represents a decisive policy action that triggered a category change, a score of 0.1 is assigned to subsequent measures. Importantly, the openness level after the latest category transition is constrained not to exceed the next category unless the stance is explicitly reassessed as having moved to the next level. As a result,

[14] If multiple measures are enacted on the same date, the days score is calculated by multiplying the number of measures by the score assigned to each.

cumulative measure-based changes cannot push the index beyond the current stance on the 0-4 scale. These post-transition scores should be interpreted with caution, as they may be revised in future updates as new information becomes available. For instance, when multiple easing measures occur after the most recent category transition without a change in stance, individual scores may be adjusted downward (e.g., from 0.1 to 0.05) to ensure consistency with the index scale.

Two supplementary scoring rules are applied in the index construction. First, the IMF CFM taxonomy records policy measures that have been assessed by IMF staff as macro-critical. Accordingly, when such measures do not trigger an immediate stance category transition, they are assigned a score of 0.5 to reflect their significant impact on capital flows.[15] For example, in 2016 May, Chinese authorities allowed "legal person financial institutions and enterprises to carry out cross-border financing freely within the limit determined by their capital and net assets". This measure is therefore assigned a score of 0.5 to reflect its macro-critical nature despite not immediately triggering a stance category change. Second, for tax-based measures, assigned scores reflect both changes in policy intensity (e.g., adjustments in rates) and changes in coverage (e.g., the range of transactions or entities affected). For taxes applied to an entire flow category, the assigned score equals 0.2 times the change in the tax rate (in percentage points). As an illustration, Ecuadors increase in the capital outflow tax from 2 percent to 5 percent in 2012 receives a score of 0.6, while the reduction from 3.75 percent to 3.5 percent in July 2023 receives a score of 0.05. By contrast, taxes applied only to a subset of transactions are assigned a smaller score. Accordingly, when a tax is introduced on a given flow category and is subsequently relaxed or fully eliminated through multiple easing actions, the cumulative effect of those easing measures is constrained to exactly offset the original tightening.

Overall, this approach provides a structured way to integrate information from stance section and policy measure section, and to align cumulated measure-level changes with observed shifts in policy stance. It also strengthens the credibility of index dynamics by ensuring that all changes are grounded in narrative evidence, either from stance assessments or from descriptions of underlying policy measures. In total, I construct 12 subindexes by quantifying policy measures and narrative information. For each flow category, three subindexes are computed: nonresidents' inflows ($FinOpen_{nr\_in}$), nonresidents' outflows ($FinOpen_{nr\_out}$) and residents' outflows ($FinOpen_{r\_out}$). All subindexes on a 0-4 scale are rescaled to a [0,1] range, with 0 indicating full closure and 1 full openness. The

[15]The value of 0.5 is interpreted as a relative ranking rather than a calibrated cardinal measure, positioning macro-critical CFMs between incremental actions and category-switching reforms. In addition, the IMF CFM taxonomy only covers measures from 2012 onward, which limits the application of this classification to earlier periods.

FinOpen subindexes on a monthly basis are calculated as the level on the last day of each month.[16]

2.4 The index aggregation

When aggregating the subindexes, I adopt two approaches: simple average and weighted average. The simple average method assumes that all categories of flows (direct, portfolio, and other flows) and all transactions, whether undertaken by nonresidents or residents, are equally important. Under this approach, each subindex is assigned the same weight, and the FinOpen index is calculated using five formulas presented below. where *cate* denotes the flow categories of direct investment, portfolio equity, portfolio debt, and other flows.[17]

$$FinOpen_{cate\_nr\_avg} = (FinOpen_{cate\_nr\_in} + FinOpen_{cate\_nr\_out})/2 \tag{1}$$

$$FinOpen_{cate\_avg} = (FinOpen_{cate\_nr\_avg} + FinOpen_{cate\_r})/2 \tag{2}$$

$$\begin{aligned} FinOpen_{nr\_avg} = (&FinOpen_{fdi\_nr\_avg} + 0.5 * FinOpen_{portequity\_nr\_avg} \\ &+ 0.5 * FinOpen_{portdebt\_nr\_avg} + FinOpen_{other\_nr\_avg})/3 \end{aligned} \tag{3}$$

$$\begin{aligned} FinOpen_{r} = (&FinOpen_{fdi\_r} + 0.5 * FinOpen_{portequity\_r} \\ &+ 0.5 * FinOpen_{portdebt\_r} + FinOpen_{other\_r})/3 \end{aligned} \tag{4}$$

$$FinOpen_{tot\_avg} = (FinOpen_{nr\_avg} + FinOpen_{r\_avg})/2 \tag{5}$$

The weighted average approach assigns weights to each subindex in proportion to its share in the countrys external balance sheet. The weights reflect the share of the each investment position in total external assets and liabilities, as shown in the following equations. For example, w_{nr_fdi} denotes the share of nonresidents' FDI in total liabilities, w_{r_fdi} represents the share of residents' FDI in total assets, and w_{asset} is the share of assets relative to the sum of assets and liabilities. To reduce simultaneity between CFMs and capital flows, the weights are constructed as five-year lagged moving averages. The weights can reflect more persistent structural features of countries external positions rather than short-run responses to policy changes. As a result, the weighted index covers

[16]The choice of "end of period" over "average over period" is made to avoid spurious CFMs. To illustrate, if an easing measure takes effect on the 10th of a month and no new measures occur the next month, an average over period calculation would artificially raise the index in the subsequent month despite no actual policy change.

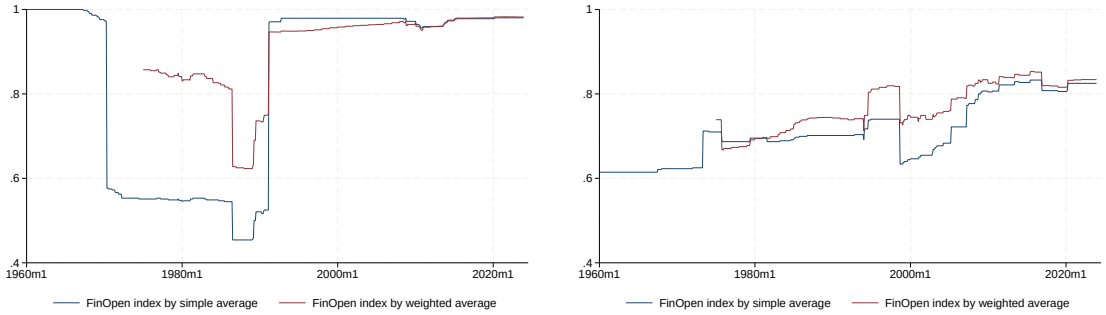
[17]Since subindexes are highly correlated, principal component analysis (PCA) could provide a more data-driven method to capture the common variation across subindexes. However, comparison results suggest that both PCA and the simple average yield very similar aggregate indexes. The simple average is adopted for better interpretability.

a shorter period than the simple-average index.[18]

$$FinOpen_{nr\_wgt} = w_{nr\_fdi} * FinOpen_{fdi\_nr\_avg} + w_{nr\_port} * FinOpen_{portequity\_nr\_avg} + w_{nr\_other} * FinOpen_{debt\_nr\_avg} \quad (6)$$

$$FinOpen_{r\_wgt} = w_{r\_fdi} * FinOpen_{fdi\_r} + w_{r\_port} * FinOpen_{portequity\_r} + w_{r\_debt} * FinOpen_{debt\_r} \quad (7)$$

$$FinOpen_{tot\_wgt} = w_{asset} * FinOpen_{r\_wgt} + w_{liab} * FinOpen_{nr\_wgt} \quad (8)$$



(a) Peru (b) Malaysia

Figure 2: **Comparison of two aggregate indexes**
Aggregate indexes on total flows are constructed by two methods: simple average and weighted average. Weights are calculated using the investment position data from Lane and Milesi-Ferretti (2007).

Figure 2 compares these two aggregation approaches for Peru and Malaysia. In Peru, the weighted-average index shows greater openness before 1991 than the simple-average index, reflecting the small share of foreign assets and stricter controls on residents ability to hold assets abroad. After the liberalization of residents outflows in 1991, the two indexes converge, leaving only a small gap. This gap narrowed steadily between 1991 and 2015, driven by a decline in the share of foreign debt (from 94 percent to 26 percent of total liabilities) together with Perus relatively tighter restrictions on debt flows compared to equity flows. In Malaysia, the weighted-average index also shows higher openness but gradually converges with the simple-average index as the share of foreign assets increases. Overall, the weighted index captures changes in the composition of external investment positions, thereby reflecting the evolving relative importance of different capital flows.

The FinOpen index has three limitations. First, the index may not fully capture

[18] Weights are derived from the EWN (The External Wealth of Nations) database: https://www.brookings.edu/articles/the-external-wealth-of-nations-database/. In the EWN database, "debt" equals to the sum of portfolio debt and other investment; an aggregate is available over longer periods than the individual components.

the de-facto implementation of administrative-based measures, which can deviate from official announcements. For instance, authorities might delay approval for foreign inflows without changing formal rules. This gap between de-jure and de-facto openness can be significant. Second, whether measures of various types (e.g., administrative-based and price-based) can be added together is still under question. Simply adding them together assumes that each measure has an independent effect, whereas in practice their impacts may interact or overlap. Third, the index classifies CFMs solely as liberalizing or tightening measures, overlooking more complex objectives. For instance, in 1972, Brazil exempted a 25 percent withholding tax on foreign loans and also imposed a 60-month minimum maturity. This policy aimed at lowering borrowing costs and lengthening debt maturities, in order to reduce the external debt risk. However, the FinOpen index fails to capture it as the offsetting impacts are cancelled each other out.

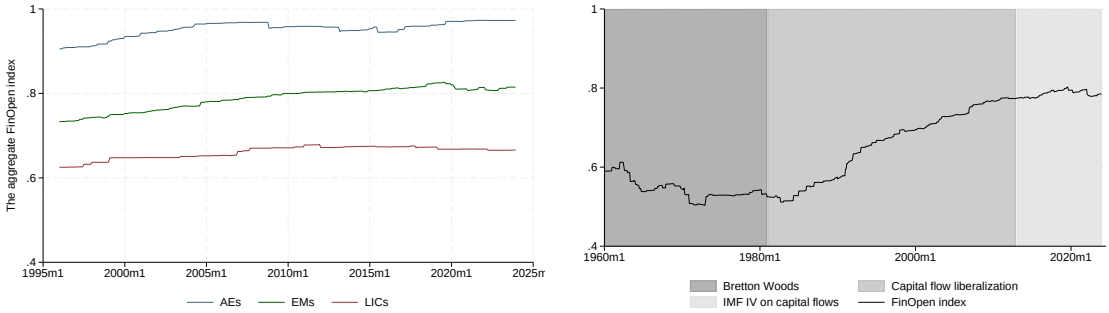
Despite these limitations, the FinOpen index has three distinct advantages over existing measures. First, the index links policy changes to the level of capital openness. Consequently, it can measure policy intensity beyond binary labels while ensuring comparability across countries. With data covering 193 countries from 1996 to 2022, the index provides a broad scope for cross-country analysis. Second, unlike previous indexes available at annual frequency, the FinOpen index is quantified at daily frequency. This granularity captures incremental changes in CFMs and allows the connection with other high-frequency macro-financial data to study short-term dynamics. Third, its 12 subindexes distinguish CFMs across major flow types, while the classification of measure types (administrative, price-based, quantity-based, and FX-based) supports more nuanced evaluation of policy impacts by instrument.

3 Stylized facts of the FinOpen index

In this section, I summarize six stylized facts based on the FinOpen index across four dimensions: (1) the trend of capital openness; (2) the heterogeneity of CFMs across different types of flows; (3) the variation in CFMs across countries and regions; and (4) the frequency of policies associated with CFMs.

Fact 1: ***Most countries have been trending towards greater capital liberalization, though significant gaps persist across country groups.***

In Figure 3, Chart (a) shows that capital openness has increased gradually across all country groups, with advanced economies (AEs) consistently more open than emerging markets (EMs) and low-income countries (LICs), and the gap among groups remaining stable over time. While the overall trend points to greater openness, the FinOpen index also captures sustained reversals during episodes of financial stress. In AEs, capital



(a) 193 countries 1996-2022

(b) 42 EMDEs 1960-2022

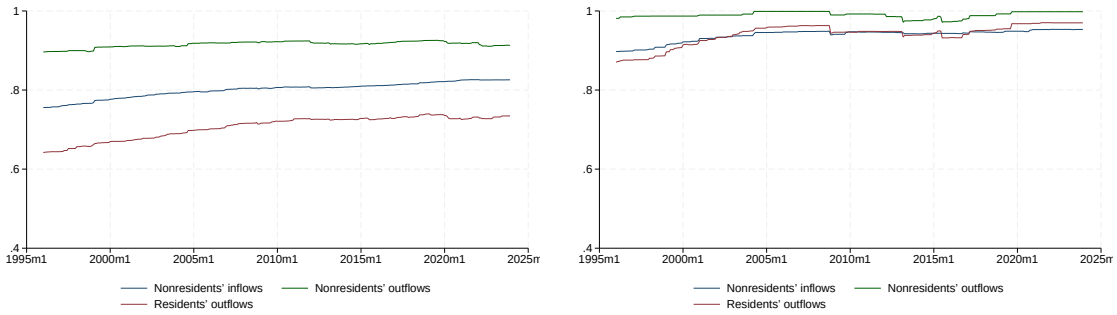
Figure 3: **The trend of capital openness**
Chart(a) calculates the simple average of the aggregate FinOpen index across 193 countries, disaggregated by country groups. Chart (b) shows the simple average of the aggregate index for 42 EMDEs over the period 1960-2022.

openness declined during the Global Financial Crisis and the European sovereign debt crisis. For EMDEs, openness fell during the COVID-19 pandemic and again following the Russia-Ukraine war, and it has yet to recover.[19] These episodes reflect that liberalization is neither linear nor irreversible, as countries often reintroduce capital control in response to shocks. Chart (b) extends the perspective to 42 EMDEs from 1960 onward, showing tight controls under the Bretton Woods system, steady liberalization beginning in the early 1990s, and smaller liberalization steps following the IMFs 2012 Institutional View on capital flows (IMF 2012). The recent shift from rapid liberalization to a slower pace reflects a more cautious stance toward financial globalization. Rather than treating the full openness of capital account as the ultimate goal, policymakers align the degree of openness with the specific needs and conditions of their economies.

Fact 2: ***In EMDEs, the degree of capital openness follows a descending order: nonresidents outflows, nonresidents inflows, and residents outflows.***

In Figure 4, Chart (a) shows that nonresidents outflows are the most liberalized, followed by openness to nonresidents inflows, with residents outflows remaining the most restricted. This suggests that when authorities impose restrictions on foreign capital, they mainly target inflows. The restriction on foreign outflows is very limited, and authorities

[19]The further capital control during Covid-19 differs from Bergant and Forbes (2022), who document limited or declining use of CFMs during the pandemic. Two factors may account for this difference. First, Bergant and Forbes (2022) rely on self-reported data from the IMF Policy Tracker. As their paper mentioned, the use of CFMs could be understated if authorities may frame them using alternative terminology to avoid negative stigma of capital control. By contrast, this paper draws on the AREAER and the IMF CFM taxonomy, which are based on IMF desk reviews and institutional assessments. Second, Bergant and Forbes (2022) focused on CFMs aimed at reducing net outflows and relied on two dummy variables for inflow easing and outflow tightening. In contrast, the FinOpen index covers both easing and tightening measures on inflows and outflows, which may lead to different aggregate patterns.



(a) All countries

(b) Advanced economies

(c) Emerging markets

(d) Low-income countries

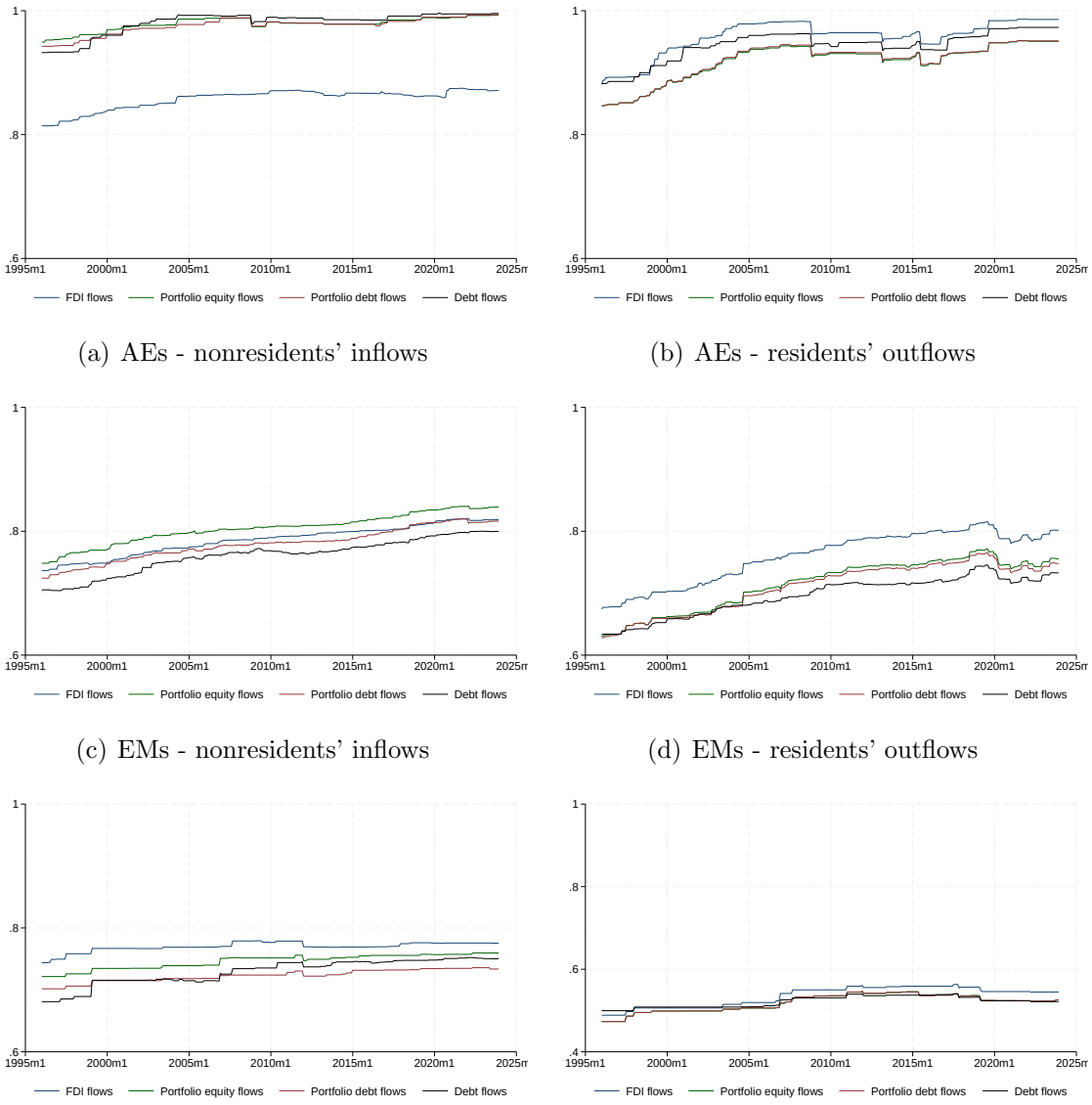
Figure 4: **The FinOpen indexes on nonresidents' and residents' flows**
Times series are the average of subindexes over economies and shows FinOpen indexes on nonresidents' inflows, nonresidents' outflows and residents' outflows separately.

further control foreign outflows only during periods of stress (Chang et al. 2024). Greece and Cyprus in Appendix Figure A3 are examples to tighten foreign outflows during crises. Chart (c) shows that in EMs, the gap between nonresidents inflows and residents outflows has narrowed until Covid-19 pandemic, indicating intensified efforts to liberalize residents outflows in recent dacades. By contrast, Chart (d) shows that the divergence between restrictions on nonresidents inflows and residents outflows is most pronounced in LICs. It reflects the prevalence of financial repression in LICs, where authorities aim to retain capital domestically and limit demand for foreign exchanges. Figure A1 shows the evolution of openness across three types of flows for a selected set of countries.

Fact 3: ***The index decomposition by flow categories reflects the tendency of most authorities to tilt towards equity.***

Figure 5 further disaggregates the FinOpen index on nonresidents' inflows and residents' outflows by flow categories.[20] In AEs, authorities have nearly fully liberalized all foreign inflows except FDI, where prohibitions remain in sensitive sectors due to national security concerns. In EMDEs, equity flows are generally subject to more relaxed

[20]Since the restriction on nonresidents' outflows is limited, I choose not to show their composition by flow categories.



(a) AEs - nonresidents' inflows

(b) AEs - residents' outflows

(c) EMs - nonresidents' inflows

(d) EMs - residents' outflows

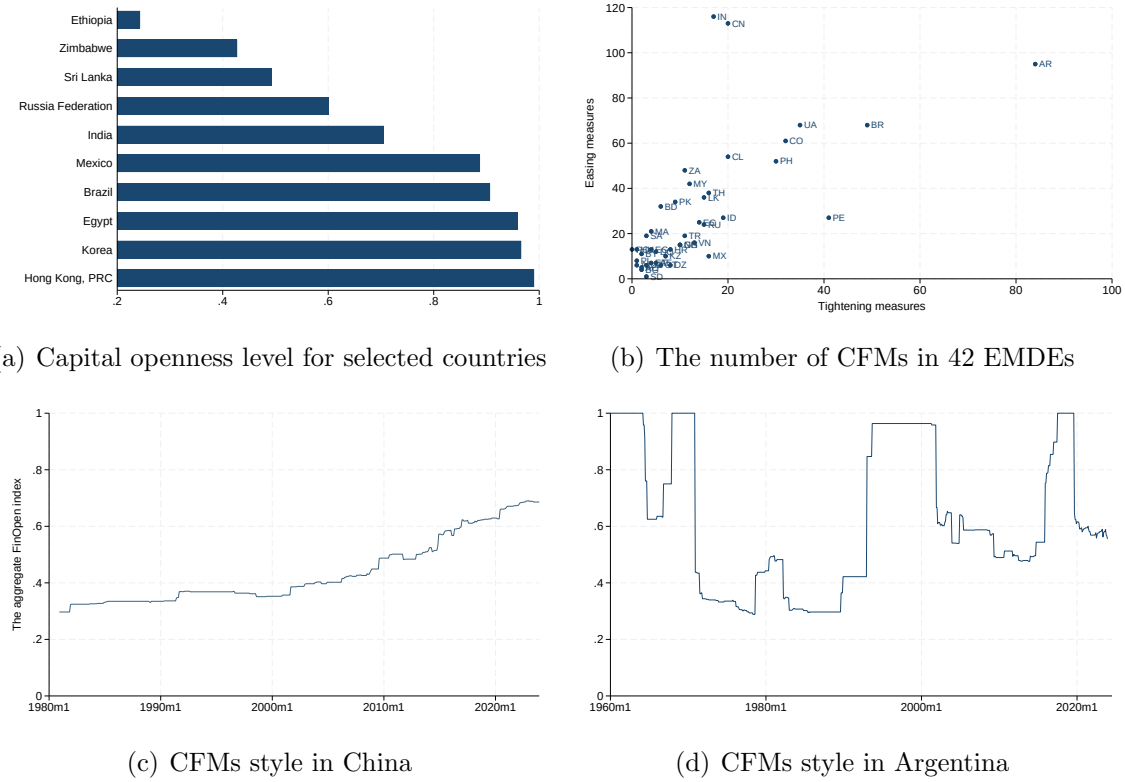
(e) LICs - nonresidents' inflows

(f) LICs - residents' outflows

Figure 5: **The FinOpen indexes on different categories of flows**
Times series are the average of subindexes over economies. Chart (a), (c), and (e) show the composition of FinOpen indexes on nonresidents' inflows by FDI, portfolio equity, portfolio debt, and other investments separately, while Chart (b), (d), and (f) show the composition of FinOpen indexes on residents' outflows.

regulation than debt flows. This pattern is consistent with the sequencing of liberalization mentioned in the literature(Jeanne 2013, Arora et al. 2013), whereby equity is liberalized first and debt last. Because debt flows are inherently less stable and excessive foreign borrowing raises concerns about external sustainability, authorities tend to impose stricter controls on external debt to mitigate these risks. Turning to residents' outflows, both AEs and EMs exhibit greater openness toward outward FDI, while LICs show little differentiation across flow categories. The absence of such distinctions in LICs may reflect their limited capacity to engage in direct outward investment. In this con-

text, the unform approach helps avoid loopholes that could allow other domestic capital to exit the country through FDI channel. Table A6 reports the FinOpen subindexes in 2022 for a selected group of countries, highlighting the heterogeneity in how countries manage different types of capital flows.



(a) Capital openness level for selected countries

(b) The number of CFMs in 42 EMDEs

(c) CFMs style in China

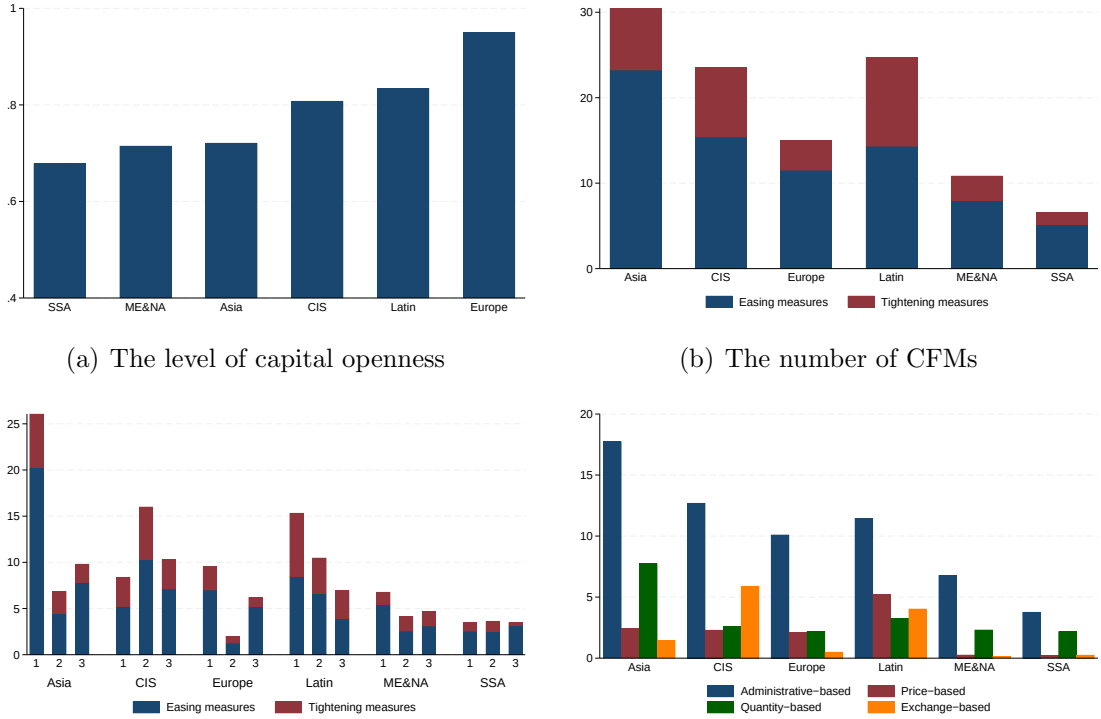
(d) CFMs style in Argentina

Figure 6: **CFMs heterogeneity across countries**
Chart (a) is the bar cart of $FinOpen_{tot,avg}$ in 2022 for selected countries. Chart (b) counts the number of easing and tightening policy measures for 42 EMDEs between 1960 and 2022. Chart (c) and (d) shows $FinOpen_{tot,avg}$ for China and Argentina.

Fact 4: ***The management of capital flows displays considerable heterogeneity across countries.***

In Figure 6, Panels (a) and (b) highlight cross-country heterogeneity in both the level of capital openness and the use of policy measures. Most EMDEs remain at an intermediate stage of openness, yet some, such as Egypt, are close to full liberalization, whereas others, including Russia and Sri Lanka, maintain strict controls. In terms of policy activity, Panel (b) shows that most EMDEs rarely change their managements of capital flows, while countries like India and China are much more active users. The cumulative policy actions of the top ten most active countries constitute 56% of the total CFMs implemented across 42 EMDEs from 1960 to 2022. Beyond frequency, authorities also differ in their management styles. Panels (c) and (d) contrast China and Argentina: China tends to adjust capital flows management gradually through low-intensity measures, reflecting a

cautious approach, whereas Argentina relies on high-intensity measures, leading to sharp swings in openness that point to a more aggressive management style.



(a) The level of capital openness

(b) The number of CFMs

(c) The number of CFMs by flow types

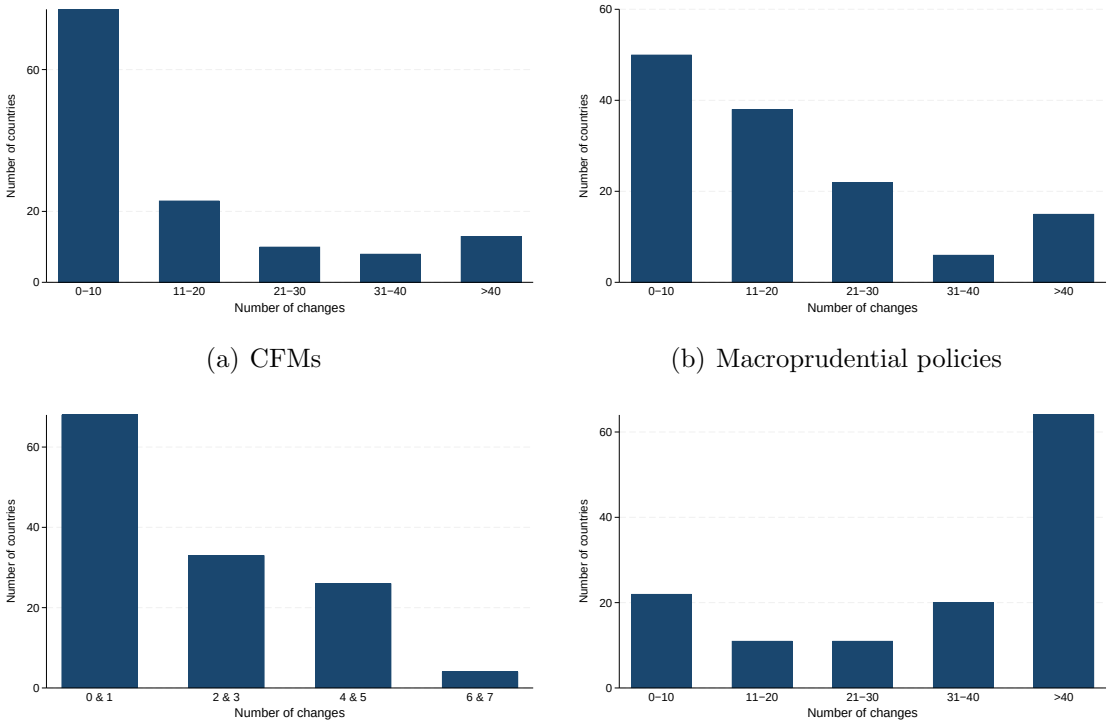
(d) The number of CFMs by measure types

Figure 7: **Region heterogeneity in EMDEs**
Chart (a) is the average value of $FinOpen_{tot,avg}$ in 2022 across regions and AEs are excluded. Chart (b) counts the country average number of easing and tightening policy measures by region. In Chart (c), the number of easing and tightening measures is counted in different types of flows: group 1 (nonresidents' inflows), group 2 (nonresidents' outflows), and group 3 (residents' outflows). In Chart(d), the number of easing and tightening measures are grouped by measure types.

Fact 5: ***EMDEs in Asia, Latin America, and the Commonwealth of Independent States (CIS) use CFMs more frequently than other regions, though with different focuses on flows and measure types.***

Figure 7 illustrates these regional differences in capital openness and CFMs practices. Chart (a) describes the average level of capital openness across regions in 2022: Europe exhibits the highest degree of capital liberalization, while Sub-Saharan Africa remains the most restrictive. Chart(b) shows Asia, Latin America and the CIS as regions where CFMs are adjusted more often. The relatively large share of the red bar indicates that Latin American countries have more often implemented tightening measures. Charts (c) and (d) further disaggregate policies by flow type and measure type. Most countries focus on managing foreign flows, and mainly use administrative-based measures. By contrast,

Latin American and CIS countries have focused more on nonresident outflows, and have employed relatively more on foreign exchange (FX)-based and price-based measures.



(a) CFMs

(b) Macroprudential policies

(c) Exchange rate arrangements

(d) Monetary policies

Figure 8: **Frequency of policy changes**
Monthly data covers 131 countries between 1996 and 2018 to ensure the same coverage for all four policies. I use macroprudential policy data from Alam et al. (2019) and fined exchange rate regime data from Ethan et al. (2017). Charts show the number of countries that change policies over different frequency intervals. The calculation differs between the count of policy actions for CFMs and MPMs where multiple policies can occur within a month and the count of months for exchange rate regimes and monetary policy that have changes. Since the likelihood of having more than one change within a month is minimal for exchange rate regimes, the conclusion would remain the same.

Fact 6: ***Capital controls show a lower degree of stickiness than previously expected.***

Traditional literature suggests that capital controls are highly persistent(Eichengreen and Rose 2014, Fernndez et al. 2015). Countries rarely adjust these controls in response to short-term fluctuations in external accounts. Instead, they tend to maintain the same level of capital controls for decades. This view is supported when looking at binary labels, which shift from "yes" to "no" only when transactions become fully liberalized. However, when we look at the number of policy actions, capital controls appear less sticky than often assumed.[21] Figure 8 compares the frequency of CFMs changes with that of other

[21]With priced-based policy actions, AcostaHenao et al. (2025) shows that persistence is not driven by

policies. CFMs exhibit a lower frequency of adjustments than macroprudential policies. When comparing the frequency of changes across three dimensions of "impossible trinity", CFMs fall in the middle: they are adjusted less often than monetary policy instruments but more frequently than exchange rate regimes. Given that most CFM actions in Figure 7 came from a small group of countries, some policymakers may have actively used CFMs as part of a cyclical management toolkit, which aligns with the recent IPF work (IMF 2020).

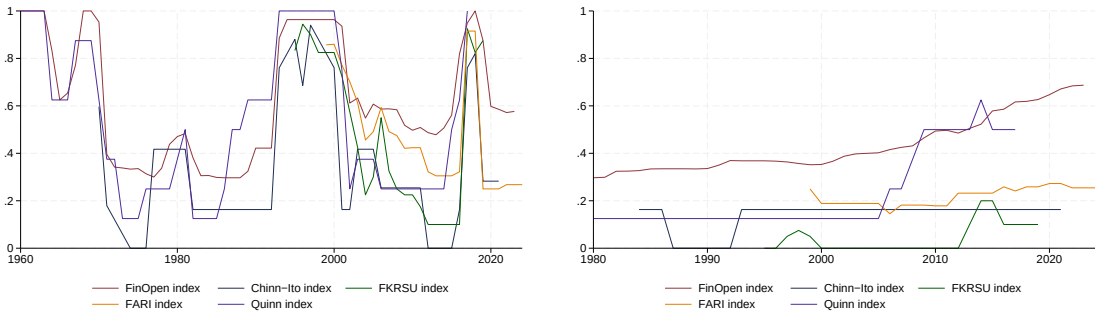
4 Comparison with other indexes of capital openness

To comprehensively assess the performance of the FinOpen index, I compare it with other de-jure indexes of capital openness. Traditional indexes rely on AREAER binary labels to construct indexes, such as Chinn and Ito (2006), Fernández et al. (2016), and Baba et al. (2026). The Chinn-Ito index, spanning from 1970 to 2021, is an annual index to measure capital openness within the range of [0,1]. It is the first standardized principal component of four binary variables: the presence of multiple exchange rates, restrictions on current accounts, restrictions on capital accounts, and the requirement to surrender export proceeds.[22] The FKRSU index of Fernández et al. (2016), covering 1995-2019, measures restrictions by averaging binary labels across ten subcategories of capital transactions. Similarly, the Financial Account Restriction Index (FARI) is constructed based on AREAER categories related to capital transactions, but the coding of binary labels has been reconfirmed by IMF staff (Baba et al. 2026). The Quinn index measures, to the best of my knowledge, is the only existing index that systematically measures the intensity of capital account openness (Quinn 1997, Quinn 2003). The variable $CAPITAL$ is coded on a 0-4 scale based on stance information, where 4 denotes full openness and 0 denotes complete closure.

Figure 9 compares the FinOpen index with four other de-jure indexes for Argentina and China. In Chart (a), the Chinn-Ito index and the FinOpen index capture similar moving patterns for Argentina: capital control removed in the 1990s, reapplied in early 2000 when the crisis took place, further easing around 2016, and then re-tightening in 2019. However, differences exist in the intensity of control. In 2012, the Chinn-Ito index and FKRSU index suggest a near-complete closure of the capital account, while the FinOpen index shows the level still far from full closure. This divergence stems from differences in construction: in 2012, binary labels recorded yes across all categories,

the absence of intensive-margin adjustment.

[22] The Chinn-Ito index captures a broader range of policies affecting capital flows because authors assume that restrictions in related areas can help control unofficial channels of circumventing barriers of capital flows.

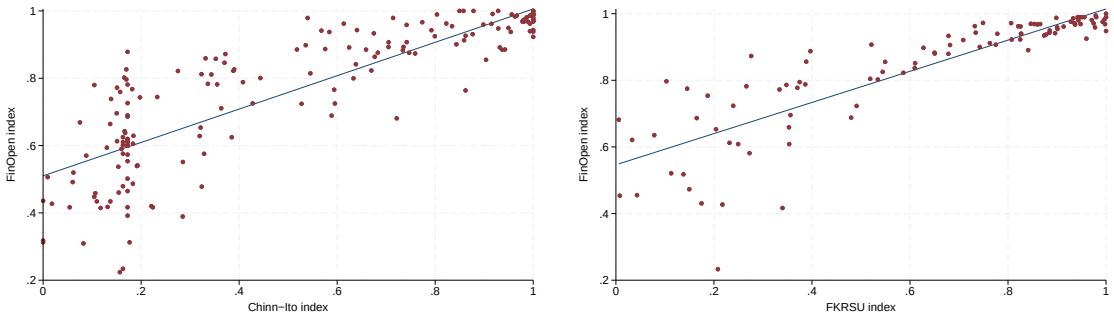


(a) Argentina (b) China

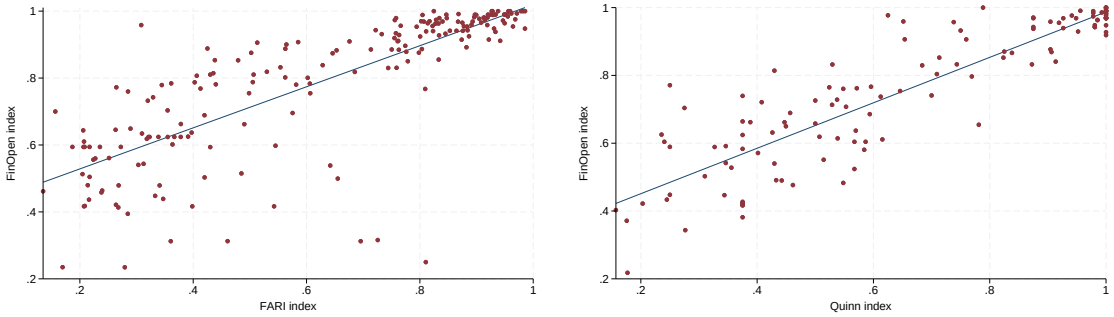
Figure 9: **Index comparison on Argentina and China**
Comparison between the FinOpen index and other indexes of capital flow management is presented on Argentina and China. The Chinn-Ito index is the variable *ka_open*. For consistency, the FKRSU index and the FARI index are transformed by subtracting their original values from one, so that higher values uniformly reflect a greater degree of openness. The Quinn index is the variable $CAPTAL$, which has transformed to 0-1 scale.

implying complete closure, even though inflows were permitted subject to a 30% unremunerated reserve requirement (URR) and outflows required approval to purchase foreign exchange. By quantifying the intensity of such measures, the FinOpen index provides a more nuanced assessment. In Chart (b), both the Chinn-Ito and FKRSU indexes illustrate China's capital account management as static and highly restrictive. Conversely, the FinOpen index describes a steady process of liberalization. This discrepancy arises because China's reform involved incremental adjustments rather than full liberalization of any category, leaving binary indicators unchanged. The Quinn index, which measures capital control intensity rather than using binary labels, also registers the trend of liberalization, underscoring the importance of accounting for intensity. Overall, these two country cases show that the FinOpen index allows for index comparisons across countries within the range of [0,1] and captures granular changes of policy intensity that binary labels miss.

Figure 10 compares the FinOpen index with four de-jure indexes across the full sample of 193 economies. Four charts show statistically significant positive correlations of the country-level mean values between the FinOpen index and the four indexes. With correlation coefficients around 0.85, the ordering of countries by openness in the FinOpen index is broadly in line with previous de-jure indexes. However, the scatter plots (a)-(c) reveal that observations for highly open economies line closer to the fitted line than those for more restrictive economies. This indicates greater divergence between FinOpen and previous indexes using binary labels when capital accounts are tightly controlled. Figure 11 is the country-level correlation averaged by region to capture the movement of capital openness over time. Correlations are highest in regions where capital flow management



(a) Average country value (Chinn-Ito index) (b) Average country value (FKRSU index)



(c) Average country value (FARI index) (d) Average country value (Quinn index)

Figure 10: **Comparison with other de-jure indexes**
Chart(a) is a scatter plot of the FinOpen index against the Chinn-Ito index, using country-level mean values over the period covered by the Chinn-Ito index. The correlation between the two indexes is 0.84. Similarly, Chart (b), (c) and (d) compare with FKRSU index, FARI index and Quinn index, with the correlation values of 0.86, 0.79 and 0.89 respectively.

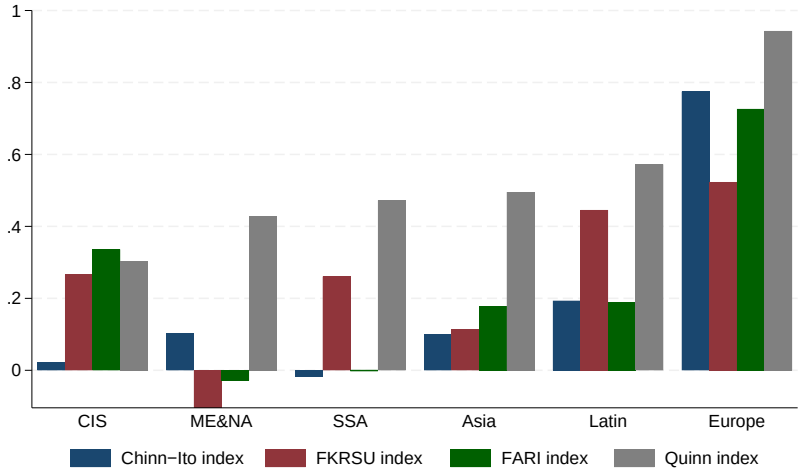


Figure 11: **Correlation with other de-jure indexes**
Correlation is first calculated for each country individually and then averaged by region. AEs are excluded.

often oscillates between "not full openness" and "full openness", such as Latin America and Europe. In these cases, the major part of CFMs information could be shared cross

binary labels and measure-based quantification. By contrast, in regions where policy changes do not trigger changes in binary labels, correlations are weaker.[23] Moreover, the consistently high correlation between the FinOpen index and the Quinn index across all regions confirms that when policy intensity is explicitly measured, FinOpen conveys information similar to an established intensity-based benchmark, thereby strengthening the credibility of the index.

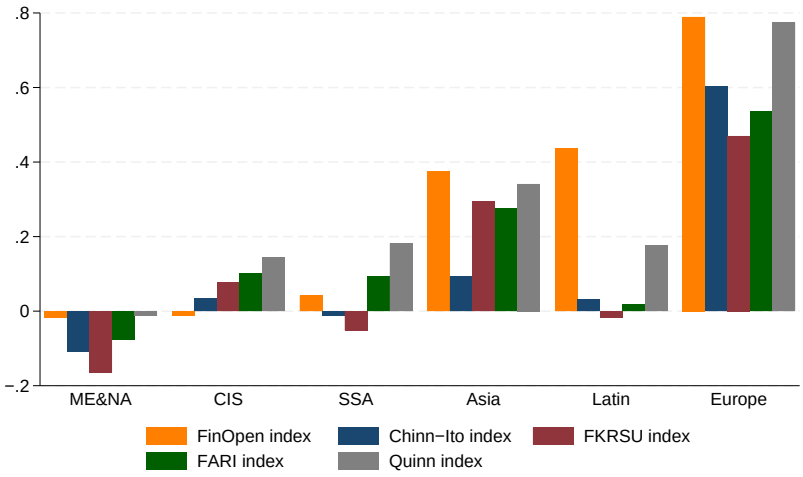


Figure 12: **Correlation with external position in percent of GDP**
External position (the sum of assets and liabilities) in percent of GDP exclude foreign reserves. Data source: EWN database (Lane and Milesi-Ferretti 2007). Each bar in the figure is the correlation between the de-facto index and one of four de-jure indexes at the country level, and then averaged by region. AEs are excluded.

We would expect countries with higher levels of capital openness to accumulate larger external positions. Accordingly, the external position measured as the sum of external assets and liabilities relative to GDP is treated as the de-facto index of capital openness since it reflects the actual scale of cross-border investment. Figure 12 shows the correlation between this de-facto index and five de-jure indexes at the country level, averaged across regions. Among EMDEs, Europe exhibits the strongest correlation with the de facto index. Interestingly, in Asia and Latin America, two regions with the most active use of CFMs, the correlation between FinOpen and the de facto index is higher than that of the other de jure indexes; the Quinn index, which also accounts for intensity, displays a similarly strong relationship. This pattern suggests that when CFMs are used actively, measuring policy intensity could substantially improve the ability of de jure indices to capture effective openness, and hence their alignment with observed external positions.

[23] In some cases, previous indexes display variations not reflected in the FinOpen index. For example, measures on portfolio investment generate larger variations in the FKRSU index, given that five out of its ten asset categories (equity, bonds, money market, collective investment, and financial derivatives) are directly affected. Moreover, certain changes in binary labels lack corresponding measures or narrative information in the AREAER, thus the FinOpen index cannot capture them.

By contrast, in regions such as the Middle East and North Africa, the Commonwealth of Independent States, and Sub-Saharan Africa, correlations between de facto and de jure measures are generally low. In these cases, other factors, such as financial development, institutional quality, and structural characteristics, likely play a more dominant role in shaping external positions, attenuating the empirical link between capital openness and realized cross-border investment.

5 Conclusion

This paper develops a novel index for capital openness, the FinOpen index, covering 193 economies from 1995 to 2022. With its daily frequency, the index captures granular changes in capital flow management and can be connected with other high-frequency macro-financial data to analyze the effects of within-year policy changes. Its cross-country comparability allows for systematic evaluations of capital openness across a broad sample, while its disaggregation provides insights into the policy impacts on different types of capital flows.

In an era of high capital mobility, it is crucial to assess the appropriate degree of capital openness and to identify the optimal timing and design of policy interventions. By advancing the measurement of CFMs, this paper contributes to a deeper understanding of their broader implications. I propose two ways to further enrich the FinOpen index. First, while the database already extends back to 1960 for 42 EMDEs, applying the same methodology to other countries would allow the construction of a comprehensive series from 1960 to 2022. Second, the index quality relies on the coverage of policy measures. Expanding the data sources beyond the AREAER - for example, by incorporating information from official websites - would strengthen the comprehensiveness and accuracy of the FinOpen index.

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6 Appendix

6.1 Criteria for the CFMs coverage

(1) Measures that do not exhibit distinct easing or tightening effects on capital flows are excluded. For example, the central bank announced the revision and consolidation of regulations pertaining to foreign exchange controls. Additionally, measures that require the registration or reporting of cross-border investments are excluded. The exclusion is based on the assumption that authorities intend to monitor rather than affect capital flows.

(2) Measures about procedures or implementations of previous measures, as well as announcements on future measures are excluded to avoid double counting.

(3) Measures that only affect capitals within a specific sector (e.g., the fishery industry) or transactions with a single country counterparty are excluded. Nevertheless, measures pertaining to the banking industry and those involving United States or Europe are included.

(4) Measures concerning foreign national residing in this country are excluded, as they are categorized as residents. Additionally, measures pertaining nonresidents with citizenship in this country or individuals originated from this country are excluded. Those measures, primarily from India, are designed to offer investment incentives to foreign investors with ties to this country.

(5) While profits, dividends and interest income are categorized under "current transactions", the investment income is highly related to cross-border investments. Restrictions on the repatriation of capital income can alarm foreign investors, dissuading them from making new investments and prompting them to pull out existing funds. Therefore, the measure coverage includes policies from "Investment-related payments".

(6) Categories including "Use of foreign exchange among residents", "Resident Accounts", "Nonresident Accounts", and "Provisions Specific to the Financial Sector" may provide additional information about FX management measures that capital transactions fails to mention, and the measure coverage includes them.

(7) Categories "Exports and Export Proceeds" and "Proceeds from Invisible Transactions and Current Transfer" reports policy measures about the repatriation or surrender requirement for current account transactions, and this paper also includes them.

Asia	Europe	Sub-Saharan Africa (SSA)	Latin America and the Caribean	Middle East, North Africa (ME&NA)	Commonwealth of independent states (CIS)
China	Turkey	Nigeria	Brazil	Saudi Arabia	Russia
India	Poland	South Africa	Mexico	United Arab Emirates	Kazakhstan
Indonesia	Romania	Angola	Argentina	Egypt	Ukraine
Thailand	Hungary	Ethiopia	Colombia	Pakistan	Uzbekistan
Malaysia	Croatia	Ghana	Chile	Algeria	Belarus
Philippines	Bulgaria		Peru	Morocco	Azerbaijan
Bangladesh			Ecuador	Sudan	
Vietnam			Dominican Republic		
Sri Lanka			Guatemala		

Table A1: **Country Sample Table for 1960-2022 period**

The sample of 42 emerging and developing countries (EMDEs) chosen based on their GDPs in 2022 has longer time period for the FinOpen index. Countries are classified using IMF region classification in WEO 2022. Middle East and North Africa region includes Pakistan.

Administrative-based measures	
Allow/Prohibit	Affected transactions are permitted/prohibited.
Relax/Restrict	Some barriers are removed/introduced.
Require approval	Transactions require approval from authorities. When the prior condition is "prohibited", a shift to "require approval" indicates a relaxation of controls on these transactions. If no prior approval was required, this measure signifies a tightening of capital regulations.
Simplify approval	Administrative procedures are simplified, such as the delegation of approval authority to lower levels or the simplification of document requirements.
Cancel approval	Affected transactions are free without requiring any approval.
Holding period	A minimum holding period is imposed to restrict capital outflows, while a minimum maturity requirement for foreign loans is designed to limit short-term foreign borrowing inflows.
Price-based measures	
Tax	Taxation can deter both inflows and outflows by imposing additional costs on affected transactions.
Reserve requirement	Investors are required to deposit a certain amount of funds at low or zero interest rates in the financial institutions.
Quantity-based measures	
Amount limit	Authorities set an upper limit on affected transactions.
Approval with exception	Transactions falling below a specified value threshold are exempt from approval (a mix of quantity-based and administrative-based measures).
FX-based measures	
Exchange control	Authorities control investors access to foreign exchanges, including nonresidents FX conversion to local currency (affect inflows), and the purchase of foreign exchanges (affect outflows).
Repatriation requirement	Authorities require that FX proceeds from capital transactions (foreign borrowing or issue FX securities) must be repatriated to the country.
Surrender requirement	Authorities require repatriated FX proceeds to convert into local currency.

Table A2: **The labelling of CFMs measure types**

[1] There are unconventional CFMs measure types, such as moral suasion and capital flows prudential management. Moral suasion refers that authorities provide guidance on capital flows rather than implement new policies. For example, banks are advised to exercise caution when borrowing new foreign capital. Capital flows prudential management, primarily used in China, allows for the adjustment of leverage ratios to control cross-border financing.

[2] Authorities employ some methods to restrict capital repatriation, such as repatriation in several installments and government bond holdings for specified periods.

[3] For foreign direct investment (FDI), authorities can restrict foreign shares or conduct acquisitions to safeguard domestic interests. They can also provide preferential treatment or establish a positive list to attract foreign capitals.

[4] In the case of foreign debt, authorities may seek to mitigate foreign exchange risk by requiring exchange rate guarantees. When the government provides exchange rate guarantees, residents are encouraged to borrow abroad. However, if residents are required to independently hedge risk, they may opt against borrowing abroad due to additional hedging costs.

Country	Time range	Assumptions
Algeria	1964-2022	For nonresidents, no information was available between 1964 and 2000 for portfolio investment. BOP6 database reflects that they are very trivial, so I assume it is under strict control (1). The information on foreign debt was also missing between 1964 and 1969. Because all borrowing abroad required prior approval by the Minister of Finance since 1970, I assume it also required administrative approval between 1964 and 1969 (2).
Angola	1990-2022	For nonresidents, no information was available between 1990 and 2009 for debt investment. Because BNA approval and authorization are required in 2010, I assume that residents must obtain prior authorization to borrow abroad between 1990 and 2009 (2).
Argentina	1960-2022	For residents, no information was available between 1980 and 2003. I assume that between 1980 and 1990, it followed strict foreign exchange control (1) in 1970. The approval of central bank gradually allows outflows since 1990 and I assume domestic outflows are free (4) between 1990 and 2003.
Azerbaijan	1993-2022	NA
Bangladesh	1973-2022	NA
Belarus	1993-2022	For residents, no information was available between 1993 and 1999 for all three categories. Because NBRB permission is required in 1999, I assume that all three require NBRB permission (2) before 1999.
Brazil	1960-2022	NA
Bulgaria	1991-2022	For residents, no information was available between 1991 and 2003 for FDI and not available between 1991 and 2007 for portfolio and debt investment. For all three categories, according the following information, I assume that prior registration with the BNB was required (3).
Chile	1960-2022	For residents, no information was available between 1960 and 1970. Because authorities limited outflows since 1970s, I assume that residents also faced the same CFMs during 1960s (1). For nonresidents, there was no information about portfolio investment until 1987 when foreign capital investment funds were allowed to set up. I assume that foreign portfolio investment was subject to administrative approval (2).
China	1980-2022	NA
Colombia	1960-2022	For residents, no information was available between 1960 and 1967. Because exports of capital by residents were restricted since 1968, I assume the same situation for residents in 1960s (1). For nonresidents, most foreign investments required prior approval and registration since 1970, so I assume prior approval was also required in 1960s (2).
Croatia	1993-2022	NA
Dominican Republic	1960-2022	NA
Ecuador	1960-2022	For residents, no information was available between 1960 and 1971. Based on the information in 1964, all other capital remittances by residents or nonresidents may be made through the free market. I assume it requires administrative approval (2).
Egypt	1972-2022	Capital remittance abroad for nonresidents was lack of information. Because no limitation was mentioned, I assume it was at least under liberal approval (3). External loans were also lack of information between 1972 and 1995. Because in 1996, it declared that residents were required to refer to the CBE for external debts and AREAER labelled it as full openness and treated it as registration for only statistical purposes. I assume that external loans were under no control also between 1972 and 1995 (4).
Ethiopia	1960-2022	For nonresidents, no information was available between 1960 and 2020 for portfolio investment. the trivial portfolio data in BOP6 database reflects that it was under strict control (1). External loans were also lack of information between 1960 and 1971. Because in 1972, it declared that borrowing abroad requires exchange control approval and is restricted. I assume external loans were also subject to approval between 1960 and 1971 (2).

[a] Values in parentheses denote the assumed level of the FinOpen subindex. The primary assumption is to extrapolate available information from the nearest year back to the base year.

[b] In the absence of specific data regarding foreign debt repayment, I assume foreign debt is under normal repayment and assign a level of capital openness of 4 for debt repatriation.

[c] When narrative descriptions change without the introduction of new measures, I infer that these changes take effect at the beginning of the respective year. For instance, in the case of Ghana, the statement "transfers of liquidation funds are being phased in gradually" in 1993 was replaced with "authorized dealer banks are permitted to facilitate the transfer of proceeds from the sale of foreign ownership to Ghanaian nationals" in 1994. I assume that a policy aimed at relaxing capital outflows comes into effect on January 1, 1994.

Table A3: **Assumptions about missing information for 42 EMDEs**

Country	Time range	Assumptions
Ghana	1960-2022	For nonresidents, no information was available between 1960 and 1993 for portfolio investment. Because foreign investors only allowed to purchase securities in Stock Exchange in 1993, I assume portfolio investment requires approval before 1993 (2).
Guatemala	1960-2022	NA
Hungary	1982-2022	NA
India	1960-2022	Information about residents direct investment abroad was missing between 1960 and 1973. Since 1974, residents were prohibited to invest in any business abroad without permission. I assume before that, residents OFDI was allowed under administrative approval (2).
Indonesia	1960-2022	In 1967 May, a Debt Investment Conversion was promulgated to deal with unsolved debts (1). I assume the debt was repaid normally in 1972 when the proceeds from restored enterprise can be transferred abroad (4).
Kazakhstan	1993-2022	NA
Malaysia	1960-2022	NA
Mexico	1960-2022	NA
Morocco	1960-2022	NA
Nigeria	1961-2022	NA
Pakistan	1960-2022	External borrowing was lack of information. Since 1999, the label of financial credits was no and since 2004, the label of commercial credit was also no. I assume that at least, external borrowing was under liberal approval (3).
Peru	1960-2022	NA
Philippines	1960-2022	NA
Poland	1986-2022	NA
Romania	1973-2022	NA
Russia	1992-2022	NA
Saudi Arabia	1960-2022	Before 1997, the narrative explanation was that no exchange control requirements are imposed on capital receipts or payments by residents or nonresidents. But in 1997, some other restrictions for nonresidents came out without new CFMs measures reported. I assume that before 1997, those restrictions existed (2) but there was no exchange control for capital cross-border movements.
South Africa	1960-2022	NA
Sri Lanka	1960-2022	NA
Sudan	1960-2022	Outward investments from residents are lack of information. Based on the narrative explanation in the later year, I assume that these transactions are subject to approval by the MOF (2). There is no information about foreign capital repatriation. Information about the liquidation of direct investment in 1999 shows that capital proceeds can be repatriated in full, so I assume there is no restriction on capital repatriation (4) before 1999.
Thailand	1960-2022	NA
Turkey	1960-2022	Lending to nonresidents was lack of information. Since 2005, the label of financial credits was yes and since 2000, the label of commercial credits was yes. I assume that lending to nonresidents required administrative approval (2).
Ukraine	1993-2022	For residents, no information was available between 1993 and 1997 for all three categories. Because in 1997, the narrative explanation was that direct investments by residents abroad are subject to individual NBU licenses. I assume all three categories were also subject to licenses before 1997 (2). For nonresidents, no information was available between 1993 and 1997 for capital repatriation. Because in 1997, it was declared that the transfer of proceeds, after payment of taxes due, is guaranteed. I assume that capital return was also guaranteed before 1997 (4).
United Arab Emirates	1973-2020	NA
Uzbekistan	1993-2022	For residents, no information was available between 1993 and 1998 for all three categories. In 1999, enterprises established abroad with the participation of Uzbek investors must be registered with the MFER. In 2009, agreements on the provision of credits for a period of more than 360 days are subject to registration with the CBU. I assume that registration in authorities was needed (3) before 1998.
Vietnam	1960-2022	For residents, no information was available between 1960 and 1998 for all three categories. Information in 1999 shows that outward direct investment and debt requires an MPI permit (2) and foreign portfolios are under strict control (1).

Table A4: **Assumptions about missing information for 42 EMDEs-Continued**

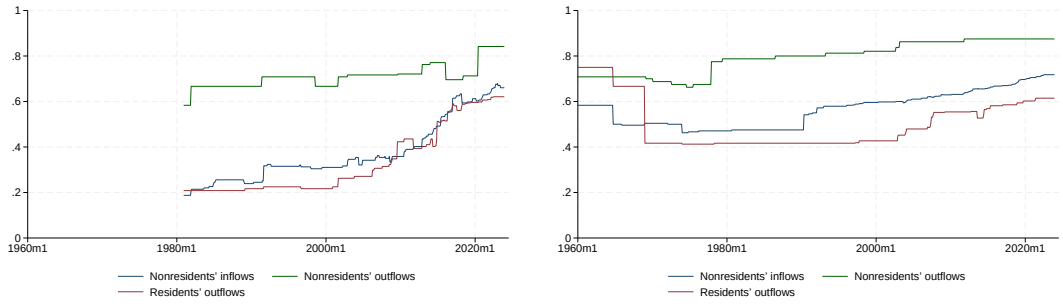
AREAER Code	AREAER category	The FinOpen subindex
172	Inward direct investment	Nonresidents' inflows of FDI
202	Purchase locally by nonresidents of real estate	
186	Controls on liquidation of direct investment	Nonresidents' outflows of FDI
203	Sale locally by nonresidents of real estate	
171	Outward direct investment	Residents' outflows of FDI
201	Purchase abroad by residents of real estate	
23	Purchase locally by nonresidents of equity	Nonresidents' inflows of portfolio equity
29	Sale or issue broad by residents of equity	
40	Purchase locally by nonresidents of collective investment securities	
43	Sale or issue broad by residents of collective investment securities	
25	Purchase abroad by residents of equity	Residents' outflows of portfolio equity
27	Sale of issue locally by nonresidents o	
41	Purchase abroad by residents of collective instruments securities	
42	Sale or issue locally by nonresidents of collective instruments securities	
24	Purchase locally by nonresidents of bonds	Nonresidents' inflows of portfolio debt
30	Sale or issue broad by residents of bonds	
35	Purchase locally by nonresidents of money market instruments	
38	Sale or issue broad by residents of money market instruments	
40	Purchase locally by nonresidents of collective investment securities	
43	Sale or issue broad by residents of collective investment securities	
26	Sale or issue locally by nonresidents of bonds	Residents' outflows of portfolio equity
28	Purchase abroad by residents of bonds	
36	Sale or issue locally by nonresidents of money market instruments	
37	Purchase abroad by residents of money market instruments	
41	Sale or issue locally by nonresidents of collective instruments securities	
42	Purchase abroad by residents of collective instruments securities	
142	Commercial credits borrowed from nonresidents to residents	Nonresidents' inflows of other investment
145	Financial credits borrowed from nonresidents to residents	
148	Guarantees from nonresidents to residents	
227	Personal loans borrowed from nonresidents to residents	
247	Commercial banks and other credit institutions borrowing abroad	
141	Commercial credits borrowed from residents to nonresidents	Residents' outflows of other investment
144	Financial credits borrowed from residents to nonresidents	
147	Guarantees by residents to nonresidents	
226	Personal loans borrowed from residents to nonresidents	
249	Commercial banks and other credit institutions lending to nonresidents	

Table A5: **The mapping of AREAER subcategories to the FinOpen subindexes**

[1] This table maps the disaggregated AREAER categories to the FinOpen subindexes. Restrictions on nonresidents outflows are separated into a distinct category only for FDI. One possible reason is that restrictions on the liquidation of foreign portfolios or the repayment of foreign debts are relatively uncommon, so the AREAER classifies the purchase and liquidation of foreign capital within the same category. As a result, in the absence of specific information, the corresponding subindex is set at level 4.

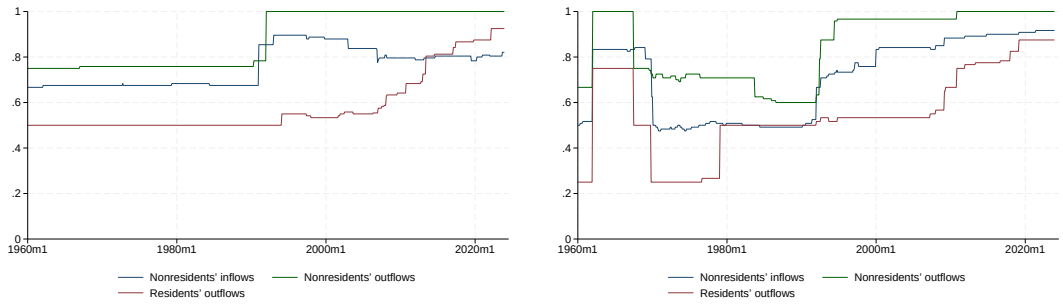
	Nonresidents' inflows				Nonresidents' outflows				Residents' outflows				
Country	FDI	EQTY	DBT	Other	FDI	EQTY	DBT	Other	FDI	EQTY	DBT	Other	Total
Asia													
China	0.80	0.54	0.56	0.62	0.78	0.75	0.75	1.00	0.78	0.41	0.41	0.67	0.68
India	0.79	0.70	0.68	0.67	0.83	0.85	0.75	1.00	0.68	0.65	0.60	0.54	0.70
Indonesia	0.84	0.90	0.75	0.39	1.00	1.00	1.00	1.00	0.88	0.75	0.75	0.13	0.71
Thailand	0.85	0.75	0.78	0.80	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.85	0.91
Malaysia	0.78	0.88	0.88	0.80	1.00	1.00	1.00	1.00	0.68	0.80	0.80	0.75	0.83
Philippines	0.95	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.88	0.88	0.88	0.88	0.92
Bangladesh	0.69	0.80	0.68	0.33	0.80	0.80	0.78	1.00	0.23	0.10	0.10	0.23	0.45
Vietnam	0.75	0.75	0.75	0.45	1.00	1.00	1.00	1.00	0.48	0.50	0.50	0.13	0.60
Sri Lanka	0.85	0.78	0.60	0.63	0.69	0.75	0.75	1.00	0.19	0.24	0.24	0.24	0.49
Europe													
Turkey	0.75	0.85	0.85	0.50	1.00	1.00	1.00	1.00	0.90	0.85	0.85	0.85	0.86
Poland	0.88	0.90	0.90	1.00	1.00	1.00	1.00	1.00	0.90	0.88	0.88	0.93	0.93
Romania	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hungary	0.83	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	1.00	1.00	1.00	0.96
Croatia	0.88	0.90	0.88	0.93	1.00	1.00	1.00	1.00	1.00	0.90	0.90	1.00	0.96
Bulgaria	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.90	0.88	1.00	0.97
Sub-Saharan Africa													
Nigeria	1.00	1.00	1.00	0.78	1.00	1.00	1.00	1.00	1.00	0.50	0.50	1.00	0.90
South Africa	0.95	0.87	0.87	0.80	1.00	1.00	1.00	1.00	0.70	0.72	0.67	0.52	0.79
Angola	0.53	0.53	0.50	0.50	1.00	1.00	1.00	1.00	0.61	0.61	0.63	0.50	0.67
Ethiopia	0.55	0.00	0.00	0.37	0.50	0.00	0.00	1.00	0.00	0.00	0.00	0.25	0.24
Ghana	0.48	0.75	0.50	1.00	0.98	0.98	0.75	1.00	1.00	0.88	0.88	1.00	0.89
Latin America and the Carribean													
Brazil	0.88	0.90	0.88	0.98	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.77	0.91
Mexico	0.83	0.88	0.88	0.70	1.00	1.00	1.00	1.00	0.88	0.88	0.88	0.88	0.89
Argentina	1.00	1.00	1.00	1.00	0.59	0.39	0.34	0.81	0.48	0.24	0.24	0.34	0.57
Colombia	0.88	0.73	0.78	0.88	0.88	0.88	0.88	0.88	0.75	0.75	0.75	1.00	0.84
Chile	0.88	0.88	0.88	0.85	1.00	1.00	1.00	1.00	1.00	0.85	0.85	0.78	0.90
Peru	1.00	1.00	1.00	0.76	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98
Ecuador	0.83	0.75	0.75	0.85	0.89	0.83	0.83	0.83	0.87	0.78	0.78	0.53	0.78
Dominican Rep	0.78	0.75	0.75	0.48	1.00	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.89
Guatemala	0.88	0.88	0.88	1.00	1.00	0.98	1.00	1.00	1.00	1.00	0.88	1.00	0.97
Middle East and North Africa													
Saudi Arabia	0.85	0.78	0.78	0.48	1.00	1.00	1.00	1.00	0.98	0.90	0.88	0.50	0.82
UAE	0.85	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	0.90	0.90	0.93	0.95
Egypt	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.81	0.81	1.00	0.96
Pakistan	0.88	0.75	0.75	0.63	0.98	0.98	1.00	1.00	0.50	0.50	0.50	0.38	0.66
Algeria	0.78	0.63	0.38	0.25	0.75	1.00	1.00	1.00	0.28	0.38	0.00	0.20	0.47
Morocco	0.90	0.88	0.88	0.78	1.00	1.00	1.00	1.00	0.68	0.65	0.65	0.50	0.77
Sudan	0.45	0.50	0.50	0.50	0.50	0.50	0.50	1.00	0.50	0.50	0.50	0.50	0.54
Commonwealth of independent states													
Russia	0.55	0.56	0.57	1.00	0.43	0.42	0.41	0.58	0.64	0.65	0.65	0.54	0.60
Kazakhstan	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ukraine	0.88	0.88	0.88	0.88	0.31	0.31	0.31	0.29	0.30	0.32	0.32	0.30	0.45
Uzbekistan	0.83	0.85	0.88	0.78	1.00	1.00	1.00	1.00	0.25	0.25	0.25	0.25	0.58
Belarus	0.90	0.90	0.95	0.90	1.00	1.00	1.00	1.00	0.88	0.88	0.88	0.88	0.91
Azerbaijan	0.88	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.88	0.88	1.00	0.96

Table A6: **FinOpen subindexes in 2022 for a selected sample**
This tables shows 12 FinOpen subindexes. Specifically, for each flow category (FDI, portfolio equity, portfolio debt, and other investment), three subindexes are presented on nonresidents' inflows, nonresidents' outflows, and residents' outflows.



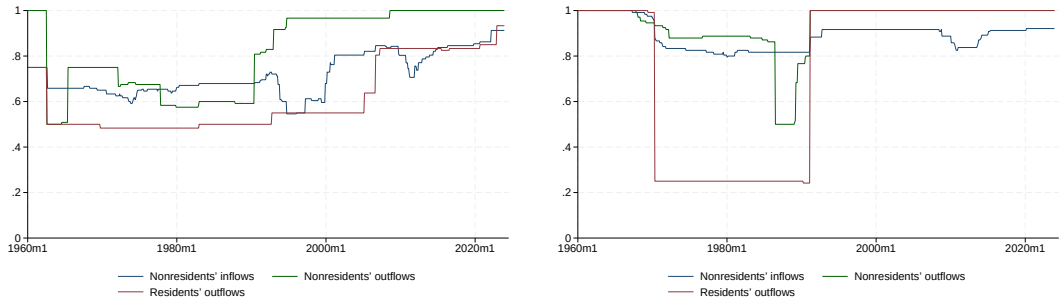
(a) China

(b) India



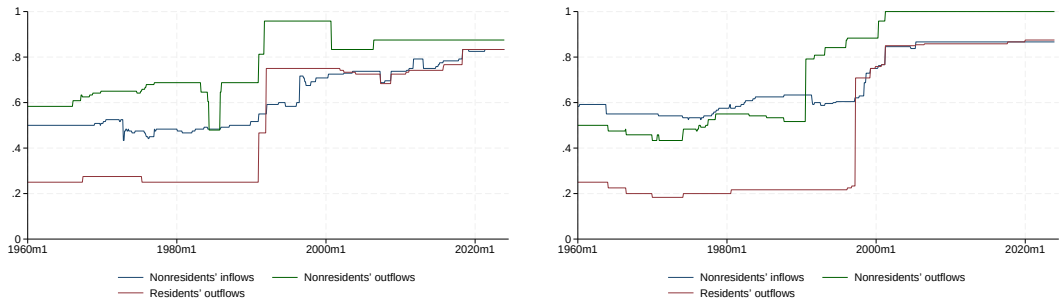
(c) Thailand

(d) Philippines



(e) Brazil

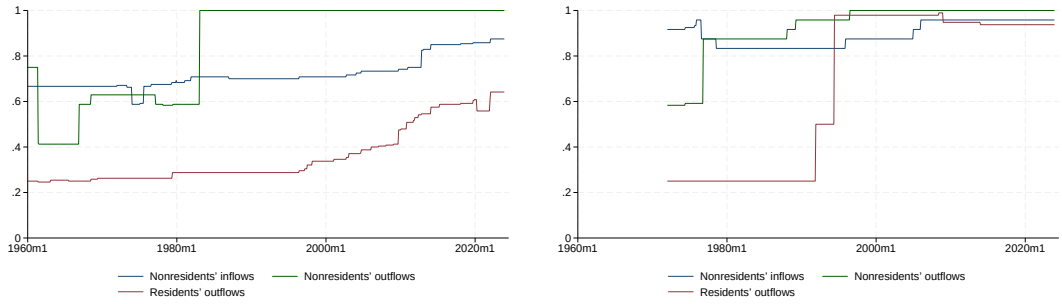
(f) Peru



(g) Colombia

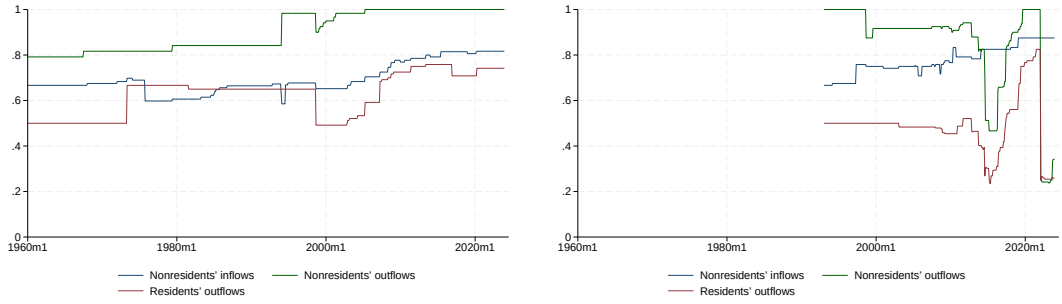
(h) Chile

Figure A1: **A selected sample for FinOpen subindexes**
The charts display a selected sample of countries for the FinOpen subindexes related to nonresidents' inflows, nonresidents' outflows, and residents' outflows.



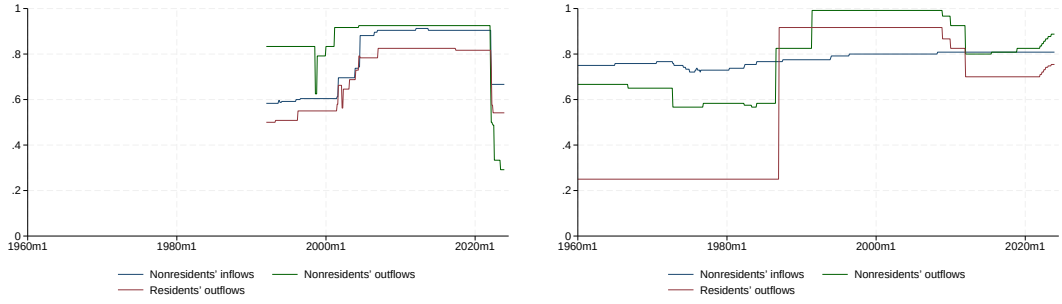
(a) South Africa

(b) Egypt



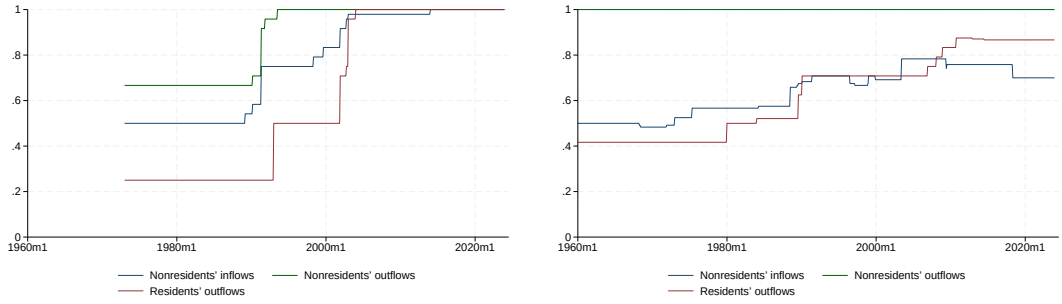
(c) Malaysia

(d) Ukraine



(e) Russia

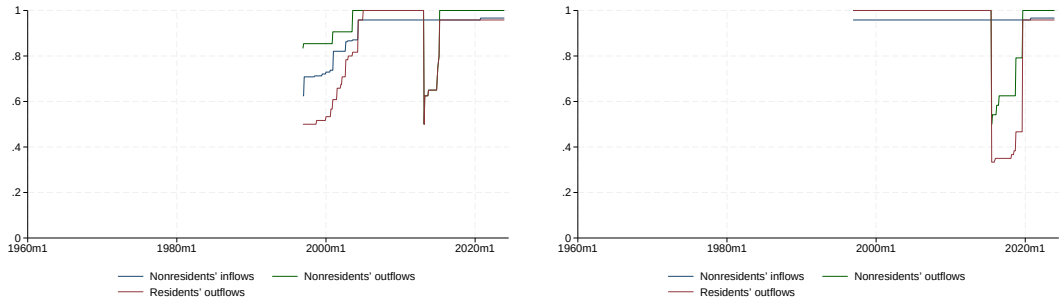
(f) Ecuador



(g) Romania

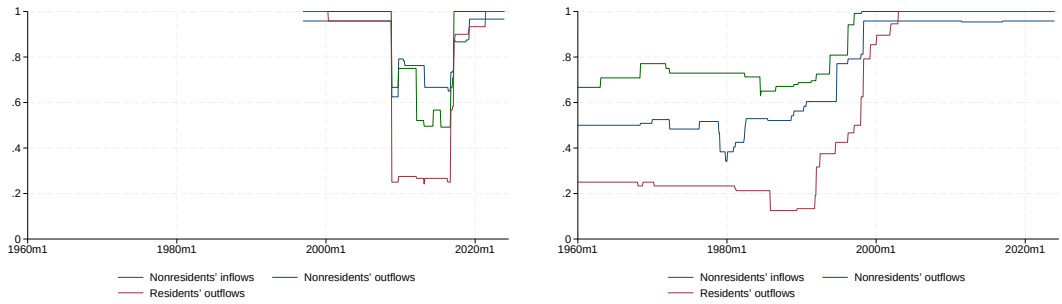
(h) Turkey

Figure A2: **A selected sample for FinOpen subindexes-Continued**
The charts display a selected sample of countries for the FinOpen subindexes related to nonresidents' inflows, nonresidents' outflows, and residents' outflows.



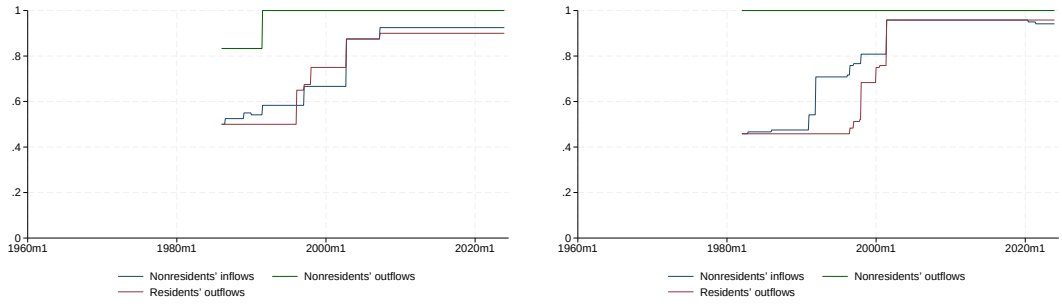
(a) Cyprus

(b) Greece



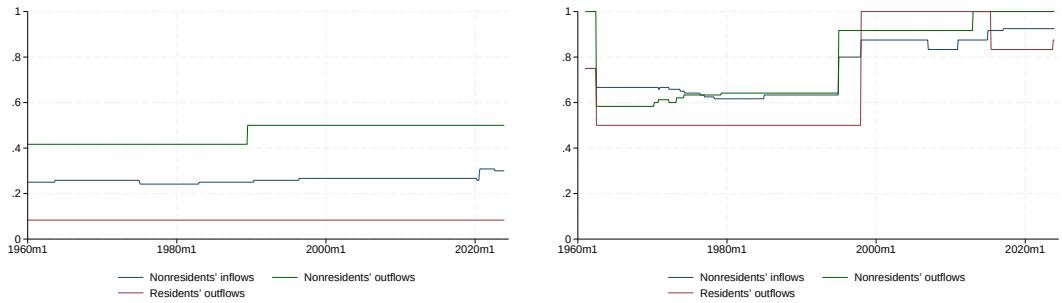
(c) Iceland

(d) Israel



(e) Poland

(f) Hungary



(g) Ethiopia

(h) Nigeria

Figure A3: **A selected sample for FinOpen subindexes-Continued**
The charts display a selected sample of countries for the FinOpen subindexes related to non-residents' inflows, nonresidents' outflows, and residents' outflows.

PUBLICATIONS

Beyond Binary: A Policy-Intensity Measure of Capital Flow Management

Working Paper No. WP/2026/021