



PEOPLE'S REPUBLIC OF CHINA

SELECTED ISSUES

August 2026

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Approved By
**Asia and Pacific
Department**

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IMPACT OF THE 2025 TRADE TENSIONS ON THE CHINESE ECONOMY: AN EARLY INVESTIGATION¹

Global trade policy actions have increased in 2025 when the US increased tariff rates on its main trading partners. Increases in tariffs and other trade restrictions between the US and China have been particularly significant. This paper takes an early look at the data to examine the implications of the 2025 US-China trade tensions on China's trade flows, corporate sector, and financial system, with a focus on differences across products and sectors, given differences in US tariff rates. Despite a sharp drop in Chinese exports to the US, China's overall trade remained resilient, supported by higher exports to other regions, particularly ASEAN. Results using granular product and country level data suggests that losses in the US market have been largest in products most affected by new trade measures and those that were more reliant on the US markets to begin with. At the same time, these products have also seen offsets from increased exports to third countries. While sectors with higher US exposure saw some margin compression, the overall impact on corporate profitability has been modest so far. Preliminary analysis suggests that the exposure of the banking sector credit risks from tariffs is heterogenous, with potentially larger risks for more vulnerable institutions.

A. Introduction

1. There have been major shifts in global trade policy in 2025, with trade tensions between China and the US remaining elevated. The renewed escalation of US-China trade tensions since early 2025 has been marked by tariff hikes and has resulted in sharply elevated trade policy uncertainty. Both countries have also raised other forms of trade barriers, including export controls or subsidies. While the US has increased tariffs on all its main trading partners, the rise in tariffs on China has been the largest. The two countries reached a one-year truce since the presidential summit in October 2025, but effective tariff rates remain higher than they were before the escalation, and their economic effects have started to materialize.

2. Rising US-China trade tensions can impact trade flows and could also spill over to China's corporate and financial sectors. Faced with rising trade costs, Chinese exporters could seek to reconfigure their supply chains and trading relationships, reallocating exports away from the tariff-imposing markets toward other destinations. Furthermore, as tariff and non-tariff barriers tighten on Chinese goods, firms with sizeable exposure to the US market may face growing pressure from disrupted supply chains, reduced market access, and heightened operational uncertainty. Meanwhile, elevated uncertainty could dampen investment and tighten credit conditions in the whole economy. This could exacerbate financial stress in vulnerable sectors and among highly leveraged firms, with potential spillovers to banks and non-bank financial institutions exposed to

¹ Prepared by Natalia Novikova, Monika Sztajerowska, Yizhi Xu, and Jibingxin Han. Contributions from Shuhan Yue are gratefully acknowledged. The note also builds on the collective monitoring and analysis by the trade team in SPR/XP.

these corporate borrowers and amplify pockets of vulnerabilities amid already elevated financial risks ([IMF, 2025a](#)).

3. This paper takes an early look at the data to analyze how the 2025 trade tensions may have affected China's trade patterns so far and explores the implications for Chinese corporate and financial sectors. The impact of tariffs is likely to evolve significantly over time as firms and policy makers continue to adapt to shifting circumstances. However, given the speed, scope, and scale of US tariff adjustments on China and China's retaliation against the US in 2025, an early assessment based on the available data is warranted. In this context, the paper first reviews the changing trade policy landscape in 2025 (Section B). We then examine the evolving patterns of China's trade flows, using aggregate, bilateral and granular trade data and focusing on how exporters and importers have reoriented toward alternative markets (Section C). Next, we assess the performance of China's manufacturing sector, particularly the pressures faced by export-dependent industries (Section D) and finally discuss potential transmission channels of trade tensions to the banking system (Section E). Given limited data availability and the still evolving nature of the shock, the paper provides a simple descriptive analysis of trends around the escalation of trade tensions, differentiating to the extent possible across products and sectors with different exposure to US tariffs. As such, the analysis in the paper should not be viewed as providing causal effects of a particular trade action on the Chinese economy.²

4. Our main findings are as follows:

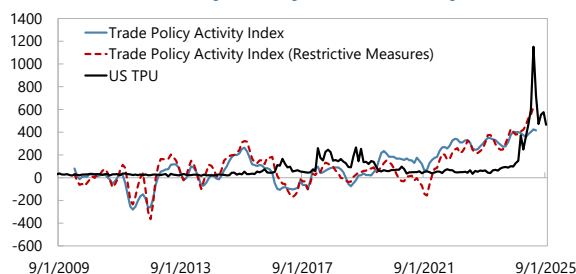
- **Trade reconfiguration:** while China's exports to the US have sharply declined since early 2025, overall exports have remained resilient, supported by rising Chinese exports to other destinations such as the ASEAN. Early evidence based on product-level customs data suggests that the loss of US market share has been partially offset by gains in third countries, with the largest contribution coming from sectors most affected by recent trade actions.
- **Corporate sector performance:** Overall manufacturing sector revenues have only limited exposure to the US market. While sectors with higher US exposure experienced a more pronounced decline in profit margins since the onset of the current trade tensions, the quantitative impact has been modest.
- **The banking system** could be impacted through various channels including deterioration in banks' export-related credit risks and macroeconomic conditions. Given existing vulnerabilities, close monitoring of emerging risks is warranted, especially among some regional banks that are more exposed to the shock.

² Heightened trade tensions involve both US trade actions on China and China's retaliatory measures. However, the analysis in this paper cannot disentangle the effects of US tariffs from those possibly arising from China's tariffs on the US or from exports controls and other non-tariff measures by either country albeit their scope and nature of effects is likely to be different. Therefore, the analysis presented here is descriptive, without accounting for the role of other confounding factors or identifying the causal effects of trade actions on China's trade reconfigurations, which can be done in future research.

B. A Changing Trade Policy Landscape

5. Global trade policy actions and trade policy uncertainty have increased substantially in 2025. While trade tensions occurred in the past, the scope and scale of the current tensions are larger (text chart) and could potentially be more disruptive to global trade and economic activity. The US trade-weighted effective tariff rate (ETR) on the world increased seven-fold since January 1, 2025, reaching 17.5 percent as of September 30, 2025.

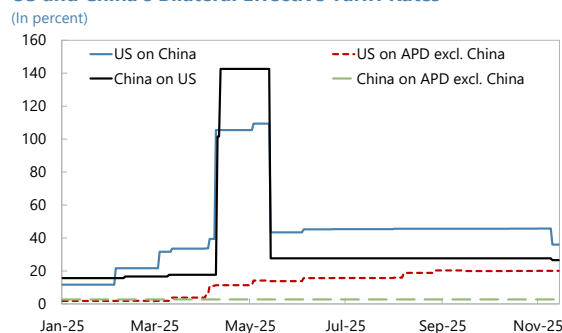
Increased Trade Policy Activity and Uncertainty



Sources: Centorrino, Diakantoni, Keck, Ruta, Sztajerowska and Wei (2025); Caldara, Iacovello, Molligo, Prespitino, and Raffo (2019).
Note: The Trade-Policy Activity (TPA) Index is a composite indicator that synthesizes a broad set of trade-related policy measures normalized to a reference period (Jan 2010-Dec 2012).

6. The increase in US tariffs on China has been particularly significant, which was followed by China's retaliatory measures. The US ETR on China rose sharply, peaking at over 100 percent in April 2025. Although it has come down since the US-China trade truce in May, the ETR stands at 36.0 percent as of November 10 and remains significantly elevated compared to the initial level at the beginning of the year (text chart). Meanwhile, as China retaliated against the US, China's ETR on the US also increased sharply from 15.6 percent as of January 1, 2025 to the peak of 142.6 percent in April 2025, and stands at 26.6 percent as of November 10, 2025.

US and China's Bilateral Effective Tariff Rates



Sources: WTO-IMF Tariff Tracker; and IMF staff calculations.
Note: Data as of November 10, 2025.

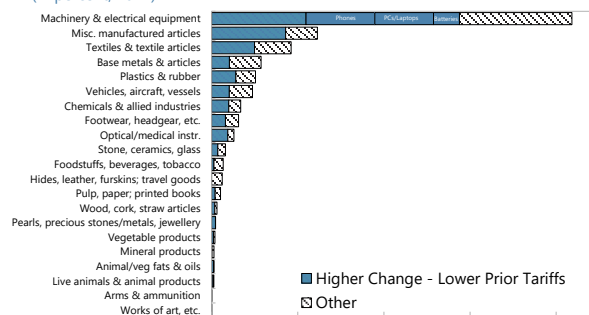
7. The relatively higher US tariffs on China than on most other trading partners has generated incentives to reconfigure trade. The level of final tariff rates, the range of affected products, and the differential between the US tariffs on China and other countries will shape firms' incentives to reconfigure supply chains. During the 2018-2019 trade tensions, when the tariff shock was largely China-specific, other Asian economies gained market shares in both Chinese exports and US imports (Freund et al., 2025, Gopinath et al., 2025, Fajgelbaum et al., 2025) and attracted investment from Chinese multinational firms (Graziano et al., 2024, Utar et al., 2023). In contrast, the current tariff hikes have also targeted these other regions. For instance, the US effective trade-weighted tariff rate on Asia, excluding China, jumped from 1.8 percent in January to 20.0 percent by November 2025, according to the WTO-IMF tariff tracker. However, as the tariff differential between China and other countries have becomes larger, the incentives for firms to reduce the asymmetric tariff burden through trade reconfiguration persist. Conversely, if the tariff advantages for other regions narrow going forward, this could dampen these incentives (Rotunno and Ruta, 2025).

8. The level of tariffs faced by China varies significantly across products, with some goods especially affected by current trade tensions.

While median US simple effective tariff across 5,612 (HS 6-digit) categories of Chinese goods stood at 21.7 percent in early January 2025, it jumped to 51.5 percent in September 2025 (Text Figure 1, panel 1). The distribution has also become more skewed with some products experiencing particularly high tariffs. Around 58 percent of Chinese exports (by value) that had below-the-median tariff rates at the beginning of the year experienced above-the-median tariff increases (in percent; Text Figure 1, panel 2). This category accounts for a large share of machinery and equipment exports (text chart). In addition, 30.7 percent of Chinese exports had above median prior tariffs, about one quarter of which (or 8 percent of total exports) additionally experienced (above-the-median) tariff hikes. Hence, the incentive of trade flows to adjust varies across products, with some exporters who initially faced low tariffs but have seen large increases potentially having greater incentives to reconfigure trade.

Share of China's Exports by Tariff Exposure

(In percent; 2024)

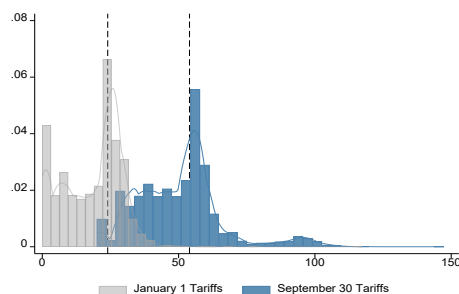


Sources: WTO-IMF Tariff Tracker; Trade Data Monitor; and IMF staff calculations.
Note: Sectors correspond to HS sections. Special provisions not included.

Text Figure 1. US Tariffs on China

US Effective Simple Tariff Rates on China

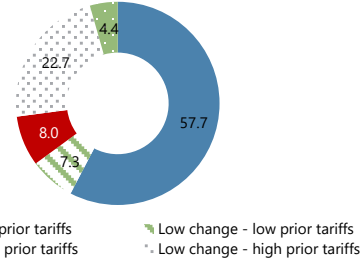
(By tariff shock and product)



Sources: WTO-IMF Tariff Tracker; and IMF staff calculations.
Note: Tariffs above 99.5 percentile are not shown for better readability.

Share of Chinese Exports by Tariff Exposure

(In percent)



Sources: WTO-IMF Tariff Tracker; Trade Data Monitor; and IMF staff calculations.
Note: Share of Chinese 2024 exports. High change refers to above median change in $\log(1+\text{tariffs})$ from Jan 1, 2025 to Sep 30, 2025. Low prior tariffs refer to below median tariff level in Jan 2025.

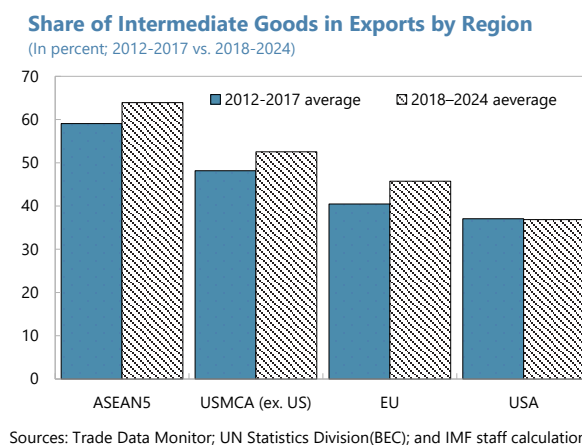
C. China's Trade Flows around Trade Tensions

9. China's export destinations have evolved markedly over the past three decades, with emerging markets playing an increasingly important role in China's trade. Following the 1978 reform and opening-up, China's trade expanded rapidly, with exports growth concentrated among other East Asian economies, notably Japan, Korea, and Hong Kong SAR (Text Figure 2, panel 1). The WTO accession in 2001 marked a milestone in China's global integration, fueling a surge in exports and cementing China as a key global manufacturing hub. However, the 2008 Global Financial Crisis exposed vulnerabilities associated with heavy export dependence on advanced economies,

particularly those in East Asia, and encouraged gradual market diversification into emerging markets. This trend accelerated after the 2018 US-China trade tensions, which disrupted bilateral trade between the two economies and heightened policy uncertainty. While advanced economies once dominated China's exports, their share has gradually declined (from around 88 percent of exports in the early 1990s to just under 60 percent in 2024), as emerging markets, especially ASEAN economies, gained prominence (Text Figure 2, panel 2).



10. The share of intermediate goods in China's exports has increased, reflecting the growing importance of global supply chains. China's share of global value chain exports, defined as exports that either use inputs from other countries or become inputs into other countries' exports, increased fivefold since the early 1990s. China's assembly of other countries' inputs drove this rise initially. However, starting in the mid-2000s, China has increasingly become a supplier of inputs to other countries, resulting in a high share of Chinese value added embedded in regional exports (IMF 2023, IMF 2025b). In recent years, intermediate goods shipments to ASEAN and USMCA (excluding the US) have increased significantly, compared to the period before the 2018 US tariff hikes (text chart).



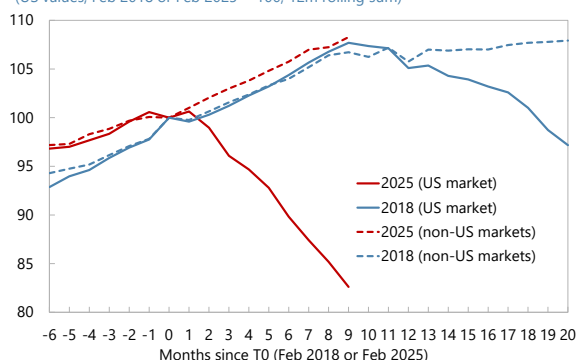
11. Since the onset of trade tensions in early 2025, US-China trade has decoupled sharply and at a faster pace than in 2018-19. China's exports to the US have dropped sharply since the escalation in trade tensions in February 2025, falling by nearly 20 percent in 9 months. The pace of

trade fragmentation is significantly faster than in 2018-2019, when exports from China to the US continued growing for nine months after the first imposition of tariffs (Tex Figure 3, panel 1).³

Text Figure 3. China's Exports to the US and other Trading Partners, 2018-2019 and 2025

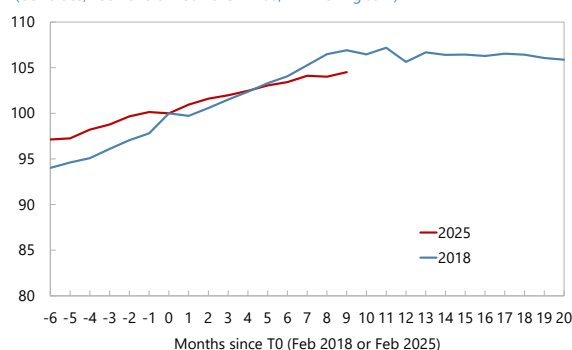
Chinese Exports to the US and Non-US Markets

(US values; Feb 2018 or Feb 2025 = 100; 12m rolling sum)



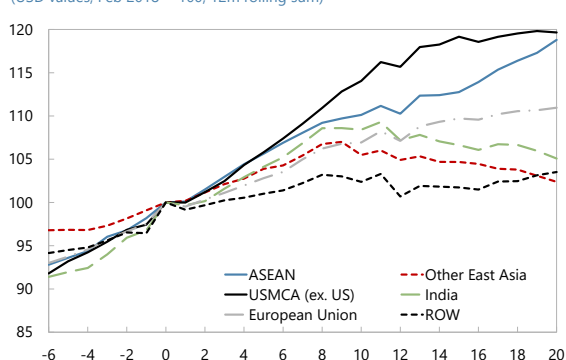
Total Chinese Exports

(US values; Feb 2018 or Feb 2025 = 100; 12m rolling sum)



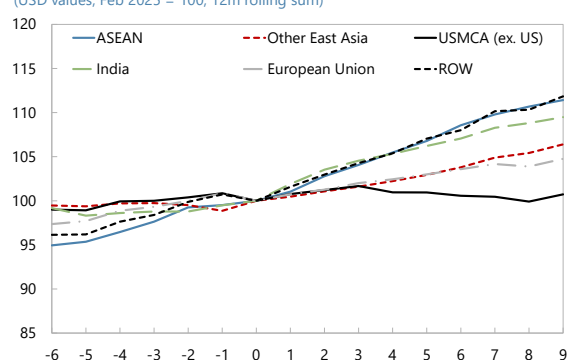
Chinese Exports by Destination

(USD values; Feb 2018 = 100; 12m rolling sum)



Chinese Exports by Destination

(USD values; Feb 2025 = 100; 12m rolling sum)



Sources: China Customs Statistics; CEIC Data company Limited; and IMF staff calculations.

12. Despite the decline in shipments to the US, total Chinese exports have remained resilient supported by higher trade with other regions, mirroring the pattern observed in 2018-2019 (Text Figure 3, panel 2). As in previous episode of the US-China trade tensions, exports to ASEAN have picked up (Text Figure 3, panel 3 and panel 4), representing nearly 20 percent of Chinese exports as of November 2025. In addition, Chinese exports to India have also been growing, although from a lower base. In contrast, the exports to USMCA (excluding the US), which had increased significantly in 2018-19, have remained flat during the recent trade tensions. As argued in [IMF \(2025b\)](#), this new pattern may reflect new trade actions targeting USMCA,⁴ combined with further tightening and enforcement of rules of origin, along with other factors.

³ See also [IMF \(2025b\)](#).

⁴ For instance, high tariffs on non-USMCA-compliant products and on steel and aluminum content on a value-added basis.

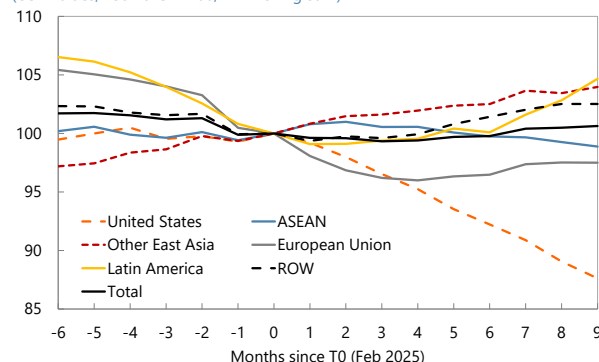
13. The decoupling between the US and China is also evident in the sharp decline in China's imports from the US, offset by increased imports from other trading partners.

Since early 2025, China's total imports from the US have fallen by nearly 15 percent. However, as US products account for only about 6 percent of China's total imports, overall import levels have remained broadly stable (albeit at subdued levels) despite the trade tensions. The stable import performance was supported by higher imports from other economies, particularly in East Asia and Latin America (text chart).

Moreover, although several commodities imported from the US, including coal, LNG, and various agricultural products, have been subject to China's retaliatory tariffs since March 2025, China's total imports of these products have held steady, reflecting China's swift import substitution toward alternative suppliers.

Chinese Imports by Source Country

(USD values; Feb 2025 = 100; 12m rolling sum)



Sources: China Customs Statistics; CEIC Data Company Limited; and IMF staff calculations.

14. Several reasons may explain current dynamics in trade reconfiguration. The faster pace of trade flows adjustments observed so far, relative to the 2018-2019 episode, may potentially reflect the sharper and more immediate tariff increases as well as non-tariff barriers implemented in 2025. In contrast, the tariff hikes during the 2018-2019 episode were more gradual, targeted, and spread-out, affecting a more limited share of trade. In addition, the continued diversification of export destinations and import sources and the reallocation of production by Chinese firms in response to the previous tariffs (see e.g., Graziano and others, 2024) may have further helped hasten the adjustment as firms could use alternative infrastructure that they had established after the 2018-19 tariff hikes.

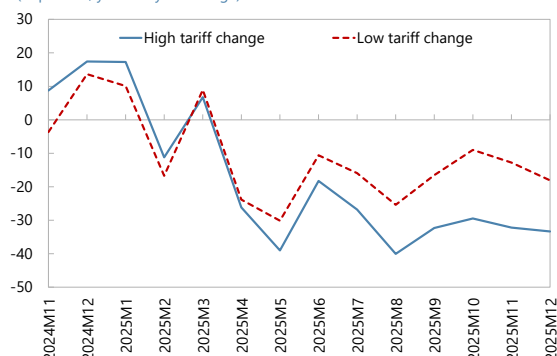
15. Analysis based on granular customs data reveals heterogeneous export responses among Chinese products to the US-China trade tensions, with sectors more exposed to the US tariff hikes seeing larger declines in exports to the US. As expected, Chinese products that were subject to steeper increases in tariffs and lower prior tariff levels have displayed stronger contractions in the US market, especially since April 2025 (Text Figure 4, panel 1).⁵ Furthermore, exports of products with greater prior reliance on the US market contracted sharply (Text Figure 4, panel 2).⁶ This could reflect greater incentive for these firms to find alternative markets expecting the US tariffs to persist (see below) or potentially Chinese exporters of these products cutting prices in the short term to maintain export competitiveness to the US. Both results point to immediate first-order effects on Chinese exports to the US for products that were more exposed to the US tariff shocks.

⁵ We consider the percent change in tariff rates across the whole period as a gauge of overall possible exposure to tariff shocks, taking into account the ability of firms to foreshadow changes.

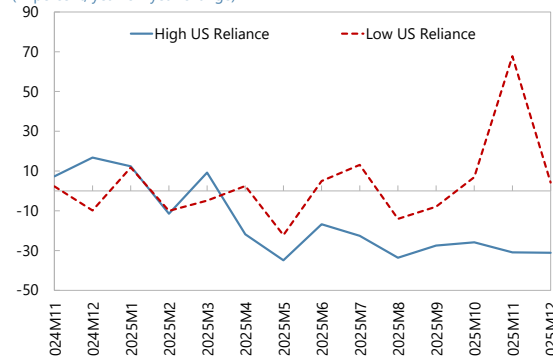
⁶ The spike in exports of low US reliance products in November 2025 was driven by copper, accounting for about one third of such exports and over half of their year-on-year increase.

Text Figure 4. Chinese Exports to the US by Product Types**Chinese Exports to the US by Tariff Changes**

(In percent; year-on-year change)

**Chinese Exports to the US by US Market Reliance**

(In percent; year-on-year change)



Sources: IMF-WTO Tariff Tracker; Trade Data Monitor; and IMF staff calculations.

Note: Higher tariff change refers to products that had low prior tariffs (i.e., below the median in January 2025) and experienced a high tariff change between January and September 30, 2025 (i.e., above the median change in $\log(1+\text{tariffs})$). High (low) US reliance refers to the products in which the share of exports to the US in total exports in 2024 is above (below or equal to) the median.

16. To further assess the overall impact on more exposed sectors, a simple index is used to analyze the extent to which losses in the US market have been offset by export gains in other foreign markets. For this analysis, we focus only on products where exports to the US have contracted. This focus on the offset of the losses in the tariffed market is economically meaningful: for instance, during June-August 2025, products that experienced year-on-year losses in the US market accounted for 85.9 percent of Chinese pre-2025 exports to the US.^{7,8} The index is essentially the ratio of the increase in exports to third markets relative to the decrease in exports of the same products to the US market (Box 1). While the index can move for various reasons unrelated to trade policy—such as shifts in third-market demand, exchange-rate movements, or supply disruption⁹—it provides a simple statistical tool to gauge the dynamics in trade reconfiguration. Values over 0 indicate third markets potentially offsetting some of the decline in exports to the US, while a value of 1 would indicate complete offset.

17. Overall, the index points to a marked rise in trade reconfiguration following US-China trade tensions, especially in products more impacted by the US tariff actions, followed by a more recent decline. Through September, the index aggregating over all products was close to 1. This suggests almost full offset of US export losses with gains to third markets, which may have been limiting the adverse impact of the bilateral trade contraction between the US and China while

⁷ Losses are defined as $\Delta \bar{X}_{p,t}^{i \rightarrow j}$ below, and calculated for August 2025 (i.e., capturing average exports for June-August 2025 relative to June-August 2024).

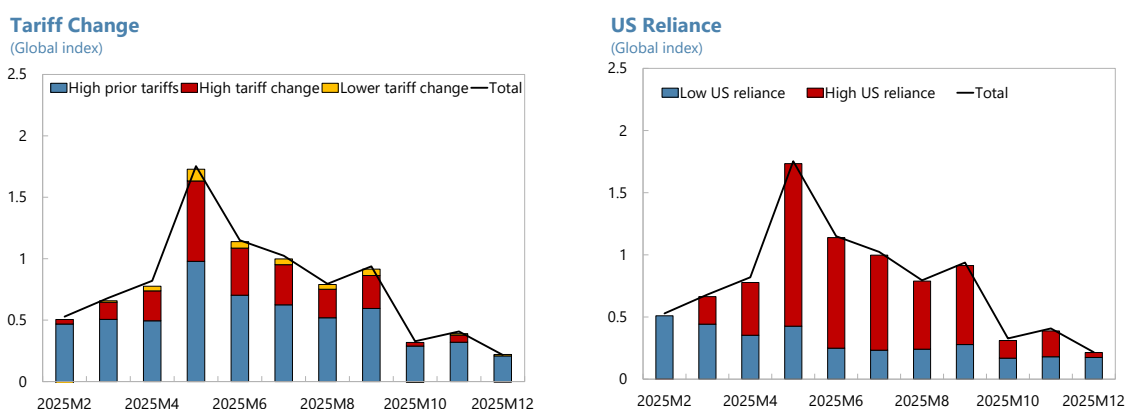
⁸ Trade reconfigurations can take different forms. Here we focus specifically on the reallocation of exports from a tariff-imposing market (the United States) toward third-country destinations within the same product lines. This phenomenon is often referred to as trade deflection (see e.g. Bown and Crowley, 2007). A related question is whether these deflected exports are eventually trans-shipped to the US (Freund et al. 2025, Freund, 2025), which is a question beyond the scope of this paper.

⁹ Some of these factors can be controlled for (e.g., through appropriate fixed effects) in future empirical analysis.

firms have been adjusting (Text Box 1). It also suggests that offsets may be driven mainly by the most affected products, i.e., those with high tariff changes and highly reliant on the US market (Text Figure 5). For example, a few top HS2 sectors accounted for most of the offsets in 2025, including electrical equipment, special provisions (including items associated with *de minimis* trade) and machinery sectors being most important. The high contribution of “special provisions” to trade offsets also points to potentially different nature of adjustment with the US abolition of the *de minimis* exception exerting an additional strain absent in 2018-2019, when *de minimis* shipments offered some reprieve (Fajgelbaum and Khandelwal, 2025; Freund et al., 2025).¹⁰ In 2025Q4, the index trended downwards though still remains positive, suggesting some but not complete offset. The decline in the index could reflect less incentives for exporters to reconfigure their supply chains amid easing US-China trade tensions following the October 30 agreement, as well as narrower US tariff differentials relative to other regions. Overall, trade reconfigurations may have provided some reprieve when and where it was needed most for Chinese exporters.

18. Trade flows are likely to evolve further going forward. As only a few months have passed since the ratcheting up of tariffs in 2025, and the tariffs on China and other destinations are still under negotiation, the trends in trade flows will likely remain fluid and may evolve significantly over time as firms and policymakers continue to adapt to shifting circumstances. The extent of trade reconfiguration may get amplified over time as firms adjust to the higher trade costs or if tariff differentials increase further. On the other hand, if tariff differentials across countries narrow, the incentive for trade reconfiguration may also decline.

Text Figure 5. Dynamics of Trade Reconfiguration: Contribution of Selected Types of Products



Note: The figure shows an index that measures contemporaneous offset in reduced exports in one market through exports to other markets, using year-on-year changes in three-month moving-average exports (a positive value of the index indicates possible trade reconfiguration). In the left-hand side chart, higher (or lower) tariff change refers to products with low prior tariffs (i.e., below median in January 2025) and a high (or low) tariff change in January-September 30, 2025 (i.e., above median change in $\log(1 + \text{tariff rate})$). Higher prior tariffs (grey line) refer to products that already had higher tariffs before the latest changes (i.e., above median in January 2025), regardless of tariff changes. In the right-hand side chart, high (or low) US reliance refers to the products in which the share of exports to the US in total exports in 2024 is above (below or equal to) the median. The denominator is the common global denominator so that group-specific index can be interpreted as contribution measures to the total loss.

Sources: Trade Data Monitor; WTO-IMF Tariff Tracker; and IMF staff calculations.

¹⁰ De minimis refers to the tariff exemption for goods of value below \$800. In 2023, de minimis imports were 7.3 percent of US imports of consumer goods (Fajgelbaum and Khandelwal, 2025). The exception was removed effective on August 29, 2025.

Box 1. An Index Capturing Trade Reconfiguration

Capturing trade reconfiguration requires looking beyond aggregate growth rates to consider within-product trade shifts. One possible analytical lens is to examine, for the same products, the extent to which export losses in the tariff-imposing country are offset through gains in other foreign markets over the same period. An index, which is defined as the ratio of the change in exports from origin i (e.g., China) to a third market k relative to the change in exports of the same product p to the tariff-imposing market j (e.g., the United States), is constructed as follows:¹

$$I_{p,k,t} = \frac{\Delta \bar{X}_{p,t}^{i \rightarrow k}}{\Delta \bar{X}_{p,t}^{i \rightarrow j}}$$

where $\bar{X}_{p,t}^{i \rightarrow k}$ and $\bar{X}_{p,t}^{i \rightarrow j}$ denote three-month moving-average exports. The numerator ($\Delta \bar{X}_{p,t}^{i \rightarrow k} = \bar{X}_{p,t}^{i \rightarrow k} - \bar{X}_{p,t-12}^{i \rightarrow k}$) captures year-on-year export gains in a third market and the denominator ($\Delta \bar{X}_{p,t}^{i \rightarrow j} = \bar{X}_{p,t}^{i \rightarrow j} - \bar{X}_{p,t-12}^{i \rightarrow j}$) export losses in the tariff-imposing market, defined for products experiencing a decline ($\Delta \bar{X}_{p,t}^{i \rightarrow j} > 0$).² The index components can be aggregated across products and/or third countries to yield an overall estimate of total losses offset in foreign markets. Also, we use the common global denominator so that group-specific index can be interpreted as contribution measures to total loss. In this exercise, i is fixed as China and j is fixed as the US while the Index permits flexibility in tracking trade reconfiguration associate with different origin and tariff-imposing markets.

¹ The Index is, a priori, flexible and other countries can be considered as the origin of exports or tariff-imposing destinations.

² Other cleaning steps include considering observations where changes in the tariff-imposing market are above 10th percentile and trimming changes in third markets to exclude changes below p1 or above p99 to capture meaningful changes.

D. Impact of Tariffs on Corporate Sector Performance

19. China's corporate sector has seen rising vulnerabilities even prior to the recent escalation in trade tensions.

Corporate indebtedness remains among the highest globally and continues to rise. The debt of the corporate sector (excluding LGFVs) reached 121 percent of GDP as of 2024, rising from 110 percent of GDP in 2019 (IMF, 2026). In addition, pandemic-related scarring is still evident among non-financial firms, reflected in lower profitability, elevated liquidity risks, and increased vulnerability to funding costs. While small businesses appear more resilience in aggregate, with lower average leverage and higher profitability, a sizable and increasing fraction of them remain structurally weak with deteriorating debt servicing capacity (IMF 2024).

20. Rising trade tensions could translate into lower profit margins for China's vast export-oriented manufacturing sectors through several interrelated channels.

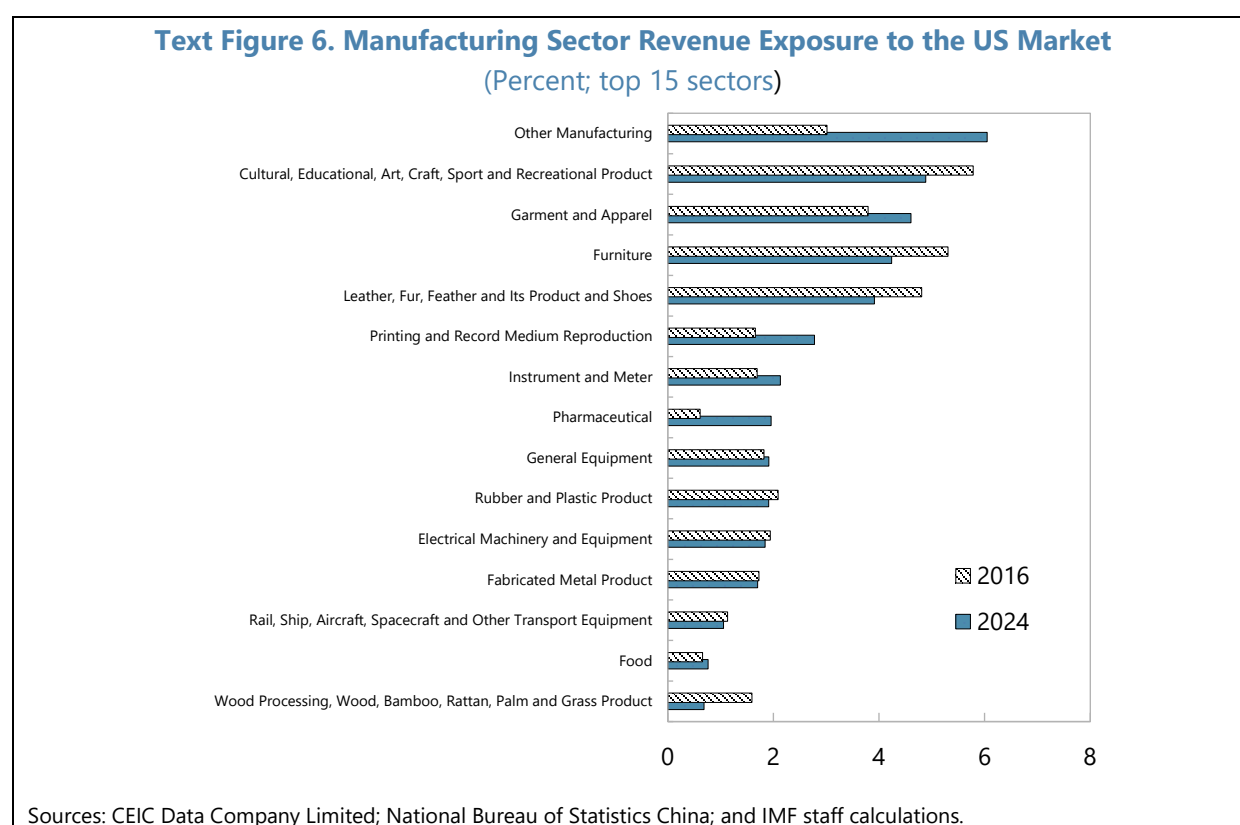
First, when tariffs are imposed, exporters may not fully pass the additional costs on to buyers due to global competition, leading them to reduce export prices to maintain market share. This price-cutting pressure may be especially severe in price-sensitive sectors, such as those manufacturing low-end consumer goods, where margins are already thin. Second, firms may need to reduce prices and margins as they try to redirect sales to the domestic market or try to redirect exports to alternative destinations. Finally, trade tensions can disrupt established supply chains, forcing Chinese firms to seek alternative inputs or logistics arrangements, which raises operational costs and adds to margin compression.

21. To estimate the impact of the 2025 US-China trade tensions on China's corporate sectors, we use sector-level data to calculate various manufacturing sectors' revenue exposure

to the US market. Specifically, each sector's revenue exposure is determined by its share of total revenue generated from export sales and the US market share in the sectors' total exports. We match the National Bureau of Statistics industrial enterprises' data that includes 29 manufacturing sectors to the General Administration of Customs HS2-level data that encompasses 99 product categories. The following formula is used to calculate sector i 's revenue exposure to the US market in year t :

$$Exposure_{i,t} = \frac{Export\ Sales\ Revenue_{i,t}}{Total\ Sales\ Revenue_{i,t}} \times \frac{Export_{i,t}^{US}}{Export_{i,t}^{Total}}$$

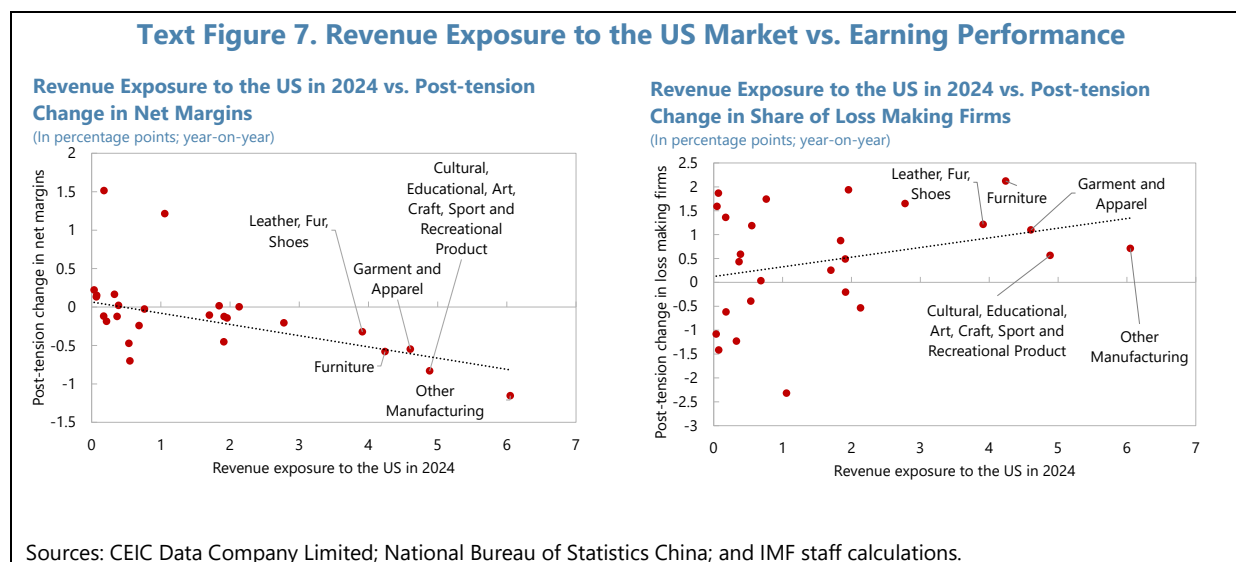
where the first ratio is based on the NBS industrial enterprises data represents sector i 's reliance on export revenues, and the second ratio is derived from the customs data and measures the share of the US market in total exports of product i .



22. Our estimates suggest that the manufacturing sector's overall revenue exposure to the US market remains limited. As shown in Text Figure 6, even for the top five most-exposed sectors, only between 4 to 6 percent of revenues were tied to the US market as of 2024. Moreover, among the top 15 most exposed sectors, more than half have seen either a decline or no change in their US exposure since the 2018-19 US-China trade tensions. For example, several low-end manufacturing sectors—such as cultural and recreational products, furniture, leather, fur, and feather products—remain among the most exposed, yet their reliance on the US market has decreased over the past decade. In contrast, a few sectors have experienced rising exposure, notably “other manufacturing,” which largely comprises de minimis products, and pharmaceuticals, both of which have seen

significant increases in their revenue share from the US. In a similar exercise, our estimates also suggest limited direct labor market exposure for the manufacturing sector to the US-China trade tensions, though indirect exposures through input-output linkages may be larger (Text Box 2). Despite limited exposure, some sectors with relatively higher share of revenue generated from the US market (e.g., cultural and recreational products, printing and recorded media, etc.) started with low US tariffs but have seen large increases since early 2025.

23. The sectors with higher US exposure have experienced a larger decline in profit margins since early 2025. As illustrated in Text Figure 7 panel 1, industries with greater revenue dependence on the US market in 2024 tended to experience more significant year-on-year drops in net margins following the onset of trade tensions. For example, sectors such as cultural and recreational products and other manufacturing exhibited both high pre-trade-tension US revenue exposure and notable profit margin compression in 2025. Sectors with higher revenue exposure to the US have also seen a larger increase in the share of loss-making firms (Text Figure 7, panel 2). This pattern suggests that firms heavily reliant on the US market were more vulnerable to the US tariff hikes.¹¹

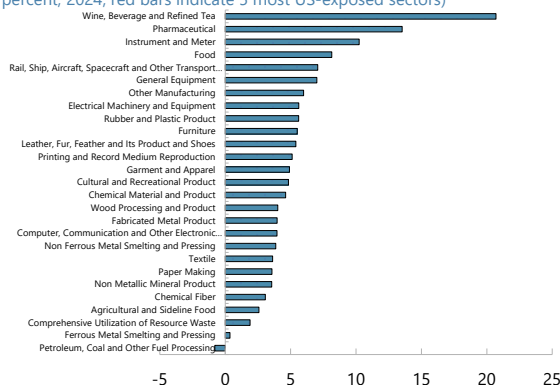


¹¹ A similar analysis of the 2018-19 tariff hikes also manifests a negative relationship between revenue exposure to the US and post-tension declines in net margins. However, the relationship in the previous episode appears somewhat weaker, likely reflecting the more limited scope and magnitude of US tariffs on Chinese products during that time.

24. However, the more exposed manufacturing sectors have some buffers which can protect against the near-term adverse impact of the trade tensions. First, the observed decline in profitability of the more exposed sectors—about 0.5 percentage points to date—remains quantitatively small relative to pre-tariff profit levels, suggesting some room to absorb cost pressures (text chart). Second, the domestic consumption support measures, such as the equipment trade-in and upgrade programs, have bolstered domestic demand for durable consumption goods such as home appliances and electronic equipment, which helped mitigate the tariff-related profit loss in those sectors. Finally, since the 2018–19 trade tensions, China's manufacturing sectors have developed more diversified global supply chains, enhancing their ability to relocate production to regions such as ASEAN.

Net Margins by Sector

(In percent; 2024; red bars indicate 5 most US-exposed sectors)



Sources: CEIC Data Company Limited; National Bureau of Statistics China; and IMF staff calculations.

Box 2. Manufacturing Sector Job Exposure to the 2025 US-China Trade Tensions

To quantify labor market exposure to the recent US-China trade tensions, a bottom-up approach based on sector-level data is employed. Specifically, the number of jobs at risk from US-China trade tensions in each sector is estimated by multiplying total sectoral employment by the sector's revenue exposure to the US market.

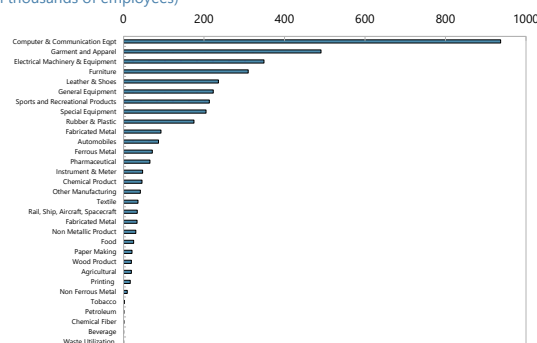
Our estimates suggest limited direct job exposure from the recent trade tensions on Chinese exports.

The total number of jobs at risk in the manufacturing sector is estimated at around 4 million, representing only 0.5 percent of total employment in China. This estimate should be interpreted as a lower bound, as the approach captures only the exposure through Chinese firms' direct exports to the US market and does not incorporate the additional exposure through production relocation and input-output linkages.¹

A sectoral breakdown reveals that the jobs at risk are concentrated in the technology, garment and apparel, furniture, and sports and recreational products sectors. The highest number of at-risk jobs are found in computer and telecommunications equipment, electronic machinery, and automobile sectors. These three sectors have a combined exposure to US tariffs of approximately 1.2 million jobs (text chart). Although traditional manufacturing sectors such as furniture, apparel, shoes, and sports and recreational products have relatively higher exposure to the US market, as shown above, tech-related sectors employ a substantially larger share of China's workforce, and thus account for more jobs at risk.

Number of Employees at Risk of US Tariffs

(In thousands of employees)

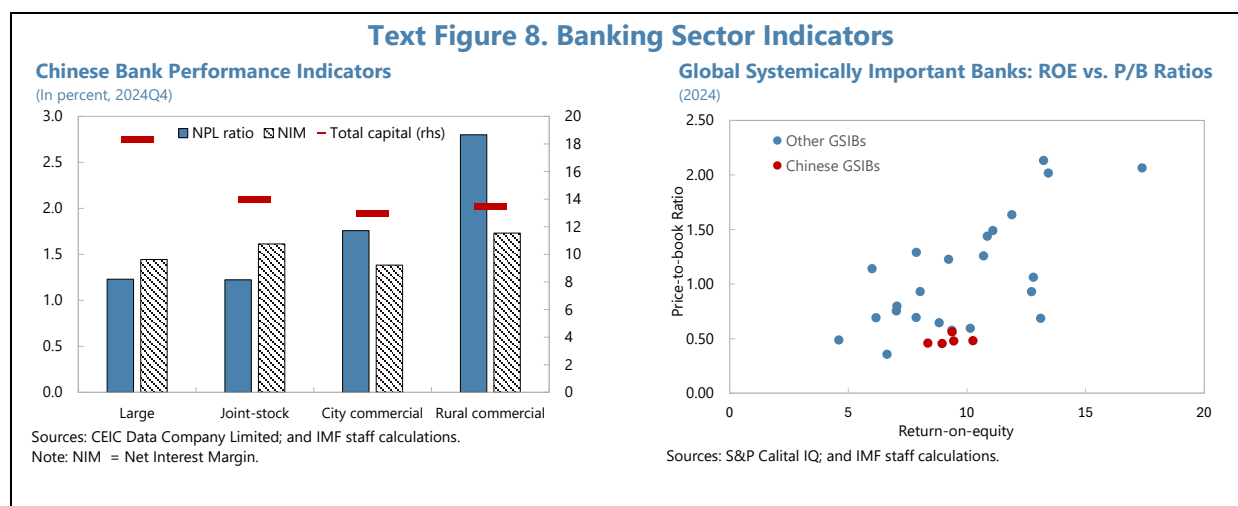


Sources: National Bureau of Statistics China; General Administration of Customs; and IMF staff calculations.

¹ Using a bottom-up approach based on the 2022 input-output table, Yang and Chen (2025) estimated a potential tariff-related loss of 6.4 million jobs in industrial sectors, which comprise manufacturing, mining, and energy.

E. Financial Sector Implications

25. China's financial system continues to demonstrate resilience on aggregate, though financial stability risks remain elevated amid ongoing correction in the property sector and the low-interest rate environment. The 2025 China Financial Sector Assessment Program (FSAP) concluded that bank capital and liquidity levels appear adequate overall, with the top segment of the banking system resilient to severe macro-financial shocks (IMF, 2025a).¹² It also found that mid-sized and smaller banks have greater credit quality concerns than the large SOE banks, less diversified funding profiles, and weaker profitability. As of end-2024, system-wide capital ratios were broadly adequate with non-performing loan (NPL) ratios edging down (Text Figure 8, panel 1). However, policy-driven decline in interest rates led to significant erosion of net interest margins, reducing banks' ability to absorb losses from legacy assets. At the same time, there are signs of rising vulnerabilities in segments beyond real estate exposure, e.g., among small and medium enterprises and retail business loans. Even for large banks, profitability is low compared to global peers, with market valuations also lagging behind (Text Figure 8, panel 2).¹³



26. Continued trade tensions could create additional sources of pressure, which may adversely affect banks via several channels.

- **Macroeconomic impact channel:** A broad slowdown of economic activity would have negative implications for banks via lower credit demand and an increase in credit impairments across sectors. Similarly, a deterioration in confidence could result in weaker loan demand and rising market volatility, as trade policy uncertainty could lead to higher funding costs, further weakening banks' ability to generate profit and to deal with legacy vulnerabilities.

¹² The FSAP solvency stress included 55 banks and the liquidity stress tests covered 111 banks. For more details, including the stress test results and the discussion of data limitations, see [IMF Country Report 25/100](#)

¹³ Chinese Global Systemically Important Banks tend to trade below a price-to-book ratio of 1.0. Factors behind low valuation could include investors' concerns over uncertainty about banks' balance sheet quality and weak projected profitability ([Caparusso et al., 2023](#)).

- **Direct exposure channel:** Deterioration in asset quality for exposures linked to export-oriented sectors or regions could have a particularly significant impact, especially for banks with high exposures to these sectors in their portfolios.
- **Other channels** include impact on banks' overseas operations, including through declines in trade finance or asset quality pressures on exposures abroad.¹⁴

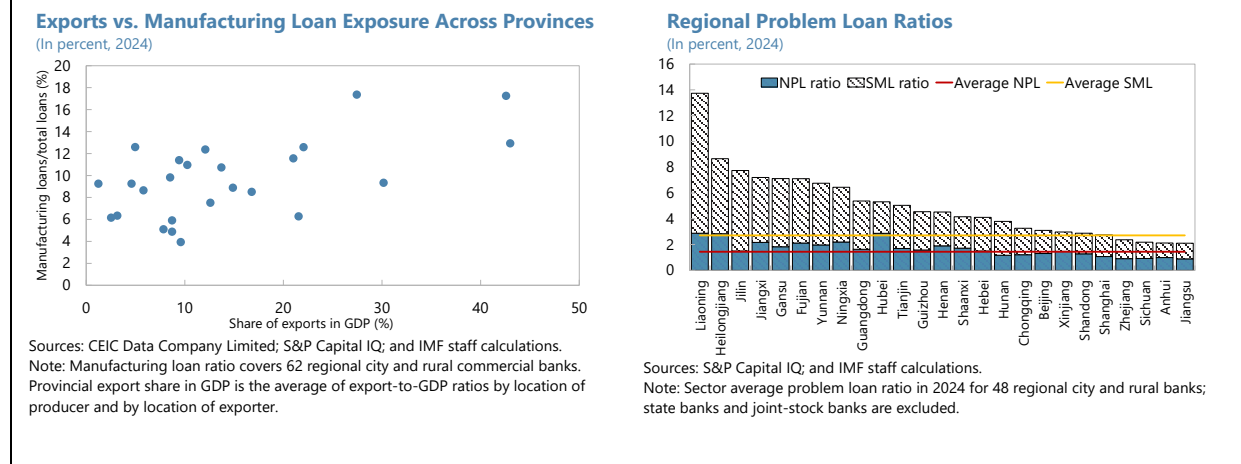
27. Overall, regional banks with weaker fundamentals appear to be more susceptible to trade tension shocks. Given the lack of data on detailed sectoral breakdown of banks loan portfolios, an in-depth analysis on exposure to tariff shocks is difficult. As a proxy, we look at manufacturing and SME exposures of banks, especially in provinces with higher export share in GDP, as they are likely to experience the largest impact of trade tensions.

- **Manufacturing sector exposures:** Regional banks in export-oriented regions have higher median exposure to manufacturing loans at around 12.0 percent, compared to 10.5 percent for nation-wide banks and 9.5 percent for regional banks in other provinces. Furthermore, manufacturing loans account for as much as one-third of the loan portfolio in some regional banks, suggesting greater sensitivity to trade shocks for some institutions (Text Figure 9, panel 1). For banks reporting asset quality for manufacturing loans portfolio, average NPL ratio was about 1.3 percent in 2024.¹⁵
- **SME exposures:** As of end 2024, about 10.6 percent of total bank loans were loans to micro and small enterprises. Regional banks tend to have higher share of loans to micro enterprises and SMEs¹⁶ (between 40 to over 50 percent of total loans in some banks). Combined NPL and special mention loan (SML) ratios for such exposure across all banks exceeded 5 percent in 2024.
- **Export-oriented regions:** Regional banks in provinces with higher reliance on exports tend to have higher share of loans to the manufacturing sector. While banks located in export-oriented regions tend to have better asset quality on average, some provinces such as Fujian and Guangdong reported elevated levels of non-performing and special mention loans ahead of trade tensions (Text Figure 9, panel 2).

¹⁴ Other potential channels include rising compliance costs resulting from evolving regulatory frameworks and enhanced scrutiny.

¹⁵ The NPL ratios for manufacturing loans remained broadly stable in 2025H1, however, it would take time for any delays in loan payment to translate into a headline NPL ratio.

¹⁶ The FSAP found that increasing the share of SME lending in banks' credit portfolios could have material impact on credit risk under stressed conditions.

Text Figure 9. Chinese Banks Exposures to Manufacturing Sector and Asset Quality

28. International operations, including trade finance, are important source of income for larger banks. For the largest banks in China, overseas loans represent about 1.5-5 percent of total loans. Based on these banks' financial reports, the average NPL ratio for such loans was around 2.1 percent in 2024. Some banks have up to 8 percent of income coming from transactional fees,¹⁷ which partly depends on international trading activity. Escalating trade tensions and slowing global trade could significantly worsen business revenues for such banks with large foreign exposure. On the other hand, these banks are best positioned to serve potential demand for loans to finance overseas expansion.

F. Conclusion

29. The global trade policy landscape has changed dramatically in 2025, with potentially profound implications for global trade reconfiguration. Unlike the 2018–2019 US-China trade tensions, the current shocks are broader in scope and scale, impacting a wider range of countries and products. Chinese exports to the US have been particularly affected, with over half—especially in machinery and equipment—subject to steep tariff hikes, underscoring growing risks to global trade and investment flows.

30. Our analysis shows that China's exports exhibited strength, despite the increased trade tensions. Even with significantly higher US tariffs, China's overall export performance has remained resilient. The sharp decline in exports to the US has been offset by strong export growth to buffering regions such as ASEAN. Early results from analysis of product-level customs data suggest that the loss of US market share has been offset by gains in third countries with the largest contribution coming from the sectors most affected by recent trade tensions. However, whether this will continue to be the case will depend on further evolution of bilateral trade policies. Modelling exercises show that the extent of reconfiguration and other economic outcomes crucially depend on the size of the

¹⁷ The transactional fees are calculated as net fees and commission income excluding fees from bank card business, wealth management, and custody and other fiduciary business following approach used in Lei et al. (2025).

tariffs placed on China and third countries, as well as on other countries' responses, among other factors (Rotunno and Ruta, 2025).

31. While immediate direct impact on corporate and financial sectors has been limited so far, pockets of vulnerabilities warrant close monitoring. Direct exposure of the corporate sector to US exports is relatively small, and while profitability of more exposed sectors has declined, the magnitude of decline to date is still small. For the banking sector, while data constraints limit analysis, pockets of vulnerabilities could be concentrated in the weak tail where risk-taking activities and export-sector-exposure are substantial for some banks. These potential vulnerabilities underscore the importance of vigilant monitoring of future tariff-related downside risks and their spillovers to domestic corporate and banking sectors.

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APPLICATION OF THE INTEGRATED POLICY FRAMEWORK TO CHINA¹

This paper applies the Integrated Policy Framework (IPF) to China. The IPF application to China helps achieve two objectives. First, the IPF informs the design of a holistic policy mix to address China's current challenges under the baseline (such as economic slack, ongoing housing adjustment, and large current account surplus) and in a shock scenario (higher tariffs on Chinese exports). The IPF recommends expanded public spending, fiscal support for consumer spending, and resolution of the housing market adjustment. In a shock scenario, additional fiscal stimulus should play a central role and resolving the housing market credit crunch becomes even more urgent. While exchange rate depreciation can help stabilize the output gap, it could exacerbate external imbalances. Second, the paper assesses the appropriateness of foreign exchange intervention (FXI) for China by empirically evaluating China's current IPF-relevant characteristics. It finds some short-term benefits of temporary FXI at specific stress events. At the same time, China should aim to gradually increase exchange rate flexibility to absorb external shocks, deepen foreign exchange markets, and improve the effectiveness of monetary policy.

A. Introduction

1. The IMF's [Integrated Policy Framework \(IPF\)](#) provides a comprehensive approach to managing external and domestic tradeoffs using multiple policy tools. In particular, the IPF aims to provide guidance on the appropriate policy mix between monetary policy, fiscal policy, macroprudential measures (MPMs), foreign exchange intervention (FXI), and capital flow measures (CFMs). Country-specific characteristics, the presence of financial frictions, and the nature of shocks inform whether and how these tools should be used. Various models have been developed within the IPF, including the IPF conceptual model (Basu and others, 2020, 2023; henceforth, the CIPF), the IPF diagrams which provide a visual representation of the CIPF (Basu and Gopinath, 2024), and the IPF quantitative model (Adrian and others, 2020, 2021; henceforth, the QIPF).² Amid the ongoing period of elevated trade policy uncertainty, assessing the initial conditions and financial frictions that shape the optimal policy mix is increasingly critical for policymakers—both to correct existing imbalances and to prepare for potential shocks.

2. This paper applies the IPF to China, adapting the framework to China's unique characteristics. In the first part of the paper, the conceptual model (specifically, the IPF diagram of Basu and Gopinath, 2024) is used to inform the optimal policy mix. In the second part of the paper, market frictions that are identified in the IPF to be relevant for FXI are evaluated for China. This application of the framework to China is unique along multiple dimensions. This is the first in-depth application of the IPF diagrams to a country case, which allows for a comprehensive evaluation of all the policy tools rather than a subset of tools covered in the application of the QIPF. Furthermore,

¹ Prepared by Suman Basu, Yingyuan Chen, Dmitry Plotnikov and Chris Redl.

² These models have been combined with non-modeled considerations to produce the IPF board paper (IMF, 2020).

the special characteristics of China's economy also makes this application unique and challenging.³ While China is highly open with respect to trade flows, China maintains a number of CFMs, both for inflows and outflows.⁴ These existing CFMs can affect the measurement of IPF-relevant country characteristics. In addition, the FX market for renminbi (RMB) is segmented into onshore (CNY) and offshore (CNH) markets. The paper mostly focuses on the CNY market, given its relative size, but also documents and studies policy implications of the CNH market. Finally, China is the largest open economy to which the IPF has been applied; previous IPF applications were limited to smaller open economies, both emerging and advanced. Correspondingly, the paper acknowledges potential spillovers and spillbacks from China's policy mix which can be analyzed in more depth in future work.

3. As discussed in the 2025 Article IV Staff Report, the initial conditions for the Chinese economy include persistent weakness in domestic demand and rising external imbalances.

After an unsustainable housing boom marked by overbuilding and a ramp up in leverage, the property sector entered a prolonged period of adjustment in 2021. Housing sales have fallen by more than half and property developers remain under severe financial strain. The significant decline in housing investment, spillovers to strained local government finances (who are heavily dependent on land sales), and persistently weak consumer and business confidence, have weighed on domestic demand, leading to deflationary pressures and a negative output gap. In contrast, robust exports, supported in part by real exchange rate depreciation due to lower inflation relative to peer countries, have sustained growth and the current account surplus has risen above levels consistent with fundamentals and desirable policies. Domestic policies have been expansionary but a comprehensive policy package to tackle the imbalances are needed—measures to durably boost consumption have been modest, housing policies have been incremental, and monetary easing has been limited.

4. Given these initial conditions, the application of the CIPF emphasizes boosting domestic demand and resolving persistent housing market problems, which would help tackle domestic and external imbalances. The IPF-consistent appropriate policy mix aims to resolve the imbalances described above, while avoiding addressing one at the expense of the other. Expanded public spending, support for consumer spending, and housing market resolution are key to affecting different domestic agents on different margins (e.g., households versus local governments). The design of these policies and their relative importance in the overall package should account for several key interactions across domestic agents which affect fiscal multipliers and housing sector spillovers. In a shock scenario where China is faced with tariffs on exports, fiscal stimulus should continue playing a central role in stabilizing the output gap as public spending would also tend to appreciate the real exchange rate and reduce the trade surplus. Exchange rate depreciation can help stabilize the output gap to some degree. However, exchange rate flexibility alone may be insufficient

³ Previous in-depth IPF applications include the following country-years of Article IV consultations: Thailand (2022), Philippines (2022, 2023), Peru (2023), Colombia (2023), India (2023), Indonesia (2023), Malaysia (2023), Mexico (2023), South Africa (2023), Romania (2023), Albania (2023), Angola (2023), Costa Rica (2023), Iceland (2024), Vietnam (2024), Uganda (2024), Korea (2024), Brazil (2025), Nigeria (2025), Jamaica (2025), Mauritius (2025), Georgia (2025).

⁴ See the latest IMF CFM taxonomy for a complete list.

if there are limits to monetary policy loosening. Moreover, relying only on FX purchases (sales) would mitigate the internal (external) imbalances while exacerbating the external (internal) imbalances.

5. The empirical evaluation of IPF-relevant frictions suggests short-term benefits of temporary FXI during specific stress events due to indications of shallowness of the CNY market. There is empirical evidence that local currency premia are sensitive to episodes of large inflows and outflows. Under the IPF, there is a case for temporary FXI (potentially alongside CFMs if consistent with the Institutional View on Capital Flows, IV)⁵ to address such episodes if the capital flows occur because of global investor sentiment unrelated to domestic macroeconomic fundamentals. If they are related to fundamentals, however, FXI should not substitute for the warranted macroeconomic policy adjustments. Small balance sheet mismatches and limited passthrough of exchange rate changes to domestic inflation do not provide justification for FXI in China.

6. The remainder of this paper is structured as follows. Section B employs the IPF conceptual model to design an appropriate policy mix given China's initial conditions. Section C provides a brief overview of the structure of the Renminbi market and empirically evaluates China's IPF-relevant country characteristics (or IPF "frictions") to gauge the case for the use of FXI. Finally, Section D concludes.

B. Optimal Policy Mix Using the IPF Conceptual Model

7. This section applies the IPF conceptual model (CIPF) to China. The next subsection lays out the general IPF model and describes the IPF diagram, an illustration of key tradeoffs in the model, assuming that all policies are set to maximize welfare. The subsection after that adapts the diagrams to incorporate China's initial conditions (as described in ¶13), extends the model to allow for feedback between the housing sector and domestic agents' consumption, and describes the model's implications for appropriate policies for China given these initial conditions. The final subsection covers a tariff shock scenario and explores how the appropriate policy mix changes.

Summary of the IPF Conceptual Model

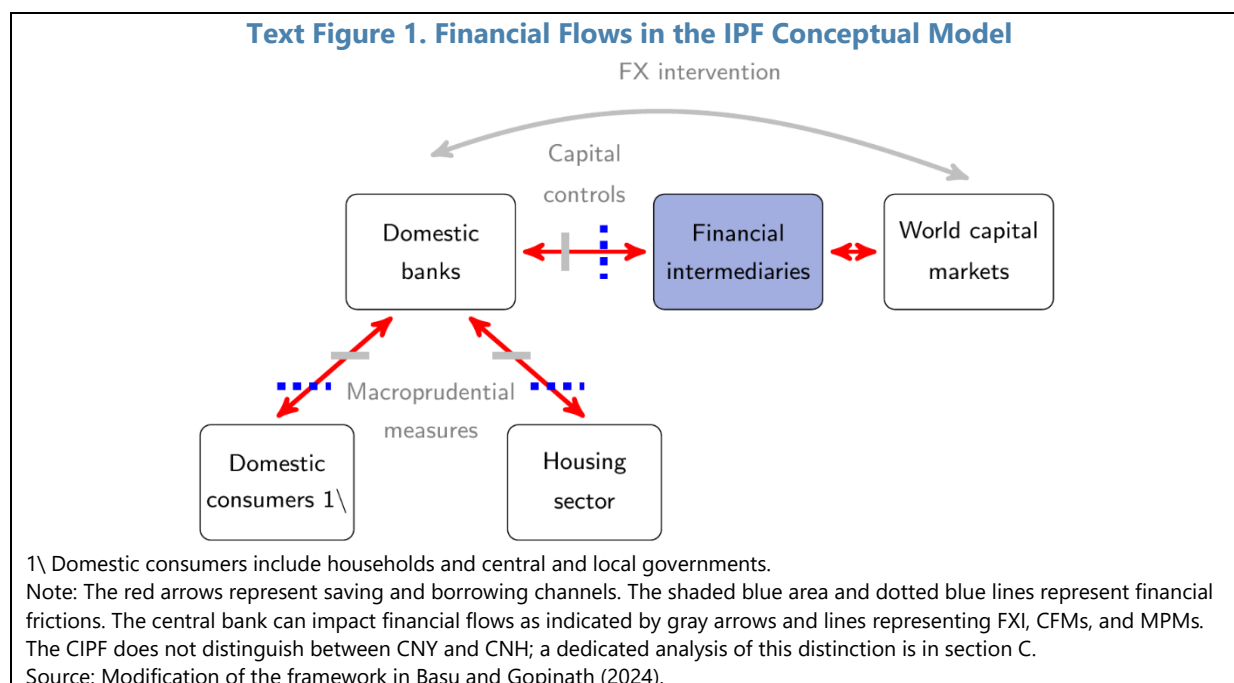
8. The CIPF can be used to solve for the optimal policy mix as a function of initial conditions, country characteristics, and shocks (Basu et al., 2020, 2023). The IPF diagram paper (Basu and Gopinath, 2024) provides a tool to visualize the policy trade-offs. The available policy tools in the diagram include monetary policy, fiscal policy, sterilized FXI, CFMs, and MPMs. Shocks interact with country-specific frictions as well as initial conditions. The model features sticky prices over the assumed short horizon of analysis: home goods prices are fixed in the local currency while export and import prices are fixed in a foreign dominant currency (although the latter assumption

⁵ See IMF (2012b, 2022).

can be relaxed as is done in ¶16). The country's exchange rate regime is a key determinant of the policy mix.

9. The CIPF model allows for a rich set of interactions across various economic agents.

Text Figure 1 provides an overview of the model, showing the economic agents (shown in boxes), financial flows between the agents (red arrows), the potential financial frictions (blue dotted lines) and central bank policies which can help address the frictions (gray lines). We assume that world capital markets borrow and lend in foreign currency, and financial intermediaries link those markets to the domestic financial system. Those intermediaries may have frictions which generate local currency premia (i.e., deviations from uncovered interest parity, and vulnerability to risk-on/off shocks) which are also impacted by capital controls.⁶ In the model, domestic banks lend funds to domestic consumers (including households and central and local governments) and the housing sector. This lending is subject to an occasionally binding domestic collateral constraint, so if the pledgeability of land declines substantially, there is a housing sector credit crunch. This constraint is also relevant for China. The model also features an occasionally binding external collateral constraint which can generate a sudden stop if the country has a large FX mismatch, but this friction is not relevant for China.

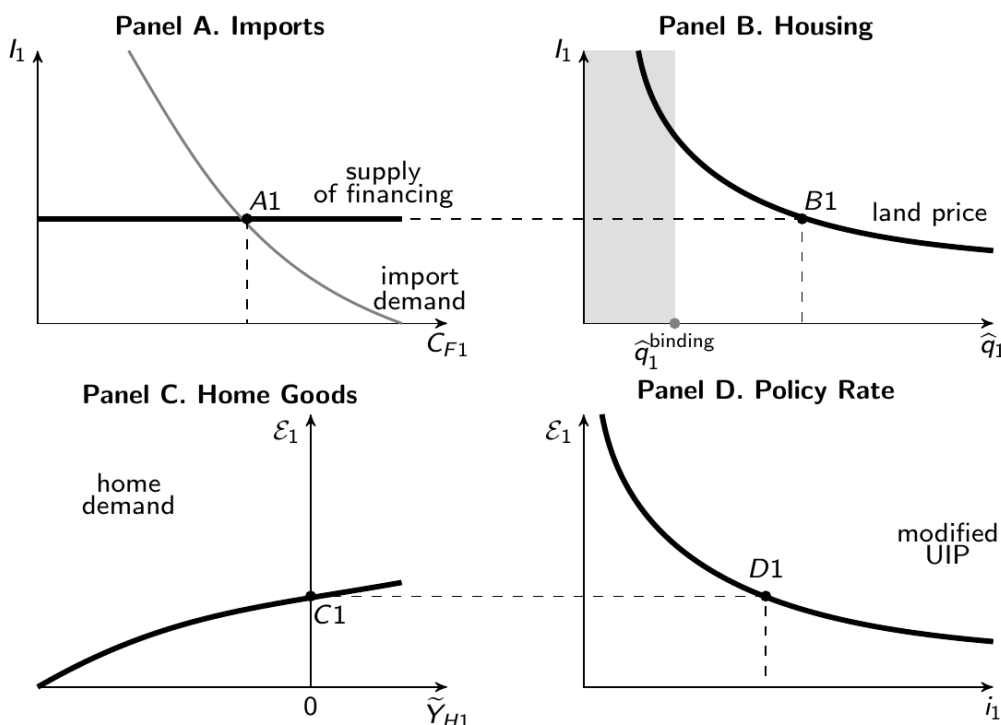


10. The IPF diagram separates out the impacts of shocks and policies on the domestic balance, external balance, and the housing market. Text Figure 2 shows the IPF diagram, assuming that policies are set to maximize welfare. The diagram features four inter-related panels which capture four key trade-offs:

⁶ The friction of “shallow” FX markets is identified as relevant for China in Section C, including when there are large capital inflows and outflows.

- Panel A: Imports.* This panel represents import demand C_{F1} (x-axis) and the external financing rate I_1 (y-axis), both in nominal USD terms. It captures the determination of the appropriate external balance of the economy. Purchasing imports requires an increase in external debt or decrease in external assets. The optimized import demand is a downward-sloping curve, because a higher external financing rate should deter the economy from increasing external debt to purchase imports. The supply of financing for imports is a horizontal line under the assumption that the FX market is deep in normal times, as the economy need not pay any premium over the world interest rate on its external borrowing. The external trade balance is equal to the volume of exports minus the level of imports. Imports are determined by the intersection of the import demand curve and the supply of financing curve (point A1).
- Panel B: Housing.* This panel represents the land price and domestic housing market (a proxy for domestic credit markets more generally). Land is an asset, so the diagram shows that the land dollar value, $\hat{q}_1$ (x-axis), is a decreasing function of the external financing rate I_1 (on the y-axis). The domestic debt constraint is binding if the land price decreases below the indicated binding threshold value, which is captured by the gray zone.⁷ In Text Figure 2, the land price is determined by the intersection of the land price curve with the international financing rate from Panel A. Since the intersection is outside the gray area, the domestic borrowing constraint is not binding. If there are CFMs which create a wedge between changes in the external and domestic financing rate, the land price is altered by such a wedge, so the position of the land price curve is shifted.
- Panel C: Home goods.* This panel represents aggregate demand and the home output gap $\tilde{Y}_{H1}$ (x-axis) and its relation to the exchange rate ε_1 (y-axis; a higher exchange rate implies a more depreciated domestic currency against the foreign currency). The demand curve for home goods is the black line which is upward sloping in the exchange rate because of the expenditure-switching mechanism: for a given level of imports from panel A, an increase (depreciation) in the exchange rate increases the demand for home goods because they become cheaper relative to imports. The home output gap is zero at point C1 where the demand curve for home goods meets the y-axis. This represents the point where domestic demand coincides with the efficient level of output.
- Panel D: Policy rate.* This panel explains how monetary policy can impact the exchange rate and close the domestic output gap, with the x-axis showing the domestic policy rate i_1 and the y-axis showing the exchange rate. The black curve is the modified uncovered interest parity (UIP) condition. It slopes downward, indicating that a higher domestic policy rate causes the exchange rate to appreciate. If monetary policy does not face any constraints, the central bank can choose the interest rate corresponding to point D1, which would imply an exchange rate consistent with a zero output gap (i.e., point C1 in panel C).

⁷ The CIPF assumes that the borrowing limit for housing production firms is proportional to the land price. When this constraint is binding, there is a credit crunch for housing firms, leading to suboptimal housing production and, consequently, overall welfare.

Text Figure 2. The Conceptual IPF Diagram

Note: i_1 is the gross external financing rate between periods 1 and 2; C_{F1} is period-1 import consumption; $\hat{q}_1$ is the FX value of the period-1 land price; ε_1 is the period-1 RMB/USD exchange rate; $\tilde{Y}_{H1}$ is the period-1 home output gap; i_1 is the policy rate between periods 1 and 2.

Source: Basu and Gopinath (2024).

11. The CIPF analysis is supplemented in several ways for China to incorporate some of the particular housing-related macrofinancial linkages in the economy and to account for the fact that China is a large open economy. The first extension relates to the macro-financial linkages stemming from China's housing sector: we allow that some households and local governments have exposures to the housing market such that their capacity to borrow may become constrained when there is a housing sector credit crunch. While this is a simplified and reduced-form representation of the Chinese housing sector, it allows us to capture one of the causes for persistent weakness in domestic demand in the economy. The other supplements to the analysis relate to China's status as a large open economy (LOE). Specifically: we explore the implications of a portion of China's exports to be priced in RMB rather than solely in foreign currencies (local currency pricing); we consider whether greater domestic monetary policy transmission in LOEs impacts the optimal policy mix; and we highlight possible spillovers to the rest of the world from China's selected policy mix.

China's Initial Conditions and Baseline Policy Advice

12. China's initial conditions are first incorporated into the CIPF. Text Figure 3 Part I adapts the IPF diagram discussed in the previous subsection to account for China's initial conditions (as described in ¶13), including weak domestic demand amid the housing market adjustment, limited monetary easing, a managed exchange rate, and a large trade surplus (for more details, see 2025 China Article IV). In all the panels, the dotted curves continue to show the positions of the curves

which maximize welfare in the steady state (i.e., the same as Text Figure 2), while China's initial conditions are different and are captured by the solid curves as follows.

- Panel A: Low imports and large trade surplus.* In China, the current account surplus has increased, and the external position is assessed to be moderately stronger than fundamentals (2024 ESR). On Panel A, this implies that import demand is to the left of the optimal dotted line. As discussed in the staff report, this reflects persistent demand weakness and accompanying deflationary pressures stemming from the protracted adjustment in the property sector, spillovers to local government finances amid a debt overhang, and subdued consumer and business confidence. If China's FX market is deep in normal times, the external supply curve is flat for domestic consumers such as unleveraged households.⁸ Therefore, the supply curve is at the dotted line, and the economy is at the outcome A2 instead of the optimal outcome A1. This point features lower imports and a correspondingly larger trade surplus.

For the application of the diagram to China, we extend the framework and allow that banks may impose a collateral constraint on a separate group of domestic consumers who have leveraged landholdings, e.g., leveraged households and local governments, which limits their borrowing and consumption. Accordingly, the supply curve for these agents has a kink after which it becomes vertical, depending on the value of land (see panel B discussion below). If there is a housing sector credit crunch in panel B, the kink in the supply curve of leveraged agents shifts to the left. The outcome shifts from point A2 to A3 for leveraged consumers, thereby further reducing imports and increasing the trade surplus.⁹ Now we turn to frictions in the housing market and how they can impact financing conditions in China.

- Panel B: Housing sector credit crunch.* The current housing situation in China can be mapped as follows within the CIPF. Impaired pledgeability of land in the housing sector translates into a larger threshold value of the land price at or below which the domestic collateral constraint is binding in the diagram, i.e. $\hat{q}_1^{binding}$ is higher. This means that despite high land prices, land may not be as collateralizable as it previously was. This inability of some developers to borrow (which in the model requires pledging land as a collateral) means that the economy is at point B1 within the gray zone where the borrowing constraint for housing developers is binding. This outcome occurs despite China's restrictive outflow CFMs that keep the domestic financing rate

⁸ As detailed in the section on FX market depth below, the assessment relies on observed data, which may obscure the "true" depth of FX markets due to existing CFMs. These measures directly restrict capital flows to mitigate adverse effects, potentially making the data appear consistent with deep FX markets while the markets may truly be much shallower. We later explain the robustness of the policy implications after shocks for the alternative specification where the supply curve is upward sloping, which occurs if the FX market is shallow and foreigners require a premium to absorb any issuance of external debt.

⁹ The vertical axis of panel B needs to be interpreted with caution when the collateral constraint is binding. As imports decrease, the external interest rate does not increase, but the *shadow* rate does increase, indicating that even if leveraged households and local governments offer a much higher interest rate to banks, they cannot borrow substantially more.

lower than the external rate, thereby supporting the land price.^{10,11} While recent sequential house price declines suggest that housing prices may still be overvalued, we abstract from this aspect in the diagram for simplicity of exposition by keeping the position of the land price curve unchanged. As already mentioned in the Panel A discussion above, for the application to China, we augment the CIPF with a feedback mechanism from the domestic collateral constraint in housing to domestic consumption. In particular, some domestic agents (e.g., leveraged households and local governments) may be subject to a collateral constraint, so their ability to purchase goods or provide government services is restricted when a housing sector credit crunch occurs (in other words, the equilibrium land price is within the gray zone) and their supply of financing curve in Panel A shifts to the left. As a result, their demand is curtailed if there is a housing sector credit crunch. Thus, the housing sector credit crunch in China results in some agents consuming at point A3 in panel A as opposed to A2.

- *Panel C: Negative home output gap.* Domestic demand weakness means low demand for home goods, so the home demand curve in Panel C is to the left of its optimal position, similar to Panel A. This is consistent with low inflation and a negative output gap in 2025. Specifically, if the level of imports from Panel A is lower, the home goods demand curve is rotated counterclockwise in Panel C, so the solid curve is the relevant one. For the same value of the exchange rate as in Text Figure 2, the economy is at point C2 on the solid curve, with the same y-axis coordinate as C1 and a negative output gap. If monetary policy is unrestricted in panel D, the economy ends up at point C3 with a depreciated exchange rate and a zero output gap. However, if the central bank is unable or unwilling to reduce the policy rate sufficiently, the economy is instead at point C4. Here, the home output gap is still negative as given other policy settings the exchange rate is too strong to close the output gap (see next bullet on Panel D). This is consistent with the open negative output gap observed in China's case, suggesting that there have been limits to monetary easing in practice.
- *Panel D: Limited monetary policy easing.* This panel illustrates the outcomes when monetary policy is unconstrained and constrained. If the central bank faces no limits to monetary easing, it lowers the domestic policy rate to point D2. However, if the central bank is unable or unwilling to lower the domestic policy rate below the red vertical line, potentially due to financial stability or capital outflow concerns which are motivated by additional frictions or institutional constraints outside the CIPF, then the economy is at point D3 instead. At D3, the policy rate is lower than it would be if the level of imports and home goods demand were at the optimal points A1 and C1 respectively, but nevertheless too high to close the home output gap. This is

¹⁰ The housing sector in the IPF model misses several important features of the Chinese housing market and should be viewed as a simplified representation of the forces at play. To give an example, while recent sequential house price declines suggest that housing prices may still be overvalued, we abstract from this aspect in the diagram for simplicity of exposition by keeping the position of the land price curve unchanged.

¹¹ The existing CFMs in China weaken the link between the external financing rate and domestic interest rates, making the latter a more important determinant of the land price than the former. Given the large interest rate differential between China and advanced economies, the existing CFMs dampen the domestic interest rate and thereby push the land price curve to the right, reducing the severity of the housing sector credit crunch.

consistent with the limited monetary easing seen in China, with the policy rate only reduced by 40 bps since 2023.

13. Given these initial conditions, the CIPF suggests that expansionary fiscal policy, credible support for consumer spending, and policies that ease frictions in the housing sector can close the domestic output gap, alleviate depreciation pressures, and lower the current account surplus. These policies have the following effects on the diagram (see Text Figure 3, Part I):

- Panel A: Higher imports and smaller trade surplus.* Expansionary fiscal policies, with a focus on durably boosting consumption and facilitating a more efficient property sector adjustment, can boost imports and lower the external imbalance (and also close the domestic output gap as shown in panel C). The announcement of credible plans to structurally improve the safety net would reduce precautionary savings and boost households' demand for all goods, including imports, shifting the demand curve to the right (back towards the dotted line in Panel A). For unleveraged households, the debt limit of the supply curve is not relevant, so they can move from point A2 to point A1 with higher imports and a lower current account surplus. By contrast, leveraged households and local governments would not be able to increase imports above the level at point A3, as they cannot borrow more. Fiscal resources allocated to households, or policies to ease the stress in the housing sector (e.g., financing to complete unfinished pre-sold homes), should further improve domestic demand from such leveraged consumers, as it would shift their supply curve further to the right (see panel B below).
- Panel B: Housing sector resolution.* The policies in the housing sector should focus on relaxing the borrowing constraint for viable housing developers (which in the CIPF is equivalent to a reduction in the gray area through a reduction in the threshold at which the constraint binds), thereby easing the credit crunch and improving welfare. First, the policies that improve domestic consumption (see Panel A above) in equilibrium would lead to higher housing rents and mortgage demand creating resources for housing developers to pay off their debts. Second, separating viable and nonviable projects, especially for presold unfinished housing, is key. Targeted and credible fiscal injections into viable projects and applying insolvency procedures to non-viable projects can resolve information asymmetries, improve confidence and reduce existing debt levels of housing developers, thus resolving pledgeability problems and preventing potential worsening of credit conditions. Such measures could then shrink the gray zone so that point B1 is no longer within it. This in turn could shift the supply of financing curve in Panel A to the right for leveraged agents, enabling these agents to increase their demand to point A1 as well. In the absence of housing sector policies, the trade surplus could still decrease, and welfare could increase if the central government purchases goods, including imports, on behalf of the leveraged agents. For the policy to be credible, the central government may have to perform the function instead of the local governments if the latter are leveraged and constrained.
- Panel C: Closure of the home output gap and lower depreciation pressures.* The policies that boost imports in panel A (e.g. boosting safety nets) are also associated with a clockwise shift of the home demand curve in panel C. Higher public spending on home goods also shifts the demand curve to the right, and it is a more direct means of closing the home output gap. The economy

can subsequently return to point C1, allowing the output gap to close even under an appreciating exchange rate, as point C1 corresponds to a more appreciated exchange rate than point C3, as indicated on the y-axis.

- *Panel D: Less pressure on monetary policy.* Finally, increased fiscal spending and stronger safety nets enable the economy to move back to point D1, so the policy rate can increase above any lower bound even as the home output gap is closed. In the absence of such fiscal support, the policy rate would have to be at a lower level in panel D, and the exchange rate would have to be more depreciated in panel C, to close the home output gap while the external imbalance will remain.

In summary, given China's initial conditions, the IPF suggests that expansionary fiscal policies that credibly promote consumption and policies to restore confidence in the housing market can help close the negative domestic output gap, lower the large current account surplus, raise domestic policy rates above any perceived lower bounds, and reduce depreciation pressure on the exchange rate.

14. Furthermore, the IPF also suggests that policies would be most effective as part of a coordinated package which accounts for interactions between households, local governments, and other domestic agents. There may be several interactions, including factors which may affect the fiscal policy multipliers and thereby the relative role of fiscal stimulus as part of the overall policy package. First, on panel A, households may not reduce their precautionary savings if an expanded safety net is made the responsibility of leveraged local governments who cannot credibly expand their spending. In that case, the central government may have to take on the task. Second, on the same panel, fiscal stimulus has a larger multiplier if it can ease the constraints of leveraged domestic agents, e.g., a mix of fiscal transfers to households and the housing sector. Otherwise, the multiplier may be small. Third, on panel B, the size of the gray zone depends on housing rents, which depends on the demand of domestic agents from panel A. Any package to resolve the housing sector contraction would be well complemented by a package to prevent housing demand from decreasing further than warranted. Fourth, in panels A, C, and D, any depreciation pressures could be eased, and the external imbalance would be reduced, if the strategy to close the home output gap relies more on public spending on home goods rather than a decrease in monetary policy rates.

15. Given that fundamental factors account for the deviation of China's initial conditions from the IPF steady state benchmark, the IPF does not recommend FXI or new inflow CFMs to attempt to change the level of imports or external financing conditions. Such tools are available in the model but would generate distortions and should be reserved for other uses. The initial conditions of China feature macroeconomic distortions, but they do not trigger the "use cases" for the active use of additional tools to manage shocks described in IMF (2023). The IPF does not recommend the abrupt removal of China's longstanding outflow CFMs either, as a surge in capital outflows could generate higher domestic financing rates and thereby cause a reduction in asset prices which exacerbates the housing sector credit crunch.

16. The above policy recommendations remain valid even when the analysis is extended to reflect China's role as a large open economy. We supplement the analysis as follows:

- *Pricing of exports in RMB.* If all export prices are denominated in foreign currency, as assumed in the CIPF, exchange rate depreciation has no effect on export volumes; instead, its effects are transmitted solely through expenditure switching between imports and home goods. However, since an increasing share of China's exports is priced in RMB, depreciation can *increase* export volumes by reducing foreign prices of Chinese exports. Consequently, in a scenario where monetary policy is eased without accompanying fiscal stimulus, the resulting exchange rate depreciation would be more effective in reducing the output gap, but it would also contribute to a further widening of the trade surplus. This underscores the importance of expansionary fiscal policy in the overall policy mix.
- *Domestic transmission of monetary policy.* In a large open economy, monetary policy easing may in principle materially loosen domestic financing conditions and support activity even in the absence of an exchange rate depreciation that may exacerbate the trade surplus. On the other hand, such transmission of lower interest rates into higher credit and activity may face some limits in China in the current environment, characterized by a credit crunch in the real estate sector with spillovers to local governments. Overall, a comprehensive package of measures rather than solely relying on monetary easing remains the appropriate option for an effective policy mix.
- *Spillovers to the global economy.* Given China's size, the implementation of the IPF's policy advice would have global spillovers which are not analyzed or included in the CIPF diagram. Global imbalances would be substantially affected by China's selected policy mix: higher Chinese imports and lower exports would affect the current account positions of other countries. As discussed in the accompanying staff report, a boost in China's consumer demand could have a positive impact on trading partners' growth depending on the strength of trade linkages. There would be implications for commodity prices and other relative prices, as there would be higher demand for the inputs into Chinese consumption goods and potentially lower demand for investment goods. Global inflation may increase as China's real exchange rate appreciates and Chinese exports become more expensive.

Policy Mix Under a Tariff Shock Scenario

17. Next, we consider a shock scenario where tariffs on Chinese exports are increased.

Within the IPF diagram, higher tariffs translate into a reduction in FX export income. The reduction in the FX value of export income depends on the coverage of the tariffs, their level, and the relevant elasticities of demand and supply of Chinese exports (see Cavallo and others, 2021, and Jeanne and Son, 2021, for an analysis of the US tariffs on China between 2018 and 2020). For goods with inelastic international demand (e.g., critical minerals and specialized components in global value chains), tariffs may cause an increase in prices for foreign consumers but little change in the dollar prices paid to Chinese firms. By contrast, for goods with elastic international demand (e.g., raw materials, undifferentiated agricultural products, and low-margin apparel), the incidence of tariffs

may fall mostly on Chinese firms, via volumes in the short term (when dollar prices are sticky) and via prices in the medium term (when prices can adjust, and especially if Chinese supply is more inelastic). For semi-differentiated manufactured goods, the incidence could be somewhere between these two cases.

18. The impact of the FX export income decline can then be illustrated in the IPF diagram.

For simplicity, we assume that the shock is permanent and leads to an equal reduction in FX export income in each period.¹² In all the panels of Part II of Text Figure 3, the dotted curves represent the initial conditions without corrective policies (i.e., the solid lines of Text Figure 3, Part I), and the tariffs move the economy to the solid curves.

- *Panel A: Lower imports.* The import demand curve respects the intertemporal budget constraint of the economy, so it shifts further to the left by the same amount as the reduction in FX export income. The unconstrained consumers move from point A2 to point A4, and the trade balance is unchanged because both imports and exports decrease. For leveraged domestic agents, the supply curve may also shift to the left as the housing sector credit crunch deepens in panel B, and these consumers move to point A5 with even lower imports, resulting in an even larger trade surplus.
- *Panel B: More severe housing sector credit crunch.* The reduction in FX export income lowers relative prices for nontraded goods and assets, including land. The economy moves from point B1 to B2. Such a price movement can also further tighten the domestic collateral constraint (reflected in a larger gray zone).
- *Panel C: Lower home demand.* The lower level of imports from panel A causes the demand curve to shift to the left in panel C (as home and foreign goods are consumed in a bundle). Given the open negative output gap observed in China's case, we assume that the economy starts at point C4. Whether the economy moves to point C5 or C6 depends on the degree of monetary policy easing and exchange rate flexibility, which we turn to next.
- *Panel D: Possible limits to monetary policy.* Given the open negative output gap observed in China's case, we assume that the economy starts at point D3. The degree of exchange rate flexibility determines whether the modified UIP condition shifts to the right, and thereby whether the economy stays at point D3 or moves to point D4. If the authorities commit to stabilize the exchange rate, the UIP curve does not shift on Panel D (meaning the dotted curve remains relevant) as expectations of future depreciation remain unchanged. Assuming that the domestic policy rate remains constrained at the level of the red line, the economy remains at point D3. In panel C, the economy moves to point C5, with a more negative home output gap.

¹² If the shock is not permanent, the qualitative changes are mostly preserved. The differences are as follows: on panel A, the demand curve shifts by a different amount; and on panel D, the exchange rate depreciation today is not necessarily exactly equal to the expected depreciation in the future. Furthermore, tariffs are modelled as an external demand shock only. To the extent that tariffs reduce productivity and potential output, the efficient level of output would decrease in panel C, so the home goods demand curve on that panel would shift to the right; to close the home output gap, there would have to be a monetary tightening and exchange rate appreciation.

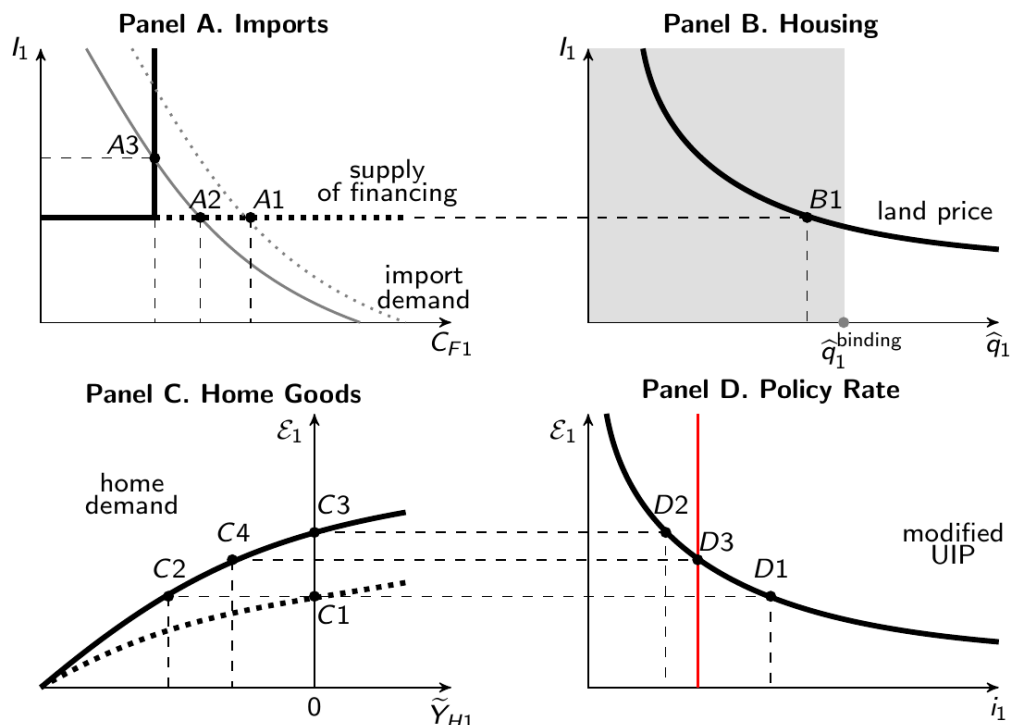
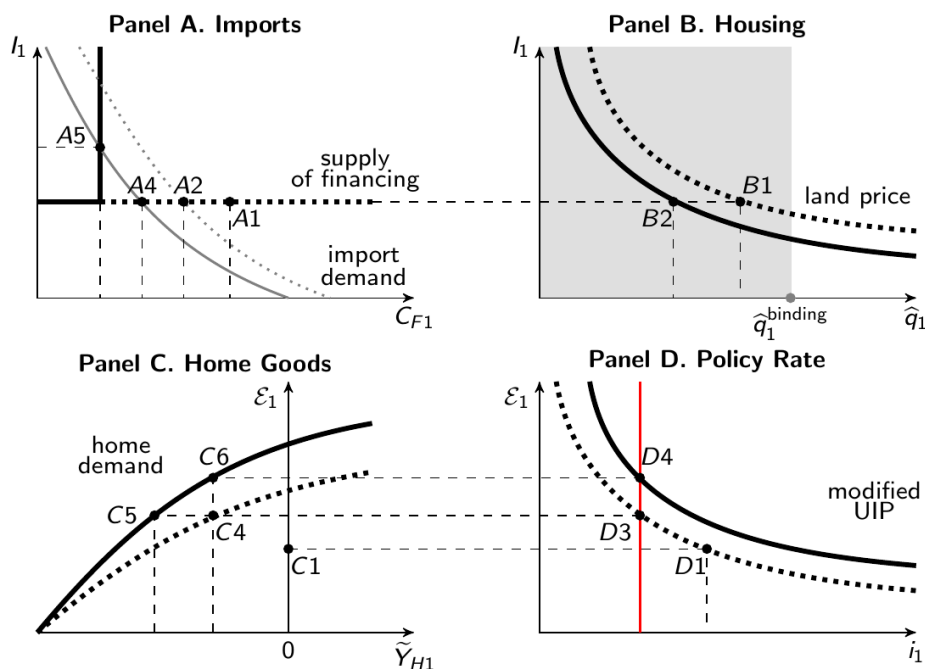
By contrast, if the exchange rate is allowed to depreciate, given the permanent nature of the shock, the exchange rate would depreciate in all periods relative to the levels consistent with the no-tariff scenario. Hence, the modified UIP condition shifts to the right on panel D, and an exchange rate depreciation can occur even without any change in the policy rate.¹³ The economy moves to point D4 in Panel D and point C6 in Panel C, with a less negative output gap. This argument also indicates that exchange rate depreciation may be insufficient to close the home output gap. The impediments to a policy rate easing that existed before the shock remain true after the shock as well, so the exchange rate depreciation cannot fully offset the reasons for the previously existing output gap.

19. The policy advice in the tariff shock scenario remains similar to the baseline advice, though with greater urgency as the output gap is larger if the exchange rate does not fully adjust. As in the previous section, fiscal stimulus can help resolve both the domestic and external imbalances, and it may appreciate the exchange rate.

- On panel A, a confidence-building stimulus for unleveraged domestic consumers can push their demand curve to the right and shift the economy from point A4 back to A1, increasing imports. The tariff shock does not affect the trade balance through these consumers, but public spending on imports and the boost to consumer demand for imports can help reduce the large trade surplus. For constrained and leveraged domestic consumers, a confidence-building stimulus to demand may not push them above the level of imports at point A5. To increase their consumption of imports, their collateral constraints would need to be relaxed.
- Resolving the housing market credit crunch becomes more urgent after tariffs are imposed. The more severe housing sector credit crunch in panel B causes a reduction in the consumption of all leveraged domestic agents in panel A, which in turn generates a further contraction in imports in that panel and counteracts the effects of any other policies that are undertaken to expand domestic demand. Resolving the housing market relaxes the collateral constraints on leveraged households, which increases their imports and thereby shrinks the trade surplus.
- On panels C and D, since the tariff shock decreases the demand for home goods even further in the absence of full exchange rate flexibility, higher public spending on home goods to close the home output gap is even more urgent. The use of fiscal policy takes the pressure off monetary policy, so the home output gap can be closed even while the exchange rate potentially appreciates, i.e., fiscal policy can shift the home demand curve to the right, and the economy can move to points C1 and D1 on the panels.¹⁴

¹³ Future levels of the exchange rate shift the UIP curve, all else equal.

¹⁴ This assumes that the fiscal stimulus is effective in: either boosting households' import demand on panel A, which would also shift the solid home demand curve on Panel C clockwise until it crosses the y-axis at C1; or being composed of direct public spending on home goods, which would also shift the home demand curve in a similar manner. This new home demand curve is not plotted to keep panel C cleaner.

Figure 1. Analysis of Initial Conditions and Scenario 1 in the IPF Diagram**I. Initial Conditions****II. Scenario: Higher Tariffs on Chinese Exports**

Note: l_1 is the gross external financing rate between periods 1 and 2; $\hat{C}_{F1}$ is period-1 import consumption; $\hat{q}_{at1}$ is the FX value of the period-1 land price; ε_1 is the period-1 RMB/USD exchange rate; $\tilde{Y}_{H1}$ is the period-1 home output gap; i_1 is the policy rate between periods 1 and 2.

Source: Extension of the framework in Basu and Gopinath (2024).

20. As the imposition of tariffs constitutes a fundamental shock that would impact an economy even in the absence of financial frictions, the IPF does not recommend FXI or new inflow CFMs. In particular, FXI is not an appropriate response (either FX purchases or sales) as it mitigates one of the imbalances while exacerbating the other. First, consider that the FX market is actually shallow instead of deep (meaning the supply of financing on Panel A is upward sloping, so that FXI can have an effect on allocations), and the authorities use FX accumulation to depreciate the exchange rate in an attempt to close the home output gap in panel C by trying to achieve the intersection of the solid home demand curve with the y-axis. Assume for simplicity that the monetary policy rate remains unchanged and the exchange rate movement is achieved only through FXI, which shifts the modified UIP condition to the right. However, the use of FX accumulation also shifts up the supply curve on panel A, reducing imports on that panel and thus increasing the trade surplus further.¹⁵ In addition, the reduction in imports shifts the home demand curve further to the left on panel C, partially undoing the initial FXI effects and necessitating even more FX accumulation and depreciation to close the higher home output gap, adding further to external imbalances. Second, consider that instead FX sales are used to shift down the supply curve on panel A and thereby imports increase. This reduces the large trade surplus but there is an exchange rate appreciation in panels C and D which will widen the negative home output gap.

21. The recommendation for FXI may change if the tariff shock triggers an episode of a non-fundamental outflow shock. If the FX market becomes shallow in an episode of large outflows driven by non-fundamental factors, use case A does apply as described in IMF (2023).¹⁶ Correspondingly, there is a case for the use of FXI and adjustments to CFMs (in line with the IV) to stabilize capital flows and external premia. These tools stabilize imports and home output and may be the appropriate response instead of adjustments to monetary and fiscal policies and the exchange rate. For this use case to be activated, there should be clear evidence of the FX market becoming shallow and outflows becoming disorderly. The next section evaluates empirical relevance of shallow FX markets for China along with other FXI use cases.

22. To sum up the discussion, the CIPF model provides a framework for understanding the appropriate use of monetary and fiscal policies and considerations for the use of FXI and CFMs for an open economy facing real and financial shocks given a variety of nominal and financial frictions and country characteristics. The model recommends monetary and fiscal policies alongside short-term maintenance of some elements of the outflow CFMs structure. It does not recommend FXI and/or new inflow CFMs because the three use cases for these tools (see IMF, 2023) are not activated: the FX market is either assumed to be deep, or it is shallow in the context of

¹⁵ FXI is defined as an open market operation where the policymaker accumulates dollar assets and issues local currency debt which the global financiers must absorb. The curve shifts since for any import demand the global financiers will demand higher interest rates (relative to no-FXI case) since they have to hold additional FXI-related debt.

¹⁶ This use case would also apply if such an outflow shock strikes in an FX market which turns out to be structurally shallower than the measured UIP premia suggest it to be.

a fundamental shock; there are few FX mismatches; and inflation expectations are anchored (see the next section).

C. Foreign Exchange Policy Under the IPF

23. Consistent with the discussion in the previous section, IMF (2023) identifies three use cases for FXI: (a) to smooth some shocks to local currency premia if FX markets are shallow; (b) to counter risks from unhedged foreign exchange liabilities in the private sector; and (c) to prevent the de-anchoring of inflation expectations.¹⁷

- *Destabilizing shocks to risk premia in currency markets.* Shallow or illiquid foreign exchange (FX) markets can amplify exchange rate movements from shocks unrelated to domestic fundamentals and incentivize excessive borrowing or deleveraging. In such cases, instead of adjusting macroeconomic policies, targeted and temporary FXI to smooth the premia shocks can be appropriate. In some cases, as outlined in the Fund's Institutional View (IMF, 2022), CFMs may also be appropriate.
- *FX mismatches on private sector balance sheets.* Currency mismatches between assets and liabilities of firms can induce sharp adjustments to private firms' ability to access credit, which in turn can increase default risk when the exchange rate moves in an abrupt manner. These financial stability risks can be significant, and the use of FXI can be appropriate to avoid such risks materializing. MPMs and preemptive CFM/MPMs consistent with the IV may also be appropriate to mitigate the FX mismatches in advance, thereby reducing the necessity of FXI once shocks materialize.
- *De-anchoring of inflation expectations.* Where exchange rate pass-through into prices is strong and monetary policy lacks credibility, and inflation expectations can respond significantly to an exchange rate movement, making a return to the previous inflation equilibrium slow and costly. FXI, alongside decisive monetary policy actions, can be appropriate to maintain price stability under such conditions.

24. This section evaluates the use cases for China and also provides some additional considerations which may impact the decision on whether FXI is appropriate in China under particular circumstances. First, it provides an overview of the Chinese FX market, including the CNY and the CNH market. Then it empirically evaluates the three FXI use cases and concludes by considering additional factors.

The Renminbi Market

25. China operates an onshore (CNY) and an offshore (CNH) FX market. As a major global exporter, China aims for broad international use of the Renminbi to support cross-border trade

¹⁷ The existence of country characteristics to justify each of these use cases is often referred to as the existence of "IPF frictions."

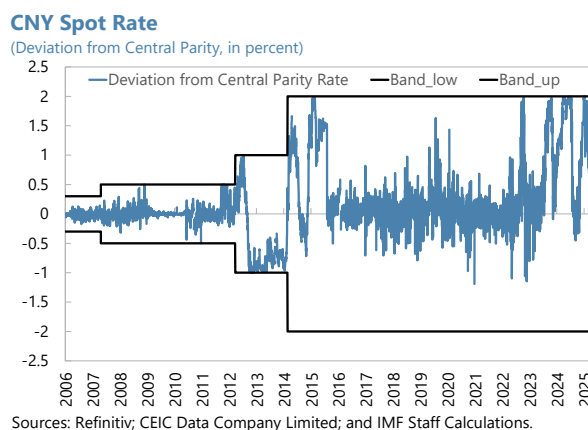
payments. At the same time, the government maintains significant controls on capital flows into the CNY market to preserve monetary policy autonomy and financial stability.¹⁸ To balance these goals, China expanded the offshore CNH market in 2010, which facilitates more liberalized use of the Renminbi in offshore transactions, with broad international participation and free currency conversion for trade and investment outside the Chinese mainland. In contrast, the onshore CNY market is tightly managed, with access restricted to domestic financial institutions and select foreign investors via regulated schemes such as Qualified Foreign Institutional Investor (QFII) and Renminbi Qualified Foreign Institutional Investor (RQFII). By separating the two markets and controlling conversions between CNH and CNY (as explained below), the authorities can in practice monitor cross-border financial flows while promoting gradual internationalization of the Renminbi.

26. Segregated market infrastructure sustains the separation between the CNY and CNH markets. Although CNH and CNY are the same currency and officially convertible at a 1:1 rate, in practice, the two markets are institutionally distinct. Conversion is subject to quotas, licensing schemes, and documentation requirements tied to underlying trade transactions. Each market operates under its own clearing and settlement systems and caters to different investor bases. The CNY market is embedded within China's broader financial regulatory apparatus, while CNH trading occurs predominantly in offshore hubs such as Hong Kong SAR, London, and Singapore. These structural features limit arbitrage and maintain segmentation, which can become salient during episodes of capital flow volatility.

27. The People's Bank of China (PBOC) employs different policy tools to manage the two markets. The central bank can more directly influence the onshore CNY market and currency movements. In contrast, the offshore CNH market operates more independently, where the central bank relies on indirect tools to influence liquidity and exchange rate expectations.

Onshore Renminbi Market (CNY)

28. In 2005, the PBOC abolished the fixed exchange rate regime against the USD and started gradually moving towards greater exchange rate flexibility with the intention to gradually liberalize the FX market. In July 2005, the authorities adopted a managed float as the exchange rate arrangement. This system involved a central parity or "fix" rate that is announced at the start of the trading day, as well as a trading band outside of which transactions cannot be executed on the domestic FX trading system and are not legally recognized. The design enforces the trading band, reducing the need for continuous FX purchases or sales to defend it, as is typical in



¹⁸ See Memorandum of Cooperation on Clearing Renminbi Business July 19, 2010.

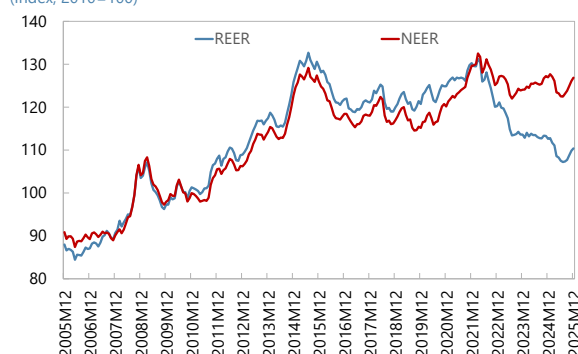
other countries. The 0.3 percent¹⁹ and was gradually widened over time to 0.5 percent in May 2007, 1 percent in April 2012 and to the current 2 percent in March 2014. During this period, the PBOC undertook significant FXI to stabilize the currency, leading to a large buildup of FX reserves, which peaked at US\$4 trillion in 2014.

29. After a period of FX volatility in 2015, the PBOC introduced further changes to the operations of the FX market.

In August 2015, following a period of prolonged real appreciation, the PBOC announced changes to the daily fixing mechanism to better reflect market conditions. The move resulted in a one-time 1.9 percent depreciation of the CNY to close the gap between fix and the market rate. Market participants interpreted this as a devaluation and a shift towards a more flexible—or weaker—currency regime, triggering capital outflows (Chan (2017), Das (2019), Brooks (2024)). In response, the PBOC relied on FXI and CFMs, and later introduced the CFETS exchange rate index in December 2015 to re-anchor expectations and guide market focus toward a broader currency basket. Furthermore, following guidance in early 2016, the fix was set as the closing CNY/USD spot rate on the previous day plus the required change to offset movements in a basket of currency indices due to changes in other cross-rates.

Real and Nominal Effective Exchange Rates

(Index, 2010=100)

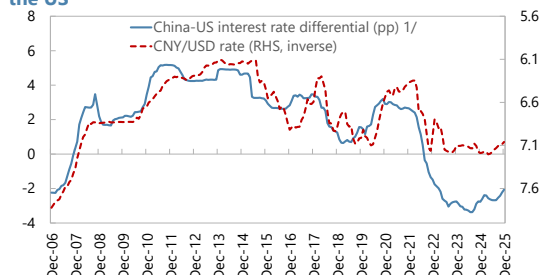


Source: IMF IFS Database.

30. In 2017 commercial banks added a counter-cyclical adjustment factor to the quotes supplied for the purpose of setting the fix.

This arrangement has persisted since then—the current market operates with a daily fix announcement, that in principle reflects the trading conditions prevailing on the previous day potentially adjusted for a counter-cyclical factor, with a 2-percent trading band for all onshore interbank transactions. Since the introduction of the counter-cyclical adjustment factor, CNY volatility has declined, and the spot rate has generally moved to reflect market forces (Das (2019)). In particular, the daily fix generally reflected the movements in the spot rate. However,

CNY Exchange Rate and Interest Rate Differential against the US



Sources: Haver Analytics; and IMF staff calculations.

1/ Defined as the difference between the 1-year SHIBOR and the effective Federal Funds rate.

¹⁹ In July 2005 a wider band of 1.5 percent was permitted for other currencies. It was increased to the current ± 3 percent in September 2005. In practice, the band for other currencies is not binding given that it larger than the band for the CNY/USD rate and other currencies exchange rates are derived from cross-rates.

²⁰ The counter-cyclical adjustment factor is intended to reduce the influence of pro-cyclical herding behavior and excessive depreciation pressures. However, the factor is not published and is determined based on each bank's interpretation of economic conditions.

starting in mid-2023, the fix became notably stable and the divergence between the spot and the fix rate has been more marked (with the fix set stronger than the spot rate), suggesting more active and discretionary use of the counter-cyclical factor. Overall, the methodology underpinning the fix remains opaque, particularly the use and sizing of the counter-cyclical factor, limiting transparency and weakening price discovery, and contributing to wider onshore-offshore divergences during periods of stress].

31. Participation in the onshore FX market is subject to a range of CFMs and macroprudential regulations. Licensed financial institutions, including both domestic and foreign banks, operate under CNY-based quotas, cross-border financing limits set under the PBOC's Macroprudential Assessment framework, and approval requirements for large overseas direct investments, typically overseen by the National Development and Reform Commission (NDRC). Inward direct investment is also subject to regulatory approvals that can act as inflow CFMs. Macroprudential policies can modulate these CFMs.

Offshore Renminbi Market (CNH)

32. The PBOC uses indirect tools to influence the offshore market. For the CNH, where direct intervention is constrained, the PBOC utilizes tools such as reserve requirements for offshore banks, central bank bills issuance to absorb liquidity, and swap market operations management. These instruments are channeled through a limited number of offshore clearing banks, offering the central bank visibility into cross-border flows.

Text Figure 3. Comparison of CNY and CNH Markets

	CNY	CNH
Daily turnover	\$526bn, +70% since 2019	
<i>Share (April 2022)</i>	20%	80%
Convertibility	Restrictions on all FX conversion	Restriction on CNY conversion only
Participants	Domestic domiciled FI and qualified foreign investors	No restrictions
Regulation	- 2% trading band around PBC's fix - PBC's administrative means - CFM measures	- PBC and HKMA jointly control CNH bond supply and reserves - CNY conversion through offshore clearing banks (SOE bank subsidiaries) - PBC's administrative means

33. The combined Renminbi market (including the CNY and the CNH) has expanded considerably, driven by offshore activities. As of April 2022, global daily RMB FX turnover exceeded \$520 billion, with 80 percent occurring outside the Chinese mainland. The offshore CNH market – particularly through deliverable (DF) and non-deliverable forwards (NDFs) contracts – has become the primary venue for international Renminbi trading, concentrated in Hong Kong SAR and London. The onshore CNY market is primarily over the counter (OTC), dominated by spot and

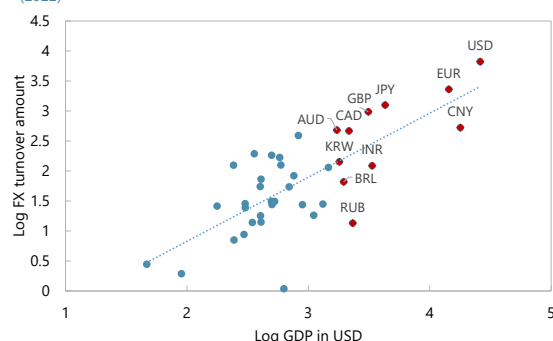
deliverable forwards, and remain less liquid and more tightly regulated. After considerable growth in recent years, FX turnover is broadly in line with what is expected based on real economic indicators such as trade volume or GDP (see Text Figure 5 panels 1 and 2).

Text Figure 4. CNY and CNH Markets

China's FX turnover is broadly in line with what is than expected based on GDP...

FX Turnover and GDP

(2022)

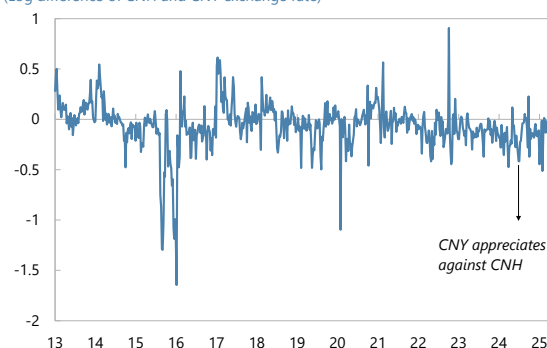


Sources: BIS Triennial Survey, 2022; Haver Analytics; and IMF staff calculations.

CNY and CNH are typically at parity but can deviate under depreciation pressures

CNH-CNY Parity

(Log difference of CNH and CNY exchange rate)



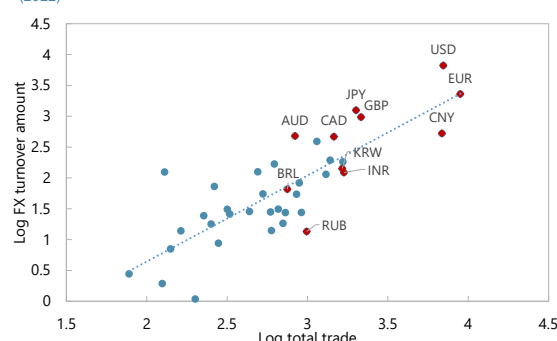
Sources: Bloomberg; BIS; and IMF staff calculations.

Note: In panel 4, downside/upside CoVaR measure the expected returns of one asset conditional on the other being in the bottom/top 5% return quantile.

...and trade.

FX Turnover and Total Trade Values

(2022)

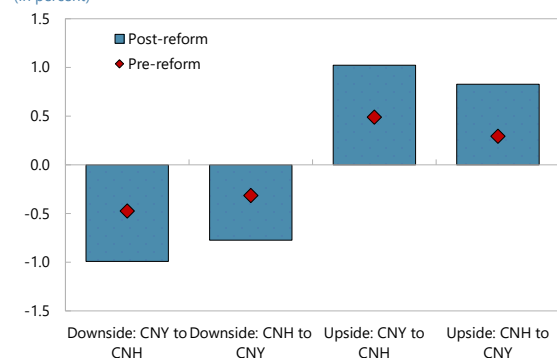


Sources: BIS Triennial Survey, 2022; IMF World Economic Outlook; and IMF

The transmission is stronger from CNY to CNH, and this relationship has strengthened after the 2015 reform

Spillover: Upside and Downside CoVaR

(In percent)



34. While the CNY and the CNH usually are tightly aligned, pricing differentials can arise, especially during periods of market stress. These deviations reflect regulatory segmentation and shifting market expectations.

- The spread between CNH and CNY spot rates, as well as forward rates, narrowed following the 2015 reforms, suggesting improving market integration (see Text Figure 5 panel 3). Under normal conditions, these spreads are typically small and short-lived, as institutions with cross-market access exploit arbitrage opportunities, reinforcing expectations of nominal convergence. However, during periods of heightened uncertainty – such as since mid-2023 amid renewed depreciation pressures and geopolitical concerns – regulatory frictions become more binding, limiting arbitrage, and resulting in more frequent and persistent divergence.

- Empirically, we document strong two-way spillovers during market stress, based on a CoVaR framework (Adrian 2016). Our results highlight two important asymmetries: (i) CNH tends to react first to shocks, owing to longer trading hours and greater sensitivity to global sentiment; (ii) the amplification of shocks from onshore to offshore markets is stronger, and has increased further following the 2015 FX reform (see Text Figure 5 panel 4). Intuitively, this suggests that while offshore markets may lead in price discovery, the onshore market remains dominant in driving broader system-wide stress dynamics.
- Recognizing these interdependencies, the Chinese authorities have implemented reforms to improve market integration, including extended trading hours, expanded access via Bond and Stock Connect programs, eased hedging restrictions for corporates, and engaged in more active offshore liquidity management.

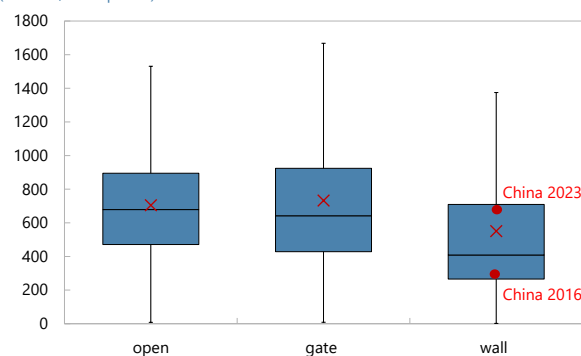
35. In sum, China's FX market has undergone significant reforms aimed at enhancing market depth, promoting internationalization of the Renminbi and maintaining policy control. However, persistent segmentation between the CNH and CNY markets, along with the extensive tools used to manage them, shape the scope and effectiveness of FXI. While the absence of large reserve operations suggests limited conventional intervention costs, limiting exchange rate adjustment can potentially impose “shadow costs” on the economy by shifting the burden of external shock absorption to domestic price and activity. We now turn to the conditions under which FXI may be warranted drawing on the IPF to assess the trade-offs between monetary independence, capital flow management and exchange rate flexibility.

Foreign Exchange Market Depth

36. The evidence on foreign exchange market depth is mixed, with some indication of occasional market shallowness which may justify FXI.

- The FX market appears deep according to some metrics (Text Figure 6). First, prior to 2015, FX markets were clearly shallow. Even considering sizable FXI amounts (as per Adler et al (2021) that likely smoothed UIP fluctuations, the observed UIP premia was highly persistent. After the 2015 reforms, both UIP persistence and estimated FXI fell sharply, making the UIP behavior qualitatively similar to some advanced economies (such as Canada, for example). Second, multiple secondary indicators such as the bid-ask spread and FX market turnover (even after considering trade volumes and China economy's size) suggest deep FX

Yearly std. Deviation of UIP Premia across CFM Regimes
(3month, basis points)

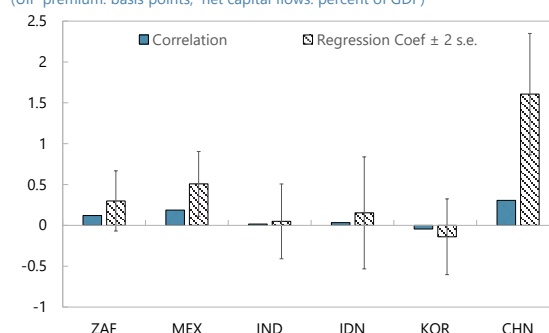


Sources: Consensus Forecasts; Refinitiv Eikon; and IMF staff calculations.

markets. However, existing CFMs likely limit the impact of adverse shocks on the FX market, which may make the data on traditional metric appear as if the FX market is deep.²¹

- However, there is also some evidence of market shallowness, especially during episodes of large inflows and outflows. Both correlation and a simple regression of net capital flows (as a share of GDP) suggest that in China, UIP premia spikes (dips) are significantly associated with net capital outflows (inflows) and more so than in other countries. This suggests FX market shallowness, especially during periods of large capital flows.²²

Relationship between UIP Premium and Net Capital Flows
(UIP premium: basis points; net capital flows: percent of GDP)



Sources: Haver Analytics; IIF Capital Flows Tracker; and IMF staff calculations.

²¹ As the text chart shows, the countries with high levels of CFM restrictiveness have lower UIP premia volatility than open regimes as CFMs mechanically dampen UIP premia deviations. Nevertheless, UIP premia may spike even when CFMs are present if the shock magnitude is large enough. If it happens, this may necessitate FXI. These considerations have been potentially relevant for China recently as indicated by sizable UIP volatility in 2023 (see the same text chart).

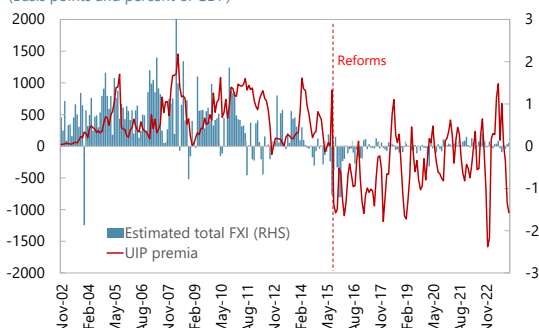
²² Ideally, to better assess the degree of FX market depth in China, one would need to have access to intraday transaction data to see how large transactions affect the exchange rate. Unfortunately, this data is unavailable for the CNY market.

Text Figure 5. Indicators of FX Market Depth

The 2015 reforms improved FX depth as indicated by less persistent and lower UIP premium...

UIP Risk Premia and Estimated FXI

(Basis points and percent of GDP)

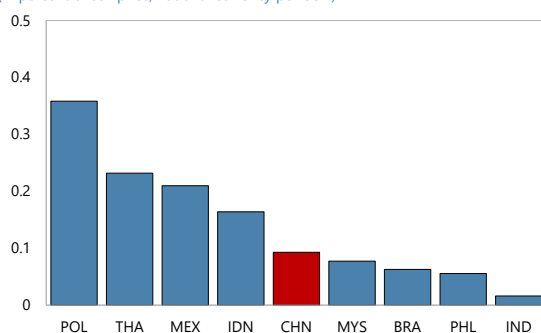


Sources: Adler et al (2021); Consensus Forecasts; Refinitiv Eikon; and IMF staff calculations.

China's bid-ask spread is lower than other EMs with deep FX markets.

Foreign Exchange Ask-Bid Spread, 2020-22

(In percent of ask price, national currency per USD)

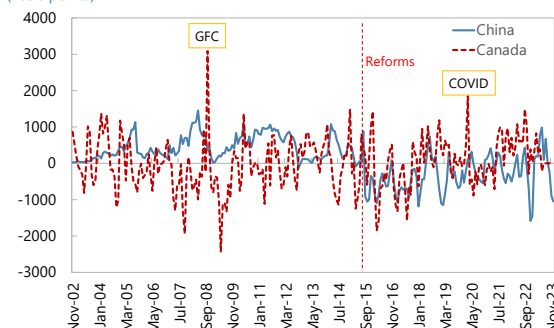


Sources: Bloomberg; and IMF staff estimates.

...making FX market appear as deep as some advanced G-7 countries (conditional on existing CFMs).

UIP Risk Premia: China vs. Canada

(Basis points)

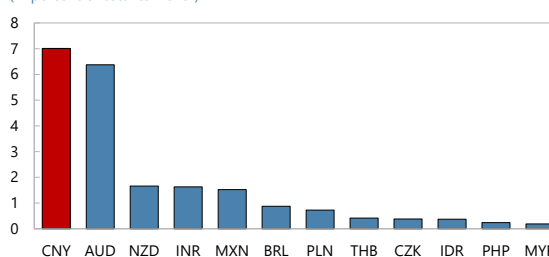


Sources: Consensus Forecasts; Refinitiv Eikon; and IMF staff calculations.

The FX turnover is one of the largest among comparator countries even conditioning on trade and economy size

Foreign Exchange Turnover by Currency, 2022

(In percent of total turnover)



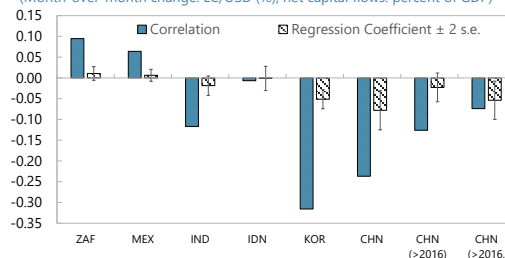
Sources: BIS Triennial Survey, 2022. Turnover of OTC foreign exchange instruments, by currency.

Notes: AUD=Australian dollar; CNY=Chinese Yuan; NZD = NZ dollar; INR=Indian Rupee; MXN=Mexican Peso; BRL=Brazil Real; PLN=Poland THB = Thai baht; IDR=Indonesian Rupiah; PHP = Philippine peso; MYR = Malaysian ringgit.

37. Net capital flows appear sensitive to large bilateral exchange rate movements.²³ Comparing coefficients from a simple regression of total net capital inflows as a share of GDP on monthly changes in the bilateral USD exchange rate for a set of comparable countries confirms that China has the strongest association between the two variables, providing an argument to limit large exchange rate movements in the short run in episodes when outflows are non-fundamental and disorderly.

Relationship between Exchange Rate Depreciation and Net Capital Flows

(Month-over-month change: LC/USD (%); net capital flows: percent of GDP)



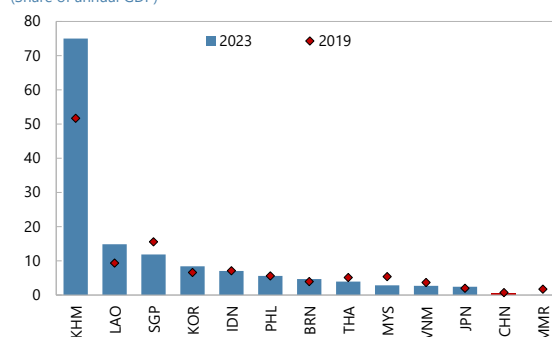
Sources: Haver Analytics; IIF Capital Flows Tracker; and IMF staff calculations.^{1/}
1/ Large depreciations are defined as larger than 2 percent m/m.

²³ The monthly net capital flows data in this exercise is from the IIF Capital Flows Tracker.

FX Balance Sheet Mismatch Risks

38. Foreign exchange balance mismatch is limited. Total FX-denominated debt stood at 3.8 percent of GDP in 2024, down from 5 percent in 2019. Most FX-denominated debt is held by the financial sector, with private sector holdings debt estimated at only 0.2 percent of GDP. As such, FX mismatches do not provide a justification for FXI.

Total FX Debt
(Share of annual GDP)

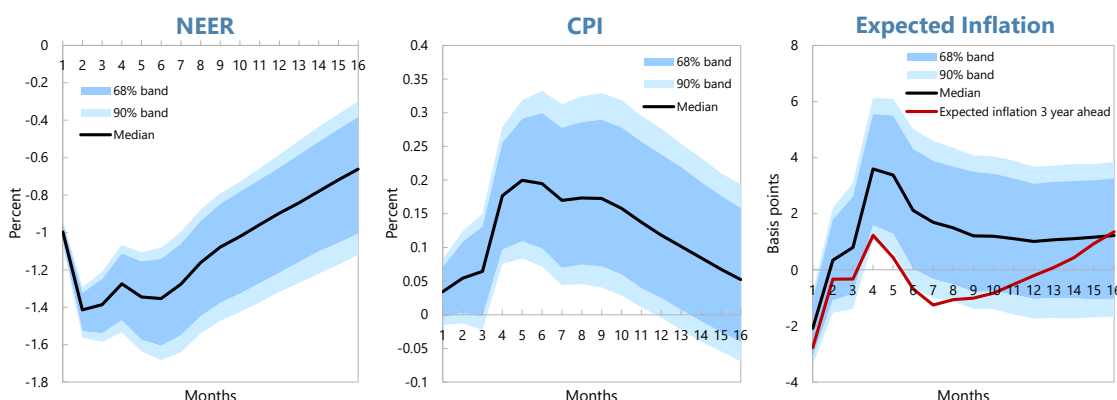


Sources: BIS LBS; BIS IDS; BIS Credit; IFS; WEO; and IMF staff calculations.

Anchoring of Inflation and Inflation Expectations

39. Limited exchange rate passthrough to inflation expectations provides little support for FXI for China. The impact of exchange rate shocks on inflation and inflation expectations is evaluated using recursively identified Bayesian Structural VAR model.²⁴ In response to a 1 percent depreciation in the NEER we find evidence of passthrough into CPI and one-year ahead inflation expectations, however the size is modest at only a 0.2 percent increase in the level of CPI and 3 basis points increase in expectations after six months (see Text Figure 8). Forbes and others (2020) find pass through, on average, of around 0.23 after one year for a sample of emerging markets, whereas our estimate for that horizon is less at around 0.1. We find no evidence of statistically significant evidence of pass through to longer term inflation expectations. Forbes and others (2020) also study variation in estimates of exchange rate pass through, finding that countries with high inflation volatility and a significant role for monetary policy shocks see larger estimates of pass through. This accords with the finding of relatively modest pass through in China, given inflation has been low and stable and interest rate based monetary policy shocks have been relatively infrequent.

Text Figure 6. Passthrough of Exchange Rate Shocks to Inflation Expectations is Modest



Sources: Haver Analytics; and IMF Staff Calculations.

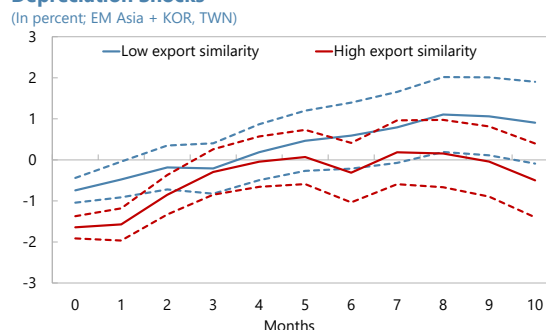
Note: The black line represents the median response to a 1 percent shock to the log level of the NEER. The Impulse Response Functions are derived from a Bayesian SVAR model with controls for oil prices, food prices and industrial production.

²⁴ The data used for the VAR is monthly for November 2002–October 2024. The VAR controls for oil prices, food prices and industrial production. Identification of NEER shocks is recursive with the NEER ordered first, so all other variables can respond contemporaneously to exchange rate shocks.

Exchange Rate Policy Spillovers

40. Asian currencies increasingly comove with the renminbi. The correlation between Asian currencies and the CNY has been rising since the latter became more flexible in 2012 and this co-movement is especially pronounced amongst countries that compete in the same export markets as China (IMF (2024)). Results from a local projections model for the period 2003–2023, controlling for a range of global factors including the VIX, a USD index and interest rate differentials, shows that the spillovers from large CNY depreciations of 2 percent or more are associated with a peak depreciation of 1.2 percent amongst other Asian currencies. This spillover co-efficient rises to 1.6 percent for currencies from China's export competitors—those countries with high similarity in their exports to China. The factors underlying the co-movement (such as contribution of policies versus shocks) could be an area of future research.

Change in Exchange Rate against USD after Large CNY Depreciation Shocks
(In percent; EM Asia + KOR, TWN)



Sources: IMF APD Regional Economic Outlook April 2024; and IMF staff calculations.

41. Policy implications of this increasing co-movement with the renminbi are non-trivial. While some non-China policymakers may prefer stability in China's exchange rate to reduce spillover induced volatility in their own exchange rates, this may not be the optimal response. For example, within the IPF framework, it is appropriate to let the exchange rate serve as a shock absorber in case of fundamental shocks unless the exchange rate movement worsens an IPF friction (IMF (2020)).

D. Conclusions and Policy Recommendations

42. Boosting domestic demand with a focus on fiscal support for consumption and housing market resolution should play a central role in addressing domestic and external imbalances. The IPF proposes that the appropriate policy mix should aim to simultaneously resolve both imbalances instead of addressing one at the expense of the other. Both to address the initial conditions of the Chinese economy and in specific shock scenarios, expanded public spending, support for consumer spending, and housing market resolution can all play a part. Public spending on home goods would tend to appreciate the real exchange rate, and spending on imports would tend to reduce the trade surplus. Resolving the housing market credit crunch becomes more urgent after tariffs. By contrast, FXI mitigates one of the imbalances while exacerbating the other. The design of a comprehensive package of measures should incorporate the interactions between the different policy tools in the Chinese context.

43. The possibility of foreign exchange markets turning shallow during a non-fundamental stress event creates the risk of disruptive exchange movements. Occasional shallowness of FX markets is the main friction identified under the IPF framework for use of FXI for China. FX market shallowness can amplify exchange rate developments if global risk appetite abruptly declines and generates disorderly outflows unrelated to domestic fundamentals,

destabilizing the FX market. The shock scenarios considered in the paper can increase the likelihood of disorderly outflows. In particular, an escalation in the trade war can damage confidence in the future growth trajectory, leading to an abrupt change in investors' expectations and possibly in excess of the fundamental changes. This can result in disorderly outflows in the context of a FX market that can turn shallow in the face of the shock.

44. In these circumstances, temporary FXI can reduce the burden on monetary policy and help cushion the impact of the shock. However, these short-term benefits of FXI should be carefully weighed against long-term costs of FXI use, which are not explicitly modelled in the IPF and include such effects as stunting future FX market development. Any FXI should be market-based and transparently recorded on the PBOC balance sheet. Additionally, if the outflows are motivated by inappropriate monetary and fiscal policy settings, those problems should be rectified in, and the use of FXI and CFMs should not substitute for these warranted macroeconomic policy adjustments.

45. Gradually increasing exchange rate flexibility would help absorb external shocks, deepen foreign exchange markets, improve the effectiveness of monetary policy, and reduce deflation risks. When faced with fundamental shock the authorities should let the exchange rate adjust. The adjustment should be accompanied by a strong and coordinated policy mix aimed at boosting domestic demand, particularly consumption. Such a policy combination will alleviate deflation risks and prevent external balances from worsening, while also reducing the depreciation pressure on the exchange rate to begin with. Greater exchange rate flexibility, including by letting the daily fix move with market expectations, will also improve transmission of monetary policy by preventing the nominal exchange rate from becoming the de-facto nominal anchor. Two-way RMB moves will also encourage overall FX market development, increasing resilience to future shocks and relieve potential pressure on CFMs.

46. Balancing FX stability with openness remains a core challenge. China's FX market continues to operate under tight capital controls and selective intervention, even as market reforms advance. This creates an environment where markets that are calm under normal conditions can quickly give way to volatility during stress episodes. The ongoing tension between maintaining a managed exchange rate and promoting Renminbi internationalization complicates policy implementation. As China deepens its financial integration, the effectiveness of exchange rate management and the resilience of capital flows will also hinge on the evolving interaction between onshore and offshore markets.

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