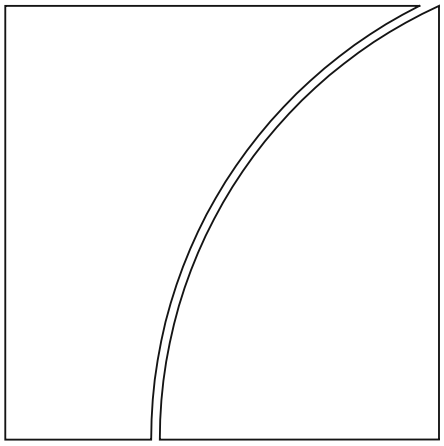

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Monetary and Economic Department

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Shifting forces behind RMB internationalization: Evidence from the 2025 Triennial Survey[1]

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Abstract

This paper explores factors driving the internationalization of Renminbi (RMB) trading, using data from the 2025 BIS Triennial Survey of global foreign exchange turnover. We analyze both short-term (three-year) trading growth and long-term RMB turnover levels across jurisdictions. Unlike recent studies that struggled to identify sizable effects of real or financial links with China, we find that financial factors, especially banking links with China, play a key role, even over short horizons. These financial links reinforce market-driven "convergence" patterns, whereby RMB trading adjusts based on its under- or over-representation in total currency trading in a given location. However, this convergence is slower than previously reported, while financial drivers have grown in importance. For the long-term geographical distribution of RMB trading, financial links with China, including policy-driven variables such as qualified investor licenses, dominate, though trade links also contribute significantly. We also find that bilateral trade effects are stronger for cross-border RMB trading, and we report new insights on the dynamics in Asian financial centers and trading in spot versus derivatives.

JEL classification codes: F31, F33, G15, G18

Keywords: geography of currency trading, foreign exchange, renminbi internationalization, cross-border banking

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1) Introduction

The internationalization of the Renminbi (RMB) has been a subject to policy debates and academic research at least since the introduction of cross-border RMB trade settlement in 2009. Top Chinese policy makers promoted this goal in public statements,[2] and Chinese authorities introduced policies to advance its currency's global status. Now, more than a decade-and-a-half later, the jury on RMB internationalization is still out. On the one hand, the share of RMB in global currency trading more than quadrupled between 2013 and 2025, from 2% to 8.8%. On the other hand, this share is lower than the 18%-20% share of China in global GDP or its 12%-13% in global trade (McGuire, von Peter and Zhu, 2024). Moreover, the growth of RMB trading has not been uniform across trading centers. While in Hong Kong SAR more than 30% of all trades involve the RMB, it is less than 3% in Germany, for instance.

Among the first researchers to raise the question where this process will lead were Frankel (2012) and Eichengreen (2013).[3] Eichengreen and Lombardi (2017) added a geographical dimension to the debate, by pointing out that the RMB could either become a global or a regional currency in the foreign exchange (FX) market. This idea has inspired Cheung McCauley and Shu (2019) – the key reference in our analysis – to use the Bank for International Settlements (BIS) Triennial Survey to analyze the factors behind the growth of RMB trading across different locations. They postulated that as a currency becomes more internationalized, "it approaches the global geographical distribution of trading observed for the overall FX market".[4] Their empirical results confirmed that "convergence" dynamics to this long-term steady state indeed explain the differences in the growth of RMB trading across different locations. This result was reproduced by several subsequent studies, including Cheung et. al (2021) with the 2019 survey and Westermann (2025) with the 2022 survey data.

These recent studies, however, contained a puzzle that is hard to reconcile with economic intuition: the striking lack of statistical significance and economic relevance of the underlying

[2] These statements include former PBOC Governor Dai Xianglong (http://www.ce.cn/macro/more/201106/26/t20110626_22503311.shtml) and former Chinese President Hu Jintao (in Q & A with Hu Jintao, *Wall Street Journal*, January 18, 2011).

[3] Other papers on the RMB, also using the BIS triennial survey, included Packer, Schrimpf and Sushko (2019), and Caballero et. al (2022). The latter explain the variance across currencies, rather than across trading centers. Bauer and Robert (2025) recently documented the role of large trading centers in the regression established by Cheung, McCauley and Shu (2019). See also Rogoff (2016)

[4] In other words, internationalization of a currency implies that its share traded in a given jurisdiction will converge to the share of all currencies traded in that jurisdiction (ie that jurisdiction's share in global FX turnover).

real economy and financial drivers beyond a "pure", market-driven, convergence.[5] What are the underlying economic forces behind RMB internationalization? What is the relative importance of real and financial factors, and what is the scope for policy, in comparison to pure market forces? The present study aims to address these questions by taking advantage of several data sets, partly unavailable to earlier researchers. For example, a more deeply disaggregated and detailed BIS Triennial Survey data, including for instance, a distinction between local and cross-border trades and a distinction across instruments. We also use the restricted BIS international banking statistics data and the BIS international debt securities statistics. These datasets allow us to shed more light on economic forces behind RMB trading, and how they have changed compared to the previous survey.

Our empirical approach can be best thought of as being analogous to estimating separately the short-run and long-run equations of an error correction model. In the short-run, the pure convergence dynamics dominate: the share of RMB trading was rising in centers where the RMB was "underrepresented" and vice versa. These convergence dynamics explain a large share of the variation in changes of RMB trading volumes across locations, leaving little scope for policy or economic drivers. This is also the case for the 2022-2025 period, although we are able to report a stronger role for financial factors than earlier studies. In particular, banking links with China appear to have played a more important role than in the past, which is consistent with recent discussions in the financial press,[6] and in line with the rapid expansion of Chinese banks' cross-border activity.[7]

We also identify unique RMB growth dynamics in the two Asian trading centers, Hong Kong SAR and Singapore, and in FX swap trading. Hong Kong SAR, an administrative region of China, has been a gateway to mainland capital markets via StockConnect, BondConnect, and mainland banks operating in Hong Kong. Singapore, in turn, is the top FX hub in Asia-Pacific, with asset managers and more speculative traders, such as hedge funds, using it as an operating base. Although in both centers the RMB was overrepresented in the 2022 survey already, the

[5] An exception is an early contribution of Cheung and Yiu (2017). Using the 2013 survey, they found that offshore RMB trading activity is affected by both, the host economy's characteristics and links with China. While most other papers have analyzed the changes from one survey to the next, this paper looked at the share of RMB trading relative to GDP, in a similar spirit to the "long-term" allocation we study in Section 4 of the paper. See also He and Yu, (2016) for similar results, who analyze the 2013 survey as well.

[6] See William Sandlund and Haohsiang Ko, "Overseas renminbi lending surges as China steps up campaign to de-dollarise", Financial Times, 24th of October 2025.

[7] Casanova (2023) document that Chinese banks have become the largest cross-border creditors for almost half of all emerging market and developing economies; and have increasingly focused on supporting foreign direct investment as opposed to trade, a trend reinforced by the Belt and Road Initiative (Casanova (2024)).

share increased further from an already high level. The statistical outlier properties of these two trading centers are identified by a formal test, based on Cooks distance measure.[8] In some specifications, accounting for these Asian trading centers is important to properly capture the convergence pattern of RMB trading growth in other jurisdictions. In terms of instruments, the FX swaps exhibit different short-term dynamics. While there is remarkably consistent evidence for the converge across the four other instruments (spot, forwards, currency swaps and options), the RMB FX swap trading growth instead point at concentration effects. Centers where the RMB was already overrepresented in FX swap trading grew even more – driven largely by Hong Kong SAR and Singapore.

In the long run, the real and financial drivers have a substantially higher impact. The long-run global reach of the RMB is measured in levels, by the share of the RMB in all FX trading in each location. On the real side, we find strong evidence for international trade as a driver of the long-reach of the RMB across jurisdictions. Bilateral trade with China, distance from mainland China, and, in some market segments, the existence of a free-trade agreement, appear to foster more RMB trading. The association with trade-related drivers is particularly strong for cross-border RMB trading in spot, a market segment which the previous studies have not zoomed-in on. The associated effects are also economically important: a one percent higher share of China in international trade of a jurisdiction leads to up to a 0.7% higher share of RMB in the local FX market.

Despite their significance, the real, trade-related, drivers are dominated by financial drivers in nearly all aspects of RMB trading. Banking links with China and the number of qualified investor (QFI) licenses by themselves explain more than 80% of the variation across trading centers, and are also economically significant. For instance, one percent higher cross-border bank claims and liabilities vis-à-vis China are associated with 0.72% higher RMB turnover, and 10 additional QFI licenses are associated with a 1% higher RMB turnover. These are sizable effects, considering that Hong Kong SAR has more than 300 such licenses. We furthermore find that the opening of clearing banks and the historical allocation of investment quotas for the onshore market (RQFII quota, which was lifted in 2019), played a role. Swap-lines also occasionally exhibited a positive and significant coefficient.[9]

[8] See Bauer and Robbert (2025) for an earlier application to the Triennial Survey.
[9] The robustness of our results is verified by harmonizing the sample size, and by implementing the regression with a two-stage least square approach, rather than the standard OLS approach typically used in the literature.

The influence of financial factors varies across different FX market segments and over time. Financial drivers explain particularly well RMB derivatives trading, namely in outright forwards and FX swaps. The share of the variance explained by financial factors has also increased when compared to the 2022 survey. This varied impact of financial drivers is likely to be due to both, a general trend towards the use of currencies for financial purposes and the market turbulence during the data collection period in April of 2025, which spurred trading in derivatives for hedging purposes (see Huang, Krohn and Sushko 2025).

We also conduct a separate set of regressions to explain the long-run geographical distribution of trading in RMB FX swaps, the most traded instrument. The regression results for the long-run share of RMB FX swap turnover are in line with their multifaceted role in banks' foreign currency funding and currency risk hedging by portfolio investors and by offshore RMB bond issuers.

Finally, we complement the main results by performing a "horse-race" among variables, by means of a step-wise regression approach. The results indicate that the two comparably most important real and financial factors are the bilateral trade in goods and the number of qualified investors licenses, respectively. They explain a large share of the total variation across trading centers, although the financial factors are more important than the real factors, as visible in the marginal R-squared in a multiple regression setup. While dropping the bilateral trade variable from the regression reduces the R-squared very little, dropping the qualified investors licenses reduces the R-squared by more than 50%.

When interpreting our results, it is important to keep in mind that some of these financial factors are under management of the Chinese government. Thus, with the 2025 Triennial survey data, we may be capturing the impact of policy shifts that became evident at the 19th Party Congress – towards a more state-directed RMB internationalization process, and away from pure market forces and eventual capital account liberalization. At the same time, our results may also be affected by the aforementioned special circumstances of data-collection. The April of 2025 was characterized by high financial uncertainty and FX hedging activity following the April 2nd US tariff announcements (often referred to as "liberation day"). In our findings, the importance of

We find that lagged values of the explanatory variables are indeed valid instruments and the 2SLS approach does not alter the inference drawn from the exercise.

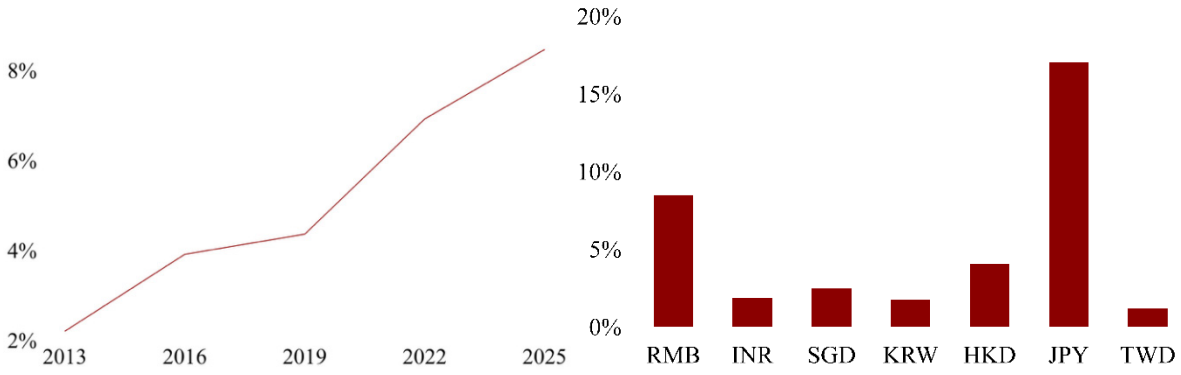
banking links and qualified investor licenses may reflect the former, while the special role of derivatives, such as FX swaps may reflect the latter development.

The remainder of the paper is organized as follows: Section 2 describes the data and methodology; Section 3 provides some institutional background of the analysis; Section 4 presents the results of the regression analysis of short-term dynamics, pertaining to RMB trading growth, thus updating earlier papers that focused on this aspect; Section 4 contains our main contribution with an extensive analysis of long-term allocation of RMB across trading centers; Section 5 reports additional results; Section 6 concludes with some implications for policy.

2) Data and methodology

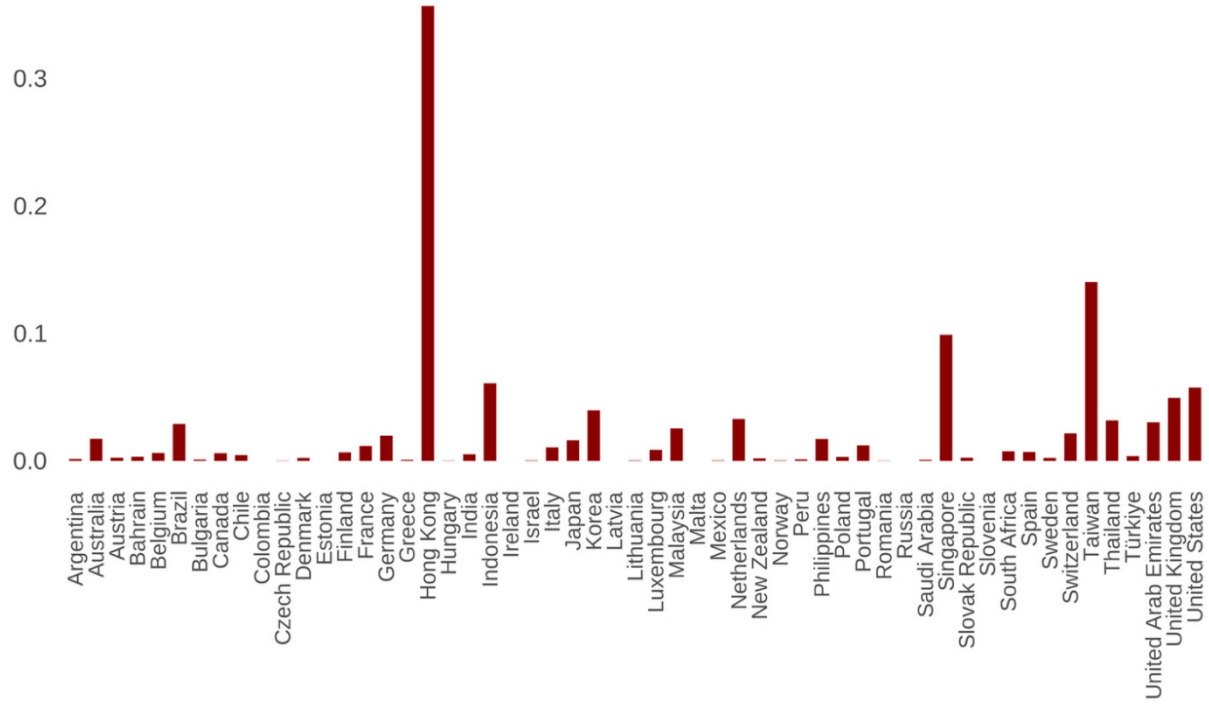
The basis of our analysis is the BIS Triennial Survey, the most comprehensive source of information on the size and structure of global FX and over-the-counter (OTC) derivatives markets (BIS, 2025). Every three years during the month of April, the BIS, working with central banks, gathers information from dealers in over 50 jurisdictions on their trading activity across instruments, currencies, different counterparties, as well as other key dimensions, such as methods of trade execution. The survey results are published in terms of average daily trading volumes.

Figure 1: Share of the RMB in global FX turnover



Source: BIS Triennial Survey

Figure 2: Share of the RMB in all FX trading in each jurisdiction – $W_{i,2025}$



Source: BIS Triennial Survey

The heft of RMB in global FX trading has increased rapidly over the recent survey iterations. In the early stages, during the 2013 Triennial survey, when the RMB started to enter the international FX markets, it was on one side of only about 2% of all trades by volume (Figure 1, left panel). In the latest, 2025, survey, 8.8% of all trades involved the RMB on one side.[10] This is an impressive increase, for instance when compared to other Asian jurisdictions, as it now is the second largest currency in Asia, with about half the amount of turnover of the Japanese Yen (Figure 1, right panel). As of 2022, the RMB has ranked as the 5th most traded currency globally.

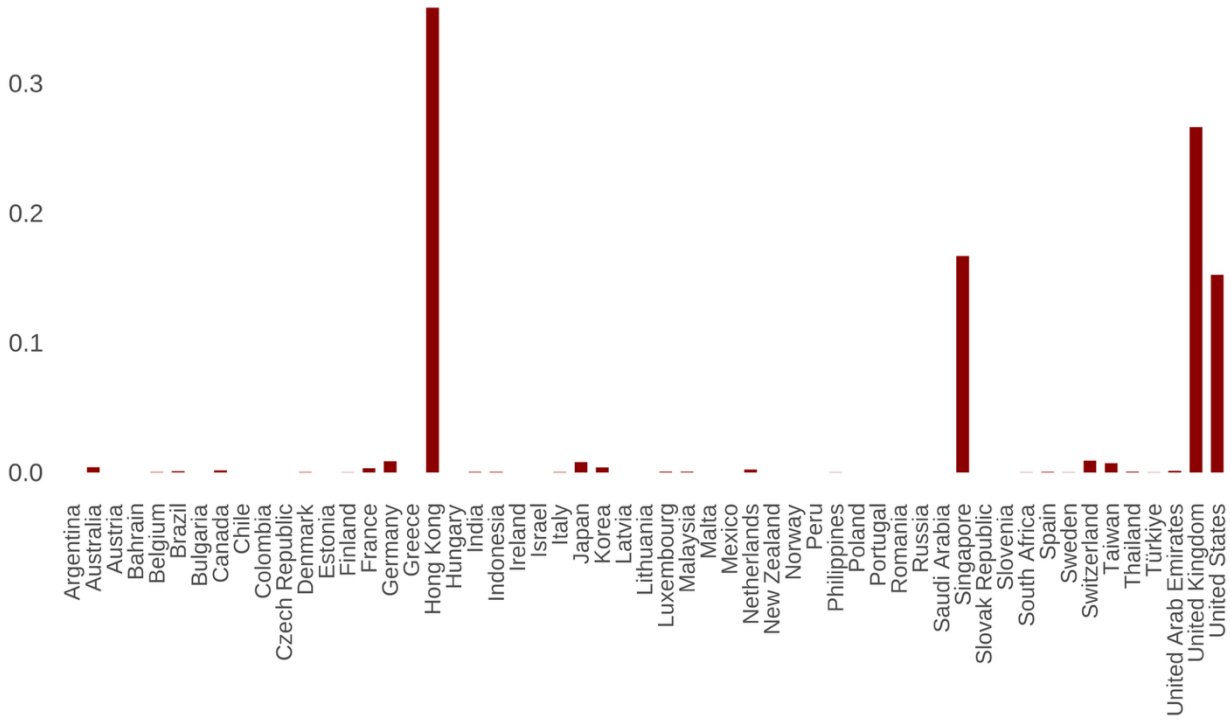
Across jurisdictions, the role of RMB trading varies substantially. For instance, in Hong Kong SAR the RMB accounts for more than 30% of all FX trading volume, while in Germany it accounts for less than 3% (Figure 2 shows the shares for all trading centers). This uneven pace of RMB internationalization has inspired a series of research articles on the topic and is the main focus in the subsequent analysis.

[10] Note that while 8.8% of all trades involve the RMB, in nearly all cases, the USD, and not the currency of the respective jurisdiction, is on the other side of the trade.

One can also look at the share each jurisdiction has in global RMB trading, which offers a different perspective. Measured this way, the distribution is more uneven (Figure 3). Indeed, more than 90% of all RMB trades take place in only 4 trading centers, i.e. Hong Kong SAR, Singapore, United Kingdom and the United States. While these locations represent the top four FX trading centers globally, their share in the global FX turnover is 75%, indicating that the RMB concentration is significantly higher than of other currencies.

The differences between the two representations of the data can be best illustrated by a few examples. For instance, in the United Kingdom nearly 30% of RMB is traded, when expressed as a share of all RMB trades. But since the UK is such a large market, the share of RMB, when expressed as a share of all trade in the UK, is less than 10%. Vice versa, the share of RMB in Indonesia is quite large. But since Indonesia is such a small market, it makes up for only a tiny part of total RMB trading.

Figure 3: Share of each jurisdiction in global RMB trading – $Y_{i,2025}$



Source: BIS Triennial Survey

Following Cheung et al (2019), the basic regression equation used to capture the short-term dynamics, i.e. the changes from RMB trading from the 2022 to 2025 survey, is the following:

$$\Delta Y_{i,25} = \alpha + \beta Z_{i,22} + \gamma \Delta X_{i,25} + \zeta Controls_{i,25} + \varepsilon_i. \quad (1)$$

It includes the key variables: $\Delta Y_{i,25} = Y_{i,2025} - Y_{i,2022}$, the change in RMB trading in the i-th financial center as a share of global RMB trading, from 2022 to 2025; $\Delta X_{i,25} = X_{i,2025} - X_{i,2022}$, where $X_{i,2025}$ is the financial center i's share of 2025 global currency trading, i.e. the ratio of its FX turnover to the global FX turnover. $Z_{i,22} = Y_{i,2022} - X_{i,2022}$ measures the degree to which RMB is over- or under-represented in a given center relative to its total share in the global FX markets. $Z_{i,22}$ can thus be interpreted as a "convergence variable." Thus, if the findings of convergence in global RMB trading of Cheung et al (2019), Cheung et al (2022) and Westermann (2025) still hold, we should expect $\hat{\beta}<0$ and $\hat{\gamma}>0$: the change in center i's share of global RMB trading is lower if the RMB accounts for a relatively high share of all FX trading in this center already, and is higher if the weight of center i in global FX trading has also increased.

In the present paper, we also take a long-run perspective with a detailed analysis of the long-term share of RMB trading in each trading center i, denoted by $W_{i,25}$.[11] In this case the regression equation, using the same control variables, is simply:

$$W_{i,25} = \alpha + \zeta Controls_{i,25} + \varepsilon_i. \quad (2)$$

3) Institutional background and choice of control variables

The evolution of RMB trading over the past two decades has been influenced by both market forces and policy decisions. While RMB internationalization has initially faced headwinds from tight capital controls (Tung et al, 2012), China has nonetheless pursued an explicit internationalization strategy since 2009, when the first cross-border settlement in RMB started. A further mile-stone was the inclusion of the RMB in the IMF SDR basket of currencies in 2016. The supporting policies to internationalize the RMB across trading centers included the opening of clearing banks, the establishment of swap-lines with the respective central banks and the allotment of investment-quotas and licenses to invest in the onshore market.

Until 2019, these licenses were referred to as RQFII licenses and were associated with an upper limit that differed by country. After 2019, the limits were removed, replaced by QFI licenses. These licenses are given to individual financial institutions and the number of licenses differ greatly across jurisdictions. While Germany only has 5 licenses, Hong Kong SAR has about

[11] Cheung and Yiu (2017), using data from 2013 Triennial Survey, also considered levels, but standardized by GDP, not by the size of FX trading in each center.

300. In the empirical analysis, we consider both the historical allocation RQFII licenses (from 2019) and the current QFIs. These policies - clearing banks, swap lines and investment licenses – are often referred to as "the three gifts",[12] and motivate the choice of our first control variables among the financial factors. Our hypothesis is that all of them should have a positive impact on RMB trading.

Beyond the three gifts, we also consider the inclusion of each jurisdiction in the CFETS (China FX trade system) basket of currencies. This basket is considered by the Peoples' Bank of China when setting the parity rate. It is indicative of the importance the authorities are placing on a stable exchange rate between China and the respective jurisdictions. We measure banking links with China with cross-border bank claims and liabilities vis-à-vis China of the respective jurisdiction, using the BIS Locational Banking Statistics. In our exercise, they are expressed as a share of all cross-border claims and liabilities in the respective jurisdiction. In one of the extensions, we also consider debt market links, measured with offshore RMB-denominated bonds outstanding, using BIS International Debt Securities Statistics, as a share of all international debt securities outstanding in a given jurisdiction.[13]

Among real factors, we consider the (log) distance between the respective trading center and China and the bilateral trade between China and the jurisdiction, as main indicators. In addition, we include a dummy variable on whether there is a free trade agreement and whether the jurisdiction is a member of the Belt-and-Road initiative. Finally, we consider the GDP growth rates of the jurisdiction and the existence of sanctions in either direction. Our hypothesis is that generally all these factors should have a positive impact, except for log distance and the sanctions variable, where we expect a negative effect.

Clearly, all variables, except the logged distance have a policy side to them. This makes them particularly interesting to study, as there has been an apparent policy shift at the 19th Party Congress in October 2017, when the Chinese Communist Party effectively shifted away from prioritizing a fully open capital account as a long-term, specific 2050 goal. While previous

[12] See Cheung (2022), as well as Lai (2021), for an overview of the institutional background and historical evolution of RMB trading.
[13] This choice is inspired by an early contribution of Ehlers and Packer (2013), who point out that trading of emerging market currencies, including the RMB, is positively related to the size of cross-border financial flows. In our paper these observations are more formally analysed in the regression framework of Cheung, McCauley and Shu (2019). See also the more recent contribution of Balmas and Howarth (2024).

agendas focused on market-oriented reforms, the 2017 congress under Xi Jinping emphasized "controlled" opening, economic security, and state-directed development, removing explicit commitments to capital account liberalization as a definitive target for the 2049/2050 centennial. When we identify a significant impact of one of these variables, an implication is that the variable could be used as a policy instrument by the authorities to steer the process of RMB internationalization.

4) Short-term dynamics

a) A benchmark regression

First, we replicate the results of previous studies which identified significant convergence dynamics in short-term changes of RMB turnover. Table 1 shows the estimation results for Equation (1) with data covering different survey periods. For the 2013-2016 period we confirm a significant convergence effect (Column (1)), documented in Cheung, McCauley and Shu (2019). We find a highly significant negative coefficient on $Z_{i,16}$ which indicates that in jurisdictions where the RMB was underrepresented the change in global share of RMB trading, ΔY, was larger, and vice versa. Also $\Delta X_{i,25}$ is significant, with a positive sign, reflecting the fact that in those jurisdictions that grew their share in the global FX market, the global share of RMB trading also increased. Columns (2) and (3) also confirm the results of previous studies. Convergence effects are found in the 2019-2022 period, consistent with Westermann (2025). Cheung et. al (2021) provide an explanation for insignificant coefficient on Z in the 2016-2019 period, by referring to the US-China trade tensions.

Table 1: Baseline regressions

	2016	2019	2022	2025	Cook
	(1)	(2)	(3)	(4)	(5)
	ΔY	ΔY	ΔY	ΔY	$\Delta Y_{i,\ 2025}$
ΔX	1.498***	0.383***	0.356	-0.452*	0.164*
	[0.223]	[0.100]	[0.277]	[0.238]	[0.0945]
Z	-0.220***	0.00337	-0.215***	0.0411**	-0.0369***
	[0.0244]	[0.0663]	[0.0204]	[0.0178]	[0.00843]
Constant	0.000162	6.06e-05	6.22e-05	-4.18e-05	-0.000221
	[0.000534]	[0.00114]	[0.000861]	[0.000359]	[0.000155]
Obs.	51	51	50	49	47
Adjusted R^2	0.859	0.162	0.793	0.457	0.274

Note: *** p<0.01, ** p<0.05, * p<0.1

For the most recent, 2022 to 2025, period, however, the same regression yields a seemingly puzzling result. Both coefficients, on Z and on ΔX, are of the opposite sign and statistically significant (Column (4)). Specifically, the results suggest that the share of RMB trading declined in locations that grew their overall share of global FX trading, but grew in centers where RMB was already overrepresented relative to other currencies captured even more RMB market share between 2022 and 2025. In the remainder of this section, we attempt to explain this puzzle.

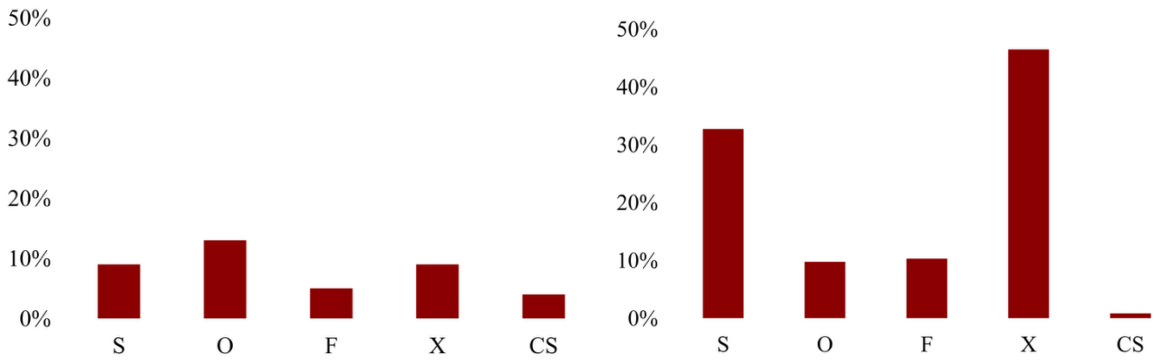
One possible cause of the puzzle is the effect of potentially large trading centers that experienced a further concentration in RMB trading. For example, top Asian trading hubs, Hong Kong SAR and Singapore, can have unique dynamics that are potentially different from other jurisdictions. Rather than handpicking the cross-sectional observations that may have caused the "surprising" coefficients, we use Cook's distance measure to identify the outlier observations which may have a disproportional impact on the regression results. This approach has been suggested recently in Bauer and Robbert (2025). Using 10% as a threshold we find that indeed Hong Kong SAR and Singapore can be considered outliers by this metric. In Column (5), using Cook's outlier procedure, we now see that both coefficients have switched signs: the coefficient on $\Delta X_{i,25}$ turned positive, and the sign on $Z_{i,2022}$ turned negative. The former is statistically significant at the 10% level and the latter at the 5% level. Both coefficients are in line with earlier findings in the literature. The only difference is that the coefficient on Z is substantially smaller, which indicates a reduced speed of convergence to the share of all currencies.

b) Differences across instruments

It is also insightful to examine, without excluding the Asian trading hubs, whether the significance of the convergence dynamics is different across instruments. From the Triennial Survey we have this information for spot, over-the-counter currency options, outright forwards, FX swaps and currency swaps. Since different instruments exhibit different shares in the total RMB turnover, one or two of them can have substantial effect on the overall results. Figure 4, left panel, shows RMB trading as a share of global trading by instrument. RMB has close to 10% share in global spot and FX swap trading, and considerably lower in that of outright forwards and currency swaps. And, it commands a considerably higher share of global options

trading, although the global options market is rather small in comparison to the other instruments.

Figure 4: RMB trading by instrument: shares in global turnover (left), in RMB turnover (right)



Source: BIS Triennial Survey

Table 2: Instruments

	S	O	F	X	CS
	(1)	(2)	(3)	(4)	(5)
	$\Delta Y_{i,\ 2025}$	$\Delta Y_{i,\ 2025}$	$\Delta Y_{i,\ 2025}$	$\Delta Y_{i,\ 2025}$	$\Delta Y_{i,\ 2025}$
$\Delta X_{i,\ 2025}$	0.396	0.265	0.853***	0.555***	0.140
	[0.608]	[0.451]	[0.0675]	[0.0945]	[0.176]
$Z_{i,\ 2022}$	-0.275**	-0.287*	-0.136***	0.0812***	-0.716***
	[0.120]	[0.148]	[0.0427]	[0.00788]	[0.0684]
Constant	0.000108	0.000449	-1.13e-05	7.63e-05	0.00224
	[0.00124]	[0.00313]	[0.000788]	[0.000437]	[0.00934]
Obs.	48	21	40	39	11
Adjusted R^2	0.588	0.289	0.885	0.954	0.973

Note: *** p<0.01, ** p<0.05, * p<0.1

Figure 4, the right panel, shows the share of each instrument in total RMB trading. From this representation it is clear that FX swaps account for the largest share of all RMB trading, with a percentage of more than 40%. Followed by the spot market, which makes up for a little over 30% of all RMB trading. Currency swaps represent the smallest segment of global RMB trading and the options and forward markets are in between, with a less than 10% share.

The benchmark regression can be estimated for each of these instruments separately (see Table 2). It is remarkable that despite the simplicity of the regression equation, the results across all but one instrument are consistent: the positive sign on $\Delta X_{i,25}$, and a negative one on $Z_{i,\ 2022}$, a confirmation of the convergence hypothesis even for the 2022 to 2025 period. Specifically, there is a statistically significant convergence effect at the 5 percent level in RMB spot and the

options trading, and at the 1 percent level in the forwards and currency swaps.[14] The only instrument exhibiting a positive (and significant at the 1 percent level) coefficient on Z are the FX swaps. This market is thus subject to unique dynamics, which we will examine further below.

c) Real and financial derivers of short-run dynamics

In this sub-section, we examine the contribution of economic drivers behind the short-run dynamics of RMB trading across centers, over-and-above that of the converge effect. Recall that studies that have looked at the earlier periods, from 2013 to 2022, in particular Westermann (2025), found very little evidence of either real or financial factors playing a role. However, for the 2022 to 2025 period, we do find that banking links with China also help explain the dispersion of RMB trading around the globe – a variable that has not been considered in the earlier literature.

First, we examine the impact of real economic factors, to find them insignificant, in line with prior research. We do so in the reduced sample that does not include the two statistical outliers, Hong Kong SAR and Singapore. The remainder of the sample has 47 observations, and Table 3 A reports the results, with each control variable included in the regression, one at a time. Indeed, the real factors are all statistically insignificant. None of them substantially contributes to the R-squared of the regression. The results support the view, that mainly global market forces, i.e. the convergence effect has been driving the distribution of RMB trading across trading centers.

However, the results differ when considering certain financial factors. Specifically, we find a significant contribution of banking links to China and cross-border access to onshore RMB trading (via CFETS). CFETS is significant at the 10% level, the variable that captures banking links with China is statistically significant at the 1% level. Controlling for the banking links with China substantially contributes to the R-squared of the regression, which goes up from 27.4% (without controls) to 68.8%. This is a substantial impact and is consistent with recent media report on bilateral bank lending as a means to internationalize the RMB.[15]

[14] The magnitude of the coefficient in the regressions reflects the speed of convergence. The speed is highest for currency swaps that grow from a rather low base, and is lowest for outright forwards.
[15] Oversea renminbi lending surges as China steps up campaign to de-dollarise, *Financial Times*, 24 October 2025.

Table 3 A and B: Control Variables – Short-term dynamics

A	(1) $\Delta Y_{i,\ 2025}$	(2) $\Delta Y_{i,\ 2025}$	(3) $\Delta Y_{i,\ 2025}$	(4) $\Delta Y_{i,\ 2025}$	(5) $\Delta Y_{i,\ 2025}$	(6) $\Delta Y_{i,\ 2025}$
$\Delta X_{i,\ 2025}$	0.157	0.161	0.167*	0.164*	0.165*	0.162*
	[0.0966]	[0.101]	[0.0964]	[0.0957]	[0.0951]	[0.0896]
$Z_{i,\ 2022}$	-0.0360***	-0.0370***	-0.0370***	-0.0369***	-0.0370***	-0.0376***
	[0.00822]	[0.00879]	[0.00847]	[0.00853]	[0.00822]	[0.00812]
Log Distance	0.000889					
	[0.000651]					
Δ Bilateral Trade		0.00591				
		[0.00993]				
Δ FTA			0.000200			
			[0.000204]			
Δ Belt & Road				2.58e-05		
				[0.000122]		
Δ GDP					0.000264	
					[0.00180]	
Trade Sanctions						0.000273
						[0.000313]
Constant	-0.00364	-0.000214	-0.000233	-0.000221	-0.000237	-0.000355
	[0.00255]	[0.000145]	[0.000163]	[0.000156]	[0.000201]	[0.000220]
Obs.	47	47	47	47	47	47
Adjusted R^2	0.294	0.265	0.259	0.257	0.257	0.271

Note: *** p<0.01, ** p<0.05, * p<0.1

B	(1) $\Delta Y_{i,\ 2025}$	(2) $\Delta Y_{i,\ 2025}$	(3) $\Delta Y_{i,\ 2025}$	(4) $\Delta Y_{i,\ 2025}$	(5) $\Delta Y_{i,\ 2025}$	(6) $\Delta Y_{i,\ 2025}$
$\Delta X_{i,\ 2025}$	0.157*	0.170*	0.171*	0.164*	0.156	0.183**
	[0.0903]	[0.0992]	[0.0989]	[0.0965]	[0.101]	[0.0802]
$Z_{i,\ 2022}$	-0.0342***	-0.0368***	-0.0476***	-0.0371***	-0.0380***	-0.0619***
	[0.00754]	[0.00846]	[0.0114]	[0.00857]	[0.00899]	[0.00869]
Δ Clearing Bank	0.000399					
	[0.000284]					
Δ QFI		0.0189				
		[0.0342]				
RQFII			-2.66e-08			
			[2.01e-08]			
Δ Swap Line				0.000315		
				[0.000378]		
Δ CFETS					0.0326*	
					[0.0191]	
Δ Claims Liab.						0.193***
						[0.0451]
Constant	-0.000383*	-0.000248*	-0.000153	-0.000235	-0.000206	-0.000155
	[0.000228]	[0.000143]	[0.000127]	[0.000171]	[0.000158]	[0.000142]
Obs.	47	47	47	47	47	32
Adjusted R^2	0.284	0.261	0.330	0.259	0.273	0.688

Note: *** p<0.01, ** p<0.05, * p<0.1

5) Long-term allocation

a) RMB's share in each trading center

Recent studies on the dispersion of offshore RMB trading focused entirely on explaining the changes from one Triennial survey to the next, but they have not attempted to explain the actual share of RMB in FX turnover across jurisdictions – a proxy for longer-run volume of RMB trading. This is a gap that we are trying to fill in this paper. In this setting, we find that economic and policy drivers really begin to show their significance, indicating that it takes more than three years for their effects to materialize.

We start by estimating equation (2), where the share of RMB trading, relative to all currencies in the same trading center is explained by the same set of control variables as in the previous section. Since variable W shows fewer statistical outliers when compared to the variable Y (see Figure 2), we start our analysis without excluding the two observations identified by the Cook's measure. As part of our analysis, we have also performed robustness tests, where the Cook distance measure is used to detect potential outliers in this regression.

Beginning with real economic drivers, we find evidence that international trade links indeed do matter for the long-run dispersion of RMB trading. Here, we find that the log distance to China, and the bilateral trade between China and the respective jurisdiction indeed matters for the share of RMB turnover (Table 4 A). Both variables have positive signs and are statistically significant at the 10% level. They explain 19.2% and 23.4% of the variance, as indicated by the R-squared of the regression. The other real factors are still insignificant. Quantitatively, our estimates imply that doubling the distance to China leads to approx. 6.6 percentage points less RMB trading. Also, 1% more trade in goods with China, leads to 0.276 percentage point more RMB turnover in the respective jurisdiction.

Turning to financial drivers, they tend to be even more significant and explain much higher share of cross-country variation in RMB trading. The variables Clearing Bank and RQFII quota, as well as the qualified investor licenses (QFI) and cross-border bank claims and liabilities vis-à-vis China, are statistically significant at the 1% level (Table 4 B). In particular the RQFII quota and the latter two variables, have a very high R-squared of 80.7%, 86.3% and 84.3%, respectively. For a simple bi-variate regression, this is a remarkably good fit. Also, economically, the estimates are significant. For instance, one percent more claims and liabilities

vis-à-vis China lead to 0.723% more RMB turnover and the issuance of 10 additional qualified investor licenses leads to about 1% more RMB turnover.[16]

Table 4 A and B: Control Variables – Long-term allocation

A	(1) $W_{i,2025}$	(2) $W_{i,2025}$	(3) $W_{i,2025}$	(4) $W_{i,2025}$	(5) $W_{i,2025}$	(6) $W_{i,2025}$
Log Distance	-0.0961*					
	[0.0529]					
Bilateral Trade		0.276*				
		[0.160]				
FTA			0.0469			
			[0.0304]			
Belt & Road				-0.0223		
				[0.0165]		
GDP					0.00423	
					[0.00319]	
Trade Sanctions						-0.0159
						[0.0149]
Constant	0.392*	-0.0112	0.0131***	0.0355**	-0.0910	0.0308**
	[0.209]	[0.0143]	[0.00411]	[0.0159]	[0.0917]	[0.0133]
Obs.	49	49	49	49	49	49
Adjusted R^2	0.192	0.234	0.109	0.021	0.000	0.000

Note: *** p<0.01, ** p<0.05, * p<0.1

B	(1) $W_{i,2025}$	(2) $W_{i,2025}$	(3) $W_{i,2025}$	(4) $W_{i,2025}$	(5) $W_{i,2025}$	(6) $W_{i,2025}$
Clearing Bank	0.0316***					
	[0.0111]					
RQFII		0.00106***				
		[5.27e-05]				
Swap Line			0.00111			
			[0.000723]			
CFETS				-0.0508		
				[0.0563]		
QFI					0.104***	
					[8.49e-03]	
Claims Liab.						0.723***
						[0.0123]
Constant	0.0018***	0.0099***	-0.00266	0.0269**	0.00615**	0.0120**
	[0.000508]	[0.00361]	[0.0132]	[0.0109]	[0.00256]	[0.00444]
Obs.	49	49	49	49	49	34
Adjusted R^2	0.051	0.807	0.237	-0.016	0.863	0.843

Note: *** p<0.01, ** p<0.05, * p<0.1

[16] Appendix Tabe A3 shows analogous regression results using two-stage least squares (2SLS), given concerns about potential endogeneity. The 2SLS point estimates are similar and the F-test indicates that lagged values of controls indeed valid instruments.

The dominance of financial drivers compared to real economy drivers is confirmed with a goodness of fit test of the respective regressions. In Figures 5 A and B, we illustrate how the actual observations compare to the fitted values and discuss the residuals of the regression, i.e., the trading centers that are not well explained by our first level-regression. We consider for each table, the variable which has the highest R-squared, the bilateral trade variable for the real economy factors, and the QFI variable for the financial factors.

Considering the fitted residual of the regression with real economy controls first, we find that the link between RMB trading and international goods trade is a rather loose. Some closely integrated Asian jurisdictions, such as Hong Kong SAR, Singapore and Taiwan display considerably more RMB trading than would be predicted by the existing trade relationships (Figure 5 A). On the other hand, Latin American trading locations like Chile and Peru, and those in Oceania, like New Zealand and Australia, have tight trade linkages with China, but display an amount of RMB trading that is smaller than it would be predicted based on these trade-links.

Turning to the fitted residuals of the regression with financial controls, we find a much tighter relationship between RMB trading and the underlying financial factor. Here, Indonesia and Taiwan have the largest positive residuals, indicating that for a given amount of qualified investor licenses, there is more RMB trading than would be predicted by our model, while in Great Britain and Singapore, there are negative residuals, indicating that there is less trading than predicted (Figure 5 B). Overall, the relationship and explanatory power of regression based on a single variable, is remarkably strong.[17]

The remainder of this section aims to explain the channels by which real and financial factors drive RMB internationalization. We do so by focusing of specific segments of the FX market: cross-border trading, trading in spot and trading in FX swaps. We also conduct a horse-race among variables, to pin down real and financial drivers which explain most of the variation in the data.

[17] In April 2025, the Triennial survey month, the dominance of financial factors may have been exacerbated by the financial volatility amid US tariff announcements and increased currency risk hedging (see Huang et al, 2025). To this end, we re-estimated the regression using 2022 data. The results, in Appendix Table A2, confirm the dominance of financial factors, in particular QFI, although their explanatory power is somewhat lower.

Figure 5 A: Actual-fitted residual plots – real economy explanatory variables

Note: based on regression results controlling for bilateral trade (Table 4 A, (2)).

Figure 5 B: Actual-fitted residual plots – financial explanatory variables

Note: based on regression results controlling qualified investor licenses (Table 4 B, (5)).

Table 5 A and B: Cross-border trades

A	(1) $W_{i,2025}$	(2) $W_{i,2025}$	(3) $W_{i,2025}$	(4) $W_{i,2025}$	(5) $W_{i,2025}$	(6) $W_{i,2025}$
Log Distance	-0.115**					
	[0.0559]					
Bilateral Trade		0.00331**				
		[0.00149]				
FTA			0.0529*			
			[0.0297]			
Belt & Road				-0.0198		
				[0.0172]		
GDP					0.00436	
					[0.00372]	
Trade Sanctions						-0.0212
						[0.0170]
Constant	0.470**	-0.0125	0.0167***	0.0387**	-0.0893	0.0389***
	[0.220]	[0.0126]	[0.00599]	[0.0157]	[0.106]	[0.0142]
Obs.	47	47	47	47	47	47
Adjusted R^2	0.240	0.301	0.122	0.006	-0.014	0.010

Note: *** p<0.01, ** p<0.05, * p<0.1

B	(1) $W_{i,2025}$	(2) $W_{i,2025}$	(3) $W_{i,2025}$	(4) $W_{i,2025}$	(5) $W_{i,2025}$	(6) $W_{i,2025}$
Clearing Bank	0.0370***					
	[0.0118]					
RQFII		0.0009***				
		[6.19e-05]				
Swap Line			0.00107			
			[0.000712]			
CFETS				0.00297		
				[0.00180]		
QFI					0.0996***	
					[8.00e-03]	
Claims Liab.						0.0067***
						[0.000189]
Constant	0.00229***	0.0156***	0.00284	0.0243***	0.0117**	0.0189**
	[0.000831]	[0.00577]	[0.0149]	[0.00821]	[0.00462]	[0.00694]
Obs.	47	47	47	47	47	35
Adjusted R^2	0.057	0.615	0.181	0.005	0.689	0.653

Note: *** p<0.01, ** p<0.05, * p<0.1

b) Cross-border trading

We start by focusing on cross-border trades, which are likely to be associated with real cross-border transactions in goods more often. As documented in Table 5 A, this is indeed the case. The results for real factors are stronger along several dimensions. First, the log distance and bilateral trade are more highly significant, now at the 5% level each. Furthermore, the R-squared of the regression is higher. For log distance, it increased from 19.2% to 24% and for

bilateral trade it increased from 23.4% to 30.1%. Thus, the share of the variance that can be explained by real factors in cross-border trades is larger than for total trades. Furthermore, there is one more variable that is statistically significant at the 10%, the dummy variable for free-trade agreements. Finally, the point-estimates are higher for all three statistically significant variables.

When considering the financial factors, reported in Table 5 B, the differences between total turnover and cross-border trades are not as large. Here, the same variables are statistically significant, and the point estimates – although slightly smaller – are generally quite similar to total turnover. The biggest difference is in the R-squared. In cross-border trading, there is a substantial decline that mirrors the increase in the R-squared for the real factors. The share of the variance that can be explained by QFI for instance is now only 68.9% and that of claims and liabilities is 65.3%. I.e., the main insight that financial factors matter more for RMB turnover remain unchanged, but the difference between real and financial factors is not so pronounced.

c) Differences across instruments

As in the previous section, we also highlight the differences across instruments when analyzing the level-regressions. We focus on the two most traded instruments, spot and FX swaps. In the spot market, the results are highly similar to the total turnover results reported in the previous section (see Table 6). The only difference is that for the long-run RMB trading share in spot, the variables for free-trade agreements and GDP growth are also statistically significant. Note, however, that the parameter estimates suggest that the impact of these variables is not very large. Signing a free trade agreement with one of the jurisdictions only increases the RMB turnover in that jurisdiction by one twentieth of a percentage point. The effect of an additional percent GDP growth is even smaller. The R-squared of the former is only 14.6%, and for the latter, it is close to zero. Therefore, these additional variables do not constitute a substantially different qualitative finding compared to the results reported for total turnover. Also, the effects of financial factors, reported in Table 6 B, are nearly the same.

Strikingly different from the previous results are the coefficients in the FX swap market regressions. Here, as documented in Table 7 A, the real factors do not play any role at all. Each of the variables is statistically insignificant. Financial factors, on the other hand, matter strongly (see Table 7 B), mirroring quite closely the findings for the aggregate. The unique pattern in

the swap market, that was already visible in the previous section, and the financial forces behind it, will be subject to further investigation in the following sub-section.

Table 6 A and B: Instruments – Spot

A	(1) $W_{i,2025}$	(2) $W_{i,2025}$	(3) $W_{i,2025}$	(4) $W_{i,2025}$	(5) $W_{i,2025}$	(6) $W_{i,2025}$
Log Distance	-0.107*					
	[0.0544]					
Bilateral Trade		0.306*				
		[0.169]				
FTA			0.0576*			
			[0.0320]			
Belt & Road				-0.0243		
				[0.0178]		
GDP					0.00658*	
					[0.00356]	
Trade Sanctions						-0.0194
						[0.0160]
Constant	0.439**	-0.0106	0.0152***	0.0410**	-0.150	0.0368**
	[0.215]	[0.0152]	[0.00450]	[0.0170]	[0.101]	[0.0144]
Obs.	49	49	49	49	49	49
Adjusted R^2	0.205	0.247	0.146	0.022	-0.002	0.006

Note: *** p<0.01, ** p<0.05, * p<0.1

B	(1) $W_{i,2025}$	(2) $W_{i,2025}$	(3) $W_{i,2025}$	(4) $W_{i,2025}$	(5) $W_{i,2025}$	(6) $W_{i,2025}$
Clearing Bank	0.0364***					
	[0.0120]					
RQFII		0.0011***				
		[3.51e-05]				
Swap Line			0.00126			
			[0.000753]			
CFETS				-0.0510		
				[0.0640]		
QFI					0.112***	
					[8.36e-03]	
Claims Liab.						0.775***
						[0.0154]
Constant	0.00283***	0.0131***	-0.00163	0.0313**	0.00922***	0.0168***
	[0.000972]	[0.00391]	[0.0138]	[0.0118]	[0.00299]	[0.00500]
Obs.	49	49	49	49	49	34
Adjusted R^2	0.060	0.813	0.260	-0.017	0.856	0.835

Note: *** p<0.01, ** p<0.05, * p<0.1

Table 7 A and B: Instruments – FX Swaps

A	(1) $W_{i,2025}$	(2) $W_{i,2025}$	(3) $W_{i,2025}$	(4) $W_{i,2025}$	(5) $W_{i,2025}$	(6) $W_{i,2025}$
Log Distance	-0.107					
	[0.0645]					
Bilateral Trade		0.312				
		[0.191]				
FTA			0.0477			
			[0.0359]			
Belt & Road				-0.0186		
				[0.0177]		
GDP					-0.000768	
					[0.00437]	
Trade Sanctions						-0.0154
						[0.0174]
Constant	0.431*	-0.0157	0.0126***	0.0323*	0.0446	0.0305*
	[0.253]	[0.0170]	[0.00431]	[0.0169]	[0.127]	[0.0159]
Obs.	43	43	43	43	43	43
Adjusted R^2	0.185	0.243	0.089	-0.000	-0.024	-0.008

Note: *** p<0.01, ** p<0.05, * p<0.1

B	(1) $W_{i,2025}$	(2) $W_{i,2025}$	(3) $W_{i,2025}$	(4) $W_{i,2025}$	(5) $W_{i,2025}$	(6) $W_{i,2025}$
Clearing Bank	0.0280**					
	[0.0121]					
RQFII		0.0011***				
		[7.66e-05]				
Swap Line			0.00122			
			[0.000848]			
CFETS				-0.0585		
				[0.0633]		
QFI					0.109***	
					[0.0122]	
Claims Liab.						0.772***
						[0.0205]
Constant	0.00221***	0.00711*	-0.00601	0.0274**	0.00290	0.00667
	[0.000811]	[0.00396]	[0.0157]	[0.0131]	[0.00281]	[0.00420]
Obs.	43	43	43	43	43	34
Adjusted R^2	0.015	0.828	0.238	-0.019	0.858	0.863

Note: *** p<0.01, ** p<0.05, * p<0.1

d) RMB FX swap trading: further controls for the hedging channel

Our findings for both short- and long-term dynamics suggest that the FX swap market has been unique in the 2025 triennial survey and merits further investigation. FX swaps play a crucial role among financial players. First, banks use FX swaps extensively to manage funding liquidity across currencies. And, along with banks, financial investors use FX swaps to hedge currency risk in international portfolio holdings, or to arbitrage across money markets (the cross-currency basis). FX swaps are used quite extensively to hedge currency risk of debt issued in a foreign currency, or to, more generally, convert the currency denomination of debt. To this end, in addition to banks' cross-border claims and liabilities, we added control variables for hedging of foreign currency debt and international portfolios. RMB bonds outstanding in international bond markets in each jurisdiction (so-called "Dim Sum bonds"), and international debt and equity portfolio claims and liabilities of residents of each jurisdiction vis-à-vis China. These variables are meant to capture the role of FX swaps as hedging instruments. Each variable is defined as a share of all cross-border bank claims, the stock of all international debt outstanding in each jurisdiction, and the corresponding portfolio claims and liabilities, respectively, in each jurisdiction.

Table 8 shows that the R-squared is indeed the largest for the bank claims and liabilities of banks which is the key financial variable used in all other regressions. But the point estimates are larger for the bond-variable. For Dim Sum bonds, consistent with hedging motive, a one percent higher share of RMB bonds in all international bonds in a given jurisdiction leads to 2.86% higher in trading in RMB FX swaps. However, the highest R-squared is for international portfolio claims and liabilities vis-a-vis China. A one percent higher share of equity claims and liabilities in total international portfolio equity claims and liabilities in each jurisdiction leads to 0.94% higher RMB FX swap turnover, so almost a one-for-one relationship, with an R-squared of 0.901. The result is also significant for debt portfolios, with a coefficient of 1.274 and R-squared of 0.880. Overall, the table clearly supports the idea that hedging activities during the month of April 2025 contributed to the determinants of RMB trading in the FX swap markets.

Table 8: FX Swaps – further controls for the hedging channel

	(1) $W_{i,2025}$	(2) $W_{i,2025}$	(3) $W_{i,2025}$	(4) $W_{i,2025}$	(5) $W_{i,2025}$
Claims Liab.	0.772***				
	[0.0205]				
Equity Claims Liab.		0.942***			
		[0.0622]			
Debt Claims Liab.			1.274***		
			[0.174]		
Dim Sum Bonds				2.866***	
				[0.167]	
Equity 24					0.526***
					[0.0715]
Constant	0.00667	0.00210	-0.00283	0.00679*	0.0123**
	[0.00420]	[0.00280]	[0.00294]	[0.00398]	[0.00465]
Obs.	34	36	34	43	40
Adj. R^2	0.863	0.901	0.880	0.825	0.751

Note: *** p<0.01, ** p<0.05, * p<0.1

e) Stepwise regression estimates ("a horse race")

So far, we have only considered univariate regressions estimates and have abstained from a multiple regression approach. The reason for this is that several of the real and financial factors are likely to be jointly determined, and empirically indeed display a large degree of collinearity. In this section we nevertheless follow a part of the literature that lets the variables "compete" and aims to identify which one is the most relevant among several alternatives. We start by estimating each equation (real and financial) with all possible control variables, as reported in Column (1) and (3) of Table 9. Next, we eliminate – step by step – the most insignificant variable from the regression. Columns (2) and (4) contain the surviving variables, which in the case of real factors, are the log distance and bilateral trade, and in the case of financial factors are QFI and claims and liabilities. In Column (5) we jointly estimate these 4 variables in a single regression and again eliminate the most insignificant variables until only two significant variables remain in the regression – bilateral trade and QFI. These two appear to be the most powerful predictors of RMB turnover. As these variables stand out, we also selected them for the graphical illustration of the actual-fitted-residual graphs, in section 4a).

Table 9: Stepwise regression

	(1) $W_{i,2025}$	(2) $W_{i,2025}$	(3) $W_{i,2025}$	(4) $W_{i,2025}$	(5) $W_{i,2025}$	(6) $W_{i,2025}$
Log Distance	-0.0649**	-0.0746*			-0.0233	
	[0.0309]	[0.0378]			[0.0248]	
FTA	-0.00348					
	[0.0211]					
Bilateral Trade	0.322*	0.227*			0.0803**	0.0828**
	[0.184]	[0.125]			[0.0365]	[0.0356]
Belt & Road	-0.0303					
	[0.0251]					
GDP	-0.00566					
	[0.00996]					
Trade Sanctions	0.0192					
	[0.0118]					
Clearing Bank			0.00553			
			[0.00630]			
RQFII			-0.000599			
			[0.000577]			
Swap Line			0.000543			
			[0.000323]			
CFETS			-0.177**			
			[0.0848]			
QFI			0.0844**	0.0635***	0.0550***	0.0976***
			[0.0383]	[0.0229]	[0.0170]	[0.00813]
Claims Liab.			0.437**	0.296*	0.278**	
			[0.174]	[0.153]	[0.134]	
Constant	0.393	0.281**	0.00414**	0.00871**	0.0895	-0.00319
	[0.341]	[0.139]	[0.00199]	[0.00346]	[0.0960]	[0.00292]
Obs.	49	49	34	34	34	49
Adjusted R^2	0.363	0.340	0.881	0.869	0.893	0.880

Note: *** p<0.01, ** p<0.05, * p<0.1

It is also interesting to consider the evolution of the R-squared in this regression table. While individually, the R-squared of bilateral trade and QFI are 0.234 and 0.863, respectively (see Table 4), the R-squared of a regression that includes both variables, is only 0.880– only slightly higher than QFI by itself. This means that the marginal R-squared of the bilateral trade variable is less than 2%, while the marginal R-squared of the QFI variable is more than 65%. A substantial difference, that again underscores the importance of financial and policy-related variables, when analyzing the total RMB turnover across trading centers.

6) Conclusion

In this paper, we have studied the drivers behind RMB internationalization. In a departure from the recent research on RMB internationalization in a similar empirical setting using BIS Triennial Survey data, we distinguish between short-term growth dynamics and long-term levels of RMB trading. From the perspective of short-term dynamics, we found a waning footprint of "pure" market forces and a stronger footprint of financial links with China. Specifically, the convergence of the RMB to the proportion of all other currencies traded in a given center, observed in earlier studies, has slowed, while financial links with China, especially of banking links, have grown in importance. Over the longer run, the role of both real and financial links with China is more evident. Here, the effects of policy relevant factors, which take time beyond the three-year interval of the Triennial Surveys to materialize, are clearly identifiable. Finally, the evidence of real and financial drivers is considerably stronger in 2025 compared to 2022 – highlighting the "shifting forces" at work.

One policy implication is that China indeed has the ability to manage and steer the internationalization process and is not, as often argued, a by-standing observer of market forces at work. Our results imply that a policy focused on intensifying trade relationships and signing free trade agreements helps promote RMB internationalization on the margin. However, the explanatory power of variables associated with international trade is dwarfed by financial policy variables. Specifically, allocating qualified investor licenses and establishing cross-border banking relationships with different jurisdictions appears to have been an effective tool to further promote international use of the RMB.

Further research may be able to address some of the limitations of this study. The paper did not intend to develop a forecasting model that predicts future developments in individual jurisdictions, or RMB trading as a whole. Also, the possible endogenous feedback between foreign exchange trading and real as well as financial factors has prevented us – despite the results being robust to an instrumental variables approach – to make stronger claims of causality. Here, a more structural model may prove useful to address the issue of causality. Nevertheless, despite the simplicity of our approach, the set of regression specifications reported in this paper overall yielded some interesting results that are plausible and remarkably robust.

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Table A1: Variable definitions and sources

Variable	Definition	Source
$Y_{i,2025}$	Ratio of jurisdiction i's average RMB daily turnover to the average global offshore RMB daily turnover in 2025	BIS Triennial Survey
$X_{i,25}$	Ratio of jurisdiction i's average RMB daily turnover to the average global FX daily turnover in 2025	BIS Triennial Survey
$Z_{i,22}$	Deviation of jurisdiction i's RMB share from its FX share in 2022	BIS Triennial Survey
$W_{i,25}$	Jurisdiction i's RMB trading as a share of its total FX trading in 2025	BIS Triennial Survey
$W_{i,22}$	Jurisdiction i's RMB trading as a share of its total FX trading in 2022	BIS Triennial Survey
Log Distance	The geophysical distance (ln(km)) between the jurisdiction's capital and Beijing, China	OpenStreetMap (https://www.distance.to/)
Bilateral Trade	Ratio of jurisdiction i's trade with China relative to global trade with China	IMF IMTS
FTA	Binary variable for the presence of a bilateral free trade agreement between the jurisdiction and China in 2025	Ministry of Commerce, People's Republic of China
Belt & Road	Binary variable for the participation in China's Belt and Road Initiative between 2022 and 2025	Nedopil (2025)
GDP	Log of jurisdiction i's GDP in 2024	World Bank
Trade Sanctions	Binary variable for the presence of trade sanctions between jurisdiction i and China in 2025	Global Sanctions Database
Clearing Bank	Binary variable for the presence of a local RMB clearing bank in 2025	News
RQFII	Approved RQFII quota amount as of March 2019 (RMB, 10 billions)	Cheung et al. (2021)
Swap Line	Size of the bilateral RMB swap line (RMB billions) between jurisdiction i and China in 2025	People's Bank of China
CFETS	Weight of jurisdiction i's currency in the CFETS currency basket in 2025	Oversea-Chinese Banking Corporation
QFI	Number of qualified foreign investor licenses issued in jurisdiction i (in hundreds) in 2025	China Securities Regulatory Commission
Claims Liab.	Ratio of cross-border bank claims and liabilities in jurisdiction i vis-a-vis China relative to total cross-border bank claims and liabilities of jurisdictions i in 2025	BIS LBS
Equity Claims Liab.	Ratio of equity claims and liabilities in jurisdiction i vis-a-vis China relative to all international equity claims and liabilities of jurisdictions i in 2025	IMF CPIS PFI
Debt Claims Liab.	Ratio of debt claims and liabilities in jurisdiction i vis-a-vis China relative to all international debt claims and liabilities of jurisdiction i 2025	IMF CPIS PFI
Dim Sum Bonds	Ratio of RMB bonds issued in jurisdiction i relative to all international bonds issued in jurisdiction i in 2025	BIS IDS
Equity	Ratio of Chinese portfolio investment in equity in jurisdiction i relative to global Chinese portfolio investment in equity in 2024	IMF PIP

Robustness Checks

Table A2: The 2022 Triennial Survey

Table A2.A	(1) $W_{i,2022}$	(2) $W_{i,2022}$	(3) $W_{i,2022}$	(4) $W_{i,2022}$	(5) $W_{i,2022}$	(6) $W_{i,2022}$
Log Distance	-0.0894*					
	[0.0450]					
Bilateral Trade		0.00242*				
		[0.00123]				
FTA			0.0621**			
			[0.0284]			
Belt & Road				-0.0188		
				[0.0144]		
GDP					0.00332	
					[0.00234]	
Trade Sanctions						-0.0101
						[0.0133]
Constant	0.362**	-0.00997	0.00784***	0.0304**	-0.0692	0.0249**
	[0.177]	[0.0107]	[0.00175]	[0.0137]	[0.0661]	[0.0106]
Obs.	50	50	50	50	50	50
Adjusted R^2	0.221	0.240	0.259	0.019	-0.013	-0.009

Note: *** p<0.01, ** p<0.05, * p<0.1

Table A2.B	(1) $W_{i,2022}$	(2) $W_{i,2022}$	(3) $W_{i,2022}$	(4) $W_{i,2022}$	(5) $W_{i,2022}$	(6) $W_{i,2022}$
Clearing Bank	0.0379**					
	[0.0165]					
RQFII		0.000837***				
		[3.68e-05]				
Swap Line			7.12e-06			
			[6.98e-06]			
CFETS				-0.000534		
				[0.000527]		
QFI					0.111***	
					[0.00797]	
Claims Liab						0.00479*
						[0.00281]
Constant	0.00584***	0.00956**	0.00954	0.0238**	0.00631**	0.0292***
	[0.00151]	[0.00415]	[0.00868]	[0.00989]	[0.00259]	[0.00783]
Obs.	50	50	50	50	50	34
Adjusted R^2	0.133	0.660	0.039	-0.013	0.757	0.360

Note: *** p<0.01, ** p<0.05, * p<0.1

Table A3: Two-stage least squares regressions

	OLS	2SLS	2SLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
Table A3.A	$W_{i,2025}$	$W_{i,2025}$	$W_{i,2025}$	$W_{i,2025}$	$W_{i,2025}$	$W_{i,2025}$
Log Distance	-0.0961*					
	(0.027)					
Bilateral Trade		0.281***				
		(0.071)				
FTA			0.060**			
			(0.018)			
Belt & Road				-0.022		
				(0.017)		
GDP					0.004	
					(0.006)	
Trade Sanctions						-0.033+
						(0.018)
Constant	0.392***	-0.012	0.008***	0.0354**	-0.0882	0.038**
	(0.105)	(0.011)	(0.009)	(0.0163)	(0.0924)	(0.011)
Obs.	49	49	49	49	49	49
Adjusted R^2	0.192	0.234	0.177	0.016	-0.012	-0.024

Note: *** p<0.01, ** p<0.05, * p<0.1

	2SLS	OLS	2SLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
Table A3.B	$W_{i,2025}$	$W_{i,2025}$	$W_{i,2025}$	$W_{i,2025}$	$W_{i,2025}$	$W_{i,2025}$
Clearing Bank	0.078**					
	(0.034)					
RQFII		0.001***				
		(0.000)				
Swap Line			0.000*			
			(0.000)			
CFETS				-0.049		
				(0.105)		
QFI					0.106***	
					(0.006)	
Claims Liab.						1.064***
						(0.184)
Constant	-0.030	0.010***	0.007	0.027*	0.006+	0.03
	(0.025)	(0.004)	(0.010)	(0.010)	(0.003)	(0.008)
Obs.	49	49	49	49	49	34
Adjusted R^2	-0.102	0.807	0.204	-0.016	0.863	0.650

Note: *** p<0.01, ** p<0.05, * p<0.1