

THE TRADE CREATION EFFECTS OF BILATERAL CURRENCY SWAPS AND THEIR HETEROGENEITY: AN EMPIRICAL TEST BASED ON THE SYNTHETIC CONTROL METHOD

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Abstract: *In recent years, amid profound adjustments in the global economic landscape, the trade creation effects of bilateral local currency swap agreements have garnered considerable attention. Based on panel data spanning 2001–2023 for China and 65 countries, this paper employs the synthetic control method to conduct empirical tests on 20 signatory countries, with a focused analysis of Pakistan, Australia, Indonesia, and Russia. The findings reveal that swap agreements exert a significant overall promotional effect on both imports and exports, yet notable cross-country heterogeneity exists; import responses are generally more rapid than export responses, and for certain countries the export effect lags for several years. Placebo tests corroborate the robustness of the conclusions. The study provides methodological reference for assessing the dynamic transmission of financial instruments to the real economy and offers empirical evidence for optimizing the layout of currency swap arrangements and enhancing the role of renminbi in denominating and settling transactions.*

Key words: *bilateral currency swap, trade creation effect, synthetic control method.*

JEL classification: *F31, F65*

1. INTRODUCTION

In recent years, the global economic landscape has undergone profound adjustments, and the international monetary system has exhibited a trend toward diversified evolution amid turbulence. Deepening renminbi (RMB)

internationalization and bolstering the construction of a robust trading nation through financial openness have become strategic pivots for China in building the new "dual circulation" development paradigm. The Recommendations of the Central Committee of the Communist Party of China on Formulating the Fifteenth Five-Year Plan for National Economic and Social Development, adopted at the Fourth Plenary Session of the 20th Central Committee, explicitly calls for "advancing RMB internationalization, elevating the degree of capital account liberalization, and establishing an independent and controllable RMB cross-border payment system," identifying the strengthening of the RMB as the foremost core element in accelerating the development of a financial powerhouse. This signifies that bilateral local currency swap agreements are no longer merely defensive instruments for coping with short-term liquidity shocks; they have been endowed with the institutional function of reducing cross-border transaction costs and leveraging trade creation effects.

The core mechanism of bilateral local currency swap agreements lies in providing local currency liquidity directly to the market, guaranteed by central bank credit, thereby circumventing exchange rate volatility risks associated with third-party currencies. From the perspective of micro-level transmission, swap agreements help alleviate corporate foreign exchange liquidity constraints and reduce currency conversion costs and exchange rate risk premiums. Institutional arrangements for bilateral currency swaps have been shown to effectively mitigate exchange rate fluctuations and attenuate their adverse impact on trade. However, the

transmission efficiency of this financial instrument is neither linear nor homogeneous; variations in trading partners' industrial structures and their degree of reliance on U.S. dollar settlement may lead to pronounced cross-country heterogeneity in trade creation effects^{Error! Unknown switch argument.}

Extant studies predominantly employ the trade gravity model to examine the trade effects of currency swaps. Yet, the gravity model struggles to precisely isolate counterfactual differences, and the signing of swap agreements may be endogenous to pre-existing trade linkages, potentially biasing estimation results. This raises the question: after controlling for endogeneity, do bilateral local currency swap agreements genuinely promote China's import and export trade with signatory counterparts? In light of this, this paper introduces the synthetic control method to construct data-driven "counterfactual" control units, thereby accurately evaluating the net trade effects of swap agreements.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

A currency swap refers to a financial transaction arrangement wherein two parties exchange equivalent amounts of different currencies based on an exchange rate agreed upon at inception, determine the respective applicable interest rates, and at the maturity of the agreement, swap back the principal amounts at the same exchange rate while paying the corresponding interest. As an important instrument for central banks to mitigate liquidity risks and promote the development of trade and investment, the trade promotion effects of currency swaps have accumulated a relatively rich body of research findings.

The majority of empirical studies indicate that bilateral local currency swap agreements exert a significant positive promotional effect on trade flows. Lin and Fu (2020) employed system GMM estimation to verify the trade creation effects of such agreements. Hao (2022) found that swap agreements can promote bilateral trade, with the effect being more pronounced in smaller economies^{Error! Unknown switch argument.}. Zhang et al. (2018), utilizing propensity score matching methods, discovered that the effect of agreements on partner countries' exports is greater than on their imports^{Error! Reference source not found.}. Li et al. (2023), applying a difference-in-differences approach, found that currency swaps promote bilateral trade by reducing trade costs^{Error! Reference source not found.}. Cao and Zeng (2019) observed that the stimulative effect of agreements is more prominent for countries with smaller trade volumes along the Belt and Road routes. Mohammed et al. (2024) confirmed that the effect

of currency swaps is more significant in countries with lower levels of financial development^{Error! Unknown switch argument.}

However, some scholars have raised doubts regarding the actual magnitude of the trade effects. McDowell (2019) pointed out that within a U.S. dollar-dominated system, RMB swaps may not substantially reduce transaction costs^[20]. Yang and Yang (2018) found that depreciation expectations and inertia in local currency settlement may attenuate the trade promotion effects^{Error! Reference source not found.}. Tang et al. (2022) noted that the Federal Reserve's signing of swap agreements takes into greater consideration the closeness of financial and political ties. Chey et al. (2020) discovered that currency swaps have not significantly increased the utilization ratio of the RMB in foreign exchange markets^{Error! Reference source not found.}

Further related research indicates that trade effects exhibit significant heterogeneity in terms of transmission mechanisms and constraining conditions. Deng et al. (2020), from the perspective of capital account constraints, demonstrated that swap agreements facilitate the advancement of RMB settlement in cross-border trade^{Error! Reference source not found.}. Huang et al. (2024) pointed out that swaps promote the RMB's trade invoicing function by stabilizing exchange rates and bolstering market confidence. Liu et al. (2021) found that agreements can reduce exchange rate volatility, with the policy effect remaining significant for approximately three. Jin and Liang (2025) confirmed that agreements promote the upgrading of export product quality by enhancing the quality of intermediate inputs^{Error! Reference source not found.}. Concurrently, Chen (2023) noted that swaps may affect the stability of cross-border capital inflows, giving rise to RMB liquidity risks^{Error! Reference source not found.}. Jung (2024) recommends prudently controlling swap quotas within a dollar-dominated system.

Reviewing the extant literature reveals that academic consensus has yet to be reached on whether agreements genuinely promote trade growth. This divergence suggests that the trade effects of currency swaps are highly contingent upon the specific characteristics of signatory countries, underscoring the necessity of employing more precise causal identification methods to delve into the cross-country heterogeneity of policy effects.

3. ANALYSIS OF THE CURRENT SITUATION

3.1. EVOLUTION OF BILATERAL LOCAL CURRENCY SWAP AGREEMENTS

The earliest central bank currency swaps date back to the Bretton Woods period, when the United States signed reciprocal agreements with multiple countries to maintain dollar exchange rate stability.

The 9/11 attacks and the subprime crisis accelerated the development of currency swaps, as the Federal Reserve entered into both unlimited and capped swap arrangements with major central banks, effectively alleviating dollar liquidity shortages.

In 2013, the Federal Reserve converted temporary arrangements into permanent standing facilities, establishing a Fed-centered currency union. China's RMB swap practice began with the Chiang Mai Initiative in 1997 and expanded rapidly after the subprime crisis. In December 2008, China and Korea signed the first RMB bilateral swap agreement, marking a shift toward local currency swaps. Since then, the function of swaps has evolved from crisis response to promoting economic and trade development and RMB internationalization.

3.2. CURRENT STATUS OF CHINA'S OUTWARD CURRENCY SWAP AGREEMENTS

As of the end of 2025, the People's Bank of China had signed bilateral local currency swap agreements with 32 countries and regions, totaling approximately RMB 4.52 trillion. The agreements primarily have a five-year term, with the average effective duration extended to 4.2 years. In 2022, the arrangement between the Chinese mainland and Hong Kong was upgraded to the first RMB standing swap facility. The outstanding amount of RMB drawn by foreign counterparts stood at RMB 94.2 billion, while the amount of foreign currency drawn by the Chinese side remained zero. The swap network is predominantly concentrated in Asia, followed by Europe, with priority given to neighboring regions with close economic and trade ties. Along with the advancement of the Belt and Road Initiative, the network has further extended to energy trading partners in the Middle East and beyond.

Table 1. Regional Distribution of China's Bilateral Currency Swap Agreements Signed

Continent	Country/Region
Asia	South Korea; Hong Kong, China; Malaysia; Thailand; Turkey; Singapore; Sri Lanka; Indonesia; Qatar; Uzbekistan; Tajikistan; Mongolia; Japan; Kazakhstan; Macao, China; Pakistan; Laos; United Arab Emirates; Saudi Arabia
Europe	Belarus; Iceland; Ukraine; United Kingdom; Hungary; Albania; European Central Bank; Switzerland; Russia; Armenia; Serbia
Africa	South Africa; Morocco; Egypt; Nigeria; Mauritius
Latin America	Argentina; Brazil; Suriname; Chile
Oceania	New Zealand; Australia
North America	Canada

Source: Compiled from publicly available information on the website of the People's Bank of China, as of September 2025

While the low utilization rate aligns with the precautionary nature of swap instruments, it also reflects persistent gaps in the accessibility and convenience of the RMB relative to the U.S. dollar. Certain agreements have yet to be fully translated into tangible increments in trade settlement and investment and financing activities—a phenomenon closely associated with factors such as the degree of RMB acceptance among signatory countries and the inertia of the dollar-based settlement system.

3.3. CURRENT STATUS OF CHINA'S IMPORT AND EXPORT TRADE

Over the past decade, China's foreign trade has traced a growth trajectory characterized by a moderate initial pace followed by acceleration and a counter-trend upswing. The total value of merchandise trade imports and exports rose from

USD 3.69 trillion in 2016 to USD 6.35 trillion in 2025. Within this total, exports increased from USD 2.10 trillion to USD 3.77 trillion, imports grew from USD 1.59 trillion to USD 2.58 trillion, and the trade surplus widened from USD 0.51 trillion to USD 1.19 trillion.

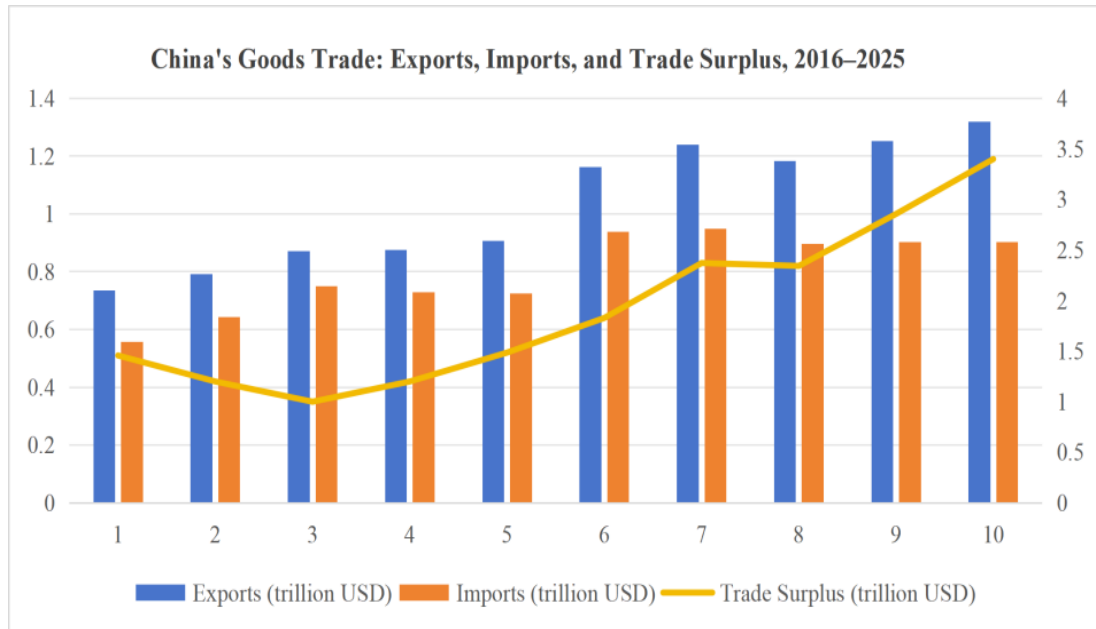
From 2020 to 2022, propelled by the restructuring of global supply chains, exports experienced robust growth; since 2023, however, the growth rate has moderated, signaling that foreign trade has entered a phase of structural adjustment. Over the ten-year period, the growth rate of exports has consistently outpaced that of imports, and the trade surplus has more than doubled.

While this underscores the significant role of exports in driving economic growth, it also highlights structural issues within the trade composition—namely, a relative emphasis on

export orientation and the need for stronger domestic demand-driven impetus. Overall, China's foreign trade retains considerable advantages in

scale and industrial resilience, yet it continues to face important tasks in optimizing the import structure and expanding domestic demand.

Figure 1. China's Total Import and Export Volume and Trade Surplus (2016–2025)



Source: General Administration of Customs of China

4. RESEARCH DESIGN

4.1. METHODOLOGY: SYNTHETIC CONTROL METHOD

This paper employs the Synthetic Control Method (SCM) proposed by Abadie et al. (2003) for empirical testing. The method operates within a counterfactual framework by constructing a "synthetic control group" for the treated country that has signed a currency swap agreement. This synthetic unit is designed to closely replicate the pre-intervention characteristics of the treated unit, thereby simulating the potential trade trajectory in the absence of the agreement and identifying the net policy effect. Compared with traditional difference-in-differences approaches that rely on the subjective assumption of parallel trends, the SCM derives an optimal control group through a data-driven weighted combination of units from the donor pool.

This approach effectively mitigates model specification bias and endogeneity concerns arising from non-random policy assignment, thereby providing a more robust econometric foundation for assessing the causal impact of policy shocks.

4.2. MODEL SPECIFICATION AND VARIABLE SELECTION

Taking China as the reporting economy, the SCM is employed to model the impact of currency swap events.

The core outcome variables are the natural logarithms of China's exports to and imports from the treated countries. All bilateral trade values are expressed in nominal U.S. dollars, as reported by the UN Comtrade database, and are used in logarithmic form. First, assume that over a given time period, a total of $J+1$ countries engage in bilateral trade with China, covering the time span $t \in [1, T]$.

Let exports and imports be denoted by ex_i and im_i , respectively. If country $i \in [1, J + 1]$ has signed a currency swap agreement with China, the corresponding export and import values are denoted as ex_{it}^I and im_{it}^I ; if no agreement has been signed, they are denoted as ex_{it}^N and im_{it}^N .

Second, assume that China and country i sign a currency swap agreement at time t_0 . During the pre-intervention period $[1, t_0]$, the agreement has not yet taken effect, and bilateral trade is unaffected by it. Hence, the following condition holds:

$$ex_{it}^N = ex_{it}^I; \quad im_{it}^N = im_{it}^I \#(1)$$

During the post-intervention period $[t_0 + 1, T]$, the currency swap agreement is in force. The treatment effects are defined as:

$$\alpha_{it} = ex_{it}^I - ex_{it}^N,$$

$$\beta_{it} = im_{it}^I - im_{it}^N$$

Since ex_{it}^N and im_{it}^N are unobservable in the post-intervention period, they are estimated using the factor model approach of Abadie et al. (2010):

$$ex_{it}^N = \rho_t + \theta_t Z_i + \lambda_t \mu_i + \epsilon_{it}$$

$$im_{it}^N = \rho_t + \theta_t Z_i + \lambda_t \mu_i + \epsilon_{it} \#(2)$$

where ρ_t represents the common time trend; Z_i is a vector of exogenous predictor variables that are time-invariant and unaffected by the policy, with time-varying coefficients θ_t ; $\lambda_t \mu_i$ captures unobserved interactive fixed effects, with λ_t being a common shock factor and μ_i the country-specific heterogeneous response coefficient; and ϵ_{it} is a random disturbance term with zero mean.

Third, regarding variable selection, the predictor variables encompass economic and institutional factors that may influence bilateral trade, including: GDP growth rate, GDP per capita (in logarithms), industry value added as a share of

GDP, net foreign direct investment inflows (as a percentage of GDP), inflation rate, gross capital formation (as a percentage of GDP), the Chinn-Ito index of capital account openness, exports as a share of GDP, imports as a share of GDP, real interest rate, and gross national income (in logarithms). These variables help ensure that the control units approximate the treated unit as closely as possible at the macroeconomic level, thereby reducing the risk of omitting important influencing factors. All data are sourced from the World Bank's World Development Indicators (WDI) database, the International Monetary Fund's International Financial Statistics (IFS) database, the United Nations Commodity Trade Statistics Database (UN Comtrade), and publicly available data for the Chinn-Ito index.

Fourth, based on whether a country has signed a currency swap agreement with China, the $J + 1$ countries are divided into a treatment group (one unit) and a control group (J units). A synthetic control group is constructed by assigning non-negative weights $W = (w_2, \dots, w_{J+1})'$ to the control group countries, subject to the constraint $\sum_{j=2}^{J+1} w_j = 1$. The export value of the synthetic control group can be expressed as:

$$\sum_{j=2}^{J+1} w_j ex_{jt} = \rho_t + \theta_t \sum_{j=2}^{J+1} w_j Z_j + \lambda_t \sum_{j=2}^{J+1} w_j \mu_j + \sum_{j=2}^{J+1} w_j \epsilon_{jt} \#(3)$$

The expression for imports is analogous. Ideally, there exists an optimal weight matrix W^* such that the outcome variables of the synthetic control group exactly match those of the treated unit during the pre-intervention period:

$$\sum_{j=2}^{J+1} w_j^* ex_{jt} = ex_{1t}, \quad \sum_{j=2}^{J+1} w_j^* im_{jt} = im_{1t} \#(4)$$

$$\sum_{j=2}^{J+1} w_j^* Z_j = Z_1 \#(5)$$

In practice, the approximately optimal weights are obtained by minimizing the distance between the feature vector of the treated unit and that of the synthetic control group:

$$W^* = \arg \min_W (X_1 - X_0 W)' V (X_1 - X_0 W) \#(6)$$

where X_1 is the pre-intervention feature vector of the treated unit, X_0 is the pre-intervention feature matrix of the control units, and V is a symmetric positive definite matrix that reflects the relative

importance of each feature variable in the fitting procedure. Having obtained the optimal weights \hat{W} , $\sum_{j=2}^{J+1} \hat{w}_j ex_{jt}$ serves as an unbiased estimator of $\sum_{j=2}^{J+1} \hat{w}_j im_{jt}$ serves as an unbiased estimator of im_{1t}^N . Consequently, the net trade effects of the currency swap agreement are given by:

$$\hat{\alpha}_{1t} = ex_{1t}^I - \sum_{j=2}^{J+1} \hat{w}_j ex_{jt}$$

$$\hat{\beta}_{1t} = im_{1t}^I - \sum_{j=2}^{J+1} \hat{w}_j im_{jt} \#(7)$$

If $\hat{\alpha}_{1t} > 0$ or $\hat{\beta}_{1t} > 0$, it indicates the existence of a trade creation effect in exports or imports, respectively; otherwise, it suggests a trade diversion effect.

5. EMPIRICAL RESULTS AND ANALYSIS

5.1. SYNTHETIC COUNTRIES AND WEIGHTS

To construct the "counterfactual" state for the treatment group, this paper assigns optimal weights to the control group countries in a data-driven manner according to Equation (6). Separate weight combinations are fitted for the import and export dimensions for Pakistan, Australia,

Indonesia, and Russia, with the specific results presented in Table 2. In terms of weight distribution, the synthetic counterpart for each country is constructed from a weighted combination of multiple control group countries, and the distribution of weights is relatively dispersed. This avoids the scenario where a single country dominates the synthetic results, indicating that the construction of the synthetic control groups exhibits satisfactory robustness.

Table 2. Control Group Country Weights

Pakistan				Australia			
Import		Export		Import		Export	
Country	Weight	Country	Weight	Country	Weight	Country	Weight
BEN	0.391	BEN	0.571	AGO	0.087	AZE	0.056
IND	0.29	BGD	0.24	AZE	0.09	BHS	0.074
RWA	0.008	IND	0.014	GEO	0.031	COL	0.093
SLB	0.016	SLE	0.002	JPN	0.781	IND	0.029
SLE	0.03	USA	0.173	MKD	0.006	JPN	0.546
TZA	0.102			VNM	0.005	MOZ	0.039
USA	0.162					PAN	0.037
						SLB	0.031
						USA	0.095
Indonesia				Russia			
Import		Export		Import		Export	
Country	Weight	Country	Weight	Country	Weight	Country	Weight
GTM	0.001	AGO	0.099	AGO	0.308	AGO	0.105
IND	0.333	DZA	0.173	AZE	0.037	COL	0.102
JPN	0.096	IND	0.034	BHS	0.028	IND	0.116
KEN	0.021	JPN	0.329	IND	0.142	MEX	0.305
OMN	0.057	PHL	0.357	JPN	0.463	USA	0.268
PER	0.073	VNM	0.009	SLE	0.023	VNM	0.105
PHL	0.385						
PRY	0.035						

Source: authors

5.2. POLICY EFFECT TESTING

Among the 20 signatory countries with complete data, approximately half exhibit satisfactory fitting performance, with the policy effects being particularly pronounced for Pakistan, Australia, Indonesia, and Russia.

For the remaining countries, the effects remain difficult to assess reliably, either because the agreements took effect relatively late and the post-intervention window is insufficient, or because the pre-intervention fit is inadequate.

The following presents the empirical results with these four countries as representative cases.

According to Equation (7), the policy effect is measured by the difference between actual trade volume and its synthetic counterpart, the sign and magnitude of which reflect the trade creation or trade diversion effects of the currency swap.

After the China-Pakistan currency swap took effect (2011), both import and export net effects (α_1 , β_1) remained consistently positive, with exports exceeding the synthetic counterfactual by 76.06%.

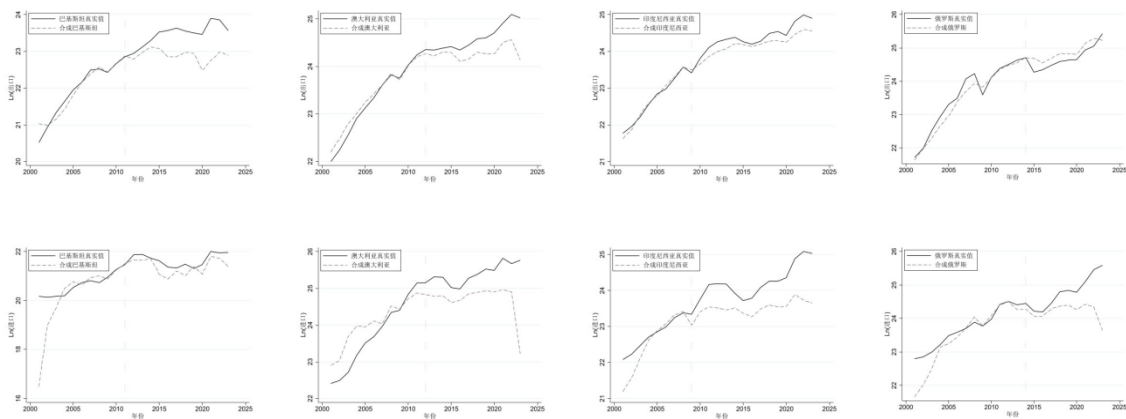
Following the China-Indonesia swap (2009), the import net effect turned significantly positive in the same year, surpassing the synthetic value by 299.97% by 2023; the export net effect became positive in 2010 and peaked at 41.82% in 2021,

indicating a rapid import response and a roughly one-year lag for exports.

After the China-Australia swap took effect (2012), both α_1 and β_1 increased steadily year by year, with exports exceeding the synthetic value by 143.44%; the import effect was rapid, while the export effect showed a slight initial lag but remained significant over the long term.

Following the China-Russia swap (2014), the import net effect remained consistently positive and expanded annually; the export net effect was negative from 2015 to 2022 but turned positive in 2023, exceeding the synthetic value by 22.64%, reflecting sustained import significance and a pronounced but recovering export lag.

Figure 2. Comparison of Growth of Log Values and Fitted Values of Import and Export Volumes Among China-Pakistan, China-Australia, China-Indonesia, and China-Russia



Source: authors

5.3. ROBUSTNESS CHECKS

To rule out confounding factors unrelated to the entry into force of bilateral currency swaps, this paper conducts robustness checks on the empirical results using placebo tests and permutation tests.

The distinction between these two testing procedures lies primarily in the selection of control units: placebo tests select control group countries that are similar to the treated unit, whereas permutation tests randomly select control group countries for comparison.

Following the approach of Abadie et al. (2010)^{Error! Reference source not found.}, this paper designates all control countries that received positive weights in constructing the synthetic control for a given treated country as the placebo subjects.

Since these weighted countries each contribute to the fit of the synthetic control group and their trade characteristics are relatively similar to those of the treated country, conducting placebo tests on them provides a more comprehensive verification of the reliability of the conclusions. Synthetic control analyses are performed on these placebo countries separately according to the procedures outlined in Equations (2) through (7).

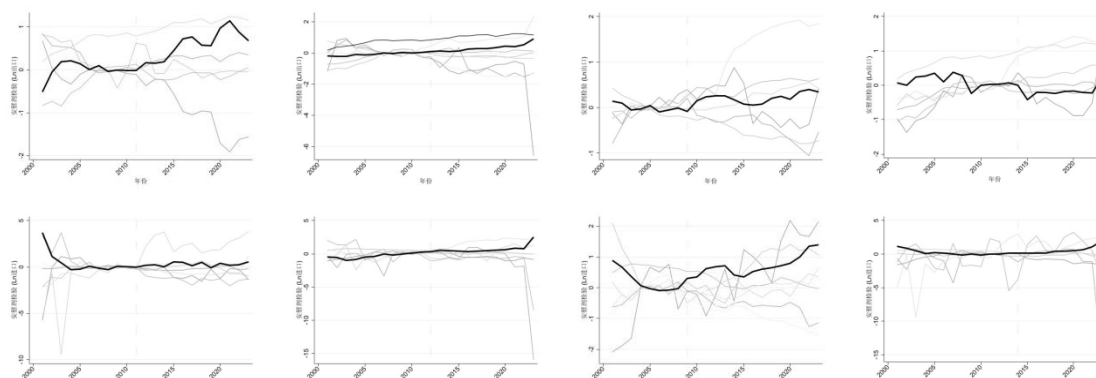
The results are presented in Figures 3 : for all placebo countries, following the imposition of a "pseudo policy shock," neither the actual values nor the fitted values exhibit a trade growth trajectory similar to that observed in the treated countries.

The actual and synthetic values either remain largely coincident or diverge in markedly different directions.

This finding strongly supports the conclusion that bilateral currency swap agreements are the core driver of the growth in bilateral trade between China and Pakistan, China and Indonesia, China

and Australia, and China and Russia, thereby substantially enhancing the robustness of the research conclusions

Figure 3. Placebo Test for Imports and Exports of Weighted Countries: China-Pakistan, China-Australia, China-Indonesia, and China-Russia



Source: authors

6. CONCLUSIONS AND POLICY RECOMMENDATIONS

6.1. CONCLUSIONS

Based on panel data of China and 65 countries from 2001 to 2023, this paper employs the synthetic control method to examine the trade creation effects of bilateral currency swap agreements.

The findings are as follows: First, swap agreements generally promote China's import and export trade, although the magnitude and time lag of the effects vary across countries. Second, the trade effects exhibit notable cross-country heterogeneity: import responses are rapid, while differences in export effects are closely related to the trade structure and degree of dollar dependence of the contracting countries.

Third, placebo tests support the robustness of the conclusions.

6.2. POLICY RECOMMENDATIONS

First, implement differentiated strategies for the deployment of swap agreements. The empirical results indicate that import and export effects are both significant for Pakistan and Australia, whereas Indonesia and Russia exhibit strong import effects but notable lags in export performance. Going forward, differentiated strategies should be adopted based on the characteristics of signatory countries: for Belt and Road partner countries and RCEP members with strong trade complementarity and high acceptance of local currencies, swap arrangements should be prioritized and expanded, with a particular focus

on First, implement a differentiated layout strategy. Prioritize the expansion of swap arrangements with countries that have strong trade complementarity; moderately increase swap quotas and extend agreement durations for countries with significant import effects but lagging export effects; and focus on enhancing ease of use for countries with balanced effects. Second, strengthen cross-border financial infrastructure and supporting facilities. Accelerate the interconnection between CIPS and the payment systems of contracting countries, and introduce exchange rate hedging instruments for countries with lagging export effects^[24]. Third, establish a dynamic evaluation mechanism to regularly assess the effectiveness of swap agreements and make timely adjustments; agreements with notable effects may be upgraded to standing arrangements.

REFERENCES

- [1] Abadie, A., Diamond, A., & Hainmueller, J. (2010). Synthetic control methods for comparative case studies: Estimating the effect of California's tobacco control program. *Journal of the American Statistical Association*, 105(490), 493–505. <https://doi.org/10.1198/jasa.2009.ap08746>
- [2] Abadie, A., & Gardeazabal, J. (2003). The economic costs of conflict: A case study of the Basque Country. *American Economic Review*, 93(1), 113–132. <https://doi.org/10.1257/000282803321455188>
- [3] Baba, N., Packer, F., & Nagano, T. (2009). The spillover of money market turbulence to FX swap and cross-currency swap markets. *BIS Quarterly Review*, March, 73–86.

- [4] Cao, Q., & Zeng, G. (2019). The Impact of Bilateral Swap Agreements on Bilateral Trade: An Empirical Study Based on Countries Along the Belt and Road. *Journal of North China Electric Power University (Social Sciences Edition)*, (04), 36-44.
- [5] Chen, L., Gu, Y., & Li, Y. (2023). Bilateral Currency Swaps and “Sudden Stops” of Cross-Border Capital Inflows. *South China Finance*, (12), 19-37.
- [6] Chey, H. K., Kim, G. Y., & Lee, D. H. (2019). Which foreign states support the global use of the Chinese renminbi? The international political economy of currency internationalisation. *The World Economy*, 42(8), 2403–2426.
- [7] Deng, F., Yang, T., & Huo, W. (2020). Bilateral Currency Swap Agreements and Cross-Border Trade Settlement in RMB: An Empirical Study from the Perspective of Capital Account Constraints. *International Trade Issues*, (06), 160-174.
- [8] Gao, H. (2024). Diversification Trends in the International Monetary System and the Role of the Euro. *International Finance*, (08), 7-10.
- [9] Goldberg, L. S., & Tille, C. (2016). Micro, macro, and strategic forces in international trade invoicing: Synthesis and novel patterns. *Journal of International Economics*, 102, 173-187.
- [10] Hao K, Han L. (2022). The Impact of China's Currency Swap Lines on Bilateral Trade[J]. *International Review of Economics & Finance*(81):173-183.
- [11] Hu, H. (2012). Motivation Analysis of China's Currency Swap Agreements. *Studies of International Finance*, (06), 12-19.
- [12] Huang, X., Zhang, Z., & Bian, Y. (2024). Research on RMB Trade Pricing under the Background of “De-dollarization”: From the Perspective of Bilateral Currency Swap Agreements. *Studies of International Finance*, (01), 15-26.
- [13] Jin, X., & Liang, T. (2025). Can Bilateral Currency Swap Agreements Promote the Quality Upgrading of China's Export Products? *World Economy Studies*, (02), 120-134+137.
- [14] Jung, H. (2024). Rethinking currency swap lines in the dollar-dominant international monetary system. *The World Economy*, 47(2), 305-328.
- [15] Li, X., Shi, X., & Zhai, Y. (2022). Currency Swaps, Local Currency Settlement and Bilateral Trade. *Nankai Economic Studies*, (10), 127-142+161.
- [16] Li, Y. (2022). The Development of the Situation Puts Forward New Requirements for Banking Reform. *Modern Financial Guide*, (08), 7-8.
- [17] Lin, L., & Fu, S. (2020). A Study on the Driving Factors of China's Currency Swap Agreements and the Linkage Effect of Bilateral Trade. *World Economy and Politics Forum*, (01), 128-149.
- [18] Liu, W. (2013). Mechanism Study on China-ASEAN Currency Swaps and Promoting RMB Internationalization. *Guangxi Social Sciences*, (08), 29-34.
- [19] Liu, Z., Zhang, J., & Zhang, H. (2021). Bilateral Currency Swap Agreements and China's Export Growth: A Perspective of Exchange Rate Volatility Risk. *Asia-Pacific Economy*, (02), 27-36.
- [20] McDowell D. (2019). The Financial Statecraft of China's Bilateral Swap Agreements[J]. *Development and Change*, 50(1):122-43.
- [21] Mohammed, S., et al. (2024). Currency swaps and international trade: Evidence from a structural gravity model. *Journal of International Money and Finance*, 142, 103021.
- [22] Tang, L., Li, K., & Ouyang, Y. (2022). Can the Federal Reserve Effectively Perform the Function of International Lender of Last Resort? — An Analysis Based on the Selection of Currency Swap Partners and Influencing Factors. *World Economy and Politics*, (08), 106-129+158-159.
- [23] Xu, M. (2016). Central Bank Currency Swaps: Impact on the International Monetary System. *Social Sciences*, (03), 51-64. DOI:10.13644/j.cnki.cn31-1112.2016.03.005.
- [24] Yang, Q., & Yang, Q. (2018). Foreign Exchange Reserves, Bilateral Currency Swaps and Liquidity Shocks. *Finance & Trade Economics*, 39(11), 67-82.
- [25] Zhang, C., Gan, J., & Tang, B. (2018). A Study on the Trade Effects of RMB Swap Agreements: With an Assessment of the Impact on Promoting the Belt and Road Initiative. *Financial Regulation Research*, (11), 50-64.

- [26] Zhang, L. (2024). RMB Internationalization and the Construction of a Financial Power. *China Foreign Exchange*, (05), 16-19.
- [27] Zhang, M. (2012). Global Currency Swaps: Current Situation, Functions, and Potential Directions for International Monetary System Reform. *International Economic Review*, (06), 65-88+5.
- [28] Zhang, M., & Wang, Z. (2024). An Analysis of the Path to Steadily and Prudently Advancing RMB Internationalization. *Opening Guide*, (02), 7-18+32.
- [29] Zhou, J. (2015). An Empirical Analysis of the Impact of Currency Swaps on China-South Korea Bilateral Trade: Based on the Trade Gravity Model. *Times Finance*, (12), 22+25.
- [30] Zhu, M., Zhou, Y., & Zheng, L. (2020). A Study on the Economic Spillover Effects of China's Monetary Policy on Countries or Regions Along the Belt and Road. *World Economy Studies*, (06), 89-105+137



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