

AN EMPIRICAL ASSESSMENT OF MACROECONOMIC AND GEOPOLITICAL DETERMINANTS OF CHINA-U.S. EXPORT DYNAMICS (2004-2023)

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Abstract: *In the context of rising geopolitical tensions, trade fragmentation, and the U.S.–China trade war, understanding the drivers of bilateral export dynamics is increasingly important. This study empirically examines the impact of macroeconomic, financial, and geopolitical factors on China's exports to the United States from 2004 to 2023. Using an OLS econometric model, it analyzes the effects of the exchange rate, foreign exchange reserves, gold prices, foreign direct investment, the U.S. dollar usage index, and global trade volume on export performance. The results show that exchange rate fluctuations and global trade conditions significantly affect Chinese exports. Appreciation of the Chinese currency against the U.S. dollar reduces exports, highlighting the role of price competitiveness. Increases in foreign reserves and foreign direct investment positively correlate with export capacity, while higher gold prices, indicating global instability, tend to decrease export volumes. A declining U.S. dollar usage index, reflecting dedollarization trends, also negatively affects export growth. The intensified trade war period (2018–2019) notably slowed China's export expansion to the U.S. Policy implications stress the need for a stable exchange rate, accumulation of foreign reserves, and diversification of trade partners to mitigate deglobalization and trade conflict risks. Overall, this research provides empirical evidence to inform policies supporting sustainable export growth.*

Key words: *Chinese exports, trade war, deglobalization, exchange rate, foreign direct investment.*

JEL classification: *F1, F3, F6.*

1. INTRODUCTION

The modern global economy is in a state of constant transformation; trade relations, production methods, and capital flows among countries are continuously evolving. According to David Ricardo's theory of comparative advantage (1817), each country should produce those goods in which it achieves a relatively largest gain, or the smallest loss, measured by labor inputs. However, in recent decades, this classical idea of free trade has been increasingly undermined by the rise of protectionism and the emergence of trade wars which restrict the free movement of goods and capital worldwide.

The New Trade Theory (Krugman, 1980) broadens the traditional understanding of trade relations by emphasizing the role of economies of scale, intra-industry competition, and industrial policies as key factors shaping trade structures. Within this framework, countries compete not only through prices but also through technology, productivity, and market size.

The theory of Global Value Chains (GVCs) explains that modern production has become internationally fragmented with different stages of the production process carried out across multiple countries (Gereffi & Fernandez-Stark, 2016). When trade barriers or geopolitical risks emerge, firms increasingly adopt strategies such as reshoring, nearshoring, and the China+1 approach in order to diversify production and strengthen the resilience of supply chains.

Over the past decade, the global economy has experienced a series of tectonic shifts. The

aftermath of the Great Recession (2008), the U.S.–China trade war (2018), the COVID-19 pandemic (2020) and the Russia–Ukraine conflict (2022) have collectively accelerated the process of deglobalization. This phenomenon implies a slowdown or even a reversal of global economic integration generating new economic and geopolitical equilibria.

As noted by Baldwin (2024) and van Bergeijk (2019), the contemporary world is not moving toward the end of globalization but rather toward its transformation into a polycentric system characterized by increasing regionalization of trade and new trade corridors linking Asia, Europe, and Africa.

The study of the U.S.–China trade war is therefore of crucial importance, as its consequences extend to global growth, inflation, currency flows and the stability of financial markets. This conflict is not merely a bilateral dispute but a systemic shock that has redefined global value chains. According to Fajgelbaum et al. (2024) and Huang et al. (2023), tariff restrictions have led not only to a decline in exports but also to a structural reallocation of trade and the emergence of new competitive patterns among Asian economies.

Furthermore, the process of deglobalization has direct implications for monetary policy, foreign exchange reserves, and currency stability, making this line of research highly relevant for policymakers and investors alike.

Existing literature provides valuable insights into the structural effects of the trade war (Dang et al., 2023; Iyoha et al., 2025; Luo, 2023). However, most studies have focused on real trade flows and sectoral effects while financial and macroeconomic transmission channels remain underexplored. Few studies integrate the roles of foreign exchange reserves, gold prices, the use of the U.S. dollar in international payments (SWIFT index) and foreign direct investment (FDI) as mediating variables explaining China's export dynamics under trade uncertainty.

Accordingly, this study addresses a clear research gap by linking the real and financial sectors in the analysis of China's export trends.

The main objective of this paper is to examine the impact of macroeconomic and financial determinants on China's exports within the context of the trade war and global geopolitical shocks during the period 2004–2023. Using the Ordinary Least Squares (OLS) econometric model, the research analyzes the relationships between exports and key variables such as the exchange

rate, foreign exchange reserves, gold prices, the use of the dollar (SWIFT index) and inflows of foreign direct investment (FDI).

The novelty of this paper lies in the integration of financial indicators into the analysis of trade flows representing an extension of the existing empirical framework. The contribution is twofold: (1) Theoretical, by combining real and financial determinants in explaining export performance; and (2) Practical, by providing an analytical basis for economic policies aimed at strengthening China's resilience under conditions of trade and financial instability.

The paper first reviews the theoretical and empirical context of trade wars and deglobalization, followed by a description of the methodology and presentation of econometric results. The final section discusses the implications for economic policy and draws key conclusions.

2. LITERATURE REVIEW

Over the past decade, the trade war between the United States and China has become one of the most extensively studied phenomena in international economics.

Numerous studies suggest that this conflict is not an isolated event but part of a broader process of restructuring the global economy, a gradual trend toward deglobalization.

Baldwin et al. (2024) argue that globalization is not disappearing but fragmenting into regional trade blocs and value chains. This view is consistent with their earlier works (Baldwin et al., 2023; Baldwin & Freeman, 2022), where technological change and geopolitical tensions are giving rise to a new model of 'regionalized globalization' are demonstrated.

Similarly, van Bergeijk (2019) offers a historical perspective, arguing that the current wave of deglobalization bears similarities to the interwar cycles of protectionism. In his works (van Bergeijk, 2022a; van Bergeijk, 2022b) he highlights that political sanctions, trade barriers and economic uncertainty are the main driving forces behind today's trade tensions.

At the same time, a growing body of empirical research focuses on the direct economic effects of the trade war and the responses of Chinese exporters. Fajgelbaum et al. (2024) show that tariffs not only caused trade diversion but also created new export opportunities and regional adaptations. Dang et al. (2023) find that the effects

of the trade war were heterogeneous, while some industries benefited through market reorientation, others experienced significant losses due to higher logistical costs.

Huang et al. (2023) examines how firms responded to trade policy uncertainty and finds that many companies adjusted their supply chains by relocating parts of production outside China. Similarly, Iyoha et al. (2025) identifies the phenomenon of trade rerouting exporting through third countries such as Vietnam and Malaysia to circumvent tariffs.

More recent studies by Luo et al. (2023; 2024) link the trade war to combined global shocks like COVID-19 and the Russia–Ukraine conflict, showing that these factors together have triggered structural shifts in global value chains. Likewise, Niepmann & Shen (2025) and Zhou & Kitano (2023) analyze how Chinese exporters employ diversification and “China+1” strategies to enhance supply chain resilience.

From a financial perspective, several recent studies apply econometric models based on OLS and ARDL approaches. Liu & Zhang (2024), demonstrate that the exchange rate, gold prices and global demand are significant determinants of Chinese exports, though their effects differ in the short run and the long run. Hu et al. (2023) found that tariff restrictions have only a temporary impact, which gradually diminishes as firms adjust, whereas Huang et al. (2023) show that foreign exchange reserves and the SWIFT index serve as key financial mechanisms supporting export stability.

Hoang et al. (2021) emphasize the importance of global value chain reallocation. Finally, the classical theoretical framework of Krugman (1980) and his new trade theory explains the role of economies of scale and strategic policies in generating trade conflicts and market reorganization.

Synthesizing the existing literature reveals three key conclusions:

1. The trade war is an integral component of the broader deglobalization process;
2. Firms adapt through trade rerouting and regionalization strategies;
3. Limited attention has been devoted to the financial and macroeconomic determinants of exports such as foreign reserves, gold and dollar dominance.

3. MATERIALS AND METHODS

3.1. DATA COLLECTION

This paper employs a quantitative, empirical approach based on econometric analysis using the Ordinary Least Squares (OLS) model. The objective is to identify the key macroeconomic and financial determinants influencing China’s exports to the United States in the context of the trade war and ongoing deglobalization processes.

The OLS method is chosen because it allows for an intuitive interpretation of coefficients, direct estimation of the direction and magnitude of effects and the testing of multiple economic hypotheses over a long time horizon. This approach aligns with contemporary literature that employs time series and panel data models to analyze trade conflicts (Hu et al., 2023; Liu & Zhang, 2024; Huang et al., 2023). Compared to more advanced models such as ARDL, VAR, or GMM, OLS proves to be a stable and transparent technique when the variables are stationary and there is no significant multicollinearity. In order to avoid endogeneity, the variables are logarithmized. Recent literature applies a range of econometric techniques to examine the effects of trade conflicts and financial variables on China’s exports. For instance, Liu & Zhang (2024) combine OLS and ARDL models to investigate the relationship between the exchange rate and Chinese exports. They conclude that these models provide sound interpretations of both short-term and long-term effects, although they require strict data stationarity conditions.

Similarly, Hu et al. (2023) employ a panel OLS model to analyze the effects of tariffs on exports, offering a clear view of firms’ adaptive responses though their model does not incorporate financial transmission channels. Conversely, Huang et al. (2023) use a fixed effects model focused on financial determinants such as foreign exchange reserves and the SWIFT index. Their approach offers greater analytical depth but is constrained by a shorter time horizon.

Finally, Rodríguez-Clare et al. (2025) develop a dynamic model analyzing the effects of the U.S.–China trade war across American states. Although analytically comprehensive and capable of revealing regional heterogeneity, the model’s complexity limits its replicability.

In summary, this research combines the interpretative clarity of the OLS model with a broader set of macroeconomic and financial variables, enabling a long term and integrated

analysis that addresses the limitations of previous studies.

The dataset covers annual observations for the period 2004–2023 obtained from international sources including the IMF, World Bank, BIS, SWIFT, UNCTAD, the U.S. Federal Reserve, the People’s Bank of China and the National Bureau of Statistics of China. For variables available from December values were used as representative annual data points.

All statistical and econometric analyses were conducted using EViews 12 Lite software.

3.2. METHODOLOGICAL APPROACH

The variables included in the research are classified into one dependent and several independent variables, as follows:

Dependent variable:

- Share of Chinese exports to the United States in total Chinese merchandise exports (CHINESE_EXPORT), this variable represents the percentage share of China’s exports to the U.S. in relation to China’s total merchandise exports. In several studies and analyses, this variable has been applied as a dependent variable, which makes this research highly relevant (Wang et al., 2022; Marquez & Schindler, 2007). Source: Office of the US Trade Representatives (Oustr, 2025)

Independent variables:

- World gold price (GOLD_PRICE), annual average price of gold on global markets; Expected impact: Negative impact on dependent variable. Source: World Gold Council (WGP, 2025)
- Chinese foreign exchange reserves in U.S. dollars (FOR_EXCH_RES), annual amount of China’s foreign exchange reserves denominated in USD; Expected impact: Positive impact on dependent variable. Source: The state council of PRC (SCPRC, 2025)
- Exchange rate USD/CNY (EXCH_RATE), annual average exchange rate (USD per 1 CNY); Expected impact: Positive impact on dependent variable. Source: Xe (XE, 2025)
- Inflow of FDI from the United States (% of total FDI in China) (FDI), annual percentage share of foreign direct

investment inflows from the U.S. relative to China’s total FDI inflows;

Expected impact: Positive impact on dependent variable.

Source: BEA (BEA, 2025)

- Index of international currency usage (INT_CURR_USAGE), annual percentage share of the U.S. dollar in global SWIFT transactions; Expected impact: Positive impact on dependent variable. Source: IMF (IMF, 2025)
- World trade index (WORLD_TRADE), annual measure of global trade volume, covering more than 80 countries that together account for approximately 99% of world trade. Expected impact: Positive impact on dependent variable. Source: WTO (WTO, 2025)

The relationship between the dependent and independent variables is formalized through the following regression equation:

$$\begin{aligned}
 CHINESE_EXPORT_{it} &= \beta_0 + \beta_1 GOLD_PRICE_{it} \\
 &+ \beta_2 FOR_EXCH_RES_{it} \\
 &+ \beta_3 EXCH_RATE_{it} + \beta_4 FDI_{it} \\
 &+ \beta_5 INT_CURR_USAGE_{it} \\
 &+ \beta_6 WORLD_TRADE_{it}
 \end{aligned}$$

Where:

- t denotes the time period and i denotes the country;
- β_0 : Constant term;
- $\beta_1, \beta_2, \dots, \beta_6$: Slope coefficients of the independent variables;
- ϵ_i : Error term for country i at time t.

This research addresses that gap by employing an OLS analysis for the period 2004–2023 to link macroeconomic and financial variables with China’s export dynamics under trade and geopolitical shocks. The main purpose of the regression model is to identify and quantify the relationships between the independent variables and the percentage share of China’s exports to the United States in its total merchandise exports. This dependent variable reflects the actual state of trade relations between the two economies. The export volume is influenced by tariffs, customs duties, the course of the trade war and global economic dynamics, particularly during the current and previous administrations of President Donald Trump.

Given the multidimensional nature of the topic, which encompasses various aspects of

international finance and trade, the inclusion of a broader set of independent variables allows for greater analytical depth, empirical robustness and academic relevance.

To ensure the reliability and statistical stability of the findings, the following statistical methods and diagnostic tests were applied in the empirical analysis:

Descriptive Statistics:

– The mean, median, and standard deviation of all variables were calculated to describe their basic behavior and distribution patterns.

Augmented Dickey–Fuller (ADF) Test:
 – Conducted to examine the stationarity of the time series data for all variables, determining whether the series are stable over time or contain trends that could bias the regression results.

Correlation Analysis:
 – Used to assess the strength and direction of relationships between the dependent and independent variables prior to estimating the regression model.

Durbin–Watson (DW) Test:

– Applied to test for autocorrelation in the residuals of the regression model.

H₀: Residuals are not autocorrelated.

H₁: Residuals are autocorrelated.

Breusch–Pagan Test:

– Used to test for the presence of heteroskedasticity, that is, whether the variance of the residuals is constant across observations.

H₀: Residuals are homoskedastic.

H₁: Residuals are heteroskedastic.

Jarque–Bera Test:

– Conducted to test the normality of the error term distribution in the regression model.

H₀: Residuals are normally distributed.

H₁: Residuals are not normally distributed.

The results section presents the values obtained from the estimated regression model and the autocorrelation test, accompanied by a detailed interpretation of the significance and statistical relevance of each independent variable in relation to the dependent one.

In the Discussion section, the results are compared with relevant academic studies and previous empirical analyses.

The interpretation is contextualized within the framework of current global economic processes, including the imposition of high, so-called 'reciprocal' tariffs by the United States, rising customs duties, and ongoing trends of deglobalization and dedollarization.

4. RESEARCH RESULTS

4.1. DESCRIPTIVE STATISTICS

A fundamental prerequisite for conducting econometric and statistical analyses is a comprehensive understanding of the intrinsic characteristics of the data.

Accordingly, Table 1 provides the descriptive statistics for the variables included in the model, offering insights into their central tendencies, dispersion and overall distributional patterns.

Table 1: Descriptive statistics

	CHINESE_...	GOLD_PRI...	FOR_EXC...	EXCH_RATE	FDI	INT_CURR...	WORLD_TRADE
Mean	20.99750	1239.825	26933.40	6.851500	37.30000	59.03100	88.42150
Median	20.37000	1263.225	31178.08	6.745000	32.50000	59.14000	89.36500
Maximum	32.45000	1943.000	38430.18	8.270000	67.00000	61.97000	104.4300
Minimum	12.15000	409.5300	6099.320	6.070000	18.00000	55.54000	68.95000
Std. Dev.	5.420666	458.2847	9687.895	0.660401	16.81509	2.266657	10.49460
Skewness	0.597463	-0.327581	-1.044340	1.020600	0.495424	-0.141893	-0.212323
Kurtosis	2.882522	2.158755	2.797763	2.983769	1.827401	1.459264	1.938914
Jarque-Bera	1.201374	0.947443	3.669568	3.472303	1.963974	2.045335	1.088523
Probability	0.548435	0.622681	0.159648	0.176197	0.374566	0.359634	0.580270
Sum	419.9500	24796.50	538668.1	137.0300	746.0000	1180.620	1768.430
Sum Sq. Dev.	558.2888	3990473.	1.78E+09	8.286455	5372.200	97.61698	2092.597
Observations	20	20	20	20	20	20	20

Source: Authors' calculation

The average value of the variable CHINESE_EXPORT is 20.99, indicating that during the period of 2004–2023 approximately one-fifth of China's total exports were directed to the United States. This underscores the significance of bilateral economic relations as a key determinant of China's external trade structure. Such a share is considered relatively high, given that no other single country accounts for a comparable portion of China's total trade volume. At the same time, the results reveal moderate variability ($SD = 5.42$) and a gradual decline in dependence on the U.S. market in more recent years, particularly following the period of trade tensions and tariff escalations during President Donald Trump's first term (2016–2020), when the United States nonetheless remained China's largest trading partner.

The average global gold price over the analyzed period was USD 1,240 per ounce, characterized by high volatility ($CV \approx 37\%$), reflecting persistent economic and geopolitical uncertainty. This result suggests that periods of higher gold prices, typically associated with greater global instability, correlate with a decline in China's exports to the United States.

The average annual level of China's foreign exchange reserves denominated in U.S. dollars amounted to USD 26,933.40 billion confirming that the majority of these reserves are held in dollars, thereby maintaining the dominant role of the U.S. currency in the global monetary system. Despite ongoing processes of dedollarization and deglobalization, China remains the country with the largest foreign exchange reserves worldwide, representing roughly 65% of global GDP (Ito & McCauley, 2019). Over time, these reserves have evolved from a tool of monetary stability into an instrument of geopolitical influence through investments in the U.S. Treasury securities and the financing of strategic projects under the Belt and Road Initiative (Zhang & Wang, 2022). The standard deviation of USD 9,687.90 billion indicates substantial fluctuations reflecting the flexibility of China's monetary policy in maintaining a stable exchange rate and preserving export competitiveness.

The average annual USD/CNY exchange rate stands at 6.85, indicating a controlled and stable monetary policy maintained by the People's Bank of China. The low variability ($SD = 0.66$) confirms that the exchange rate has been kept within a narrow range allowing China to sustain its export competitiveness vis-à-vis the United States. A weaker yuan enhances the price advantage of

Chinese products, thus a positive relationship between the exchange rate and exports is expected. The average share of U.S. foreign direct investment (FDI) in China's total investments amounts to 8.73%, suggesting a stable, yet moderate presence of American capital. The low standard deviation ($SD = 1.24$) demonstrates that, despite recurring political tensions, the economic interdependence between the two economies has remained resilient. U.S. investments exert a positive influence on Chinese exports, as a considerable portion of FDI-financed production is directly intended for export to the U.S. market.

The average annual inflow of U.S. FDI to China equals USD 37.3 billion with a standard deviation of 16.81, indicating high variability throughout the observed period. The volatility ($SD = 16.82\%$) reflects significant deviations from the mean, particularly during the U.S.–China trade war under President Donald Trump's first term (2016–2020), as well as during the COVID-19 pandemic and the Russia–Ukraine conflict, all of which contributed to a global slowdown in capital flows. These fluctuations stem from trade frictions, regulatory constraints and global shocks; nevertheless, FDI has remained a stable source of capital and an important driver of Chinese exports, particularly in technology and export oriented manufacturing sectors.

The average index of international currency usage is 59.03, reflecting the high and sustained dominance of the U.S. dollar in global payments. With a standard deviation of 2.27, the data confirm low volatility and long-term stability of the dollar as the world's leading international currency. Such stability provides a favorable foundation for global trade indirectly facilitating China's exports to the United States, given that the majority of global trade transactions are denominated in USD.

The average value of the World Trade Index stands at 88.42, with a standard deviation of 10.49, indicating moderate variability in global trade flows over the period 2004–2023. The minimum value (68.95) was recorded during episodes of global economic shocks, while the maximum (104.43) corresponds to periods of strong economic expansion. The results confirm that global trade has remained stable but moderately growing, creating a supportive environment for Chinese exports, particularly during times of increased international demand.

4.2. CORRELATION ANALYSIS

This section analyzes the correlation between the dependent and independent variables.

The correlation analysis (Table 2) provides insights into the strength and direction of the relationships among the variables, serving as a

preliminary step for assessing potential associations prior to econometric estimation.

Table 2: Correlation analysis

	CHINESE_...	GOLD_PRI...	FOR_EXC...	EXCH_RATE	FDI	INT_CURR...	WORLD_TRADE
CHINE...	1.000000	-0.955485	-0.865219	0.843062	-0.590026	-0.349682	-0.854208
GOLD...	-0.955485	1.000000	0.846518	-0.810953	0.506666	0.326180	0.815610
FOR...	-0.865219	0.846518	1.000000	-0.951857	0.406959	0.240825	0.729611
EXCH...	0.843062	-0.810953	-0.951857	1.000000	-0.357265	-0.122619	-0.626606
FDI	-0.590026	0.506666	0.406959	-0.357265	1.000000	0.731066	0.698306
INT_C...	-0.349682	0.326180	0.240825	-0.122619	0.731066	1.000000	0.694125
WORL...	-0.854208	0.815610	0.729611	-0.626606	0.698306	0.694125	1.000000

Source: Authors' calculation

The correlation analysis of CHINESE_EXPORT, defined as the share of Chinese exports to the United States in total merchandise exports, and key macro-financial indicators reveals several economically meaningful patterns. GOLD_PRICE, while theoretically expected to negatively affect exports due to its role as a safe-haven asset during global uncertainty, exhibits a strong positive correlation ($r = 0.87$), likely reflecting broader global liquidity and pro-cyclical dynamics: during expansionary phases with accommodative monetary policies, both commodity prices and trade volumes tend to rise simultaneously, producing a coincident movement rather than a direct causal effect.

FOR_EXCH_RES and EXCH_RATE show strong positive correlations ($r = 0.86$ and $r = 0.84$, respectively), consistent with the notion that higher foreign exchange reserves, accumulated from trade surpluses, and a relatively weaker domestic currency support export competitiveness. Similarly, FDI inflows from the U.S. and the WORLD_TRADE index positively correlate with exports, underscoring that stronger global demand and investment linkages enhance China's trade performance. Conversely, INT_CURR_USAGE exhibits a moderate negative association, suggesting that higher dominance of the U.S. dollar in global transactions may tighten

international financial conditions and indirectly constrain exports.

While these bilateral correlations highlight relevant economic relationships, the extremely high intercorrelations among GOLD_PRICE, FOR_EXCH_RES, and EXCH_RATE indicate potential multicollinearity, signaling the need for further diagnostic testing or alternative model specifications prior to regression analysis to ensure robust econometric inference.

4.3. TESTING FOR STATIONARITY

One of the key prerequisites for obtaining reliable results in quantitative research is the stationarity of time series data. Non-stationary time series exhibit upward or downward trends over time, which may lead to spurious regression results due to the common influence of time.

By applying first differencing, the data are transformed into stationary series that capture real variations and allow for a more accurate analysis of causal relationships among variables. In this section, the Augmented Dickey-Fuller (ADF) test is employed (see Table 3) to examine the stationarity of both the original and differenced time series.

Table 3: ADF test results

CHINESE_E XPORT	GOLD_P RICE	FOR_EXCH _RES	EXCH_R ATE	FDI	INT_CUR R_USAGE	WORLD_ TRADE
0.4946	0.4741	0.1003	0.2778	0.6571	0.7795	0.5562
Non-stationary	Non-stationary	Non-stationary	Non-stationary	Non-stationary	Non-stationary	Non-stationary
CHINESE_E XPORT	GOLD_P RICE	FOR_EXCH _RES	EXCH_R ATE	FDI	INT_CUR R_USAGE	WORLD_ TRADE
0.0591	0.0045	0.0021	0.0234	0.0258	0.0000	0.0000
Stationary	Stationary	Stationary	Stationary	Stationary	Stationary	Stationary

Source: Authors' calculation

Based on the results of the stationarity test, all time series are found to be stationary after the first differencing.

Following this transformation, the series satisfy the statistical requirements for stability and consistency, making them suitable for econometric analysis.

4.4. REGRESSION RESULTS

In this section, the results of the regression analysis using the OLS method (Table 4) are examined, providing a significant contribution to identifying the determinants of the dependent variable in the study. Additionally, post-hoc testing of autocorrelation, heteroscedasticity, and normality of the distribution was performed.

Table 4: Regression analysis

Dependent Variable: CHINESE_EXPORT
 Method: Least Squares
 Date: 08/25/25 Time: 13:34
 Sample: 2004 2023
 Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GOLD_PRICE	-0.525214	0.114838	-4.573537	0.0004
FOR_EXCH_RES	0.421321	0.096313	4.374485	0.0006
EXCH_RATE	1.125329	0.408926	2.751911	0.0156
FDI	-0.105499	0.045663	-2.310359	0.0366
INT_CURR_USAGE	1.306304	0.467817	2.792338	0.0144
WORLD_TRADE	-1.041551	0.331528	-3.141667	0.0072

Source: Authors' calculation

The results of the regression analysis (OLS) provide significant insights into the determinants of the share of Chinese exports to the United States relative to total exports which represents a key indicator for the processes of deglobalization, the effects of the trade war and dedollarization. The regression indicates that the world gold price has a significant negative effect on Chinese exports to the U.S. Specifically, an increase in gold prices contributes to heightened global market risk and uncertainty. According to numerous studies, the China–U.S. trade war significantly contributed to rising gold prices leading to a decline in global demand including a demand for Chinese goods in the American market.

The variable Foreign Exchange Reserves (FOR_EXCH_RES) exhibits a positive and statistically significant effect on Chinese exports. This result suggests that an increase in China's foreign exchange reserves enhances export performance. Higher reserves strengthen the central bank's ability to stabilize the exchange rate and maintain international investor confidence in the national currency. A stable or moderately undervalued exchange rate increases the competitiveness of Chinese products in global markets by providing predictable pricing and reducing exchange rate risk for exporters. Additionally, higher reserve levels often indicate a

positive trade balance, creating a feedback loop between export growth and reserve accumulation. Therefore, the positive relationship confirms that foreign exchange reserves play a dual role in the Chinese economy, both as a result of a continuous export surplus and a political instrument that ensures stability and encourages further export growth.

Although traditional economic theory suggests that currency depreciation typically stimulates exports, the regression results show a positive relationship between the revaluation of the yuan and export growth. This outcome can be explained by structural changes in the Chinese economy over the last decade which have shifted toward the export of higher value added goods that are less sensitive to exchange rate fluctuations. Furthermore, a stronger yuan reduces the cost of imported raw materials, indirectly enhancing export competitiveness.

Despite the correlation analysis indicating a positive relationship between foreign direct investment (FDI) and Chinese exports ($r = 0.28$), the regression model reveals a negative and statistically significant effect (coefficient = -0.105 , $p = 0.0366$). This discrepancy may be attributed to the mediating influence of other macroeconomic factors, such as the exchange rate, foreign

exchange reserves and global trade, which partially redirect the impact of FDI. When these factors are constant, it is evident that a portion of FDI in recent years has been directed toward satisfying domestic demand rather than export oriented production. Consequently, the result suggests a gradual increase in the share of domestically oriented investments within Chinese FDI, leading to a negative 'net' effect on exports in the regression. The variable INT_CURR_USAGE, representing the annual share of the U.S. dollar in global SWIFT transactions, has a positive and statistically significant effect on Chinese exports (coefficient = 1.306, p = 0.014). This indicates that increased dollar activity in the international payment system is associated with higher Chinese exports. This outcome can be explained by the continued role of the U.S. dollar as the primary currency for international settlements, facilitating liquidity, enhancing payment predictability and promoting global trade. Since a significant portion of Chinese exports is invoiced in dollars, higher use of the dollar in the SWIFT system indirectly contributes to increased Chinese exports. The variable WORLD_TRADE has a negative and statistically significant effect on Chinese exports

(coefficient = -1.041, p = 0.007), although the correlation analysis indicates a weak positive association (r = 0.17). This result suggests that, when other macroeconomic factors such as exchange rates, foreign exchange reserves and international currency usage are held constant, global trade growth does not directly contribute to an increase in Chinese exports. On the contrary, it may be associated with increased international competition, the relocation of production chains to other countries and a reduced reliance of China on export oriented growth. Therefore, the negative coefficient in the regression reflects the structural shift of China's position in the global economy, from a dominant exporter toward an economy gradually oriented toward domestic consumption and technological upgrading. In order to identify the potential presence of autocorrelation in the regression residuals, a Durbin-Watson test was conducted in this section (Table 5). This test is particularly important for time series models, as autocorrelation indicates a dependence between current and past values of the errors, which can compromise the stability of the model and the accuracy of statistical inferences.

Table 5: Regression statistics

R-squared	0.947480	Mean dependent var	3.013336
Adjusted R-squared	0.928723	S.D. dependent var	0.256049
S.E. of regression	0.068359	Akaike info criterion	-2.284754
Sum squared resid	0.065422	Schwarz criterion	-1.986035
Log likelihood	28.84754	Hannan-Quinn criter.	-2.226441
Durbin-Watson stat	1.654778		

Source: Authors' calculation

The Durbin-Watson statistic (presented in Table 5) indicates that there is no autocorrelation among the residuals, meaning that the errors are independent of one another. Therefore, the null hypothesis (H_0) cannot be rejected, implying that the model does not exhibit serial correlation in the errors. This finding suggests that the regression is stable and the results obtained are scientifically valid and statistically consistent. Additionally, the Adjusted R^2 value of 0.9287 confirms that 92.87% of the

variation in the dependent variable (Chinese exports) is explained by the independent variables in the model, while the remaining 7.13% is attributed to factors not included in this analysis.

To examine the presence of heteroskedasticity in the regression model, a Breusch-Pagan test was conducted (Table 6). This test is one of the most commonly used methods for assessing the stability of the residual variance and for verifying the validity of the OLS assumptions.

Table 6: Breusch-Pagan test

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.402177	Prob. F(6,13)	0.8646
Obs*R-squared	3.131193	Prob. Chi-Square(6)	0.7922
Scaled explained SS	0.737796	Prob. Chi-Square(6)	0.9936

Source: Authors' calculation

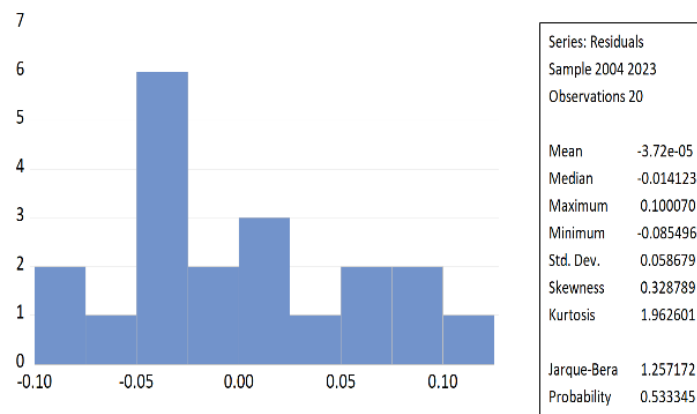
The results of the Breusch–Pagan test (Table 6) indicate that the regression is homoscedastic, meaning that the variance of the errors is constant and does not depend on the values of the independent variables.

Accordingly, the null hypothesis (H_0) cannot be rejected, indicating that heteroskedasticity is not

present in the model and the obtained regression results are stable and statistically reliable.

An important assumption for the validity of the regression model is the assessment of the residuals' distribution. In this case, the Jarque–Bera test was applied (Figure 1), which serves to evaluate whether the residuals are distributed in accordance with the theoretical normal distribution.

Figure 1: Histogram - Normality test



Source: Authors' calculation

The results of the Jarque–Bera test (Figure 1) indicate that the residuals are normally distributed, as the p-value exceeds 0.05. This means that the null hypothesis (H_0) cannot be rejected. Consequently, the errors are symmetrically distributed around their mean, confirming that the model satisfies the fundamental statistical assumptions. This further supports the reliability and stability of the regression results.

DISCUSSION

Our analysis both confirms and expands the existing insights in the literature on the economic consequences of the trade war and deglobalization. As Baldwin et al. (2024) emphasize, globalization 'did not end; it transformed', while trade in goods peaked around 2008, services have continued to grow. This observation helps explain our finding that Chinese exports to the United States remain a substantial share of global trade (averaging about 20%), despite persistent trade tensions over the past decade. Specifically, even with the imposition of high tariffs during the 2018–2020 period, the culmination of the 'cold trade war', as explained by van Bergeijk (2019), the United States has remained China's largest trading partner. Hence, our findings suggest that China has partly sustained its growth by reorienting toward

domestic consumption and high technology products, thereby increasing the price elasticity of exports and reducing their dependence on the exchange rate. This accounts for the positive coefficient of the USD/CNY exchange rate in the regression (a stronger yuan – higher exports), contrary to traditional depreciation theory: as the yuan appreciates, the cost of imported raw materials declines, indirectly improving export competitiveness.

Our results are consistent with several empirical studies. For example, Amiti et al. (2019) demonstrate that U.S. tariffs on Chinese goods led to higher domestic prices and reduced welfare in the United States. Similarly, the increase in the price of gold, a proxy for global uncertainty, has raised the attractiveness of safe-haven assets while signaling lower demand for industrial goods. Our analysis reveals that as gold prices rise, Chinese exports to the United States decline significantly. This finding aligns with the broader prediction that geopolitical and economic shocks triggered by trade conflicts reduce the overall volume of global trade. In essence, the price of gold functions as a 'barometer' of international risk, during periods of heightened uncertainty (including fears of a trade war), gold prices tend to rise while exports fall.

At the same time, the impact of financial determinants remains substantial. Our regression shows that the growth of China's foreign exchange reserves exerts a positive and statistically significant effect on Chinese exports. This implies that the accumulation of large reserves, primarily in U.S. dollars, strengthens the People's Bank of China's ability to stabilize the exchange rate and sustain confidence in the national currency. According to data from the Federal Reserve System, the U.S. dollar continues to hold a dominant position (58% of all global reserves in 2024), meaning that growing dollar reserves reduce exchange rate risk for Chinese exporters. Moreover, higher reserves also reflect an ongoing trade surplus, which in turn stimulates future export growth, a dual role that goes beyond their mere statistical interpretation. This finding aligns with the theoretical framework of Mundell-Fleming, according to which countries with large reserves enjoy greater flexibility in managing exchange rates and monetary policy.

Our analysis also highlights the important distinction between correlation and regression analysis. The correlation results revealed a general positive association, for instance, between foreign direct investment (FDI) and Chinese exports ($r = 0.28$), yet in the regression model, the effect of FDI turned negative and statistically significant. This suggests that much of the recent U.S. investment in China has been directed toward serving domestic consumption rather than export-oriented production, which helps explain the 'pure' negative coefficient of FDI in the regression. Similarly, although the correlation between global trade and Chinese exports was slightly positive ($r = 0.17$), once all other variables were included in the model, global trade appeared as a negative factor. This may indicate that independent global trade growth is accompanied by intensified competition and supply chain fragmentation; thus, when other conditions are controlled for, broader trade expansion does not necessarily translate into export growth for China.

Overall, these findings reinforce Baldwin et al.'s argument (2024) that the phase of globalization driven by mass exports is evolving toward service-based models, with China gradually transforming its role from a dominant exporter to an economy increasingly reliant on domestic development and technological upgrading.

CONCLUSION

Our research points to several important conclusions. First, during periods of trade conflicts and global political tensions, financial factors, such as foreign exchange reserves, the yuan's exchange rate and the use of the U.S. dollar in international

trade play a crucial role in shaping China's export performance. Larger reserves and a stable dollar position contribute to export stability, while global uncertainty, measured through gold prices, has the opposite effect by dampening exports. Second, the results indicate that the trade war led to shifts in export flows with part of China's exports being redirected to other markets. Countries such as Vietnam have increased their exports to the U.S. suggesting that globalization is evolving toward a new pattern, one characterized by more regional and distributed trade networks.

From a policy perspective, these findings call for a strategic and coordinated economic response. Specifically, we recommend:

- **Monetary policy and exchange rate management:** The People's Bank of China (PBOC) should adopt a more flexible approach in managing the exchange rate and take advantage of periods of a weaker U.S. dollar to implement gradual reforms. Maintaining a moderate exchange rate with slight adjustments and no abrupt changes can support domestic consumption without undermining exports. Furthermore, it is essential for the PBOC to continue diversifying its foreign exchange reserves by increasing investments in alternative currencies and gold, thereby enhancing financial stability and providing a buffer against potential global economic shocks.
- **Currency usage and dedollarization:** Chinese authorities should promote the faster internationalization of the yuan through bilateral and multilateral trade and financial settlement agreements in local currencies. Increasing the yuan's share in global transactions would reduce dependence on the dollar and mitigate foreign exchange risks. As our analysis shows, the dominance of the dollar (as measured by the SWIFT dollar usage index) currently supports Chinese exports but it also leaves China vulnerable to shifts in U.S. policy. A gradual strategy to reduce dollar dependency through greater use of the CIPS system and international initiatives such as the Belt and Road currency mechanisms could weaken this linkage and enhance export resilience.
- **Trade diversification:** China should actively pursue broader market and supply chain diversification. Reduced dependence on the U.S. market (as highlighted by de Matos, 2024) presents opportunities for developing new regional trade zones and partnerships, particularly in Asia, Africa, and Europe. The government should support domestic firms seeking alternative markets through the 'China+1' strategy aimed at reducing exposure to new trade barriers. This may include tax and credit incentives for firms exporting beyond the U.S. market as well as improvements

in logistics and digital infrastructure across Southeast Asia.

Overall, this study demonstrates that correlation analysis alone is insufficient to fully capture the relationships among variables. The regression model reveals effects not evident in simple correlations such as the negative impact of foreign direct investment (FDI). The high statistical significance and strong Adjusted R² (92.87%) confirm the robustness and economic relevance of the results. These findings suggest that a combined policy approach linking monetary policy, stable foreign reserves and careful management of trade relations can strengthen the resilience and competitiveness of China's exports. Therefore, we recommend the continuation of this strategy through balanced trade and stable fiscal and monetary policies as a foundation for China's long term economic growth.

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