

ANALYSIS OF THE RELATIONSHIP BETWEEN INTERNATIONAL TRADE AND FINANCIAL DEVELOPMENT AND THEIR IMPACT ON ECONOMIC GROWTH FOR THE PERIOD 1978-2013: CHINA AS A CASE STUDY

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Abstract

The study's goal is to find out how international commerce affects China's financial development and economic growth. Examining the order of integration of variables with augmented Dickey-Fuller and Phillips-Perron (PP) tests and Johansen's co-integration methods to look at the long-term relationship between these variables. The Granger causality test determines if one variable causes the other. International commerce, financial development, and economic growth are all proven to be linked over the long term, according to the study's findings. The findings show that China's economy benefits from increased foreign commerce and financial development.

Keywords: financial development, international trade, economic growth.

1. INTRODUCTION

The GDP growth index is one of the most important criteria for evaluating the performance of the economy and to identify the main drivers of economic growth and potential sources of growth, a large number of studies have been conducted. These studies point to different drivers of growth including foreign direct investment, domestic investment, financial development, and export. This study aims to analyze the relationship between international trade, financial development and economic growth using time series analysis.

The relationship between economic growth and export, which is an important component of international trade, has brought the attention of many scholars and most studies have concluded that export has a positive effect on economic growth (Ullah et al., 2009) although export-led growth has been investigated Intensely, however, the direction of causation is still under discussion. In a developing economy, some industrial firms may undergo major changes as a result of learning, technical updates, expertise and technology allocation by foreign direct investment (FDI).

And under these circumstances; Even if there is no government policy trying to achieve development by encouraging free trade policies, it is possible to enhance output growth if domestic demand does not increase at a rate higher than the growth of production in emerging industries, and thus the surplus can be exported and thus export growth can be promoted through economic growth in any country. From this, we conclude if the growth of domestic demand is higher than the growth of industrial production, this may lead to a decline in exports. As a result, domestic demand leads to an increase in domestic production accompanied by a

decrease in exports; Therefore, productivity growth can degrade export performance (Lee and Huang, 2002).

➤ **Research Problem:** Scientific libraries contain many books related to the relationship between international trade, financial development and economic growth. There is a consensus in the literature that financial development aids economic growth through various channels, including the expansion of exports (Shahbaz and Rahman, 2014). A well-functioning financial sector in a country can have a positive impact on export as well as output growth (Hur and Riyanto, 2006; Shahbaz, 2009). So it is important to have a developed financial system to get higher export shares in world trade. Thus, the research problem can be formulated by asking whether there is a relationship between international trade, financial development and economic growth through China as a case study and the direction of the causal relationship between these variables.

➤ **Research Importance:** The impact of international trade and financial development on growth has become an important research topic. According to the traditional theoretical framework, enterprises can enhance their ability to overcome liquidity shortage with the help of financial development by encouraging exports of products with high reliance on external financing and advancing the scale and structure of commercial production. Rajan and Zingales (1998) explore the relative beneficiary theory of financial development and claim that financial development helps firms avoid moral hazard and adverse selection problems and promote export growth promoted by external financing. Where financial development represents a certain degree of comparative advantage for those industries that depend more on external financing. These industries are likely to enjoy higher growth rates, higher shares of exports and obtain more trade benefits in countries with a higher level of financial development.

➤ **Research Objectives**

- Statement of the role and importance of international trade in achieving financial development and economic growth in China.
- Analyze the extent to which there is a long-term relationship between international trade, financial development and economic growth.

➤ **Research Hypothesis:** The research is based on a general hypothesis: (There is no statistically significant effect relationship and the existence of a long-term relationship between international trade, financial development and economic growth).

➤ **Data And Information Collection Tools**

- Theoretical framework tools: To enrich the theoretical side, the researchers relied on scientific journals and periodicals, research and studies related to the variables of the study, as well as using the information network and its electronic research to provide and supplement the theoretical side with information aimed at the study.
- Tools of the field side In preparing the field side of the study, the researchers relied on the data used in this research, which are the annual figures for the years 1987-2013 that

contain variables, gross domestic product (GDP), exports (X), imports (I), domestic credit for the sector Private credit by banks (M1), money and quasi-money (M2), and domestic credit to the private sector (M3). Money and money equivalents include demand deposits other than central government, currency outside banks, time and savings, and foreign currencies other than central government. M3 refers to financial resources provided to the private sector by financial corporations, such as accounts receivable, trade credit, and other loans that create a claim for repayment. Financial companies include finance and leasing companies, monetary authorities, money deposit banking, money lenders, insurance companies, pension funds, and foreign exchange companies. The GDP figures are in constant US dollars for 2005 and the exports, imports, and three indicators of financial development are in percentage of GDP. All data were collected from the World Bank database (2014). The data is converted to lognormal form in order to capture the effects of growth.

➤ Limits Of Study

- Spatial boundaries: China was chosen as a sample for the study for several reasons: including that international trade in China is a pioneer with high indicators, and that there is a rapid increase in indicators of economic growth.
- Temporal boundaries: Annual figures for the period 1978-2013 containing variables were approved, gross domestic product (GDP), exports (X), imports (I), domestic credit to the private sector by banks (M1), money and quasi-money (M2).), and domestic credit to the private sector (M3).

2. THEORETICAL ASPECT

One of the most important sources of competitive advantage is the growth of the banking sector. Beck (2003), Svaleryd and Vlachos (2005) researched the relationship between financial development and trade in terms of economies of scale. They discovered that financing had an impact on trade. Companies can use external financing to overcome liquidity constraints when the financial sector is more developed. This transfers more savings from the public sector to the private sector. According to Chang et al. (2012), China's financial development and economic growth are closely related. Also, Al-Yousef (2002) discovered, during the years 1970-1999, a causal relationship between financial development and GDP growth in thirty developing countries. Emmanuel and Lartey (2010) investigated the effect of financial development on economic growth in 74 provinces and found that the effect of financial development on economic growth was constant, regardless of the level of financial development.

International trade and economic growth in Cyprus have been examined by Jenkins and Katercioglu (2008) over the long term. They found that trade and financial development go hand in hand, Granger causality test also shows that real income plays a role in the growth of international trade and financial development The positive effect of exports on economic growth has been thoroughly investigated in many studies and has also been validated by many

Scholars include (Ullah et al., 2009; Jordaan and Eita, 2007). On the other hand, Pazim (2009) uses panel data analysis to examine the validity of the theory of export-led development for Indonesia, Malaysia, and the Philippines and found no link between exports and production growth, and Shahbaz et al. (2011) confirmed the export-led growth theory by looking at whether or not China had export-led growth. Shahbaz and Rehman (2014) used the bounds test approach of cointegration and the vector error-corrected model (VECM) causality test to test the relationship between Pakistan's exports, financial development, and GDP growth. The long-term association is confirmed by cointegration analysis. There has been much debate in the economic community about the relationship between exports and economic growth. The result is determined by the features of the country. The study variables and methods, as well as their types, are extremely important.

3. PRACTICAL SIDE

The data used in this research are the annual figures for the years 1967-2013 containing variables, gross domestic product (GDP), exports (X), imports (I), domestic credit to the private sector by banks (M1), money and quasi-money (M2), and domestic credit to the private sector (M3). Money and money equivalents include demand deposits other than central government, currency outside banks, time and savings, and foreign currencies other than central government. M3 refers to financial resources provided to the private sector by financial corporations, such as accounts receivable, trade credit, and other loans that create a claim for repayment. Financial companies include finance and leasing companies, monetary authorities, money deposit banking, money lenders, insurance companies, pension funds, and foreign exchange companies. The GDP figures are in constant US dollars for 2005 and the exports, imports, and three indicators of financial development are in percentage of GDP. All data were collected from the World Bank database (2014). The data is converted to lognormal form in order to capture the effects of growth.

This study investigates the relationship between international trade, financial development and economic growth using an econometric time series methodology. To achieve this goal, first of all, augmented unit root Dickey-Fuller (ADF) (1981) and Phillips-Perron (PP) (1988) tests are used to test whether variables are constant. Then, Johansen and Juselius (1990) cointegration test was performed to examine the cointegration relationship between GDP and explanatory variables. Finally, the Granger test for causality is used to determine the direction of causation between variables. In our experimental work, the linear logarithmic specifications of the variables were used, and the following equation is estimated:

$$\ln G_T = \alpha_0 + \alpha_1 \ln X_T + \alpha_2 \ln I_T + \alpha_3 \ln M1_T + \alpha_4 \ln M2_T + \alpha_5 \ln M3_T + \varepsilon_T$$

Where G_T , X_T , I_T , $M1_T$, $M2_T$ & $M3_T$ represent economic growth, export, import, domestic credit to the private sector by banks, money, troubled money, and domestic credit to the private sector, respectively. And $\alpha_1, \alpha_2, \alpha_3, \alpha_4$ and α_5 give flexibility to the explanatory variables.

• **Unit Root Test**

Before performing any experimental analysis first, the order of integration of the variables should be checked. In our study, ADF and PP unit root tests are used to test whether the strings are stable. The null hypothesis of the ADF and PP tests is this series has a unit root. If the string is not fixed in plane, the first differences in the string must be taken in order to make the string stable. The invariant series at the plane is denoted by $I(0)$ and the unit root is denoted by $I(1)$. Enders (1995) suggests that testing unit roots should start from the most general model which includes direction and interception.

• **Co-Integration Test**

If all the variables have the same order of integration, the next step is to use cointegration analysis to explore the long-run equilibrium relationship between the variables. Johansen's approach is used to test cointegration. The Johansen test helps to determine the long-run relationship between variables; there must be at least one vector for cointegration between variables (Johansen, 1988).

• **Granger Causality Test**

In the third step, Granger causality test should be applied to find the direction of the long-run relationship between the variables. Granger causality tests are run by holding the vector error-corrected (VEC) framework when there is a cointegration relationship (Katrco lu et al., 2007). When there is a common merging vector in the model, simple Granger causality tests cannot be performed under the VAR approach. The relationship between cointegration and Granger causation is discussed by Granger (1988).

• **Results of unit root analysis of stability**

The stationary nature of the variants is examined by ADF and PP root unit tests. Table 1 shows the results of the ADF and PP tests. Both tests indicate that all variables are unchanged in the form of their level and fixed in the form of their first difference which means that all variables are fused in the first order.

Statistics (Level)	ln G	Lag1	ln X	Lag2	ln I	Lag3	ln M1	Lag4	ln M2	Lag5	ln M3	Lag6
WT (ADF)	-0.44	(0)	-2.31	(0)	-2.58	(0)	-1.34	(0)	-3.12	(0)	-1.55	(0)
WP (ADF)	-2.26	(0)	-2.18	(0)	-2.61	(0)	-2.34	(1)	-3.18	(0)	-1.36	(0)
W (ADF)	4.64	(1)	0.27	(0)	-0.02	(0)	-0.85	(0)	-0.16	(0)	-0.88	(0)
WT (PP)	-0.80	(3)	-2.13	(5)	-2.53	(2)	-1.34	(0)	-2.94	(5)	-1.55	(0)
WP (PP)	-1.98	(3)	-1.96	(5)	-2.56	(2)	-1.68	(1)	-2.97	(5)	-1.36	(0)
W (PP)	10.42	(4)	0.48	(5)	0.03	(2)	-0.77	(1)	-0.16	(5)	-0.84	(2)
Statistics (First Differences)	ln G	Lag1	ln X	Lag2	ln I	Lag3	ln M1	Lag4	ln M2	Lag5	ln M3	Lag6
WT (ADF)	-5.73*	(0)	-6.14*	(0)	-8.56*	(0)	-5.28*	(0)	-5.57*	(0)	-5.69*	(0)
WP (ADF)	-5.38*	(0)	-6.15*	(0)	-8.64*	(0)	-5.25*	(0)	-5.64*	(0)	-5.63*	(0)
W (ADF)	-1.27	(1)	-6.18*	(0)	-8.71*	(0)	-5.25*	(0)	-5.71*	(0)	-5.63*	(0)
WT (PP)	-5.77*	(3)	-6.58*	(5)	-8.95*	(4)	-5.21*	(4)	-5.67*	(5)	-5.61*	(5)
WP (PP)	-5.45*	(3)	-6.44*	(5)	-8.83*	(3)	-5.17*	(4)	-5.78*	(5)	-5.57*	(4)
W (PP)	-1.67***	(3)	-6.45*	(5)	-8.89*	(3)	-5.19*	(3)	-5.87*	(5)	-5.57*	(4)

Note: G represents real GDP; X is exports of goods and services; In I represents imports of goods and services; M1 is domestic credit to the private sector via banks; M2 is money and quasi money; Finally, M3 is a domestic credit for the private sector. WT tests the equation with skewness and direction; WP with skew and without direction; W without drift and direction. The numbers in parentheses represent the lag lengths used in the ADF test used to remove the serial link in the residual values. The number in parentheses represents the Newey-west bandwidth used in the PP test. *, **, and *** denote the rejection of the null hypothesis at the 1%, 5%, and 10% levels, respectively.

• **Cointegration analysis results**

The Johansen cointegration test is used to investigate the long-run equilibrium relationship between variables. all six variants; They are GDP, exports and imports, and 3 integrated financial development indicators of the same order. In our proposed model, economic growth (GDP) is a dependent variable while international trade and financial development are explanatory variables. Table 2 shows the results of the cointegration analysis

According to Table 2, the null hypothesis that there is no cointegration vector in the proposed model can be rejected at the 1% level indicating that there is only one vector in the model. The results reveal that there is a long-term equilibrium relationship between international trade, financial development and economic growth.

Co-integration analysis

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.650892	111.5534	94.16	103.19
At most 1	0.472993	65.24899	68.53	76.08
At most 2	0.340188	37.06509	47.22	54.47

Note: A trace test indicates one co-integration equation(s) at each of the 5% and 1% levels, *(**) denotes rejection of the hypothesis at the 5% (1%) level.

• **Granger Causality Test**

After the cointegration analysis, the next step is to analyze the trend of the long-run relationship between the variables by Granger causality test. Table 3 shows the results of the Granger causality test. The null hypothesis of the model is the lack of causality between the variables. If the null hypothesis of the model is rejected, it means that the independent variable is not affected by the dependent variable.

Granger Causality Test

Null hypothesis	F-statistic	Prob.
LNX does not Granger Cause LNG	1.86974	0.1283
LNG does not Granger Cause LNX	1.00813	0.4296
LNI does not Granger Cause LNG	0.26348	0.9297
LNG does not Granger Cause LNI	3.27206	0.0175
LNM1 does not Granger Cause LNG	1.36338	0.2659

LNG does not Granger Cause LNM1	1.19261	0.3366
LNM2 does not Granger Cause LNG	2.36118	0.0631
LNG does not Granger Cause LNM2	2.15781	0.0856
LNM3 does not Granger Cause LNG	1.09964	0.3807
LNG does not Granger Cause LNM3	1.62572	0.1827
LNI does not Granger Cause LNX	3.55765	0.0128
LNX does not Granger Cause LNI	1.71316	0.1621
LNM1 does not Granger Cause LNX	0.40961	0.8385
LNX does not Granger Cause LNM1	0.84516	0.5286
LNM2 does not Granger Cause LNX	1.76722	0.1490
LNX does not Granger Cause LNM2	1.23911	0.3149
LNM3 does not Granger Cause LNX	0.18455	0.9664
LNX does not Granger Cause LNM3	0.76202	0.5842
LNM1 does not Granger Cause LNI	1.68563	0.1664
LNI does not Granger Cause LNM1	1.85883	0.1294
LNM2 does not Granger Cause LNI	3.35722	0.0164
LNI does not Granger Cause LNM2	0.77091	0.5790
LNM3 does not Granger Cause LNI	1.41721	0.2466
LNI does not Granger Cause LNM3	1.83958	0.1351
LNM2 does not Granger Cause LNM1	1.62557	0.1815
LNM1 does not Granger Cause LNM2	0.23663	0.9423
LNM3 does not Granger Cause LNM1	0.60844	0.6951
LNM1 does not Granger Cause LNM3	0.71506	0.6180
LNM3 does not Granger Cause LNM2	0.50696	0.7698
LNM2 does not Granger Cause LNM3	1.73727	0.1565

Table 3 indicates a one-way relationship between GDP and import, import and export, and quasi-money and import. On the other hand, there is a bidirectional relationship between quasi-money and GDP.

The results also reveal that causation runs from GDP; It is an agent of economic growth, of imports, of imports to exports, of quasi-money; which is used as a proxy for financial development, for imports and finally for quasi-money to GDP and vice versa. According to Granger's causal results, economic growth is driven by financial development and financial development is driven by economic growth in China. In addition, imports are China's GDP growth and financial development driven. From the above results, it can be concluded that for China, a change in economic growth will have an impact on imports, which will further affect the country's exports. Thus, the two-way finding between economic growth and quasi-money acknowledges that financial development stimulates growth, and thus economic growth may stimulate financial development, which is important for maintaining sustainable economic growth for China. So to boost the economic growth of a country, it is important to have a well-functioning financial sector.

4. CONCLUSIONS

- The study was conducted to evaluate the long-run equilibrium relationship and the direction of causality between economic growth, international trade and financial development.
- By applying the first unit root tests that the variables are not static.
- That the first difference in the chain was fixed; And that all variables in their level have one unit root.
- The cointegration relationship was analyzed by using the Johansen test
- It was found that there is a long-term equilibrium relationship between international trade, financial development and economic growth.
- The direction of the causal relationship is evaluated through the Granger causality approach, as the results of the Granger causality test show that the change in economic growth and financial development precedes the change in imports, and the change in financial development precedes the change in economic growth and vice versa

5. RECOMMENDATIONS

- The above empirical results indicate that the Chinese government should try to support financial development in order to accelerate economic growth and have a better financial system that will be conducive to stable economic growth.
- With an integrative vision and to achieve the goal in 1, there is a need for a developed infrastructure, a good macroeconomic environment and the removal of all kinds of trade barriers.
- The Chinese government should encourage the private sector by providing various incentives so that they can participate more effectively in the country's development efforts.
- For a better financial system, cooperation between the government and the central state bank is important.
- A better financial system promotes international trade and economic growth and in turn the country's output will be increased which will enhance international trade, competition and efficiency in the economy.

Resources

1. Al-Delawi, Amjad S. (2015). Activating Accounting Information System in Light of Electronic Trade in Iraq, AL-Anbar University journal of Economic and Administration Sciences, 7(13).
2. Al-Delawi, Amjad S. (2019). Role of ethics in Islamic Thinking in the activation of accounting information quality, Utopía y praxis latinoamericana: revista internacional de filosofía iberoamericana y teoría social, 6, 179-187.
3. Al-Delawi, Amjad S., Ramo, Waheed M. (2020). The Impact of Accounting Information System on Performance Management, Polish Journal of Management Studies, 21.

4. Al-Yousif, Y.K., 2002. Financial development and economic growth another look at the evidence from developing countries. *Review of Financial Economics*, 11, 131-150.
5. Beck, T., 2003. Financial dependence and international trade: is there a link. *Review of International Economics*, 11, 296-316.
6. Dickey, A.D., Fuller, W.A., 1981. Likelihood ratio statistics for autoregressive time series with a unit root. *Econometrica*, 49(4), 1057-1072.
7. Emmanuel, K. and Lartey, K., 2010. A note on the effect of financial development on economic growth. *Applied Economics Letters*, 17, 685-687.
8. Enders, W., 1995. *Applied Econometric Time Series*, John Wiley & Sons, Inc., U.S.A.
9. Granger, C. W. J., 1988. Causality, cointegration, and control. *Journal of Economic Dynamics and Control*, 12(2-3), 551-559.
10. Harjan, S., Abdulrida, M., Alduhaidahawi, H., & Jiyad, A. (2021). Supporting Sustainable Development Processes and Measuring the Impact of Financial Inclusion on Them. *Cihan University-Erbil Journal of Humanities and Social Sciences*, 5(2), 60-68.
11. Hur, Raj, M. and Riyanto, Y., 2006. Finance and trade: a cross-country empirical analysis on the impact of financial development and assets tangibility on international trade. *World Development*, 34, 1728-1741.
12. Jenkins, H. P., Katircioglu, S. T., 2010. The bounds test approach for cointegration and causality between financial development international trade and economic growth: the case of Cyprus. *Applied Economics* 43(13), 1699-1707.
13. Johansen, S., Juselius, K., 1990. Maximum likelihood estimation and inference on cointegration- with applications to the demand for money. *Oxford Bulletin of Economics and Statistics*, 52(2), 169–210.
14. Johansen, S., 1988. Statistical analysis of cointegration vectors. *Journal of Economic Dynamics and Control*, 12(2-3), 231–254.
15. Jordaan, A.C. and Eita, J.H., 2007. Export and economic growth in Namibia: a Granger causality analysis. *South African Journal of Economics*, 75, 540-547.
16. Katircioglu, S., Kahyalar, N. and Benar, H., 2007. Financial development, trade and growth triangle: The Case of India. *International Journal of Social Economics*, 34(9), 586-598.
17. Lee, C.H. and Huang, B.N., 2002. The relationship between exports and economic growth in East Asian countries: a multivariate threshold autoregressive approach. *Journal of Economic Development*, 27, 45-68.
18. Massoudi, A; Fatah, S. & Ahmed, M (2019). Incorporating Green Innovation to Enhance Environmental Sustainability. *Wseas Transactions on Business and Economics*. Volume 16, 477-486
19. Massoudi, A., & Hamdi, S. (2019). Reciprocal Leadership Influence on Organizational Change. *Cihan University-Erbil Journal of Humanities and Social Sciences*, 3(1), 20-26.
20. Pazim, K.H., 2009. Panel data analysis of export-led growth hypothesis in BIMP-EAGA countries, MPRA, 13264.
21. Philips, P.C.B., Perron, P., 1988. Testing for a unit root in time series regression. *Biometrika*, 75(2), 335-346.
22. Rajan, R. and Zingales, L., 1998. Financial development and growth. *American Economic Review*, 88(3), 559-586.
23. Shahbaz, M. and Rahman, M. M., 2014. Exports, financial development and economic growth in Pakistan. *International Journal of Development Issues*, 13(2), 155-170.

24. Shahbaz, M., Azim, P. and Ahmad, K., 2011. Exports-led hypothesis in Pakistan: further evidence. *Asian Economic and Financial Review*, 1, 182-197.
25. Shahbaz, M., 2009. A reassessment of finance-growth nexus for Pakistan: under the investigation of FMOLS and DOLS techniques. *Journal of Applied Economics*, 1, 65-80.
26. Shah, S. S. H., Xinping, X., Khan, M. A., & Harjan, S. A. (2018). Investor and manager overconfidence bias and firm value: Micro-level evidence from the Pakistan equity market. *International Journal of Economics and Financial Issues*, 8(5), 190.
27. Svaleryd, H. and Vlachos, J., 2005. Financial markets, the pattern of industrial specialization and comparative advantage: evidence from OECD countries. *European Economic Review*, 49(1), 113-144.
28. Ullah, S., Zaman, B., Farooq, M. and Javid, A., 2009. Cointegration and causality between exports and economic growth in Pakistan. *European Journal of Social Sciences*, 10, 264-272.
29. Zhang, J., Wang, L. and Wang, S., 2012. Financial development and economic growth: recent evidence from China. *Journal of Comparative Economics*, 40, 393-412.