Trade Flows and Trade Potential: China and Its Major Trading Partners

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ABSTRACT

During the last three decades, China experienced vast economic reforms and achieved many great successes. Nowadays, as the most emerging economy, China plays an important role as the world largest goods supplier. However, due to subprime-born-financial crisis, China economy was affected badly and gradually lost its exports advantage which is the major driver of its economic growth. Past literatures show a mix of results regarding FTAs and export flow increase. To examine the issue of FTA-trade in China, this paper employs the famous gravity model which is estimated using panel data techniques to estimate the impact of trade flows and FTAs among China and its trading partners. The data includes a total of 22 countries over 27 years (1980-2006). The results show that GDP, FDI, M2/GDP and Colony have positive relationship with export; Population, Endowment and Exchange rate we get mixed results which are similar with other articles' results. This paper also gets the results that common land and common languages are not the major trade barriers between countries. Forming FTAs of APEC and ASEAN will bring trade creation among members, which require Chinese government accelerate to enhance FTA strategy in the future. In order to keep up and sustain the economic growth, China has two options in hands. On one hand China has to transform its export structures to keep its export advantage on the other hand, China has to expand more economic cooperation through free trade agreements (FTAs) to trade more from the regional economic grow up.

Keywords: International bilateral trade; Gravity model; Trade potential; Panel data; FTA; Regional economy integration

INTRODUCTION

China as the "Asia Driver" and the most emerging country achieves huge success in economy. From the economic reform in 1979, China involved globalization with an aimed to be a part of free trade. Specifically in 2001 which was the landmark of China's economy as China accession to the World Trade Organization (WTO) was fully accommodated, which then prefigured that China would emerge as one of the world's largest manufacturing base as it integrates into the world economy. The prediction of Lardy (2002) that China will overtake Germany and Japan to become the world second largest economy within a decade came true in 2010. At the same time, China foreign exchange reserve becoming the top one in the world indicated China international trade achieves huge success. WTO system and its advantages stimulated China to establish Free Trade Agreement (FTA) with countries and economic blocs. Insofar as various negotiations made, the number of FTA reached 8 until 2009, which indicated that China made progress in the trade and economic agreements and the same time China had tremendous potential. This momentum may enhance the regional economic cooperation and advance the regional security, which give a big win-win opportunity to countries involved.

Export is the major driver of China's high speed economic growth. The cheap labor forces and the abundant resource decrease the cost of goods produced. While the Chinese currency kept in a stable level also contributes to a well export environment. To benefit from China adopting export-oriented growth model, the export advantage obtained from both natural features and policy views of China is obvious. In 2009, the total exports of China was 1201.66 billion U.S. dollars which accounted for 54% of its GDP 2207.22 billion U.S. dollars, which compared to some previous years again proved that the importance of export.

However, due to rising of new emerging countries and stagnant international economy environment, China gradually lost its export advantage. China gradually loses its exports advantages which register as the increasing in labor costs, declining in external demand, protectionism, domestic inflation and appreciation of currency. The subprime-born-financial crisis also gave adverse impacts to China's export. In Asia, India and Vietnam gradually grow up in manufacturing sectors. Comparing China labor wage gradually increasing and education level raising, India and Vietnam on the other hand, have more cheap cost advantage hence more low-end products' order forms shifts from China to India and Vietnam and other emerging developing countries in Asia. While after 2008 subprime-born-financial crisis, the world economic depression adversely impact China's exports. From the end of 2008, the economy appeared the first time a negative growth. In order to sustain export advantage, China government has to formulate some policies such as adjusting the structure of export products, promoting the use of technology and knowledge of export products, requiring government to pay more efforts on improving scientists and engineers in R&D (Research and Development), enhancing the labor efficiency, promoting the improvement of the international balance of payments and accelerating China's industrial structure adjustment. All above policies do not only consolidate the export but also enhance overall China's foreign trade activities.

China and other countries also realize that when the world encounters difficult time in economy, international trade activities will be the first to be. No countries can escape the adverse impact. In order to keep international trade stable, one way may be taken is to strengthen global and regional economic cooperation. For instance, WTO and G20[1] multilateral mechanisms not only are propitious to enhance countries cooperation but also promote international trade development, and even avoid individual country unilaterally increasing trade barriers to its neighbors and keep away vicious competition. In this case, in order to achieve sustainable economic growth, China actively participates into the WTO and advocates economic cooperations with ASEAN (Association of Southeast Asian Nations) and APEC (Association of Southeast Asian Nations), which requires China to establish FTA with the countries in order to promote positively the regional bilateral and multilateral trade and avoid the increasingly risk of being "marginalized".

This paper through empirical work tests the trade flows and trade potential between China and its major partners and also tries to find the key determinates to sustain its economic prosperity. This study uses gravity model which is the most successful empirical tool to study the effect of trade flows and trade potential. This model has been widely used in various researches to examine the effect of FTAs (before and after FTAs) on bilateral trade flows for over the past 40 years. This paper uses pooled OLS (Ordinary Least Square) and other panel data econometrics methods which include Random Effects Model, Fixed Effects Model, GLS (Generalized Least Square) and Panel-Corrected Standard Errors (PCSE) to test for the BLUE β and to ensure the coefficients obtained are robust and stable. In order to explore the trade flows and trade potential, there are 22 countries are selected[2] over the period from 1980 to 2006. Our data set is a balanced panel with a total 12474 observations.

The structure of this paper is organized as follow: Section 2 reviews the exports and imports of China. Second 3 discusses past literatures. The 4 section introduces the gravity model, empirical methodology and data source. Second 5 represent the empirical evidence. Final section is the conclusion.

BACKGROUND

Due to the China's successful long-term economic reform, its economy reached the peak during 2003-2008 at a high speed growth rate. During these past 6 years, China achieved on average annual GDP growth rate over 10%. In 2009, China has overtaken Germany becoming the world third largest economy. Now, beginning 2010, China becomes the second largest economy of the world.

To understand the factors contributing to this successful achievement, we can conclude that the China's high speed economic growth is based on several reasons: First, the economic reforms and the accession to WTO. After the founding of PRC, Chinese government adopted planned economy that one

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[1] The G20 (Group of 20, also variously G21, G22 and G20+) is a bloc of developing nations established on 20 August 2003. Distinct and separate from the G-20 major economies, the group emerged at the 5th Ministerial WTO conference, held in Cancún, Mexico, from 10 September to 14 September 2003. The G-20 accounts for 60% of the world's population, 70% of its farmers and 26% of world's agricultural exports.

[2] Countries include: Australia, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Korea, Malaysia, Netherland, Philippines, Russia, Singapore, South Korea, Spain, Sweden, Thailand, United Kingdom, United State, Vietnam

hand advanced self-sufficient and the other hand due to the blockade of the capitalist countries, China almost did not have international trade with other countries. Until the time arrived in 1979, the Cultural Revolution finished, China began vigorous economic reforms by opening up its economic doors. Then, it actively negotiated to be a member of WTO. Parallely, China developed its international trade to facilitate world globalization and trade liberalization. In 2001, China formally was officially admitted into WTO. Based on this advantage, the accession has push China's trade especially the export development to grow fast. For instance, China total import and export from January to December 2001 was 509.768 billion U.S. dollars which are exports, 266.155 billion U.S. dollars and 243.613 billion U.S. dollars of imports; Export surplus of 22.541 billion U.S. dollars. In 2009, the country's total trade value was 2207.27 billion U.S. dollars; export 1201.66 billion U.S. dollars and 1005.6 billion U.S. dollars of imports where the export surplus was 196.06 billion U.S. dollars[3]. Second, China government drove the state-owned enterprises reform which promoted the efficiency use of labor force and capital. China's cheap labor wage and abundant resources attracts a lot of Foreign Direct Investments (FDI) and obtains opportunities to gain many processed goods order forms. (Changes in export and import of China see Figure 1)

Due to that, many countries especially developing countries in Asia treat China as the major competitor. They fear the threat from China will be immediate and give intense impact on their labor-intensive products and processes, but it is broader and is likely to quickly affect the entire technological spectrum (Lall & Albaladejo, 2001). China's government takes care about the Asia neighbors' attitudes towards China's economic and national power changing. Hence the government changed "rise" to "peaceful development" to describe its current situation to show that China will not be a threat and the only thing it can bring to neighbors is the collaborative development.[4] Many cases proved that China helped neighbors to break away from the shadow of this economic crisis such as China increased Japanese government bonds holding in 2010, which liked a timely rain to Japan's economy.

However, as the world economic are interlinked, China could not escape the adverse impact from subprime-born-financial crisis in 2008 originated from the United States. Due to this economic crisis, China's export growth rate declined month by month, in November 2008 which appeared for the first time in 10 years where growth rate down to a -2.2%. At the same time, US, European countries and Japan tried various measures to regain trade increase to drive economy come away from the crisis. In addition, with the U.S. dollar continuing to slide, the increasing costs of production factors in China and the intense competition in the international market, the problem China face is becoming more severe.

In this situation, to achieve sustainable economic development, China should carry out economic restructuring which includes changing from labor-intensive to technology-intensive production. Upgrading the production capacity and export structure is necessary for a number of reasons. First, it is essential for sustainability of exports. Second, it helps technological development and spillover effects of the export sector to the rest of the economy. Third, it reduces the vulnerability of the economy to external factors, balance of payments crisis, and fallacy of composition and terms of trade losses.[5]

In addition, recent years China also paid more attention on forming FTAs. China is the original 23 founding GATT signatory. April 21, 1948, Chinese government signed the "Protocol of Provisional Application", on May 21 of the same year, China became a GATT Contracting Parties. Without the authorization of sole legal government of China-The People's Republic of China, Taiwan authorities informed the UN Secretary-General withdrawing from the GATT in March 1950. Obviously, the withdrawal decision was null and void. However, at home and abroad due to political and economic environmental constraints, China failed to timely apply for recovering the status of GATT contracting parties Since July 11,1986 China resume formal status, GATT set up a working group of China and China began GATT negotiations. WTO was established in 1995, and then China's GATT negotiations turned to join the WTO negotiations. November 10, 2001, WTO Ministers adopted unanimously and China became a formal member of WTO on Dec.11.

China's FTA strategy is relatively lagging behind other countries, which is inseparable to China's implementation of "non-aligned". Since 1990, China would not give up the premise of open regionalism, and gradually paid attention to institutional FTA. Since 2000, international regional FTA group has the influence of "reconstruction" on structure and function of the world economy. Since 1999, the foreign trade

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3 All data come from "Ministry of Commerce of the People's Republic of China Comprehensive Department"
4 Yizhou Wang. 2007. China's State Security in a Time of Peaceful Development: A New Issue on Research Agenda, China & World Economy, Vol. 15, No. 1, 2007, pp. 77 – 86.
5 Shafaeddin S.M., April 2005, Trade liberalization and economic reform in developing countries: structural change or de-industrialization?, United Nations Conference on Trade and Development Discussion Papers No. 179.

right was revolution to domestic private enterprises. At the end of 2005, the total liberalization of foreign trade rights greatly promoted the development of China's international trade. In 2005, China's foreign trade grew so fast that the total import and export volume was 1.4221 trillion U.S dollars. In 2009, the number reached to 2.2072 trillion U.S dollars[6].

Until now, China already has signed FTA with 8 countries and area as follow:
  ◆ China-ASEAN FTA (2002)
  ◆ China-Singapore FTA Singapore (2008)
  ◆ China-Pakistan FTA (2009)
  ◆ China-Chile FTA (2004)
  ◆ China-New Zealand FTA (2008)
  ◆ China-Peru FTA (2009)
  ◆ Mainland and Hong Kong Closer Economic and Partnership Arrangement (2004)
  ◆ Mainland and Macau Closer Economic and Partnership Arrangement (2004)

Free Trade Agreements under Negotiation as follow:
  ◆ China-GCC (Gulf Cooperation Council) FTA
  ◆ China-Australia FTA
  ◆ China-Iceland FTA
  ◆ China-Norway FTA
  ◆ China-SACU (Southern Africa Customs Union) FTA

Free Trade Agreements under Consideration as follow:
  ◆ China-India Regional Trade Arrangement Joint Feasibility Study
  ◆ China-Korea FTA Joint Feasibility Study
  ◆ China-Japan-Korea Joint Study
  ◆ China-Switzerland FTA Joint Study

Source: http://fta.mofcom.gov.cn

About the strategy of China FTA, there are many opinions from Chinese scholars, and most of them agree that China should join the East Asia integration especially basis the core of ASEAN and collect Japan, South Korea and India to form a strong economic power in Asia. This opinion is also supported by one writer who indelicately put it, "ASEAN has to ensure that it is the stuffing in the vast sandwich being created by the accelerating economic engagement between the biggest economies of the region-Japan, China, India and South Korea"[7]

This paper base on the results suggests China could follow this strategy (see the Chart 1). This paper uses the most famous gravity model and this model is a workhorse tool in a wide range of empirical fields. It is regularly used to estimate the impact of trade agreements, exchange rate, the 'border effect', common or related language usage and it even has a range of more exotic applications such as the impact of religion on trade and the impact of trade on the likelihood of war.[8]

PAST LITERATURES

Bergstrand (1985), (1989), (1990) also developed relationship between bilateral trade and trade theory. Especially, he highlighted price variable. Helpman and Krugman (1985) paid more attention on gravity equation and Helpman (1987) justified the gravity model using a differentiated. With the developing of gravity equation and more empirical applications, many authors affiliate the study of this area. Especially in the recent two decades, the gravity model has become popular again. In the early and mid of 1990s, it was used to analyze the changes in the world trade system. And most of the studies which used gravity framework are to predict trade potential.[9]

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6 These data come from National Bureau of Statistics of China.
[7] Ravi Velloor, "ASEAN in Driver's Seat of East Asia Summit," The Straits Times, December 15,2005.
[8] Richard Baldwin and Daria Taglioni, 2006, Gravity for Dummies and Dummies for Gravity Equations, NBER Working Paper No. 12516.
8. The UNCTAD-WTO International Trade Centre created a name "Trade Sim" has been developed specifically for analyzing the

Hamilton and Winters (1992) and Wang and Winters (1992) made more contributions about this area and their researches were very useful on improvement of predicting the world trade potential and shifts of global trade patterns. And at the same time, Baldwin (1994), Gros and Gonciarz (1996), Brenton and Di Mauro (1999), Nilsson (2000) also use gravity equations to evaluate deeper topics. And Bhavish et al. (2007) used the gravity model to see if Asia/Pacific Regional Trade Agreements have been trade creating or trade diverting. Mordechai et al. (2008) used gravity model to capture the effect of regioanl economic co operation on Foreign Direct Investment (FDI) flows in the cases of the EU (European Union), NAFTA (North American Free Trade Agreement), and ASEAN.

MODELS AND ESTIMATION

Gravity model as the most successful empirical model to analyze kinds international issues which is adopted in this paper. Gravity models begin with Newton's Law for the gravitational force (GF_{ij}) between two objects *i* and *j*. In equation form, it is expressed as follow:

$$GF_{ij} = \frac{M_i M_j}{D_{ij}}(i \neq j) \tag{4.1}$$

Tinbergen (1962) and Poyhonen (1963) were the first to apply the gravity model to international trade flows. In its original form, they specified the following gravity model equation:

$$Trade_{ij} = A(GDP_i GDP_j)/dis\tan ce_{ij}^2 \tag{4.2}$$

We suppose there are two country *i* and *j*. Then tradeij is the value of bilateral trade between country *i* and *j*, A is a constant of proportionality, GDP_i and GDP_j are national incomes of country *i* and *j*, distance$_{ij}$ is distance between the two countries *i* and *j*.

Based on Newton's gravitation law, the gravity model of trade is analogous to other gravity models. Gravity model is good at analyzing trade flows, trade potentials and regional free trade agreements by estimating determinations such as GDP, population, exchange rate, border effect, distance, common language, and common culture and so on. The trade views of the (4.2) represents a reduced form that include demand and supply factors such as GDP or GNP and population, and at the same time produced trade resistance such as geographical distance which as a proxy of transport costs and trade preference factors (common language, common land and FTA). Then because of its empirical strategy contribution it became very popular. For instance, Egger (2000) included from his all estimations that the scaling variable GDP and distance (DIST) exhibit major influence. Soloaga and Winters (2001) modified the gravity equation to identify separate effects of PTAs on intrabloc trade, members' total imports and their total exports and to test for significant changes in trade patterns following the creation of trade blocs. Michael (2006) used gravity model to evaluate the relevant policy lessons of the European experience for ASEAN.

This paper selects seven quantitatively variables and seven dummy variables, and establishes five gravity models to estimate the impact of variables on trade. This chapter specifies these variables and introduces panel data and dynamic panel data as the econometric methods to estimate the gravity model. Moreover, this chapter forecasts the estimation results base on previous articles as the references of chapter four. Lastly this chapter also describe five economics methods include OLS, Random-effect, Fixed-effect, GLS and PCSE.

Based on the equation of Inmaculada Martinez-Zarzoso (2009) and for estimation purpose with time dimension added, this paper specifies 5 equations:

Model 1:

$$\ln X_{ijt} = \alpha_{ij1} + \phi_{t1} + x_{i1} + \varphi_{j1} + \beta_{1,1}\ln GDP_{it} + \beta_{2,1}\ln GDP_{jt} + \beta_{3,1}\ln\left|GDP_{it} - GDP_{jt}\right| + \beta_{4,1}\ln POP_{it} + \beta_{5,1}\ln POP_{jt}$$
$$+\beta_{6,1}EXR_{it} + \beta_{7,1}EXR_{jt} + \beta_{8,1}FDI_{it} + \beta_{9,1}FDI_{jt} + \beta_{10,1}DIST_{ij} + \beta_{11,1}\ln FIN_{it} + \beta_{12,1}\ln FIN_{jt} + v_{ijt}$$

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trade potential of developing countries and economies in transition.

$$(4.3)$$

Model 2:

$$\ln X_{ijt} = \alpha_{ij1} + \phi_{t1} + x_{i1} + \varphi_{j1} + \beta_{1,1} \ln GDP_{it} + \beta_{2,1} \ln GDP_{jt} + \beta_{3,1} \ln \left| GDP_{it} - GDP_{jt} \right| + \beta_{4,1} \ln POP_{it} + \beta_{5,1} \ln POP_{jt}$$
$$+ \beta_{6,1} EXR_{it} + \beta_{7,1} EXR_{jt} + \beta_{8,1} FDI_{it} + \beta_{9,1} FDI_{jt} + \beta_{10,1} DIST_{ij} + \beta_{11,1} \ln FIN_{it} + \beta_{12,1} \ln FIN_{jt} + \beta_{13,1} comlang_{ij}$$
$$+ \beta_{14,1} comland_{ij} + \beta_{15,1} colony_{ij} + v_{ijt}$$

$$(4.4)$$

Model 3:

$$\ln X_{ijt} = \alpha_{ij1} + \phi_{t1} + x_{i1} + \varphi_{j1} + \beta_{1,1} \ln GDP_{it} + \beta_{2,1} \ln GDP_{jt} + \beta_{3,1} \ln \left| GDP_{it} - GDP_{jt} \right| + \beta_{4,1} \ln POP_{it} + \beta_{5,1} \ln POP_{jt}$$
$$+ \beta_{6,1} EXR_{it} + \beta_{7,1} EXR_{jt} + \beta_{8,1} FDI_{it} + \beta_{9,1} FDI_{jt} + \beta_{10,1} DIST_{ij} + \beta_{11,1} \ln FIN_{it} + \beta_{12,1} \ln FIN_{jt} + \beta_{13,1} comlang_{ij}$$
$$+ \beta_{14,1} comland_{ij} + \beta_{15,1} colony_{ij} + \beta_{16,1} English_{ij} + \beta_{17,1} Mandarin_{ij} + v_{ijt}$$

$$(4.5)$$

Model 4:

$$\ln X_{ijt} = \alpha_{ij1} + \phi_{t1} + x_{i1} + \varphi_{j1} + \beta_{1,1} \ln GDP_{it} + \beta_{2,1} \ln GDP_{jt} + \beta_{3,1} \ln \left| GDP_{it} - GDP_{jt} \right| + \beta_{4,1} \ln POP_{it} + \beta_{5,1} \ln POP_{jt}$$
$$+ \beta_{6,1} EXR_{it} + \beta_{7,1} EXR_{jt} + \beta_{8,1} FDI_{it} + \beta_{9,1} FDI_{jt} + \beta_{10,1} DIST_{ij} + \beta_{11,1} \ln FIN_{it} + \beta_{12,1} \ln FIN_{jt} + \beta_{13,1} comlang_{ij}$$
$$+ \beta_{14,1} comland_{ij} + \beta_{15,1} colony_{ij} + \beta_{16,1} English_{ij} + \beta_{17,1} Mandarin_{ij} + \beta_{18,1} APEC_{ij} + v_{ijt}$$

$$(4.6)$$

Model 5:

$$\ln X_{ijt} = \alpha_{ij1} + \phi_{t1} + x_{i1} + \varphi_{j1} + \beta_{1,1} \ln GDP_{it} + \beta_{2,1} \ln GDP_{jt} + \beta_{3,1} \ln \left| GDP_{it} - GDP_{jt} \right| + \beta_{4,1} \ln POP_{it} + \beta_{5,1} \ln POP_{jt}$$
$$+ \beta_{6,1} EXR_{it} + \beta_{7,1} EXR_{jt} + \beta_{8,1} FDI_{it} + \beta_{9,1} FDI_{jt} + \beta_{10,1} DIST_{ij} + \beta_{11,1} \ln FIN_{it} + \beta_{12,1} \ln FIN_{jt} + \beta_{13,1} comlang_{ij}$$
$$+ \beta_{14,1} comland_{ij} + \beta_{15,1} colony_{ij} + \beta_{16,1} English_{ij} + \beta_{17,1} Mandarin_{ij} + \beta_{18,1} ASEAN_{ij} + v_{ijt}$$

$$(4.7)$$

Where ln denotes variables in natural logs, X_{ijt} are the exports from country i to country j in period t at current US\$. α_{ij} are the specific effects associated with each bilateral trade flow. They are a control for all the omitted variables that are specific to each trade flow and that are time-invariant. x_i and φ_j are exporter and importer effects that proxy for multilateral resistance factors. [10] ϕ_t are specific time effects that control for omitted variables that are common for all trade flows but vary over time. v_{ijt} denotes the error term that is assumed to be well behaved. Definitions for other variables are as follow:

- GDP_i and GDP_j here notes real GDP
- $\left| GDP_i - GDP_j \right|$ notes the endowment between countries
- POP_i and POP_j here notes population
- FDI_i and FDI_j here notes inward foreign direct investment[11]
- EXR_i and EXR_j here notes real exchange rate

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[10] In Anderson and Wincoop (2003) paper, they called multilateral trade resistance which means the incorrect specification or omission of the terms.

[11] There are two types of FDI which are inward foreign direct investment and outward foreign direct investment, which results in a *net* FDI *inflow* that is positive or negative.

•FIN$_i$ and FIN$_j$ notes that $\dfrac{M2_i}{GDP_i}$ and $\dfrac{M2_j}{GDP_j}$

•DIST$_{ij}$ here notes distance between two capital cities

•Comland$_{ij}$ here notes common border

•Comlang$_{ij}$ here notes common language

•Colony$_{ij}$ is a binary variable which is unity if *i* ever colonized *j* or vice versa •Englis$_{hij}$ notes that pairs of countries speak English

•Mandarin$_{ij}$ notes pairs of countries speak mandarin

•APEC$_{ij}$ notes that pairs of countries are the members of APEC

•ASEAN$_{ij}$ notes that pair of countries is the members of ASEAN

This paper uses different panel data econometric methods such as OLS, Fixed Effect Regression, Random Effect Regression, GLS and linear regression with panel-corrected standard errors to get the BLUE β and improve β to be robust and stable. In order to explore the trade flows and trade potential, there are 22 countries are selected over the period from 1980 to 2006. Our data set is a balance panel with a total 12474 observations (22×21×27). All data are taken from Datastream except distance is taken from Jon Haveman's international trade data[12] and FDI data come from UNCTAD website.[13] To construct dummy variables, information from the CIA's World Factbook are considered for country-specific variables.[14] These include: physically contiguous neighbors, language, colonizers. The data of member of APEC, ASEAN come from WTO website.[15]

EMPIRICAL RESULTS

As the main pillar of China economy, foreign trade's flows and potential is the most important issue. So to examine this issue has significant meaning not just for China economy but also to other countries. This paper sets five gravity models and uses five econometrics methods of panel data to check for result robustness and coefficient stability. The results are shown in Table 1-5. Some researchers studied the FTA effect on the trade of bloc members with nonmembers such as Bayoumi and Eichengreen (1997), Frankel (1997) and Frankel and Wei (1998), which they believed that trade creation raises intrabloc trade but has no effect on extrabloc imports; trade diversion boosts intrabloc imports and has an equal and opposite effect on extrabloc imports. And Bhavish et al. (2007) used the gravity model to see if Asia/Pacific Regional Trade Agreements have been trade creating or trade diverting. Mordechai et al. (2008) used gravity model to capture the effect of regional economic integration on Foreign Direct Investment (FDI) flows in the cases of the EU, NAFTA, MERCOSUR, and ASEAN.

Although in this paper our results as expected were achieved but for the exception of common land and common language, which is different comparing other articles. This paper proved again that GDP, FDI, M2/GDP, Distance and Colony we get expected results that except distance has negative relationship with trade the others have positive relation. While statistically all of them are highly significant. And at the same time, we get mixed results in Population, Endowment and Exchange. OLS, Random effect, GLS and PCSE results show that Population have negative relationship with trade and statistically significant. But the result of Fixed effect show that the population of importing country has positive and statistically insignificant. Endowment results from the OLS, GLS and PCSE have positive relationship with trade and statistically significant. Random and Fixed effect get the opposite results. However both results are rational that between same economic development level and different economic development level countries, the trade could gradual increase with the depth of globalization. Exchange rate we get the expected results from OLS, Random effect, GLS and PCSE that exchange rate have positive relationship with trade (especially with export) and statistically are significant. Fixed effect result shows that importing country exchange rate have positive relation and statistically are insignificant.

Common land and Common Language (English and Mandarin) results are different from other articles that they statistically are significant but have negative relationship with trade, which is a new

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[12] http://www.macalester.edu/research/economics/page/haveman/trade.resources/tradedata.html#Gravity

[13] http://www.unctad.org/Templates/Page.asp?intItemID=1923&lang=1

[14] http://www.odci.gov/cia/publications/ factbook/index.html.

[15] http://www.wto.org/english/thewto_e/ gattmem_e.htm.

conclusion. Initially, different languages made barriers between countries that language and culture differences as a factor created trade resistance. But as pointed out, with the development of globalization, the world got benefits that increased communication, cultural breakdowns, technology flows, etc, which reduce the trade barriers between countries.

As we know that sharing a common land helps to facilitate trade. The coefficients show another phenomenon that common land is negative with trade. Actually, in empirical world, it is rational. For instance, India is China's neighbor and they share a long common land. But comparing the trade flows between China-India and China-United State, we can find that China trade much more with US than that with India. Anderson and Wincoop (2003) got the same result that they found borders reduce trade between the United States and Canada by 44 percent, while reducing trade among other industrialized countries by 29 percent. With the acceleration of globalization and the development of modern technology, likes common language, common land also gradual reduces its importance in international trade.

That Baier and Bergstrand (2007) again proved that the Free Trade Agreements do increase members' international trade. Antkiewicz & Whalley (2005) support China will benefit in regional liberalization. The others are opposite, which show the ineffectiveness of these two groups and trade diversion. Soloaga and Winters (2001) concluded the similar results that export diversion in EU and EFTA, which could be consistent with their imposing a welfare cost on the rest of world. Clarete et al. (2003) got the result through gravity model that membership in APEC was estimated to expand significantly trade both between members of the PTA and between members and to the rest of the world.

As we know that trade creation and trade diversion effects happen because of the formation of economic union. Whether FTA creates more trade than they divert become an open question. Clarete et al. (2003) concluded that the lower trade barriers in economic union may expose member economies to greater competitive pressures and open up larger markets for producers in member countries. And FTAs small size can ease trade-facilitating "deep integration" such as harmonizing standards or regulatory codes. Wacziarg (2001) argued that FTAs not only spur productive efficiency gains among domestic producers but also improve the inputs and goods available in economy. Producers can benefit from the greater market and expand its range of activity, which will lead to enterprise and employment growth.

Above results imply that China should strengthen culture communication with countries to maximum reduce the recessive trade barriers. And with the consolidated economic and culture relationship, China and its neighbors will promote the transportation facilities to reduce transportation cost. FTAs with APEC and ASEAN for both exporting and importing countries will improve the trade and statistically are significant. Especially for exporting countries can benefit more due to the low trade barriers in FTAs. Sum up, if China wants to sustainable improve its economic growth one hand by increasing export volume and the other hand by promoting to sign FTAs and develop regional economic integration. Countries promoting to sign FTAs and enhancing the regional economic integration have absolute significant meaning that not generate economic benefits to China economy but also bring peace in Asia. This strategy hence provides a win-win prospect for both China and Asia.

CONCLUSION

This paper proved again that GDP, FDI, M2/GDP, Distance and Colony we get expected results that except distance has negative relationship with trade the others have positive relation. And at the same time, we get mixed results in Population, Endowment and Exchange. Common land and Common Language (English and Mandarin) results are different from other articles that they statistically are significant but have negative relationship with trade, which is a new conclusion. Sharing a common land helps to facilitate trade. Forming FTAs of APEC and ASEAN for both exporting and importing countries will improve the trade between members.

The current situation of world market requires China government shift its exports-orientation growth model to exports more productions with high-tech and knowledge growth which we can call it Increase Added Value model. And this model at the same time will stimulate the technology innovation and improve the industrialization level of China. This paper's results also inspire China to keeping exchange rate stable, attract more FDI, accelerate the finance development strengthen culture communications with countries. Ministry of International Trade and Industry (MITI) argued the efforts of Malaysia government which is the core country of ASEAN that actively expand trade opportunities by signing new FTAs particularly with emerging markets, which will expand market access and boost business opportunities for

exports and businesses and government will also undertake efforts to conclude the on-going FTA negotiations at the bilateral and regional levels. That this argument again proves the significant of this paper results.

The strategy of China's FTA, there are many opinions from Chinese scholars, and most of them agree that China should cooperate with other East Asia n countries and promote regional economic integration especially base on the core of ASEAN and collect Japan, South Korea and India to form a strong economic bloc in Asia. This opinion is also supported by Ravi Velloor (2005) who indelicately put it, "ASEAN has to ensure that it is the stuffing in the vast sandwich being created by the accelerating economic engagement between the biggest economies of the region-Japan, China, India and South Korea"

As we know the current situation is that China, Japan, South Korea and India already have signed FTAs with ASEAN separately. Each of pair has obvious effect on economy that not only increasing the trade volumes but also benefiting people within regions. But each of pair cannot become a strong power to affect the whole Asia and even the global economy. As long as countries such as China, Japan, South Korea and India these Asian "major driving forces" integrating together and at the same time cooperating with ASEAN to form a super economic blocs, it would favour internal region and benefit the global economy. Although this strategy is full of passion and the process to operate this strategy is a hard work such as the agricultural products this sensitive project between countries that they can eliminate tariff completely, the trend regional economic integration in Asia will accelerate its steps with the further global trade liberalization.

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TABLE 1: OLS Coefficients for EXPORTs

Dependent variable lnx	Model 1	Model2	Model 3	Model 4	Model 5
Independent variables					
lnrgdp$_i$	0.6127***	0.5850***	0.6760***	0.7019***	0.7484***
lnrgdp$_j$	0.5235***	0.4969***	0.5627***	0.5902***	0.6369***
lnrendow	0.0391**	0.3045*	-0.0103	-0.0501***	-0.0850***
lnpop$_i$	-0.1798***	-0.1599***	0.1573***	-0.1386***	-0.1739***
lnpop$_j$	-0.1256***	-0.1062***	-0.1009***	-0.0860***	-0.1187***
lnfdi$_i$	0.2418***	0.2368***	0.1995***	0.2198***	0.2523***
lnfdi$_j$	0.2657***	0.2597***	0.2366***	0.2282***	0.2662***
lndist	-1.0841***	-1.0897***	-0.9969***	-0.9109***	-0.6771***
lnexr$_i$	-0.3884***	-0.0512***	0.0004	-0.0486***	-0.1068***
lnexr$_j$	-0.4780***	-0.0602***	-0.0278**	-0.0740***	-0.1377***
lnfin$_i$	0.4908***	0.0563***	0.0413***	0.0700***	0.0654***
lnfin$_j$	0.0570***	0.0639***	0.0579***	0.0803***	0.0811***
comlang		-0.2059***	-0.1493***	-0.2235***	0.0183
comland		-0.1539	-0.4475***	-0.5894***	-0.2937***
col		0.3634***	0.5326***	0.9579***	0.7244***
eng$_i$			-0.0389	-0.2423***	-0.3754***
eng$_j$			-0.0178	-0.1816***	-0.3461***
man$_i$			0.9437***	0.6809***	0.2282***
man$_j$			0.5960***	0.3886***	-0.0905
APEC$_i$				0.1798**	
APEC$_j$				0.0394	
APEC				0.7121***	
ASEAN$_i$					0.5211***
ASEAN$_j$					0.4706***
ASEAN					0.9405***
_cons	3,9739***	4.6409***	2.8036***	1.9725***	-0.4681
R-squared	0.5508	0.5548	0.5804	0.6130	0.6337
F-test	515.20	417.56	365.63	361.44	394.70
Wald chi2					

Notes: Asterisks (*, **, ***) denote significance level at the 10, 5 and 1 percent level respectively.

TABLE 2: Random effect coefficient for exports

Dependent variable lnx	Model 1	Model 2	Model 3	Model 4	Model 5
Independent variables					
lnrgdp$_i$	0.9697***	0.9614***	0.9457***	0.9385***	0.9209***
lnrgdp$_j$	0.7218***	0.7137***	0.7217***	0.7209***	0.7198***
lnrendow	-0.0835***	-0.0853***	-0.0877***	-0.0901***	-0.0873***
lnpop$_i$	-0.2042***	-0.1862***	-0.1826***	-0.1776***	-0.1737***
lnpop$_j$	-0.1060**	-0.0898*	-0.0870*	-0.0856*	-0.0868*
lnfdi$_i$	0.1008***	0.0993***	0.1014***	0.1034***	0.1052***
lnfdi$_j$	0.1198***	0.1181***	0.1200***	0.1212***	0.1256***
lndist	-1.0385***	-1.0261***	-0.9347***	-0.8549***	-0.7703***
lnexr$_i$	-0.2354***	-0.2341***	-0.1997***	-0.2225***	-0.1739***
lnexr$_j$	-0.2047***	-0.2042***	-0.1842***	-0.2064***	-0.2157***
lnfin$_i$	0.5096***	0.5100***	0.4883***	0.4917***	0.4672***
lnfin$_j$	0.3490***	0.3491***	0.3425***	0.3482***	0.3485***
comlang		-0.4072***	-0.0517	-0.0684	0.0249
comland		-0.2031	-0.5418	-0.6358*	-0.4514
col			1.8078***	1.9729***	1.6845
eng$_i$			-0.4538**	-0.5572***	-0.4662**
eng$_j$			-0.2752	-0.3806**	-0.4015**
man$_i$			0.9000***	0.7503***	1.1192***
man$_j$			0.4912***	0.3401*	0.3318
APEC$_i$				-0.1309	
APEC$_j$				-0.1104	
APEC				0.6782**	
ASEAN$_i$					-0.7277***
ASEAN$_j$					-0.2765
ASEAN					1.0014***
_cons	4.7909***	4.7665	3.8570***	3.4295***	2.8336***
R-squared	0.6240	0.6247	0.6249	0.6237	0.6240
F-test					
Wald chi2	7379.00	7465.60	7443.18	7442.15	7362.05

Notes: Asterisks (*, **, ***) denote significance level at the 10, 5 and 1 percent level respectively.

TABLE 3: Fixed effect coefficient for exports

Dependent variable lnx	Model 1	Model2	Model 3	Model 4	Model 5
Independent variables					
$lnrgdp_i$	1.2617***	1.2617***	1.2617***	1.2617***	1.2617***
$lnrgdp_j$	0.7342***	0.7342***	0.7342***	0.7342***	0.7342***
lnrendow	-0.0639***	-0.0639***	-0.0639***	-0.0639***	-0.0639***
$lnpop_i$	-0.0355*	-0.0355*	-0.0355*	-0.0355*	-0.0355*
$lnpop_j$	0.1400	0.1400	0.1400	0.1400	0.1400
$lnfdi_i$	0.0259**	0.0259**	0.0259**	0.0259**	0.0259**
$lnfdi_j$	0.0832***	0.0832***	0.0832***	0.0832***	0.0832***
lndist	omitted	omitted	omitted	omitted	Omitted
$lnexr_i$	0.8990***	0.8990***	0.8990***	0.8990***	0.8990***
$lnexr_j$	0.1167	0.1167	0.1167	0.1167	0.1167
$lnfin_i$	0.2811***	0.2811***	0.2811***	0.2811***	0.2811***
$lnfin_j$	0.2714***	0.2714***	0.2714***	0.2714***	0.2714***
comlang		omitted	omitted	omitted	Omitted
comland		omitted	omitted	omitted	Omitted
col		omitted	omitted	omitted	Omitted
eng_i			omitted	omitted	Omitted
eng_j			omitted	omitted	Omitted
man_i			omitted	omitted	Omitted
man_j			omitted	omitted	Omitted
$APEC_i$				omitted	
$APEC_j$				omitted	
APEC				omitted	
$ASEAN_i$					Omitted
$ASEAN_j$					Omitted
ASEAN					Omitted
_cons	-11.8706***	-11.8706***	-11.8706***	-11.8706***	-11.8706***
R-squared	0.6474	0.6474	0.6474	0.6474	0.6474
F-test	779.04	779.04	779.04	779.04	779.04
Wald chi2					

Notes: Asterisks (*, **, ***) denote significance level at the 10, 5 and 1 percent level respectively.

TABLE 4: GLS coefficient for exports

| Dependent variable lnx	Model 1	Model2	Model 3	Model 4	Model 5
Independent variables					
lnrgdp$_i$	0.6127***	0.5850***	0.6760***	0.7019***	0.7439***
lnrgdp$_j$	0.5235***	0.4969***	0.5627***	0.5902***	0.6369***
lnrendow	0.0391**	0.0304*	-0.0103	-0.0501***	-0.0850***
lnpop$_i$	-0.1798***	-0.1599***	-0.1573***	-0.1386***	-0.1739***
lnpop$_j$	-0.1256***	-0.1062***	-0.1009***	-0.0860***	-0.1187***
lnfdi$_i$	0.2418***	0.2368***	0.1995***	0.2198***	0.2523***
lnfdi$_j$	0.2657***	0.2597***	0.2366***	0.2282***	0.2622***
lndist	-1.0841***	-1.0896***	-0.9969***	-0.9109***	-0.6771***
lnexr$_i$	-0.0388***	-0.0512***	0.0004	-0.0486***	-0.1068***
lnexr$_j$	-0.0478***	-0.0602***	-0.0278**	-0.0740***	-0.1377***
lnfin$_i$	0.0491***	0.0563***	0.0413***	0.0700***	0.0654***
lnfin$_j$	0.0570***	0.0639***	0.0579***	0.0803***	0.0811***
comlang		-0.2059***	-0.1493**	-0.2235***	0.0183
comland		-0.1539	-0.4475***	-0.5894***	-0.2937***
col		0.3634***	0.5326***	0.9579***	0.7244***
eng$_i$			-0.0389	-0.2423***	-0.3754***
eng$_j$			-0.0178	-0.1816***	-0.3461***
man$_i$			0.9437***	0.6809***	0.2282***
man$_j$			0.5960***	0.3886***	-0.0905
APEC$_i$				0.1798**	
APEC$_j$				0.0394	
APEC				0.7121***	
ASEAN$_i$					0.5211***
ASEAN$_j$					0.4706***
ASEAN					0.9405***
_cons	3.9739***	4.6409***	2.8036***	1.9725***	-0.4681
R-squared					
F-test					
Wald chi2	6210.43	6283.26	6974.68	7988.09	8723.26

Notes: Asterisks (*, **, ***) denote significance level at the 10, 5 and 1 percent level respectively.

TABLE 5: PCSE coefficient for exports

Dependent variable lnx	Model 1	Model2	Model 3	Model 4	Model 5
Independent variables					
lnrgdp$_i$	0.6127***	0.5850***	0.6759***	0.7019***	0.7484***
lnrgdp$_j$	0.5235***	0.4969***	0.5627***	0.5902***	0.6369***
lnrendow	0.0391**	0.0304*	-0.0103	-0.0501***	-0.0850***
lnpop$_i$	-0.1798***	-0.1599***	-0.1573***	-0.1386***	-0.1739***
lnpop$_j$	-0.1256***	-0.1062***	-0.1009***	-0.0860***	-0.1187*
lnfdi$_i$	0.2418***	0.2368***	0.1995***	0.2198***	0.2523***
lnfdi$_j$	0.2657***	0.2597***	0.2366***	0.2282***	0.2662***
lndist	-1.0841***	-1.0896***	-0.9969***	-0.9109***	-0.6771***
lnexr$_i$	-0.0388***	-0.0512***	0.0004	-0.0486***	-0.1068***
lnexr$_j$	-0.0478***	-0.0602***	-0.0278**	-0.0740***	-0.1377***
lnfin$_i$	0.0491***	0.0563***	0.0413***	0.0700***	0.0654***
lnfin$_j$	0.0570***	0.0639***	0.0579***	0.0803***	0.0811***
comlang		-0.2059***	-0.1493**	-0.2235***	0.0183
comland		-0.1539*	-0.4475***	-0.5894***	-0.2937***
col			0.5326***	0.9579***	0.7244***
eng$_i$			-0.0389	-0.2423***	-0.3754***
eng$_j$			-0.0178	-0.1816***	-0.3461***
man$_i$			0.9437***	0.6809***	0.2282***
man$_j$			0.5960***	0.3886***	-0.0905
APEC$_i$				0.1798**	
APEC$_j$				0.0394	
APEC				0.7121***	
ASEAN$_i$					0.5211***
ASEAN$_j$					0.4706***
ASEAN					0.9405***
_cons	3.9739***	4.6409***	2.8036***	1.9725***	-0.4681
R-squared	0.5519	0.5548	0.5804	0.6130	0.6337
F-test					
Wald chi2	6186.71	6230.86	8233.28	9390.57	9374.09

Notes: Asterisks (*, **, ***) denote significance level at the 10, 5 and 1 percent level respectively.
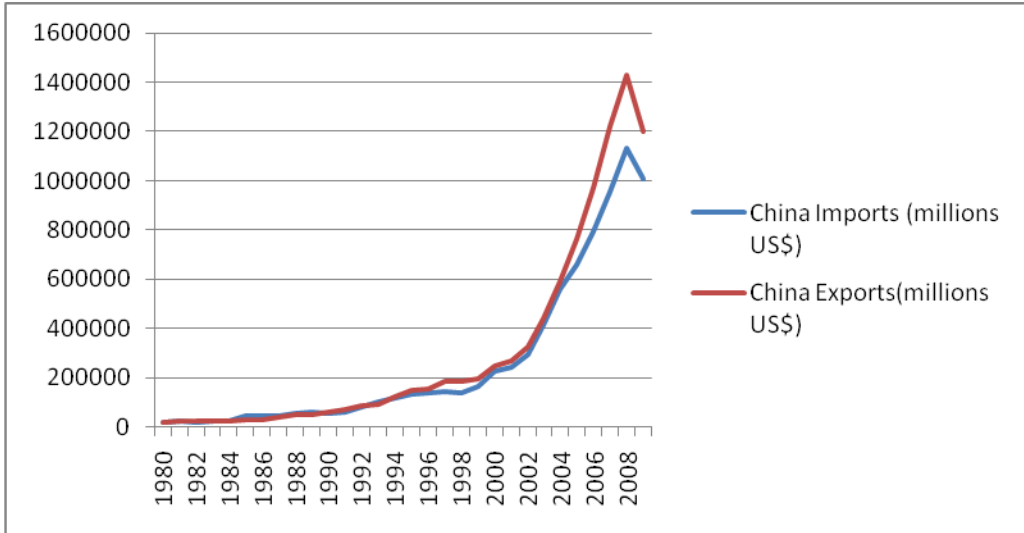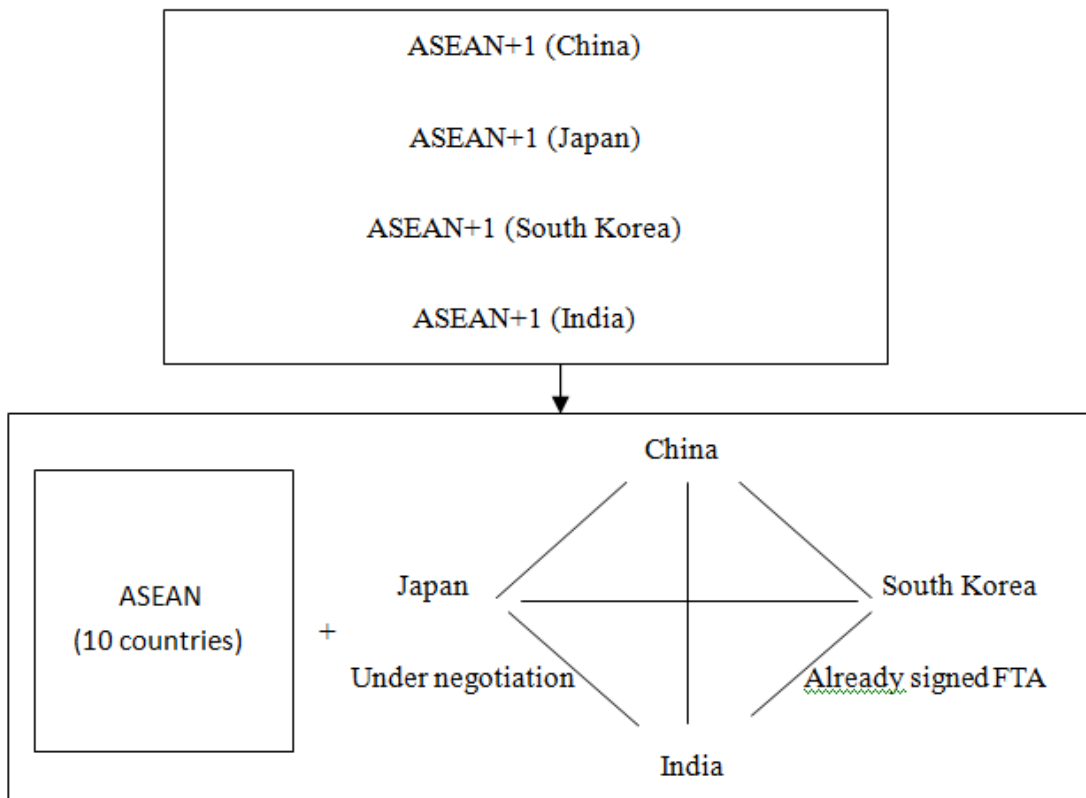
Source: IFS database

FIGURE 1

CHART 1