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TRADE FLOWS AND TRADE SPECIALISATION: THE CASE OF CHINA

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Abstract

Using annual data for the period 1992-2012, this

1. Introduction

Since the reform process started and an opening-up policy was adopted, China has experienced a sharp increase in its growth rate and also its trade with the rest of the world: it has successfully converted itself from a country with protectionist trade policies to an outward-oriented one with an open economy. During this transition its trade relations with the rest of the world went through various stages, from isolation and dependence on the Soviet economy to openness. Its accession to the World Trade Organization (WTO) was a key step giving China the opportunity to participate in world trade within a multilateral trade system.

However, the global financial crisis of 2007-8 affected the main Chinese export markets (EU, US, and Japan in order of importance) and both export growth and FDI have decreased over the last few years, although less than in the US and the European countries most hit by the crisis.

The present study analyses trade flows between China and its main trade partners in Asia, North America and Europe. In particular, it examines whether increasing trade has also led to industrial structural adjustment and

but has been declining over time and has been overtaken by the latter. China's main trading partners since its foreign trade was liberalised have been the OECD economies, accounting for 49.7% of total trade in 2012. China's top eighteen (18) trading partners in 2012 in terms of trade volume and share are shown in Table A3. Trade with these countries accounted for 62.4% of total trade in 2012. The main trading partner in 2012 was the EU (14.1%), followed by the US (12.6%) (see Table A2 and A3). Trade with the rest of the world has increased by a factor of 23 since 1992 (see Table A1) and even more, by a factor of 25, with the EU and US (see Figure A6). However, trade with emerging economies is also becoming important, with China looking for new potential markets for its products.

A few previous studies have investigated trade between China and the rest of the world. In particular, Yang and Martinez–Zarzoso (2014) examined trade creation and diversion effects of the free trade agreements between China and ASEAN using a sample of 31 countries over the period from 1995 to 2010. They used aggregate and disaggregate export data for agricultural and manufactured goods (chemical products, machinery and transport equipment). They found that these free trade agreements (ACFTA) led to significant trade creation. Lee et al. (2013) analysed China's imports, estimating the relative importance of the extensive margin (number of goods) versus the intensive margin (the amount traded per good), and examining the role of both firm heterogeneity and product heterogeneity, shedding some light on China's trade patterns following its recent emergence as a globally significant importer. Bahmani- Oskooee and Ratha (2010) tested the S-Curve using bilateral trade data between the US and China. They reported that there is no evidence of an S

3. The Gravity Model

The gravity model is widely used as a benchmark to estimate trade flows between countries[2]. Trade flows from country i to country j are modelled as a function of the supply of the exporter country, the demand of the importer country and trade barriers. In other words, national incomes of two countries, transport costs (transaction costs) and regional agreements are assumed to be the main determinants of trade. Initially inspired by Newton's gravity law, gravity models have become essential tools in the analysis of international trade flows. The first applications were rather intuitive, without theoretical foundations. They included the contributions of Tinbergen (1962) and Pöyhönen (1963). Subsequently, the new international trade theory provided theoretical justifications for these models in terms of increasing returns of scale, imperfect competition and geography (transport costs) (see Anderson 1979, Bergstrand 1985, and Helpman and Krugman 1985).

Linnemann (1966) proposed a gravity model based on a Walrasian, general equilibrium approach. He explained exports of country i to country j in terms of the interaction of three factors: potential supply of exports of country i, potential demand of imports from country j

country pairs can bias the estimated coefficients. An alternative solution is to use an estimator to control bilateral specific effects as in a fixed effect model (FEM) or in a random effect model (REM). The advantage of the former is that it allows for unobserved or misspecified factors that explain simultaneously the trade volume between two countries and lead to unbiased and efficient results.

Plümper and Troeger (2007

X_{ijt} denotes total trade between countries *i* and *j* at time *t* with i # j (source: COMTRADE);

a_o is the intercept;

GDP_{it} stands for Gross Domestic Product of country *i*, source: FMI;

GDP_{jt}

the EU, which has become China's main trade partner. The model is estimated over the whole sample, and then over two subsamples (1992-2001 and 2002-

Table 1: Bilateral trade between China and the Rest of the World

Variables	1992 2012	1992 2001	2002 2012
	X_{ijt}	X_{ijt}	

It can be seen that the coefficients are significant in almost all cases and their signs are consistent with theory. The country size of China and its trade partners are important factors determining trade flows. Geographical distance is negatively related to trade volumes as expected. WTO

Table 2 : Bilateral trade between China and its main trading partners

Variables	

The results for trade between China and the EU, currently its main trade partner, are reported in Table 3.

The estimated coefficients are almost always significant and their signs are consistent with the predictions of the gravity model. The country size of the exporting country and its trade partners accounts well for bilateral exports between China and the EU, and has a positive effect. Access to a sizeable market such as the EU increases trade volumes. Similarly, geographical distance and the financial crisis are again found to have a negative effect, whilst WTO membership has a positive one. The effects of the financial crisis on exports are found to be even more pronounced in this case since the EU experienced a particularly severe (debt) crisis. According to difference in GDP per capita, there is a shift towards trade in capital-intensive goods in the second period. China is a net exporter vis-à-vis the EU of o

The most important finding of our analysis is the significant change in China's trade structure associated with the fast growth of foreign trade. In particular, there has been a shift from resource- and labour-intensive to capital- and technology-intensive exports. Most recently China has also developed a comparative advantage in capital-intensive sectors sectors such as office machines and telecommunications and sound recording equipment vis-à-vis its main partners. Processing operations have contributed significantly to the improvement in China's manufactured exports with massive technology transfer through intermediate goods. The technological upgrading has led to highly internationalised and competitive industries (including the electrical machinery sector) being able to sell their exports to the developed economies. A convergence in the commodity compositions of exports and imports and the increase in trade in machinery parts and components indicate that intra-industry trade has become much more important in the most recent years. On the whole, there is evidence of both static and dynamic benefits of trade fostering Chinese economic growth.

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Appendix

Table A1: Trade between China and the Rest of the World

Year	Yearly rate (%)			Growth vis-à-vis 1992		
	Export	**Import**	**Total trade**	**Export**	**Import**	**Total Trade**
1992	-	-	-	-	-	-
1993	8.0	28.7	18.1	1.1	1.3	1.2
1994	31.9	11.2	20.9	1.4	1.4	1.4
1995	23.0	14.2	18.7	1.8	1.6	1.7
1996	1.5	5.1	3.2	1.8	1.7	1.8
1997						

Table A2: China's Trade Shares
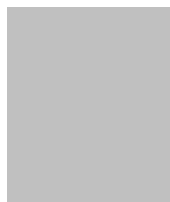
Table A3: The top trading partners (% of total Chinese Trade)

| Year	Total trade with the 18 main partners			of which:								
				US			Japan			Hong-Kong	Germany	
	Export	Import	Total	Export	Import	Total	Export	Import	Total	Export		

SITC-2	Text	1992	2002	2012	1992	2002	2012	1992	2002	2012
65	Textile yarn,fabrics,made up articles,etc.	0.13	0.17	0.13	0.46	0.53	0.39	0.19	0.22	0.29
66	Non-metallic mineral manufactures,n.e.s.	0.23	0.18	0.32	0.21	0.60	0.42	0.23	0.31	0.48
67	Iron and steel	0.34	0.25	0.33	0.08	0.25	0.26	0.04	0.07	0.50
68	Non-ferrous metals	0.07	0.57	0.48	0.27	0.58	0.38	0.04	0.25	0.32
69	Manufactures of metals,n.e.s.	0.25	0.17	0.20	0.86	0.81	0.59	0.36	0.56	0.68

Figure A1: Chinese Exports to the Rest of the World (1992)
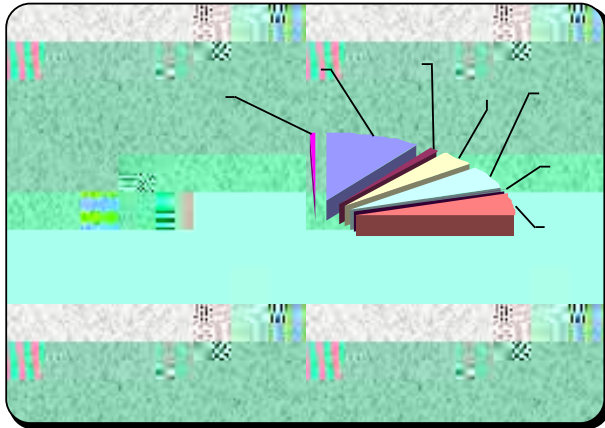
Figure A2: Chinese Imports from the Rest Of the World (1992)
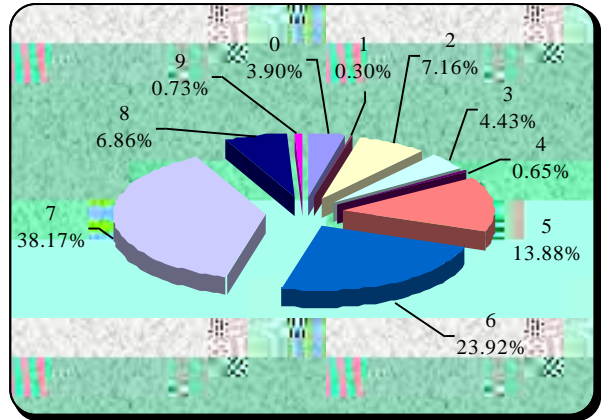
Figure A3: Chinese Exports to the Rest of the World (2012)

Figure A4: Chinese Imports from the Rest Of the World (2012)

Source:Comtrade

Table A6: List of SITC – 1 sectors

Code	Sector	Code	Sector
0	Food and live animals	5	Chemicals and related products,n.e.s.
1	Beverages and tobacco	6	Basic manufactures
2	Crude materials, inedible, except fuels	7	Machinery, transport equipment
3	Mineral fuels etc	8	Miscellaneous manufactured articles
4	Animal and vegetable oils and fats	9	Goods not classified elsewhere