Micro Structure of Global Imbalance and the Development of Global value-Chains

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Abstract

Global imbalances receded during the Global Financial Crisis. However, they may be on the rise again with a large surplus in Germany, a rising surplus in China, and a rising deficit in the U.S. Do value added trade data and GVCs provide a clearer picture of global imbalances? What the key reasons or mechanism underpinning the current tremendous trade imbalance globally To what extent of GVC trade affects gross trade composition and the gains of primary factors? Do GVCs render traditional instruments such as exchange rate adjustment more or less relevant? To answer these questions, this paper develops an applied general equilibrium (AGE) framework which is calibrated around a world ICIO table estimated for 2011 based on version 9 Global Trade Analysis Project (GTAP) database and macro-economic assumptions generated by a world macroeconomic forecasting model. This benchmark equilibrium serves as a "baseline" for counterfactual simulation analysis. It tries to offer policy makers a quantitative picture of what will happen to major bilateral trade imbalance in the world such as U.S.-China trade in the next 10 years if (1) China re-evaluates its currency, (2) a structural change in global supply chain as manufacturing FDI flows from China to other developing countries. It examines the changes in commodity and country composition of major bilateral trade imbalance over time and provides an analysis of how the changing pattern of comparative advantage across the world relates to the segmentation of global commodity and services production, and its role in the changing distribution of the major bilateral trade imbalance in both sector composition and geographic locations. A quantitative assessment of this micro economic aspect of U.S.-China, EU-China trade deficit in an AGE framework that explicitly models transnational production chains and export processing zones in China and other major developing countries can provide insights and long term perspective of the likely trajectories of these most important bilateral trade imbalances in the world.

The preliminary scenario simulation result shows that the current bilateral trade imbalance between China and the United States is dominated by the effect of the global supply chain. Many other industrialized countries, especially those economies in East Asia, have been exporting their value-added via China since the early 1990s. This implies that the China-U.S. trade imbalance will continue for some time in the future due to such structural factors. However, as manufacturing FDI flows from China to other countries, the structure of global supply chain would change accordingly, and we are very likely start to see the U.S.-China bilateral trade imbalance declining in the near future, while China's trade surplus with other developing country, such as Viet Nam, Bangladesh and other Asian less developed countries, increases simultaneously with bilateral trade deficit between U.S. and these countries increases as the manufacturing assembling activities move from China to these countries. This is consistent with the "flying goose" theory in development economics and may be seen as the earlier sign of the "Leading Dragons Phenomenon" proposed by Chandra, Lin and Wang (2012).

1. Introduction

As U.S.–China economic ties expanded substantially over last two decades, the U.S. trade deficit with China also increased from about $10 billion in 1990 to over $569 billion in 2015.[1] Most economists agree that bilateral trade balances should not be a focus of national policy because of the multilateral nature of international trade (Bergsten, 2006). However, as the bilateral trade balance is frequently headline news and a regular topic in the trade policy debate in the United States, a detailed analysis of the micro-economic factors that are driving the U.S.–China trade deficit, would help the public and policy makers to better understand the deeply rooted nature of bilateral trade issues and thus inform expectations as to what might happen in next decades due to changes in these underlying micro economic structures. We recognize that macro-economic factors, such as savings and investment gap, are determining force for both countries' worldwide trade balances, but in this short paper we focus on the micro structural aspects of bilateral imbalance.

As we will show by trade statistics bellow, the changing structure of global production chains in the past two decades appears to be a fundamental driving force underlying the U.S. trade deficit with China. Therefore, the development of the U.S.-China trade imbalance in next decade will also likely depend on how the various global production chains evolve, undergoing restructuring and relocation of labor intensive operations to other low-cost countries as China continues to upgrade its industrial structures and move to medium- and high-tech and skill-intensive production lines.

2. The evolution of bilateral trade balances: the United States and China

Often discussions of the U.S.-China economic relationship in the press focus on the aggregate bilateral U.S. trade deficit. Using a simple break out of the broad sectoral composition of the U.S. worldwide, and U.S.-China, trade balance, the driving factors of this increasing and substantial deficit start to emerge. **Figure 2** shows that U.S. has run huge worldwide trade deficits in mineral and manufacturing products, but has enjoyed a trade surplus in agricultural products and services since 1990. The sharp increase in the U.S. trade deficit in manufacturing goods occurs in the late 1990s, it accelerates after China joined the WTO in 2001, and it reaches its peak in 2006.

[1] Source: Department of Commerce, P.R.China. The data updated to Nov.31,2015.

In contrast to the United States, China has run a trade deficit in agricultural products and services with the world, but has enjoyed a large surplus in manufacturing products (**Figure 3**). Like the United States, China also has run a large trade deficit in mineral products. The dramatic increase in manufacturing products surplus and the growing deficit in mineral products seems to have happened simultaneously around 2002, the year after China joined the WTO. **Figure 4** demonstrates clearly that the U.S.-China trade deficit is concentrated in manufacturing products and that the U.S. actually enjoys a surplus in agricultural products and services similar to its global trade balance. U.S.-China trade in mineral products is basically balanced over the last two decades. The sharp increase of trade deficit with China in manufactured products also occurs around China's accession to the WTO. Other than a decline in 2009 due to the global financial crisis, the bilateral deficit appears to continue its upward trend despite the Chinese currency, RMB's approximate 20 percent nominal appreciation between July 2005 and the end of 2015.[2] It is apparent that more fundamental structural forces are playing a role offseting and dominating the effect of the exchange rate appreciation.

Examining the changing geographical distribution of the U.S. trade deficit measured in traditional gross trade data in manufacturing products over the past two decades helps us to identify a major driver of the large and growing U.S.-China trade deficit. **Table 1** reports the share of U.S. major trading partners' contribution to the U.S. trade deficit in manufactured goods between 1990 and 2014. We see clearly that the dramatic increase in the U.S. manufacturing trade deficit with China is largely a result of the movement of production facilities from other industrialized countries (mainly Japan and the Asian NICs) to China. That is, various products that used to be made in Japan, Taiwan, Hong Kong, Singapore and Korea, as well as other industrialized countries around the world, and then exported to the United States, are now being made in China (in many cases, by foreign invested firms in China) and exported to the United States. For example, in 1990, Japan and the four Asian Tigers were the source of more than 75% U.S. worldwide trade deficit in manufactured products, by 2014 U.S. manufactured trade with Japan was actually in surplus and the four Asia tigers was in balance. Over the same period, China's share of the U.S. trade deficit in manufacturing products increased from 10% to about 47%. In other words, while China was becoming an increasingly important source of manufactured goods, the relative importance of the rest of the industrialized world as a whole

[2] Source: *China Monthly Economic Indicators*, National Bureau of Statistics, PRC.

was declining, because many firms in these economies were shifting their manufacturing and assembly facilities to China via their FDI to China.

Over the past two decades, production has become internationally fragmented and specialized firms in different countries take part in the production process of a product but at different stages of the value-added chain. This globalized production system allows more in-depth specialization and brings efficiency gains as countries specialize in the segments of the production process in which they have a comparative advantage. The dramatic increase of trade in goods belonging to the same industry but at different stages of production reflects the reorganization of production on a worldwide basis. The re-distribution of FDI along such a segmented production chain according to changing comparative advantage of different geographic locations is a central feature of economic globalization. In fact, the large amount of FDI flows to China in the 1990s, especially after China's WTO entry represents the relocation of the downstream labor-intensive stage of manufacturing production to China. China, with its large pool of low-wage unskilled labor, has increasingly become the location of choice for the final assembly of a full array of manufactured goods, especially electronic and information technology products. Goods that are assembled from imported parts and components, or processing exports, accounted for more than half of China's manufactured exports and about two thirds of the manufactured goods China has exported to the United States since the 1990s. When these goods were exported from China to the United States, traditional trade data counts their entire value as imports from China. On average, however, about half of the value of these so-called processed exports in fact originates outside China, mostly in other industrialized economies, including the United States itself (Koopman, Wang and Wei, 2008, 2012). Therefore, the structural change of global value chain and the increasing role of China as the final assembler in various global production networks since the 1990s' is a clear driving force for the growing U.S. manufacturing trade deficit with China.

Along with China, other emerging economies, such as Mexico and the ASEAN countries, have been increasingly integrated into global production networks over the last two decades and have increased their share of the U.S. global trade deficit in manufactured goods (**table 1**). Meanwhile those developing countries not tightly integrated into the global value-chain appear to have contributed very little to the U.S. manufacturing trade deficit since 1990. The U.S. actually

runs an increasing trade surplus in manufactured products with rest of the developing world since 2007. These facts suggest that the development of various global production chains are a fundamental driving force of the growing U.S. bilateral trade deficit with China in manufactured products during past two decades. Therefore, as Bergsten suggested in his 2006 Congressional Testimony**,** "The United States must understand that it will continue to run a sizable bilateral deficit with China, as recorded in the conventional statistics, largely because of the growing internationalization of production with China as the final assembly point for many products." Global fragmentation of production has been a driving market force. To minimize cost, enterprises (especially multinationals) tend to locate each segment of their business in places that have a cost advantage. Once one gains a cost advantage by moving certain segments of its production activities to China (or other low cost, efficient sources), others follow in order to remain competitive in the world market. Understanding this point is also important to have a reasonable expectation of the likely prospective outcome of U.S.-China trade imbalance as it evolves over the next decade.

As labor intensive industries mature and labor cost rise in China, rising costs will likely force China to graduate from labor-intensive industries, upgrading its industrial structure to a higher ladder in the global value-chain. In such a process, various labor intensive operations will leave China (or move from coast to hinterland of China) , as they did in Japan's labor-intensive industries during the 1970s and in the four Asian Tigers' labor-intensive industries during the 1980s. This process has already begun in China and is showing up in China's trade statistics and China's regional GDP growth rate. The appreciation of the Chinese currency since July 2005 has accelerated this process. **Table 2** reports the composition of China's manufactured goods exports. It shows that the share of labor intensive-manufactures steadily declined over the past two decades, from 41% in 2000 to 28% in 2014. At the same time, the share of capital- and technology-intensive products has become dominant in China's manufactured exports. Although labor-intensive products still dominated China's surplus in manufactured goods trade, capital-products also shifted from a deficit to a surplus in recent years.

The changing distribution of global FDI and international segmentation of production since the 1990s and the role foreign invested firms have played since China's WTO accession were key factors driving structural change in China and the rapid industrial structure upgrading process in China. FDI combined with segmented production processes facilitated China's

integration into various global production networks. As a result, China has not only become more competitive as a net exporter of labor-intensive goods, but also emerges as a net exporter in most capital- intensive manufactured products just a few years after its WTO accession, with a continued strong trend over last decade.[3]

As this trend continues and China starts to graduate from the labor-intensive assembling operations, where might labor intensive production be relocated? What might be the effects of such a re- structuring of global value-chains on other economies in the world and its implications for the U.S.-China trade imbalance? Some recent statistical evidence may give us a hint. **Figure 7-Figure 10** plots a group of triangle trade relationship in manufactured goods for China and its major trading partners. In each of the six sub-graphs in **Figure 7**, there are one or two intermediate manufactured goods supplying countries, a final manufactured goods assembling country, and one or two final goods importing (consuming) countries.

These graphs show that although China still runs large trade surpluses in final goods with the older EU countries and United States and a simultaneous large trade deficit in intermediate goods with other industrialized countries, it has already become an important supplier of manufactured intermediate goods for many lower wage countries in its neighborhood, such as Viet Nam, Thailand, India, Cambodia and Malaysia. All those Asian developing economies run surpluses of manufactured final goods with the United States or older EU counties, or both, similar to China. Despite the fact that China is still a global center of final assembly for many manufactured products, there appear to be some labor intensive final assembly activities already migrating from China to other low cost countries.

Figures 8 to 12 break manufactures into broad sectors according to OECD technology intensity definitions and plot several triangular trade relationships at the sector level. They indicate that the first wave of labor-intensive production relocation from China to other developing countries mainly occurs in Low-tech such as garments, footwear and toys, while most medium-low, medium-high high-tech and ICT industries are currently continuing to choose China as the final point of assembly operations for their products. This is consistent

[3] The prediction on the impact of China's WTO accession made by Wang (2003a and 2003b), especially its impact on China's industrial upgrade and trade structure change are largely consistent with what really happened in the first decades of China in the WTO. Wang had predicted based on his CGE model simulation that "China will be a net exporter of most manufacturing products, including low-end capital-intensive products as a long-term trend, and will emerge as the world's largest and cheapest manufacturing center in the years to come." "The infusion of foreign funds, technology, and marketing expertise after its WTO accession and further integration with Taiwan will enhance China's prospective as a high-volume, low-price producer of almost all manufactured products in the coming decades."

with the "flying goose" theory in development economics and may be interpreted as the earlier sign of the "Leading Dragons Phenomenon" proposed by Chandra, Lin and Wang (2012). To gain insights on how such trends might evolve over the next decade, and their impact on the U.S.-China trade imbalance, more detailed analysis based on Applied General Equilibrium model is needed, but is beyond the scope of this short essay.

3. Spatial distribution of trade: imbalance is a normal phenomena

The imbalance of trade among different trade partners is a normal phenome in international trade. Figure 13 shows the spatial distribution of net export of China's processing trade in 2011. It is clearly depicted that China owns the largest trade surplus with USA. Meanwhile, there were huge trade deficits with some neighbor countries/regions. For example, the trade deficits of China's processing trade reached 30.9, 26.4, 10.2 and 7.6 billion US dollar respectively with Taiwan, Korea, Malaysia and Singapore. Such a trade pattern is witnessed obviously in Mexico's processing trade. As shown in Figure 14, Mexico enjoyed the huge trade surplus of processing trade with USA and Canada, which were 65.1 and 9.9 billion US$ in 2011. Meanwhile, Mexico also took tremendous trade deficits with many countries/regions in East Asia and Southeast Asia. For example, the trade deficits with China, Japan, Korea, Taiwan and Malaysia were 14.8, 3.5, 3.3, 1.4 and 1.4 billion US dollars respectively.

The imbalance of trade is impossible to be suitable excuses to blame its trade partner as the complicated cross. As shown in Figure 15 and Figure 16, China is the country with largest trade surplus with USA, but with largest trade deficit with Germany. Despite USA takes the tremendous trade deficit with China, it enjoys the huge trade surplus of 27.8 billion US dollar with Australia (shown in Figure 15). It seems like a circle that Australia got the largest trade surplus of 36.7 billion US$ from China in 2011. Just as demonstrated above, the global trade in the liberalized era has linked the individual countries as a whole. Consequently, any trade analysis should take systematic and comprehensive point of view, instead of just from one slice.

It is worthwhile to notice that (Figure 17).

4. Methodology and Scenario designs

(Uncompleted)

5. Simulation results and analysis

(Uncompleted)

6. Concluding remark

Because changing structure of global production chains in the past two decades appears to be a fundamental driving force underlying the U.S. trade deficit with China. Therefore the development of the U.S.-China trade imbalance in next decade will also likely depend on how the various global production chains evolve, undergoing restructuring and relocation of labor intensive operations to other low-cost countries as China continues to upgrade its industrial structures and move to medium- and high-tech and skill-intensive production lines. A quantitative assessment of this micro economic aspect of US-China trade deficit in an applied general equilibrium (AGE) framework that explicitly models transnational production chains and export processing zones in China and other major developing countries can provide useful insights and long term perspective of the likely trajectories of this largest bilateral trade imbalance in the world. To the best of our knowledge, there is no comprehensive analysis of the changing commodity composition and geographical location of the U.S. trade deficit and its underlying micro economic driving forces in current literature. We intend fill this void in our ongoing research efforts.

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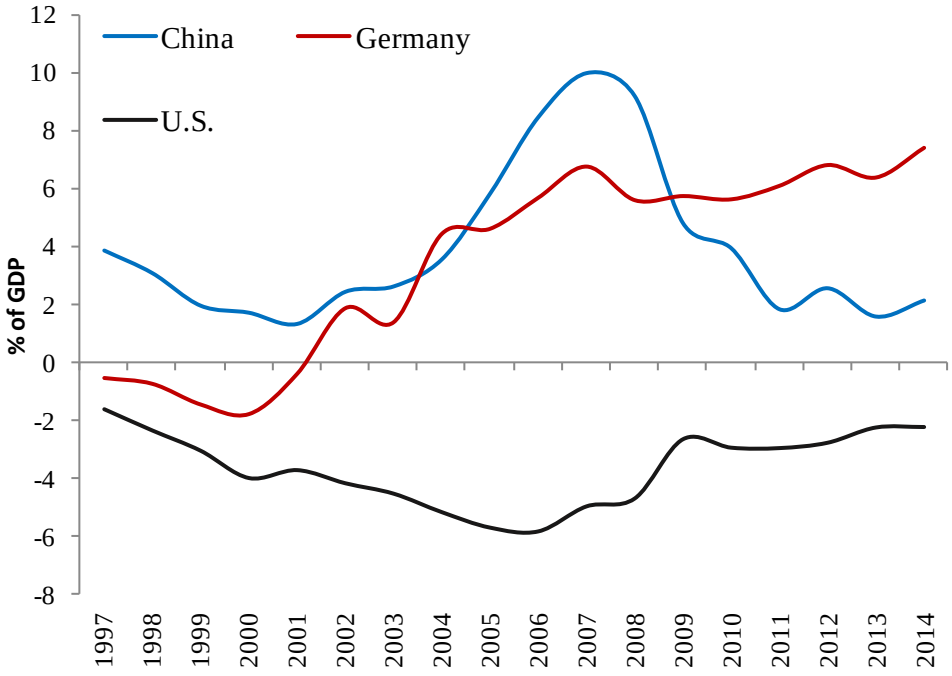


Figure1 Current Account Imbalance of China, Germany and United States

Source: World Economy Outlook, 2015 Oct.

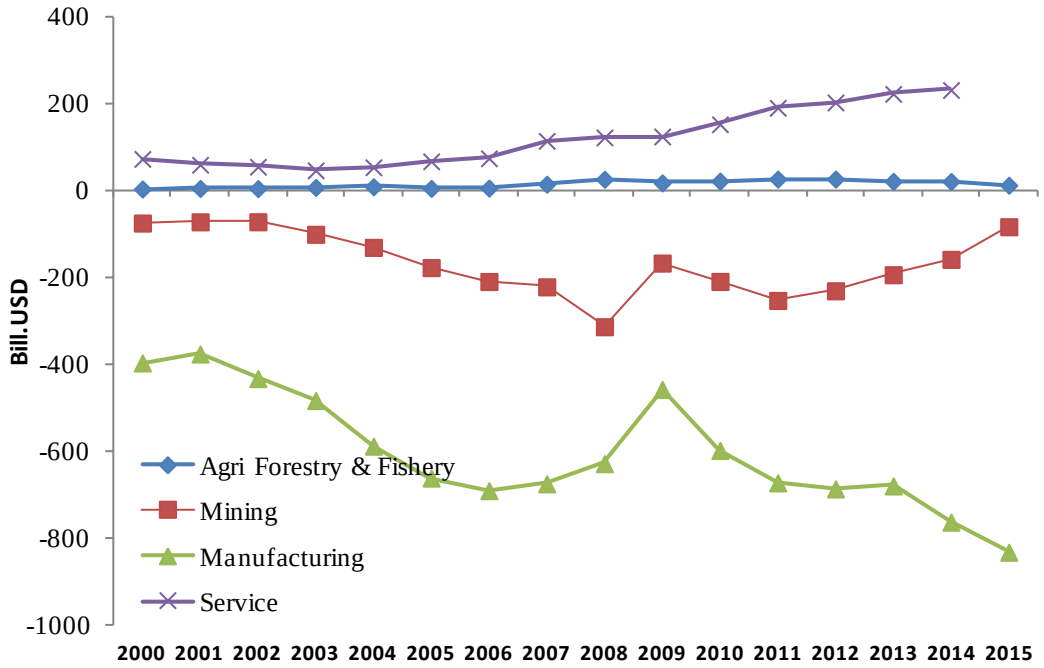


Figure 2 Broad Sector Trade Balance between the United States and Rest of the World

Source: The merchandise data are from U.S. Department of Commerce, Bureau of the Census, the service data is from U.S. Bureau of Economic Analysis (BEA).

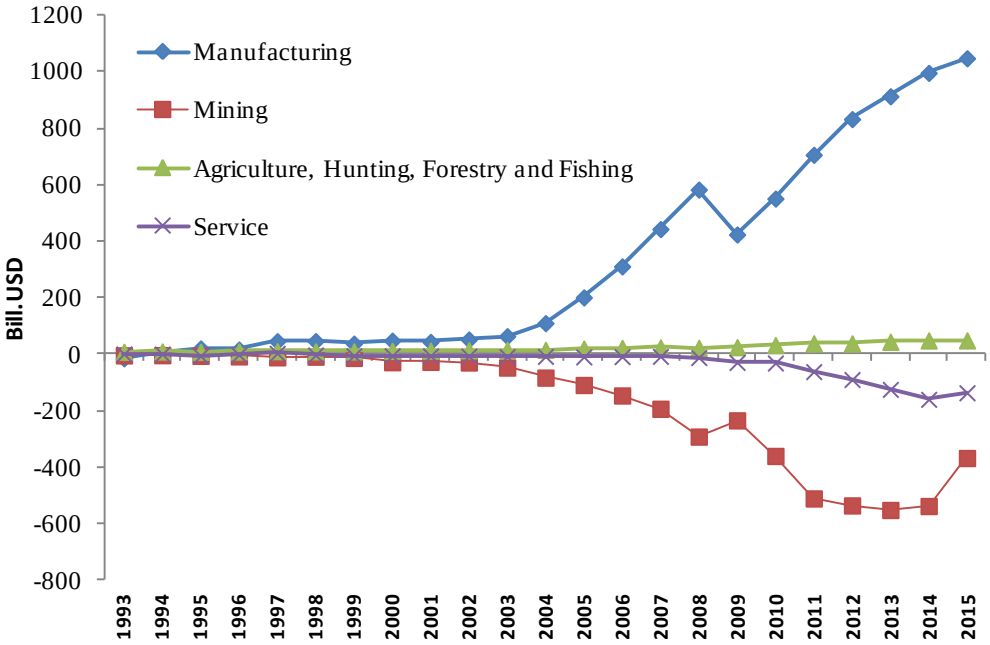


Figure 3 Broad Sector Trade Balance between China and Rest of the World

Source: CEIC

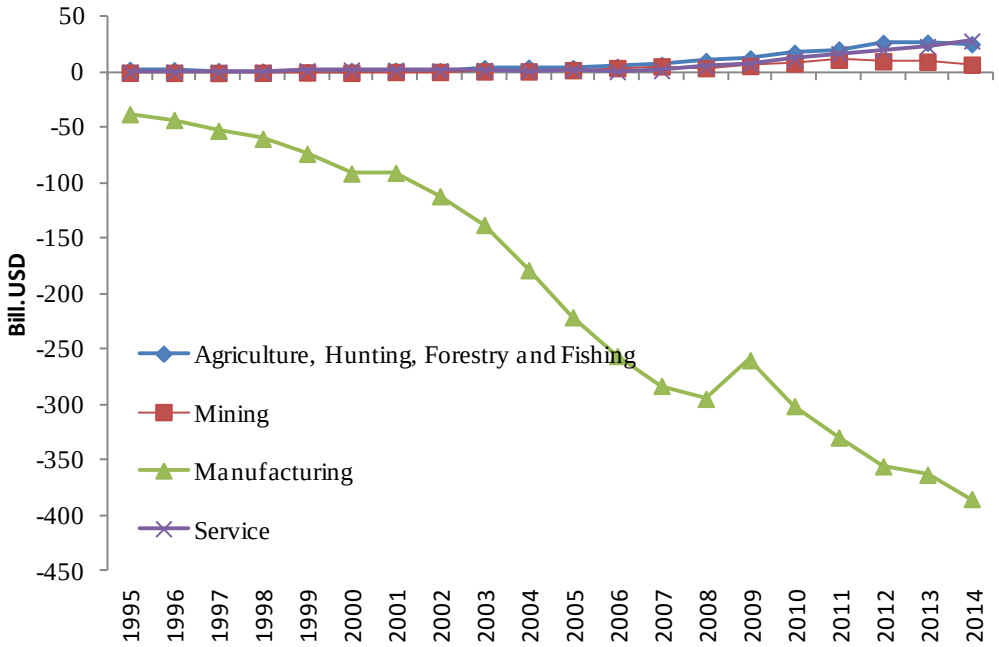


Figure 4 Broad Sector Trade Balance between the United States and China

Source: CEIC。

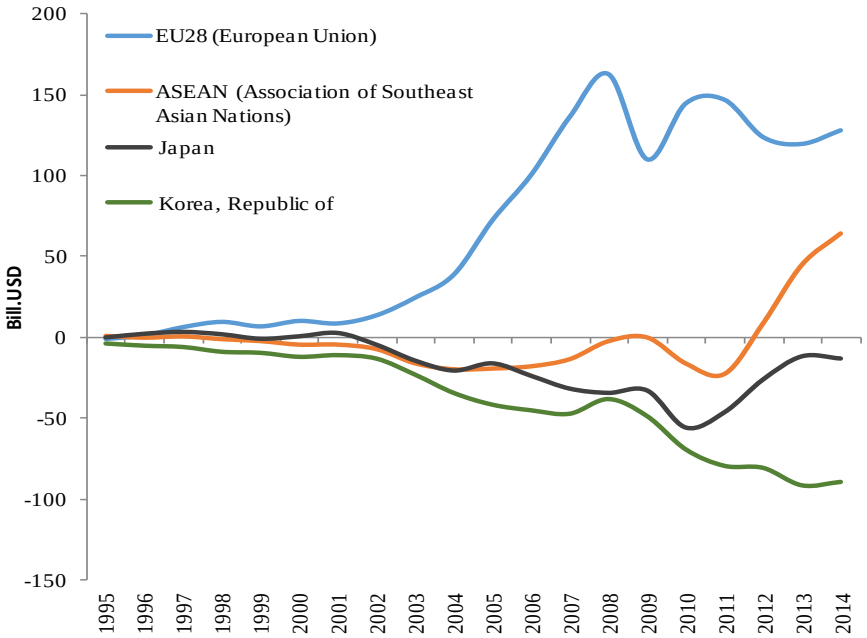


Figure 5 Trade balance in industrial products between China and her major trade partner

Source: UNCTAD

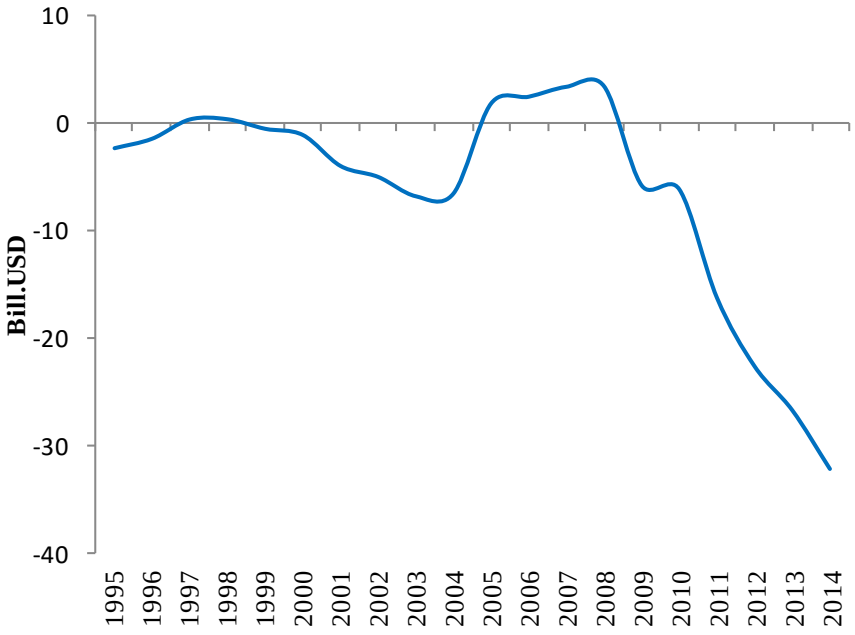


Figure 6 Trade balance in industrial products between China and Germany

Source: UNCTAD

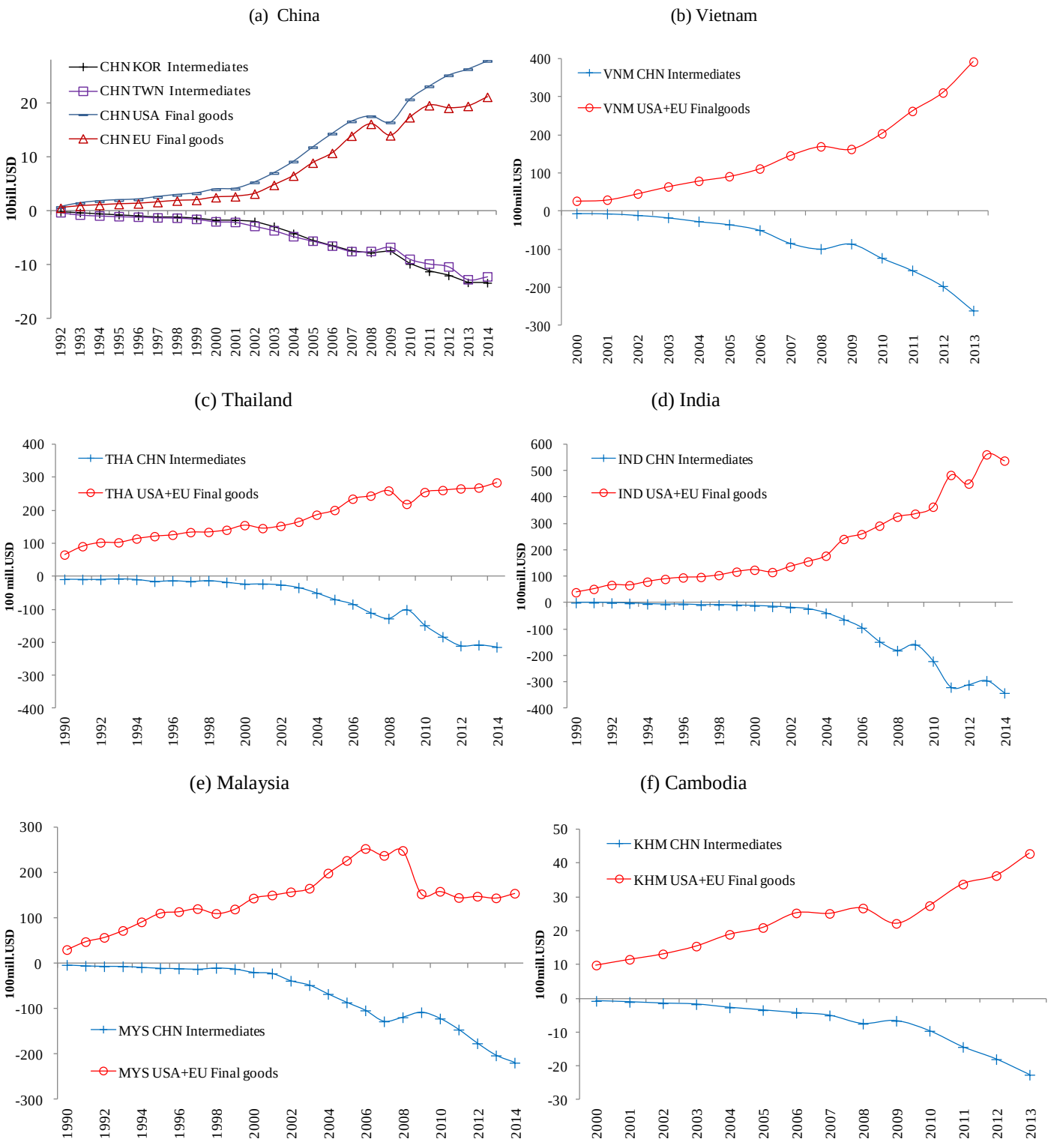


Figure 7 Trade balance in industrial products among different countries and their major trading partners: Final goods assembling activities is starting to transfer out of China

Note: The industry classification of Manufacturing is ISIC rev.3.1 01T99.

Source: : BTDIbyE,2015ed, OECD

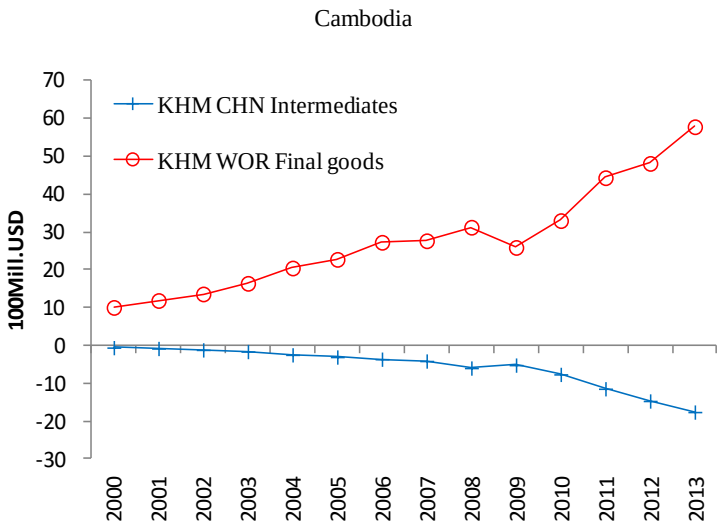
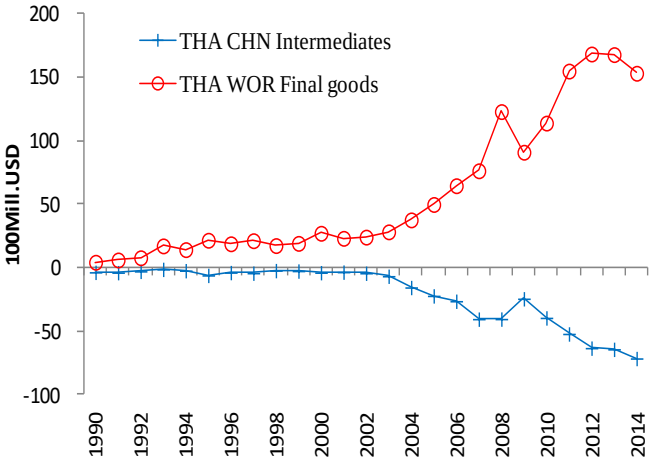
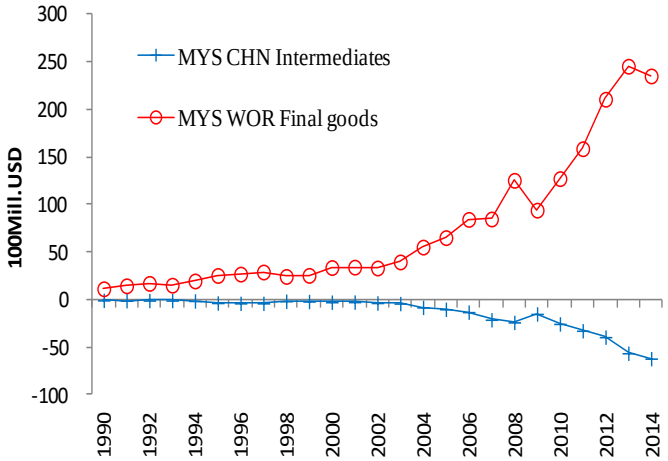


Figure 8 Trade balance in Low-technology manufactured products among different countries and their major trading partners: China starts transfer out final goods production in technology-intensive industries (ISIC rev.3.1 15t16, 17t19, 20, 21t22, 36t37) to other developing countries

(a)Thailand



(b)Malaysia



(C) Vietnam

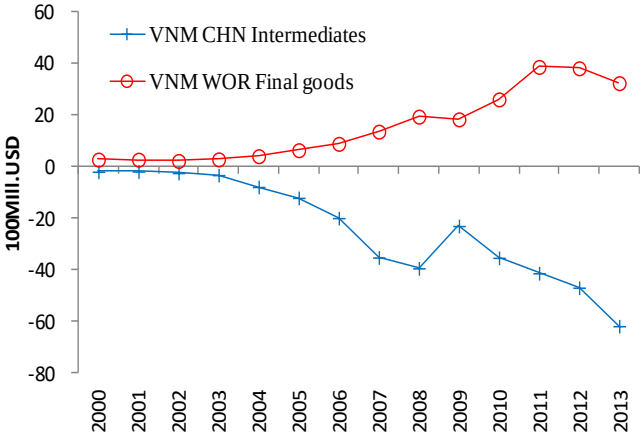


Figure 9 Trade balance in Medium-low technology manufactured products among different countries and their major trading partners: China starts transfer out final goods production in capital-intensive industries (ISIC rev.3.1 23, 25, 26, 27t28, 351) to other developing countries

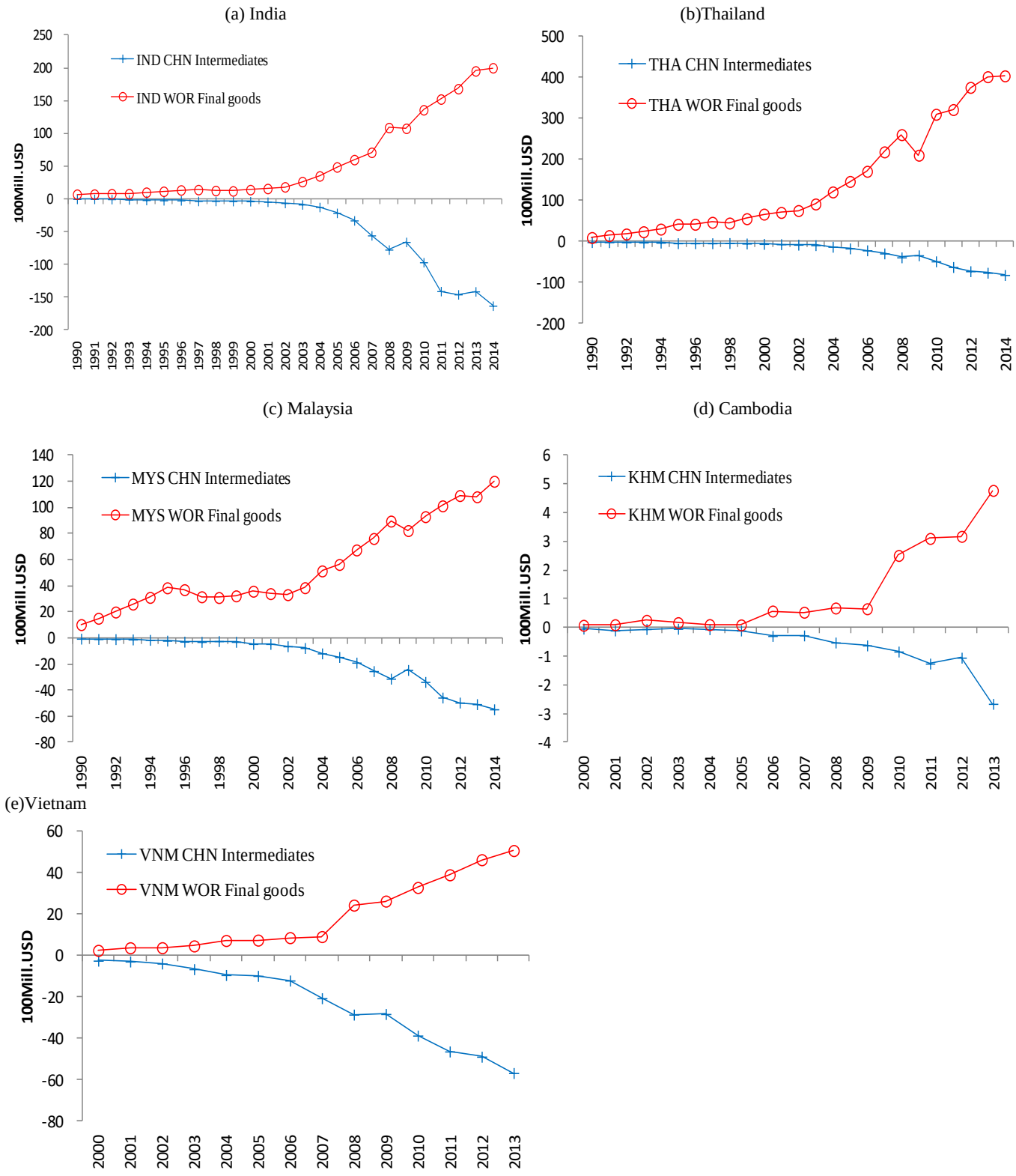


Figure 10 Trade balance in Medium-high technology manufactured products among different countries and their major trading partners: China starts transfer out final goods production in capital-intensive industries (ISIC rev.3.1 24ex2423, 29, 31, 34, 352, 359) to other developing countries

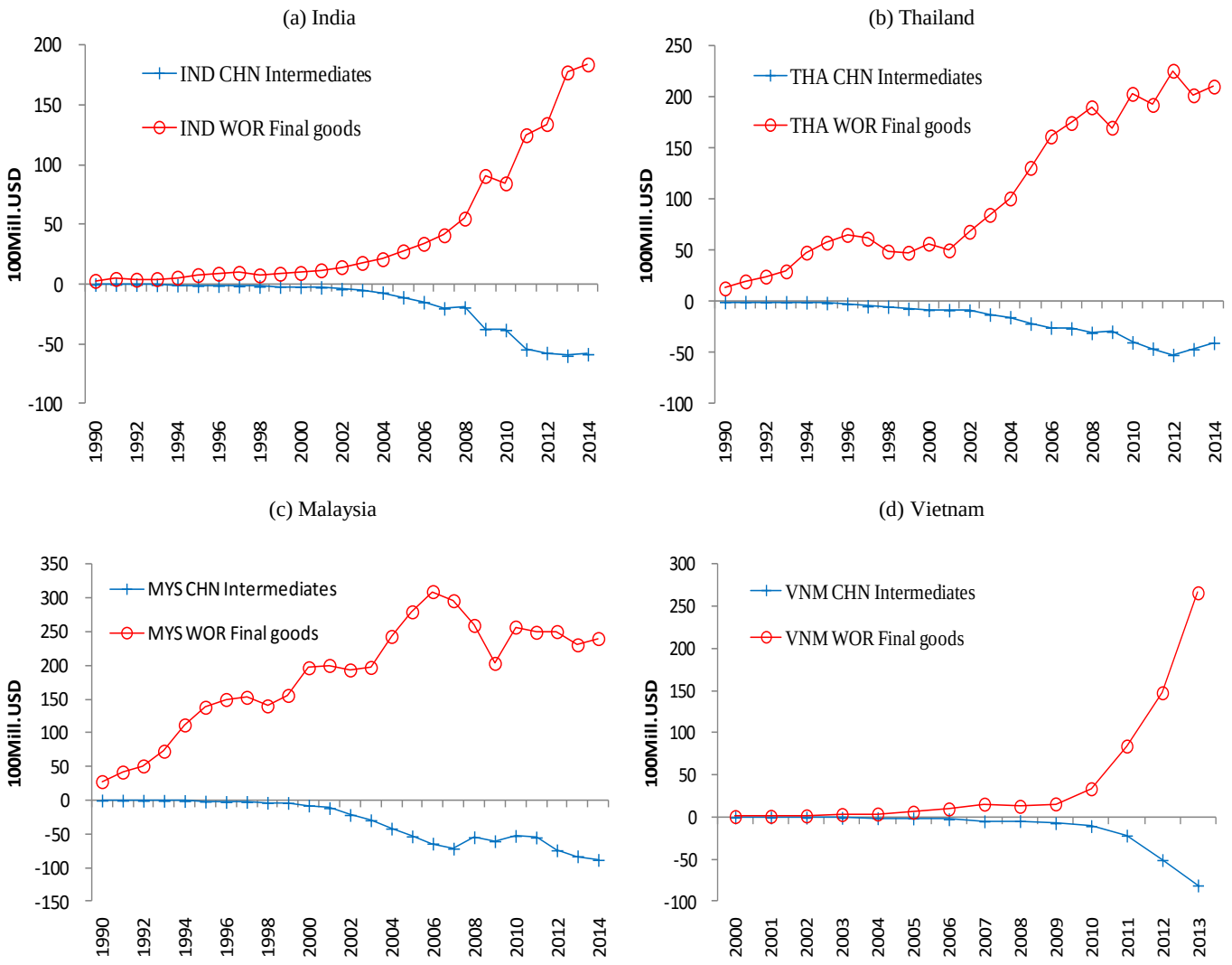


Figure 11 Trade balance in High-technology manufactured products among different countries and their major trading partners: China starts transfer out final goods production in technology-intensive industries (ISIC rev.3.1 2423+30+313+32+33+353) to other developing countries

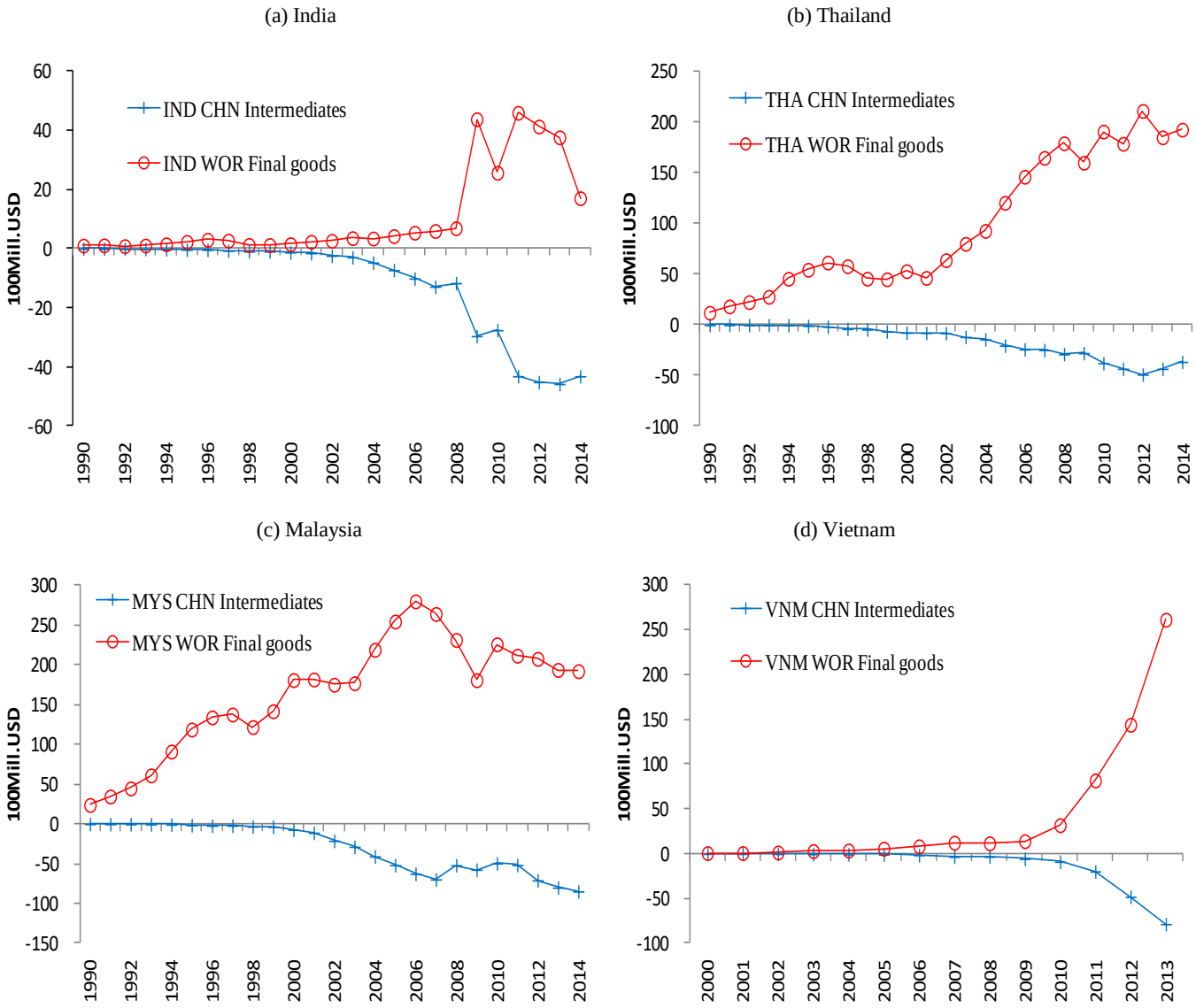


Figure 12 Trade balance in Information and communication manufactured products among different countries and their major trading partners: China starts transfer out final goods production in technology-intensive industries (ISIC rev.3.1 30, 313, 32, 3312, 3313) to other developing countries

Note: The industries classified as "Low-technology manufactures" are ISIC rev.3.1 15t16,17t19,20,21t22,36t37; "Medium-high technology manufactures" include ISIC rev.3.1 "24ex2423, 29, 31, 34, 352, 359"; "Medium-low technology manufactures" include ISIC rev.3.1 "23, 25, 26, 27t28, 351"; "high-technology manufactures" include ISIC rev.3.1 "2423+30+313+32+33+353". "Information and Communication technology manufactures" include ISIC rev. 3.1 "30, 313, 32, 3312, 3313".

Source: BTDIbyE, 2015ed, OECD

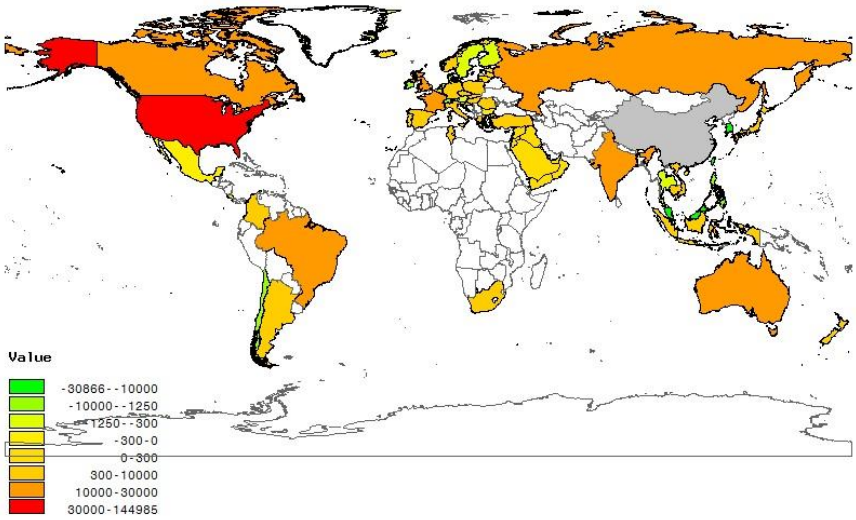


Figure 13: Spatial distribution of net export of China's processing trade in 2011 (million US$)
Source: OECD Inter-Country I-O tables (ICIOW), 2015

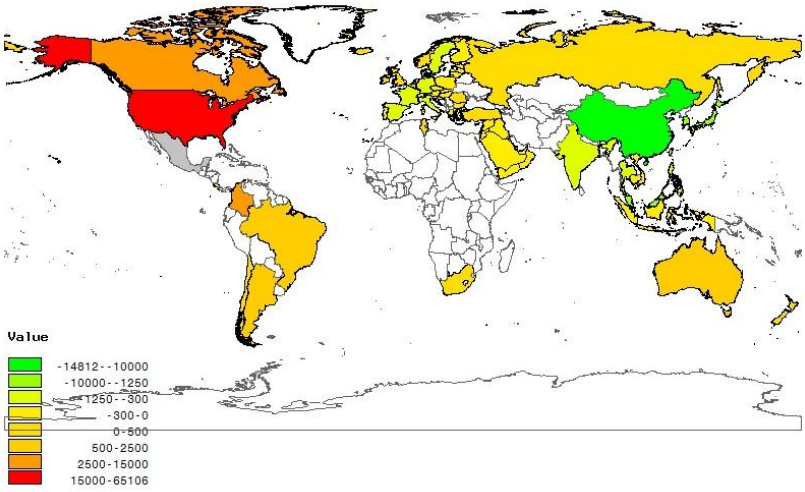


Figure 14: Spatial distribution of net export of Mexico's processing trade in 2011 (million US$)
Source: OECD Inter-Country I-O tables (ICIOW), 2015

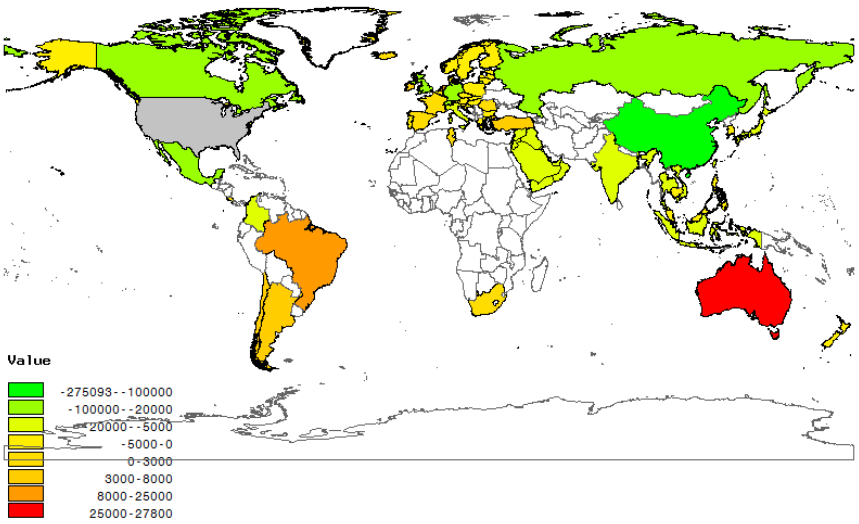


Figure 15: Spatial distribution of net export of USA in 2011 (million US$)
Source: OECD Inter-Country I-O tables (ICIOW), 2015

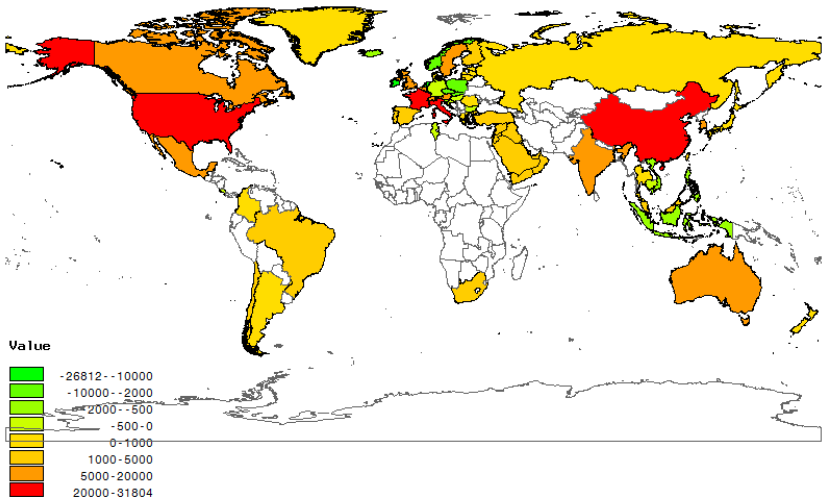


Figure 16: Spatial distribution of net export of Germany in 2011 (million US$)
Source: OECD Inter-Country I-O tables (ICIOW), 2015

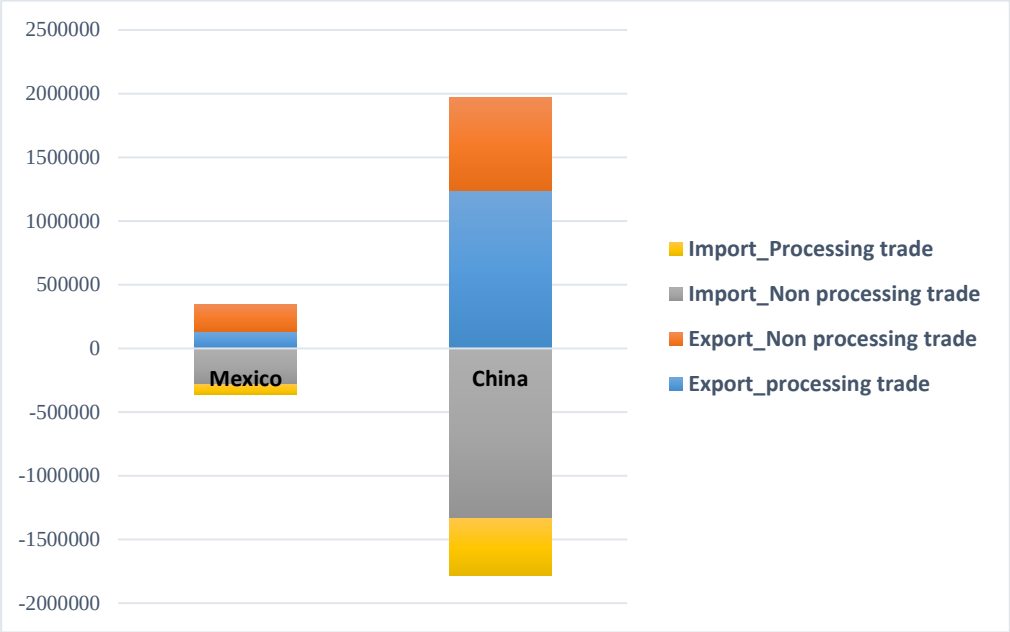


Figure 17: Export and import of processing and non-processing trade in Mexico and China in 2011 (million US$)
Source: OECD Inter-Country I-O tables (ICIOW), 2015

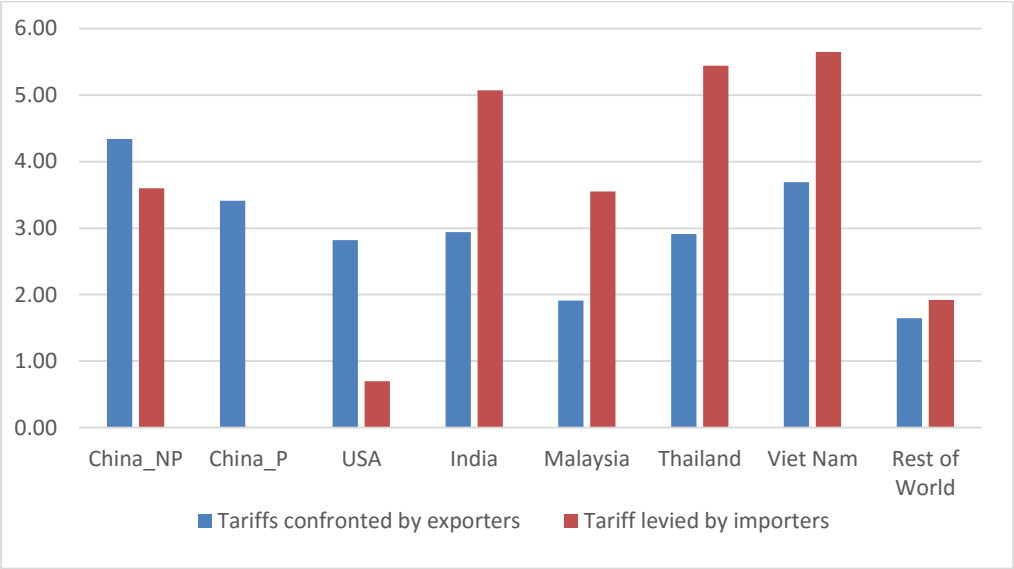


Figure 18: Average import tariffs confronted and levied by various countries/regions on intermediate inputs (%)
Source: Authors' calculation according to GTAP database

Table 1 The share of U.S. trade deficit in manufacturing products with major trading partners (%)

	Canada	Japan	Four Asia NICs	Germany	Mexico	ASEAN 5	China	G7exU.S.A	Rest of OECD	ROW
1990	8.7	35.9	26.1	8.3	2	6.1	9.3	2.3	0.3	1
1995	11.9	33.5	11.1	8.4	8.8	11.3	19.6	5.8	0.6	-11
1998	9	25.4	13.4	9.3	6.5	12.5	23	6.1	3.8	-9
2000	11.7	18.2	9.4	6.5	5.6	8.7	19.4	5.8	13.5	1.2
2001	12.6	16	8.2	6.8	7	8.1	20.1	6.1	16.4	-1.3
2002	10.4	14.4	6.6	7.3	7.6	7.7	21.9	6.6	17.2	0.3
2003	10	11.9	6.4	7	7.3	6.8	23.2	6.6	18.3	2.5
2004	10.2	11.1	5.8	6.7	6.6	6.6	24.8	5.8	17.8	4.6
2005	9.7	10.4	4	6.4	6.3	6.9	26.3	5.7	16.8	7.5
2006	8.8	10.5	3.4	5.7	7.5	7.1	28.4	5	14.5	9.1
2007	8.1	10.2	2.9	5.5	8.9	7	32.2	5.2	12.1	7.9
2008	9.1	8.9	2.4	5.2	7.7	6.6	32.9	5	6.7	15.5
2009	4.3	8.6	3.6	5.4	9	8.5	43.9	4.6	0.2	11.9
2010	4.7	9.1	-0.3	5.2	9.9	7.4	42.2	4.2	2.1	15.5
2011	4.7	8.7	-0.1	6.8	8.9	7.1	40.7	3.4	0.9	18.9
2012	4.3	10.5	0.1	8.3	8.4	7.6	43.1	4.2	-1.5	15
2013	4.6	10.6	-1.3	9.7	7.9	8.5	46.2	5.7	-1.5	9.6
2014	4.9	9.2	1.4	10.2	7.4	9.7	47.2	5.5	2.3	2.2

Notes: A negative share represents a country that run a trade deficit in manufacturing products with the United States.
Four Asia NICs includes Taiwan, Singapore, Korea and Hong Kong. ASEAN5 includes Indonesia, Malaysia, Philippines, Thailand, and Viet Nam.
G7exU.S.A includes France, UK and Italy
Source: IMF DOT.

Table 2 The composition of China's manufactured exports and trade surplus (2000-2013)

	The share of manufacturing exports (%)			**The share of manufacturing trade surplus (%)**		
	Lab-intensive manufacturing	Cap-intensive manufacturing	Tech-intensive manufacturing	Lab-intensive manufacturing	Cap-intensive manufacturing	Tech-intensive manufacturing
1992	54.3	23.6	22.1	696.6	-547.4	-49.2
1993	54.9	23.6	21.5	-279.8	342.3	37.5
1994	54.5	24.6	20.9	834.1	-669.3	-64.7
1995	48.9	30.2	21.0	280.0	-157.6	-22.4
1996	48.0	29.7	22.4	371.7	-247.8	-23.9
1997	47.2	30.3	22.5	144.5	-41.2	-3.3
1998	45.5	31.1	23.5	132.1	-30.1	-2.0
1999	43.9	31.3	24.8	198.1	-62.7	-35.4
2000	41.0	32.3	26.7	288.1	-85.3	-102.8
2001	39.5	32.0	28.4	324.4	-110.4	-114.1
2002	37.4	31.3	31.3	285.4	-109.6	-75.8
2003	34.3	31.0	34.7	430.4	-196.2	-134.3
2004	30.8	33.0	36.2	422.3	-139.6	-182.7
2005	29.3	33.6	37.1	170.6	-8.3	-62.3
2006	28.2	35.2	36.5	123.4	20.0	-43.4
2007	26.8	38.2	34.9	99.5	37.7	-37.2
2008	25.5	41.3	33.2	98.1	57.9	-56.0
2009	27.4	36.9	35.7	134.3	30.3	-64.7
2010	26.2	38.6	35.2	179.9	49.3	-129.2
2011	26.9	40.4	32.7	258.1	92.4	-250.5
2012	27.5	39.5	33.1	193.8	93.8	-187.7
2013	27.7	38.8	33.5	186.7	100.0	-186.8
2014	28.0	40.2	31.8	129.7	84.1	-113.8

Note: The industries classified as "Low-technology manufactures" are ISIC rev.3.1 15+16+17+19+20+21+22+36+37; "Medium-high & Medium-low technology manufactures" include ISIC rev.3.1 "23+24ex2423+25+26+27+28+29+31+34+351+352+359"; "high- technology & Information/communication technology manufactures" include ISIC rev.3.1 "2423+30+313+32+33+353.

Source: The data for 1992-1994 are from BTD 2008ed, OECD. The data for 1995-2010 are from BTDIbyE, 2012ed, OECD.

Table 3: Economic impacts of China's real exchange rate rising by 3% on China, USA and Rest of World, relative to reference (2011)

	China	**USA**	**Rest of world**
Real GDP (%)	-6.2	0	0.006
EV (billion US$)	-383.1	-17.6	-51.2
Real national Income (%)	-5.47	-0.02	-0.03
Term of trade (%)	1.67	-0.15	-0.16
Export quantity (billion US$)	-140.8	5.3	20.8
Import quantity (billion US$)	-70.1	-12.3	-33.5
Trade balance (million US$)	-41.6	15.6	25.9

Source: Simulation results

Table 4: Change of export, import and net export of USA as China's real exchange rate rising by 3%, relative to reference (billion US$, 2011)

		China	Other regions
USA	Export	4.5	-5.2
	Import	-26.8	12.3
	Net export	31.3	-17.5

Source: Simulation results

Table 5: Impacts of eliminating the import tariffs on intermediate inputs across countries, relative to reference (2011)

	China	**USA**	**Rest of world**
Real GDP (%)	0.50	0.00	0.28
EV (Billion US$)	27.36	-51.66	197.04
Term of trade (%)	-0.17	-0.06	0.02
Export quantity(billion US$)	142.6	79.9	415.4
Import quantity (billion US$)	133.1	27.9	476.2
Trade balance (billion US$)	7.6	54.4	-62.0

Source: Simulation results

Table 6: Impacts of eliminating the import tariff on intermediate inputs on the selected developing countries, relative to reference (2011)

	India	**Indonesia**	**Malaysia**	**Thailand**	**Viet Nam**
Real GDP (%)	0.81	0.20	1.46	1.21	4.29
EV (Billion US$)	9.41	0.33	9.16	13.82	21.17
Real national Income (%)	0.03	0.01	1.38	1.06	5.92
Term of trade (%)	-1.60	-0.33	-0.66	-0.16	0.14
Export quantity(billion US$)	46.0	8.9	9.5	12.1	4.9
Import quantity (billion US$)	40.2	7.5	14.5	21.8	20.2
Trade balance (million US$)	-0.5	0.6	-6.6	-10.1	-15.0
Labor wage					
Unskilled labor	0.47	0.24	1.59	1.39	4.36
Skilled labor	0.48	0.24	1.63	1.21	4.92

Source: Simulation results