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# **Foreign Investment Policy and Changing Patterns of Chinese Exports: What are the Implications?**

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## **Abstract**

The aim of this paper is to contribute to the literature on emerging trends in Chinese exports, with a special focus on the role of foreign investment. The structure of Chinese exports has fundamentally changed in the last decade or so, largely due to the involvement of foreign firms in assembly of imported parts and components into final products for re-exports. This phenomenon has attracted several names, including vertical specialisation, outsourcing, intra-product specialisation, global production network and international production sharing. This type of trade now accounts for about one-third of total Chinese exports, which has significant welfare implications as well as implications for public policy, particular for industry assistance and skill upgrading in China.

**Keywords:** Liberalisation, Export Performance, Foreign Investment, Privatisation, State-owned Enterprises

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**Biographical notes:**

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## 1 Introduction

China embarked on an outward-oriented strategy in the late 1970s, following a chronic shortage of foreign exchange. As a part of this outward-oriented strategy, it gradually liberalised its trade and investment policies, opened up banking sectors to foreign banks, privatised state-owned enterprises, and removed price controls and restrictions on foreign exchange transactions. These reforms, together with significant improvements in physical infrastructure, access to cheap labour and political stability, helped attract a significant amount of foreign direct investment (FDI) into China (Jiang et al., 2013). Accession to the World Trade Organisation (WTO) in November 2001 further increased FDI inflows, leading to significant growth in Chinese exports. Chinese exports have witnessed a dramatic structural change, as evidenced by the rising share of high-tech products and a declining share of primary products and simple labour-intensive manufactured goods. High-tech products now account for nearly one-third of Chinese exports, produced using imported parts and components.

Beginning with the basic labour-intensive exports, such as clothing, footwear and toys, China has become a major exporter of electric and electronic goods by now. There is growing evidence to suggest that the expansion of Chinese exports and its changing composition is largely brought about by the involvement of foreign firms (Athukorala, 2009; Sharma and Wei, 2014). These foreign firms, widely known as foreign invested enterprises (FIEs), import parts and components from all over the

world, which are put together using the semi-skilled Chinese workforce, and the final products are sold globally. This phenomenon has attracted several names, including intra-product specialisation, vertical specialisation, global production network, international production sharing and outsourcing. The aim of this paper is to shed light on this issue to contribute to policy debate. The paper is divided into five sections, including this section. Section 2 presents an analytical context to place the study in the context. This is followed by a brief review of foreign investment policy in China, and trends and patterns of foreign investment in section 3. Section 4 discusses emerging trends in Chinese exports and the role of vertical specialisation. The paper concludes in section 5 with policy remarks.

## **2 The Analytical Context and Review of the Literature**

The globalisation of the world economy, together with rapid development in transport and communication networks, has significantly increased international trade in both final products and intermediate inputs (including parts and components). As costs of connecting various geographic markets fall, it has become increasingly attractive to host fragmented production blocks involving sequential, vertical trading chains in various locations, with each country (or location) specializing in particular stage of a good's production process (Arndt and Kierzkoski, 2001). While fragmentation can be 'intra-firm' or 'inter-firm', the latter seems to have occurred rapidly as firms are increasingly moving their unskilled labour-intensive fragments to countries with an abundant supply of labour, and capital-intensive fragments to capital abundant nations

(Ruane and Gorg, 2001 and Sharma, 2012). With falling coordination costs, different stages of the production process are now increasingly located in different countries, allowing each country to specialise in production of particular components and parts within a vertically integrated production network as explained by Mattoo et al, 2013 (p.1) in the following example:

‘If you order a new model of iPad today from Apple’s online store, you will notice that your device will be shipped out of China by a company called Foxconn, so China is officially the country that exports iPads. Of course, the product is designed in California and uses lots of components from Japan, Korea and other countries. When a product is produced by a global production chain in which a number of countries participate in different stages of production and supply different parts and components that make the final product what it is, the concept of ‘country of origin’ is not very useful.’

In this context, it is important to assess the actual contribution of export growth on China’s domestic value added trade by measuring vertical specialisation rather than just looking at the total export data. As China has attracted a huge amount of foreign investment in export-oriented manufacturing industries, emerging trends in its exports should be assessed in this context. Globally, foreign firms are taking advantage of lower production costs by breaking the production process into several small activities, and locating labour-intensive activities in labour abundant countries

and capital-intensive activities in capital abundant countries. Since China has an abundant supply of cheap and disciplined workforce, it has attracted a significant amount of foreign investment in fine assembly line activities, including in electric and electronic goods, information communications technology (ICT), and office and medical equipment sectors (Sharma and Wei, 2015). While some commentators have argued that trade in vertically integrated products could assist technological upgrading, in the case of China it is simply assembly line activities, based on the processing of imported parts and components, offering limited positive spillover into other industries (Steinfeld, 2004; Guillaume et al., 2005). As China began specialising in the assembly of a number of manufactured goods, the production networks expanded across national boundaries, making it easier for foreign firms to have their plants in China to take advantage of lower costs, resulting from cheap labour, and efficient transport and communication networks. This has resulted in a surge in vertical specialisation in Chinese exports from 20% of total merchandise exports in 2002 to 26% in 2007, leading to a fall in domestic value-added share in its exports. When vertical specialisation is pervasive, 'the actual trade surplus' is much smaller than that suggested by 'the standard trade surplus' figures because imported parts and components are used in the processing trade, providing a misleading picture (Wei, 2003; Sharma and Wei, 2014). A falling domestic value added share in Chinese exports appears to be due to the growth in sectors (such as ICT products) which increasingly rely on imported inputs, but not on domestically produced inputs. Growth in ICT sector may also have helped China to address environmental degradation, as it

appears to be less polluting than its traditional exports sectors, such as textiles and chemicals.

### **3 Foreign Investment Policy, and Trends and Patterns of Foreign Investment**

China embarked on an outward-oriented development strategy in 1978 with a view to integrating with the rest of the world. As a part of the outward-oriented strategy, it created special economic zones (SEZs), liberalised trade and investment policy, privatised state-owned enterprises (SEO) and allowed foreign investment in the banking sector. Furthermore, it offered generous tax incentives to foreign firms located in the SEZs. By the early 1990s, the central government permitted 100 per cent ownership for foreign enterprises and amended the joint venture (JV) law, which permitted a JV agreement beyond 50 years. In 1992, the government relaxed a number of sectoral and regional barriers relating to foreign investment, and committed to protect foreign investment. These reforms enabled China to gain WTO membership in November 2001, sending clear signals to foreign investors that China is committed to market-oriented policy (Jiang et al., 2013).

As China liberalised foreign investment policy and improved its physical infrastructure, FDI inflows gradually increased. It surged from just over US\$3.2 billion in 1990 to US\$45.2 billion in 2000 and then to US\$ 123 billion in 2012 (NBSC, 2013; Jiang et al., 2013). Although FDI inflows in 2012 were lower than the 2008 and 2009 levels, the lower level of FDI inflows in the post 2008/09 period is a reflection of

global downturn (Table 1). Despite this, China remains the largest recipient of FDI among developing countries and the second largest in the world after the United States of America. It is a well-known fact that foreign firms in China are heavily engaged in the assembly of electric and electronic goods, and information and communications technology products, whose shares in China's exports surged from just under 30 percent on the eve of its accession to WTO to over 60 % by 2010. With the increase in FDI inflows, the share of foreign investment in gross domestic products (GDP) and gross fixed capital formation (GFCF) also rose, reflecting the importance of foreign investment in China's economic transformation. For instance, inflows of FDI as a percentage of GDP rose from 5% in 1990 to 16% by 2000; and then fell to 10 percent in 2012, perhaps due to the 2008/2009 global recession brought about by the global financial and Euro zone crises as noted earlier (Figure 1). The share of foreign investment in the GFCF has been declining since 1994 largely due to an expansion in foreign exchange reserve following a surge in its exports. As UNCTAD (2014) correctly points out, China has become an important source of global capital as reflected by the rising share of FDI outflows in GDP, reaching nearly 6% by 2012 (Figure 1).

\*Insert Figure 1 about here\*

As shown in Table 1, foreign investment has been heavily concentrated in the Eastern (Coastal) region, which has excellent infrastructure for export-oriented firms,

while it remains very small in Central and Western regions. By 2010, Eastern region attracted 78 percent of the total foreign investment. As expected, they were export-oriented, engaged in the assembly of imported parts and components into final products for re-exports (Table 1).

\*Insert Table 1 about here\*

With the rise in price of various factors, and intense competition for land in Eastern region, a few matured industries have relocated some of their activities to relatively cheaper Central and Western regions, where standardised goods are produced (Houkai et al., 2010). This organisational disintegration strategy has led to marginal increase in foreign investment in Central and Western regions, but the magnitude of investment by foreign firms in these two regions are nowhere near the Eastern region (see Table 1). Foreign firms in Central and Western regions still face significant challenges due to relatively less experience in facilitating foreign investment among bureaucrats. From an economic efficiency point of view, Eastern region is far ahead of the two other regions (Central and Western) due to differences in economic growth, per capita income and high quality physical infrastructure. As expected, poverty is much lower in Eastern province, while it is higher than the national average level in Western and Central regions. To address this, these two relatively less developed regions have embarked on a growth enhancing strategy. For example, with the implementation of the Western Development Strategy in early 1999, the Western region has encouraged

the establishment of industries such as equipment manufacturing, pharmaceuticals, aerospace and defence, information technology and natural resource exploitation by giving tax incentives. The Central region, on the other hand, places heavy emphasis on utilising the region's agricultural advantages and has developed industries such as agriculture machinery, food processing, logistics, and petrochemicals by offering financial and non-financial incentives (China Business Review, 2010).

China's ability to attract FDI flows in such a massive scale has led to a dramatic rise in its exports and structural change in the composition of exports. As shown in UNCTAD (2014), China's share in the world exports rose from just under 2% in 1990 to about 12% by 2012 (Figure 2). Not only its share in world exports has risen but also its share in world imports rose dramatically from less than 2% in 1990 to about 8% by 2012, as China's involvement in international global production sharing continues to rise.

#### **4 Emerging Trends in Chinese Exports: The Role of Vertical Specialisation**

China's commitment to an outward-oriented development strategy has led to rapid growth in its GDP and exports. During 1990 to 2010 periods, its GDP grew 15 fold, from US\$390 billion to US\$5878 billion, while exports expanded 25 fold from US\$62 billion in 1990 to US\$1578 billion by 2010. As Sharma and Wei (2014) argue export growth was rapid since late 2001, when China became a WTO member, although its

growth rate became negative in 2009 following the global financial and Euro Zone crises. However, despite this growth in China's GDP remains very robust ( Figure 3).

\*Insert Figure 2 about here\*

\*Insert Figure 3 about here\*

The composition of Chinese exports has changed dramatically over the years. For instance, its exports of primary products, including fuel, have fallen, while that of manufactured goods has increased rapidly (Table 2). The share of fuel exports in China's merchandise exports fell from about 26% in 1985 to less than 2% by 2012. In the meantime, its exports of high value-added manufactured goods have risen from just over 26% of merchandise exports in 1985 to 94% by 2012 (World Bank, 2014). One noticeable development within manufacturing exports is the rise in exports of high-tech products, namely ICT products, whose share in total merchandise exports rose from just over 6% in 1990 to 27% by 2012 (Table 2). This is a remarkable achievement for a country like China, which had a long history of inward-oriented policy (Sharma and Wei, 2014; 2015). This significant structural shift in export structure was the result of a number of factors, including policy liberalisation, favourable investment climate, well-developed physical infrastructure, disciplined labour force and political stability, giving rise to vertical specialisation, which is also known as outsourcing, intra-product specialisation, global production network and international production sharing.

\*Insert Table 2 about Here\*

As Athukorala (2009) correctly argues China has become the world's largest exporter of high-tech products, assembled by foreign firms, using imported parts and components, and cheap Chinese labour. Nearly one-third of Chinese exports involve processing trade, as shown in Table 3.

\*Insert Table 3 about Here\*

Table 3 presents estimates of total vertical specialisation in Chinese exports, and key manufacturing and non-manufacturing sectors for 2002, 2005 and 2010. The selection of years was guided by data availability. Table 3 shows that vertical specialisation in Chinese exports is growing. It rose from 20% of total merchandise exports in 2002 to 30% in 2005, and then fell to 25% in 2010 due to the world-wide recession following the 2008/09 global financial and Euro zone crises. Within the manufacturing sector, vertical specialisation is high and increasing in high-tech industries (such as communications equipment, computers and other electronic equipment manufacturing etc) and low and falling in labour-intensive industries (such as food and tobacco, textile, footwear etc). Chinese exports of communications equipment, computers and other electronic equipment manufacturing sector have the highest degree of vertical specialisation, increasing from 37% in 2002 to 47% in 2005

before falling to 39% in 2010 in response to the world-wide recession (Sharma and Wei 2014; 2015). The next most important sector in terms of processing trade is the measuring instruments and office machinery sector, recording a growth from 30% in 2002 to 38% in 2005 and then experiencing a marginal decline in 2010 due to global downturn. Vertical specialisation in simple labour intensive manufacturing industries is low and declining as China moves into the processing of high value added products brought about by influx of foreign firms mainly in assembly line activities.

It is increasingly evident that the rising vertical specialisation has led to the enlargement of China's trade surplus and foreign firms have played an important role in this process by slicing up their value chain and transferring labour-intensive final assembly activities to China. China's increased involvement in processing trade has given rise to a highly competitive manufacturing sector globally.

## **5 Conclusion**

This paper contributes to the literature on emerging trends in Chinese exports, with an emphasis on the role of foreign investment and vertical specialisation. Policy liberalisation initiated in mid-1970s, together with significant improvements in physical infrastructure and political stability, has led to significant inflows of foreign investment in China, particularly in export-oriented industries, to take advantage of its

comparative advantage in cheap labour. This has contributed to growth in Chinese exports and a change in its structure.

Over the years, China's export growth has been far greater than growth in GDP and this trend continues despite a slowdown in the world economy brought about by the 2008/09 global financial and Euro zone crises. Following liberalisation reforms initially foreign firms were attracted in simple labour intensive assembly line activities, but gradually they moved into assembly of sophisticated manufacturing industries as China improved its overall business climate. This is increasingly evident by domination of sophisticated manufactured goods in Chinese exports, based on assembly of imported parts and components using cheap Chinese labour. Our analysis suggests that vertically integrated products (i.e. processing of imported parts and components into final products for re-exports) account for nearly one-third of Chinese exports, although this has fallen marginally in recent years due to the world-wide recession following the global financial and Euro zone crises. However, prospects for growth in such trade remain robust, as China continues to improve its physical infrastructure and the rule of law.

There is clear evidence to suggest that falling service link costs, brought about by rapid development in transport and communication networks, together with policy liberalisation, have led to a surge in vertical specialisation in China. Our analysis indicates that the share of vertical specialisation is high and growing in high-tech

industries, and low and falling in labour-intensive industries. As this trend continues, it has significant welfare implications, as well as policy implications for industry assistance and skill upgrading.

Table 1: FDI inflows to China by Region (in Constant US\$ million): 1985-2012

Year	Eastern Region		Central Region		Western Region		Total FDI
	Volume	Proportion	Volume	Proportion	Volume	Proportion	
1985	867.2	90.4	49.2	5.1	43.3	4.5	959.7
1986	1028.6	84.7	65.4	5.4	120.5	9.9	1214.5
1987	1177.7	84.2	47.2	3.4	173.4	12.4	1398.3
1988	2316.5	85.4	172.9	6.4	223.6	8.2	2713.0
1989	2800.9	89.4	144.8	4.6	187.0	6.0	3132.7
1990	2976.4	91.6	151.5	4.7	122.1	3.8	3250.0
1991	3975.3	91.0	253.6	5.8	140.4	3.2	4369.3
1992	10369.0	87.3	986.9	8.3	518.5	4.4	11874.4
1993	22044.2	82.3	2666.9	10.0	2085.3	7.8	26796.3
1994	28954.8	83.3	3199.3	9.2	2588.7	7.5	34742.7
1995	31497.0	83.3	4053.0	10.7	2259.2	6.0	37809.2
1996	35620.7	83.6	5099.7	12.0	1896.2	4.4	42616.5
1997	37542.1	81.2	6165.9	13.3	2532.4	5.5	46240.3
1998	37366.7	81.5	5962.5	13.0	2492.1	5.4	45821.3
1999	36986.7	82.8	5700.2	12.8	2005.7	4.5	44692.7
2000	38210.3	84.5	5122.0	11.3	1906.0	4.2	45238.2
2001	42805.0	85.5	5300.9	10.6	1985.9	4.0	50091.8
2002	51528.7	85.0	6682.7	11.0	2405.0	4.0	60616.5
2003	64659.5	85.5	8294.2	11.0	2687.3	3.6	75641.0
2004	60996.5	81.9	10364.6	13.9	3136.2	4.2	74497.3
2005	66311.3	79.4	12893.5	15.4	4293.2	5.1	83498.0
2006	80541.4	78.6	16042.2	15.7	5881.7	5.7	102465.3
2007	90325	70.3	30080.0	23.4	8140.0	6.3	128545.8
2008	100875.8	67.0	37082.7	24.6	12646.7	8.4	150605.3
2009	98579.9	64.1	40396.8	26.2	14872.2	9.7	154029.1
2010	89855.0	78.32	6858.0	6.0	9022	7.86	114734.0
2011	96604	77.92	7836	6.32	11571	9.33	123985
2012	92513	76.41	9287	7.67	9916	8.19	121073

Source: Compiled by the authors based on Jiang et al. (2013) for data from 1985-1999 and National Bureau of Statistics of China (NBSC) for data from 2000 to 2013.

Table 2: Recent Trends in Chinese Exports (unless otherwise stated % of Merchandise Exports)

	1985	1990	1995	2000	2005	2010	2011	2012
Trade % of GDP	12.6	12.6	8.2	5.4	3.2	2.7	2.8	2.7
Fuel exports % of merchandise exports	25.7	8.3	3.6	3.1	2.2	1.7	1.7	1.5
ICT exports % of merchandise exports	-	6.4	10.4	17.7	30.7	29.1	26.7	27.0
Manufactured exports % merchandise exports	26.4	71.6	84.1	88.2	90.8	93.5	93.3	93.9
Ores and minerals % of merchandise exports	1.5	2.0	2.1	1.9	1.8	1.4	1.4	1.3

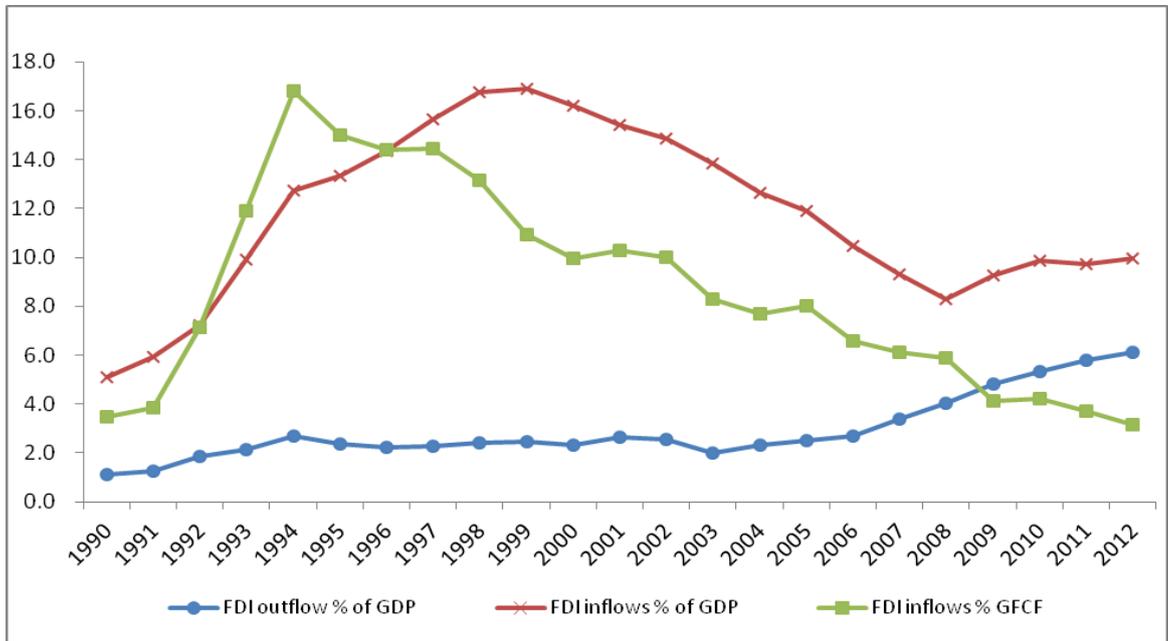
Source: Compiled by the authors based on data from World Bank (2014).

Table 3: Total vertical specialisation, and vertical specialisation in key manufacturing and non-manufacturing sectors, China: 2002, 2005 and 2010

	2002	2005	2010
<b>Key manufacturing sectors</b>			
Food manufacturing and tobacco processing industry	0.09	0.12	0.12
Textile	0.18	0.21	0.15
Textile, leather and feather products industry	0.19	0.20	0.15
Wood processing and furniture manufacturing	0.14	0.19	0.16
Paper printing and educational and sports goods	0.14	0.22	0.19
Chemical industry	0.18	0.25	0.23
Non-metallic mineral products	0.14	0.20	0.17
Metal smelting and rolling processing industry	0.17	0.27	0.27
Fabricated metal products	0.18	0.25	0.21
General, special equipment manufacturing	0.20	0.26	0.24
Transportation equipment manufacturing	0.20	0.26	0.24
Electrical machinery and equipment manufacturing	0.22	0.28	0.26
Communications equipment, computers and other electronic equipment manufacturing	0.37	0.47	0.39
Measuring instruments and office machinery	0.30	0.38	0.34
Handicrafts and other manufacturing	0.15	0.19	0.13
<b>Non- manufacturing sectors</b>			
Petroleum processing, cooking and nuclear fuel processing industry	0.23	0.09	0.11
Building industry	0.17	0.20	0.17
Transportation and warehousing industry	0.11	0.17	0.15
Information transmission, computer services and software industry	0.16	0.23	0.12
Accommodation and catering	0.08	0.11	0.09
Leasing and business services	0.20	0.30	0.16
Education	0.08	0.09	0.05
Culture, sports and entertainment	0.10	0.14	0.10
Integrated technical services	0.19	0.15	0.13
<b>Total vertical specialisation in Chinese exports</b>	<b>0.20</b>	<b>0.30</b>	<b>0.25</b>

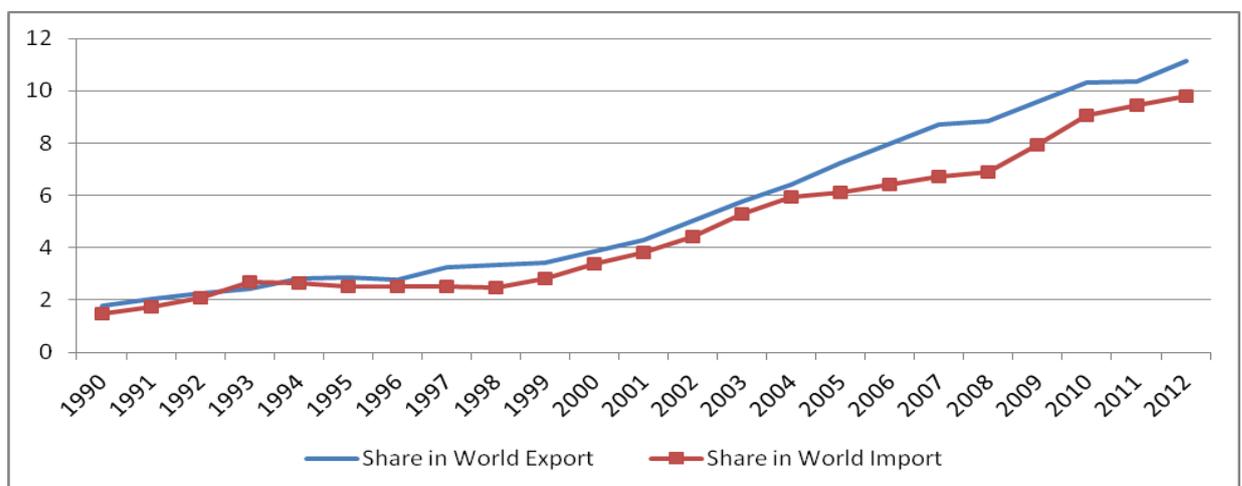
Source: Computed by the authors based on data from National Bureau of Statistics of China, various issues (from 2000 to 2011) and input-output tables.

Figure 1: FDI outflows and inflows % of GDP and FDI inflows % of gross fixed capital formation (GFCF), China: 1990-2012



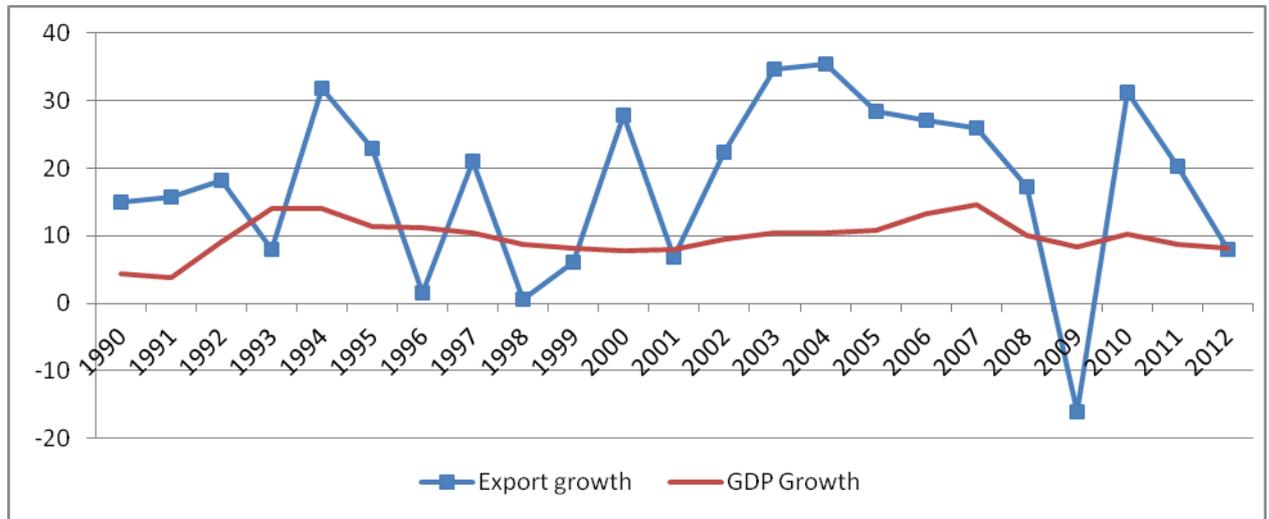
Source: Extracted by the authors from UNCTAD (2014)

Figure 2: China's Share in the World's exports and imports, China: 2000-2012



Source: Extracted by the authors from UNCTAD (2014)

Figure 3: Export and GDP Growth (%), China: 1990-2012



Sources: Extracted by the authors from World Bank (2014)

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