

GUESTS**UDC 339.5:330.322****DIAO Li,**

International Economics Department

Associate Professor Doctor of Economics

Zhongnan University of Economics and Law

**TRADE INTERDEPENDENCE, COMPARATIVE ADVANTAGE
AND FDI BETWEEN CHINA AND EU****Abstract**

The objective of this paper is to examine the connection between international trade and foreign direct investment (FDI), by assessing some salient features of China and EU's market structures and their current patterns of the revealed comparative advantage, and how their two-way investments are related to the changes in the comparative advantage and trade between China and EU. We postulate that the EU firms venturing in China plays an important role in changing patterns of China's comparative advantage. A increasing similarity of trade structure and decreasing complementarity of the Chinese and EU economies limit the absorptive capacity of each other's products, which further challenges China's entrepreneurs to a high commitment of direct investment into EU.

Key words: trade independence, distribution, export categories, import structures.

Introduction

The European Union (EU) is the world's biggest economy, consists of twenty-five member states. They are: Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and the United Kingdom. The EU is a customs union and a developing single market, with around 459,5 million people and an official GDP of €

10,5 trillion, per capital GDP 23 400 euro. In 2005, EU's export reached € 1176 billion, its import amounted to € 1061,8 billion, and the main trade partners are USA (18,5 %), China (9,4 %), Russia (7,3 %), Switzerland (6,6%), and Japan (5,2 %).

China (here we only consider the data of China Mainland for the convenience of depiction) is the biggest developing economy in the world, its trade relations with the EU countries have been developing smoothly and have been enhanced continuously. The development of the China – EU bilateral trade relation has been characterized by its “dynamic” nature, manifested in the (dis)similarities of these countries' economic structures and trade patterns. China enjoys strong economic complementarity and the expansion of EU to the East provides huge market potential, and consequently, favorable conditions for the expansion of Chinese products' share in EU market. At the same time, the rapid economic development in China offers broad market space for competitive products from EU.

And yet, EU – China trade relations are marked by a sizeable and widening EU deficit with China (around \$ 133 billion in 2005), and this is the EU's biggest bilateral trade deficit. Whether EU should take the defensive measures to protect European market, fight against Chinese imports, as some are suggesting, or should support European exports to, and investments in China, it has become a topic of hot debate recently.

Problem statement

The purpose of this paper is to assess the overall interdependence of foreign trade and FDI between China and EU after 2001 (the trade between China and EU is very far from being a free trade, it is a trade under high surveillance, and even a trade under suspicion in many cases, only since 2001 China accessed to WTO and it is just starting to export more freely toward EU. In addition, many products, like clothing and textiles, have been opened to China exports only more recently and very gradually), to study the trade pattern resulting from industrial development in these economies, and to examine the connection between international trade and foreign direct investment. The analysis should be especially instructive in light of the macroeconomic model of FDI pioneered by

Kojima (1973, 1978, 1984) on the relationship between a country's comparative advantage and its outward direct investment. We postulate that the changing patterns of EU's comparative advantage and other macro-level factors play an important role in motivating EU firms to venture in China. In turn, EU's investments improve China's comparative advantage, the increasing similarity of trade structure and decreasing complementarity of the Chinese and EU economies limit the absorptive capacity of each other's products, which further challenges the Chinese entrepreneurs to a high commitment of direct investment into EU.

The structure of the paper is as follows. Section 2 studies the trade pattern and the economic interdependence between China and the EU countries, to compare the dynamic features of China – EU trade. In section 3 the structures of the China – EU trade are examined by classifying the commodities into five groups according to their factor-intensive uses, and by assessing the measures of their revealed comparative advantage over recent years. We then turn to section 4 an analysis of the development of China and EU's direct investment: their characteristics, motivations and linkage with the China – EU trade pattern. The final section contains some concluding remarks and implications for the future development of China-EU economic interdependence.

Research results

1. Trade interdependence between China and EU

(1) EU and China trade patterns by regions

The EU countries are heavily dependent on intra-EU and the United States markets as an outlet for their total exports, 66,8 % of EU export conducted in intra-EU, followed in US with a share of 11,7 %. China with a share of 4,9 % in 2005. One notable feature is that the intra-EU market is particularly important for Netherlands, France, Germany, Italy and United Kingdom. The shares of their exports to EU countries are 77,2 %, 64,1, 63,3, 60,2 and 54,8 % in 2005, respectively (Table 1). And the market share showed a steady state with a little fluctuation in recent years.

The import pattern of the EU countries matched their export pattern, with the heaviest dependence on intra-EU, Intra-EU trade accounted for over 60 % of EU's total imports, followed by the United States with a share of around 8 %. France depends most heavily on the EU market for its imports, taking on 67 % in recent years. The UK recorded the least among the first-five EU trade partners of China. Only ranging from 47,1 % of its total imports in 2001 to 51,8 % in 2005. The Chinese market has become increasingly important for EU's trade, with the Chinese share of exports and imports rising steadily from 2,7 and 6,9 % in 2001 to 4,9 and 13,5 % in 2005 (Table 1, 2).

As seen in Table 1, 2, China has a market structure of foreign trade different from that of EU, and the export destinations of Chinese goods are diversifying. The US, EU and Japan now form 50 % of China's export market. The US market was China's largest outlet of exports and the Japanese market was the largest supply of imports though with a slightly declining trend. In 2001, 21,7 % of China's exports and 17,6 % of China's imports were conducted with US and Japan respectively. These shares were reduced to 21,4 % and 15,4 % in 2005, correspondingly. In contrast, China's export to EU increased from 15,4 % in 2001 to 19,2 % in 2005, although its import from EU decreased from 14,7 % to 11,9 % correspondingly. The little decline of China's trade dependence has generally been complemented by a stead growth of EU direct investment in China during the period (see section 4).

EU and China: percentage export distribution by major destination*

		EU	UK	Germany	France	US	Japan	China
EU	2001	67,7	8,2	13,8	9,4	9,2	1,7	1,2
	2002	67,7	8,3	13,3	9,2	9,2	1,6	1,3
	2003	69,1	7,9	13,7	9,4	8,5	1,5	1,5
	2004	68,5	7,8	13,5	9,3	8,1	1,5	1,7
	2005	66,8	6,8	9,9	4,6	11,7	2,0	4,9
France	2001	60,7	10,5	16,2	–	9,5	1,5	1,1
	2002	61,1	10,4	15,9	–	8,7	1,6	1,1
	2003	65,4	10,1	16,4	–	7,5	1,6	1,5
	2004	64,9	9,8	15,8	–	7,4	1,5	1,6
	2005	64,1	9,0	15,1	–	7,2	1,4	2,0
Germany	2001	55,2	8,3	–	11,1	11,4	2,1	1,9
	2002	54,6	8,3	–	10,6	11,5	1,9	2,2
	2003	64,1	8,2	–	10,4	10,0	1,8	2,7
	2004	63,9	8,3	–	10,2	9,5	1,8	2,9
	2005	63,3	8,1	–	9,8	9,1	1,7	3,2
Italy	2001	53,8	6,6	14,3	12,1	10,7	1,8	1,2
	2002	53,1	6,8	13,5	12,0	10,7	1,7	1,5
	2003	59,6	7,1	14,1	12,5	9,4	1,7	1,5
	2004	59,3	8,1	15,8	14,3	8,8	1,5	1,8
	2005	60,2	8,3	15,4	14,8	8,7	1,4	1,9
Netherlands	2001	78,7	11,7	28,6	11,4	4,6	1,0	0,5
	2002	77,1	11,7	27,6	11,2	4,9	0,9	0,6
	2003	80,1	11,6	28,8	11,7	4,8	0,8	0,7
	2004	79,5	11,3	28,1	11,1	4,6	0,8	0,9
	2005	77,2	11,0	28,0	11,3	4,7	0,9	0,7
UK	2001	54,4	–	11,6	9,6	17,7	2,0	0,9
	2002	55,8	–	11,2	9,3	17,2	2,0	0,8
	2003	56,3	–	10,6	9,5	17,5	2,0	1,0
	2004	55,0	–	10,7	9,2	16,9	2,0	1,3
	2005	54,8	–	10,5	9,4	17,2	2,1	1,5
China	2001	15,4	2,5	3,6	1,4	21,7	16,9	–
	2002	15,2	2,4	3,4	1,2	30,4	13,8	–
	2003	17,9	2,4	4,0	1,6	22,4	13,6	–
	2004	18,2	2,5	4,0	1,7	24,9	12,2	–
	2005	19,2	2,5	4,3	1,5	21,4	11,3	–

Sources: 2006 International Monetary Fund: Direction of Trade Statistics.

* Of China's trade with the EU countries, the major part of that was China-France, Germany, Italy Netherlands and UK trade, account for 75 % of its exports and 80 % of its imports, So our analysis will pay more attention to these EU countries.

Table 2

EU and China: percentage import distribution by major source

		EU	UK	Germany	France	US	Japan	China
EU	2001	63,4	6,3	14,4	7,8	7,8	3,2	2,9
	2002	64,5	6,2	15,0	7,8	7,1	2,9	3,3
	2003	66,0	5,8	15,6	7,9	6,1	2,8	3,8
	2004	65,0	5,5	15,7	7,6	5,7	2,7	4,3
	2005	64,6	3,6	14,7	6,7	7,9	3,6	13,5*
France	2001	65,1	8,4	20,4	–	7,9	2,0	2,4
	2002	65,9	7,7	20,4	–	7,4	1,9	2,6
	2003	69,0	7,4	21,1	–	6,0	1,9	2,9
	2004	68,7	7,3	20,2	–	5,6	1,8	3,2
	2005	67,3	6,9	19,7	–	5,4	1,6	3,4
Germany	2001	52,1	7,0	–	9,5	8,9	4,1	3,6
	2002	52,7	6,5	–	9,5	7,8	3,6	4,1
	2003	61,3	5,9	–	9,1	7,8	3,6	4,6
	2004	61,8	5,9	–	9,0	6,9	3,4	5,6
	2005	63,1	5,3	–	8,7	6,4	3,2	4,3
Italy	2001	56,5	5,0	17,5	11,0	5,5	2,4	2,8
	2002	57,0	4,9	17,5	11,1	5,3	2,1	3,2
	2003	60,6	4,8	18,1	11,4	4,5	2,0	3,6
	2004	60,0	5,0	21,2	12,9	4,0	2,0	4,9
	2005	61,5	5,6	22,9	14,1	3,8	1,9	3,1
Netherlands	2001	50,0	7,7	18,4	5,8	10,4	4,5	4,8
	2002	51,5	7,7	20,2	6,2	9,7	4,0	5,7
	2003	54,5	8,4	20,5	5,7	8,6	3,9	7,2
	2004	53,0	7,2	20,2	5,4	8,5	3,6	8,3
	2005	52,8	7,0	20,1	5,1	8,4	3,1	7,3
UK	2001	47,1	–	11,8	7,8	15,6	4,2	2,7
	2002	49,8	–	12,9	7,8	13,5	3,8	3,1
	2003	54,2	–	16,3	8,2	11,8	3,5	3,6
	2004	52,2	–	13,1	7,4	10,9	3,4	4,3
	2005	51,8	–	13,3	7,1	10,6	3,2	3,8
China	2001	14,7	1,5	5,6	1,7	12,4	17,6	–
	2002	12,9	1,1	5,6	1,5	9,9	16,1	–
	2003	13,2	0,9	5,8	1,4	9,3	18,0	–
	2004	12,2	0,8	5,4	1,3	8,8	15,8	–
	2005	11,9	0,9	4,7	1,4	7,4	15,4	–

Sources: 2006 International Monetary Fund: Direction of Trade Statistics.

*In 2005, EU has experienced a surge in textiles and clothing import from China for the Agreement on Textiles and Clothing (ATC) signed. The EU textiles imports from China have risen substantially since January 1, 2005. For example, between

January and June, imports of textiles and clothing from China have increased between 83 % and 541 %, with serious average unit price drops – up to 62 % in the case of dresses. The share of imports from China as of total extra-EC imports in this period has increased in certain instances dramatically: 54 % in brassieres – 55% in flax yarn – 36 % for trousers. Thus resulting not only in a increases in the total volume and value of goods imported, but also in the displacement of other developing country suppliers. China and EU representatives decided to meet in order to avoid engaging in a trade dispute. This meeting occurred in Shanghai in June 2005. During this meeting, the European Union and China agreed to curb a surge in imports of Chinese textiles into Europe until the end of 2008 (Source: Website of the directorate of Trade of the EU).

(2) EU and China trade patterns by categories

Table 3 and 4 show the export and import structures of China and EU countries for selected years of 2001 – 2004 at the SITC two-digit level. Table 3 shows that in 2001 EU's export consisted above 40 % of capital-intensive or R&D-intensive commodities, especially Germany have about 50 % export be high-tech products.

In 2004, of the manufactured exports, machinery and transport equipment were the predominant categories, accounting for 49,5 % in Germany, 42,7 in France, 38,0 in Italy, 37,8 in UK, 34,1 % in Netherlands, followed by other manufactures and chemical products. The importance of manufactures has been maintained at around 70 – 90 % while only about 3 – 16 % of food and 0,4 – 3,7 % of agricultural raw materials have been exported. The export share of mineral fuels and metals keep a small share, reflecting its resource-lacked nature. Of the manufactured exports, machinery and transport equipment have a little decrease (e.g., from a level of 44,8 % in 2001 to 42,7 % in 2004 for France). This can be attributed to EU's low economic development and unstable growth of FDI activities overseas.

Table 3

EU and China: export structures by main categories

SITC	All food items (0+1+2+2++4)	Agriculture			Manufactured goods ((5 to 8) – 68)	Of which		
		raw materials (2 – (22+27+28))	Fuels (3)	Ores & metals (27+28+68)		Chemical Prod., (5)	Other Manuf., ((6+8) – 68)	Machinery, & equip., (7)
France								
2001	10,6	1,0	2,6	1,9	81,8	14,3	22,8	44,8
2002	11,2	0,9	2,5	1,7	81,4	14,9	22,8	43,6
2003	11,8	1,0	2,7	1,8	82,3	16,7	22,9	42,8
2004	11,2	1,0	3,0	2,2	82,3	16,7	23,0	42,7
Germany								
2001	4,6	0,8	1,5	2,4	86,5	12,8	22,3	51,4
2002	4,2	0,8	1,4	2,2	85,7	11,8	22,0	52,0
2003	4,3	0,8	1,6	2,1	84,4	12,6	21,5	50,2
2004	4,1	0,8	2,0	2,3	83,9	13,1	21,2	49,5
Italy								
2001	2,7	1,0	0,3	1,3	94,6	13,6	46,6	34,4
2002	4,2	1,0	0,4	1,3	93,0	13,1	51,1	28,7
2003	6,8	0,6	2,2	1,3	86,6	10,1	39,2	37,2
2004	6,6	0,6	2,4	1,5	87,5	10,0	39,5	38,0
Netherlands								
2001	15,0	3,2	10,0	2,2	69,3	13,7	19,1	36,6
2002	16,3	3,4	8,0	2,1	70,0	15,9	19,6	34,4
2003	17,6	3,6	7,1	2,2	69,2	17,4	19,6	32,2
2004	16,7	3,7	6,7	2,3	70,3	16,9	19,4	34,1
UK								
2001	4,9	0,4	7,8	2,1	77,7	12,7	21,1	44,0
2002	5,3	0,5	7,8	2,0	79,0	13,6	21,5	43,9
2003	5,7	0,6	8,1	2,2	83,0	16,2	22,4	44,4
2004	5,7	0,6	8,9	2,8	76,4	15,4	23,3	37,8
China								
2001	5,3	0,9	3,2	1,7	88,6	4,9	48,1	35,6
2002	5,0	0,8	2,6	1,6	89,9	4,6	46,3	39,0
2003	4,4	0,7	2,5	1,6	90,6	4,4	43,3	42,8
2004	3,5	0,5	2,4	1,9	91,4	4,4	41,8	45,2

Source: UNCTAD: Handbook of International Trade and Development Statistics, various issues.

EU and China: import structures by main categories

SITC	All food items (0+1+22+4)	Agri-cultural raw materials (2 – (22+27+28))	Fuels (3)	Ores & metals (27+28+68)	Manu-factured goods ((5 to 8) – 68)	Of which		
						Chemi Prod. (5)	Other Manuf. ((6+8) – 68)	Machi .&equip.(7)
France								
2001	8,2	1,7	9,5	2,7	77,7	12,5	26,7	38,5
2002	8,7	1,7	9,2	2,5	77,8	12,9	27,2	37,7
2003	8,8	1,7	9,7	2,4	77,4	13,4	27,2	36,8
2004	8,2	1,5	10,8	2,6	76,7	13,1	26,9	36,7
Germany								
2001	7,5	1,7	8,8	3,5	74,0	10,4	24,6	39,0
2002	7,3	1,6	8,1	3,2	71,2	10,3	23,2	37,7
2003	7,3	1,6	8,7	3,0	70,4	10,4	23,0	37,1
2004	6,8	1,5	9,2	3,4	69,3	10,8	21,9	36,6
Italy								
2001	8,7	3,5	9,2	4,2	68,5	12,1	23,3	33,1
2002	9,0	3,3	9,1	3,8	69,4	12,7	23,5	33,2
2003	9,3	3,0	9,2	3,5	68,7	12,9	23,3	32,5
2004	9,2	2,8	9,6	4,1	69,6	13,1	24,1	32,4
Netherlands								
2001	9,8	2,0	11,5	2,9	73,7	10,4	22,0	41,4
2002	10,4	1,9	11,6	2,4	73,6	11,1	22,9	39,6
2003	11,6	2,0	11,9	2,7	71,7	12,5	23,2	36,1
2004	11,5	1,9	11,6	2,7	72,3	12,0	21,8	38,4
UK								
2001	7,9	1,5	4,3	2,7	77,3	9,3	26,5	41,6
2002	8,3	1,5	4,1	2,2	79,1	10,2	27,5	41,4
2003	8,9	1,6	4,6	2,2	82,1	11,1	27,5	43,6
2004	9,0	1,5	6,5	2,3	77,2	11,1	28,0	38,2
China								
2001	3,8	4,3	7,2	5,9	78,0	13,0	21,2	43,9
2002	3,3	4,0	6,6	5,3	80,2	13,0	20,9	46,4
2003	3,6	3,7	7,1	5,6	79,6	11,7	21,1	46,8
2004	3,8	3,7	8,6	7,3	76,3	11,5	19,7	45,1

Source: UNCTAD: Handbook of International Trade and Development Statistics, various issues.

China uses the United States, EU and Japan as their most important outlets for exports of its primary products, labor-intensive manufactures and a growing range of capital-intensive manufactures, imports of high-tech machinery and equipment. The EU countries, being relatively (and absolutely) more capital

abundant than China, is exporting capital-intensive goods to China. And at the same time, import labor-intensive goods from China since they are labor absent countries both in the absolute sense and in the relative sense of having an overall labor to capital ratio lower than China. This seems in comply with the traditional trade theory based on comparative advantage as a determinant of trade flows. As we can see, the striking feature of China's trade pattern is its growing trade dependence on importing raw material and resources, and export more labor-intensive products. In 2001, about 20 % of its total imports are raw materials and high value-added products, and 46 % of its exports were low-added value. This could offer rising opportunities to the EU countries and expand the China – EU bilateral trade, EU – China trade has doubled between 2001 and 2005 making Europe China's largest export market, EU exports to China have also increased by more than 100 % between 2001 and 2005, much faster than its exports in the rest of the world.

In order to promote sustained development of the domestic economy, a series of macroeconomic policy adjustments has been adopted to diversify Chinese sole export structure, which included liberalization of foreign direct investment, encouraging high value-added goods such as automobiles, chemicals and mining machinery. As a result of these policy changes, its reliance on exports of traditional resource-based products has gradually shifted toward engineering products requiring greater input of skills and technological sophistication. In 2005, Chinese exports of new and high-tech products increased 32 percent. They accounted for 29 percent of total exports, an increase of 11 percent over 2001. Exports of textile products, white goods, toys and shoes reported moderate export growth. Exports of billets, unforged aluminum and coke dropped by 36 percent, 20 percent and 11 percent year on year, respectively.

Compared with the EU countries' import structures, China possesses a quite similar commodity composition of its imports. As shown in Table 4, China's imports are now dominated by manufactured imports, as a result of its market-oriented

economic policy and efforts toward export-oriented industrialization. In 2004, China's imports consisted of 15,9 % fuels, minerals and metals, and 76,3 % of China's imports was manufactures, of which machinery and transport equipment accounted for 45,1 %, chemical products for 11,5 %, and other manufactures for 19,7 %. The changes in the composition of manufactured imports showed that China's strategic policies to import foreign intellect to speed up its economic construction and social development, and is one important aspect of in the implementation of the opening-up policy.

To compare China and EU's overall trade structures, one notable feature is the high similarities of import and export structures and lack of complementarity in absorbing each other's products except for China's labor-intensive products. This feature helps explain the increasing EU trade deficit.

(3) Trade interdependence between China and EU

The growth of China – EU bilateral trade is very impressive. In 2001, China's total two-way trade with EU was US\$ 96,7 billion. It roses to US\$ 339,3 billion in 2005, 3,5 times the value of 2001. During this period, China's exports to EU countries grew from US\$ 68,9 billion in 2001 to US\$ 255 billion in 2005, while imports from EU grew from US\$ 27,8 billion to US\$ 84,3 billion, respectively. The balance of trade has almost remained in China's favor. The relative trade interdependence between China and EU is illustrated in Table 5.

As indicated in Table 5, China is more important as a source of supply for imports of the EU countries rather than as an outlet for EU's exports. One may note that in 2001 EU as a whole shipped only 11,4 % of its total exports to China, which is smaller than the share (25,9 %) it purchased from the Chinese market in the same year, EU's dependence on the Chinese market as the source of supply increased steadily from 2,5 % in 2001 to 3,7 % in 2005. Consistent with this trend, sales to China grew rapidly from 1,2 % of EU's total exports in 2001 to 1,8 % in 2005. Such rapid growth of trade interdependence between China and EU should attributed to the

liberalization of institutional factors, while the small scale have to be explained by the similarities of trade structures.

Table 5

Chinese trade interdependence with EU countries (in percentage)

	Exports to China as % of total Chinese imports					Exports to China as % of the exporting country's total exports				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
EU	11,4	11,2	11,2	10,6	15,2	1,2	1,3	1,5	1,6	1,8
France	1,3	1,8	1,3	1,2	1,4	1,1	1,2	1,5	1,5	1,6
Germany	4,4	4,6	4,9	4,6	4,7	1,9	2,2	2,7	2,8	3,1
Italy	1,2	1,3	1,1	0,9	1,4	1,2	1,5	1,5	1,8	2,1
Netherlands	0,4	0,5	0,4	0,5	0,7	0,5	0,7	0,7	0,9	1,1
UK	1,0	0,7	0,7	0,7	0,9	0,9	0,8	1,0	1,3	1,9
	Imports from China as % of total Chinese export					Imports from China as % of the exporting country's total imports				
	2001	2002	2003	2004	2005	2001	2002	2003	2004	2005
EU	25,9	24,7	26,3	26,4	26,9	2,9	3,3	3,8	4,4	4,6
France	2,8	3,3	2,4	2,4	2,3	2,5	2,6	2,9	3,3	3,7
Germany	6,6	6,1	6,4	6,8	7,0	3,6	4,1	4,6	5,6	6,4
Italy	2,5	2,4	2,4	2,4	2,6	2,8	3,2	3,6	4,9	5,1
Netherlands	3,5	3,4	3,8	3,9	4,1	4,8	5,7	7,2	8,3	8,7
UK	3,2	3,2	3,2	3,3	3,5	2,7	3,1	3,7	4,3	5,2

Source: UNCTAD: Handbook of International Trade and Development Statistics, various issues.

Among the EU member countries, Germany depends most heavily on Chinese market mainly for its imports of light and textile industrial products, minerals metallurgical and human capital-based manufactures, ranging from 6,6 % of its total imports in 2001, to 7,0 % in 2005. The Chinese market also attracted 1,9 % in 2001 and 3,1 % of Germany's total exports in 2005, accounting for 4,4 % and 4,7 % of the Chinese total imports respectively. In value terms, Germany imports from China

grew from US\$ 17,7 billion in 2001 to US\$ 32,5 billion in 2005, while exports to China grew from US\$ 10,8 billion to US\$ 30,7 billion. This made China Germany's seventh largest import partner, and tenth largest export partner. It is interesting to note that the Chinese market has become increasingly important for agricultural resource-rich France as an outlet for its exports. The share grew rapidly from 1,1 % in 2001 to 1,6 % of France's total exports in 2005. This could be attributed to its strong comparative advantage in the agricultural resource-intensive industry relative to China, as shown in the next section.

As mentioned before, Chinese trade dependence on the EU countries is relatively greater than the latter's dependence on China, especially in labor-based and capital-intensive manufactures categories. The share of EU's imports from China accounted for 25,9 % of total Chinese exports in 2001, increasing to 26,9 % in 2005,. Germany remained the most important market among EU countries for China's exports in 2001 – 2005. China's share in the total imports and exports of other EU countries has not increased much. Once again, this suggests a wide scope for the future expansion of the complementary commodity mixes of China and EU's imports and exports. This conclusion is lent further support by the analysis of changes in comparative advantage in the following section.

2. Changes in Comparative advantage

Table 6 illustrates the “revealed” comparative advantage for the economies of China and EU. As would be expected, the technology-rich EU economies have sustained a high level of comparative advantage in technology-based products in the sample period. This advantage has determined the structure of EU's exports to be predominantly of capital-intensive and technology-intensive goods.

China's open-door policy and drive toward market economy have allowed it to gain advantage more rapidly in the labor-intensive, human capital-intensive and gradually high-value goods exports. As for the export of agricultural and mineral

Table 6

**China and its first-five trade EU partners indices
of revealed comparative advantage**

	Agricultural Resource- intensive	Mineral Resource- intensive	Unskilled Labor- intensive	Human Capital- intensive	Technology- intensive good
Germany					
2001	0,09	0,04	0,02	1,85	2,25
2002	0,08	0,06	0,03	1,88	2,31
2003	0,08	0,05	0,04	1,82	2,31
UK					
2001	0,12	0,95	0,16	1,81	5,56
2002	0,11	1,05	0,17	1,75	4,67
2003	0,12	0,92	0,19	1,85	4,86
Netherlands					
2001	3,08	2,67	0,15	0,41	2,93
2002	3,02	2,73	0,11	0,38	2,99
2003	2,95	2,49	0,09	0,21	2,81
France					
2001	4,69	0,23	0,63	4,98	3,05
2002	4,82	0,34	0,50	4,95	3,12
2003	4,87	0,39	0,48	4,89	3,23
Italy					
2001	0,27	2,94	3,43	3,49	2,60
2002	0,24	2,13	3,36	3,34	2,89
2003	0,20	2,18	3,25	3,30	2,94
China					
2001	0,57	0,28	6,08	1,59	1,53
2002	0,55	0,26	4,91	1,63	1,89
2003	0,48	0,24	4,52	1,92	2,81

Source: Calculated by author from UNCTAD: Handbook of International Trade and Development Statistics, various issues.

resource-intensive goods, China has been losing its comparative advantage over the last decades. This finding is in line with what we observed about the changes in China's export structures during the period, and implies that China's foreign trade has been conducted more closely according to its comparative advantage. It is also interesting to note that the measures of comparative advantage for China have evolved close to or similarly to those of the Asian newly industrial economics in the

1970s, implying that China is likely to follow the general industrialization paradigm in shifting and composing its export structures.

In comparison with the EU economies, China has apparently certain disadvantages in agricultural resource-based goods relative to France and Netherlands, in human capital-intensive commodities relative to France and Italy, in technology-intensive products relative to all selected EU countries, and possesses greater comparative advantage in labor-intensive goods relative to all selected EU countries. The “revealed” comparative advantage suggests a wide scope for the future expansion of China – EU bilateral trade. China will increase its imports of agricultural resource-intensive and technology resource-intensive products from the EU economies, while exporting in turn more labor-intensive. The “revealed” comparative advantage indices show a difference between China and EU countries, China gaining advantage rapidly in human capital-intensive manufactures and technology-intensive exports, which some EU countries are losing advantage in. From this, it should not be surprising to observe a dynamic economic relationship between China and EU, interacting both competitively and complementarily. Intense competition is to be expected in the manufactured goods category, particularly in human capital-intensive goods and increasingly in technology-intensive goods, both in EU and the rest of the world markets. On the other hand, direct investment will be increasingly important in the development of China – EU economic interdependence.

It is apparent that China and EU are at different stages of industrial development and have different production structures. Trade conducted between them is more complementary in nature. In the short and medium run, the present China – EU trade pattern will persist, as China has a high demand for EU’s technology-based exports for which meeting the needs of its rapid economic development. EU has, in turn, a demand for the labor-intensive and some kinds of human capital-intensive goods and services that China can supply with comparative advantage.

But changes in comparative advantage for China and EU indicate that commodity mix complementarity existing in certain goods categories and between individual

countries are gradually decreasing. As both China and EU have been rapidly developing their comparative advantage in the capital-intensive and technology-intensive manufactures, severe competition would be expected, both directly and indirectly, in the EU market and the rest of the world market, reflecting the “dynamic” nature of their trade relationship. To cope with the severe competitive threat, both China and EU started to shift, at least partially, certain technology-intensive and capital-intensive manufactures to each other and heavily promote outward investments in those fields where they do not have/retain comparative advantage relative to the opposing party. This trend has become more obvious since the beginning of 21 century.

3. Two-way investments between China and EU

The trend in FDI flows has been quite dynamic over the past five years, with a substantial increase of two-way investment flows in the period 2001 – 2005. Substantial investment by European companies in the Chinese market – in particular in the telecommunications, car manufacturing, retailing and insurance sectors – have made the EU the largest source of FDI into China in recent years. Conditions on both sides have to be created to take advantage of the positive trade off between China and Europe, on the one hand offering very low labor costs and a large potential market and on the other hand providing management expertise, brands and technology. China and EU enjoy strong economic complementarity. Also, it is clear that China’s rapid economic growth provides large opportunities for EU companies in one of the biggest markets in the world: the rise in wages in China is leading to an increasing domestic demand and thus a growing potential market for imports. An additional asset is China’s convenient geographical position, which allows it to be used as an export platform for third countries markets, in particular in Asia.

EU committing direct investment in China, on one hand, has matched the increasing trend of EU’s export to China, on the other hand, has matched the increasing trend of China’s high value-added exports. Given Skilled labor, being plentiful, is also very cheap, EU multinationals in China are not only processing goods, assembling parts

but, more and more, doing research and conception at the top level of the world innovation frontier, in turn, provide for the acceleration of its climbing of the technological ladder and exports of high-tech goods.

According to Ministry of Commerce of China, the electrical machinery manufactures attracted the bulk of foreign investment, followed by food-processing industry, petroleum and chemicals, textiles and clothing, and heavy industry. These industries are in fact the ones in which some EU countries have been experiencing declining or lack of comparative advantage relative to China. It would be advantageous for those firms to invest accordingly in China instead of organizing production at home. The investment distribution in the five sectors as classified according to its factor-intensive uses shows this trend clearly. Of total FDI in forming Sino-foreign joint ventures, was in 9,2 % agricultural resource-intensive industry, 14,2 % in unskilled labor-intensive manufactures, in 5,6 % mineral resource-intensive sector, and finally 35,2 % and 35,8 % went to the human capital-intensive and technology-intensive industries, respectively. This investment pattern shows a complementarity that corresponds to revealed comparative advantage as described in the previous section. As the technology-intensive and human capital-intensive industries are the ones in which China has a comparative disadvantage relative to EU, China received over 70 % of EU's capital in forming joint ventures. This finding accords with Kojima's macroeconomic theory of foreign direct investment that outward direct investment facilitates structural adjustment in the investing country by transferring abroad the industries in which the country is losing its comparative advantage.

Considering that China appears an increasing similar trade structure to that of EU after 2001, one may think that it is to China's advantage to shift the corresponding production to EU in order to maintain or enlarge its market share and complement its comparative advantage. But actually it is not the case. Table 7 shows the amount of foreign FDI in China by country of origin, as well as the stock of FDI owned by China in each economy. As can be seen from the table, in the 10 new countries of the EU, there is not FDI with China. Those countries have not yet invested in China and,

Table 7

**FDI stock in China by EU countries and FDI stock own by China
in the corresponding economy (Billions of US dollars) by 2004**

	FDI stock in China	China stock of FDI
Austria	0,35	0
Belgium	0,5	0
Denmark	0,18	0,074
Finland	0,35	0
France	5,5	0
Germany	8	0,08
Greece	0,03	0
Ireland	0,035	0
Italy	2,2	0
Luxembourg	0	0
Netherlands	5,5	0
Portugal	0,07	0
Spain	0,35	0,102
Sweden	0,81	0
United Kingdom	10,7	0,076
Cyprus	0	0
Czech Rep.	0	0
Estonia	0	0
Hungary	0	0
Latvia	0	0
Lithuania	0	0
Malta	0	0
Poland	0	0
Slovakia	0	0
Slovenia	0	0

Source: World Economic Forum interactive Map on China.

correspondingly, China has not yet invested in these economies. For the other 15 economies, the situation is better, but in most cases, unilateral. In other words, most of the countries own a stock of FDI in China, but there is no corresponding FDI from China. There are only four countries where China has a positive stock of FDI: United Kingdom, Germany, Spain and Denmark. But this stock is much lower than the corresponding stock of FDI of the same countries in China.

European FDI in China is massive, whether than China FDI in Europe is close to zero. This FDI disequilibrium gives another explanation for EU's high trade deficit: a good part of Chinese exports of high value (e.g., telecom equipments, office equipments, etc.) to the EU is due to the presence of foreign multinationals in China, they have been largely responsible for the country's dynamic export expansion.

Thanks to its persistent trade surpluses and huge influx of FDI through most of the 1990s, China has achieved a very strong external balance and rising foreign exchange reserves. In fact, due to the positive saving-investment and export-import gaps, the economy has, for years, experienced a net resource outflow. Technically speaking, China's economy can sustain significant capital outflow for investment purposes. China has a few emerging multinationals, but these companies are much less present in world market than their European, American or Japanese counterparts because they are not as strong as foreign counterparts and are unfamiliar with overseas markets. It might be useful to take is the most practical way which would be, for China, to encourage its own firms to invest abroad more aggressively, particularly in the EU.

Conclusion from the research

It has been shown that China trade dependence on EU is relatively greater than the latter's trade dependence on Chinese economy. China is slightly more important as a source of supply for imports for the EU countries than as an outlet for EU's exports. Given the strong complimentary of their market structures and their current patterns of the revealed comparative advantage, it is not surprising that trade between China and EU have a broad market space to develop, but China's dynamic comparative advantage features determine the dynamic nature in the development of China-EU trade interdependence, with both competitive and complementary interaction. EU's direct investments in China show a complementary which corresponds to its comparative advantage. The industries in which EU have been losing or lacking comparative advantage received the bulk of its total FDI in China.

This finding is consistent with the macroeconomic theory of foreign direct investment pioneered by Kojima.

Among the EU countries, Germany is China's largest trade partner and FDI investor. They have a quite complementarity trade structure between China and Germany existing in the labor-intensive and technology-intensive goods trade. In comparison with the rest of EU, it has been shown that China possesses a comparative disadvantage in agricultural resource-intensive goods relative to France and Netherlands, in mineral resource-intensive goods relative to Netherlands and Italy, in human capital-intensive relative to France and Italy, and in technology-intensive goods relative to all EU countries. China has a comparative advantage in labor-intensive products relative to all EU countries, in human capital-intensive products relative to Netherlands. Trade in those sectors can be expected to expand between China and these countries. China has an increasing demand for industrial raw material and agricultural products because of its industrialization drive. The competition is expected to be more intense between them in the human capital-intensive and technology-intensive manufactured goods category with the movement of the comparative advantage of China toward high value-added manufactures.

To complement its comparative advantage, China should commit direct investment in EU primarily in technology-intensive and human capital-intensive manufactures in which it has no comparative advantage relative to EU. The economic interdependence between China and EU is expected to increase given the high commodities mix complementarity between the countries, appreciation of the China RMB, and the promotion of regional trade and investment by China government as a part of its long-term strategy.

The long-run economic interdependence between China and EU will be further strengthened following the implementation of their industrialization programs and the rapid integration of the Chinese economy into the world economy. Although the rapid expansion of the Chinese economy may generate certain negative spillover effects on the EU economies in the short run, the potential economic benefits for EU from an

economically resurgent China far outweigh the costs. Most prominently, China's openness to the outside world and rapid economic expansion will offer rising opportunities to the EU countries for expanded trade and a greater outlet for their direct investment, and contribute to EU's efforts at diversifying the highly concentrated market structures of its foreign trade.

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