The Global Value Chain and its Policy Implications

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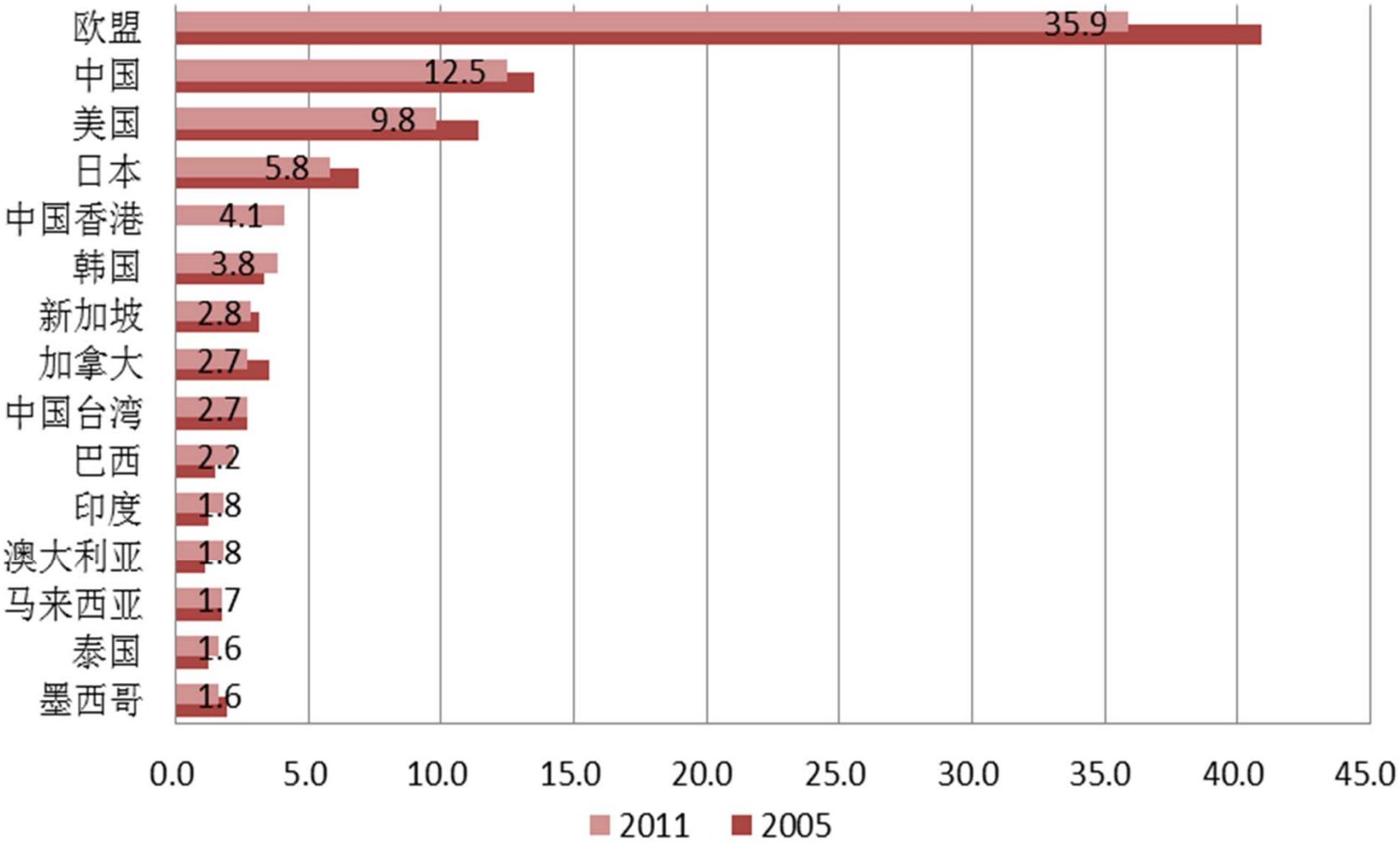
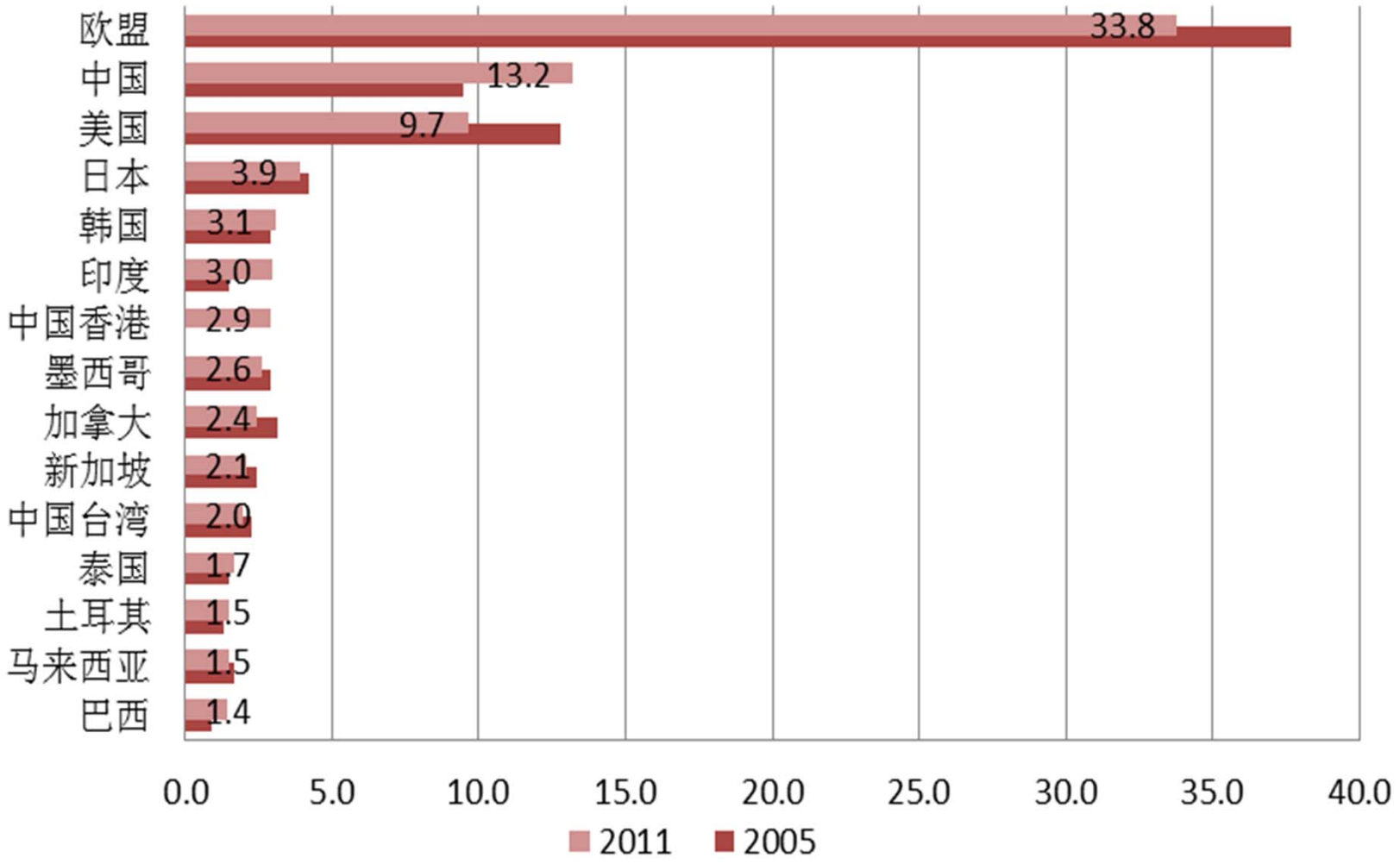
1. GVC: competitive advantages and sign to decelerate

Main global value chain players (share in the global intermediate exports)



Main global value chain players (share in the global intermediate imports)



Distribution of competitive advantages-based on top 22 intermediate goods exported ($bn) ,2011

SITC	Components and parts	EU	Asia	NAFTA
625	tires	**36.6**	**36.8**	8.7
641	paper	**72.9**	18.6	19.6
65	Yarn, textiles	75.4	**153.4**	17.9
667	jewelry	30.8	**55.8**	22.1
67	Steel materials	51.8	**157.3**	33.3
691	Other steel and aluminum	**27.0**	17.0	X
699	Other base metals	**69.8**	39.6	18.2
713	Piston engine	**86.3**	41.4	28.6
714	Turbo engines etc	**50.7**	X	16.2
7239	Construction equipment	**18.0**	16.9	14.1
7285	Special machines	--	--	**7.7**
747	valves	**36.9**	21.7	12.4
748	transmissions	**28.4**	15.5	6.9

Distribution of competitive advantages

SITC	Components and parts	EU	Asia	NAFTA
759	Office machines	45.2	**120.0**	20.8
764	telecommunications	109.3	**301.6**	61.7
772	Switches	82.8	**98.9**	27.0
773	Eclectic cables etc	**42.3**	32.6	18.1
776	Electronic circuits etc	63.0	**442.6**	49.2
77812	Battery	--	**17.5**	--
7783	Special electric equipment	**18.3**	--	6.3
7788	Special machinery accessories	--	**20.7**	--
784	Motors	**172.3**	48.3	64.9
7929	Aircrafts	**26.1**	11.3	8.3
813	Special lighting	--	**16.3**	--
8211	Seats	**25.2**	20.9	8.5
8931	Plastics for packing	**20.3**	--	7.1

Top 22 intermediate goods imported, 2011($bn)

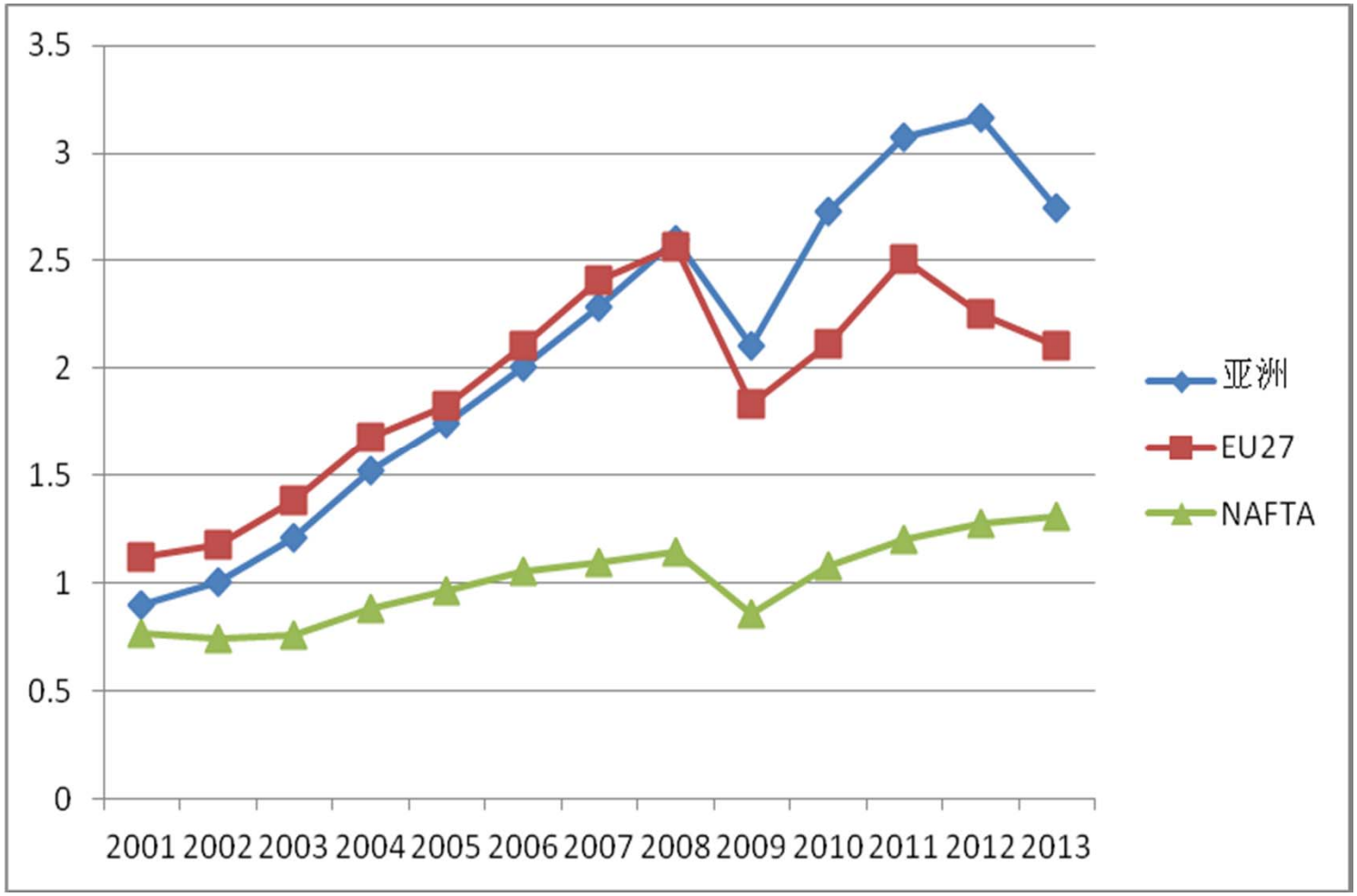
SITC	Components and parts	EU	Asia	NAFTA
625	**Tires**	**37.6**		20.2
641	**Paper**	**57.3**	16.9	16.7
65	**Yarn, textiles**	**79.3**	60.3	35.7
664	**Glass**		**11.9**	
667	**Jewelry**	33.5	**66.6**	24.4
67	**Steel materials**	**191.8**	117.2	63.3
691	**Other steel and aluminum**	**17.7**		
694	**Nails, bolts**	**16.5**		8.9
699	**Other base metals**	**59.5**	25.3	26.9
713	**Piston engine**	**68.8**	30.4	39.8
714	**Turbo engines etc**	**38.7**	21.4	22.2
7239	**Construction machinery**		**13.4**	
7285	**Special machines**		**13.0**	
746	**Ball Or Roller Bearings**		**11.0**	

SITC	Components and parts	EU	Asia	NAFTA
747	**valves**	**26.0**	16.5	17.7
748	**Transmissions, gears**	**20.8**	14.3	12.4
759	**Office machines**	58.7	**83.1**	37.5
764	**Telecommunications**	144.2	**184.6**	130.9
772	**Switches**	65.9	**95.5**	36.5
773	**Other electric cables**	**42.2**	24.1	23.8
776	**Electronic circuits and tubes**	92.5	**442.6**	58.6
7783	**Special electric equipments**	**16.6**		10.2
7788	**Special machinery accessories**		**14.3**	
784	**Motors**	**153.1**	48.3	88.4
7929	**aircrafts**	**29.0**	11.3	14.9
813	**Special lighting**			**8.7**
8211	**Seats**	**26.2**		20.6
88419	**Cable, Optical Fiber**		**13.1**	
8931	**Plastics for packing**	**20.1**		10.0

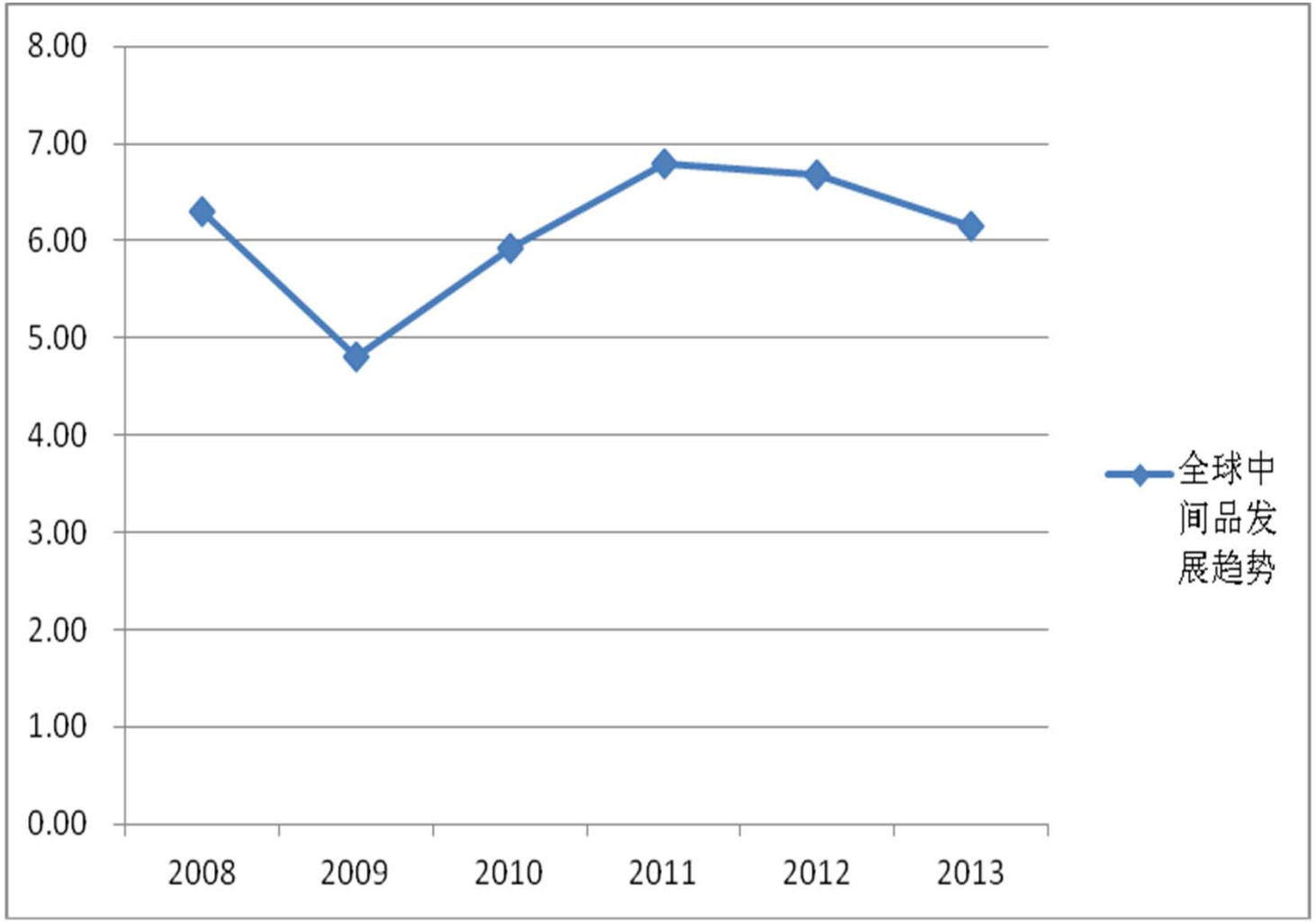
Trends of global factories

(based on top 22 intermediate goods traded)

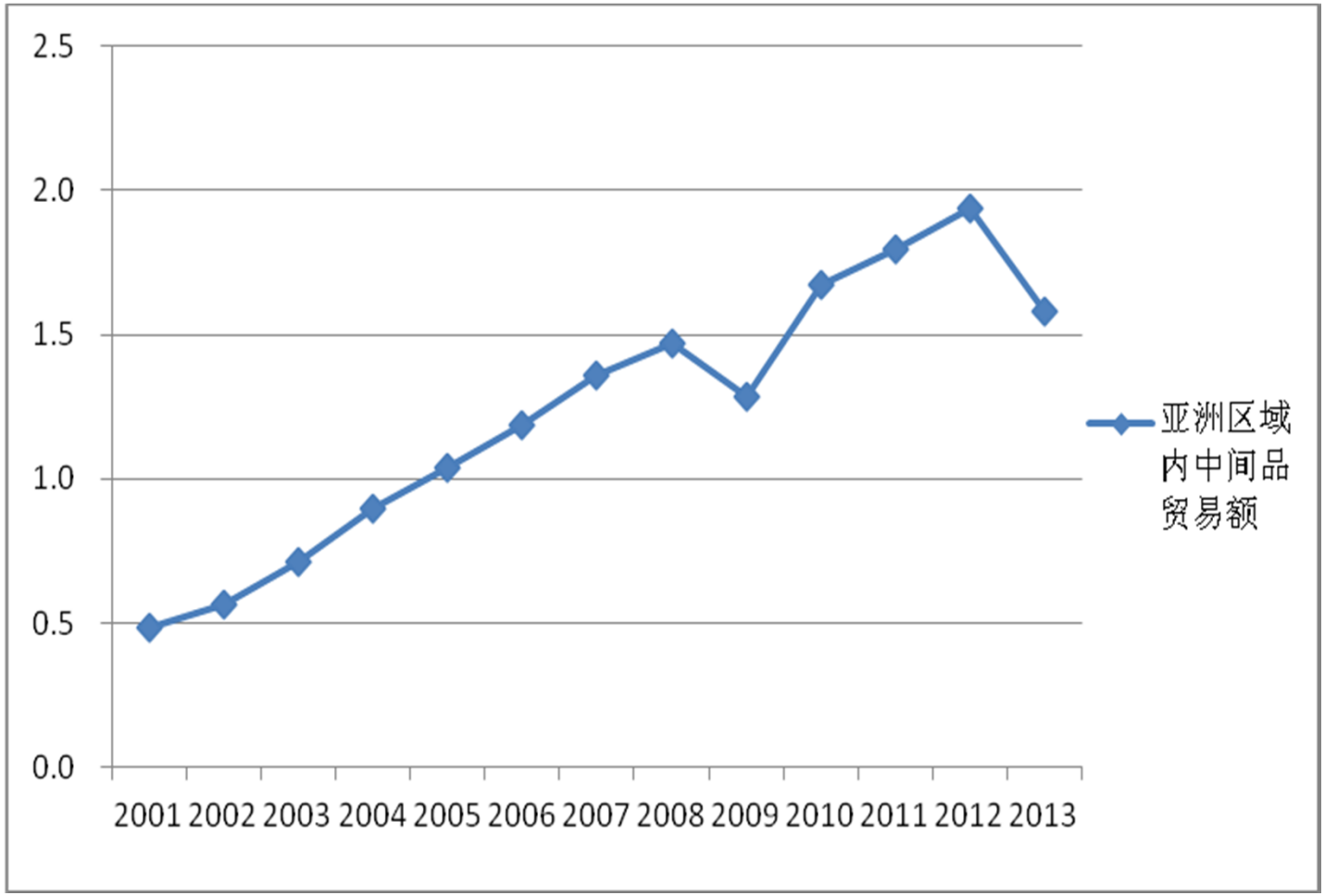
(trillion dollars)



Global value chain after global financial crisis（trillion dollars）



Asia's trade in intermediate goods (billion dollars）



2. Some evidence about the role of services

Impact of Chinese exports on US industry-level employment (10,000 people)

	2005	2006	2007	2008	2009
Agruculture	0.78	1.00	1.07	1.47	1.53
Manufacturing	**10.33**	**12.94**	**15.12**	**14.77**	**10.95**
Electronics, optical	4.78	5.93	6.36	6.17	4.67
Metals	1.43	1.95	2.62	2.70	1.92
Machinery	0.80	1.03	1.27	0.89	0.69
Transport	0.37	0.54	0.72	0.75	0.55
Service	**10.62**	**14.30**	**17.79**	**19.54**	**14.16**
Leasing	3.66	5.04	6.26	7.29	5.03
Travel-related	1.75	2.83	3.86	4.84	3.97
Wholesale	1.79	2.18	2.57	2.32	1.58
Financial	0.79	0.94	1.11	1.08	0.82

Impact of China industry-level exports on US employment (10,000 people)

	2005	2006	2007	2008	2009
Manufacturing	20.04	26.16	31.81	33.32	24.9
Service	1.74	2.19	2.40	2.70	1.92
Leasing	0.51	0.69	0.81	0.88	0.60

Impact of Chinese exports to the US on US industry-level employment (10,000 people)

	2005	2006	2007	2008	2009
Agriculture	0.20	0.24	0.24	0.30	0.31
Manufacturing	2.92	3.45	3.75	3.38	2.65
Service	2.92	3.70	4.92	4.32	3.29
Leasing	1.01	1.30	1.51	1.60	1.17
Travel-related	0.48	0.74	0.93	1.07	0.88
Wholesale	0.50	0.57	0.63	0.52	0.37

Impact of China industry-level exports to the US on US employment (10,000 people)

	2005	2006	2007	2008	2009
Manufacturing	5.78	7.08	7.94	17.53	5.86
Service	0.32	0.38	0.45	0.58	0.48
Leasing	0.25	0.29	0.36	0.46	0.38
Air transport	0.05	0.07	0.08	0.09	0.07

Impact of Chinese Exports on employment of trade partners (10,000)

	2005	2006	2007	2008	2009
US	6.1	7.5	8.4	8.1	6.4
Taiwan	14.5	15.6	15.7	13.6	13.0
Korea	10.9	11.0	10.9	10.0	9.8
Japan	11.7	13.6	14.6	11.5	8.1
Germany	4.1	4.8	5.0	4.5	3.8
UK	0.1	0.2	0.2	0.2	0.1

3. China’s participation in the global value chain

China's parts and components trade ($bn)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
China	**158**	**202**	**279**	**380**	**473**	**598**	**722**	**811**	**690**	**905**	**1053**
HK	143	158	188	233	269	308	344	367	335	427	470
Indo	16	16	17	21	26	26	30	52	39	52	62
Ind	25	31	38	47	62	66	81	96	99	132	166
Jap	196	198	227	273	288	305	332	361	280	364	389
Kor	99	112	135	173	190	206	237	266	219	281	315
Mal.	74	82	88	102	109	121	129	100	105	130	134
Philip	38	47	48	52	53	56	55	49	37	49	59
Sing	100	104	129	167	193	228	241	251	199	255	260
Thai	45	45	52	63	71	77	90	96	77	104	115
Viet	5	7	9	12	14	17	25	32	29	39	51
ASEAN	**278**	**302**	**343**	**416**	**465**	**524**	**571**	**580**	**487**	**628**	**681**
Asia	898	1003	1210	1521	1748	2007	2288	2481	2109	2738	3074

China VS share: top 10 sectors, 2007

sectors	General	processing
Non-metal mining	10.4	54.9
Textiles, clothing	12.1	35.0
Paper, printing and cultural goods	13.4	65.4
Oil refining, coking, nuclear	28.3	39.7
Chemical	18.7	36.0
Metals working	19.9	17.4
Metal products	16.6	32.1
Equipment, machinery, general and special	19.6	31.4
Transportation equipment	20.9	51.9
Electric, machines and accessories	22.5	61.5
Telecom, computers, electronics	41.3	89.5
Office machines, instruments	34.6	84.8

China VS share: top 10 provinces, 2011

Regions	2000	2003	2006	2009	2011
Tianjin	67.7	70.8	66.7	59.6	66.8
Shanghai	50.3	73.5	70.4	65.6	65.1
Beijing	62.1	69.4	72.8	47.6	56.7
Guangdong	65.3	68.6	61.8	52.5	50.7
Jiangsu	55.3	67.8	62.1	51.3	49.5
Guangxi	**16.5**	**29.4**	**30.4**	**32.7**	**47.3**
Fujian	37.1	42.7	39.0	43.0	44.6
Liaoning	47.7	50.9	44.4	50.8	44.4
Hainan	**24.4**	**32.6**	**45.8**	**43.8**	**43.9**
Sichuan	37.7	42.9	32.6	29.6	35.2

	2000	2003	2006	2009	2011
Shandong	37.7	42.9	32.6	29.6	32.9
Shanxi	8.0	6.0	16.9	23.0	31.8
Neimeng	9.2	11.3	11.7	21.9	28.4
Henan	22.3	14.7	15.3	15.5	28.0
Jilin	24.1	27.9	23.1	25.5	25.9
Zhejiang	21.1	22.6	23.8	23.1	25.6
Chongqing	6.8	10.9	13.1	15.5	22.5
Hubei	21.9	22.2	25.5	19.9	22.0
Yunnan	13.9	12.6	16.2	18.9	21.2
Gansu	14.8	13.3	17.8	18.8	20.5
Shan’axi	18.1	14.9	16.5	16.5	20.3
Jiangxi	16.6	17.6	24.9	27.2	19.7

	2000	2003	2006	2009	2011
Anhui	22.5	17.1	18.7	15.0	18.3
Hebei	11.7	14.4	10.9	14.6	17.7
Heilongjiang	7.2	9.3	9.5	10.6	17.4
Hunan	12.3	12.4	9.9	10.1	12.0
Xinjiang	4.6	4.4	5.4	6.3	10.3
Guizhou	11.3	16.3	11.2	8.9	10.2
Ningxia	8.0	6.6	4.8	2.7	3.3
Qinghai	8.0	6.6	4.8	2.7	3.3
Xizang	6.8	4.7	3.2	1.3	1.7

China: top 10 trading provinces

Regions	2013	2012
Guangdong	10900. 0	9840. 2
Jiangsu	5508. 4	5479. 6
Shanghai	4414. 0	4365. 9
Beijing	4291. 0	4081. 1
Zhejiang	3358. 5	3124. 0
Shandong	2671. 6	2455. 4
Fujian	1693. 5	1559. 4
Tianjin	1285. 2	1156. 3
Liaoning	1142. 8	1040. 9
Chongqing/Sichuan	**687.0**	**591.4**

China is a hub in Factory Asia

- Most of Asian economies most depend on China in the trade of intermediate goods.
- China's dependence on Hong Kong is the highest in Asia Pacific.

High dependence on China in intermediate goods trade

- Out of 22 most traded intermediate goods in Asia, 16 depend most on China;
- 4 depend most on Japan;
- 1 on India and 1 on Singapore.

Product dependence for top 22 intermediate goods

SITC	Ch	HK	Indo	Ind	Jap	Kor	Mal	Phi.	Sin	Thai	Viet	Asia	EU	NAFTA
625	**0.12**	0.00	0.02	0.02	**0.07**	0.04	0.01	0.00	0.01	0.03	0.00	0.30	**0.49**	0.21
641	**0.05**	0.01	0.02	0.01	**0.03**	0.02	0.01	0.00	0.01	0.02	0.01	0.18	0.63	0.19
65	**0.27**	0.05	0.03	0.05	**0.04**	0.04	0.01	0.00	0.00	0.02	0.03	**0.52**	0.35	0.13
667	**0.05**	0.16	0.00	**0.28**	**0.01**	0.00	0.00	0.00	0.01	0.02	0.00	**0.52**	0.28	0.20
67	**0.11**	0.01	0.02	0.03	**0.08**	0.08	0.01	0.00	0.01	0.02	0.01	0.37	**0.50**	0.13
699	**0.12**	0.02	0.01	0.02	**0.04**	0.03	0.01	0.00	0.01	0.02	0.01	0.28	**0.53**	0.19
713	**0.07**	0.00	0.01	0.01	**0.08**	0.03	0.00	0.00	0.01	0.02	0.00	0.25	**0.51**	0.24
714	**0.03**	0.05	0.00	0.01	**0.05**	0.01	0.00	0.00	0.05	0.01	0.00	0.21	**0.55**	0.24
7239	**0.10**	0.01	0.02	0.02	**0.05**	0.05	0.01	0.00	**0.11**	0.00	0.00	**0.37**	**0.36**	0.27
7285	**0.06**	0.02	0.01	0.01	**0.12**	0.07	0.02	0.01	0.08	0.00	0.00	**0.40**	0.39	0.21
747	**0.15**	0.01	0.01	0.02	**0.06**	0.03	0.01	0.00	0.01	0.01	0.00	0.30	**0.47**	0.23
748	**0.12**	0.01	0.02	0.02	**0.09**	0.03	0.01	0.00	0.01	0.01	0.00	0.31	**0.49**	0.20

Product dependence for top 22 intermediate goods

SITC	Chi	HK	Indo	India	Jap	Kor	Mal	Phi.	Sin	Thai	Viet	Asia	EU	NAFTA
759	**0.18**	0.15	0.00	0.01	**0.06**	0.02	0.03	0.01	0.07	0.02	0.00	**0.56**	0.28	0.16
764	**0.22**	0.13	0.01	0.02	**0.04**	0.05	0.01	0.00	0.02	0.01	0.01	**0.53**	0.26	0.21
772	**0.17**	0.10	0.01	0.01	**0.07**	0.04	0.03	0.00	0.03	0.02	0.01	**0.48**	0.36	0.16
773	**0.13**	0.03	0.01	0.01	**0.05**	0.04	0.01	0.01	0.01	0.01	0.01	0.32	**0.45**	0.24
776	**0.25**	0.14	0.00	0.00	**0.06**	0.07	0.06	0.01	0.13	0.02	0.00	**0.76**	0.14	0.10
77812	**0.23**	0.07	0.01	0.01	**0.08**	0.09	0.01	0.00	0.01	0.01	0.01	**0.53**	0.31	0.16
7788	**0.17**	0.06	0.01	0.01	**0.07**	0.09	0.02	0.00	0.02	0.03	0.00	**0.49**	0.35	0.16
784	**0.07**	0.00	0.01	0.01	**0.08**	0.04	0.00	0.00	0.01	0.02	0.00	0.24	**0.50**	0.26
8211	**0.18**	0.00	0.01	0.00	**0.03**	0.01	0.01	0.00	0.00	0.01	0.01	0.25	**0.47**	0.28
88419	**0.32**	0.08	0.00	0.01	**0.21**	0.16	0.01	0.00	0.01	0.01	0.00	**0.82**	0.11	0.08

Products mostly dependent on China

1. Rubber and Tires（625），
2. Paper and Paperboard（641），
3. Textile yarn, fabrics, and related products（65）），
4. Iron and steel（67），
5. Manufactures of Base Metal（699），
6. Taps, Cocks, Valves （747），

7. Transmission shafts and cranks（748），
8. Office or automatic data processing machines（759），
9. Telecommunications equipment（764），
10. Electrical apparatus for switching or protecting electrical circuits（772），
11. Equipment for distributing electricity（773），
12. Thermionic, cold cathode or photocathode valves and tubes; integrated circuits（776

13. Storage Batteries（77812），
14. Electrical Machinery（7788），
15. Seats （8211），
16. Optical Fibers, Cables; （88419）.

Products mostly dependent on Japan

1. Internal Combustion Piston Engines（713），
2. Engines (other than Steam Turbines, Internal Combustion Piston Engines and Power Generating Machinery);（714），
3. Machinery For Public Works, for preparing animal or fixed vegetable fats, and Specialized For Particular Industries（7285），
4. Tractors, Motor Cars and other Motor Vehicles（784），

Products mostly dependent on Singapore

- Civil Engineering, Machinery (Mining, Public Works) (heading 723) and Cranes (heading 744.3)（7239），

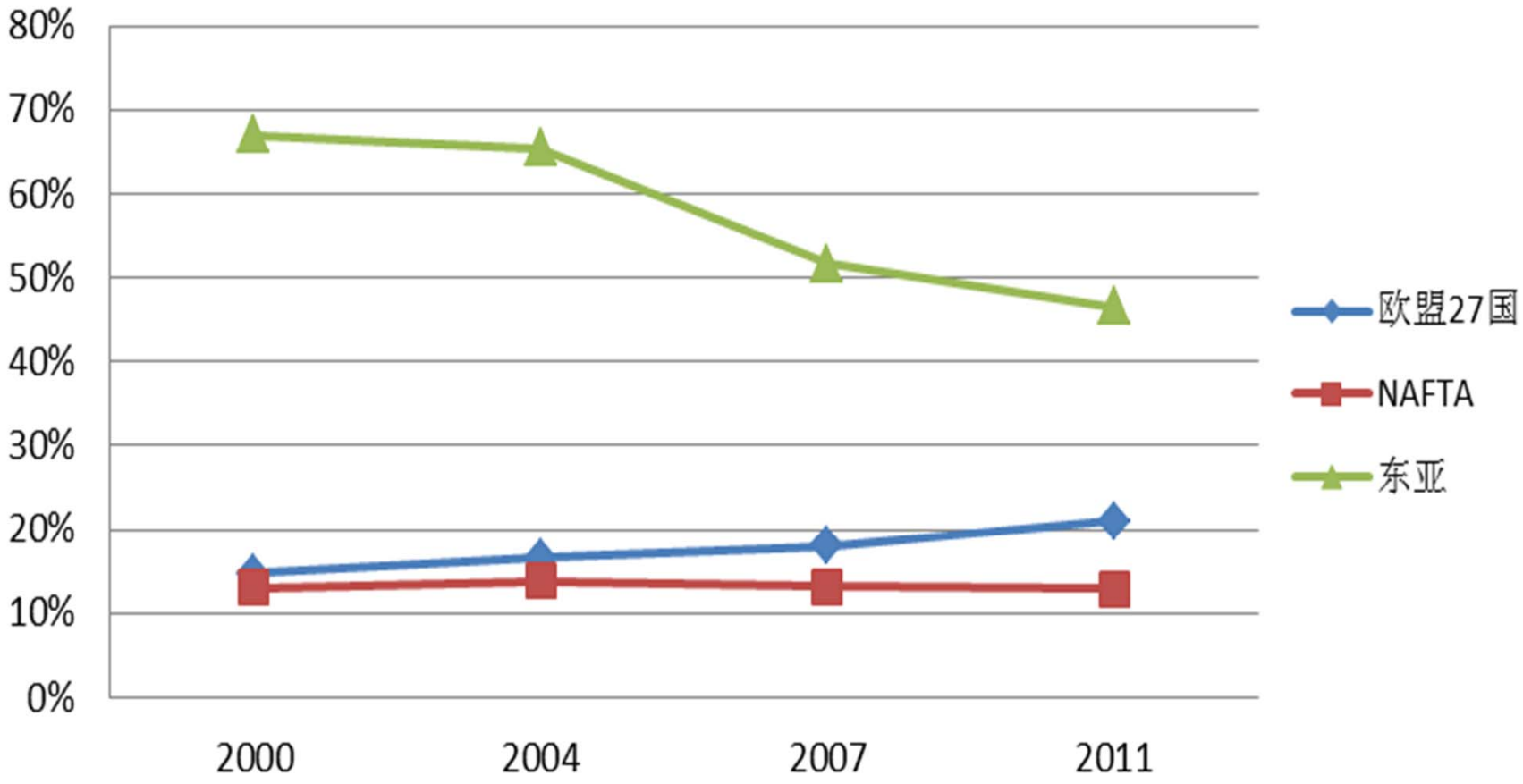
Products mostly dependent on India

- Pearls, Precious And Semiprecious Stones, Unworked Or Worked （667）

China: Value chain partners

- China's most important value chain partners include **Japan, Korea, Hong Kong, Taiwan, Malaysia, Singapore and Thailand in Asia, the US and Germany in EU**.
- The ties with Germany are increasing while with Asia decreasing.

Share with Asia decline, with EU up



China's main value chain partners, 2000

	Share	Share (imp)	Share (exp)
Japan	22.0	25.9	15.2
Hong Kong	13.5	5.5	27.9
US	11.0	8.6	15.2
Taiwan	9.5	12.7	3.6
Korea	7.7	9.5	4.6
Germany	4.8	5.9	3.0
Singapore	4.1	3.1	5.7
Malaysia	3.5	4.5	1.7
Thailand	2.4	2.6	2.0
Philippines	1.7	2.0	1.3
Share in total	80.2		

China's main value chain partners, 2011

	Share, total	Share (imp)	Share (exp)
Japan	**14.2**	**23.1**	**7.4**
Hong Kong	**11.5**	**0.4**	**20.0**
US	**11.1**	**5.5**	**15.5**
Germany	**8.3**	**11.4**	**5.9**
Korea	**7.1**	**11.7**	**3.6**
Taiwan	**5.3**	**9.0**	**2.5**
Holland	**2.5**	**0.4**	**4.0**
Malaysia	**2.0**	**2.9**	**1.3**
Thailand	**2.0**	**2.5**	**1.6**
Singapore	**1.5**	**1.2**	**1.7**
Share in total	**65.5**		

China: summary of policies accommodating global shifts

Time	Global value chain changes	China policy changes
mid-1960s	US electronic companies started outsourcing in Singapore,	Cultural revolution
End, 1970s	Production relocated from Singapore to low-cost neighbors; Japan began invest in ASEAN	Opening-up policies, encourage processing trade, SEZs
1980s	World MNCs began investing in Asia	Open up coastal cities; more processing trade; Hainan SEZ created
1990s	Factory Asia emerged.	Open up inland cities; Pudong DZ created; Deng's socialist market economy
2000	China rose as a hub in value chain	WTO accession
Today	Global reform for value chain, upgrading	New round of reforms

4. Implications for policy reforms

A look into the future

- Labor cost is rising;
- The long distance of supply chain involves risks;
- Production may locate near the market in the future;
- Big data analytics may find alternative low-cost sites different from the previous;
- But a comprehensive package of policy reforms is needed to retain the value chain and upgrade along it.

- The future of value chain is mainly determined by (Baldwin):
- Development of communication technology;
- Development of information technology;
- Wage gap between countries;
- **Trade and transport costs.**

- The key of the reform is:
- First, to lower the value chain cost,
- second, to upgrade along the value chain;
- Third, the developing countries will develop their own global value chaims

Aspects of value chain reforms

Reform policies	Reform policies
Cost-oriented reforms	-competition
-Low tariff on imported inputs	**Reforms for own GVC innovation**
-trade facilitation and business environment	-Education infrastructure and capacity development
-mobility of value chain managers	-Free flow and sharing of knowledge
- processing zones reform	-Tax incentives, recruit talents
Reforms for upgrading	-public-private partnership
-service liberalization	-IP protection
-IP protection	-work on innovation strategy

- Also important, in a regional free trade arrangement, it should align with the value chain (advice to TPP, TTIP and RCEP negotiations).

Thank you!