



Chinese Global Connectivity: A Decade of Rapid Change

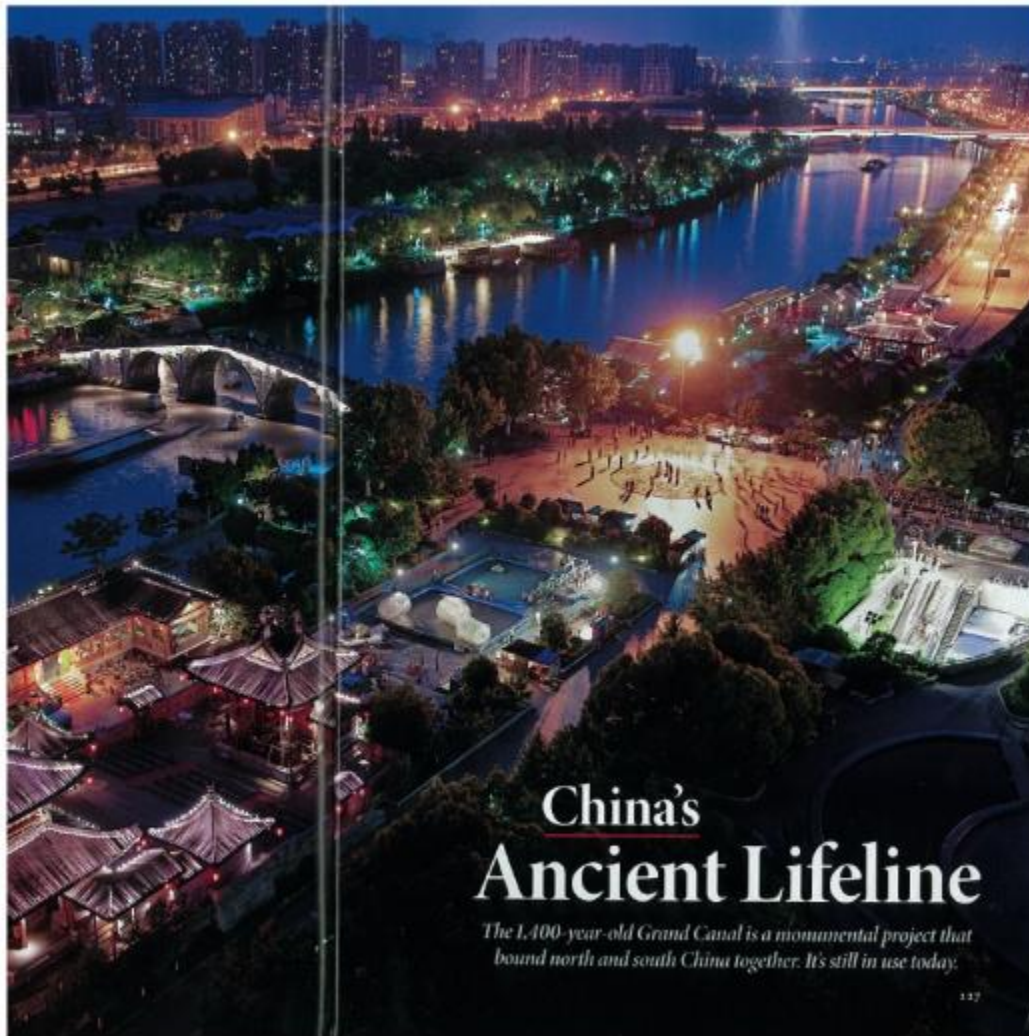
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Georgia State University

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New Zealand in session #093 on January 10, 2015*

Economic Forecasting Center



China's Grand Canal



Today's waterway

The canal flexes its commercial muscle on the 520 miles south of Jining. Much of the northern stretch is filled in or dry, though a seasonal channel runs from Jining to the Yellow River.



Executive Summary

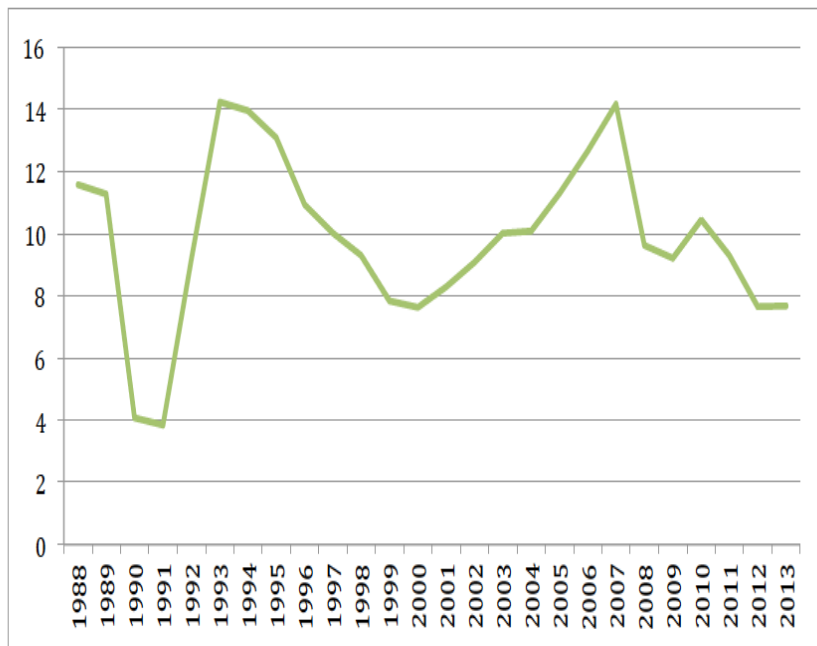
- We do this by looking at China's top thirty trading partners from 1980 to 2013 and metrics such as the change in import and export shares of china with respect to its trading partners and vice versa.
- This paper also looks at revenue growth performance of some prominent U.S. multinationals who have substantial operations in China.



China: A Macro Overview

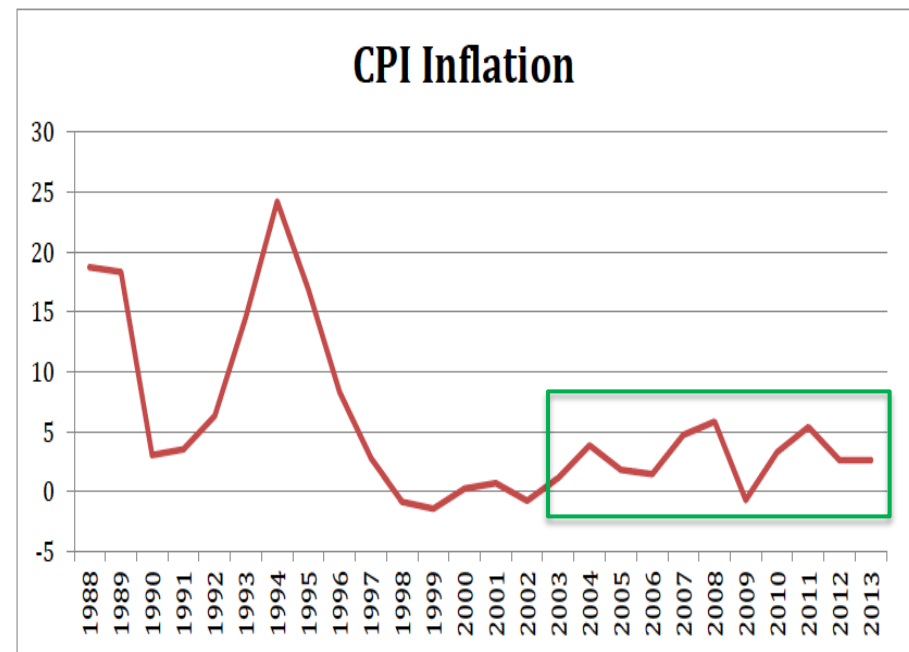
- In 2013, China was the largest exporter and second largest importer of goods in the world. China became part of the World Trade Organization in December 2001 and member of the Association of Southeast in 2010.
- China's trade expansion occurred thanks to its increasing specialization in production within its neighbor regions, serving today as the final processing and assembly platform for the other Asian and Western countries (Prasad, 2004).

Figure 1. Annual Chinese GDP Growth from 1988 to 2013



Source: World Bank

Figure 2. Chinese Inflation Experience from 1988 to 2013



Source: World Bank

Global Linkages of China

**Table 1. China Exports by Commodity Type
(As a % of Total Exports)**

	1980	1992	1997	2003	2008	2013
1. Agricultural products	15.8%	7.4%	4.4%	2.2%	1.3%	1.4%
Food	11.3%	6.1%	3.7%	1.9%	1.1%	1.2%
2. Fuels & mining products	17.9%	3.9%	3.0%	1.8%	1.6%	1.2%
Fuels		3.0%	2.0%	1.1%	0.9%	0.7%
3. Manufactures	31.5%	42.5%	43.7%	39.0%	39.3%	40.3%
Iron and steel	0.9%	0.8%	1.3%	0.5%	2.1%	1.1%
Chemicals	4.1%	2.8%	2.9%	1.9%	2.3%	2.3%
Pharmaceuticals		0.6%	0.4%	0.3%	0.2%	0.2%
Machinery	3.0%	8.4%	12.2%	18.5%	19.9%	20.2%
Office equipment	0.3%	3.4%	6.0%	11.6%	11.3%	11.5%
Electronic data equip.		0.7%	2.6%	6.1%	5.2%	4.3%
Telecom equip.		2.5%	2.9%	4.4%	4.8%	4.9%
Integrated circuits		0.2%	0.6%	1.0%	1.3%	2.3%
Transport equip.		1.4%	1.5%	1.6%	2.3%	2.2%
Automotive products	0.2%	0.2%	0.2%	0.4%	0.9%	0.9%
Textiles	9.2%	5.5%	3.9%	2.6%	1.9%	2.1%
Clothing	5.9%	10.6%	8.9%	5.1%	3.6%	3.4%

Source: World Trade Organization



Global Linkages of China

**Table 2. China Imports by Commodity Type
(As a % of Total Imports)**

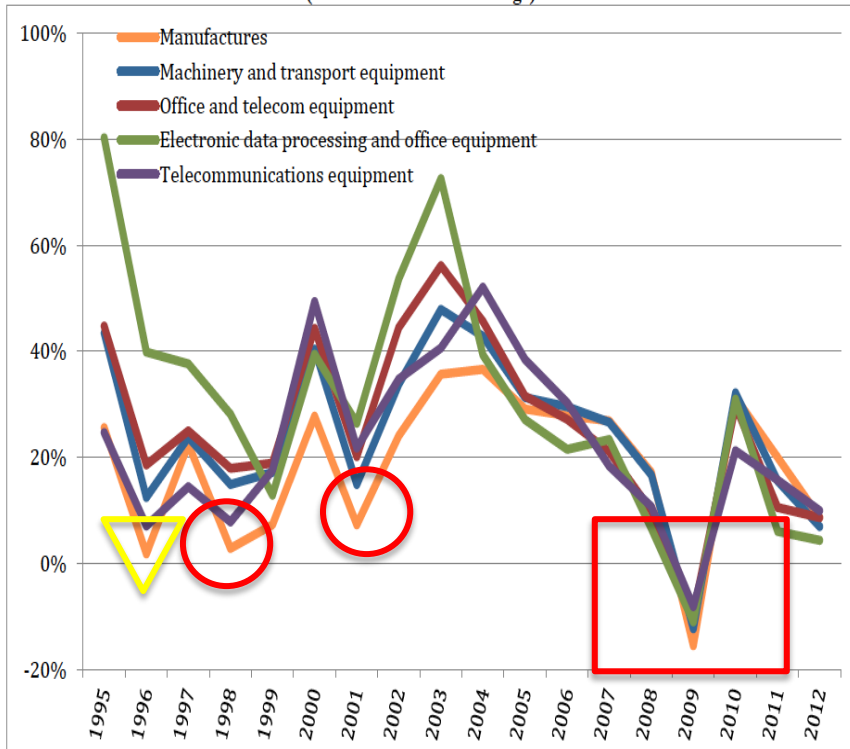
	1980	1992	1997	2003	2008	2013
1. Agricultural products	18.2%	4.8%	5.0%	3.2%	3.5%	3.9%
Food	9.0%	2.4%	2.5%	1.6%	2.0%	2.4%
2. Fuels & mining products	2.9%	4.5%	5.9%	5.4%	12.3%	13.0%
Fuels		2.2%	3.5%	3.0%	6.8%	7.5%
3. Manufactures	34.2%	39.1%	37.4%	34.1%	29.3%	27.0%
Iron and steel	6.2%	2.7%	2.3%	2.3%	1.1%	0.5%
Chemicals	8.0%	6.8%	6.6%	5.1%	4.8%	4.5%
Pharmaceuticals		0.3%	0.1%	0.2%	0.2%	0.4%
Machinery	14.7%	18.6%	18.0%	20.0%	17.7%	16.9%
Office equipment	1.5%	3.9%	5.7%	10.0%	9.3%	9.4%
Electronic data equip.		0.8%	1.5%	2.5%	1.9%	1.4%
Telecom equip.		2.1%	2.0%	2.0%	1.5%	1.8%
Integrated circuits		1.1%	2.1%	5.5%	5.9%	6.2%
Transport equip.		4.1%	2.1%	2.2%	2.0%	2.7%
Automotive products	2.1%	2.2%	0.7%	1.3%	1.2%	1.9%
Textiles	3.1%	4.6%	4.2%	1.5%	0.7%	0.5%
Clothing	0.1%	0.3%	0.4%	0.2%	0.1%	0.1%

Source: World Trade Organization



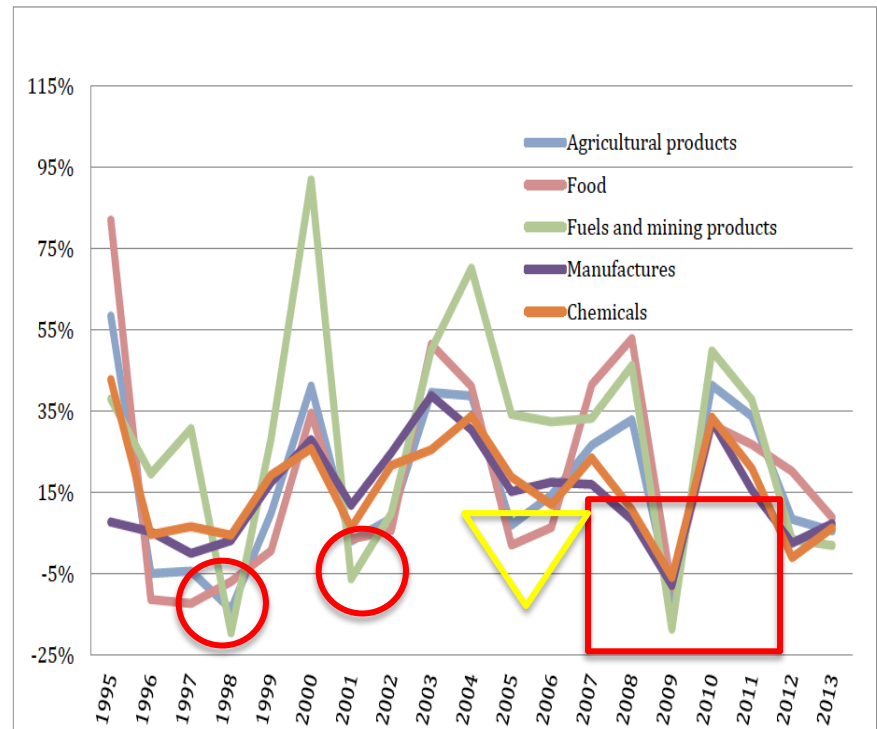
Global Linkages of China

Graph 3a. Selective Chinese Exports by Type: 1995 to 2012
(Year-Over-Year % Change)



Source: World Trade Organization

Graph 3b. Selective Chinese Imports by Type: 1995 to 2012
(Year-Over-Year % Change)

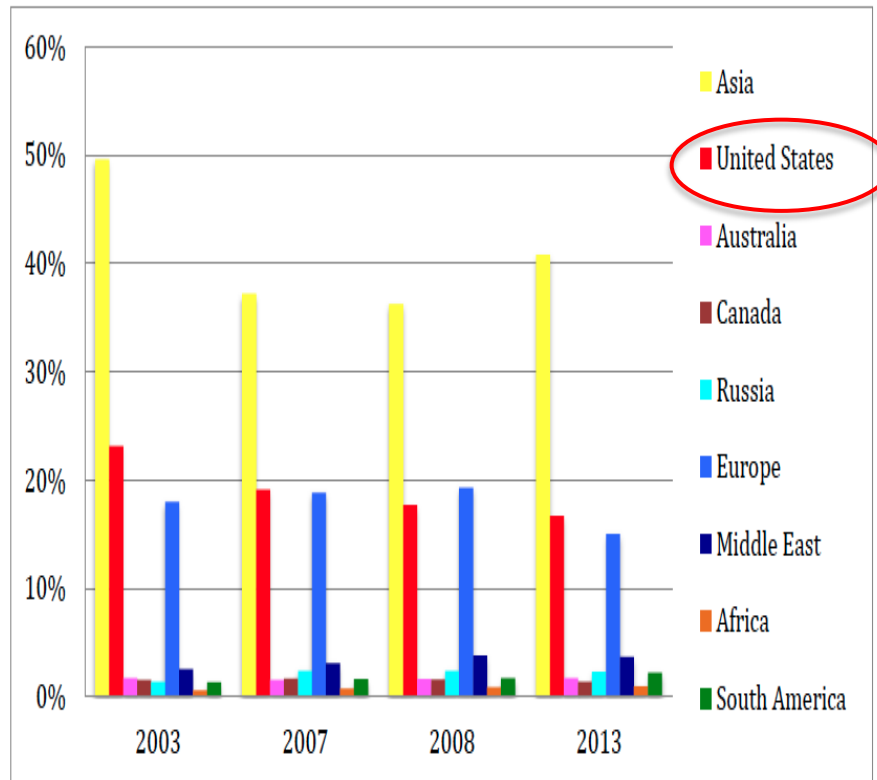


Source: World Trade Organization



China's Trading Partners

Graph 4b. China Share of Total Exports by Geographic Area



Source: Bloomberg



China's Trading Partners: Exports

Table 2. China Share of total exports by country
(Chinese exports of each country divided by total Chinese exports, in percentage)

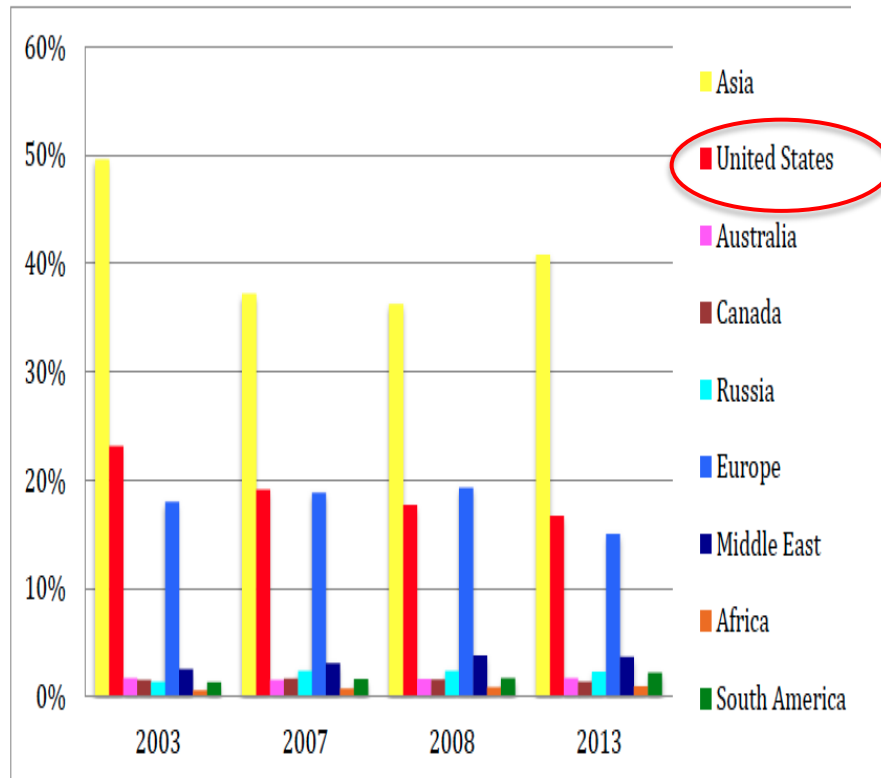
	2003	2007	2008	2013
Asia	49.6%	37.2%	36.2%	40.8%
Korea	5.1%	4.6%	5.2%	4.1%
Japan	16.3%	8.4%	8.1%	6.8%
Malaysia	1.6%	1.5%	1.5%	2.1%
Hong Kong	19.4%	15.1%	13.4%	17.4%
Taiwan	2.4%	1.9%	1.8%	1.8%
United States	23.1%	19.1%	17.7%	16.7%
Australia	1.7%	1.5%	1.6%	1.7%
Canada	1.5%	1.6%	1.5%	1.3%
Russia	1.3%	2.3%	2.3%	2.2%
Europe	18.0%	18.8%	19.3%	15.0%
Germany	4.6%	4.0%	4.1%	3.1%
U.K.	2.6%	2.6%	2.5%	2.3%
Turkey	0.5%	0.9%	0.7%	0.8%
Middle East	2.5%	3.0%	3.8%	3.6%
UAE	1.2%	1.4%	1.7%	1.5%
Oman	0.0%	0.0%	0.1%	0.1%
Africa	0.5%	0.7%	0.8%	0.9%
Angola	0.0%	0.1%	0.2%	0.2%
South America	1.3%	1.6%	1.6%	2.2%
Chile	0.4%	0.4%	0.4%	0.6%
Mexico	0.9%	1.0%	1.0%	1.3%

Source: IMF data via Bloomberg



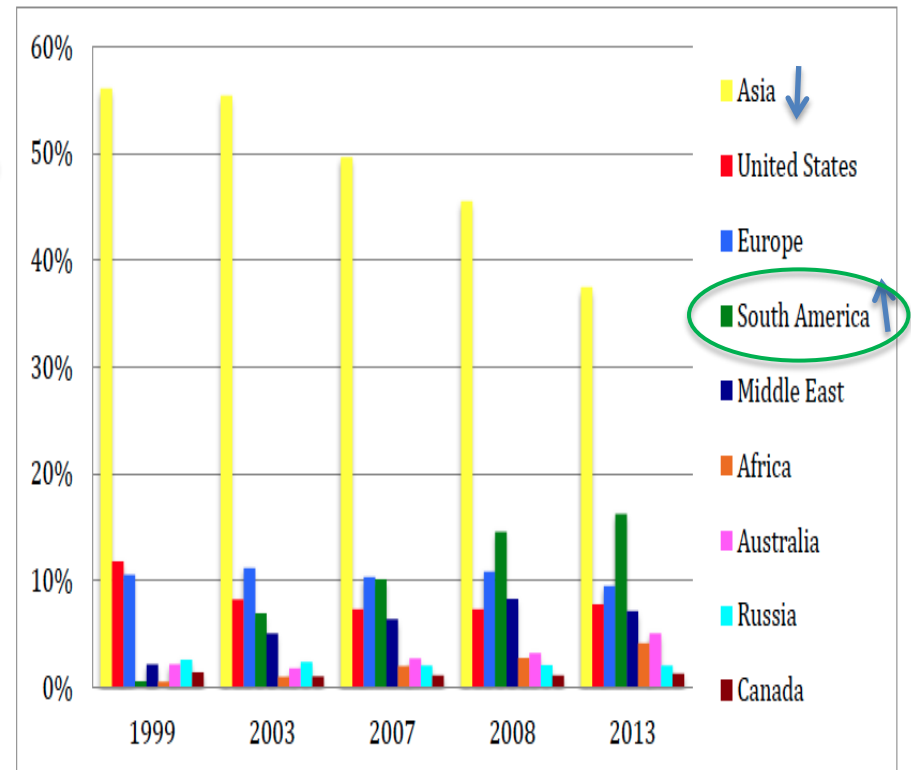
China's Trading Partners

Graph 4b. China Share of Total Exports by Geographic Area



Source: Bloomberg

Graph 4a. China Share of Total Imports by Geographic Area



Source: Bloomberg



China's Trading Partners: Imports

Table A1. China Share of Total Imports by Country
(Imports from each country divided by total Chinese imports)

	1999	2003	2007	2008	2013
Asia	56.0%	55.4%	49.6%	45.5%	37.4%
Korea	10.4%	10.4%	10.9%	9.9%	9.4%
Japan	20.3%	18.0%	14.0%	13.4%	8.3%
United States	11.8%	8.2%	7.3%	7.3%	7.8%
Europe	10.5%	11.2%	10.3%	10.8%	9.5%
Germany	5.0%	5.9%	4.7%	5.0%	4.8%
France	2.3%	1.5%	1.4%	1.4%	1.2%
Italy	0.5%	1.0%	1.5%	1.8%	0.9%
S. America	0.6%	6.9%	10.1%	14.6%	16.2%
Brazil	0.6%	1.4%	1.9%	2.6%	2.8%
Chile		4.7%	6.8%	9.9%	11.5%
Middle East	2.2%	5.0%	6.4%	8.3%	7.2%
Saudi Arabia	0.6%	1.3%	1.8%	2.7%	2.8%
Oman		0.8%	1.0%	1.4%	1.2%
Africa	0.5%	1.0%	2.0%	2.8%	4.1%
South Africa	0.5%	0.5%	0.7%	0.8%	2.5%
Angola		0.5%	1.3%	2.0%	1.6%
Australia	2.2%	1.8%	2.7%	3.2%	5.1%
Russia	2.6%	2.4%	2.1%	2.1%	2.1%
Canada	1.4%	1.1%	1.2%	1.1%	1.3%

Source: IMF data via Bloomberg



China's Commodity Trade with Korea: 1999 vs. 2013

Table B1a. China imports from Korea in 1999 and 2013
(Top ten commodities and their percentage of total imports of China from Korea)

1999	2013
Electrical equipment (19.7%)	Electrical equipment (42.0%)
Plastics (13.0%)	Medical, technical equipment (12.9%)
Iron and steel (8.4%)	Machines, engines, pumps (8.6%)
Fuels (8.1%)	Organic chemicals (8.4%)
Organic chemicals (7.3%)	Plastics (6.9%)
Machines, engines, pumps (6.6%)	Fuels (5.6%)
Manmade filaments (4.9%)	Vehicles other than railway (2.8%)
Paper & pulp (4.4%)	Iron and steel (2.2%)
Raw hides and leather (4.1%)	Copper (1.3%)
Manmade staple fibers (3.6%)	Gems and stones (1.1%)

Source: United Nations Database

Table B1b. China exports to Korea in 1999 and 2013
(Top ten commodities and their percentage of total exports of China to Korea)

1999	2013
Electrical equipment (17.3%)	Electrical machinery and (37.5%)
Fuels (8.1%)	Machines, engines, pumps (9.8%)
Iron and steel (5.4%)	Iron and steel (7.2%)
Apparel (not knit or crochet) (5.2%)	Medical, technical equipment (4.6%)
Manmade filaments (4.8%)	Articles of iron or steel (3.1%)
Fish (4.6%)	Organic chemicals (2.8%)
Machines, engines, pumps (4.5%)	Apparel (not knit or crochet) (2.2%)
Cotton (4.1%)	Fuels (2.2%)
Railway equipment (3.4%)	Apparel (knit or crochet) (1.9%)
Apparel (knit or crochet) (3.1%)	Inorganic chemicals (1.8%)

Source: United Nations Database

China's Commodity Trade with Australia: 1999 vs. 2013

Table B4a. China imports from Australia in 1999 and 2013
(Top ten commodities and their percentage of total imports of China from Australia)

1999	2013
Ores, slag and ash (21.5%)	Ores, slag and ash (61.6%)
Others ¹ (14.0%)	Fuels (13.7%)
Wool (11.7%)	Others (7.0%)
Precious metal (8.5%)	Copper (2.9%)
Fuels (7.0%)	Wool (1.9%)
Cereals (5.9%)	Cotton (1.8%)
Aluminum and articles thereof (5.2%)	Precious metal (1.5%)
Seeds (3.7%)	Meat (1.1%)
Electrical equipment (2.5%)	Cereals (1.1%)
Machines, engines, pumps (2.4%)	Raw hides and skins (0.9%)

Source: United Nations Database

Table B4b. China exports to Australia in 1999 and 2013
(Top ten commodities and their percentage of total exports of China to Australia)

1999	2013
Apparel (knit or crochet) (14.3%)	Machines, engines, pumps (19.4%)
Apparel (not knit or crochet) (12.35%)	Electrical equipment (14.7%)
Electrical equipment (11.00%)	Furniture; prefabricated buildings (7.7%)
Machines, engines, pumps (8.5%)	Articles of iron or steel (6.0%)
Textile articles (4.2%)	Apparel (knit or crochet) (5.45%)
Footwear (4.1%)	Apparel (not knit or crochet) (4.3%)
Articles of iron or steel (3.3%)	Plastics (3.9%)
Plastics (3.1%)	Railway equipment (2.7%)
Furniture, prefabricated buildings (2.9%)	Vehicles (2.6%)
Games and sports equipment (2.5%)	Games and sports equipment (2.3%)

Source: United Nations Database

Importance of China to its Trading Partners

**Table 3. Exports of Selected Countries to China
(In percentage of their total exports)**

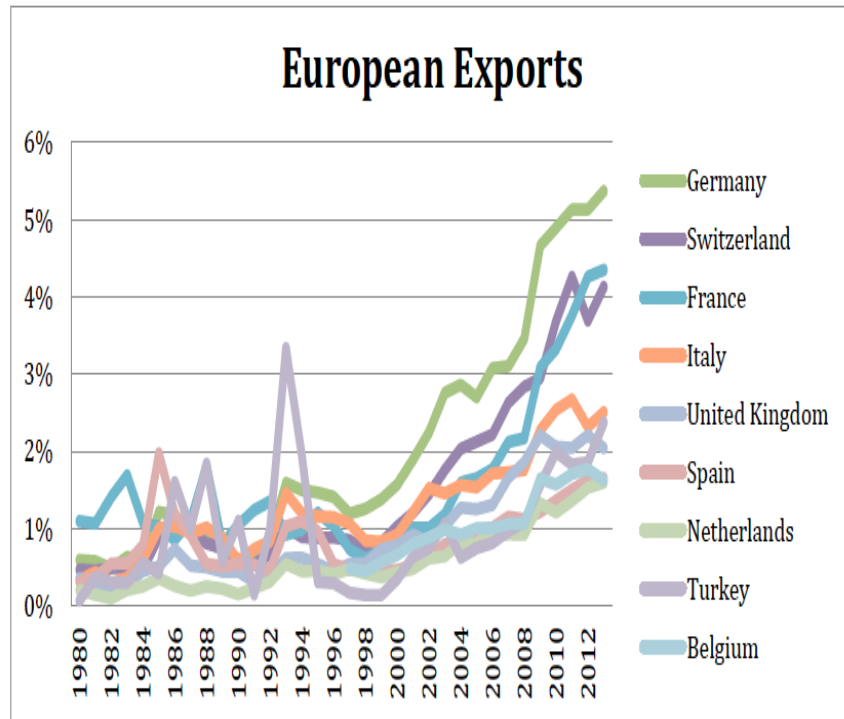
	1980	1992	1997	2003	2008	2013
Korea		3.4%	9.4%	18.1%	21.7%	26.1%
Japan	3.9%	3.5%	5.2%	12.2%	16.0%	18.1%
Indonesia		4.1%	4.2%	6.2%	8.5%	12.4%
Singapore	1.6%	1.8%	3.2%	6.3%	9.2%	11.8%
Vietnam		1.1%	3.4%	12.4%	19.8%	28.7%
Hong Kong	6.3%	29.6%	34.9%	42.6%	48.5%	54.8%
USA	1.7%	1.7%	1.9%	3.9%	5.5%	7.7%
Australia	3.6%	3.2%	4.6%	8.4%	14.6%	36.1%
Germany	0.6%	0.9%	1.2%	2.8%	3.5%	5.4%
Switzerland	0.5%	0.7%	0.9%	1.8%	2.8%	4.1%
France	1.1%	1.4%	0.7%	1.2%	2.2%	4.4%
Brazil	0.4%	1.2%	2.0%	6.2%	8.3%	19.0%
Chile	2.3%	2.2%	2.4%	8.8%	13.2%	24.9%
Saudi Arabia	0.0%	0.1%	0.7%	5.5%	9.3%	13.9%
Kazakhstan			6.8%	13.4%	10.8%	23.4%
Iraq		0.1%	1.1%	0.0%	2.2%	19.8%
Russia		6.9%	4.7%	6.2%	4.6%	6.8%
Angola		0.8%	12.7%	23.6%	32.8%	45.3%
South Africa				2.4%	6.0%	32.0%
Canada		0.1%	0.2%	0.8%	2.9%	4.1%

Source: Bloomberg, International Monetary Found



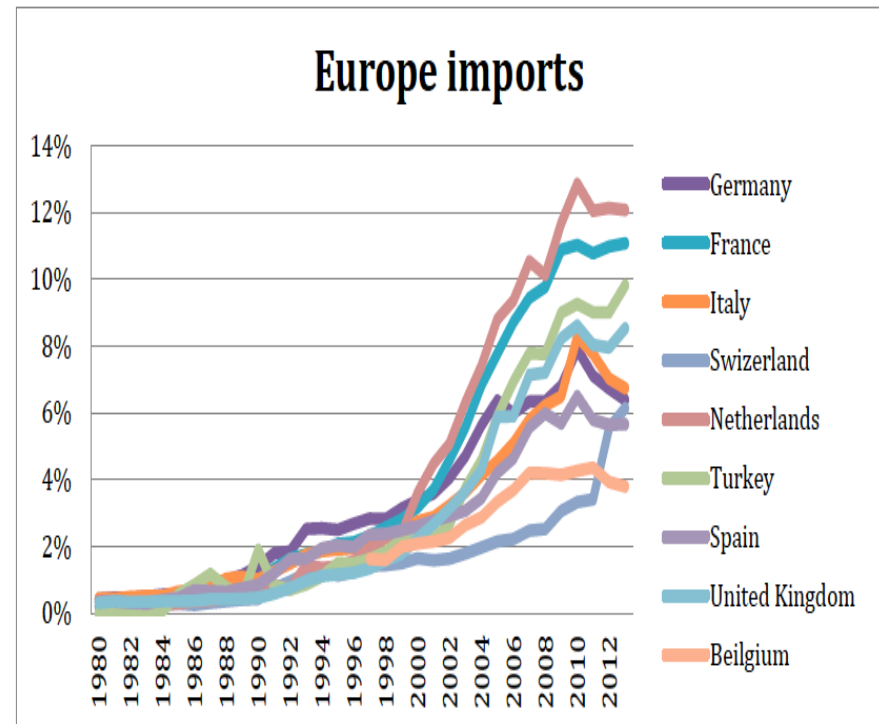
Importance of China to its Trading Partners

Graph 5a. Country Export Share to China: EUROPE



Source: Bloomberg

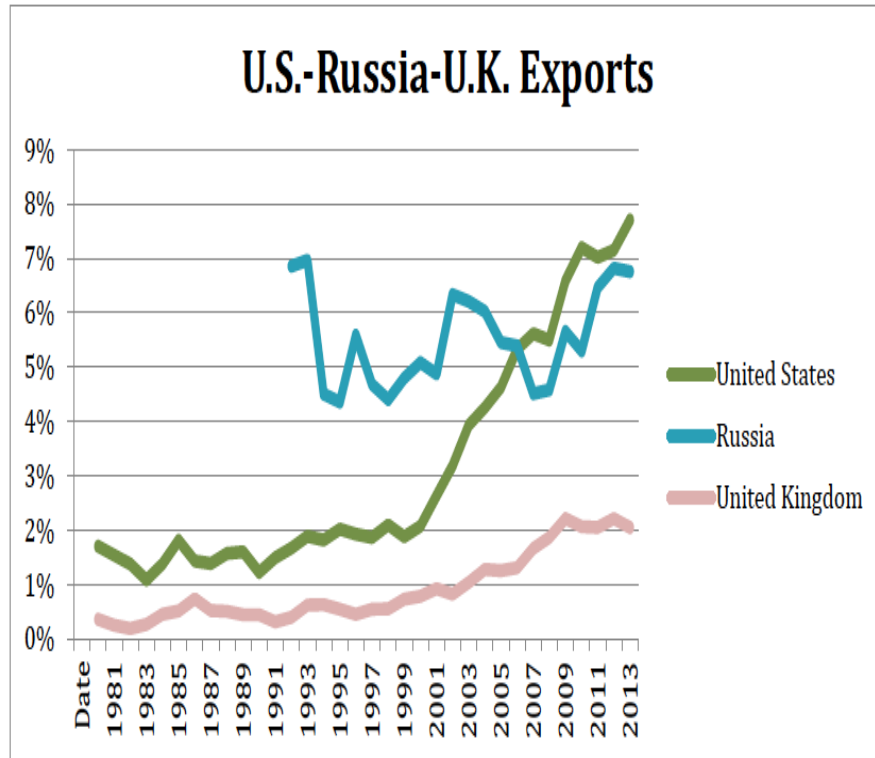
Graph 5b. Country Import Share to China: EUROPE



Source: Bloomberg

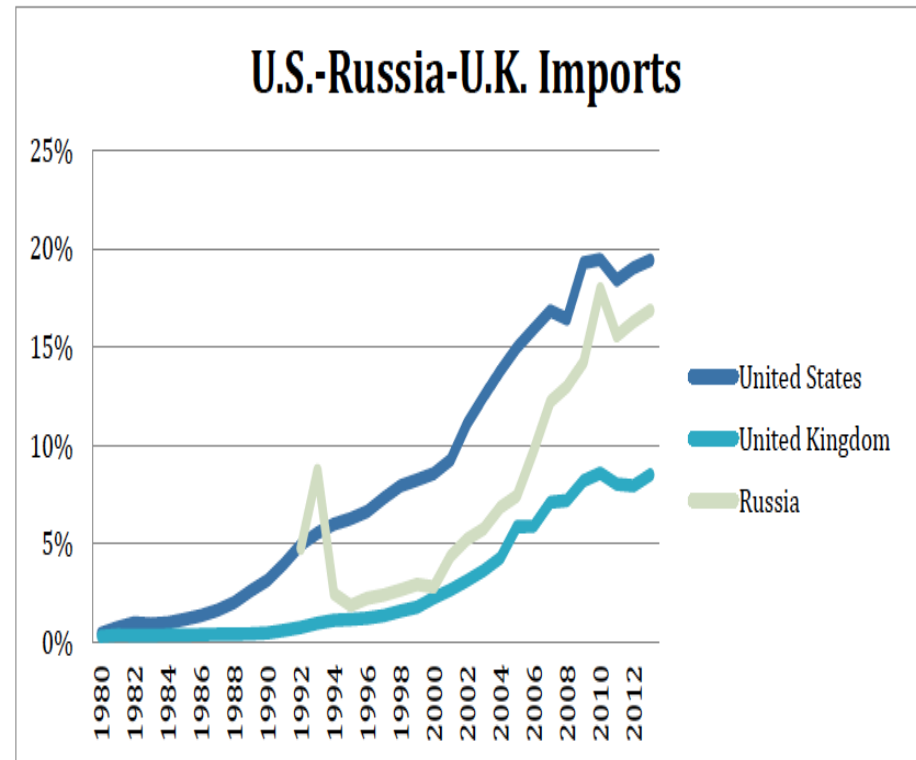
Importance of China to its Trading Partners

Graph7a. Country Export Share to China: U.S., U.K. & RUSSIA



Source: Bloomberg

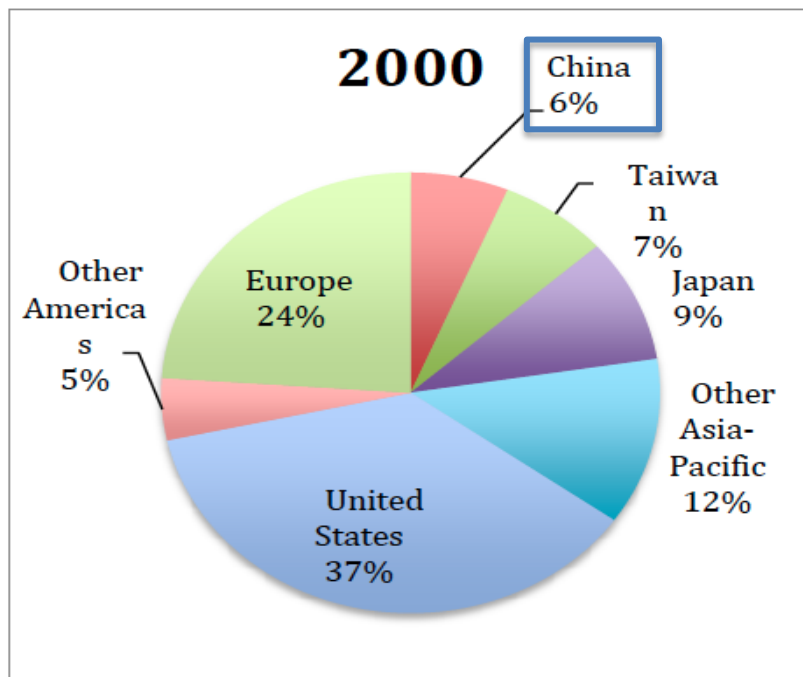
Graph7b. Country Import Share to China: U.S., U.K. & RUSSIA



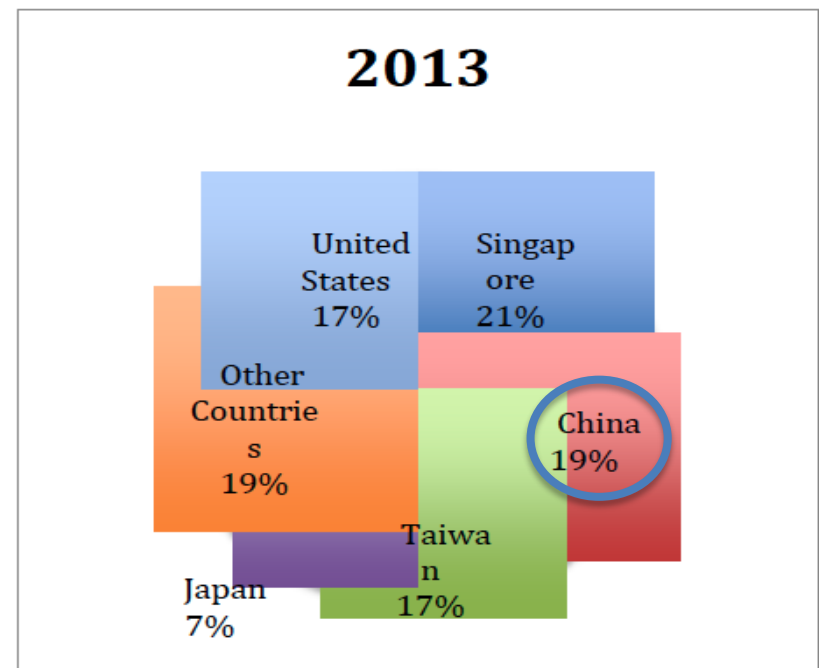
Source: Bloomberg

Importance of CHINA to Multinationals: INTEL

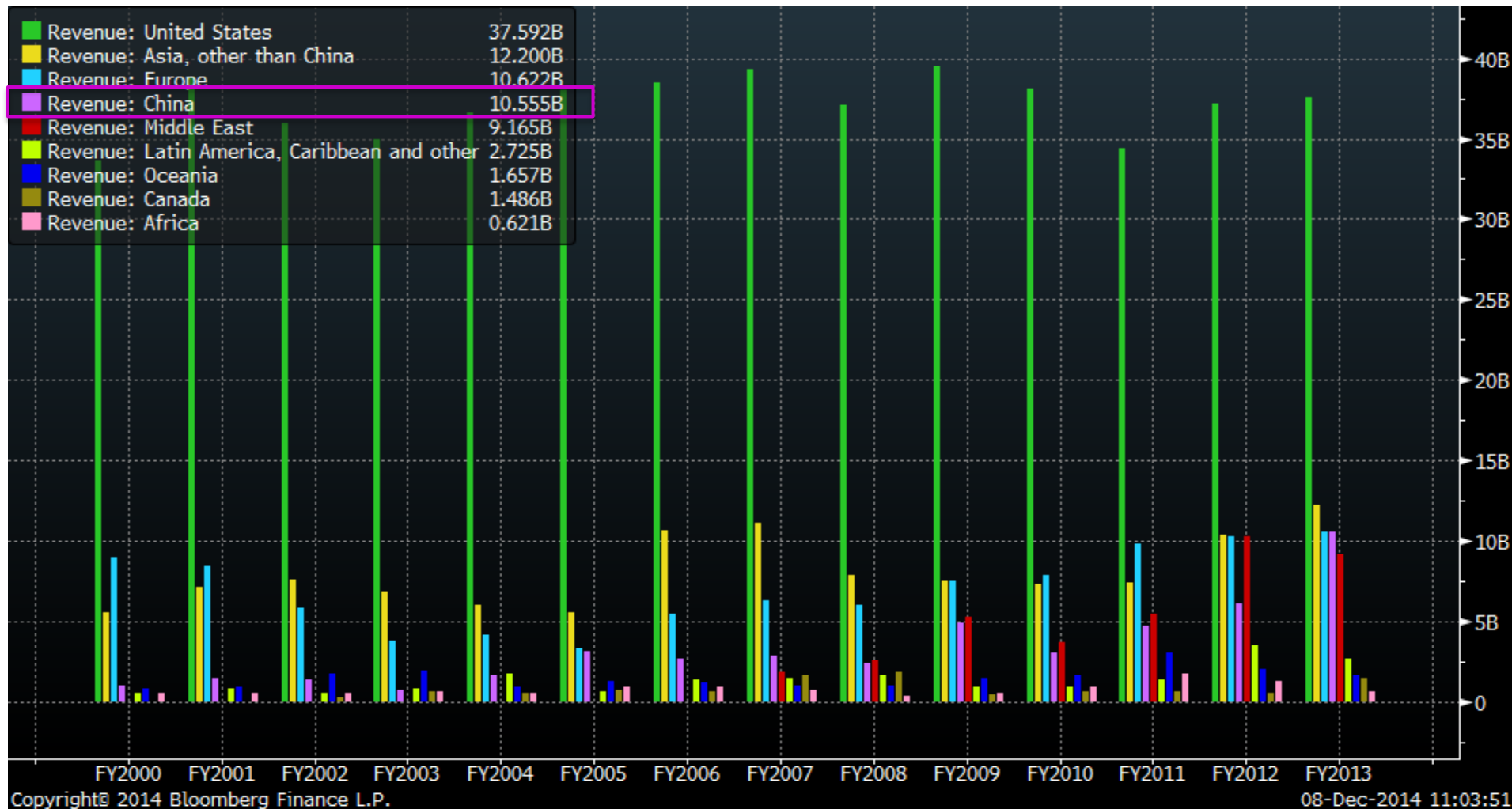
Graph A3. Intel's revenue shares divided by geographic areas in 2000 and 2013
(In percentage of total revenue)



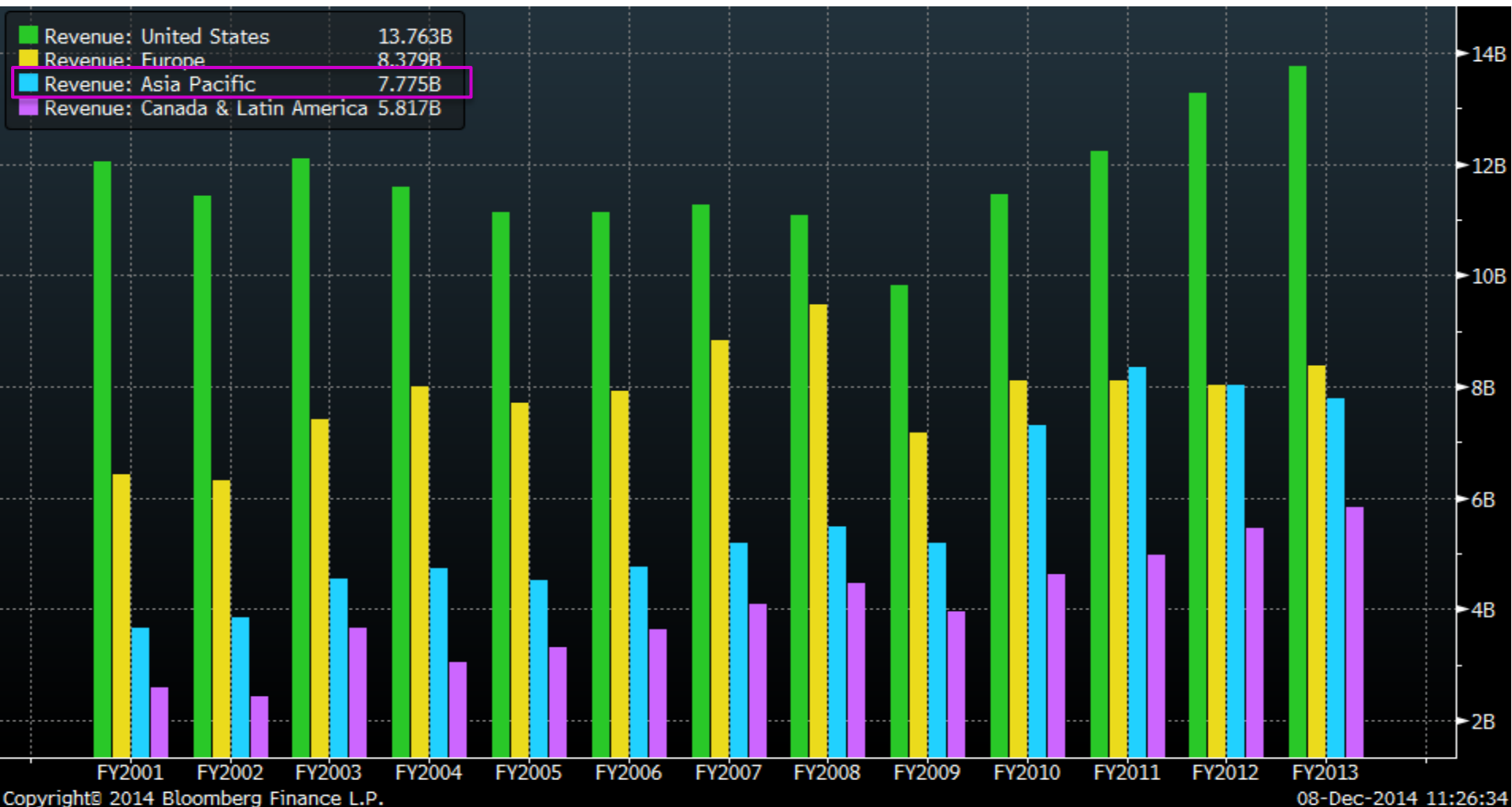
Source: Bloomberg



Importance of CHINA to Multinationals: BOEING



Importance of ASIA to Multinationals: DuPONT



Company Revenues by Geographic Areas

**Table 5. Selected Company Revenues by Geographic Areas (In millions)
(As a percentage of total revenue, by year)**

Company	Year	Revenue	United States	Europe & MidEast	Asia Pacific	Latin America	China
Apple	2011	108249	35.4%	25.7%	9.1%		11.7%
	2013	170910	36.7%	22.2%	6.5%		14.9%
Boeing	2000	51321	65.7%	18.7%	10.8%		2.0%
	2005	53621	70.8%	8.0%	10.4%		5.9%
	2013	86623	43.4%	23.6%	14.1%		12.2%
Caterpillar	2009	32396	38.1%	27.5%	22.3%	12.0%	
	2013	55656	39.1%	24.5%	22.4%	14.0%	
Cisco	2001	22293	67.9%	28.2%	10.7%		
	2005	24801	53.6%	23.0%	10.0%		
	2014	47142	58.9%	25.5%	15.6%		
Coca-Cola	2004	21838	29.4%	36.1%	3.2%	8.1%	
	2005	23234	28.7%	35.8%	3.1%	8.9%	
	2013	46854	46.1%	5.9%	12.5%	10.5%	
Disney Co.	2001	25172	83.0%	10.3%	4.9%	1.8%	
	2005	31944	77.7%	16.3%	4.5%	1.5%	
	2014	48813	75.3%	13.3%	8.1%	3.3%	
Du Pont	2001	24726	48.8%	26.0%	14.8%	10.5%	2.5%
	2005	26639	41.8%	28.9%	16.9%	12.4%	4.5%
	2013	35734	38.5%	23.4%	21.8%	16.3%	8.4%
Intel	2001	26539	35.4%	24.5%	31.4%		8.8%
	2005	47496	15.9%	17.3%	37.3%		11.3%
	2013	52708	17.2%		44.8%		18.8%
Nike	2010	19014.7	35.2%	26.5%	4.6%		9.2%
	2014	27799	44.2%	22.9%	2.8%		9.4%
Proctor & Gamble	2001	39244	55.0%	27.0%	10.0%	8.0%	
	2005	56741	48.0%	24.0%	5.0%		
	2014	83062	39.0%	18.0%	18.0%	10.0%	

Source: Bloomberg



China and Multinationals Revenue Growth

Table 6. Selected Companies Revenue Growth by Geographic Areas
(compound growth rate between reported years)

	Year	Americas	Europe & Mideast	Asia (not China)	Latin America	China
3M	2005- 2013	3.8%	3.9%	5.8%	8.5%	
American Express	2005- 2013	5.5%		6.6%		
Boeing *	2005- 2013	-0.1%	21.6%	10.3%		16.3%
Caterpillar	2009- 2013	15.2%	11.2%	14.6%	18.9%	
Cisco	2005- 2014	8.5%	8.6%	12.8%		
Coca-Cola	2005- 2013	15.8%	-12.9%	30.0%	11.5%	
Disney Co.	2005- 2014	4.5%	2.5%	11.7%	14.4%	
Du Pont	2005- 2013	2.7%	1.1%	7.0%	7.3%	12.1%
Goldman Sacks	2005- 2013	4.2%	2.0%	6.3%		
IBM	2005- 2013	-0.1%	0.5%	2.6%		
Intel *	2005- 2013	2.3%		3.7%		8.0%
JPMorgan Chase	2005- 2013	7.0%	9.5%	10.3%		
Merck	2005- 2013	4.6%	12.3%	12.0%		
Nike*	2010- 2014	16.4%	6.0%	-3.3%		10.6%
Proctor & Gamble	2005- 2014	1.9%	1.0%	20.3%		
United Tech.	2005- 2013	7.3%	1.5%	3.7%		
Apple *	2012- 2013	9.1%	4.3%	4.1%		12.8%

Source: Companies Balance Sheet from Bloomberg

*Asia and Pacific do not include China





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Questions..?

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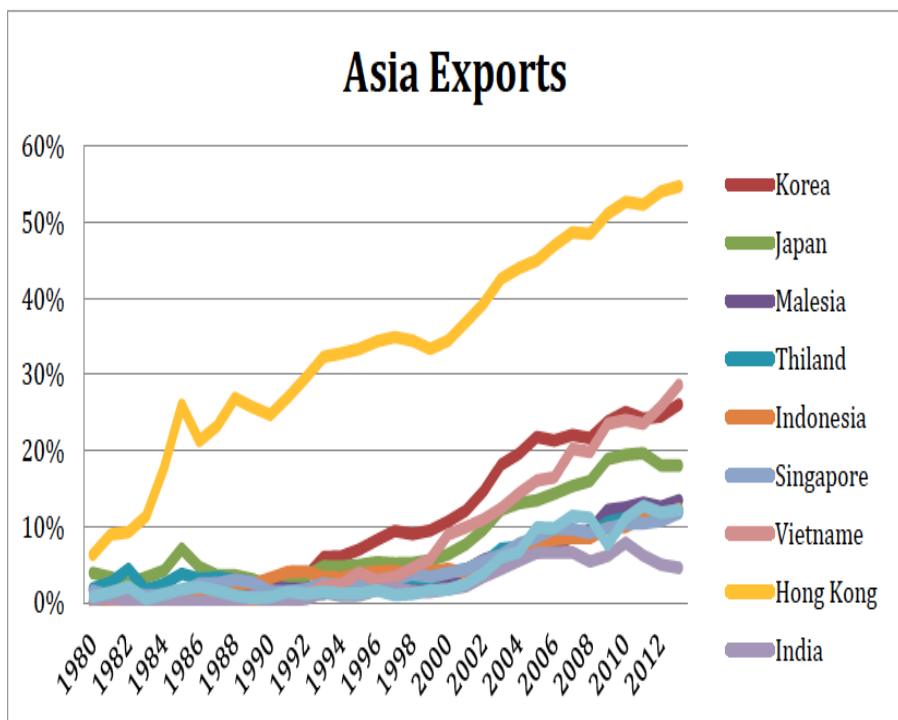
Giulia Zilio

**Andrew Young School of Policy Studies, Georgia State University,
giuliazilio@gmail.com**



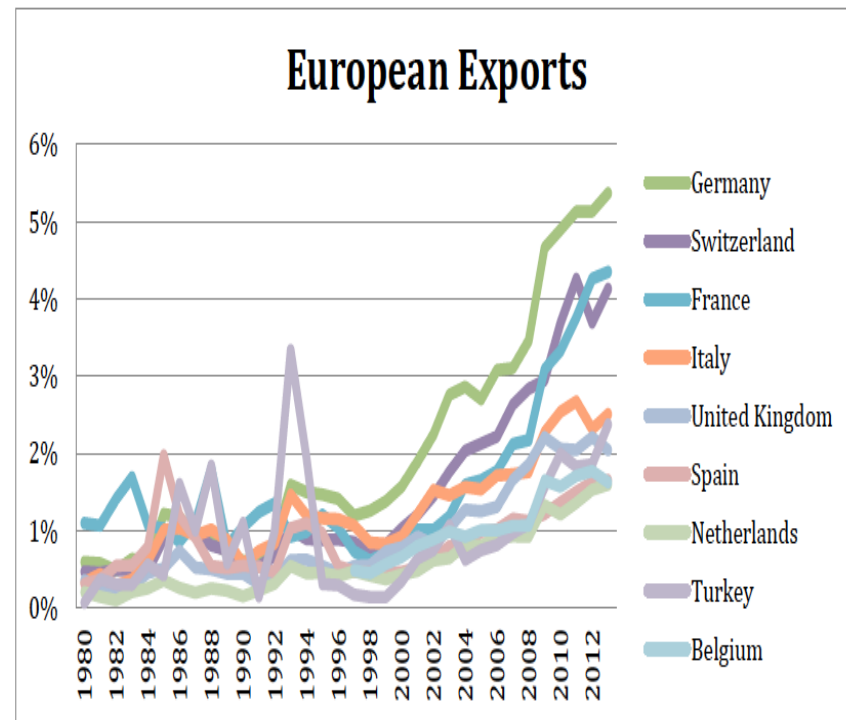
Importance of China to its Trading Partners

Graph 6a. Country Export Share to China: ASIA



Source: Bloomberg

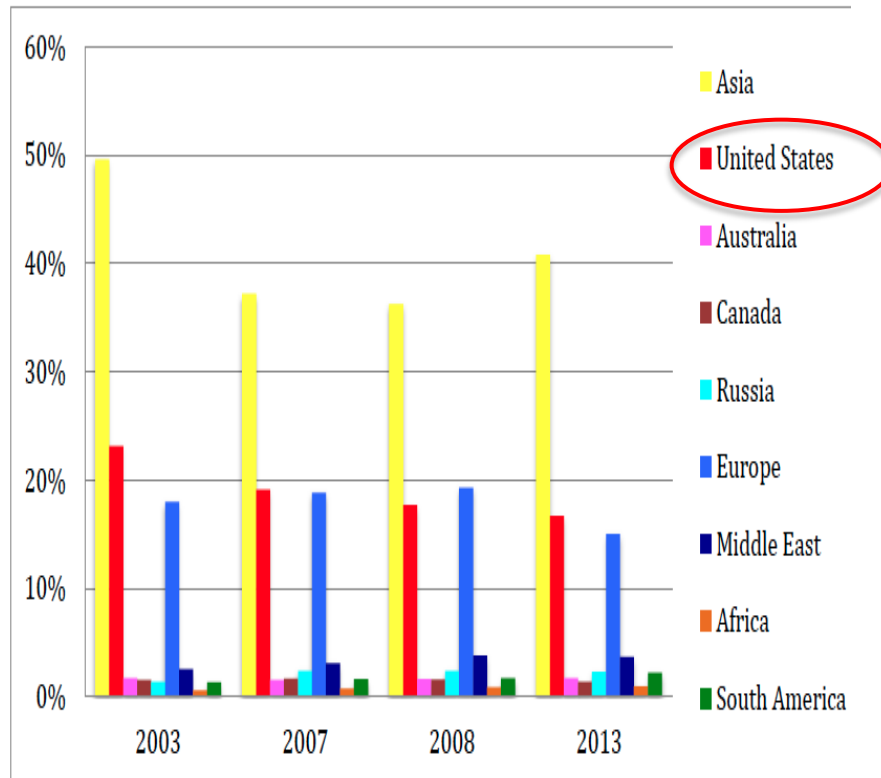
Graph 5a. Country Export Share to China: EUROPE



Source: Bloomberg

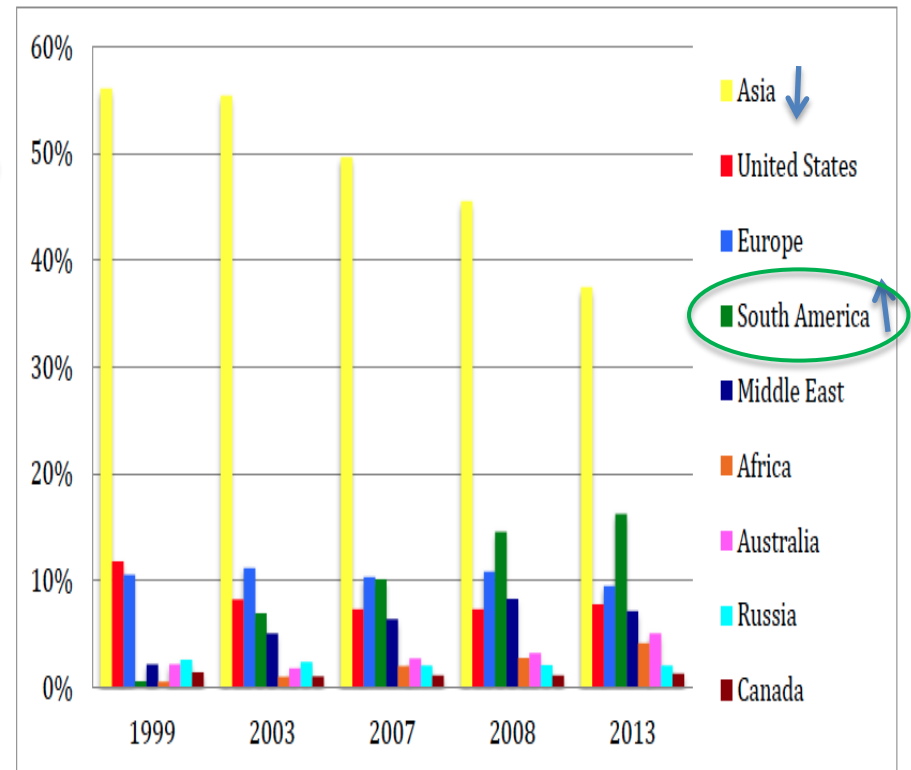
China's Trading Partners

Graph 4b. China Share of Total Exports by Geographic Area



Source: Bloomberg

Graph 4a. China Share of Total Imports by Geographic Area

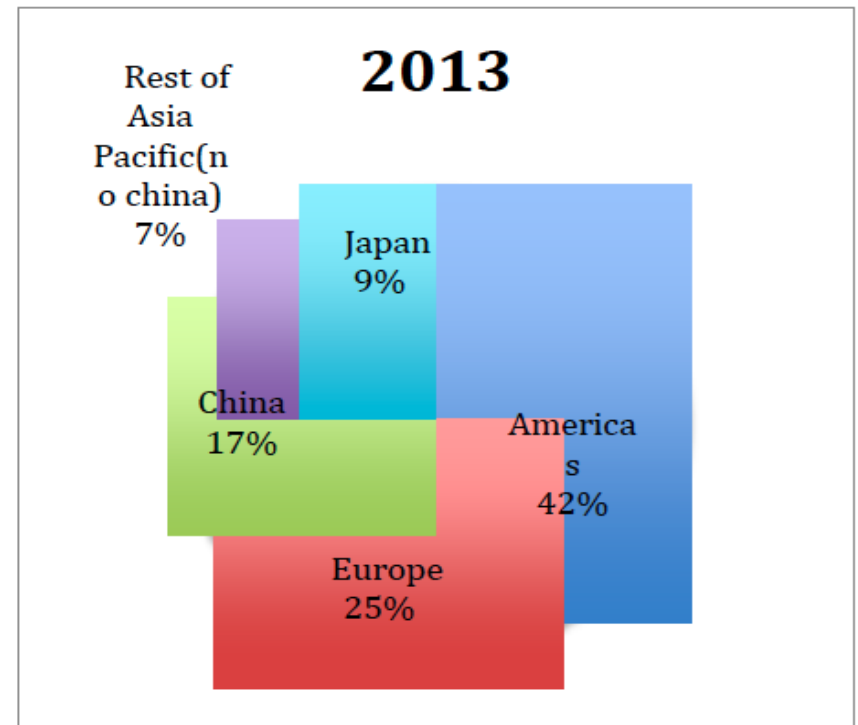
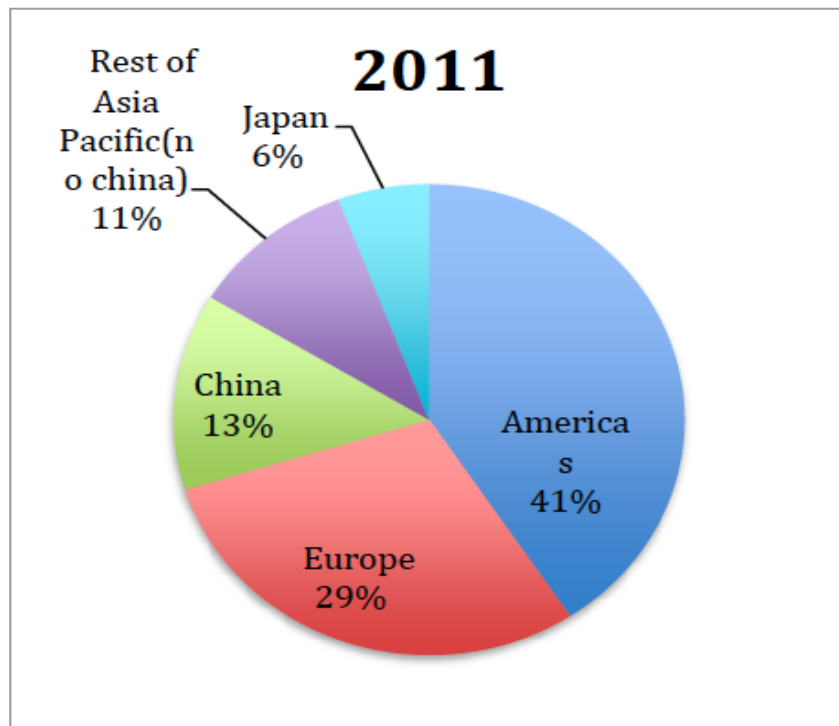


Source: Bloomberg

China and Multinational Companies

Apple

Graph A1. Apple's Revenue Shares by Geographic Areas: Q1-2011 vs Q1-2013
(as % of total revenue)



Source: Bloomberg

Importance of China to its Trading Partners

**Table 3. Exports of Selected Countries to China
(In percentage of their total exports)**

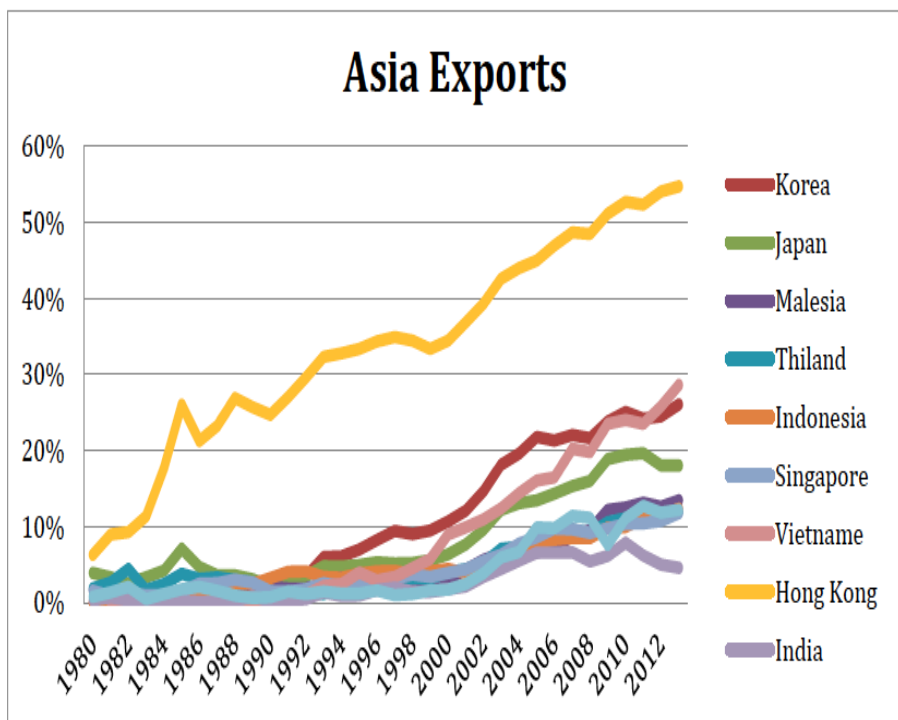
	1980	1992	1997	2003	2008	2013
Korea		3.4%	9.4%	18.1%	21.7%	26.1%
Japan	3.9%	3.5%	5.2%	12.2%	16.0%	18.1%
Indonesia		4.1%	4.2%	6.2%	8.5%	12.4%
Singapore	1.6%	1.8%	3.2%	6.3%	9.2%	11.8%
Vietnam		1.1%	3.4%	12.4%	19.8%	28.7%
Hong Kong	6.3%	29.6%	34.9%	42.6%	48.5%	54.8%
USA	1.7%	1.7%	1.9%	3.9%	5.5%	7.7%
Australia	3.6%	3.2%	4.6%	8.4%	14.6%	36.1%
Germany	0.6%	0.9%	1.2%	2.8%	3.5%	5.4%
Switzerland	0.5%	0.7%	0.9%	1.8%	2.8%	4.1%
France	1.1%	1.4%	0.7%	1.2%	2.2%	4.4%
Brazil	0.4%	1.2%	2.0%	6.2%	8.3%	19.0%
Chile	2.3%	2.2%	2.4%	8.8%	13.2%	24.9%
Saudi Arabia	0.0%	0.1%	0.7%	5.5%	9.3%	13.9%
Kazakhstan			6.8%	13.4%	10.8%	23.4%
Iraq		0.1%	1.1%	0.0%	2.2%	19.8%
Russia		6.9%	4.7%	6.2%	4.6%	6.8%
Angola		0.8%	12.7%	23.6%	32.8%	45.3%
South Africa				2.4%	6.0%	32.0%
Canada		0.1%	0.2%	0.8%	2.9%	4.1%

Source: Bloomberg, International Monetary Found



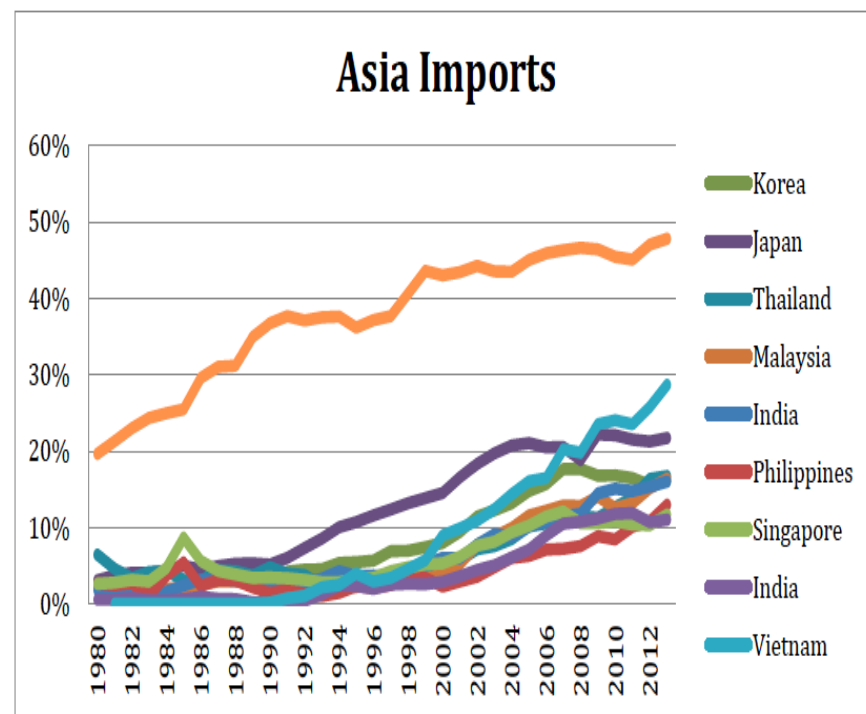
Importance of China to its Trading Partners

Graph 6a. Country Export Share to China: ASIA



Source: Bloomberg

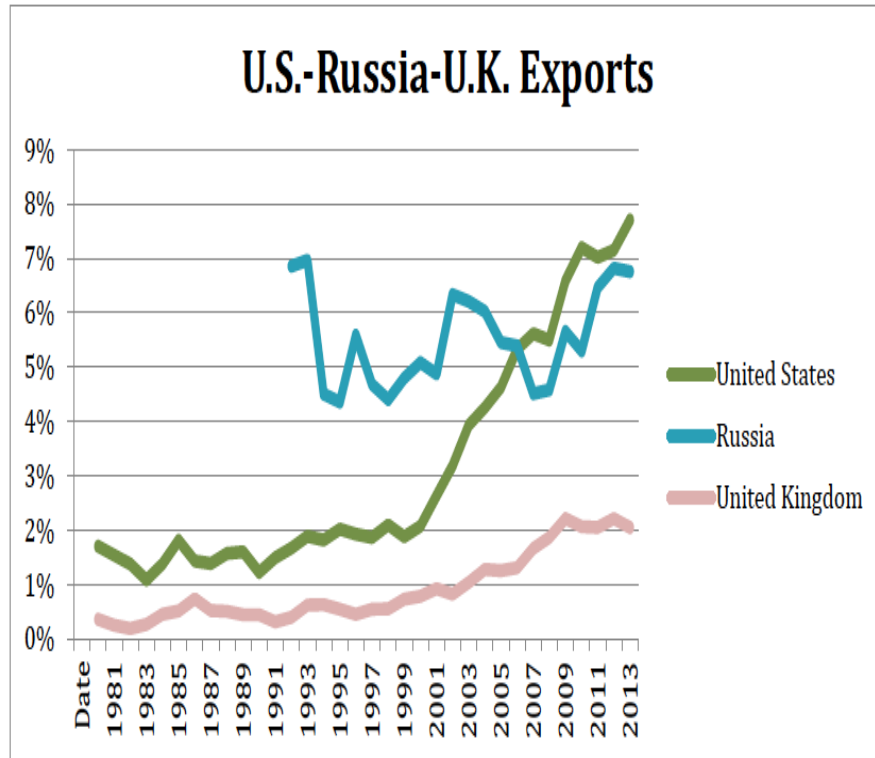
Graph 6b. Country Import Share to China: ASIA



Source: Bloomberg

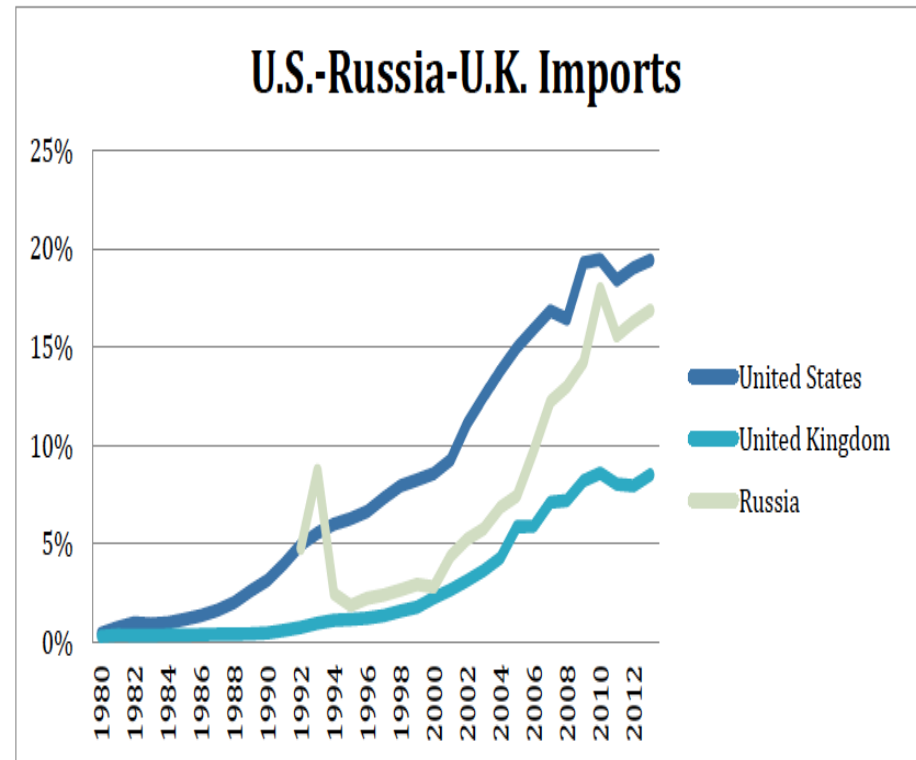
Importance of China to its Trading Partners

Graph7a. Country Export Share to China: U.S., U.K. & RUSSIA



Source: Bloomberg

Graph7b. Country Import Share to China: U.S., U.K. & RUSSIA



Source: Bloomberg

Importance of China to its Trading Partners

**Table 4. Imports of Selected Countries from China
(In percentage of their total imports)**

	1980	1992	1997	2003	2008	2013
Korea		4.5%	6.9%	12.3%	17.7%	16.1%
Japan	3.1%	7.3%	12.4%	19.7%	18.8%	21.7%
Thailand	6.4%	3.8%	3.9%	7.6%	11.5%	16.7%
Malaysia	2.3%	2.4%	2.8%	8.8%	12.8%	16.4%
India	1.8%	2.8%	3.6%	9.1%	11.8%	16.0%
Vietnam		1.1%	3.4%	12.4%	19.8%	28.7%
Hong honk	19.6%	37.1%	37.7%	43.5%	46.6%	47.8%
US	0.5%	5.0%	7.3%	12.5%	16.5%	19.4%
Australia	1.2%	4.2%	5.7%	11.0%	15.4%	19.5%
France	0.2%	1.6%	2.3%	5.6%	9.8%	11.1%
Netherlands	0.4%	0.7%	1.9%	6.3%	10.1%	12.1%
Brazil	1.1%	0.2%	1.9%	4.4%	11.6%	15.6%
Chile	0.4%	1.5%	3.1%	8.5%	13.2%	19.7%
Venezuela	0.4%	0.1%	0.0%	1.9%	7.1%	12.9%
Mexico	0.3%	0.0%	1.1%	5.5%	11.2%	16.1%
Saudi Arabia	0.8%	2.1%	3.2%	5.9%	10.4%	12.9%
Iraq		0.1%	5.7%	1.4%	6.0%	14.7%
Kazakhstan		53.3%	1.1%	6.2%	12.0%	25.3%
UAEs	1.6%	6.2%	8.2%	9.8%	12.7%	14.6%
South Africa			6.4%	6.4%	11.1%	16.2%
Angola		0.4%	1.3%	3.6%	15.0%	19.1%
Russia		4.8%	2.4%	5.8%	13.0%	16.9%
Canada	0.0%	0.1%	0.1%	0.4%	0.7%	2.4%

Source: Bloomberg

