

China's industrial development

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Outline of this presentation

- **Chinese industrial sector in the world in 2015/2014;**
- **The development process of Chinese industrial sector;**
- **The model or strategy of Chinese industrial development;**
- **Some comments and discussions.**

I. High speed railway: a product of Chinese industry



18000 km high speed railway in 2015







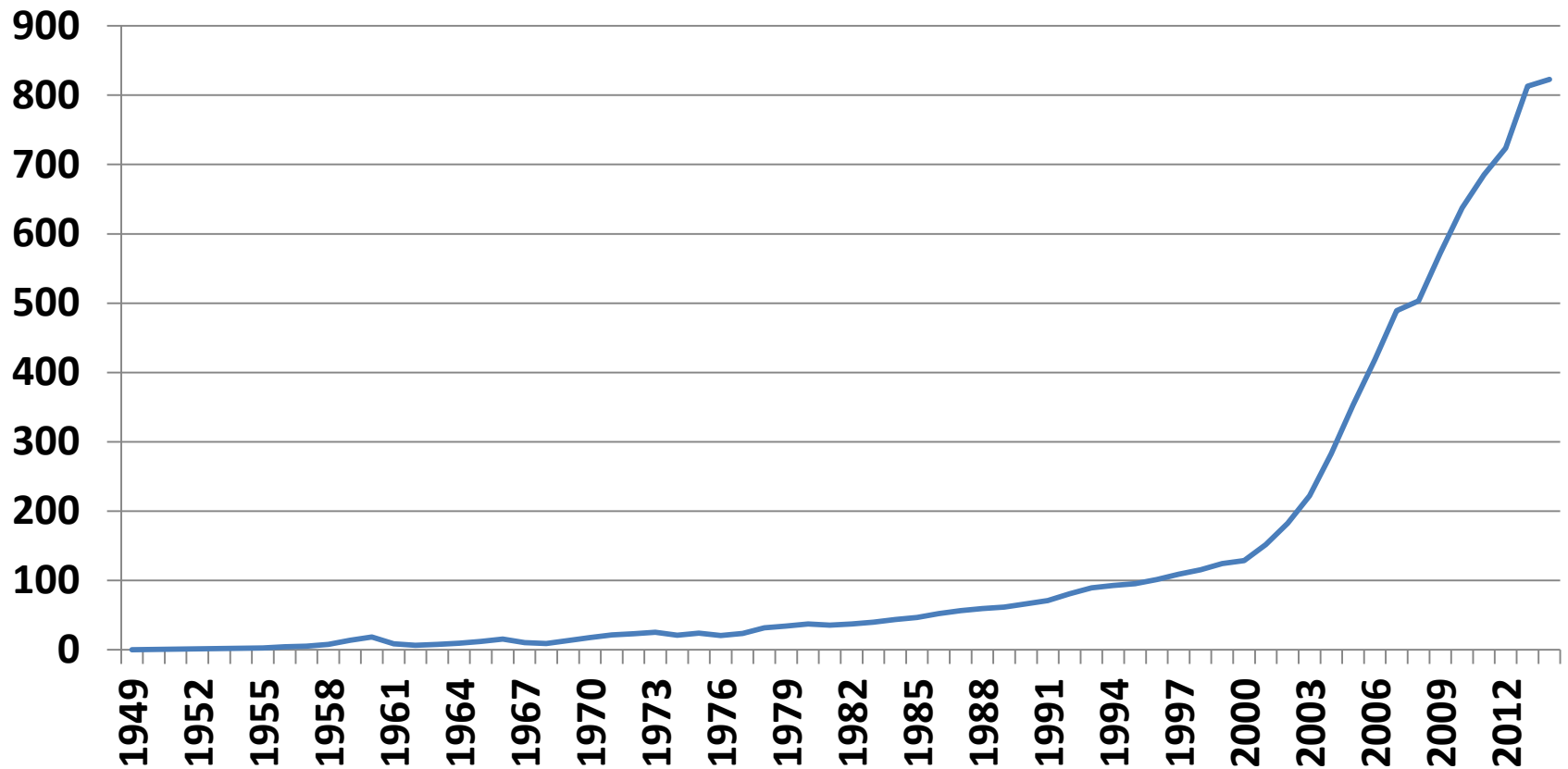






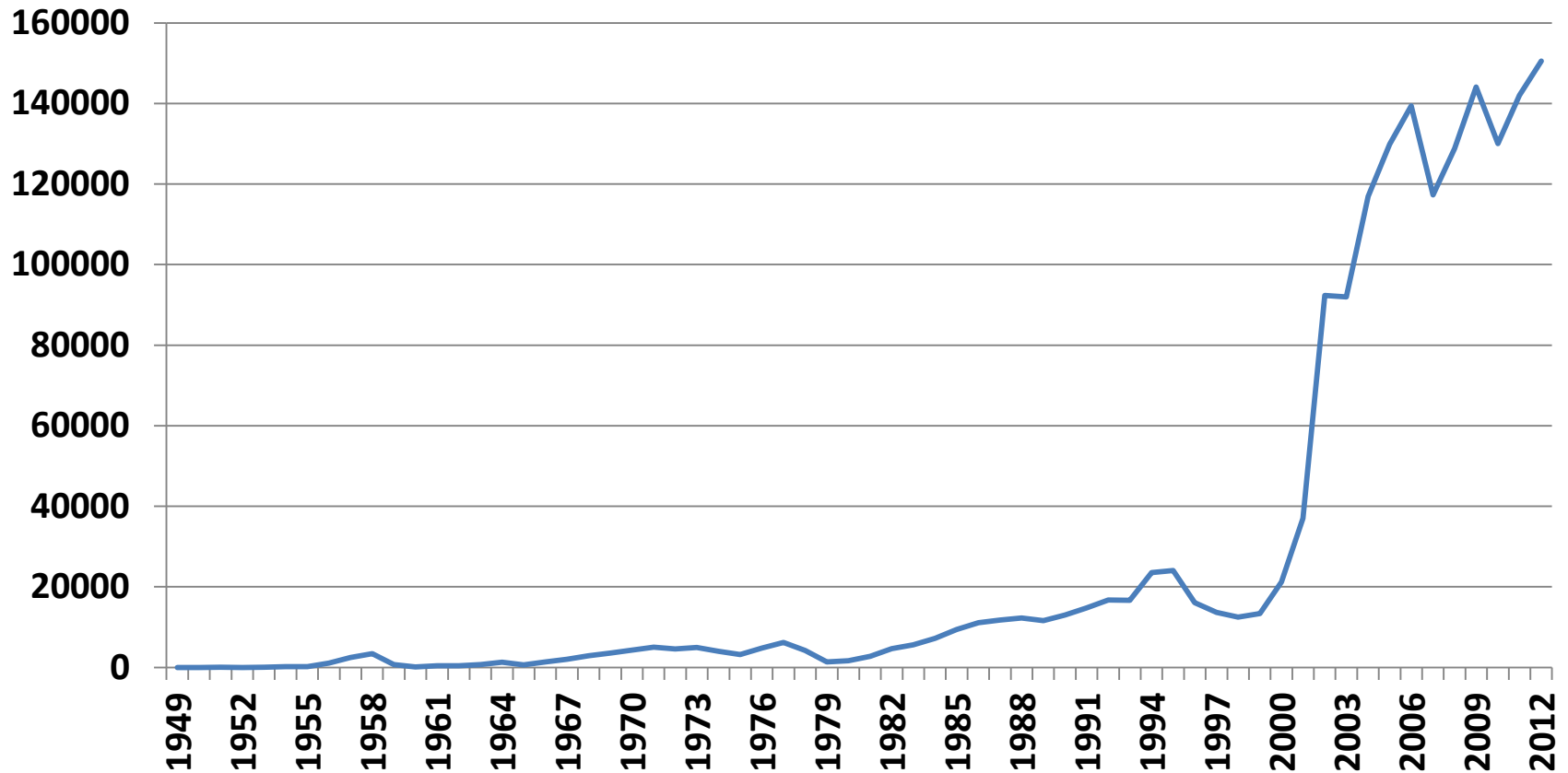
China's production of Crude steel, 1949-2014, million ton

crude steel, 1000 ton



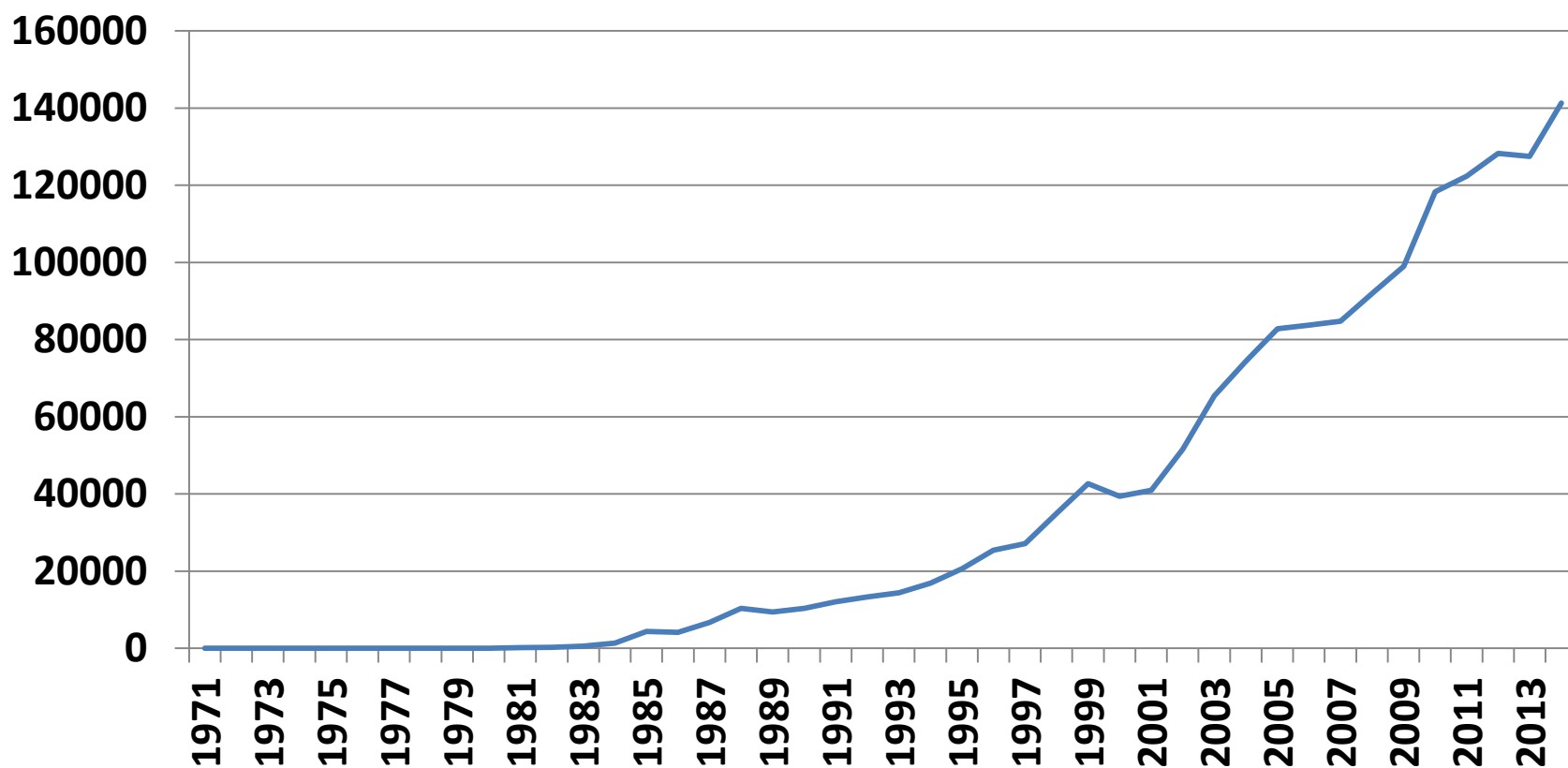
The electricity generating equipment, 1949-2014

Electricity generating equipment, 1000 kw

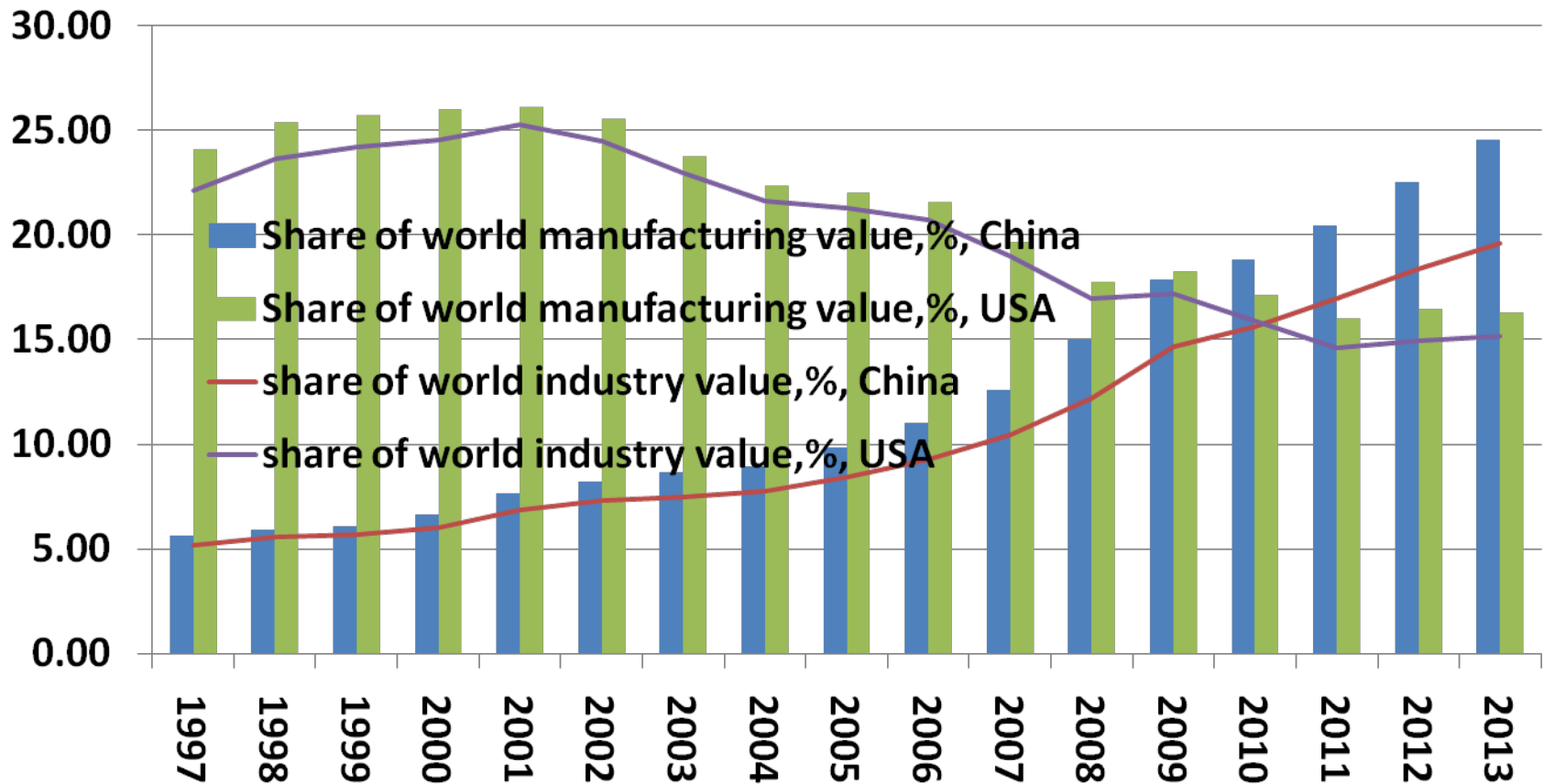


The production of Color TV sets, 1971-2014

Color TV, 1000 unit



China vs. USA: Industry and Manufacture, 1997-2013



Data from database: World Development Indicators

Last Updated: 07/28/2015

The largest producer of many products...

Item	1978	1980	1990	2000	2005	2009	2010	2011
Crude Steel	5	5	4	2	1	1	1	1
Coal	3	3	1	1	1	1	1	1
Crude Petroleum	8	6	5	5	5	4	4	4
Electricity	7	6	4	2	2	2	1	1
Cement	4	4	1	1	1	1	1	1
Fertilizer	3	3	3	1	1	1	1	1
Woven Cotton Fabrics	1	1	1	2	2	1	1	1

Source: United Nations MBS Database.

The world leading industrial power...

- **According to the classification of UN industrial sectors, China are the top supply of 7 of 22 chapters;**
- **And China are top supply of more than 220 industrial products, such as car, steel, cement and so on...**

The world leading trading of manufacture goods

- **Since 2009, China became the world largest exporter, replacing Germany;**
- **Since 2011, China became the second largest importer in the world only after USA;**
- **In 2013, China exported 2.209 trillion dollar and imported 1.95 trillion dollar, and became the largest trader of goods;**
- **In 2014, China export 2.342747 trillion dollar(12-13% of the world export), and import 1.96029 trillion dollar(10-11% of world import).**

The most diverse national industry system in the world

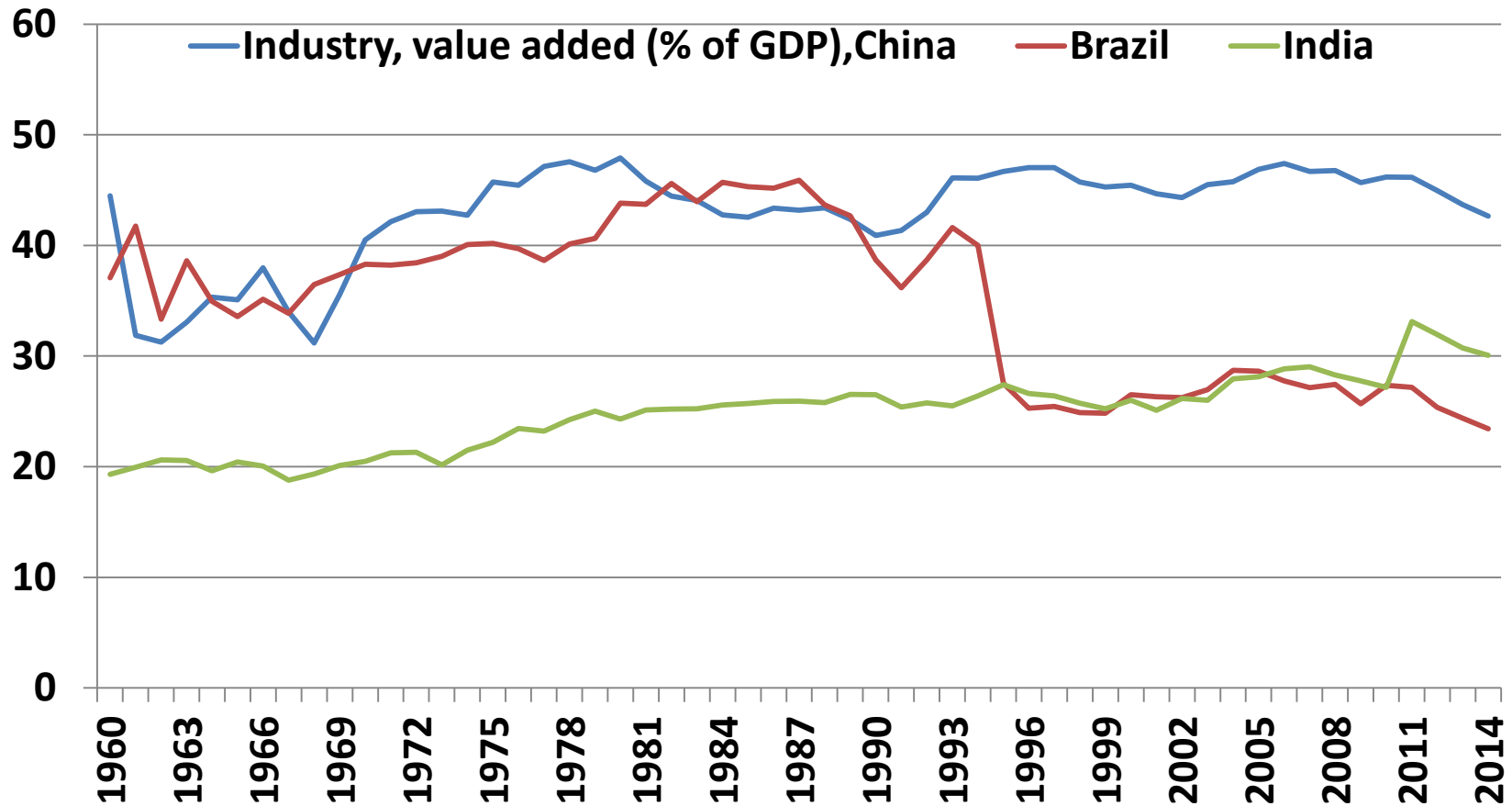
- **The most diverse industry supply networks in the world, along with that of USA, Japan and Germany;**
- **The number of export goods (HS-6, the value of export more than 1 million dollar a year), the 17 years average of 1992-2008, China is 4742.12, only after that of USA(4871.18), higher than those of Germany (4729.24) and Japan (4550); as a benchmark, according to Carrere et.(2007), the average number of import goods for 159 economies in 1988-2004 each year is 2492.**
- **In terms of import, the number of import goods during 1992-2008, averagely annually, China is 4798.76, after USA 4881.88, Germany 4864.59, and higher than Japan 4774.18.**



106 of Global 500 is from China

- **According to Fortune global 500, the firms from China (Mainland, Taiwan and Hong Kong together) are 106, that of USA 128;**
- **Of 106 of Chinese firms, 96 from Mainland China, 6 from Taiwan, 4 from Hong Kong.**
- **And in 2000, only 9 firms from mainland China listed in the global 500, 1 firm from Taiwan.**

II. Very long term of industrialization process, 1960-2014



The history of China's industrial development

Five years plan	time	Main policy and strategy	Industrial development
Recovery	1949-51		
一五	1952-57		
二五	1958-62	big jump	
Adjustment	1963-65		
三五	1966-70	Culture revolution: Military defense projects and small industrialization in rural areas	The aid of Soviet Union: 156 projects
四五	1971-75		The second wave of import of equipment and machineries
五五	1976-80	reform and opening to the outside world	
六五	1981-85		
七五	1986-90		
八五	1991-95	South Tour	
九五	1996-00	WTO accession negotiation	Big open and reform
十五	2001--05		
十一五	2006--10		
十二五	2011--15		

The Aid/Import of Soviet Union

- **156 projects from Soviet Union, built the base of China's industrial in the 1950s, 1960s;**
- **The building up this projects;**
- **The assimilation of those projects, especially when the experts of Soviet Union were asked to go back their home country in after 1960 ;**
- **This projects are copied in the other part of China, especially during the military defense building era**

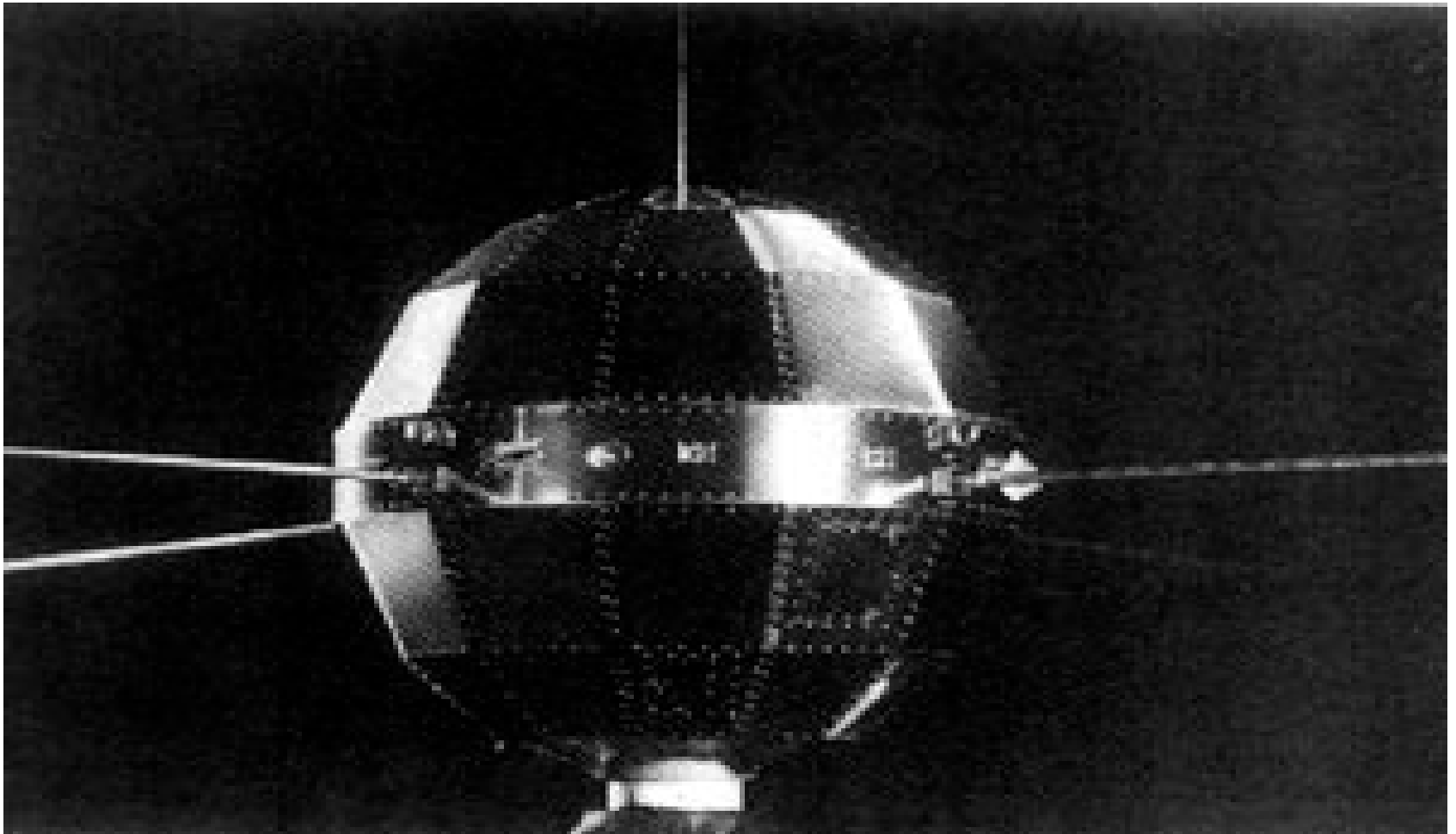
Already be a major power in 1970s...

- **Nuclear power: atomic boomer in 1964, and Hydrogen, or super-atomic boomer in 1968, launched satellite in 1971;**
- **Have wars against India, Soviet Union, and USA...**

China's first nuclear bomb, 1964



China's first satellite, 1971



The second wave of import of technologies from the West...

- **“43” projects: imported a lot of equipments and technologies;**
- **Steel, petrochemical, and color TV, refrigerator and air-conditions production lines and so on...**
- **Commercial projects are the priority**

- **Updated the technologies and equipments;**
- **Introduced new ideas and management methods;**
- **Opening up to the outside world and reforming the central plan economy...**
- **Bao steel project and the new steel industry development in Shanghai**

Baosteel project



1)October of 1978, this import project is Initiated, and 1985 the first stage of Construction is finished, 1995 the third Stage finished;

2)Biggest project in 1978, it cost 20-30 Billion RMB, a big parts of Chinese Government revenue, and foreign Exchange resere;

3)Now, Baosteel is the second larggest producer in the world.

The big reform and opening-up era

- **Dengxiaoping's south China tour and a lot of speeches;**
- **The market economy reform in 1992;**
- **The unilateral liberalization of tariff and trade, investment regimes;**
- **WTO accession negotiation with USA during 1990s;**
- **WTO accession in 2001...**

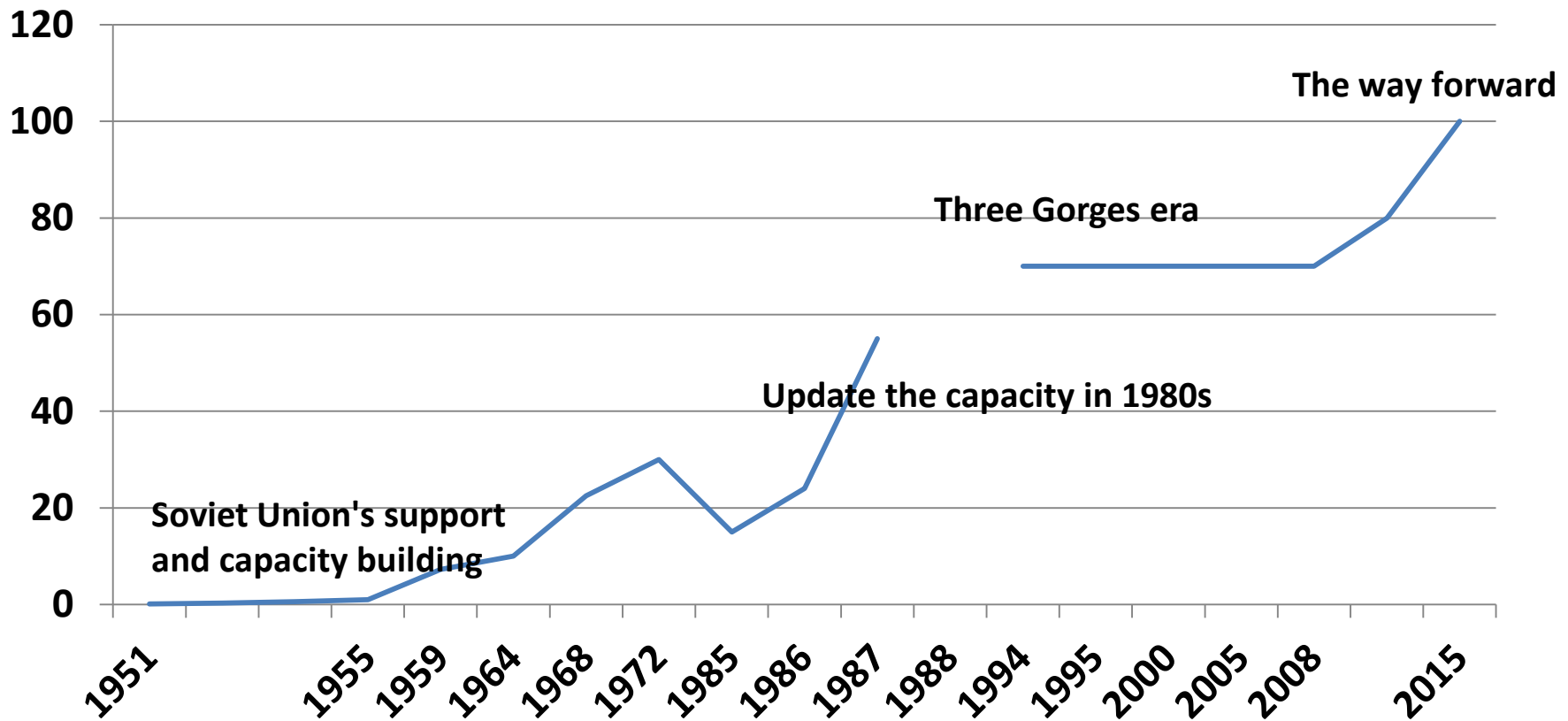
- **1) Huawei, ZTE and telecommunication equipment industry;**
- **2) Phone industry----Huawei, Lenevon, Xiaomi,...**
- **3) High speed railway industry;**
- **4) New internet+ industries such express mail, e-commerce, and so on: Alibaba, Tecent, and Jingdong...**

Active learning and industrial capacity building

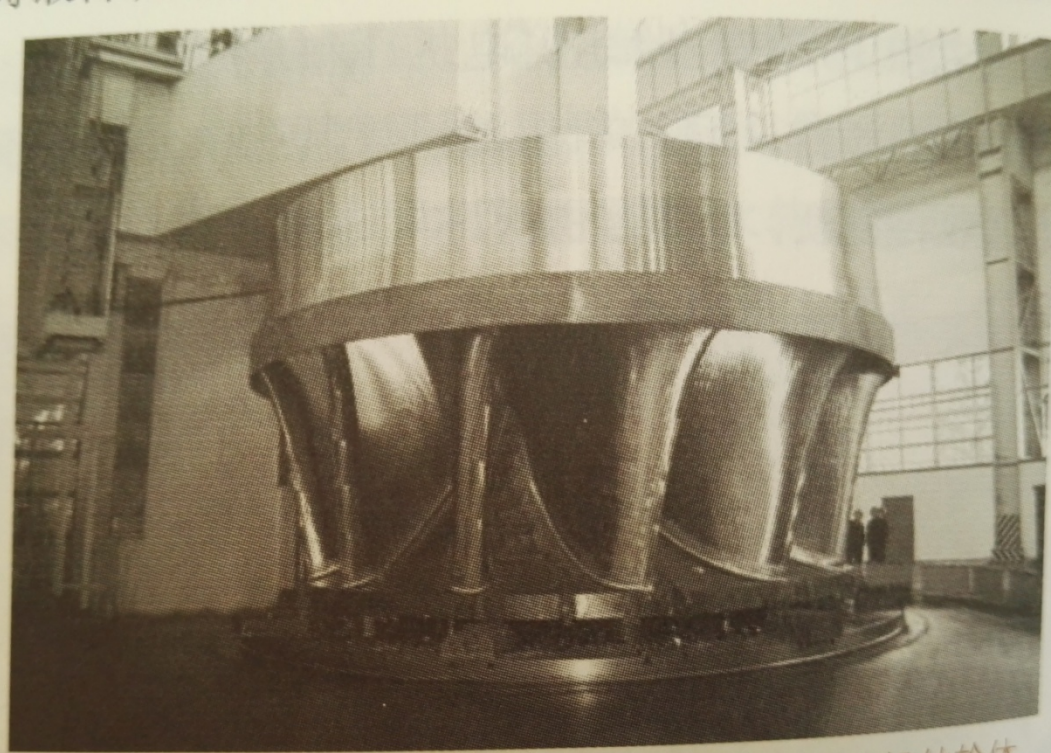
		Based on Soviet Union's support: 1952-70;	The second wave import of technologies: 1971-90;	Big reform and opening up: 1991-2015
1	import	Chinese firms— SOEs; Isolated;	Chinese firms cooperating with MNEs; The west opening to China	Joint venture or the new entrants; China opening to the world
2	import and production			
3	single product production			
4	mass production			
5	copy of the factory			
6	local market			
7	innovation and export			

A case-study of electricity generating equipment industry

Hydro-power generating equipment, 1000 kw



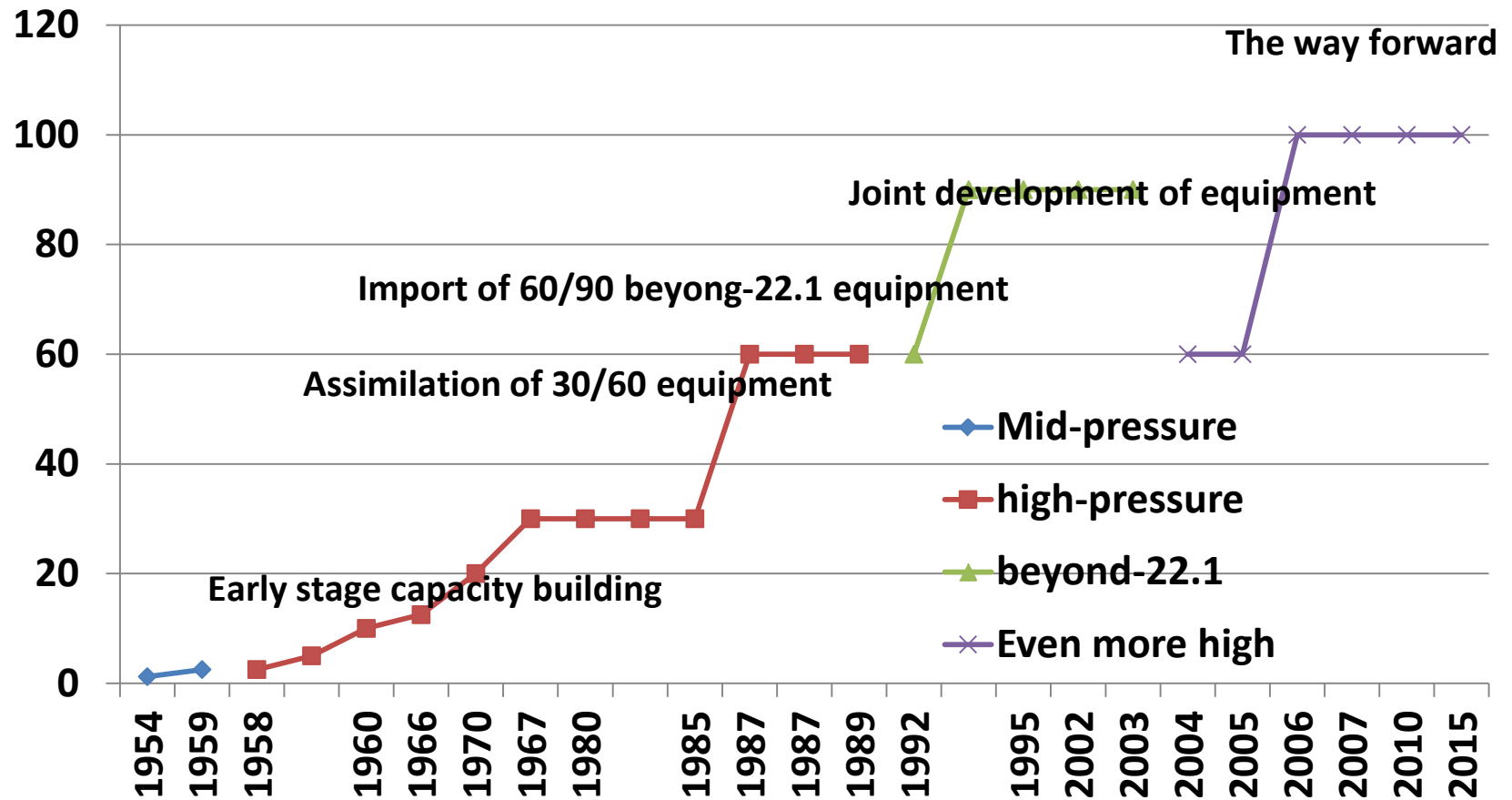
Parts of the new 700,000kw Hydro-power equipment in three Gorges Power station



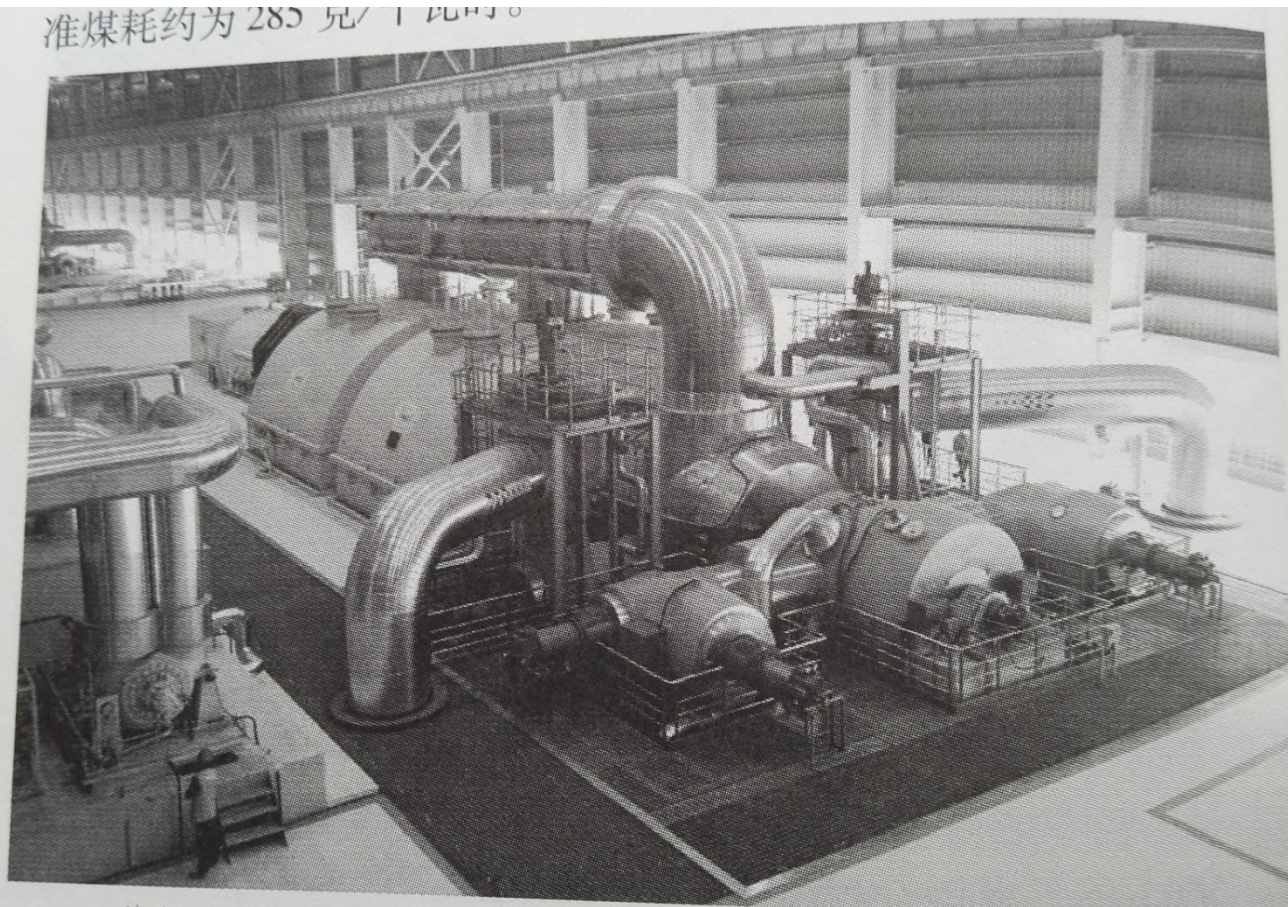
二重集团为三峡 70 万千瓦机组提供的水轮机转轮体
在精加工中



Generating equipment capacity building process—Thermal power, 10000kw



ultra supercritical thermal power generating units--100 Unit, 2008



浙江玉环电厂国产首台（套）100 万千瓦超超临界火电机组

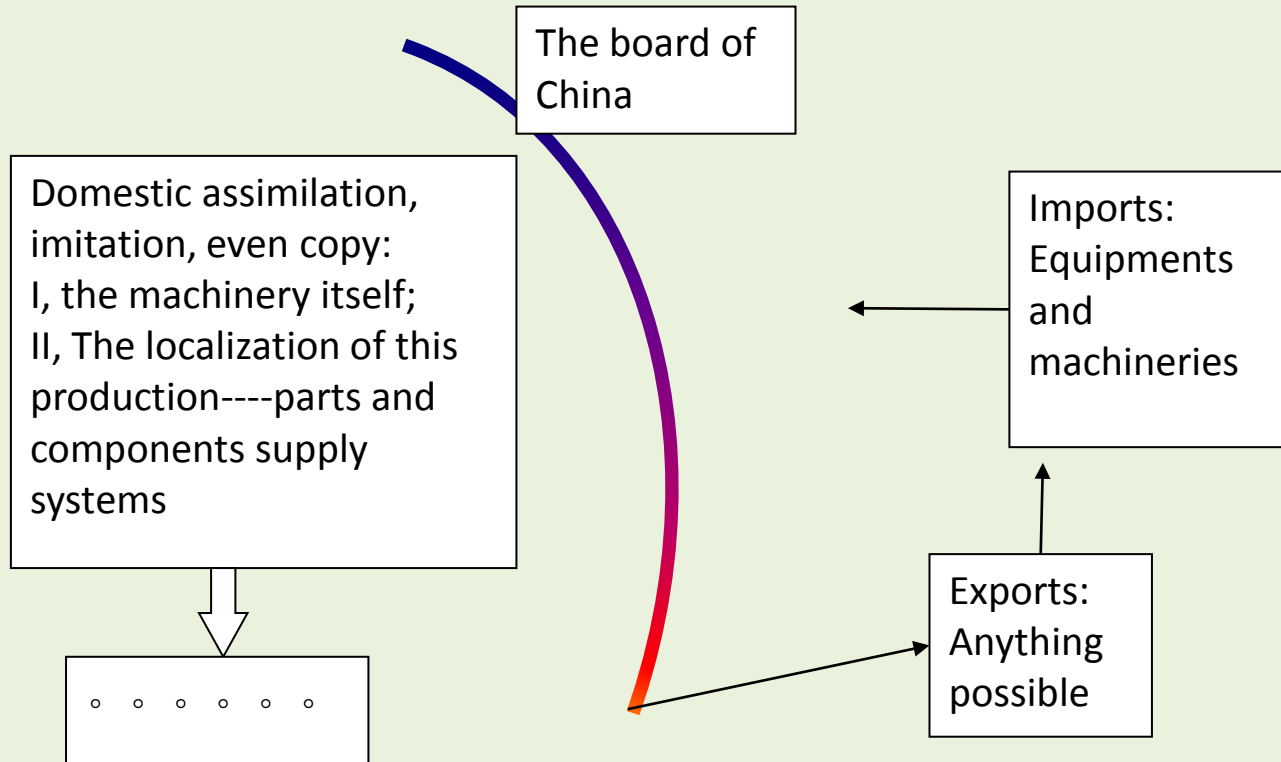
III. Local capacity building and industrial development model in China

- **Mainly to build local capacity, and support local demand;**
- **Import-substitution strategy, maybe, but there is difference---
-because China can't depend upon the import to supply the local market: so huge demand, other country can't supply China, and China can't afford this import. Take steel as an example. 2014, China produced 822 million ton crude steel, the international price of it is \$800 per ton in 2014. If China all import this steel, it will cost \$657.6 billion!**
- **Isolated and build local capacity by ourselves? Not necessary, we have imported technologies and equipment, and set up joint cooperation, joint venture firms, attracted FDI... China is very open, and local market is very competitive**

Two drivers of this model

- **1) Try the best to export everything to earn as much as foreign exchange reserves;**
- **Try the best to assimilate the imported technologies and equipments;**
- **2) Localize all the production, otherwise, was forced to import what we can't produce, and repeat the process again...**
- **3) The local capacity building was forced to do by ourselves...**

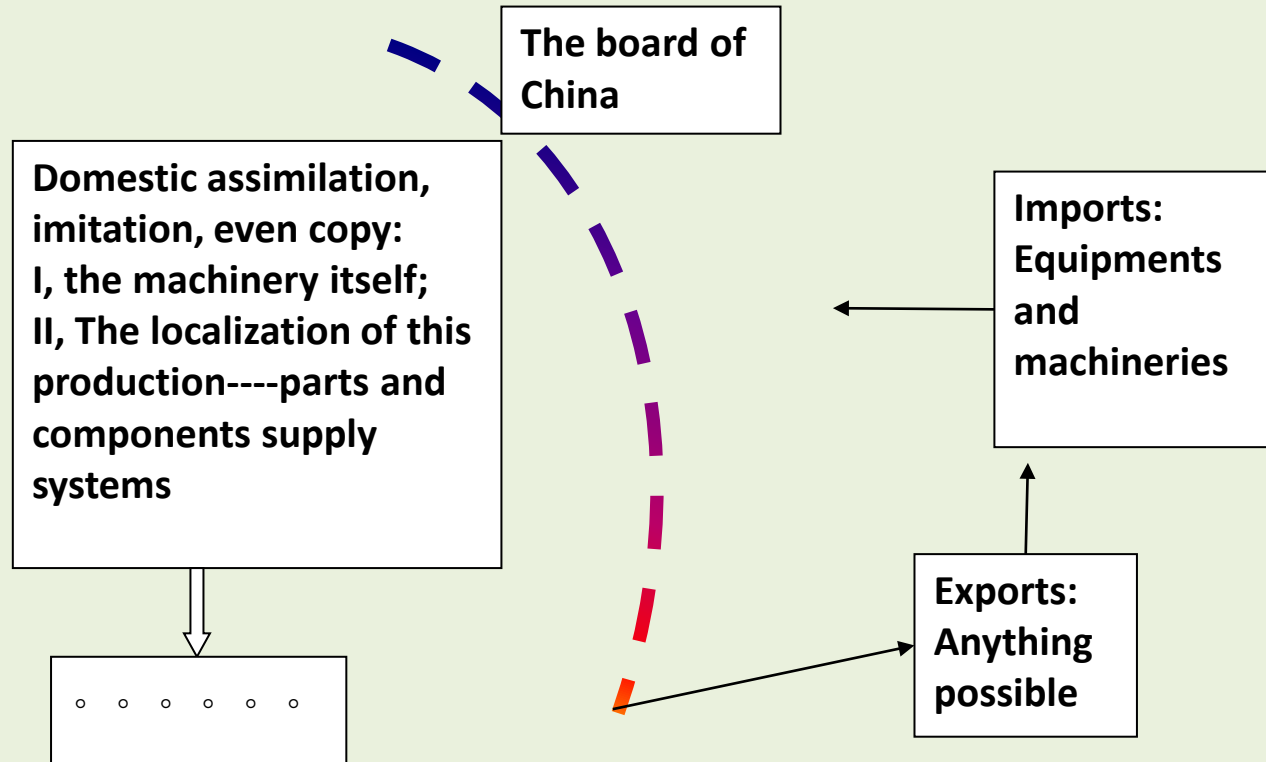
A model under almost closed economy



Local firms and local market

- **Local firms, most of them are State-owned enterprises;**
- **Local market is isolated, not by the Chinese government, but by the foreign country;**
- **Technologies and equipment importation, assimilation and then local production;**
- **Local production expansion, and technological innovation...**

A model under more open economy



Local and foreign firms, local market and export

- **Local market is open: import competition, especially foreign firms get involved deeply;**
- **Local firms produce for the local market, and a lot of them also export much;**
- **Foreign firms produce for the local market, also for the external market, especially for the processing trade.**

IV. Some comments and discussions

- **1) Why China chose this industrial development model?**
- **China was isolated by the foreign countries for a very long time;**
- **China is a very big country.**
- **2) Why China's industrial performance is not bad?**
- **Long term engagement;**
- **and active learning and capacity building process.**

- **3) Can Chinese industrial development experience or model be followed by other country?**
- **Maybe, big country, and long term enagement, and so on...**
- **Maybe not. Richar Baldwin from Swissland argued that under global value chain era, the traditional import-subsitution model is out, and China is different...**
- **What's your oppioin?**

Thank you!