



The Competitiveness of Chinese Shipbuilding Industry

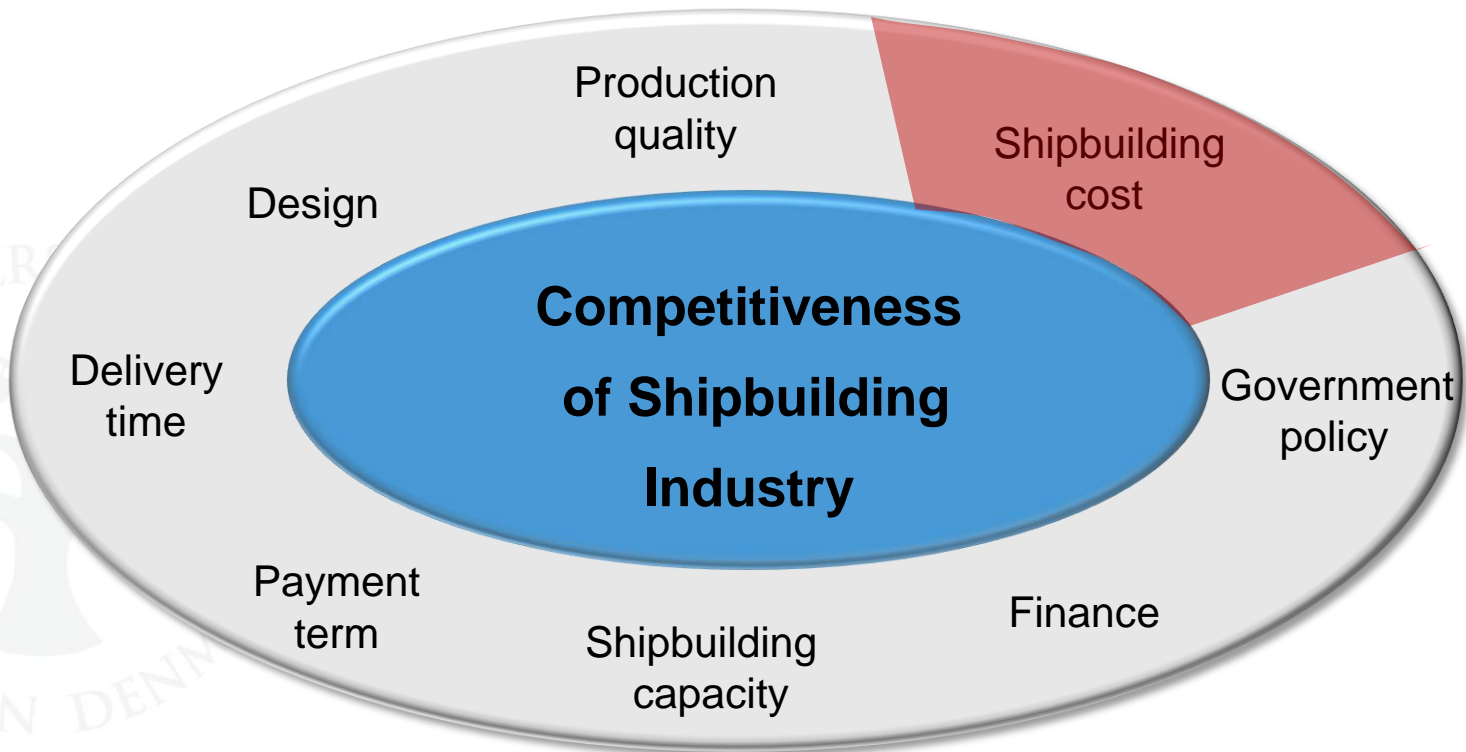
Liping Jiang, PhD Student
University of Southern Denmark
2-3 December, Blue Conference 2010





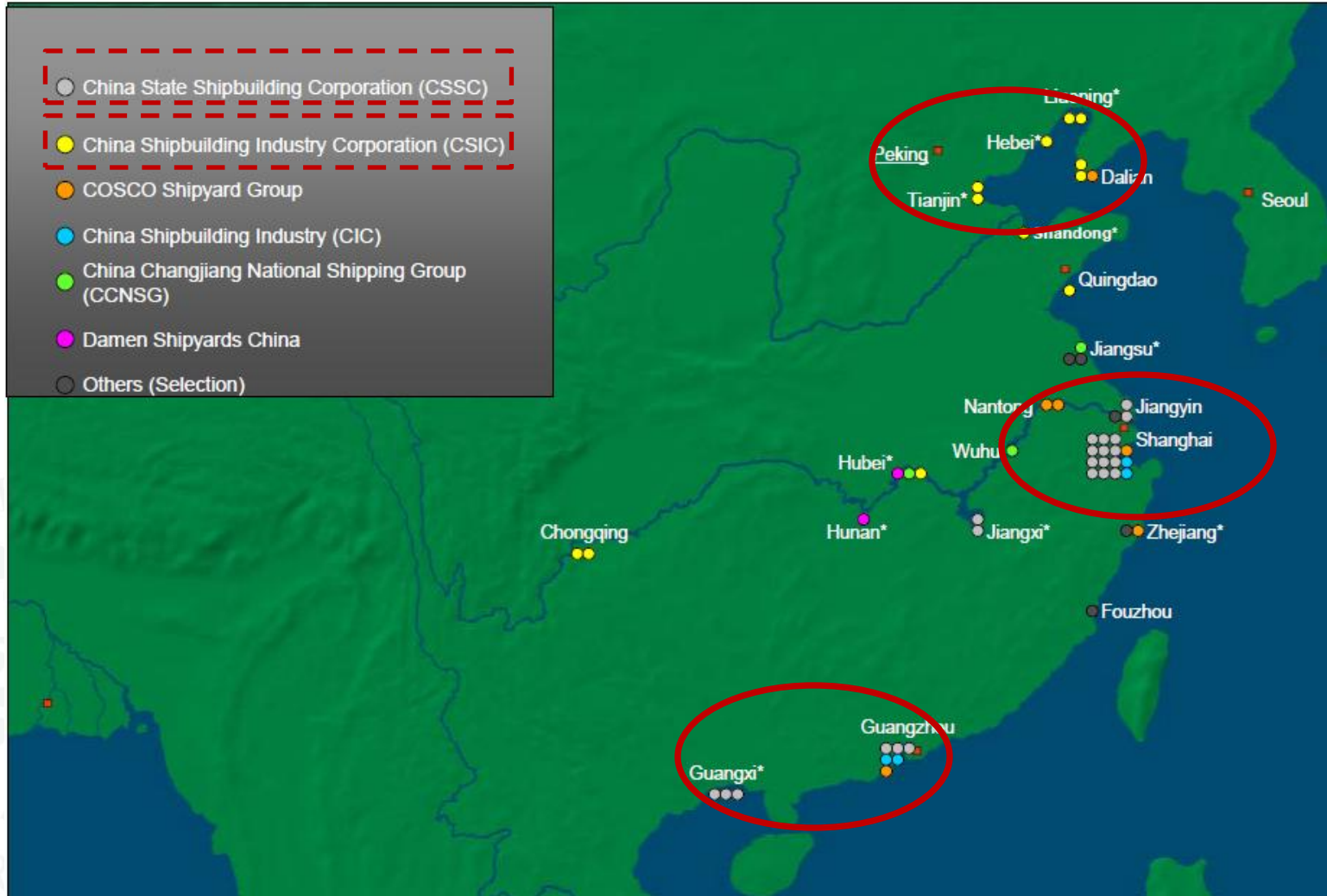
Competitiveness

Peter Marwick (1992) defines as: the ability to **WIN** and **EXECUTE** shipbuilding orders in open competition and stay in the business.





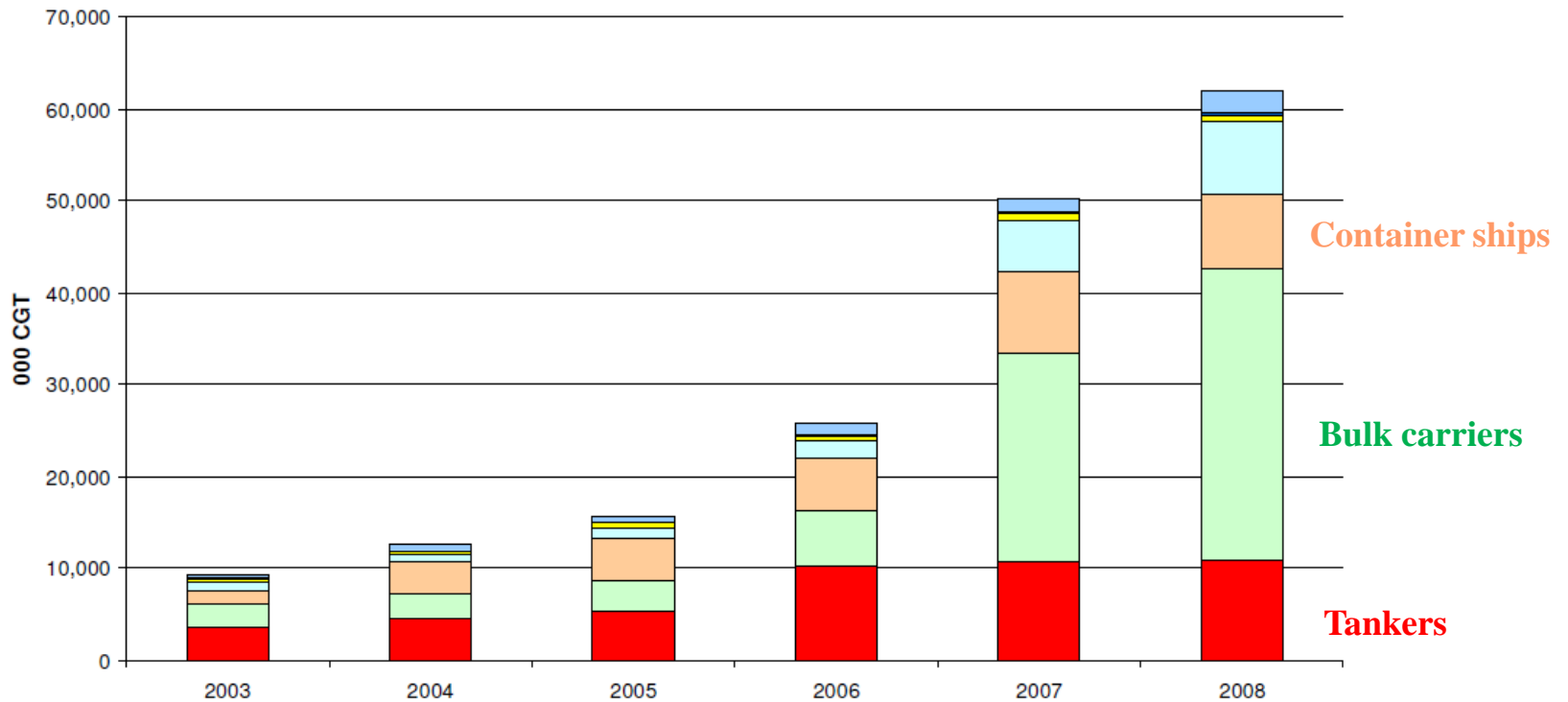
Overview – who?





Overview – what?

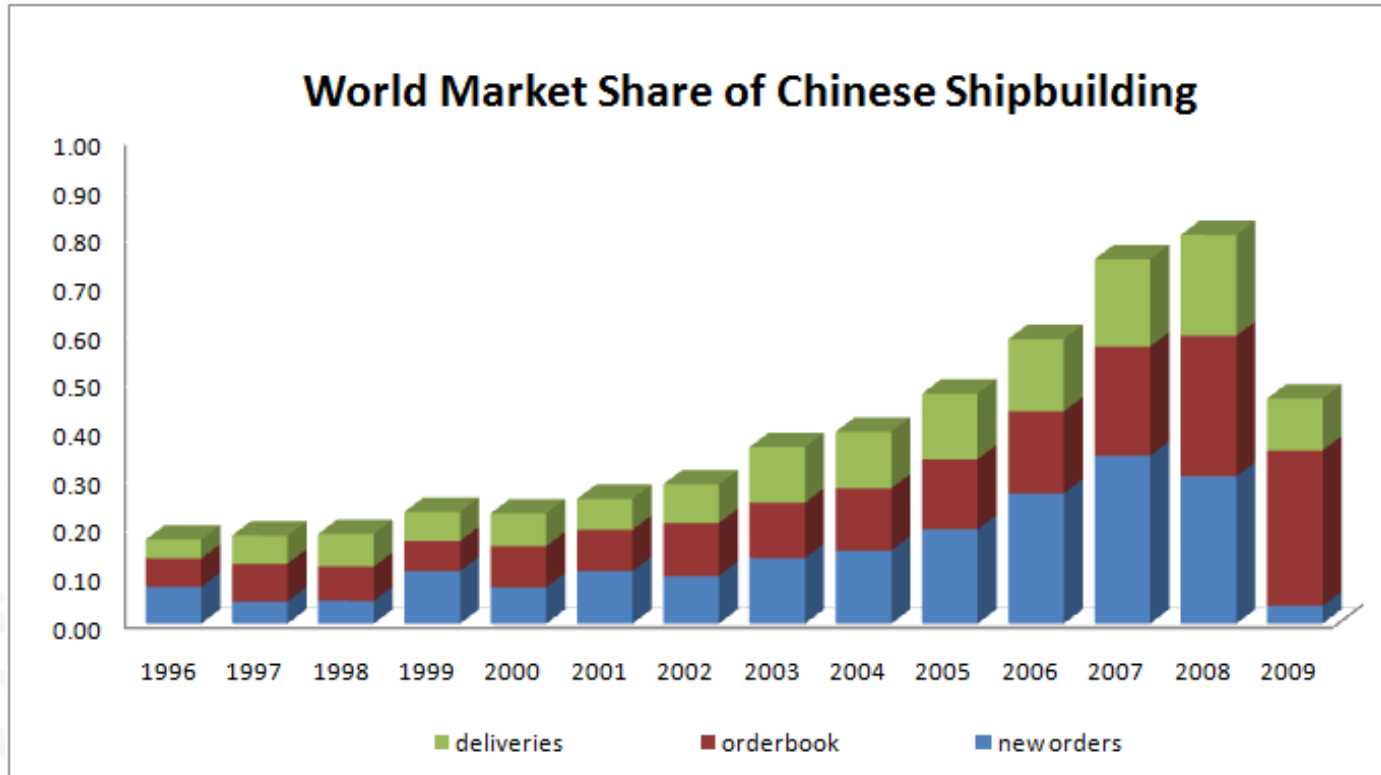
Chinese Orderbook by Ship Type



Source: CESA Shipbuilding Market Monitoring(2009)



Overview – how?



Source: Clarkson Shipping Intelligence Network (SIN)



Overview – why?

- ❖ China's accelerated ECONOMIC GROWTH and rising demand for seaborne trade of cargos
- ❖ Chinese government POLICY – 'Home products country carries'
- ❖ South Korean and Japan's new FOCUS
- ❖ Old fleet REPLACEMENT
- ❖ Competitive COST and low price





The Cost of Chinese Shipbuilding Industry

❖ Major costs: Labour + Steel + Equipment

❖ Cost index (national level)

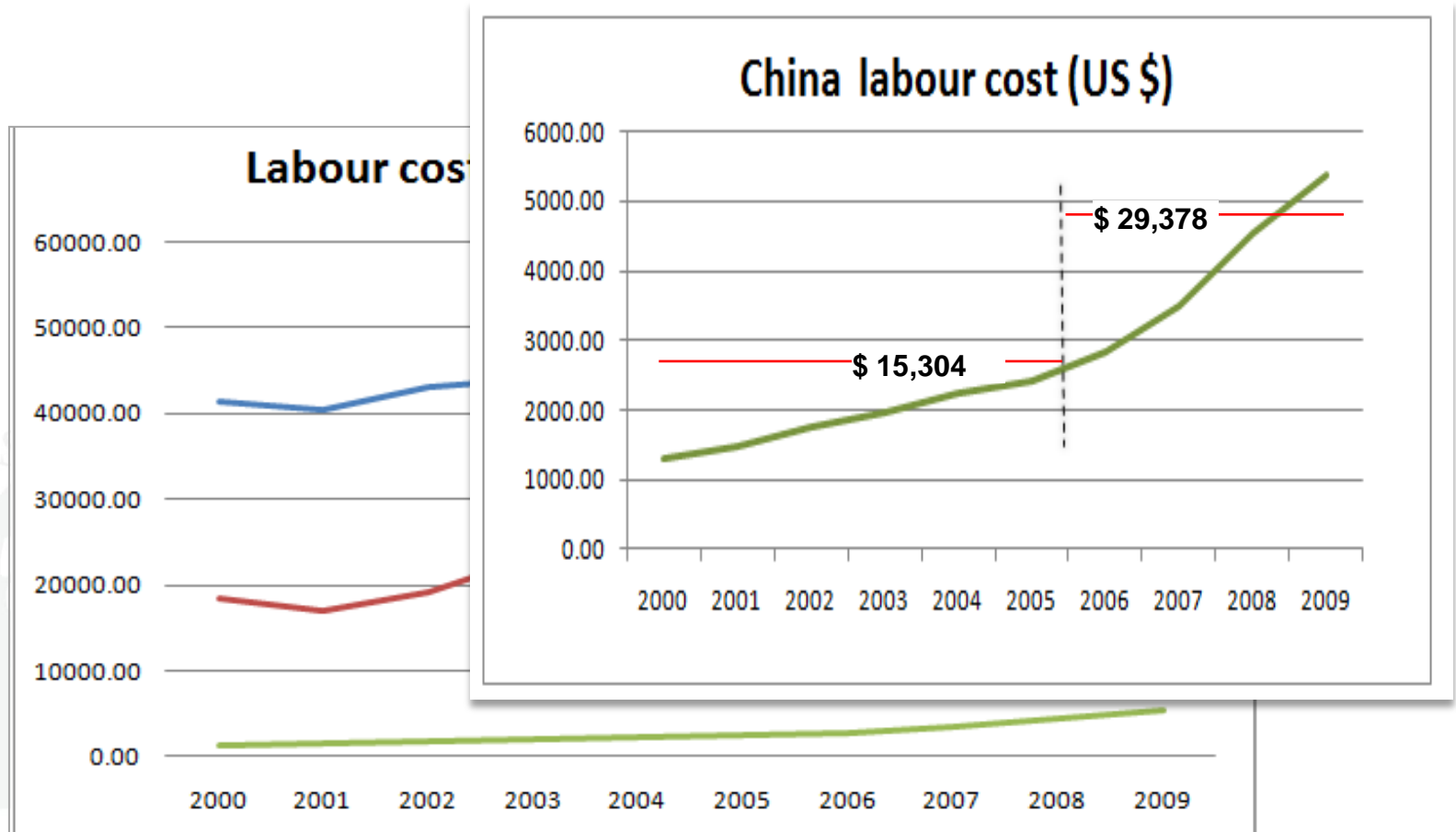
$$C = \text{exchangerate} * (W_1 * \text{labour} + W_2 * \text{steel}) + W_3 * \text{equipment}$$





Labour Cost (1)

•Wage

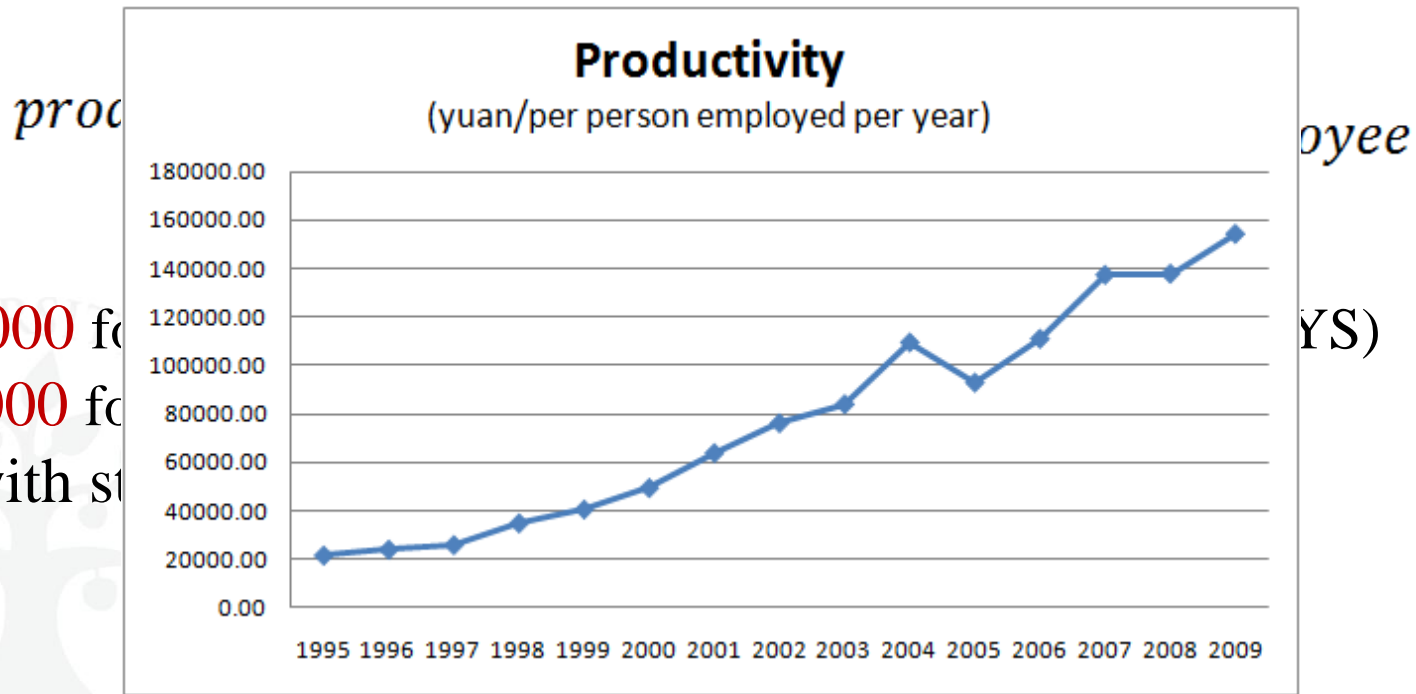


Source: OECD (for Japan and South Korea), Chinese National Bureau of Statistics (for China)



Labour Cost (2)

- **Productivity:** value-added per person employed per year



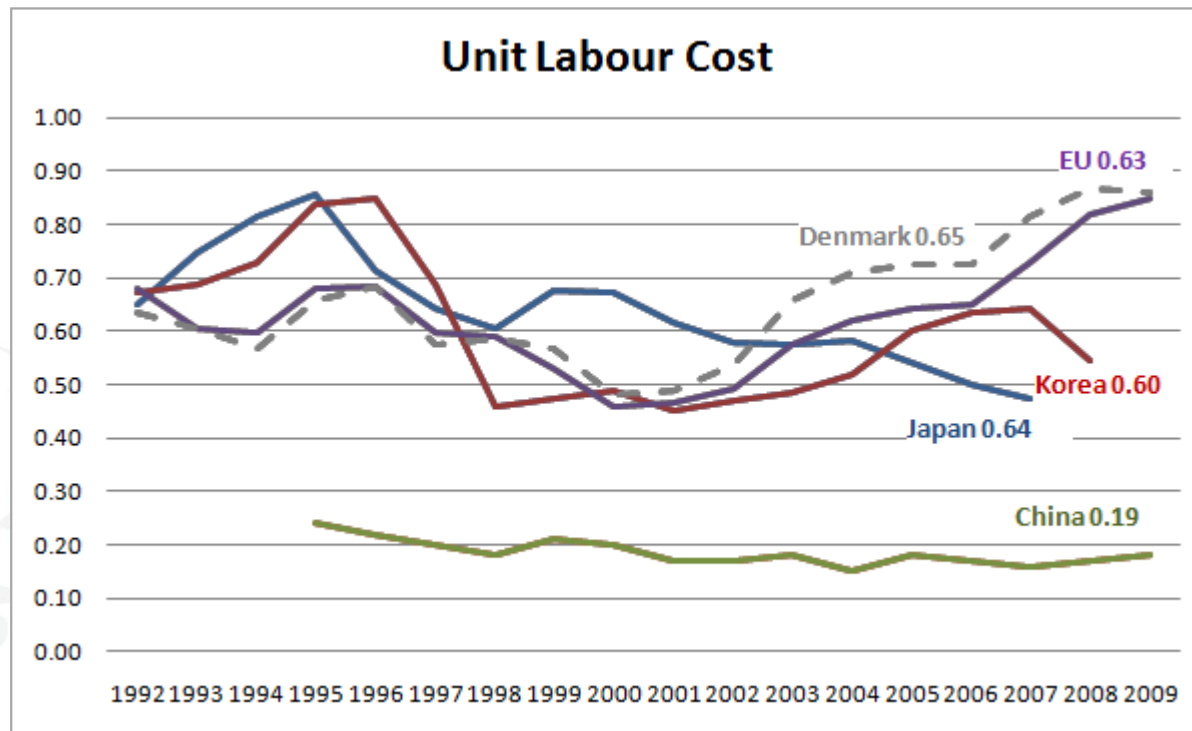
- € 40,000 for
- € 21,000 for
- But with st

Source: Chinese National Bureau of Statistics and Chinese Ministry of Labour and Social Security



Labour Cost (3)

• **Unit labour cost = wage / productivity**



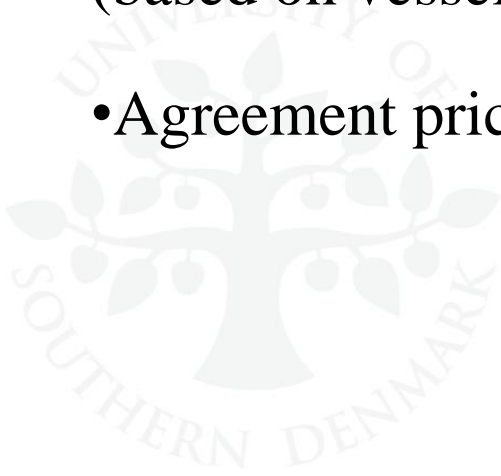
Source: OECD, Chinese National Bureau of Statistics and Chinese Ministry of Labour and Social Security



Steel Cost (1)

Sources of steel:

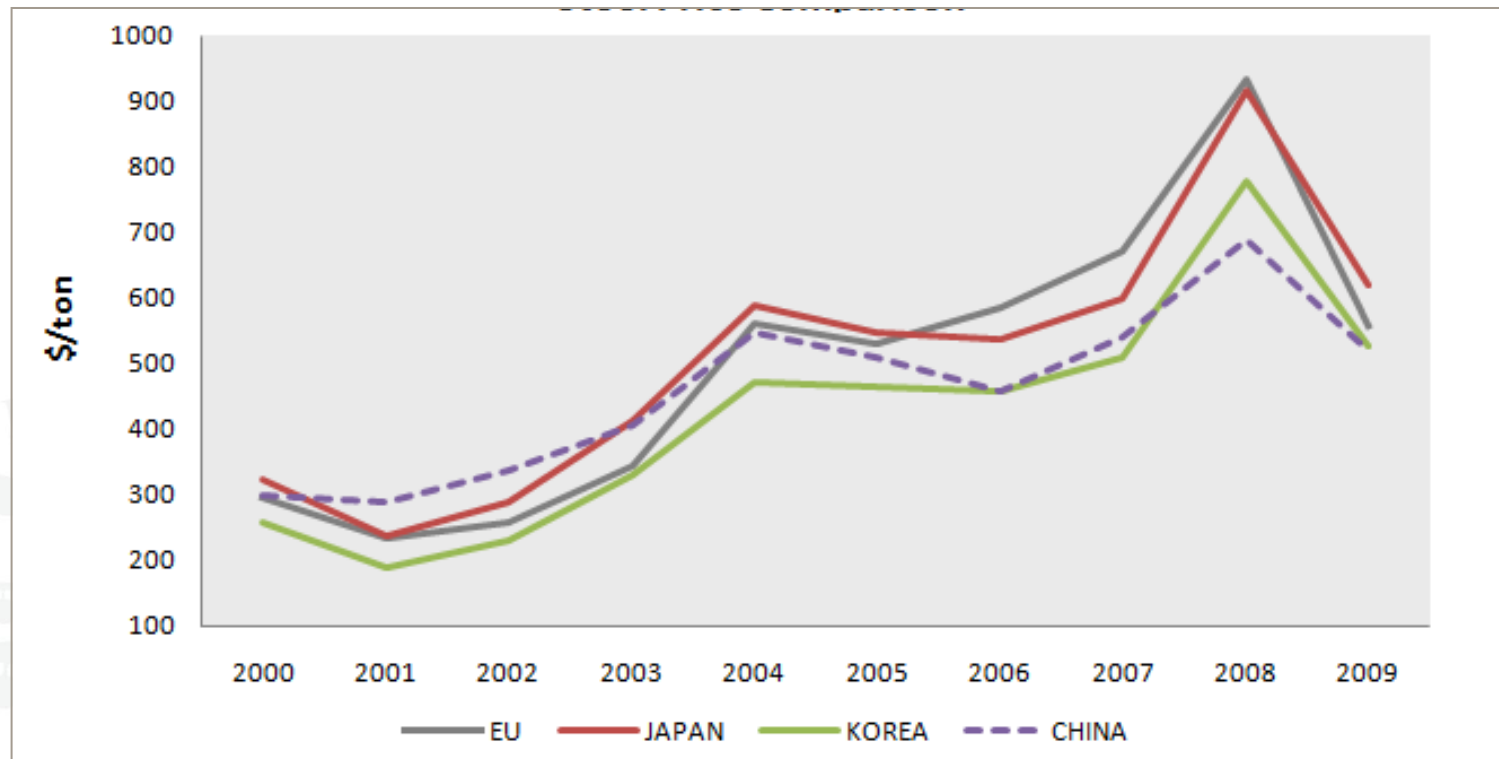
- Mainly from domestic steel mills, others from Japan and South Korea, even from Europe.
- Make an agreement on the price of steel with domestic mills (based on vessel)
- Agreement price is less effective for small yards





Steel Cost (2)

Domestic steel rice Comparison



Source: Steel Business Briefing



Equipment Cost (1)

Modern shipyard is becoming a final assembly facility with 50-70% of the value added comes from external suppliers.

The sources of equipment:

- **Domestic supply**

initially started with state enterprises

- **Import from Japan, South Korea and Europe**

weak production capacity

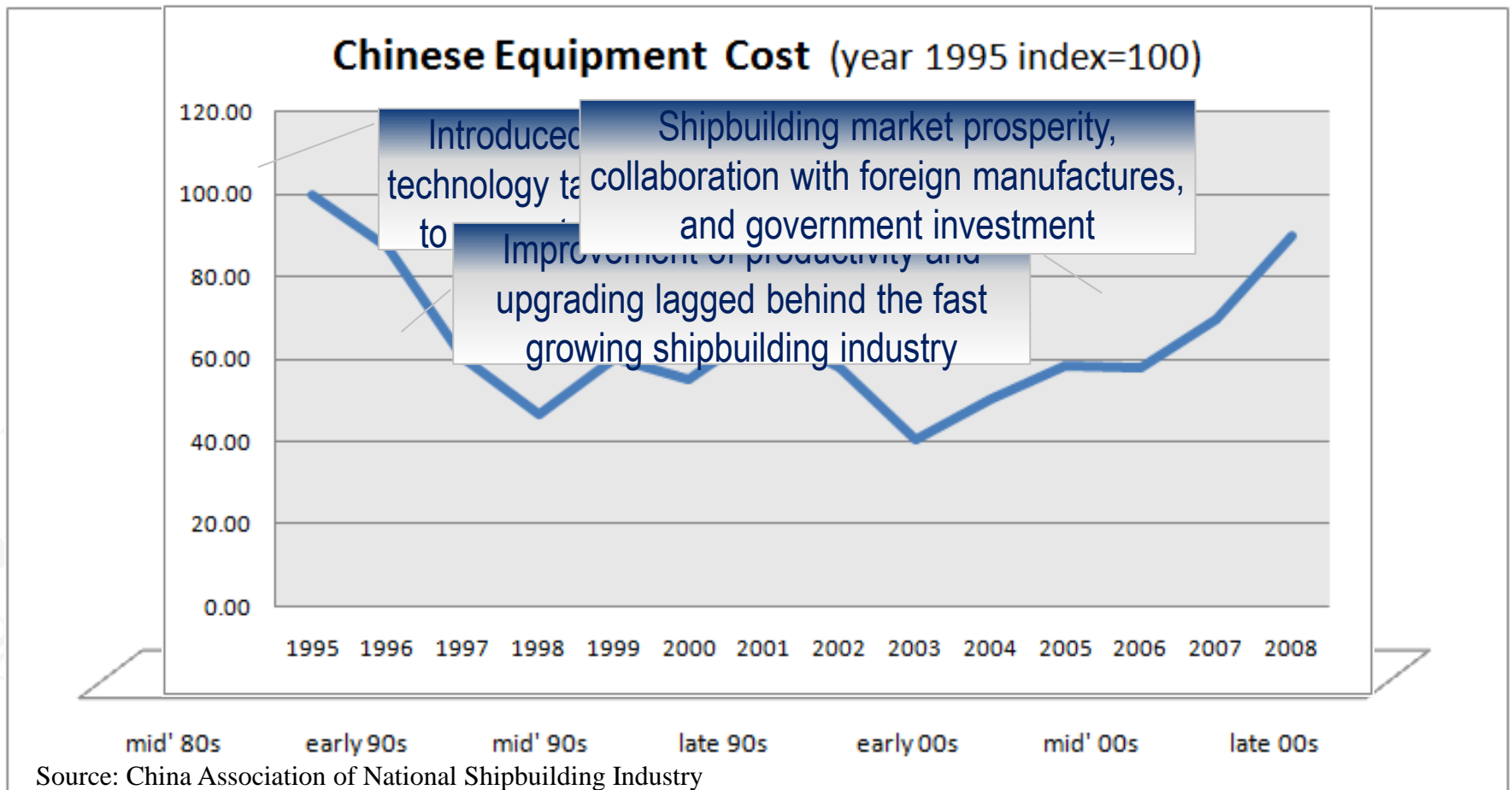
- **Licensing company**

manufactures e.g. MAN B&W, Wärtsilä licensed to Chinese companies



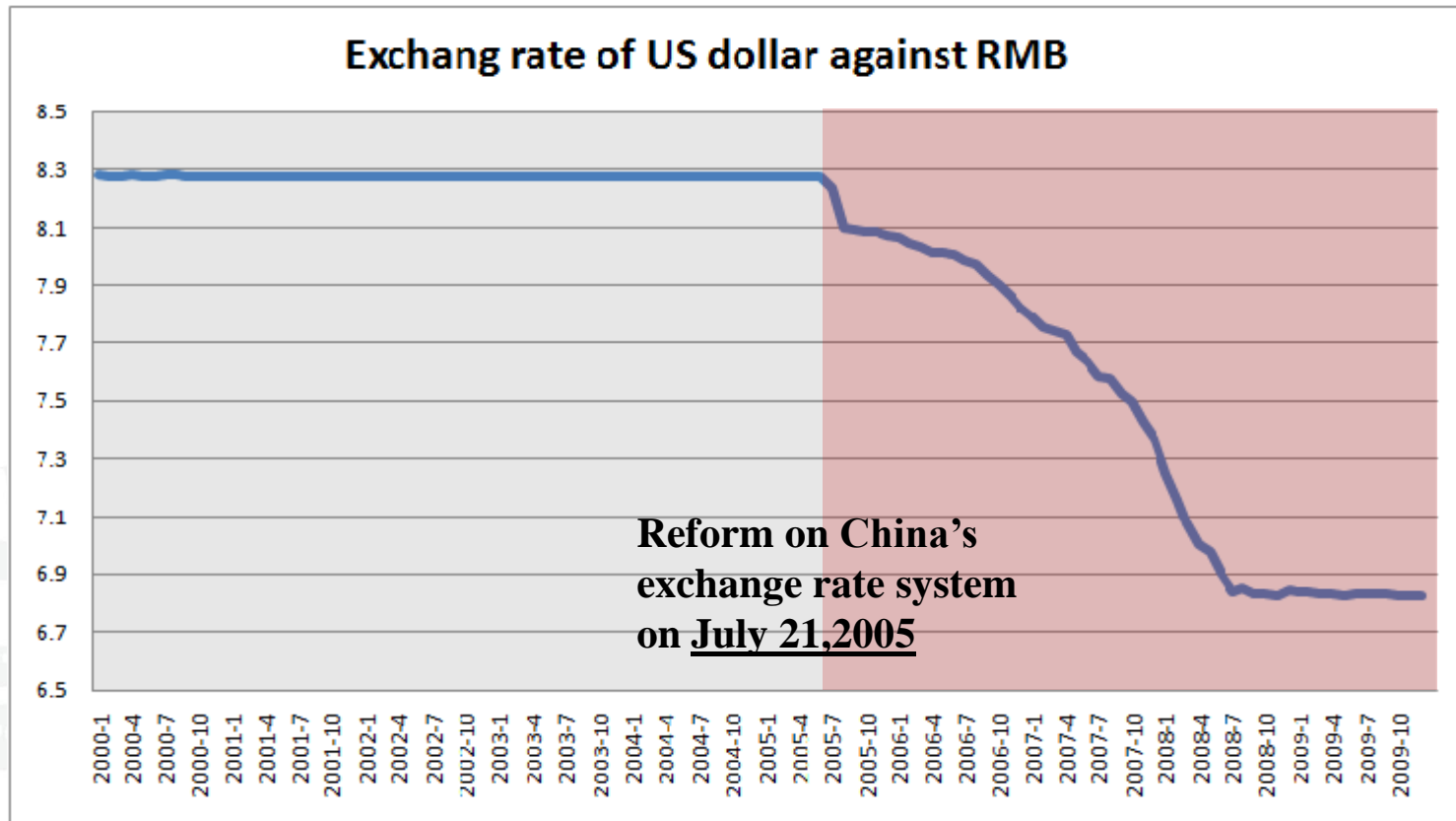
Equipment Cost (2)

Weakness --- low localization rate & high import dependency





Exchange rate (1)



Source: The people's bank of China

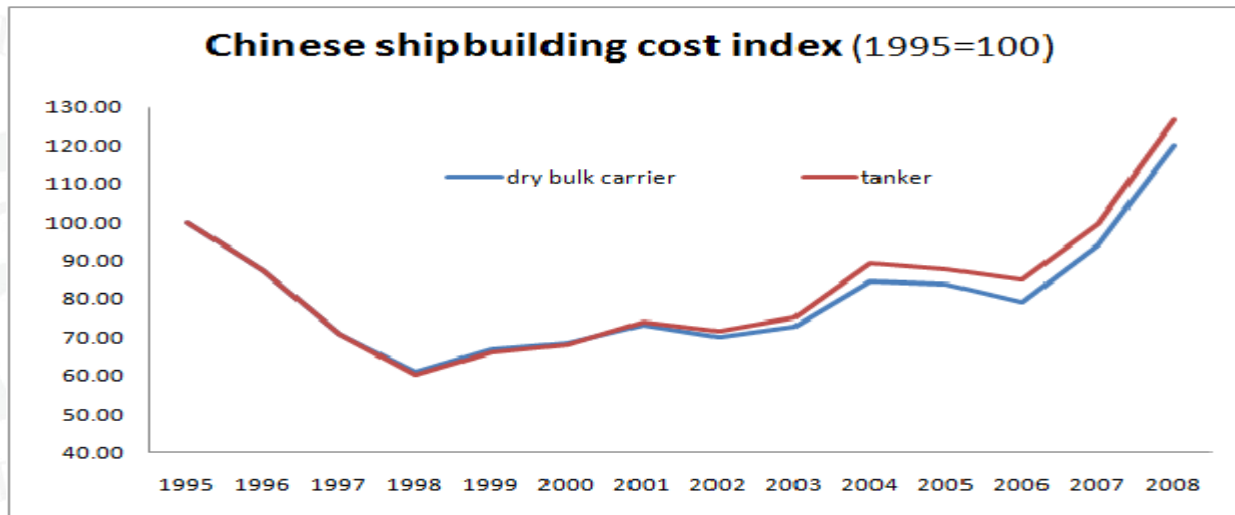


Cost index

The share of cost components

share	Labour	Steel	Equipment
Dry Bulk Carrier	10%	38%	52%
Tanker	6%	46%	48%

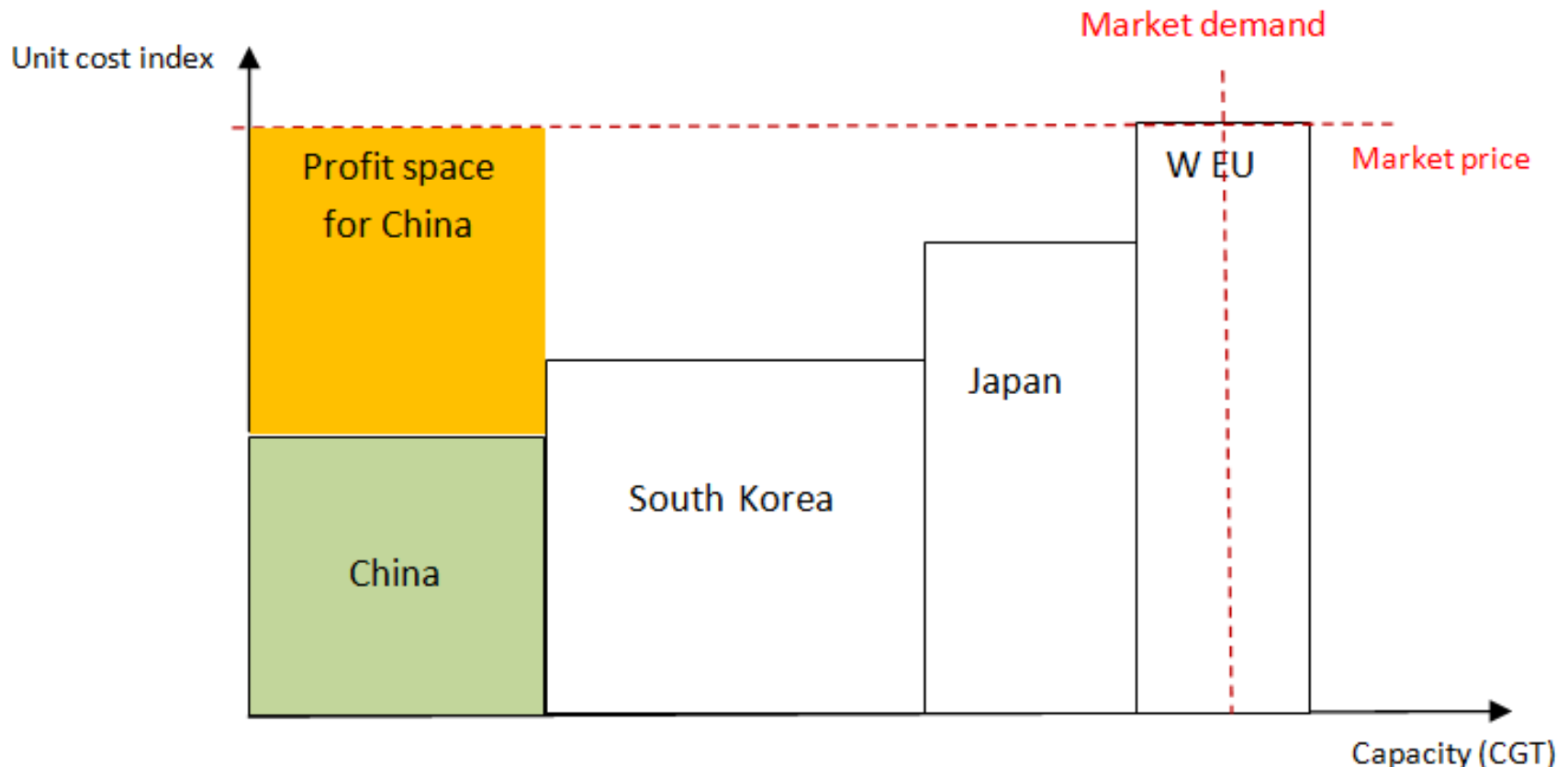
$$C = \text{exchangerate} * (W_1 * \text{labour} + W_2 * \text{steel}) + W_3 * \text{equipment}$$





Competitiveness (1)

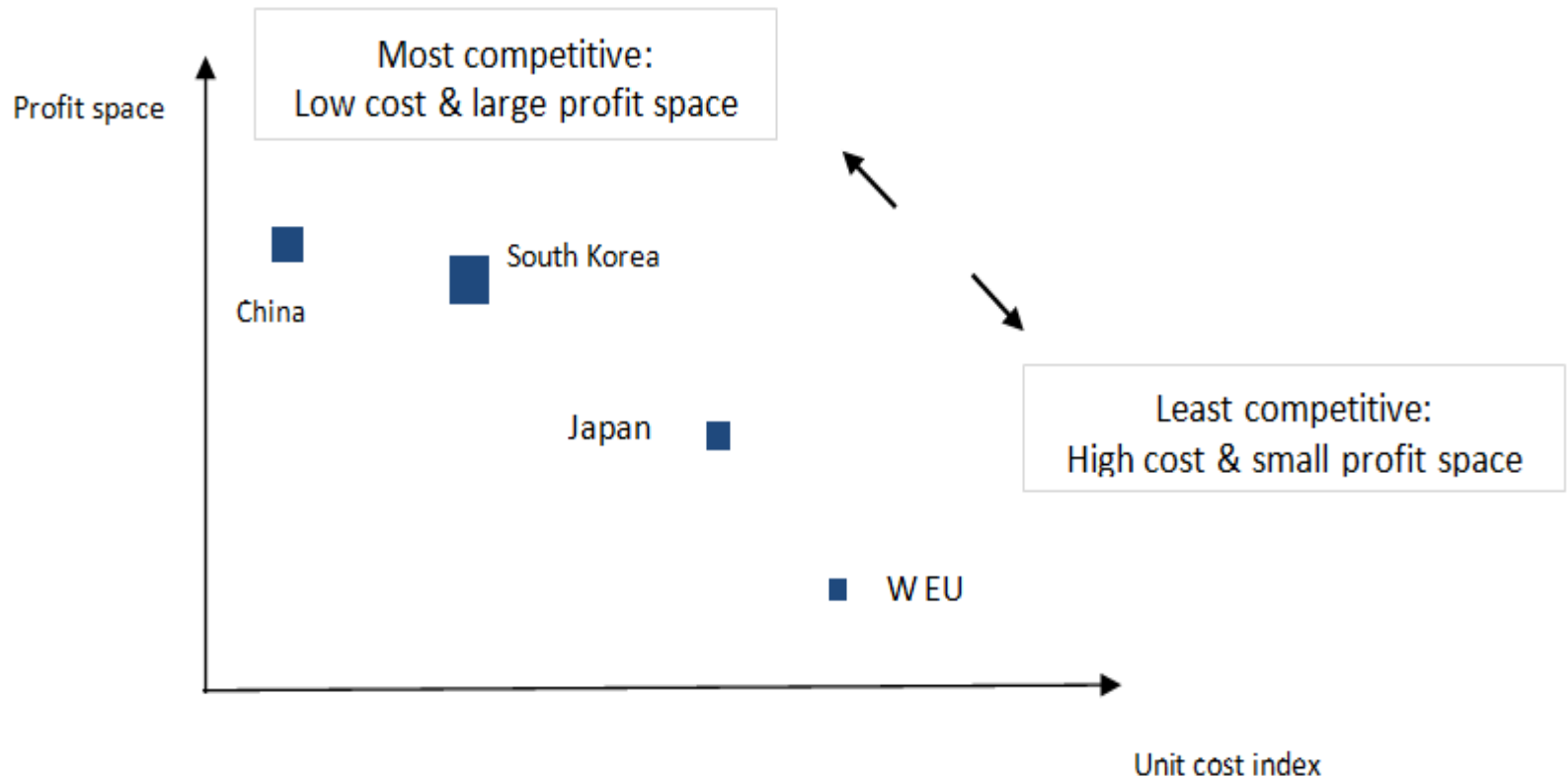
Industry cost curve of world shipbuilding market





Competitiveness (2)

Indicative perceptual map of shipbuilding competitiveness

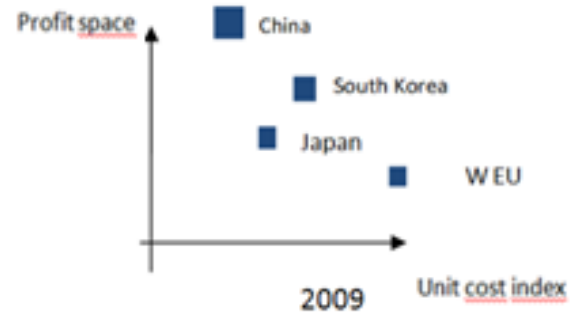
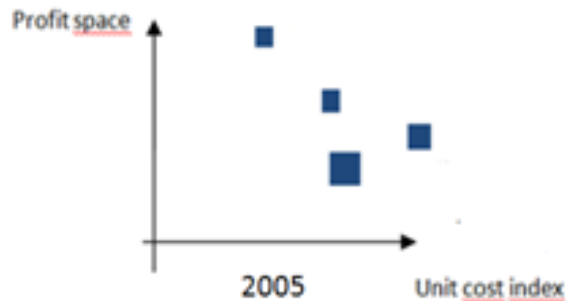
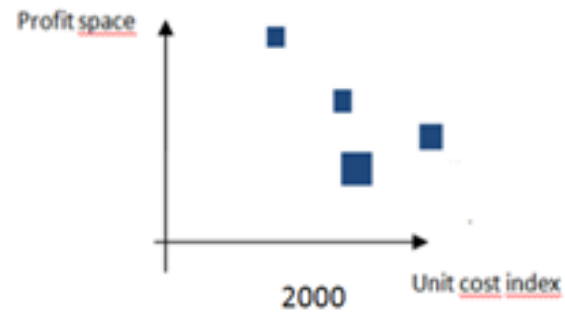
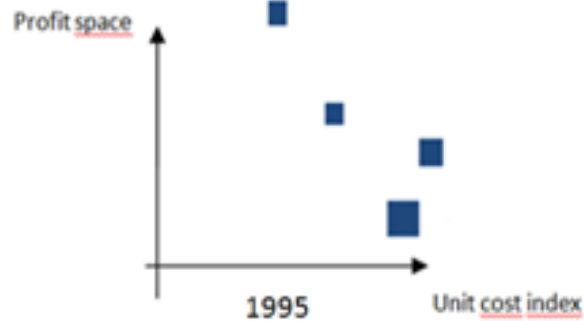




Competitiveness (3)

The time dimension:

The Chinese price competitiveness compared to previous years





Conclusion

A general **upward trend of cost** in the Chinese shipbuilding industry

How to keep competitive position in the future?

- Increase productivity
- Collaboration with steel mill
- Improve production capability of marine equipment
- Government investment on R&D



Thank you for your attention!

Liping Jiang, PhD Student

University of Southern Denmark

lji@sam.sdu.dk

