

# US-Japan Workshop on Climate Policies towards a Low Carbon Future

## Assessment of Japan's Emission Trading Initiatives: Effectiveness, Efficiency and Concern on the Carbon Leakage

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# 1. Effectiveness

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# Born to be ineffective ?



**Voluntary, not stringent and no penalty**



**No verification of emissions needed if the regulated companies will not sell the allowance**



**Questionable (?) quality of the domestic offsets**



**Only JVETS and J-VER keep the integrity**



## 2. Efficiency

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# Born to be inefficient ?



**Free allocation**



**Intensity target**



**Up-dating of the allocation**



**Price control (guidance?) by the government**



**Competition between domestic credits**



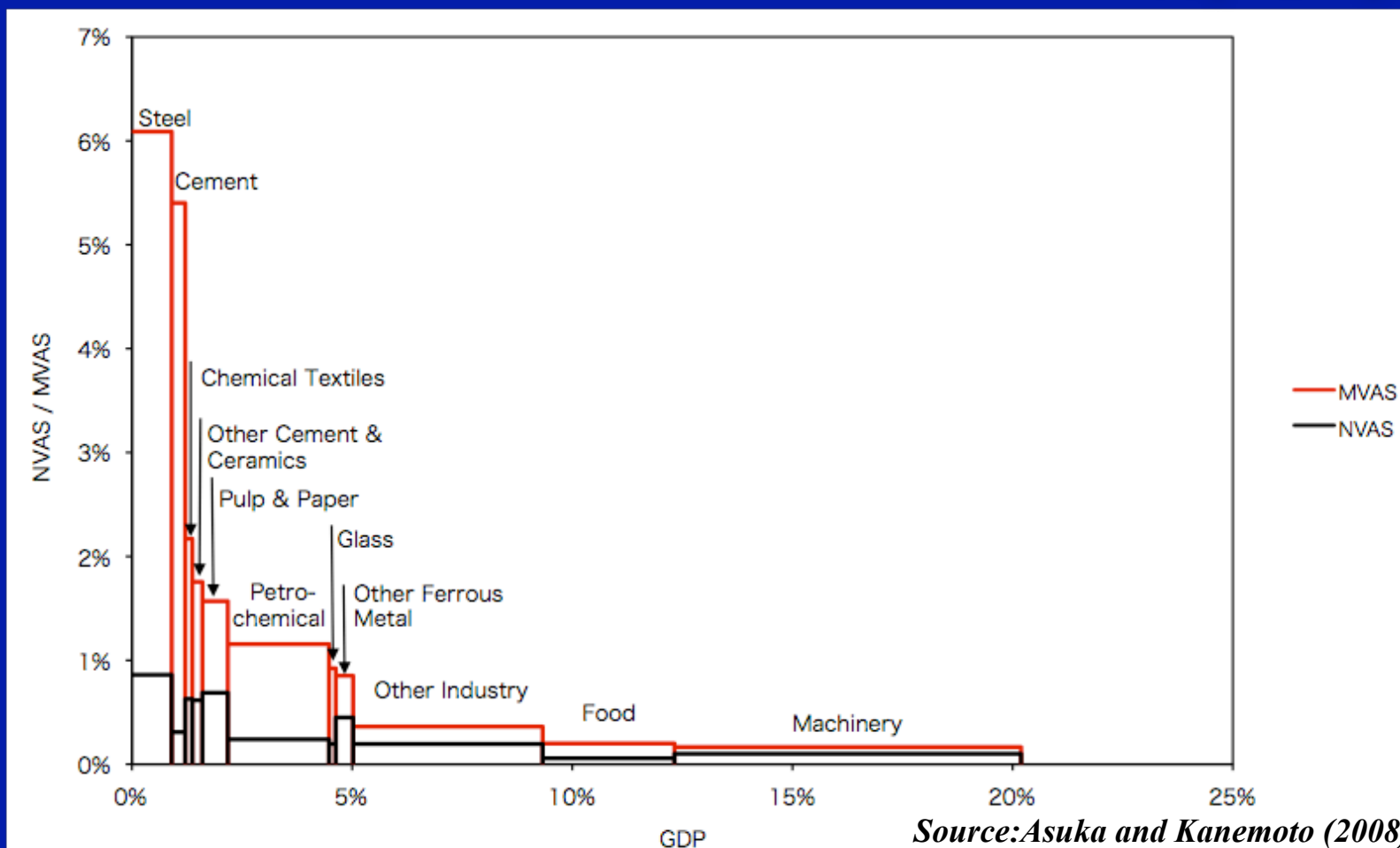
### **3. Value at stake in Japan**

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# Impacts of ETS on Industrial Sector (case of Japan)

VAS and GDP

CO<sub>2</sub>@1500 JPY/ton



Source: Asuka and Kanemoto (2008)

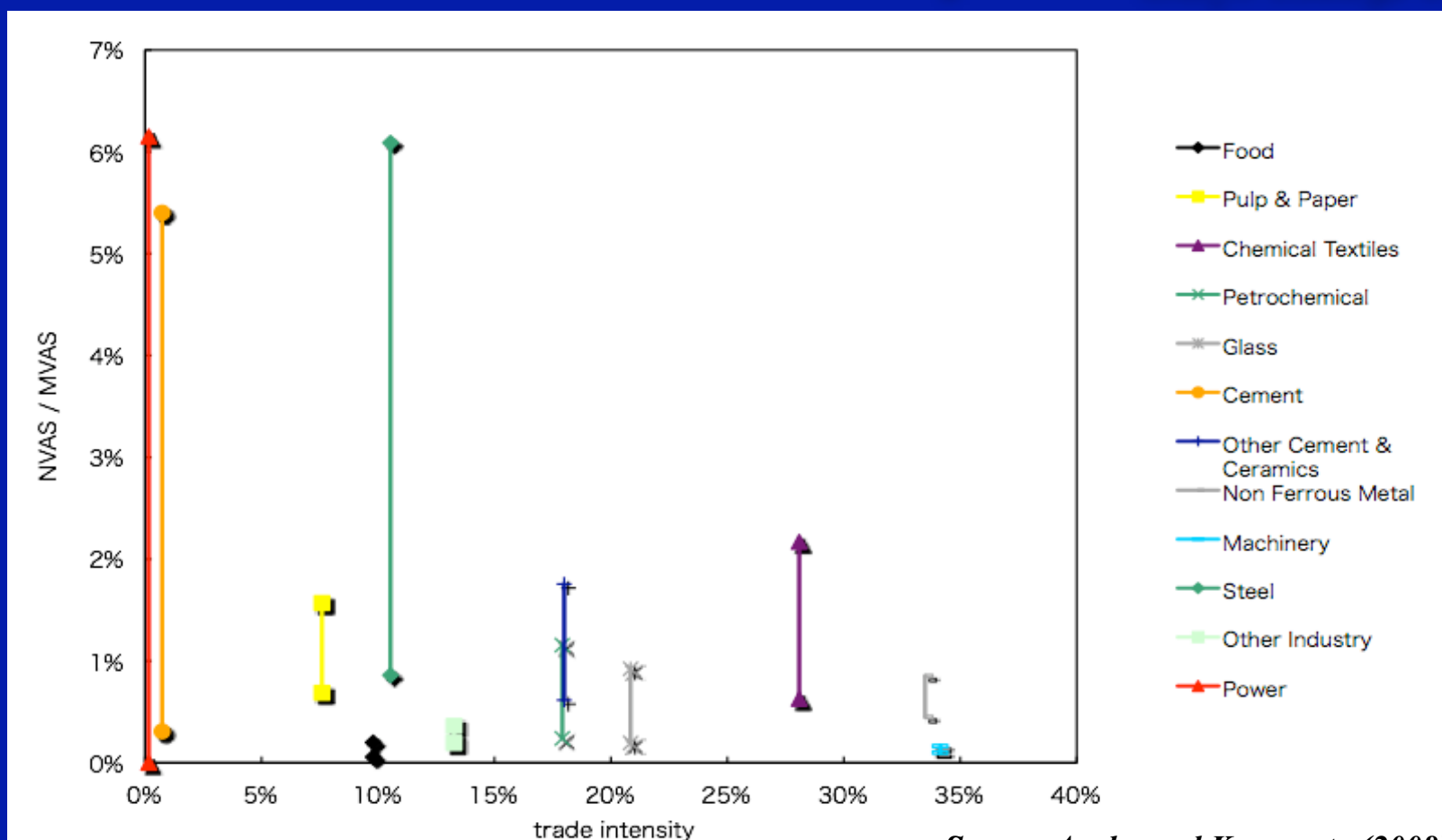


### 3. Value at stake in Japan

# Impacts of ETS on Industrial Sector (case of Japan)

VAS and trade intensity

CO<sub>2</sub>@1500JPY/ton



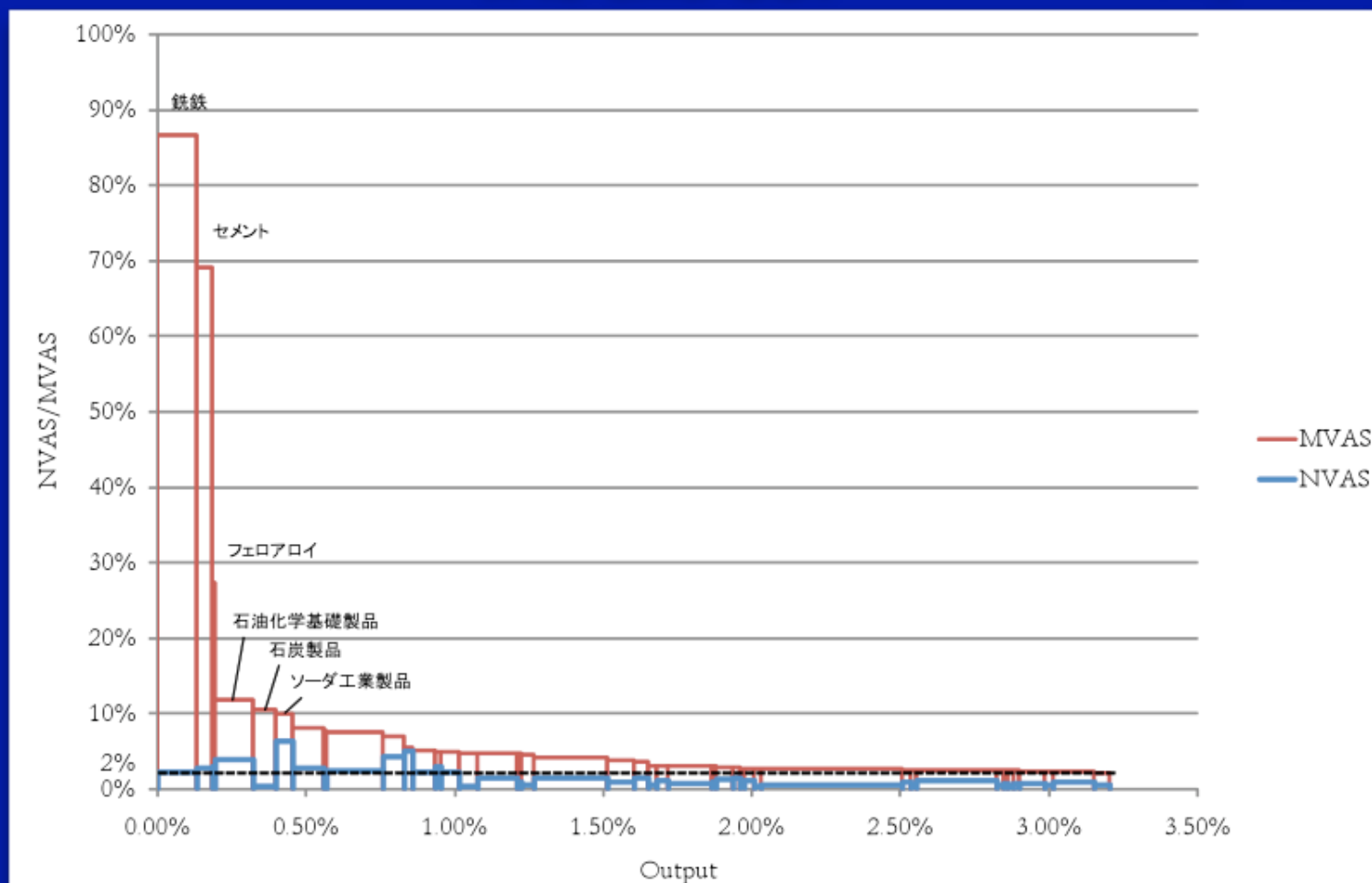
Source: Asuka and Kanemoto (2008)

### 3. Value at stake in Japan

# Impacts of ETS on Industrial Sector (case of Japan)

VAS and GDP

CO<sub>2</sub>@2000 JPY/ton



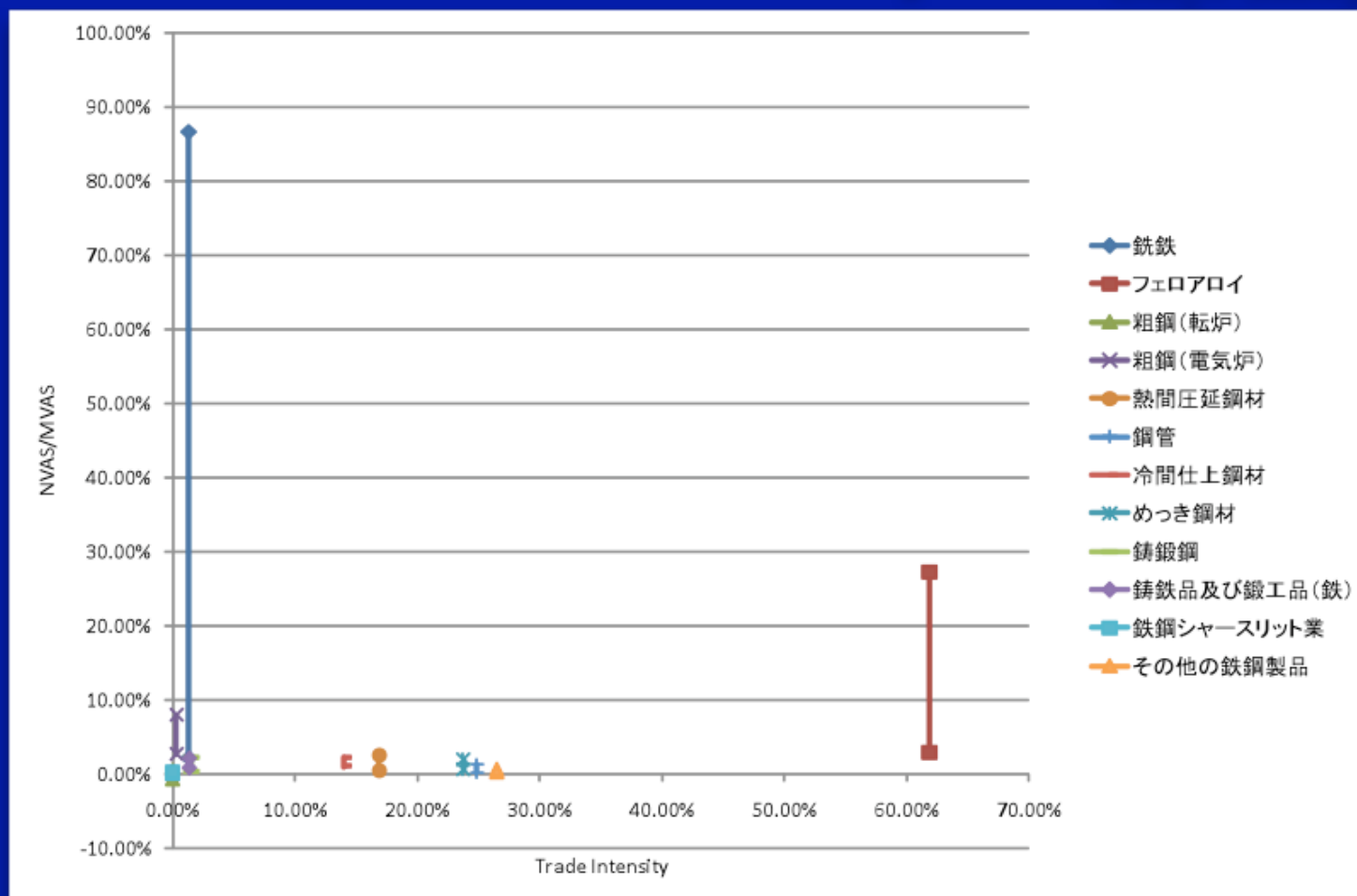
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### 3. Value at stake in Japan

# Impacts of ETS on Industrial Sector (case of Japan)

## VAS and trade intensity

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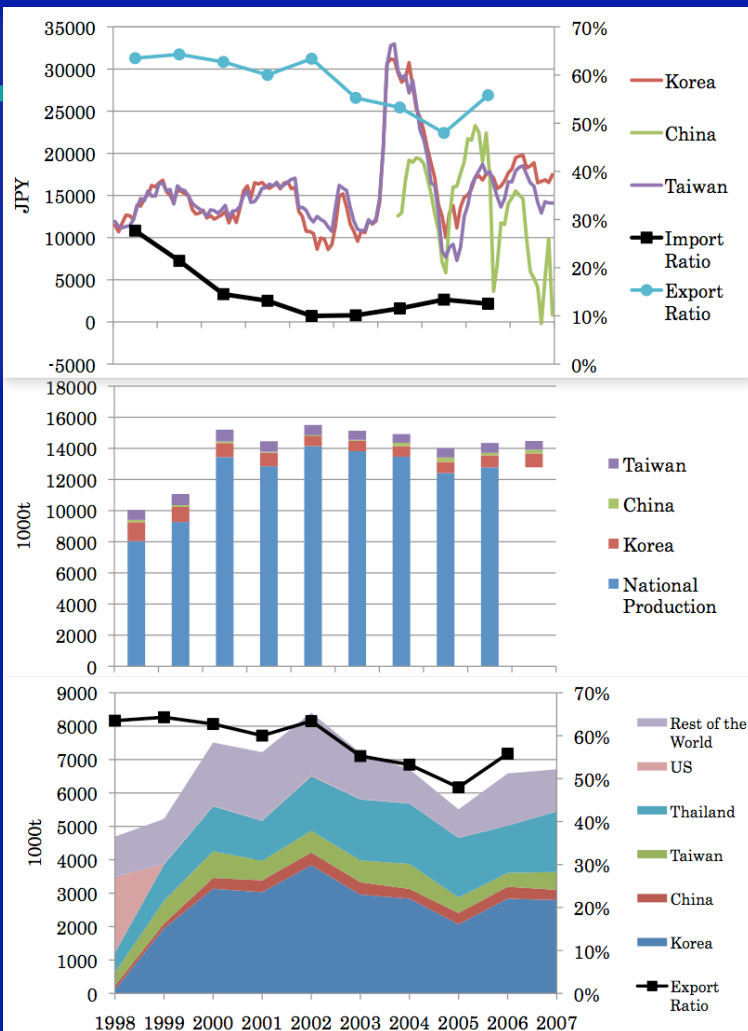


Source: Asuka and Kanemoto (2009)

## **4. Price difference and Trade pattern: case of steel**

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# Will carbon leakage really happen?



**Price difference  
(domestic price -  
import price), export  
ratio and import ratio**

**Domestic  
production, import  
from abroad**

**Export from  
Japan**

**Case of flat steel  
(1998-2007)**

1. Japan's competitors are Korea, Taiwan, and China
2. So far, no clear relationship between price difference and trade pattern

*Source: Asuka and Kanemoto (2008)*



## **5. China specific factors**

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# Rapidly changing economical/ political/business environment

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**Energy conservation**



**Voluntary self-restriction on export**



**Economic integration in the Asian region**

## 5. China specific factors

# Efficiency: Better than Japan's average

Comparison of the energy intensity among steel making plants both in China and in Japan (MJ/ton, as of 2004)

|                                     |                         | Energy consumption intensity | Cokes making process | Sinter making process  | Iron making process  | Steel making process with converter | Casting process with rolling mill |
|-------------------------------------|-------------------------|------------------------------|----------------------|------------------------|----------------------|-------------------------------------|-----------------------------------|
| ①                                   | China big enterprises   | 20.64                        | 4.16                 | 1.94                   | 13.65                | 0.99                                | 2.72                              |
| ②                                   | China small enterprises | 30.59                        | 6.71                 | 3.18                   | 17.32                | 2.20                                | 8.40                              |
| ③                                   | China best enterprise   | 17.45                        | 2.58<br>(Bao steel)  | 1.52<br>(Hanzou steel) | 11.57<br>(Bao steel) | -0.11<br>(Wuhang steel)             | 1.57                              |
| ④                                   | Japan average           | 19.20                        | 2.78                 | 1.55                   | 11.59                | -0.08                               | 1.81                              |
| Differences inside of China         | ② - ①                   | 9.95                         | 2.54                 | 1.24                   | 3.68                 | 1.21                                | 5.68                              |
|                                     | ② - ③                   | 13.14                        | 4.13                 | 1.65                   | 5.75                 | 2.31                                | 6.83                              |
|                                     | ① - ③                   | 3.19                         | 1.58                 | 0.42                   | 2.07                 | 1.10                                | 1.15                              |
| Differences between Japan and China | ① - ④                   | 1.43                         | 1.38                 | 0.39                   | 2.05                 | 1.07                                | 0.90                              |
|                                     | ② - ④                   | 11.39                        | 3.93                 | 1.63                   | 5.73                 | 2.28                                | 6.58                              |
|                                     | ③ - ④                   | -1.76                        | -0.20                | -0.03                  | -0.02                | -0.03                               | -0.24                             |

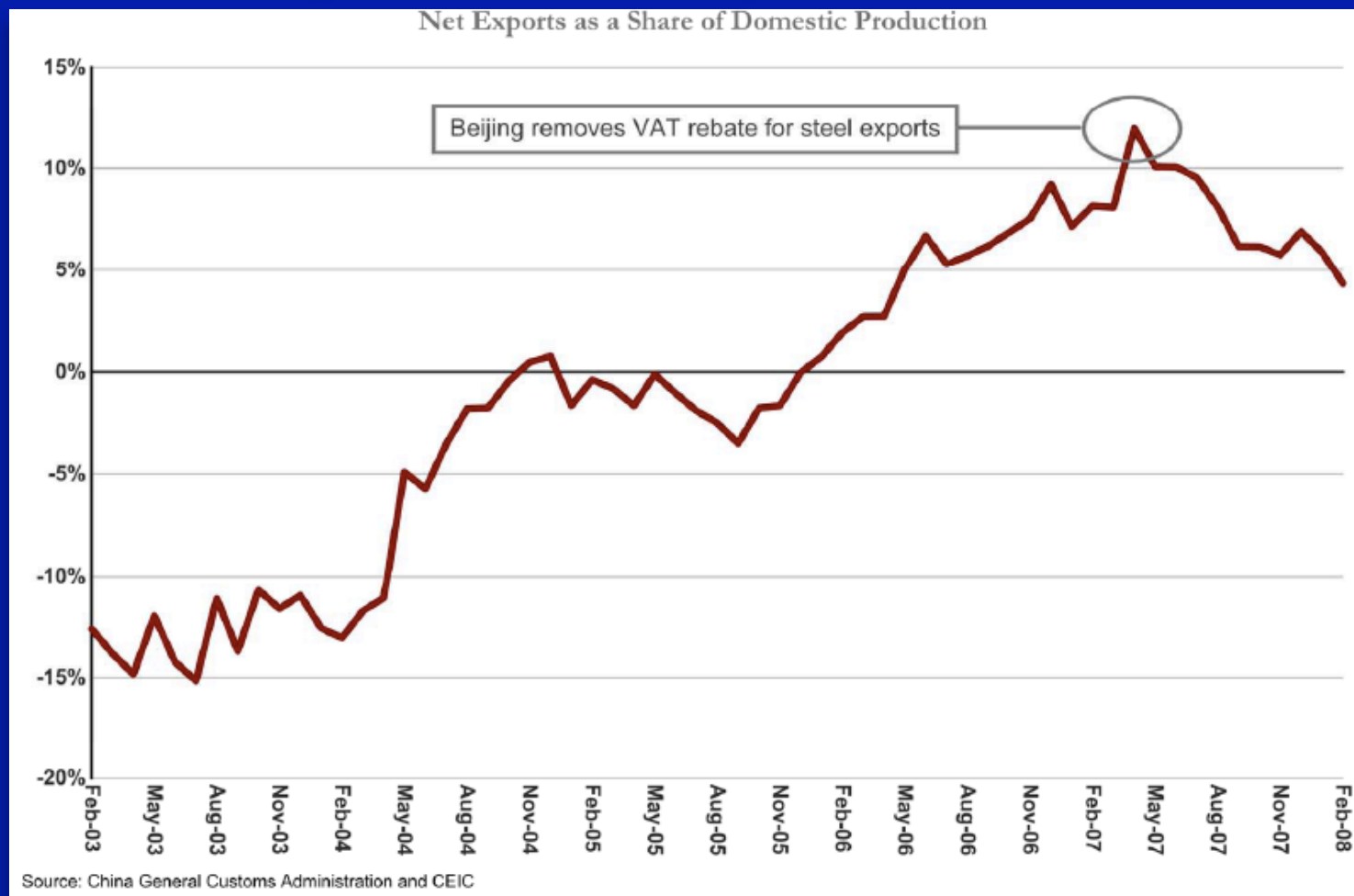
Source: Ning Yandong and Tonooka Yutaka (2008) "Study on Production Formation and Energy Consumption in Chinese Iron and Steel Industry", *Energy and Resources*, Vol.29, No.5, 313-318.



## 5. China specific factors

# Effects of the voluntary self-restriction

## Change of the steel export ratio of China



*Source: Peterson  
Institute (2008)*



## 6. Conclusion

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# Bumpy ride ahead...be optimistic!



**Substantial infrastructure has been built**



**Post-2012 target is crucial for the real implementation/improvement**



**Domestic constituency is still problematic**



**Myth of carbon leakage?**



**Methodology for the benchmarking**

