

**RIETI Policy Symposium**

# **International Economic Shocks and the Challenges of International Corporations**

**Ryuhei Wakasugi**

**Research Counselor, RIETI**

**Professor**

**Kyoto University and Keio University**





## Global Recession after Financial Crisis: Asymmetric Effects on Economic Growth

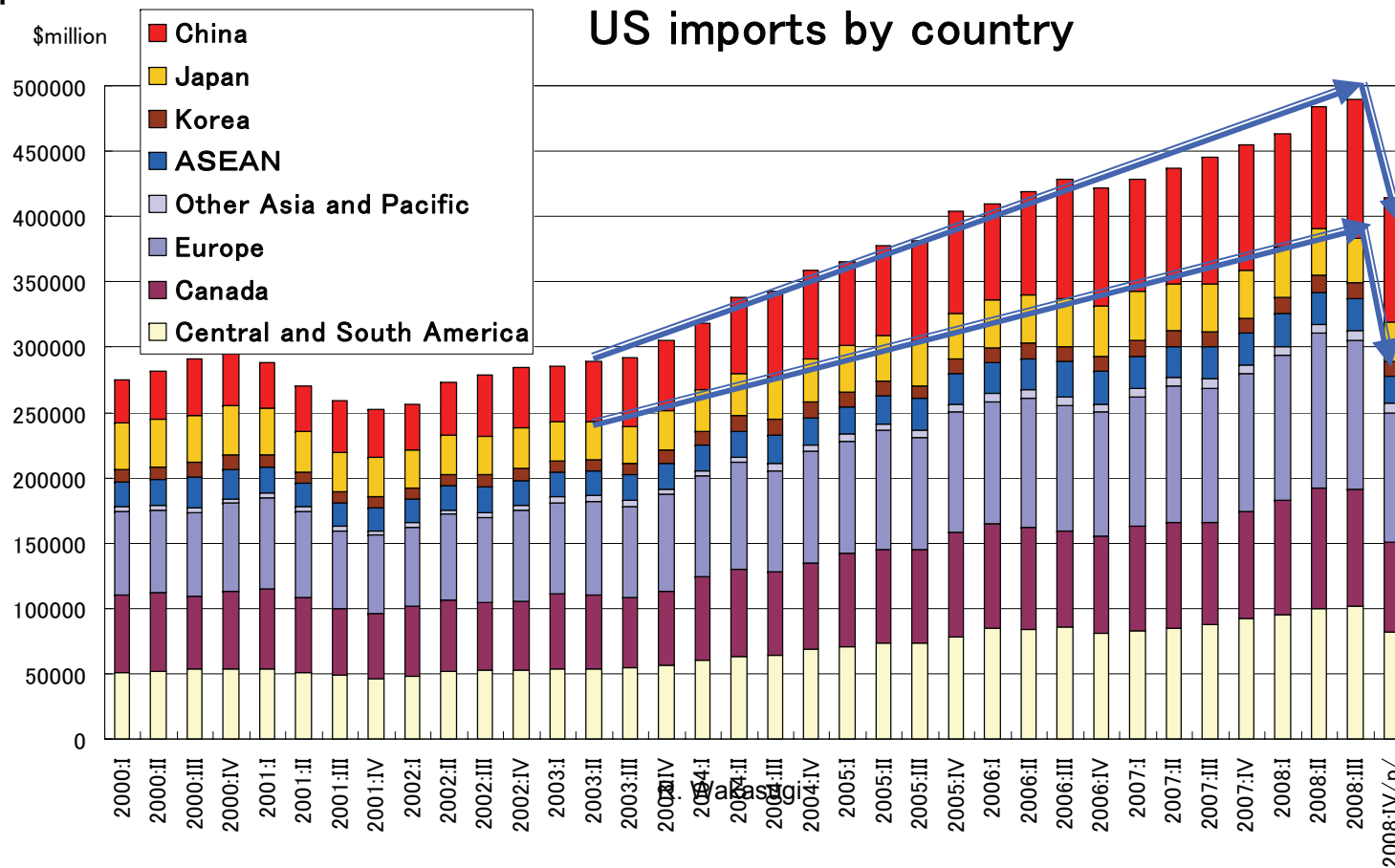
- Widely spread to the world market
- Seriously negative effect on Japan and NIES 4
- Positive economic growth in China and India

	2005	2006	2007	2008	2009	2010	2011
World	4.5	5.1	5.2	3.2	-1.3	1.9	4.3
U.S.	2.9	2.8	2.0	1.1	-2.8	0.0	3.5
EU	2.2	3.4	3.1	1.1	-4.0	-0.3	1.7
United Kingdom	2.1	2.8	3.0	0.7	-4.1	-0.4	2.1
Japan	1.9	2.0	2.4	-0.6	-6.2	0.5	2.2
China	10.4	11.6	13.0	9.0	6.5	7.5	10.2
NIES-4	4.7	5.6	5.7	1.6	-5.6	0.8	4.4
ASEAN-5	5.5	5.7	6.3	4.9	0.0	2.3	4.3
India	9.2	9.8	9.3	7.3	4.5	5.6	6.9

# Decrease of world imports: Sharp decline of US imports



- Large expansion of US import demand after 2001 ⇒ Large decrease in 2008年
- Increase of US import from Japan and East Asia, followed by the increasing import from China



# Decreasing Demand of US after the Financial Crisis: Asymmetric Reduction of Imports



- Sharp reduction of US import in Automobiles and parts and capital goods
- Reduction of US imports from Japan and Canada

	2008:I	2008:II	2008:III	2008:IV	2009:I/p/
All countries	0.12	0.15	0.13	-0.09	-0.30
Europe	0.13	0.14	0.10	-0.07	-0.27
Canada	0.12	0.15	0.16	-0.14	-0.38
Mexico	0.08	0.10	0.04	-0.11	-0.26
China	0.02	0.07	0.10	0.01	-0.10
Japan	0.03	0.03	-0.07	-0.16	-0.41
Petroleum and products	0.60	0.60	0.59	-0.15	-0.54
Foods, feeds, and beverages	0.08	0.12	0.10	0.06	-0.05
Industrial supplies and materials	0.34	0.35	0.37	-0.10	-0.45
Capital goods, except automotive	0.05	0.07	0.03	-0.06	-0.20
Automotive vehicles, parts, and engines	0.00	-0.02	-0.12	-0.24	-0.49
Consumer goods (nonfood)	0.01	0.05	0.05	-0.06	-0.13

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# Shocks on International Trade after Financial Crisis

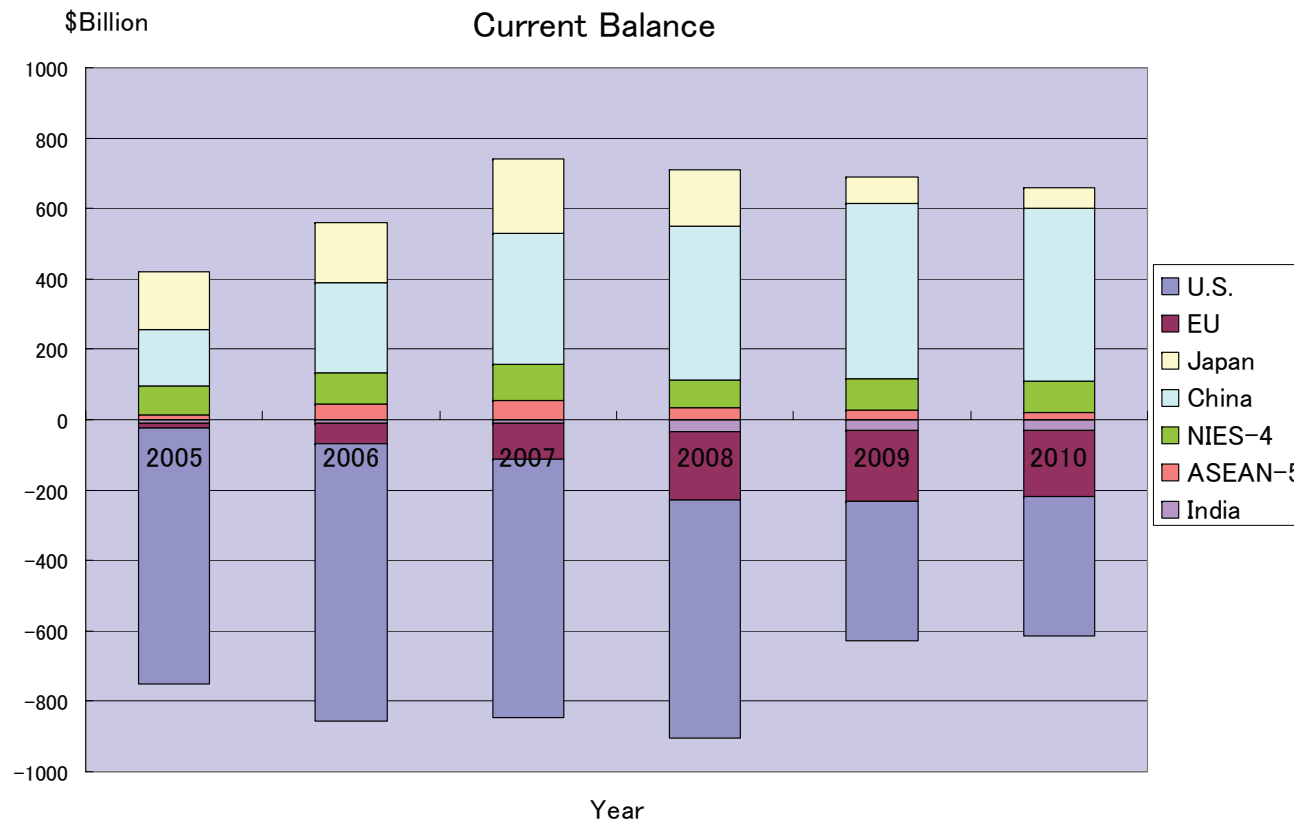


- Dramatic change in world demand after the bubble before 2007
- Widely spread to the world market through “global sourcing”
- Asymmetric effects on the industries and countries

# Macroeconomic Imbalance: Increase of uneven distribution of I-S imbalance



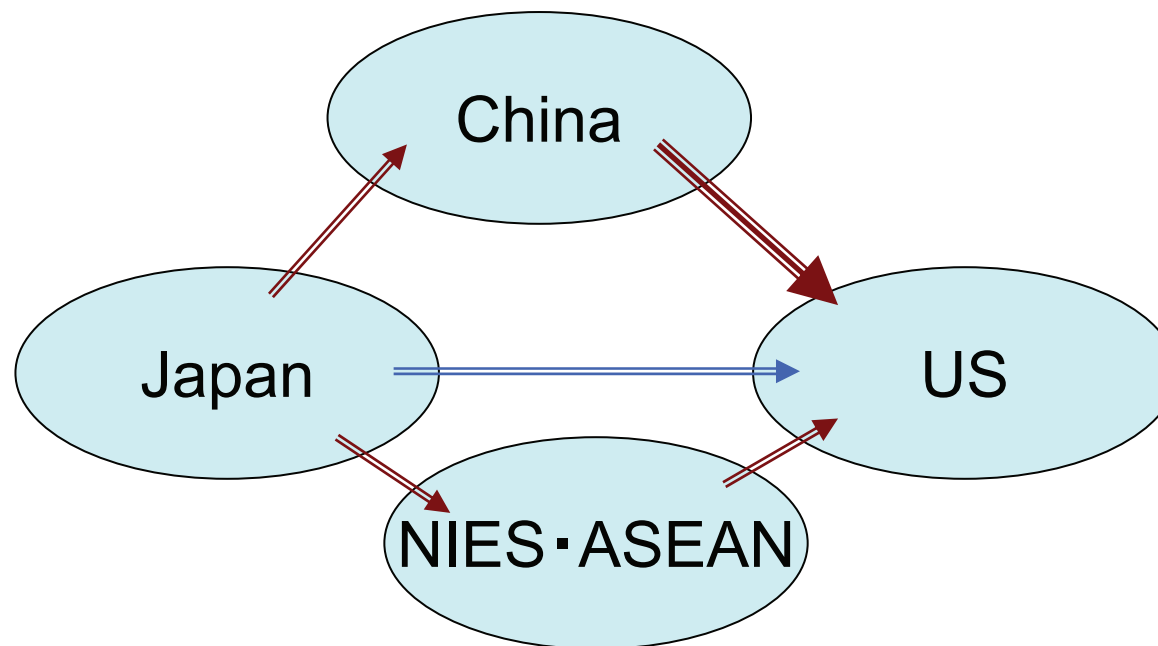
- US current deficit vs Chinese current surplus
- Decreasing trade surplus of Japan



# Development of global sourcing and production



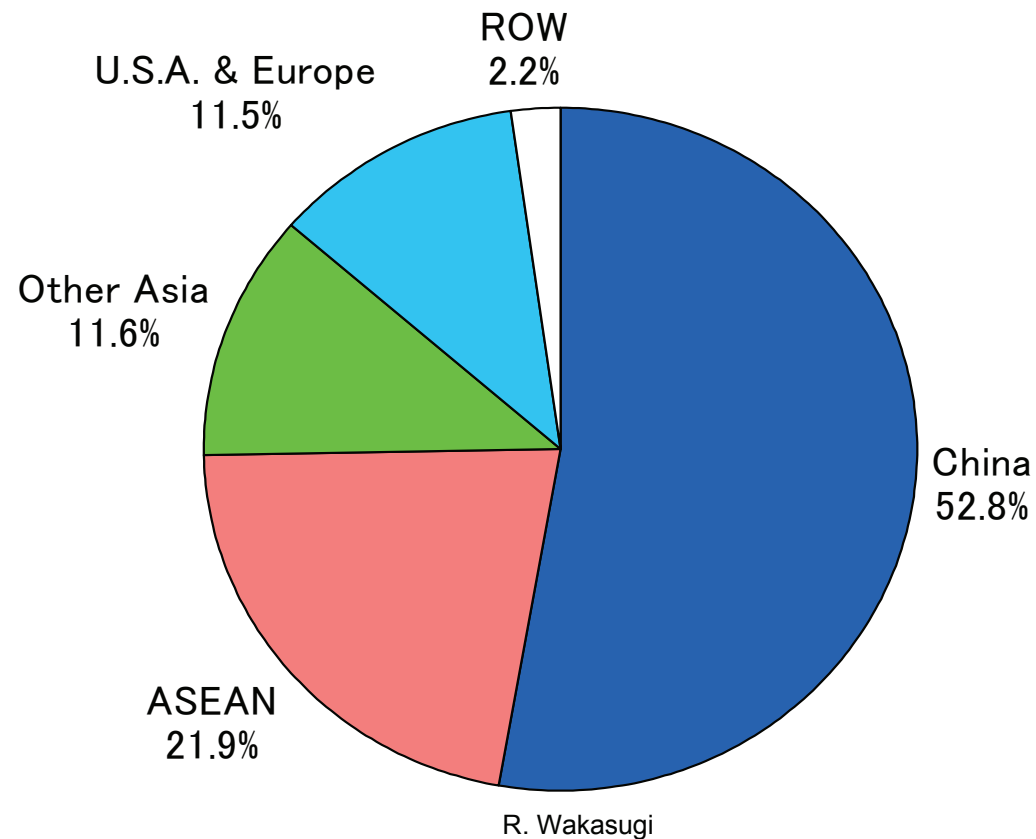
- Triad trade among US, China (+ East Asia), and Japan
  - A decline of Japanese share in US import (—)
  - A rise of Chinese share in US import (+)
  - A rise of Japanese share in Chinese export and import (+)



# Outsourcing of Japanese MNCs in the world market



- Global sourcing and location, in China

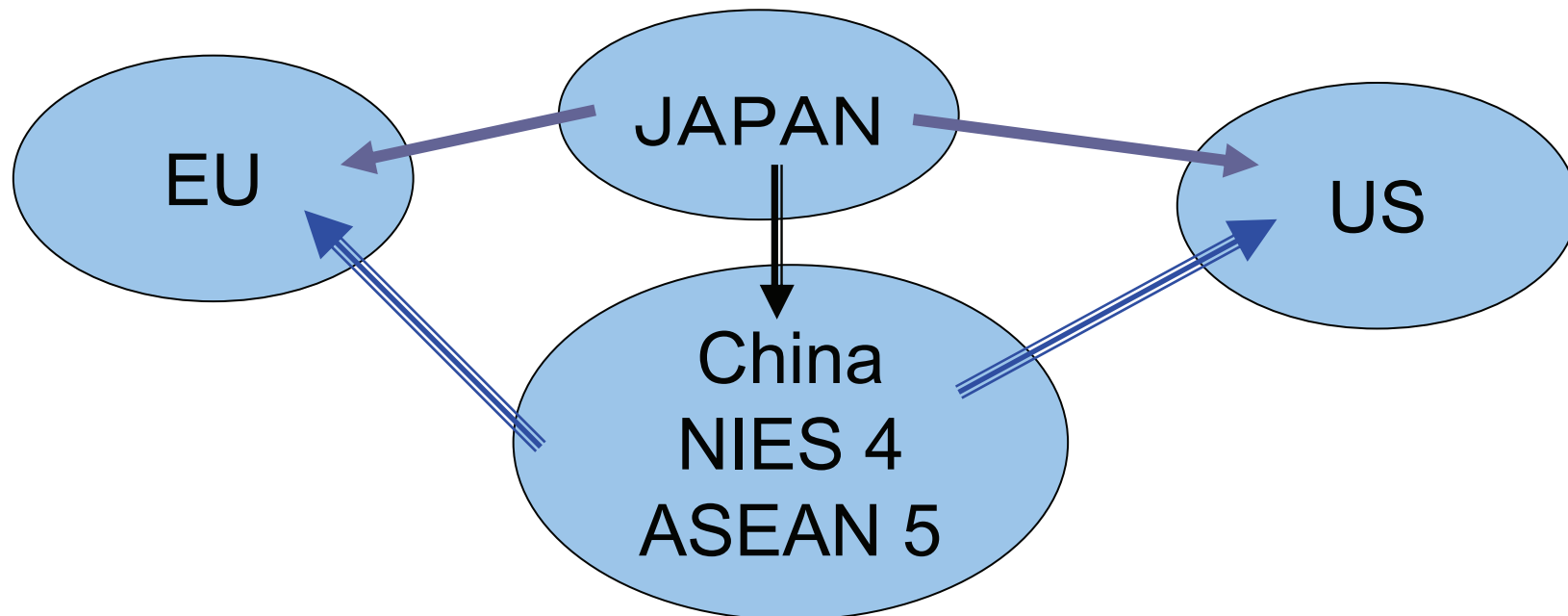




# Amplifiers of the trade shocks after the financial crisis



- Development of multi-tier production network in East Asia supplying to US and EU as the final destinations
- Selection and concentration to the high-end products



# Macroeconomic conditions and the exports of Japanese firms



- Selection and concentration to the demand for high-end products in high-income countries
- High dependence of Japanese and East Asian products on US import demand
- Changes in trade structure to that with higher vulnerability to financial shock

# Changes of macroeconomic condition and the exports of Japanese firms: Selection and Concentration



- The effects of changing macroeconomic conditions on the export structure after 1990 ( “extensive” and “intensive” margin)

$$\ln TV_{i,t} = \ln N_{i,t} + \ln \left( \frac{TV_{i,t}}{N_{i,t}} \right)$$

N: number of products  
TV/N: average price of products

$$\ln TV_{i,t} = \alpha_0 + \alpha_1 \ln(GDP_{Japan}) + \alpha_2 \ln(GDP_i) + \alpha_3 \ln(Ex) + \alpha_4 WTO \text{ dummy} + \varepsilon$$

$$\ln N_{i,t} = \beta_0 + \beta_1 \ln(GDP_{Japan}) + \beta_2 \ln(GDP_i) + \beta_3 \ln(Ex) + \beta_4 WTO \text{ dummy} + \varepsilon$$

$$\ln \left( \frac{TV_{i,t}}{N_{i,t}} \right) = \gamma_0 + \gamma_1 \ln(GDP_{Japan}) + \gamma_2 \ln(GDP_i) + \gamma_3 \ln(Ex) + \gamma_4 WTO \text{ dummy} + \varepsilon$$

# US economic growth and the changes of Japanese exports: reduction of variety · increase of average price



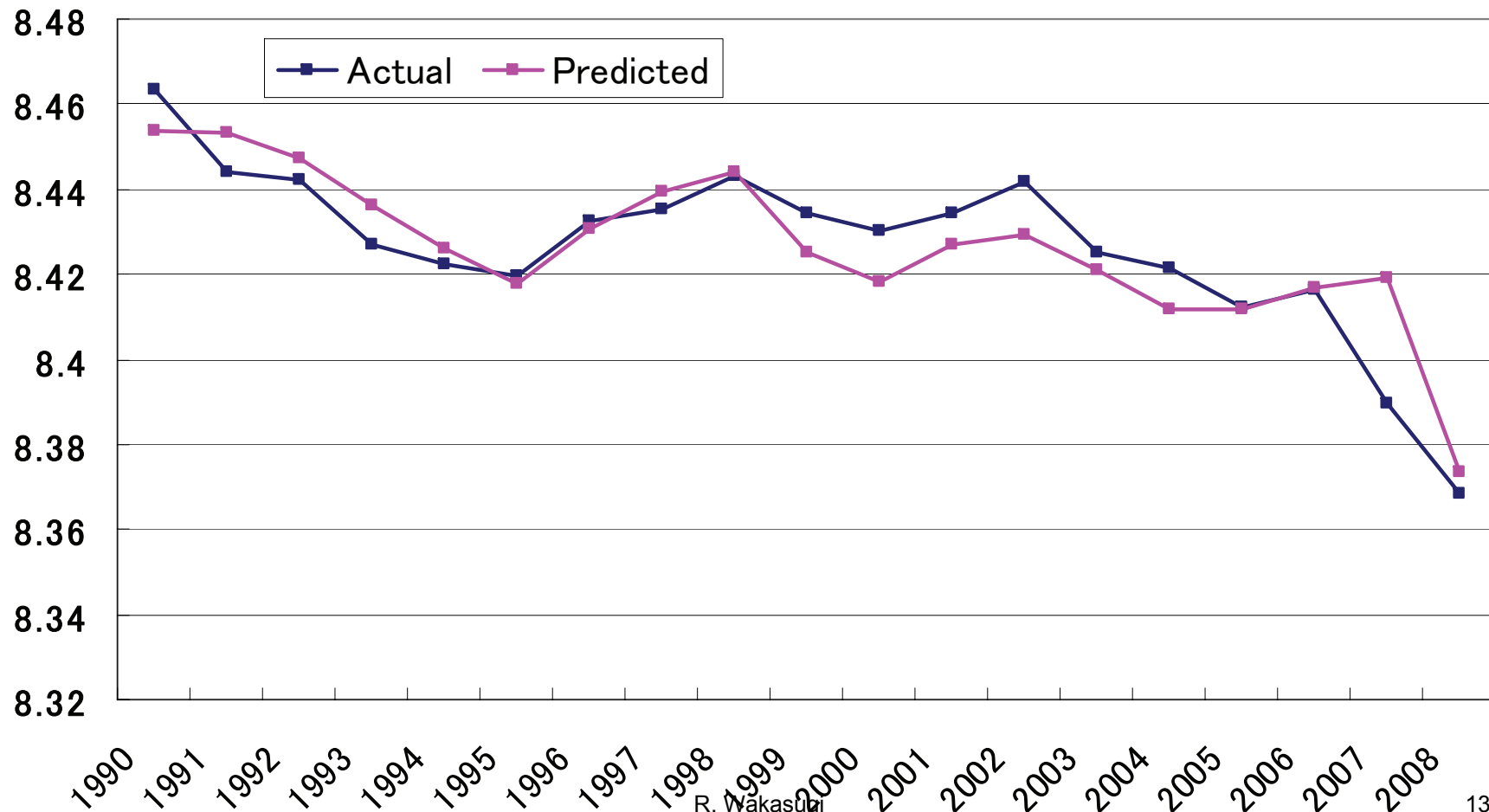
	Export value	Number of goods	Average price
GDP of US	0.645	-0.069	0.714
GDP of Japan	0.340	0.109	0.230
Exchnage rate (¥/\$)	0.867	0.199	0.667

Estimated by Wakasugi and Iida (2009)

# Reduction of number of the exported goods to US (Extensive margin)

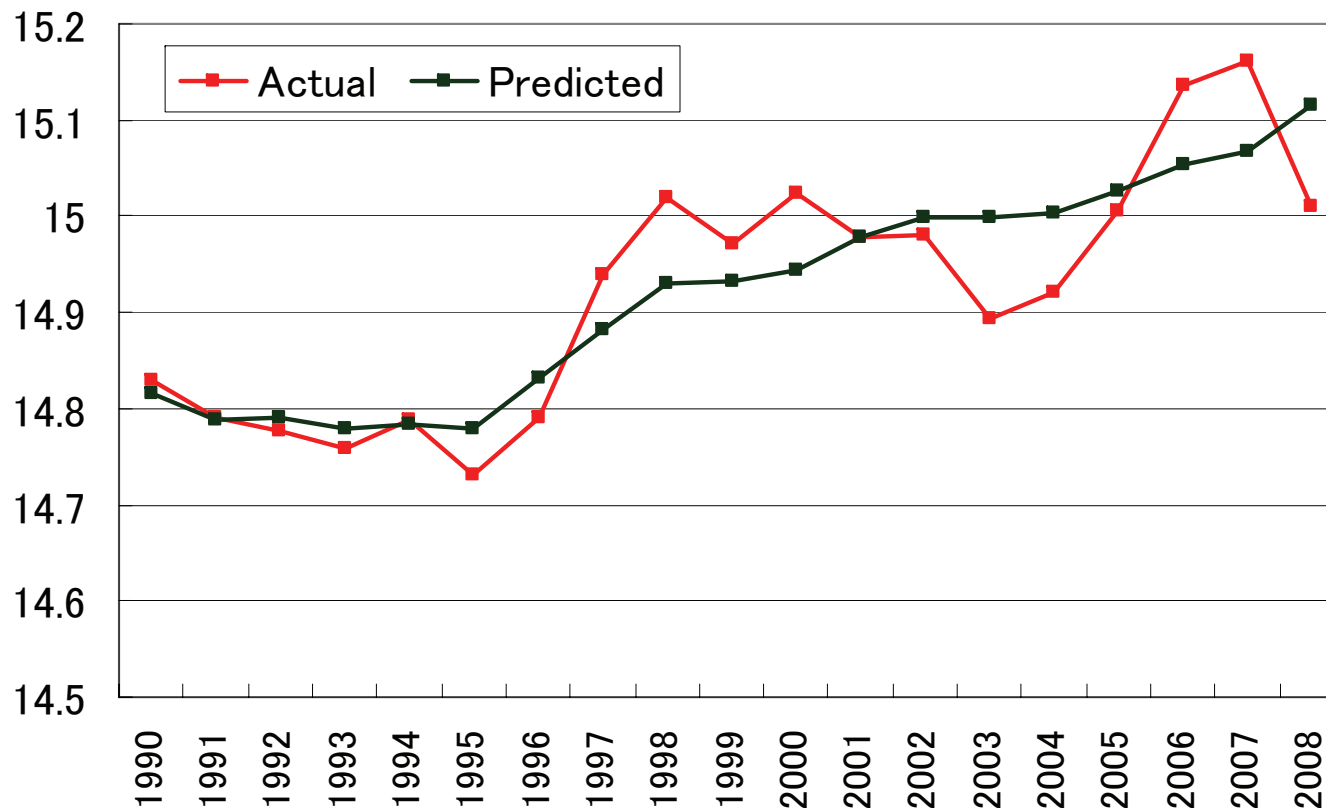


Extensive margin (US)



Estimated by Wakasugi and Iida (2009)

# Increase of the average price $\Rightarrow$ sudden drop (Intensive margin)



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Estimated by Wakasugi and Iida (2009)

# Economic growth of China and Japanese export



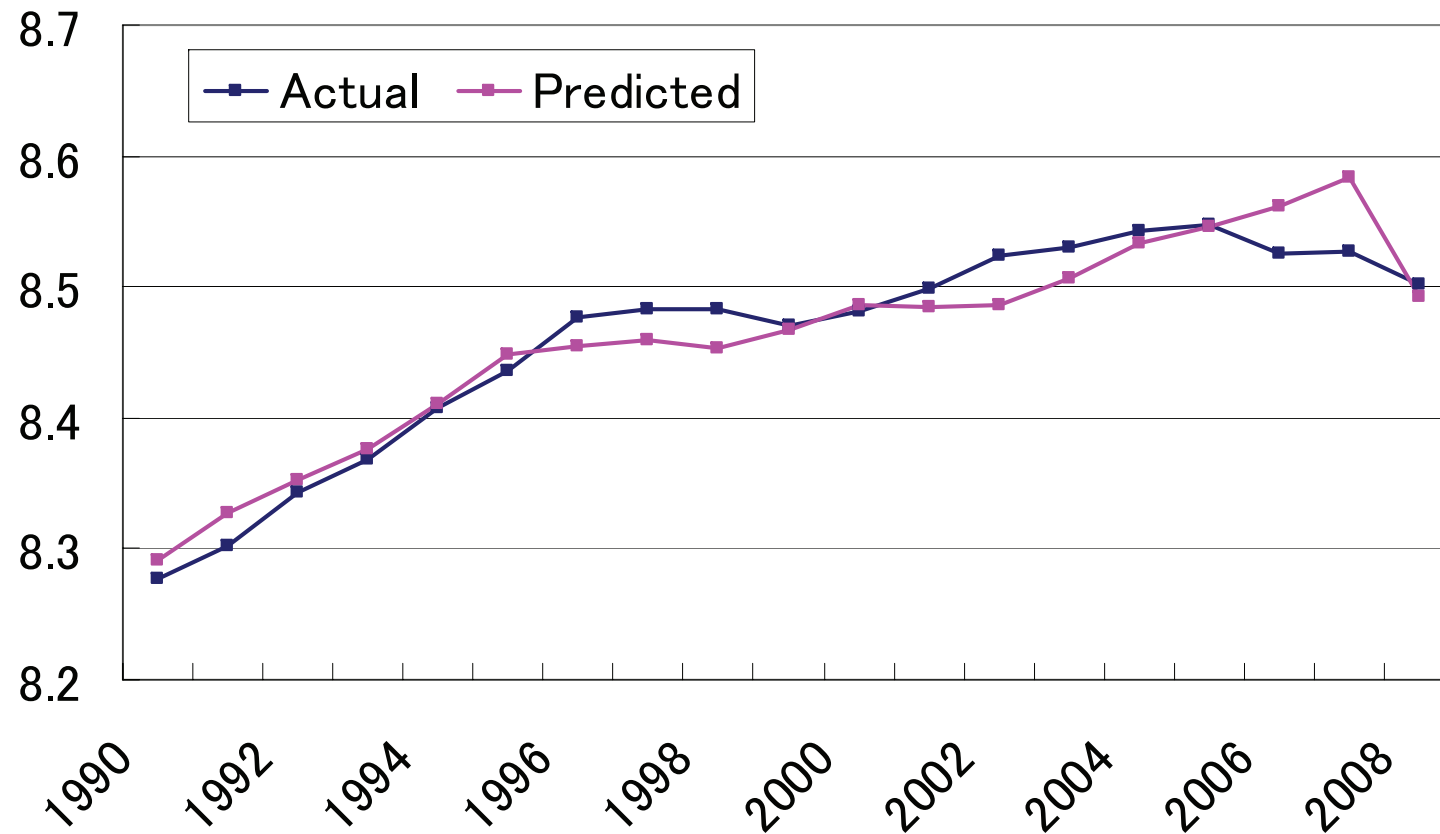
	Export value	Number of goods	Average price
GDP of China	0.848	0.092	0.755
GDP of Japan	0.017	0.361	-0.344
Exchnage rate (¥/\$)	-0.634	0.245	-0.879
Dummy for WTO	0.403	0.006	0.396

Estimated by Wakasugi and Iida (2009)

# Increasing number of exported goods to China: (extensive margin)



Extensive margin (China)



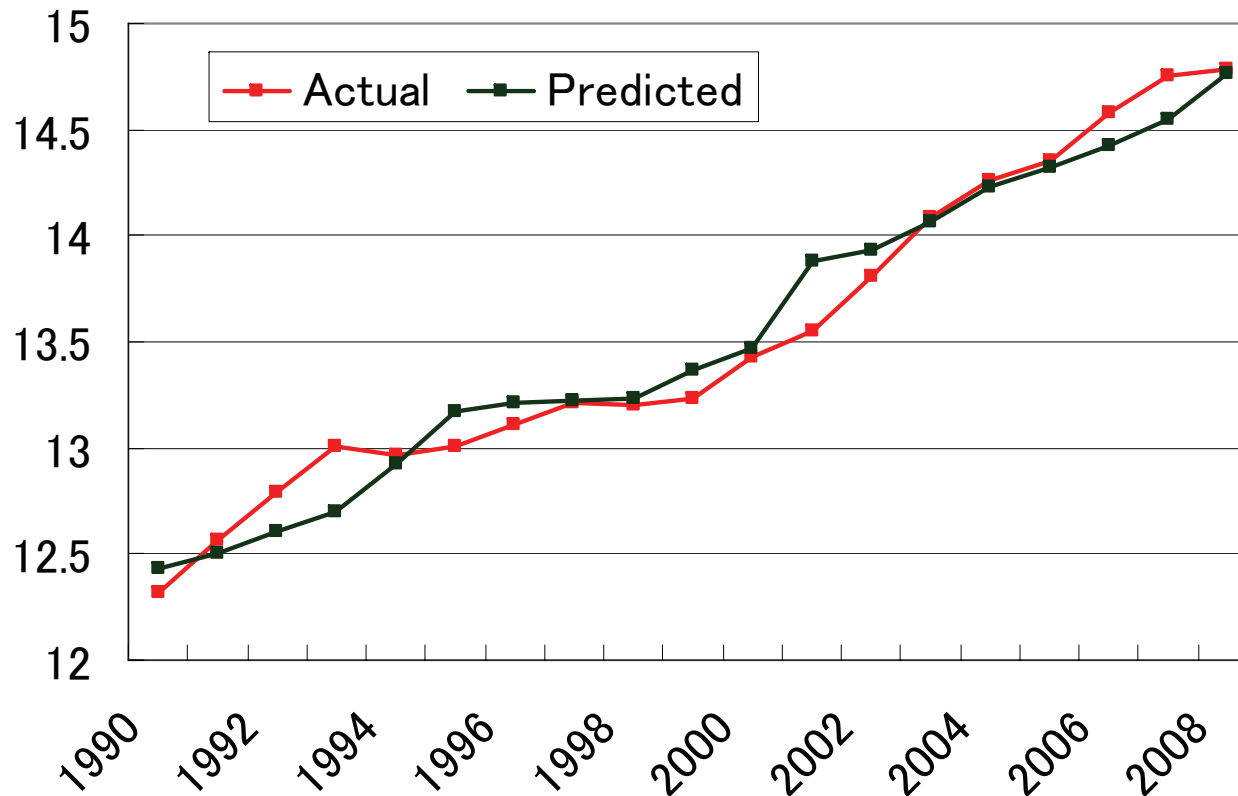
Estimated by Wakasugi and Iida (2009)



# Increasing average price (Intensive margin)



Intensive margin (China)



Estimated by Wakasugi and Iida (2009)

# Changes of Japanese export structure



- Selection and concentration
- Concentration to the high-end products for US market
- Response to the high-income consumers
  
- Global sourcing and location
- Expansion of exports in intermediate and capital goods, and eventually the development of product range

# New Paradigm after the financial crisis



- Changes of demand structure in the world market
- Changes to higher globalization of production mode
- Higher qualification of market system in the world
- Response of corporate strategy

# Structural change of world demand



- From one black hole of high-income region to multiple absorbers in high- and middle-income regions

# Growing market size in high income countries

## Growing population in meddle income countries



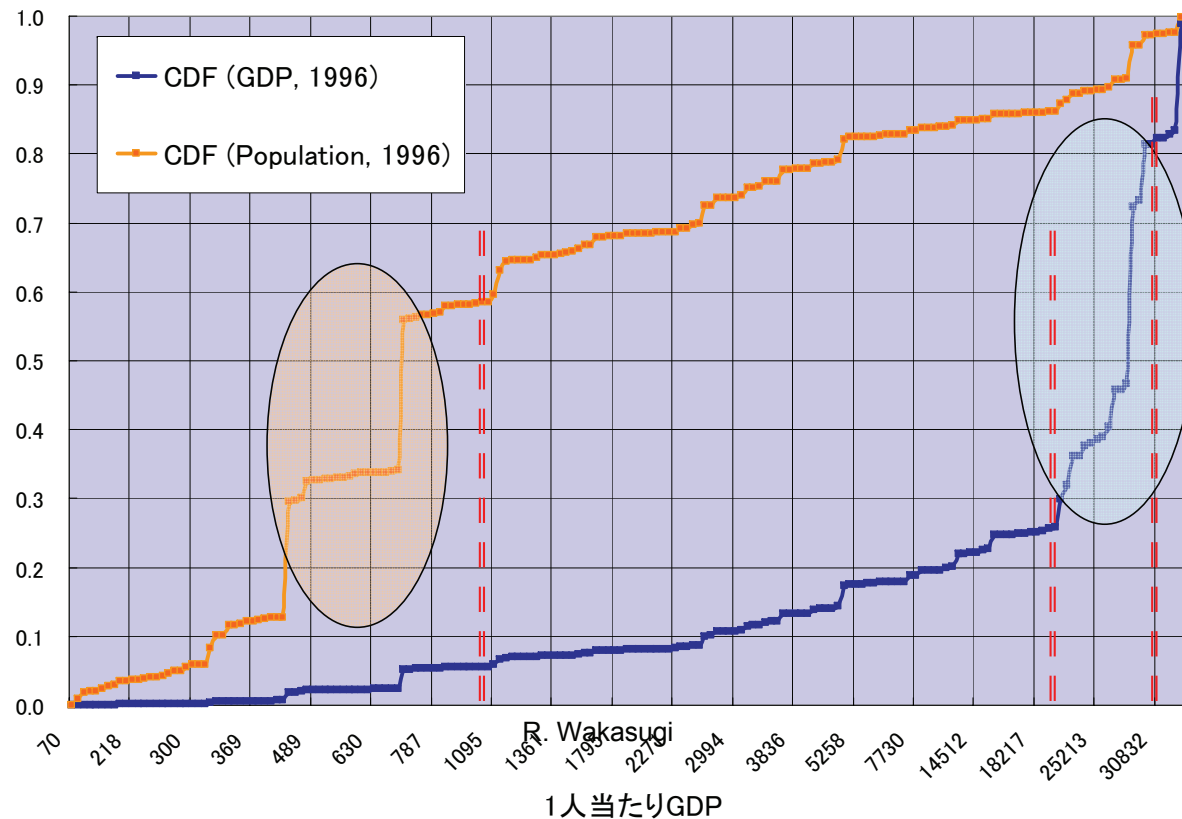
Per capita GDP	GDP		Population	
	1996	2006	1996	2006
$0 \leq 1,000$	0.06	0.03	0.58	0.37
$1,000 \leq 2,000$	0.02	0.02	0.10	0.08
$2,000 \leq 5,000$	0.06	0.08	0.11	0.28
$5,000 \leq 10,000$	0.05	0.11	0.05	0.12
$10,000 \leq 20,000$	0.06	0.04	0.02	0.02
$20,000 \leq 30,000$	0.56	0.04	0.11	0.01
$30,000 \leq$	0.19	0.68	0.03	0.13

# 1996



	GDP	Population
Per capita GDP	1996	1996
$0 \leq 1,000$	0.06	0.58
$1,000 \leq 2,000$	0.02	0.10
$2,000 \leq 5,000$	0.06	0.11
$5,000 \leq 10,000$	0.05	0.05
$10,000 \leq 20,000$	0.06	0.02
$20,000 \leq 30,000$	0.56	0.11
$30,000 \leq$	0.19	0.03

Shere Per capita GDP and Distribution of Population nad Income (1996)

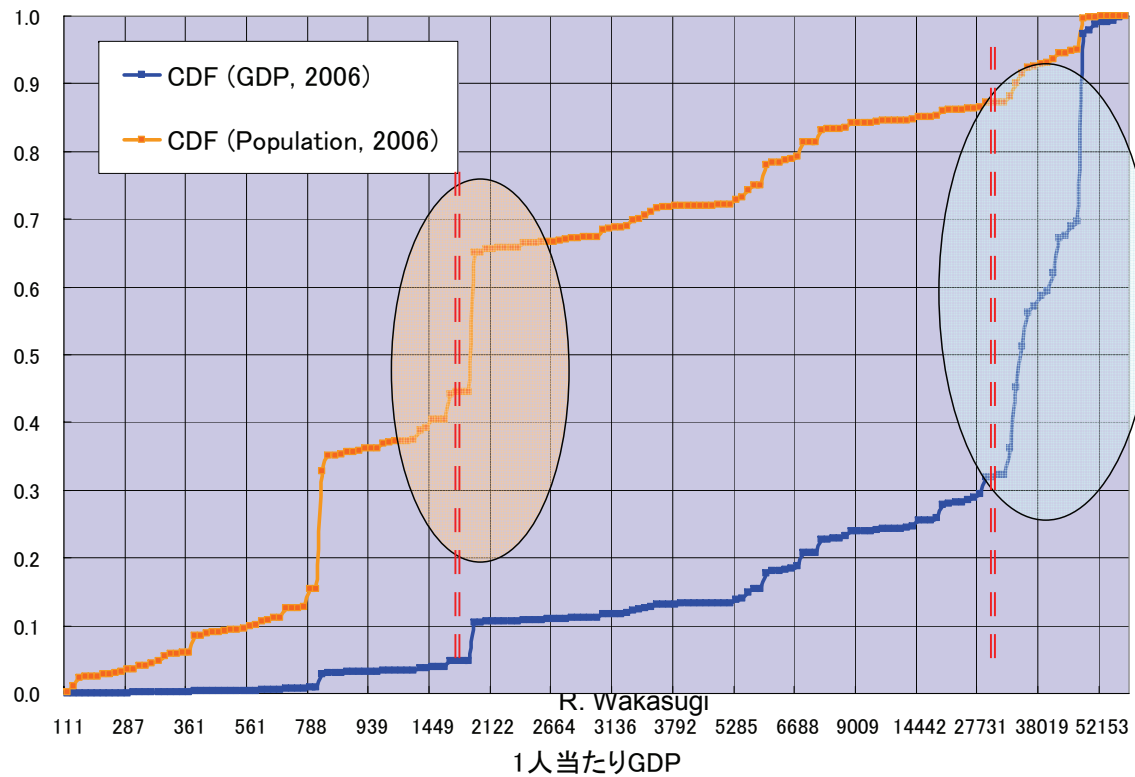


# 2006



	GDP	Population
Per capita GDP	2006	2006
$0 \leq 1,000$	0.03	0.37
$1,000 \leq 2,000$	0.02	0.08
$2,000 \leq 5,000$	0.08	0.28
$5,000 \leq 10,000$	0.11	0.12
$10,000 \leq 20,000$	0.04	0.02
$20,000 \leq 30,000$	0.04	0.01
$30,000 \leq$	0.68	0.13

Per capita GDP and Distribution of Population nad Income (2006)  
CDF

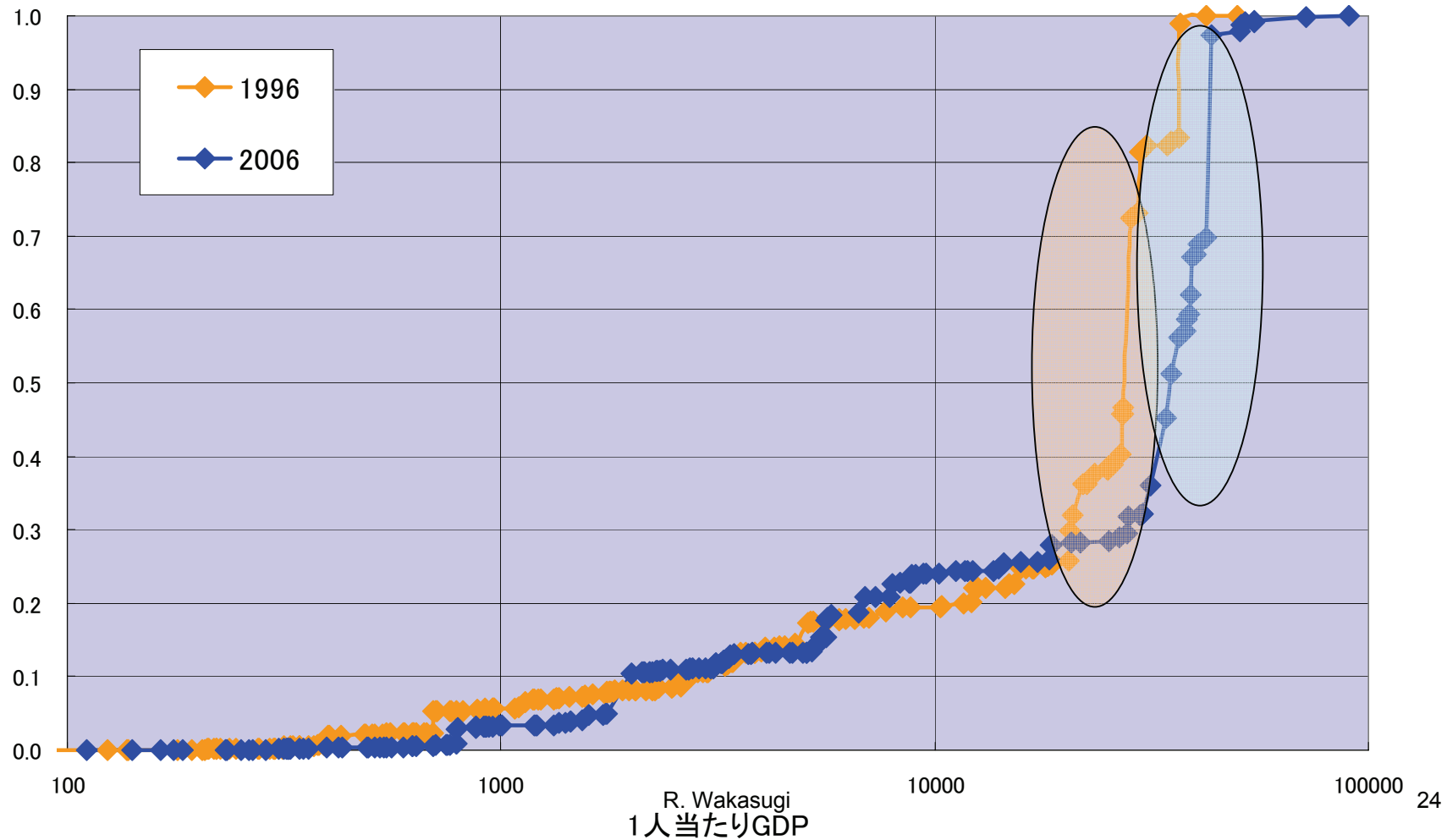


# Market expansion in high income countries



CDF (Income)

Per capita GDP and Distribution of Income



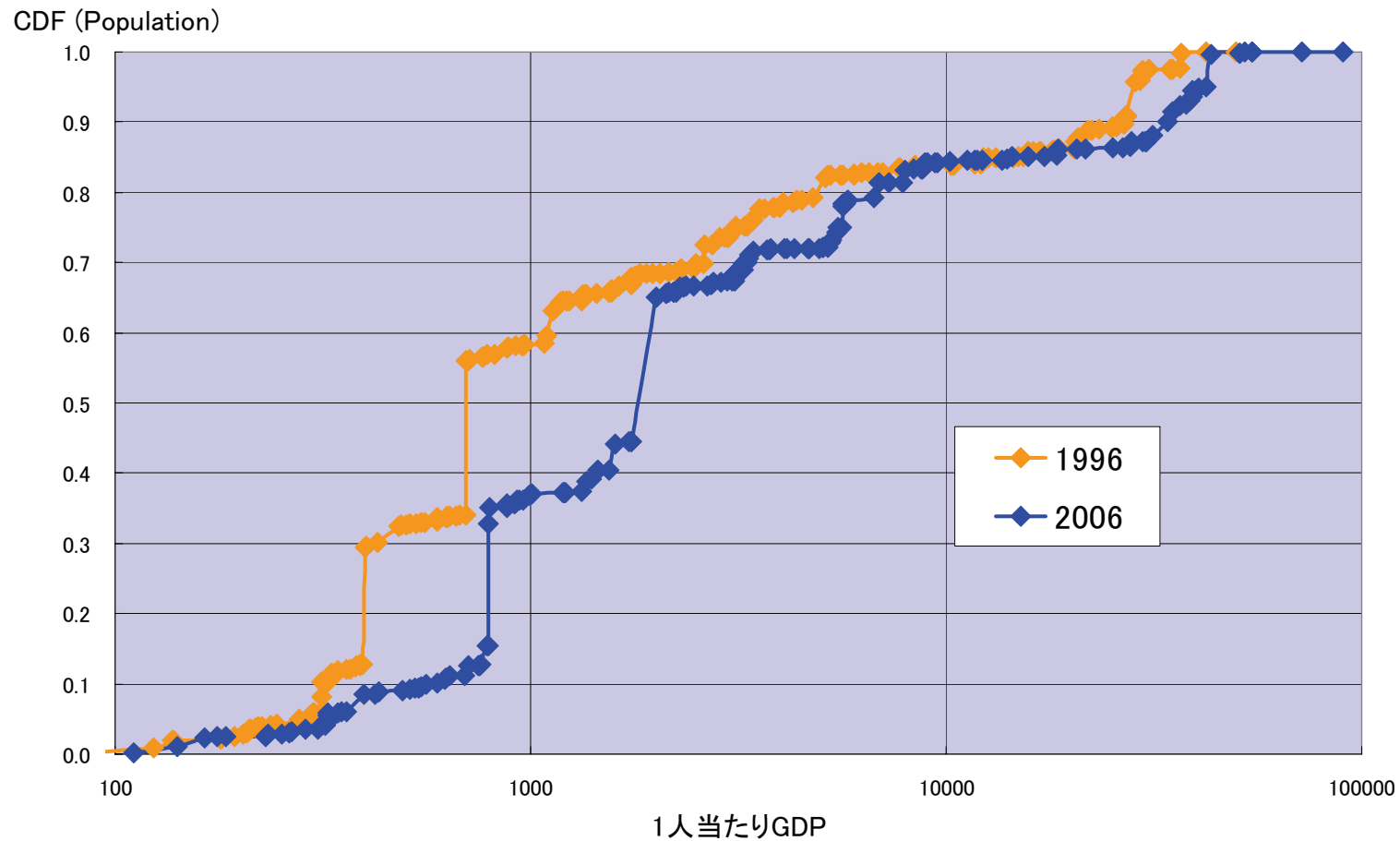


# Multiple markets

「 $\$2,000 \leq \$5,000$ 」 「 $\$30,000 \leq$ 」



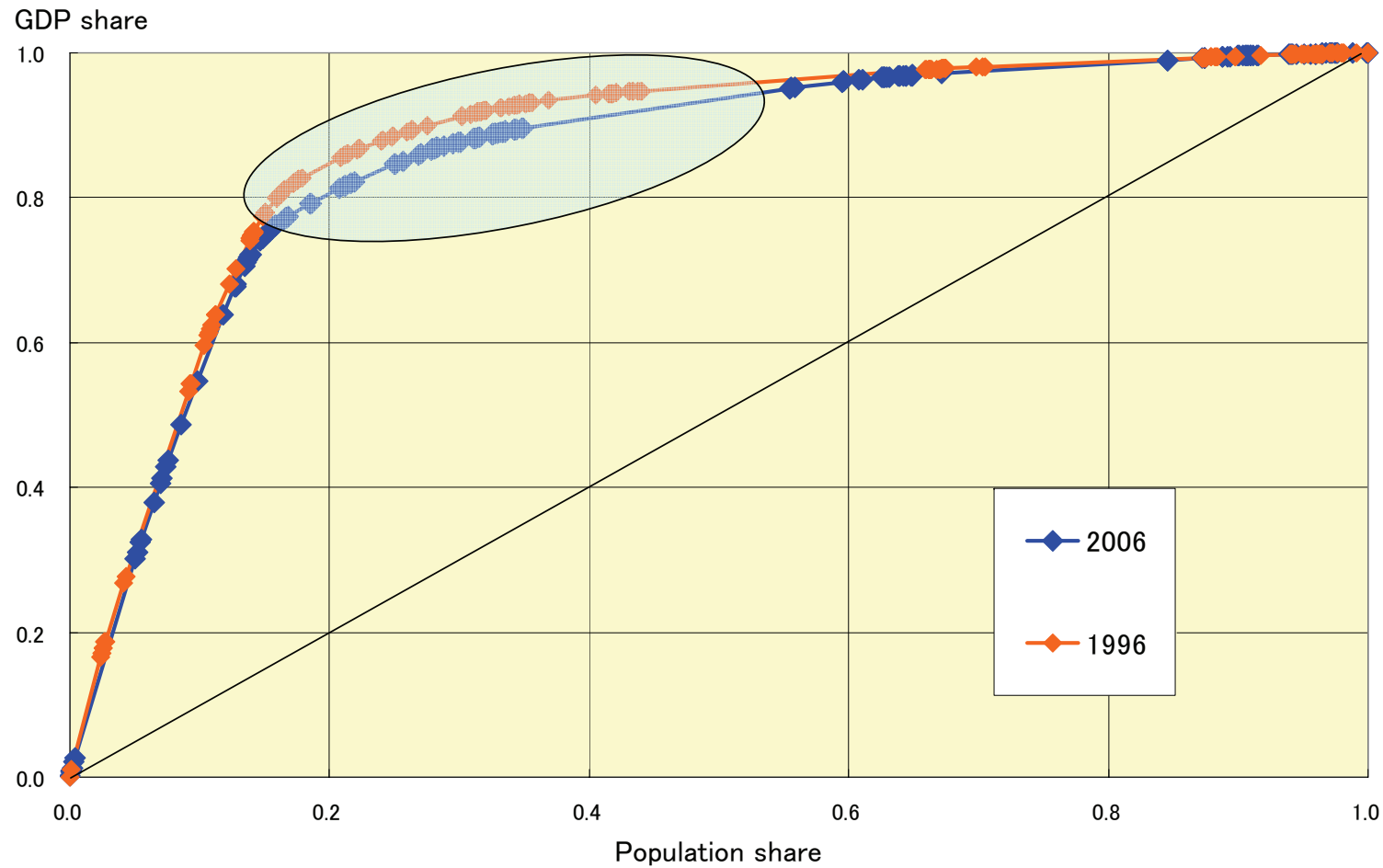
Per capita GDP and Distribution of Population



# Equalization of income in middle income countries

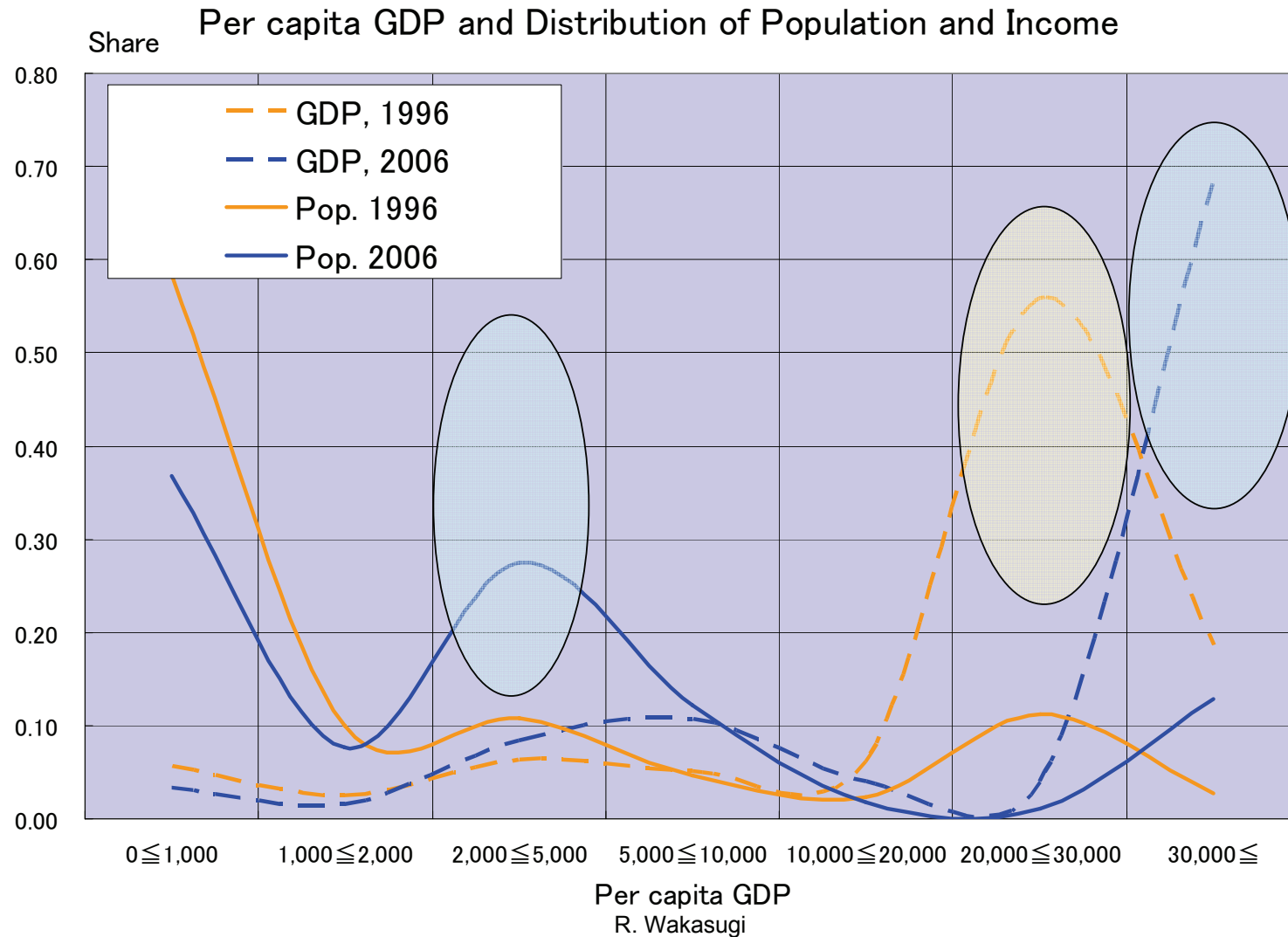


Distribution of Population and Income



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# Diversification of market size: High income market ⇒ High income and middle income markets



# Growth model responding to the changing demand in the world



- Changes of demand structure in the world market
  - Recovery of IS balance in US and the stagnant demand in high income countries
  - Diversification of growing demand: Expansionary demand in the middle income countries including Asia (China, India) and BRICs
- Growth model with East Asia as a core of production and consumption
  - “Two polar model with production network in East Asia and high demand in developed countries” to “Multiple polar model with production and demand in East Asia”

# Qualified market: responding to the changing world market



- Realization of higher market quality in the world market
  - Liberalization of trade and investment: acceleration of WTO new round
  - Market rules to realize the consumer's benefit
  - Enforcement of contractibility in the market transaction: establishment of domestic judicial system
- Prevention against the rising protectionism in the world market:

# MNCs' strategy to the changing world market



- Multiple production system responding to a variety type of demand with dispersive income
  - Supply system for a variety of goods and service responding to high and middle income consumers
- Innovation and creation of new goods and services, responding to the fast catch-up
- Product strategy and corporate organization responding to the global market
  - Lower competitiveness of language (Japanese) intensive goods and services