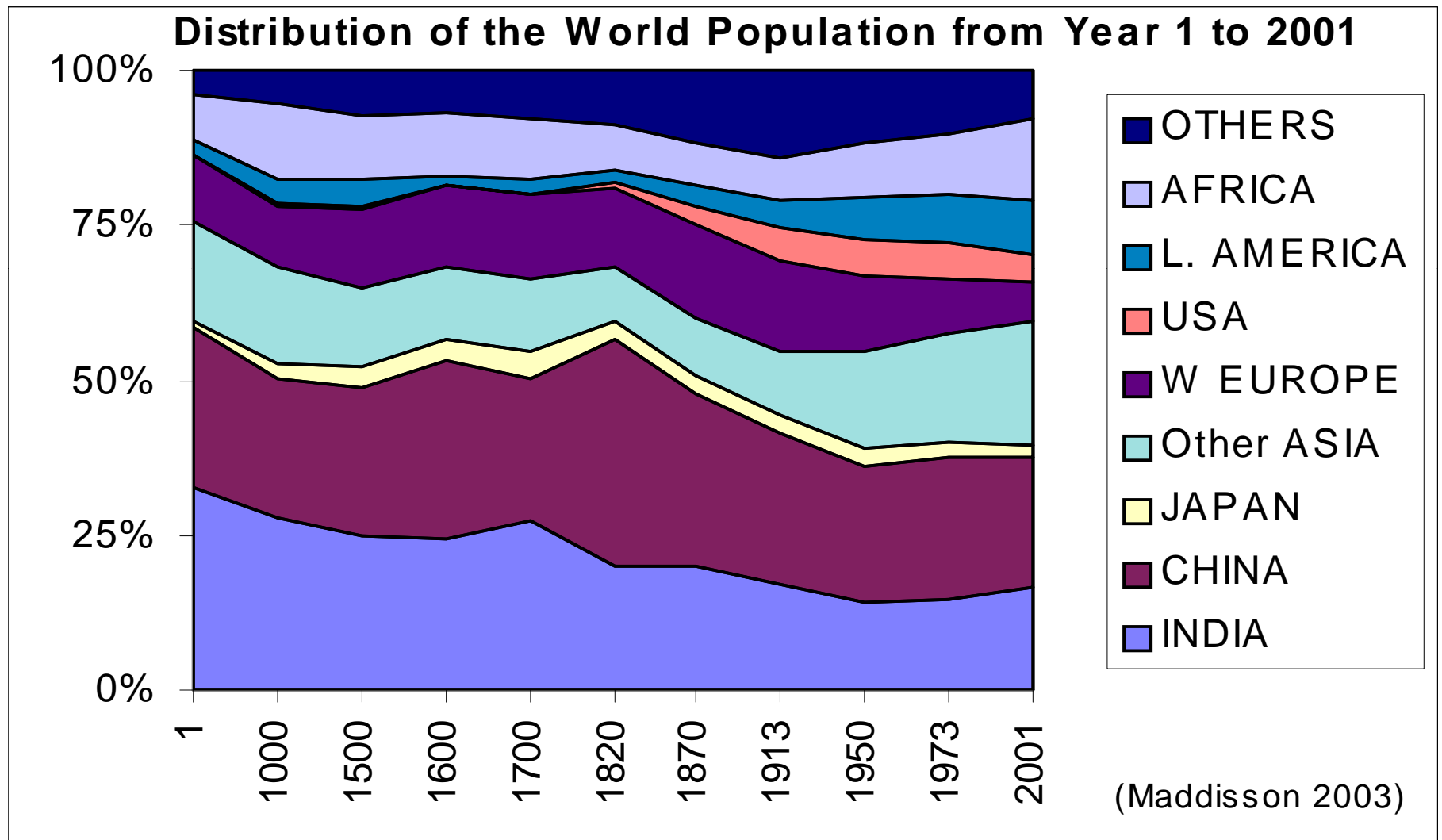


# **Economic Balance of Powers after the crisis Global Perspective 2025 an European vision**

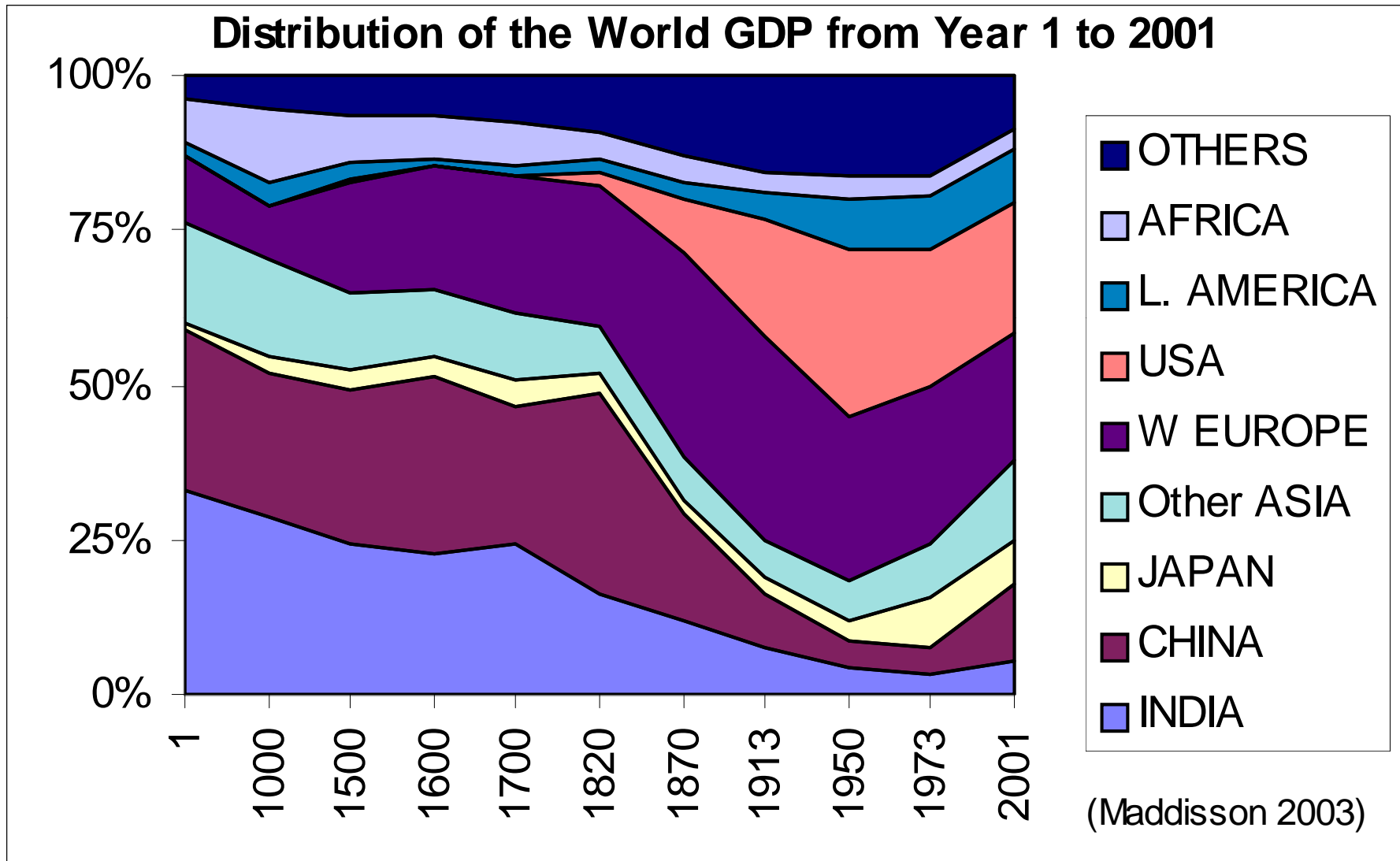
**Jean-Joseph Boillot**

- **Economic Advisor club CEPII & co-founder of the EIEBG**

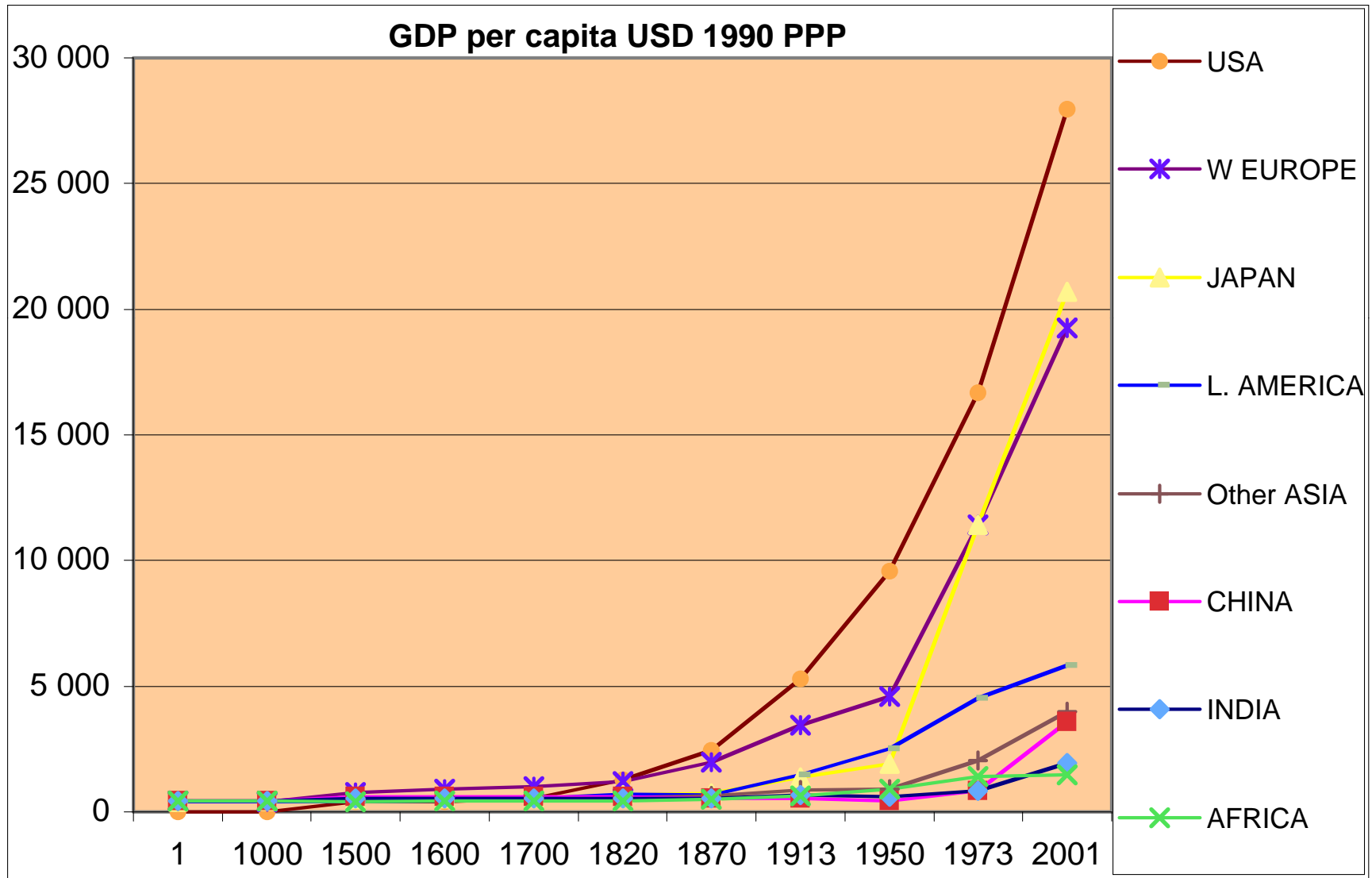
## The Historical Trends: Population ...



## ... and GDP

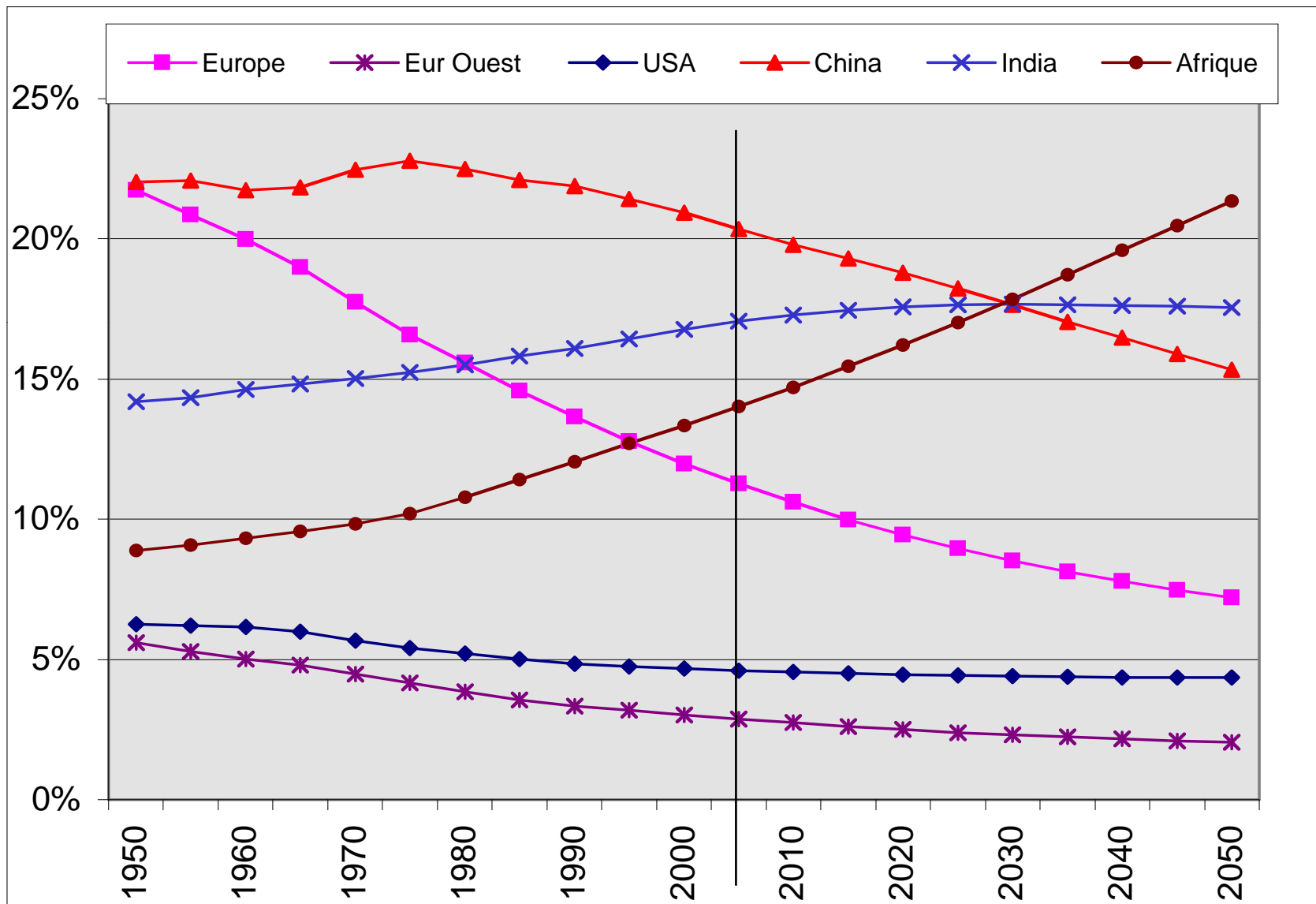


# What matters is Productivity, Size ... & TIME!

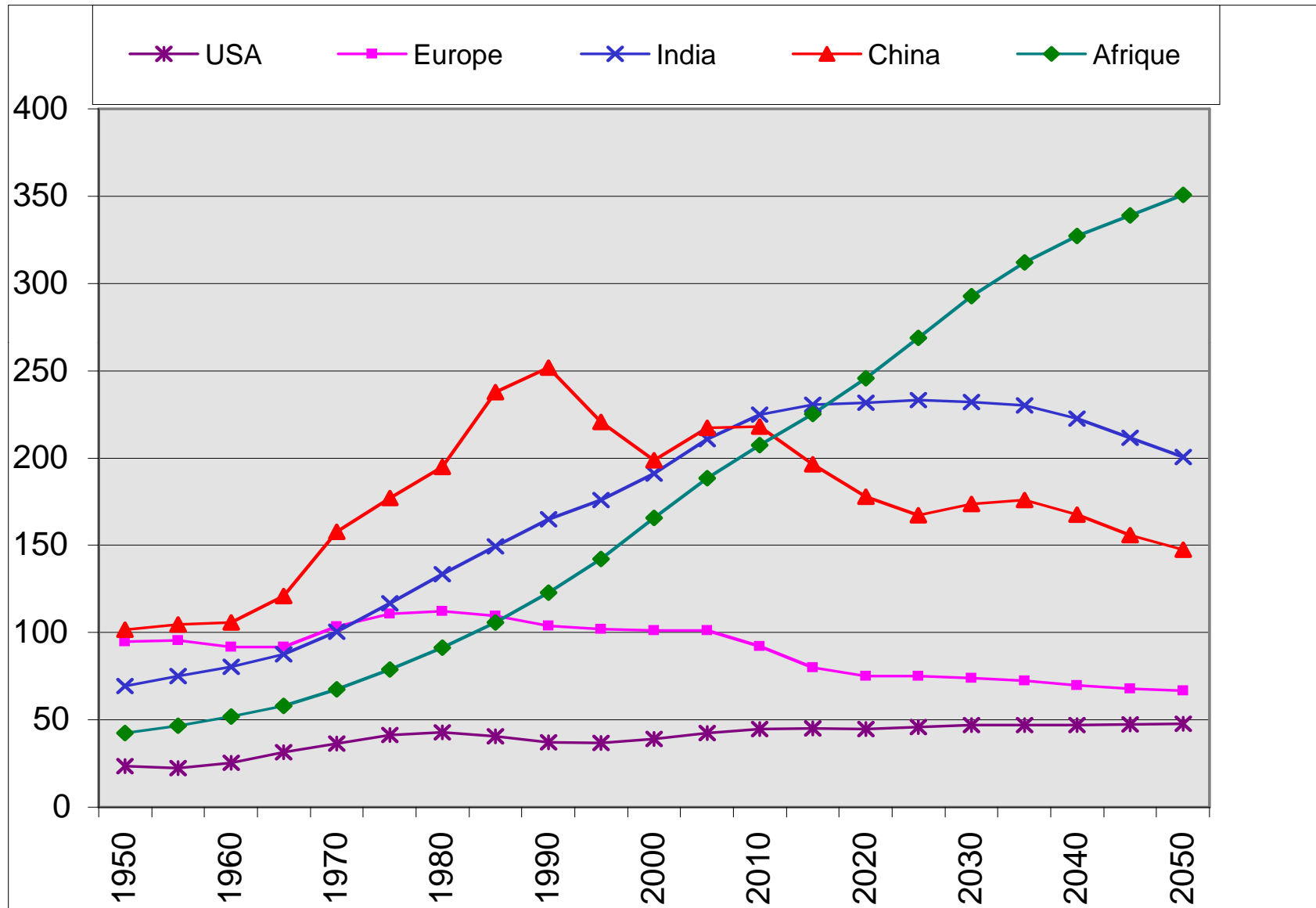


# The New Comers in Human capital

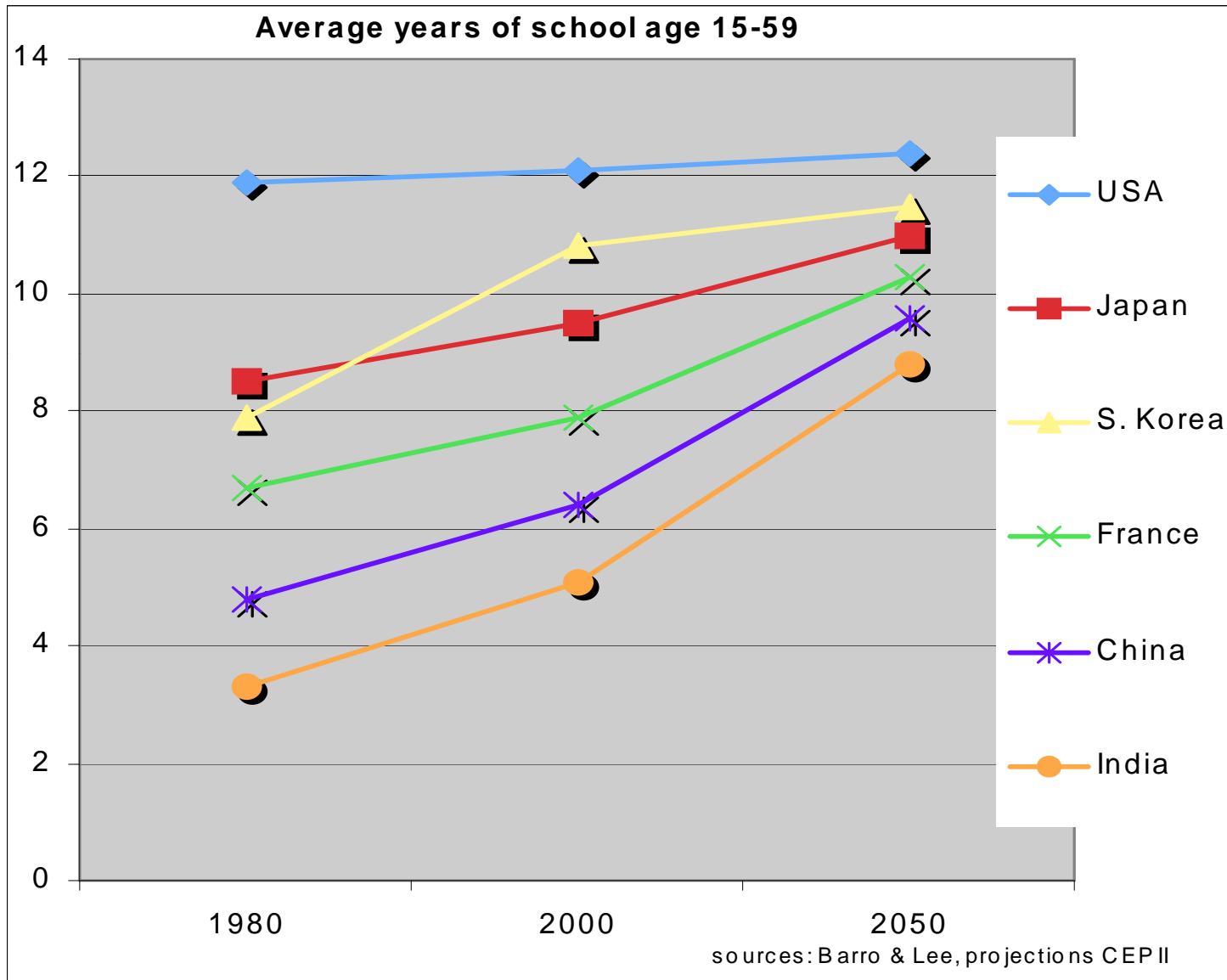
## China ... India ... and Africa (% World population 1950-2050)



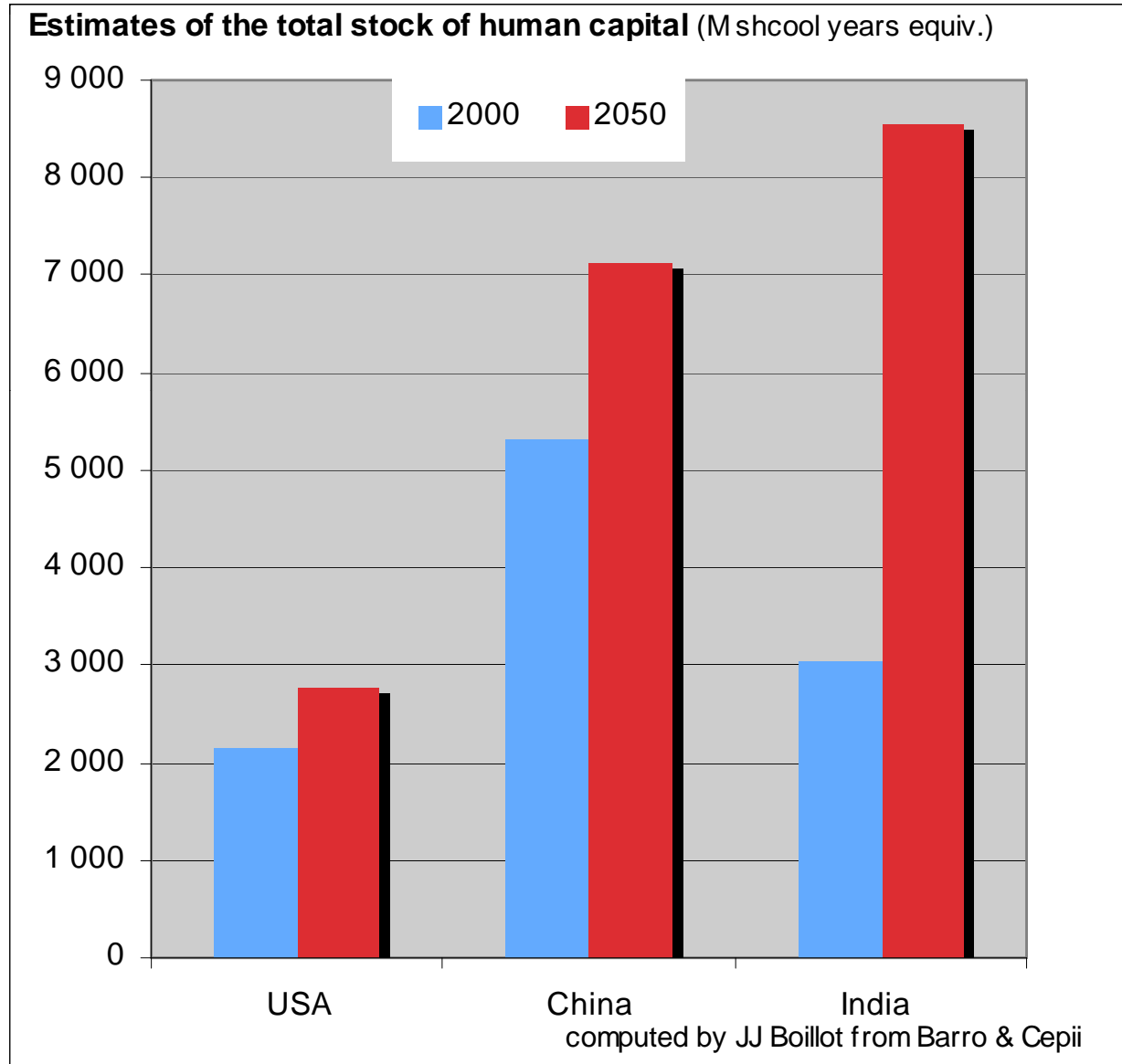
## ... more so with the 15-24 age group



# Education: a major parameter

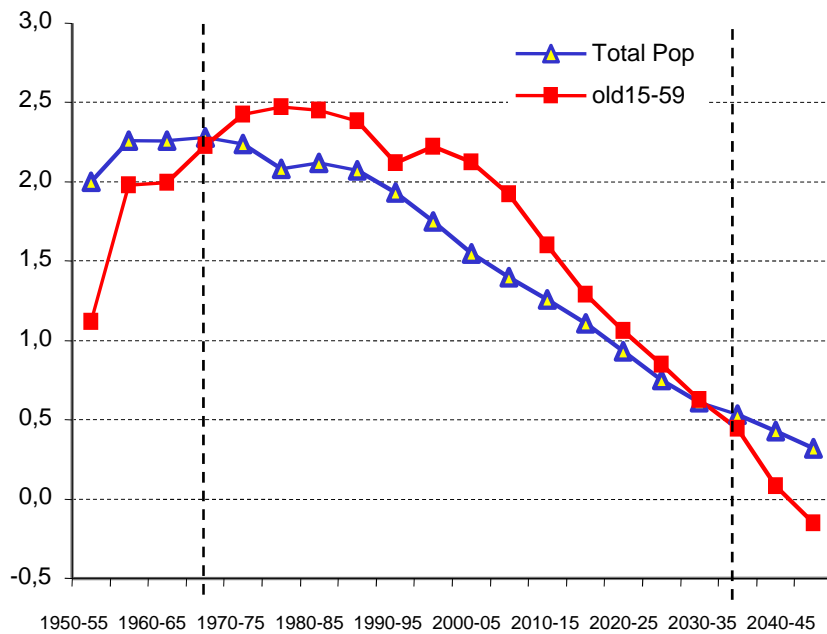


# The big shift in the Human Capital stock

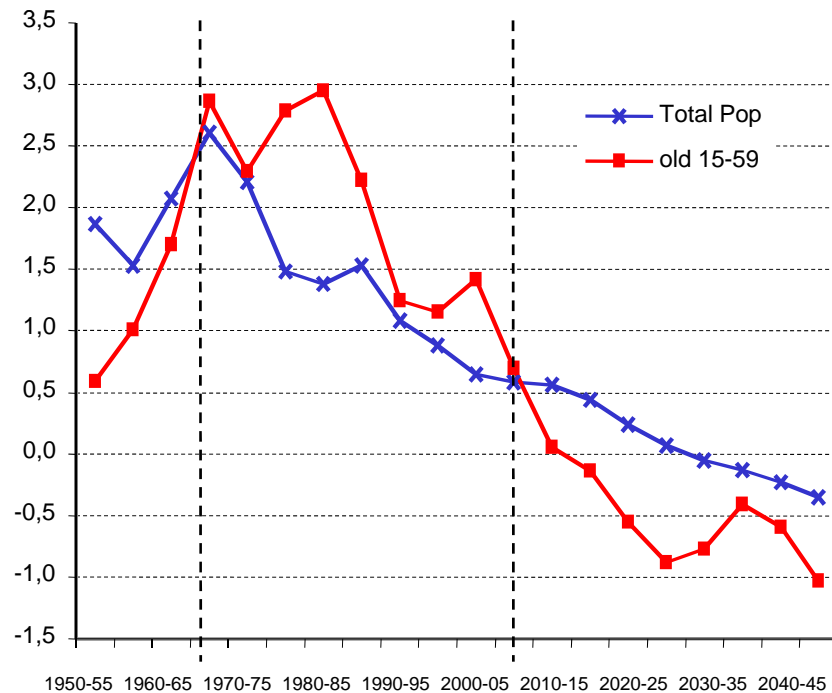


## Plus the strong impetus of the « Demographic Window of Opportunity »

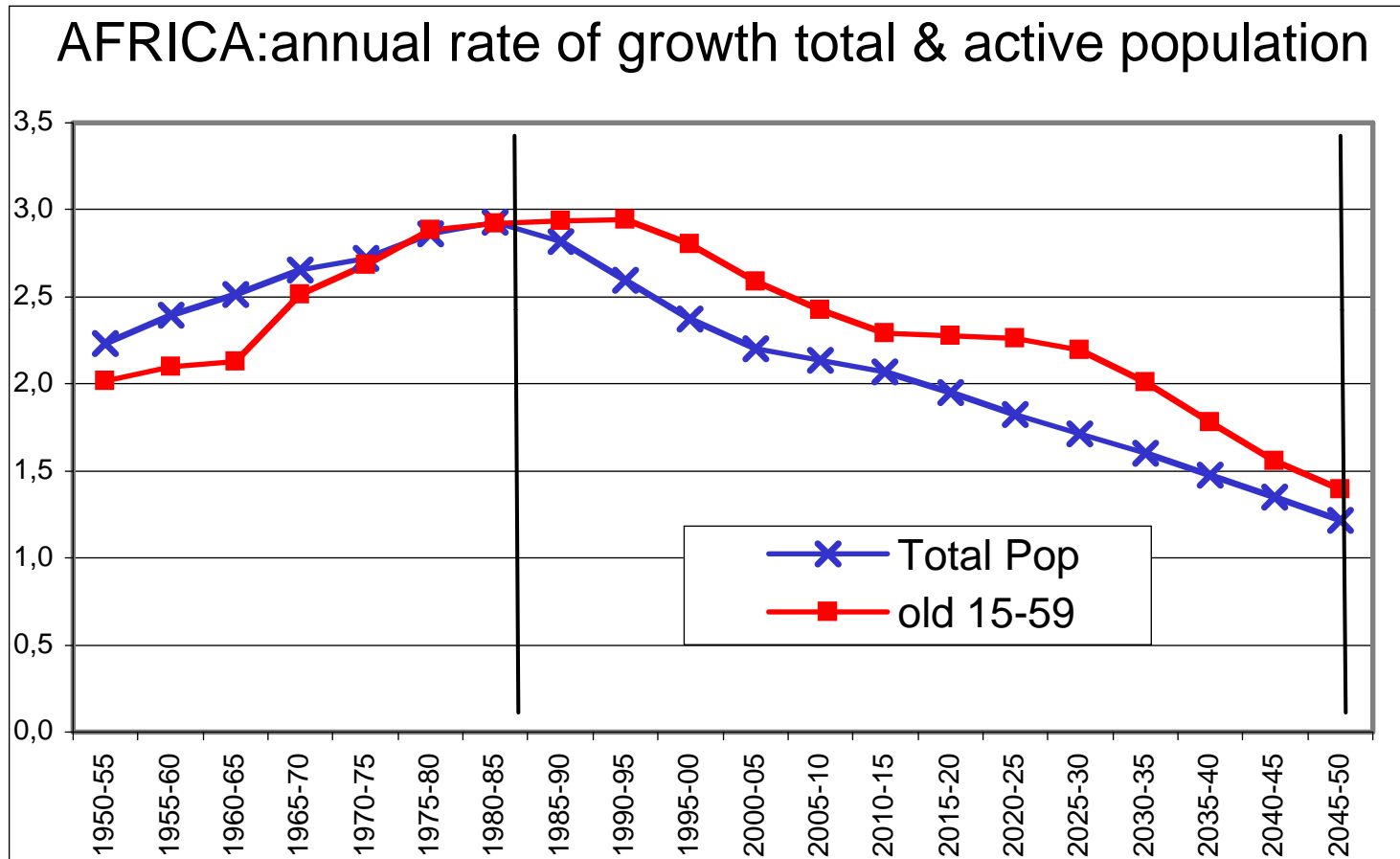
**INDIA: annual rate of growth total and active population**



**CHINA: annual rate of growth total and active population**



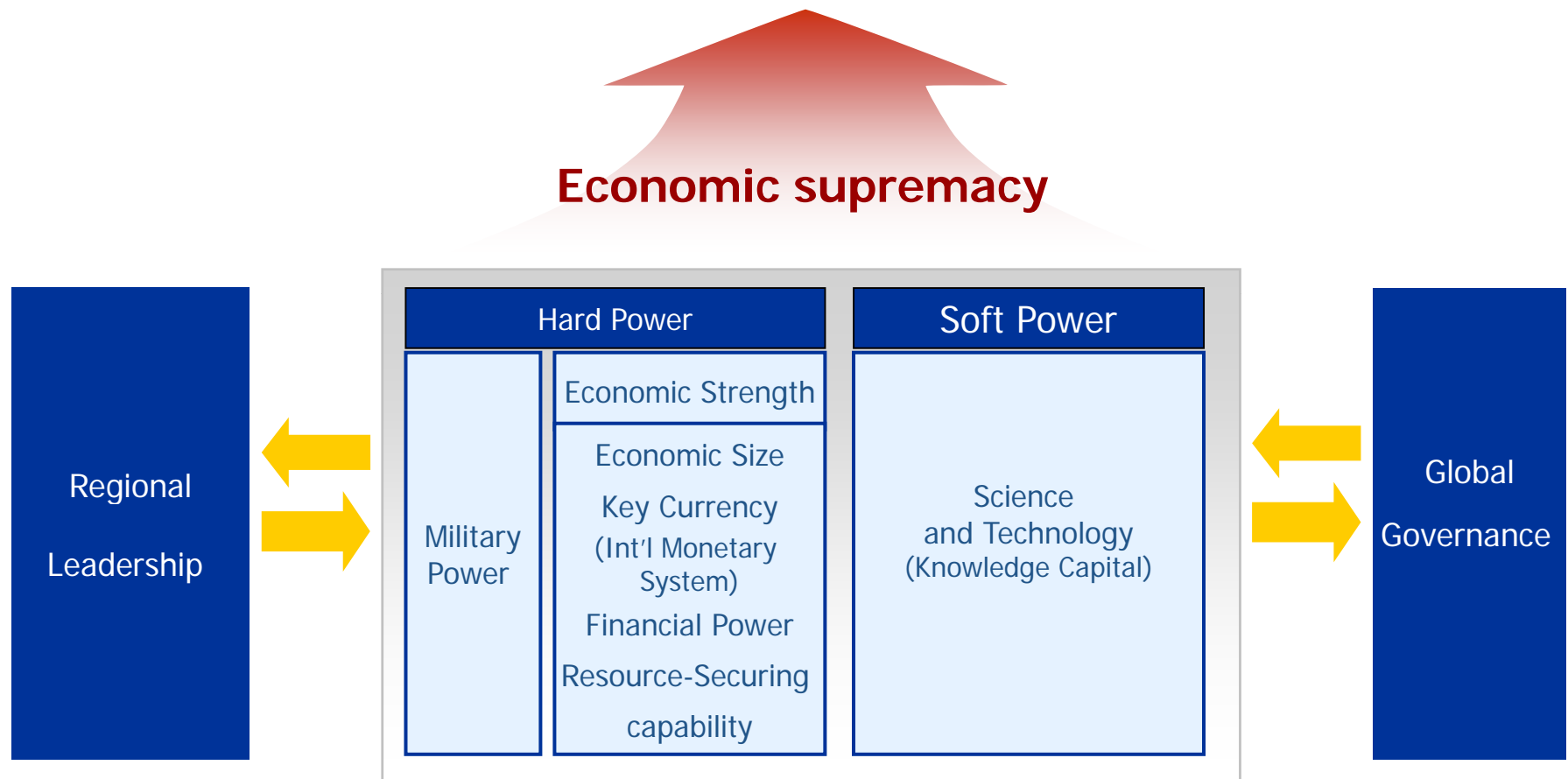
## ... Including Africa



# Key Research Questions of Ku-Hyun JUNG

- **How will regional weights in the world economy change over the next 10-20 years?**
- **What impact will financial power and technological prowess have on altering the paradigm of the world economy?**
- **Will natural resources become a critical variable in the change of the world economic paradigm? What will be their impact on industrialized and emerging countries?**
- **How will the regionalism evolve from a mid- and long-term view? Will the Asian economic integration make progress?**
- **How will the dollar-centered international currency system (pax-dollarium) be reorganized in the future?**
  - **Outlook for change in the weight of euro as the world's key international currency and the possibility of the yuan and yen becoming the world's main reserve currency**
- **How will the governance system of the world economy change in the future, and who will lead it?**
  - **The roles of international organizations, nation-state, NGOs and global companies as main entities setting the global agenda**

# Research Framework



Note: Military power and political/diplomatic power, another component of soft power, excluded in the research.

# 1) Economic Scale

## ■ Estimates of major countries' GDP up to 2030 using "Growth Accounting Model"

- To form mid/long-term predictions on the size of major economies, IMF's forecasts were used up to 2013 and a growth accounting model for 2014-2030
  - Growth Accounting Model: Includes population, capital stock and productivity as growth factors

## ■ Predict major countries' GDP using different foreign exchange rate scenarios

- Difference in productivity growth affects foreign exchange rates (Balassa-Samuelson effect)
  - Scenario 1: applied 50% of difference in productivity growth
  - Scenario 2: applied 33%
  - Scenario 3: maintained the current foreign exchange rates

## ■ The possibility and timing of China overtaking the US as the world's largest economy depends on whether China can properly handle risk factors.

- Sociopolitical instability, asset bubble burst, resource crisis

### Overtaking by China and India by Scenario

	Scenario ① (Basic Scenario)	Scenario ② (Slight Change in Foreign Exchange Rates)	Scenario ③ (No Change in Foreign Exchange Rates)
China > US	2026	2029	2042
China > 15 Euro Countries	2025	2027	2035
India > Japan	2023	2025	2029
India > 15 Euro Countries	2042	2047	Impossible by 2050
India > US	2046	Impossible by 2050	Impossible by 2050

### Overtaking by China When Risks Occur

	Scenario ① (Basic Scenario)	Scenario ② (Slight Change in Foreign Exchange Rates)	Scenario ③ (No Change in Foreign Exchange Rates)
China > US	2028	2030	2042
China > 15 Euro Countries	2027	2029	2035

## What could be the 2025 GDP?

All models use a Cobb-Douglas fonction of Production :

$$Y = A K^{\alpha} L^{(1-\alpha)}$$

- Y= GDP
- K = capital
- L= labor
- A= Technical Progress or Total Factor Productivity (TFP).

But :

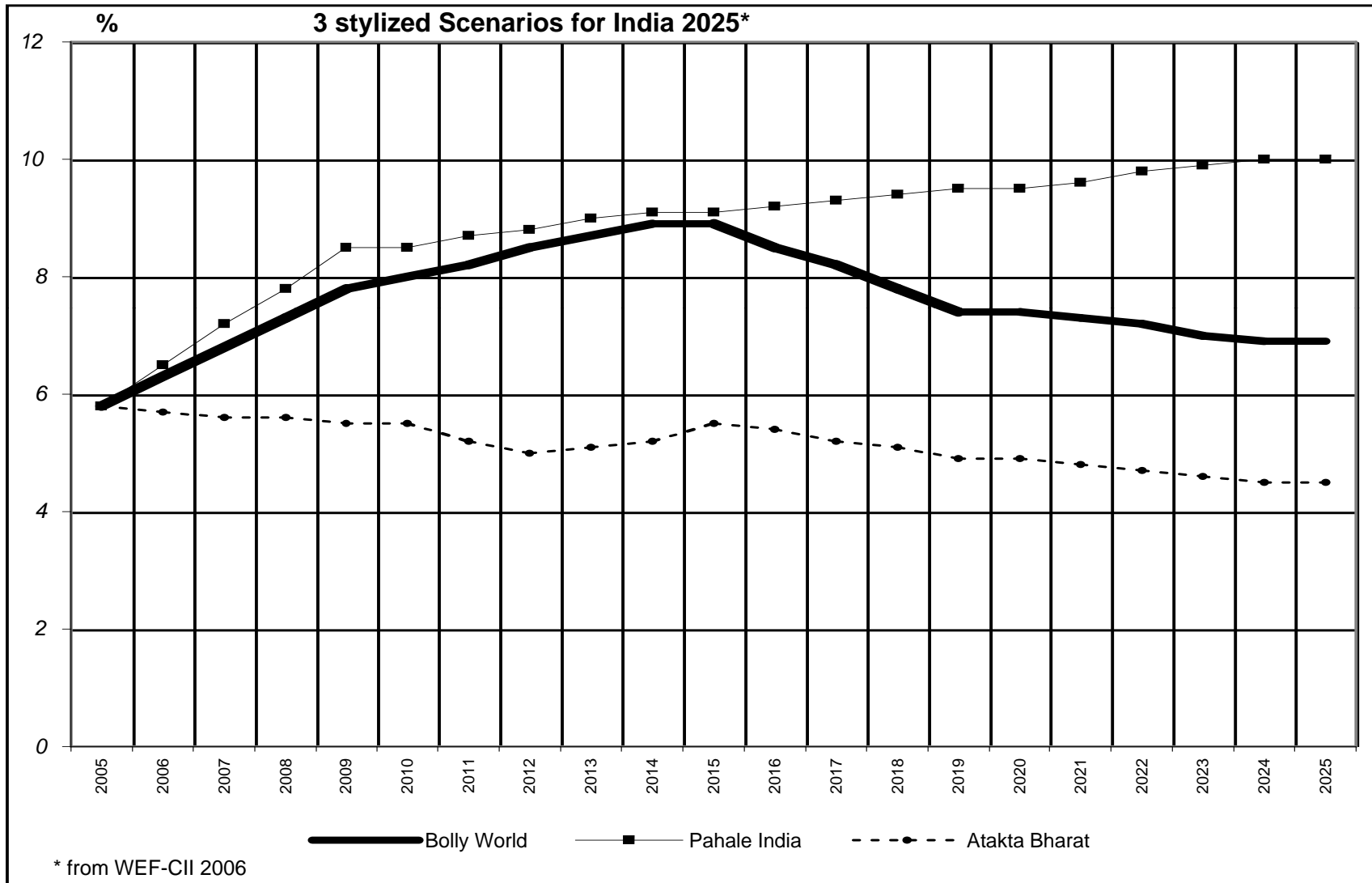
1/ Specifications in the models are quite different

2/ Parameters also

## Contrasting results for India

	Annual rate of Growth					%
	GDP	TFP	Capital	Labor	Edu	I/GDP
CEPII (2050)	4,5	2,2	4,7	0,7 in PGF		20%
GS03 (2050)	5,7/7,4	4,6		1,9	in PGF	22%
GS07 (2020)	8,4	3,2	7,8	1,8	2	29%
(2020-50)	8,2	2,2	7,9	0,6	1,4	29%
Rodrick (2025)	6,7	2,5	8,3	1,9 sc +1pt		39%
BM (2030)	4,9					

## And Possible Paths & Scenarios for India Hypothesis of a « Middle Path » or « Unfine Balance »

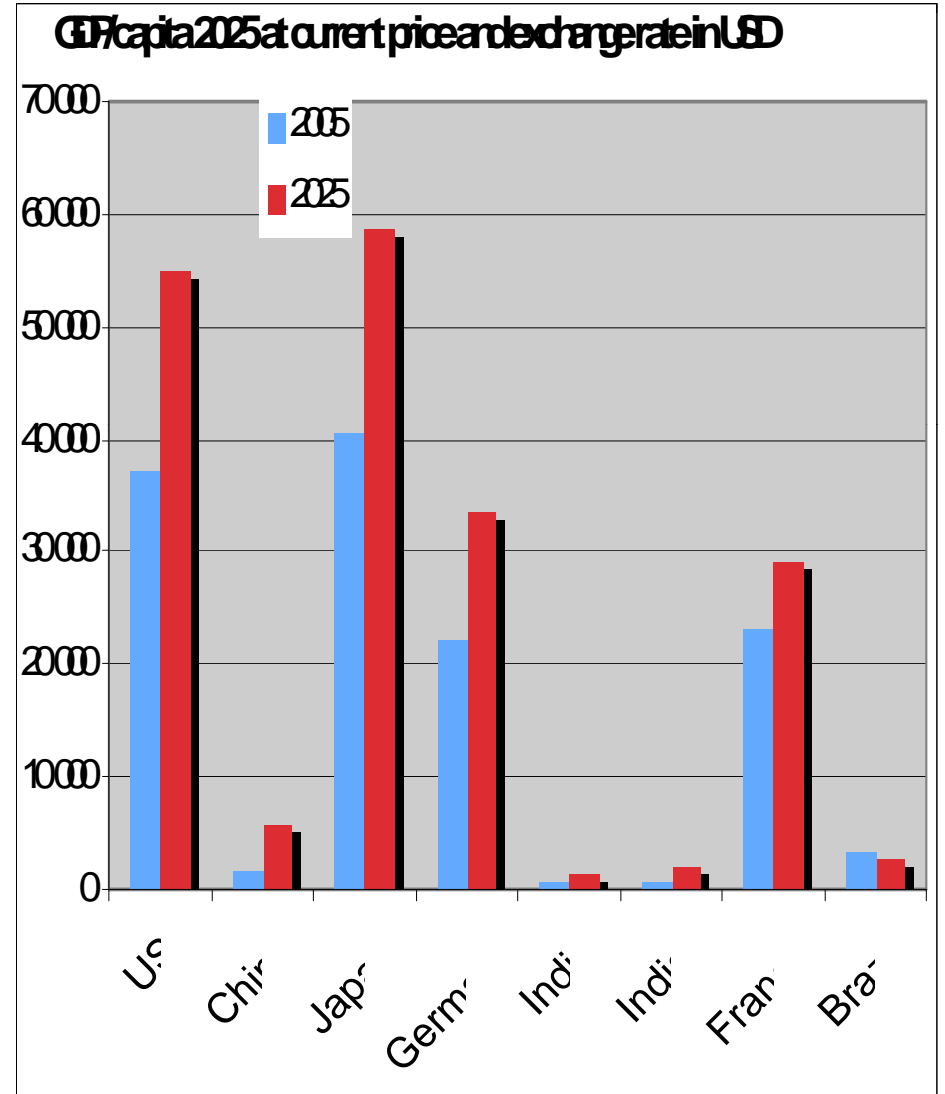
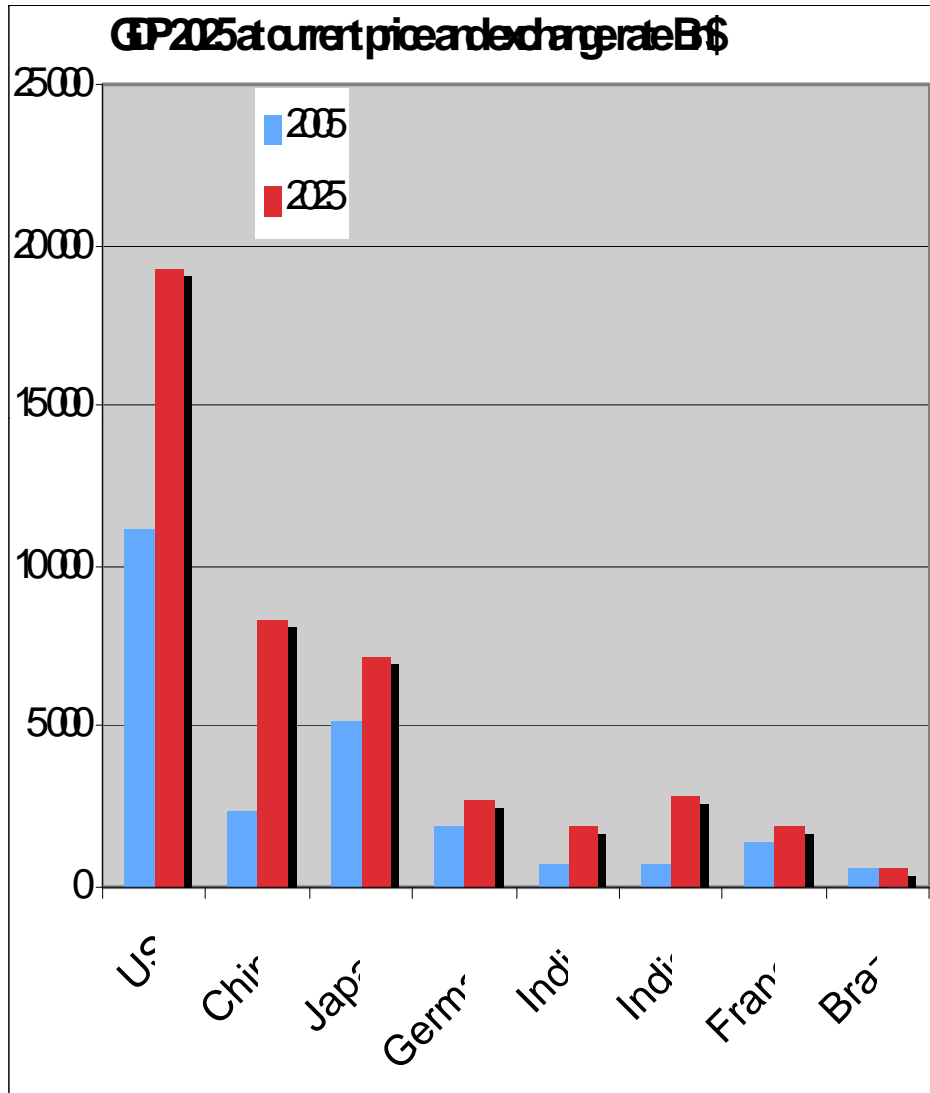


## Comparative results for CEPII

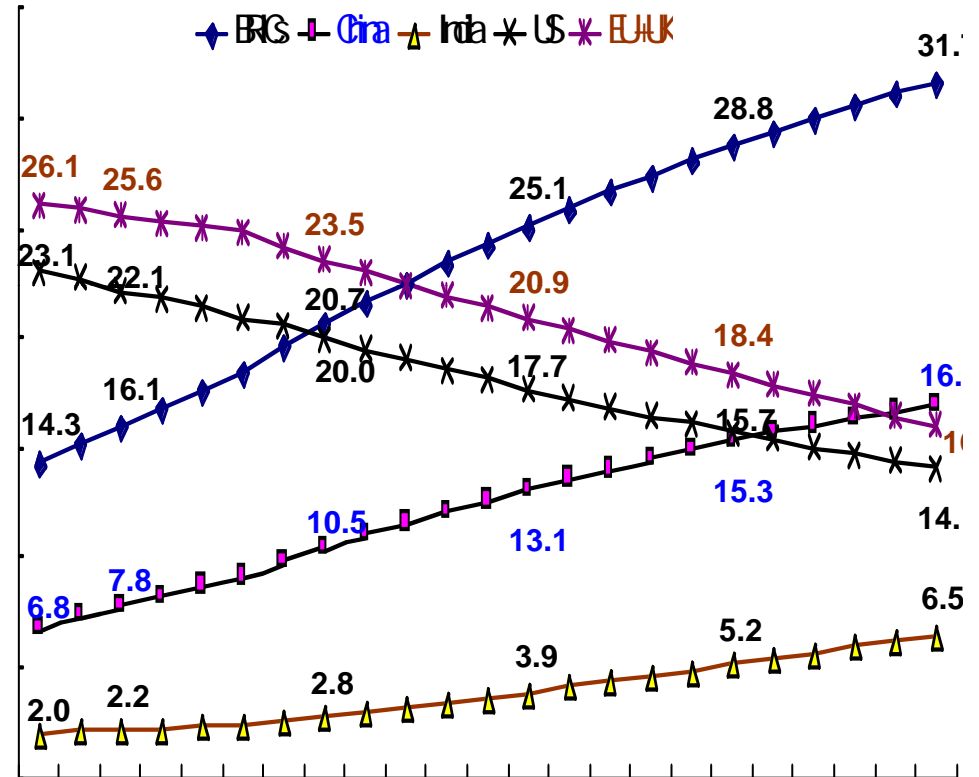
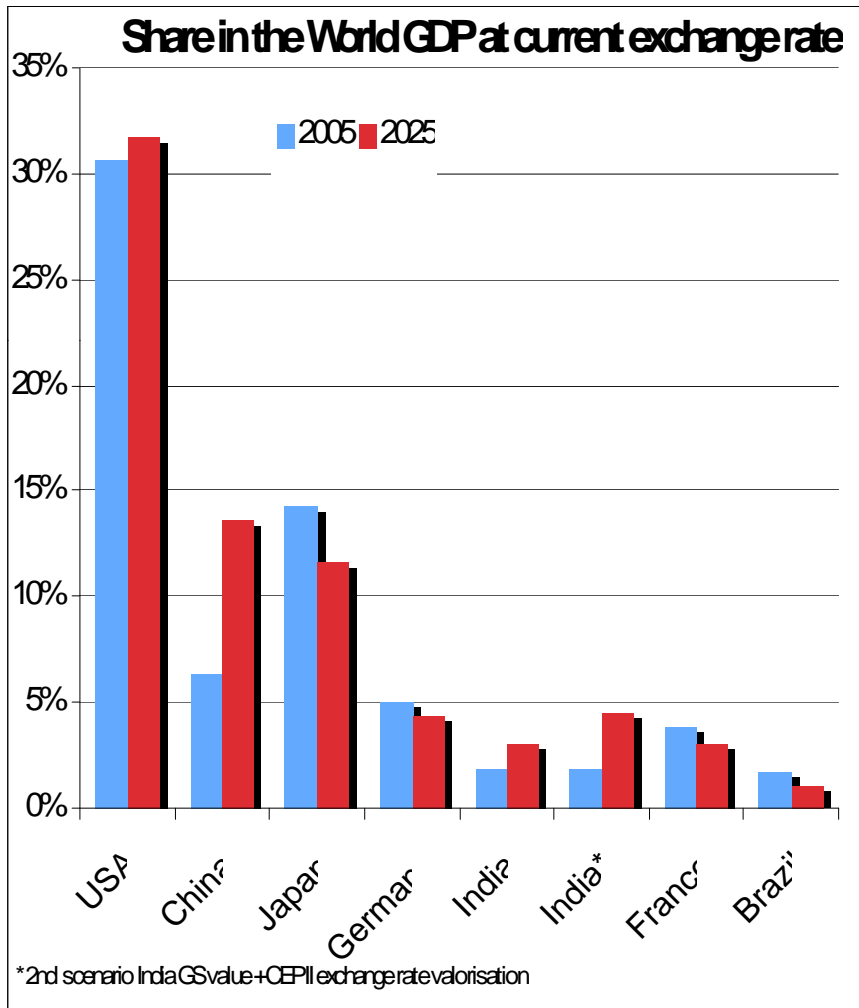
Projection 2025 in Bn USD (current US \$ and current relative prices base 2000)

<b>GDP</b>	<b>China</b>	<b>US</b>	<b>India</b>	<b>India*</b>	<b>France</b>	<b>Germany</b>	<b>Japan</b>	<b>Brazil</b>	<b>World</b>
2005	2 300	11 100	671	671	1 400	1 840	5 190	615	36 294
2025	8 287	19 287	1 890	2 772	1 833	2 692	7 113	605	60 902
<b>GDP/hab</b>									
2005	1 748	37 222	608	608	22 951	22 169	40 563	3 366	5 614
2025	5 749	55 091	1 354	1 986	29 097	33 647	58 486	2 644	7 704
<b>Population Mios</b>									
2005	1 316	298	1 103	1 103	61	83	128	187	6 465
2025	1 441	350	1 395	1 395	63	80	122	229	7 905
<b>GDP % World</b>									
2005	6,3%	30,6%	1,8%	1,8%	3,9%	5,1%	14,3%	1,7%	100%
2025	13,6%	31,7%	3,1%	4,6%	3,0%	4,4%	11,7%	1,0%	100%
<b>DP/hab USA=100</b>									
2005	5%	100%	2%	2%	62%	60%	109%	9%	15%
2025	10%	100%	2%	4%	53%	61%	106%	5%	14%
<b>Pop % World</b>									
2005	20%	5%	17%	17%	1%	1%	2%	3%	100%
2025	18%	4%	18%	18%	1%	1%	2%	3%	100%
<i>Annual rate c</i>	6,6	2,8	5,3	7,4	1,4	1,9	1,6	-0,1	

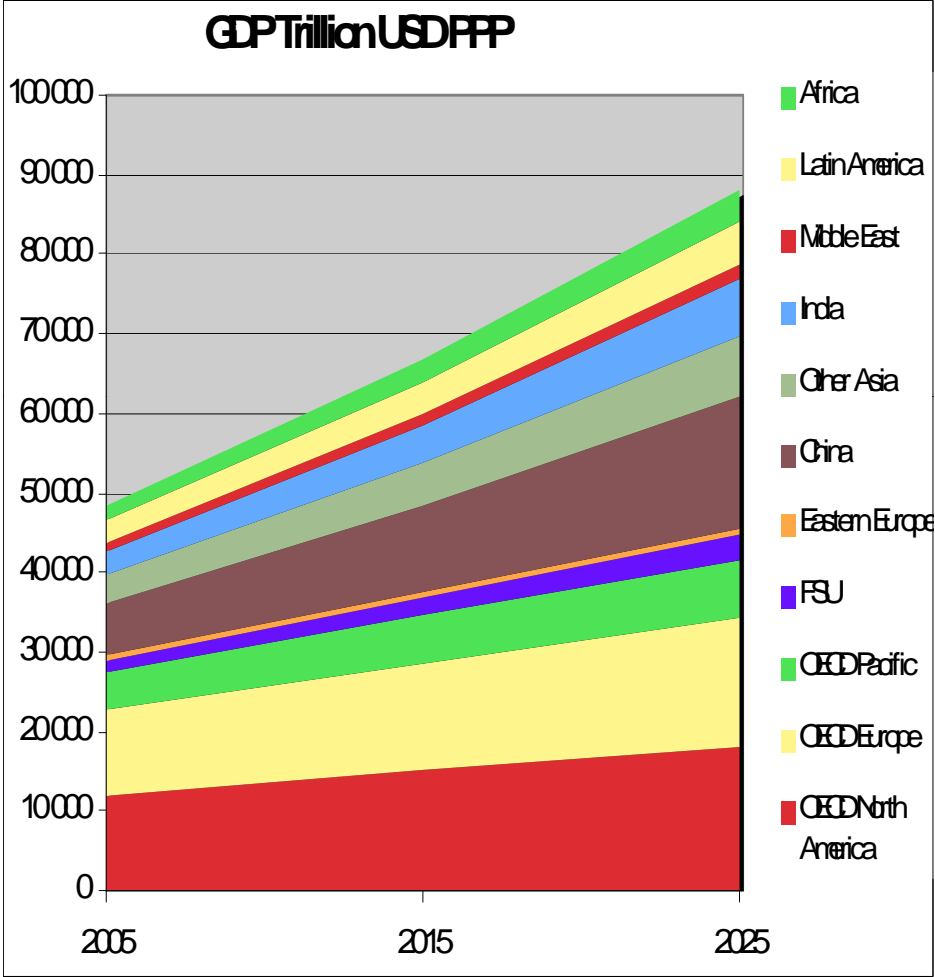
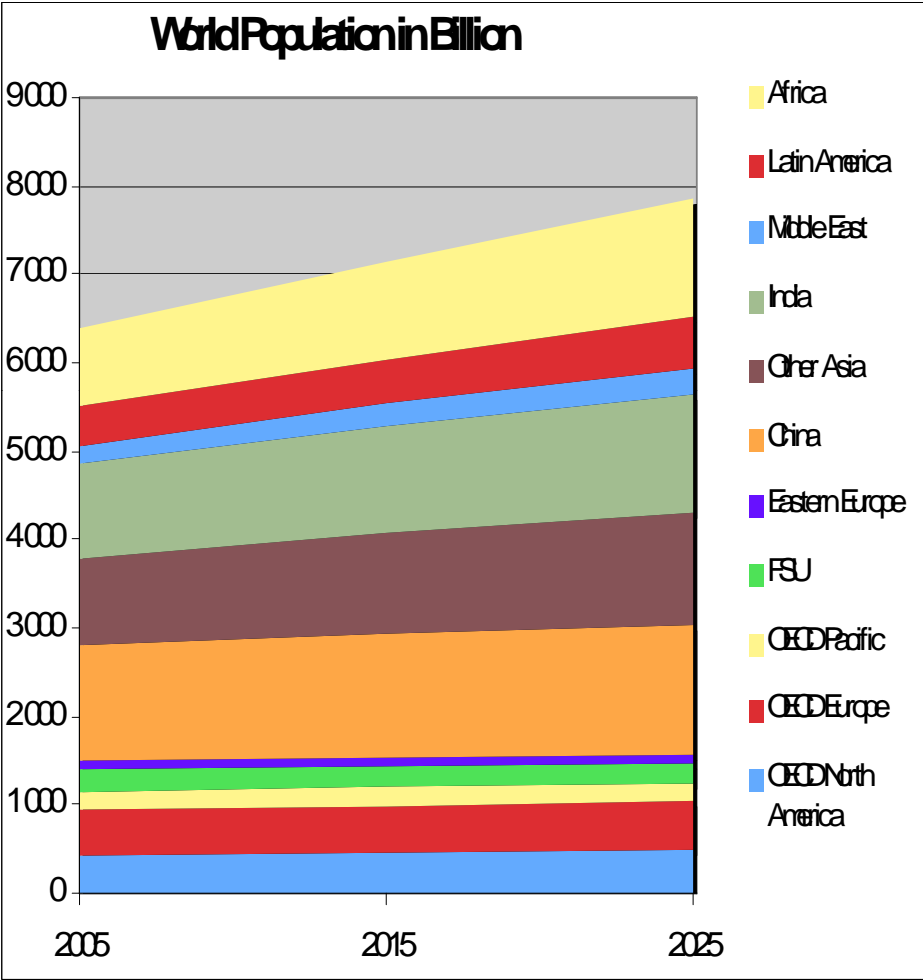
## What economic scales in 2025?



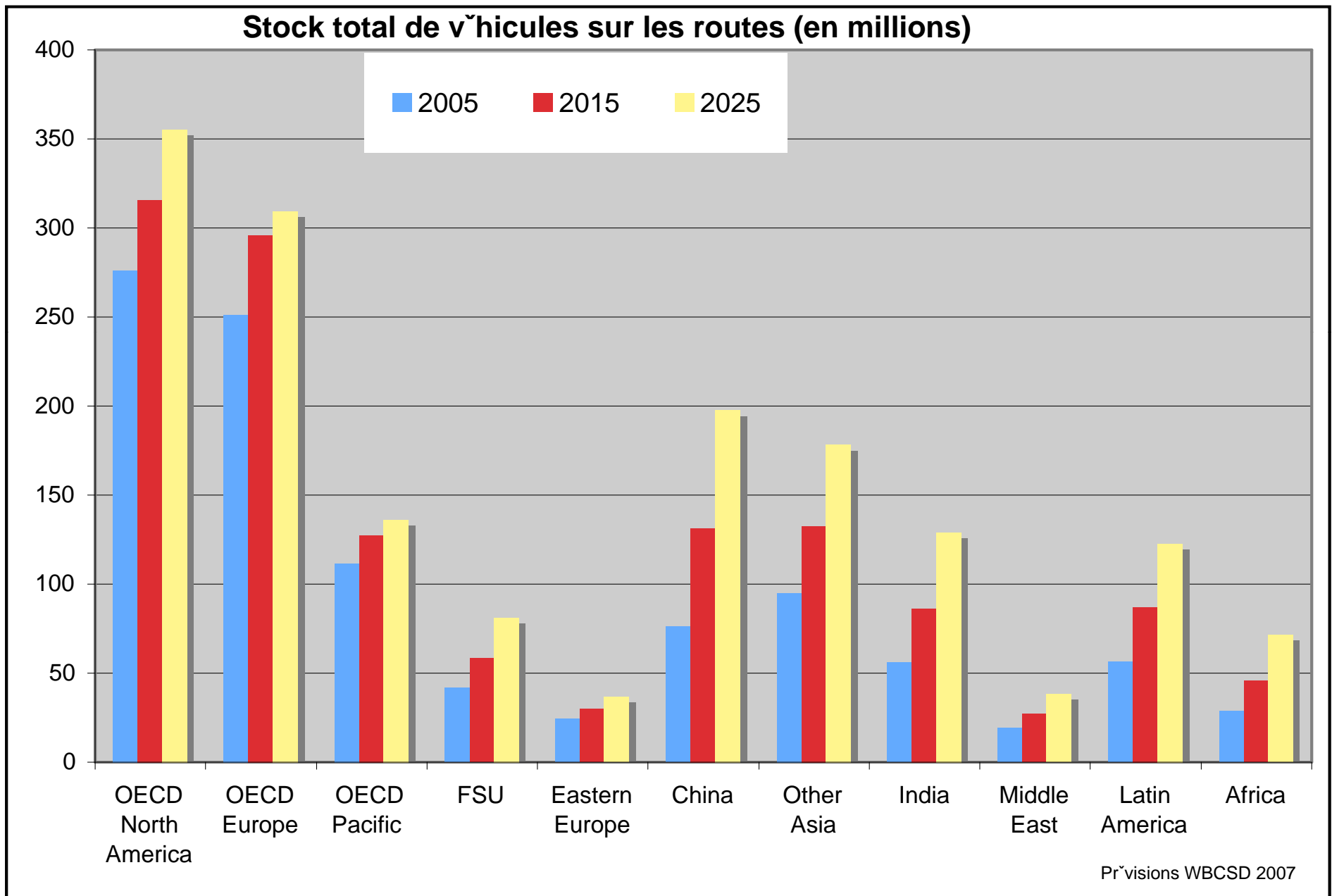
# Comparative result for the world GDP shares in 2025



# Hypothesis of a Multipolar World GDP & Population



## Even in some sectors as important as Cars



## The CHINDIA story shows some sensitive sectors but can we take for granted the coalition of the two asian giants?

### Industrial/commodities data

Consumption	India	China	Chindia as a % of world
Steel (m t)	35	320	35
Aluminium (m t)	0.9	6.3	24
Nickel (000 t)	30	143	13
Copper (m t)	0.3	3.3	22
Oil (m t)	120	253	11
Cement (m t)	125	817	48
Coal (m t oil equivalent)	178	799	37
Iron ore (m t)	59	406	37
Bauxite (m t)	5	29	21
Power gen capacity (000 MW)	115	440	15

### Agricultural indicators

	India	China	Chindia as a % of world
Total land (m ha)	297	933	10
Arable land (m ha)	162	145	23
Cotton consumption (m t)	3.0	9.0	37
Soya oil consumption (m t)	2.1	9.5	30
Sugar consumption (m t)	20.0	31.5	22
Cereal production (m t)	226.3	422.6	
Cereal yield (kg/ha)	2,358	5,185	3,316 <sup>4</sup>
Tractors per 1,000 agri workers	6.0	2.0	20 <sup>4</sup>
Rice production (m t)	117	181	52
Wheat production (m t)	72	87	28
Tea (m t)	0.8	0.8	52
Milk (m t)	83	16	17

<sup>4</sup> world average

## 2. Key Currency (Int'l Monetary System)

### Current Status

- Since the World War II, US dollar has been the world's key currency.
- The Bretton Woods system created the key currency
- US dollar remained as the key currency thanks to the US's economic power, financial network and the absence of competing currency
- Despite the rapidly rising status of Euro, US dollar still holds over 60% share.
- Foreign currency reserve (as of the end of June 2008): 62.5% is US dollar, 27% is Euro
- Foreign currency assets held by private banks: 55.3% is US dollar
- Foreign transactions: 86.3% is US dollar, 37% is Euro
- Outstanding amount of international bonds (Sept. 2008): US\$8.2 trillion, 10.8 trillion euro

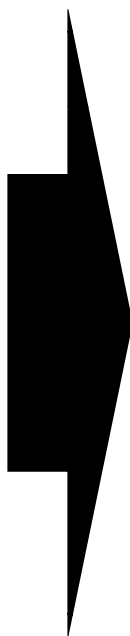
### Mid/Long-term Forecast

- US dollar will remain the leading currency.
- Due to abundant liquidity in financial market and network effect
- Euro will become a powerful competing currency, resulting in a bipolar currency system of US dollars and euros.
- After the global financial crisis, restructuring in the international financial order will alter the US-led global currency system
- Chinese yuan will become a regional currency in Asia.

### 3. Financial Power

#### Current Status

- US holds dominant position in all areas that create financial power; financial hub, center of financial assets and institutions.
- US holds 56.1% of the world's financial assets
  - 34% of bonds (as of 2006)
  - Stock market capitalization: 4.5 times that of Japan, the world's second-largest market
- Among the world's ten major banks, three are US banks
- New York is the global financial hub
  - Except for London, most other financial hubs specialize in narrow financial services
- US maintains financial power based on its key currency status and advanced financial acumen.
- U.S. Dollar Recycling Mechanism
  - US's current account deficit → Increasing liquidity in countries with current account surplus → Swelling foreign currency reserve of these countries → Investment in the US
- US has quality workforce, core factor of financial industry
- Financial crisis caused contraction in US investment banks.



#### Mid/Long-term Forecast

- Financial power of Europe and emerging countries will strengthen.
- Significant advancement expected in sovereign wealth funds and emerging countries
- Absolute financial power of the US will weaken but its superior status will continue.
- In the wake of the financial crisis, the US financial industry will undergo a temporary contraction
- US will continue to hold competitiveness thanks to large comprehensive financial groups
  - Commercial banks and investment banks combined
- Financial power will be divided between the US and Europe.
- Impact of China's rapidly growing financial power will be limited to Asia.

## 4. Capability to Secure Natural Resources

### Current Status

- Competition among big players to dominate the oil market
  - Five major oil companies and five state-owned oil companies of oil-producing countries dominate the oil market.
- UK and US major oil companies account for one-third of the world's oil production.
  - State-owned oil companies of China and India secure resources.
- International oil prices plunged due to global recession but the possibility of resource crisis still exists.
  - The demand and supply system of oil resources is inherently unstable.
    - With declining oil production, economic development of emerging economies such as China and India boosts oil demand.
  - A global economic rebound can again expose a shortage of natural resources.

### Mid/Long-term Forecast

- Natural resources have always been an obstacle to sustainable growth of the global economy.
- Further competition between emerging and highly industrialized countries to secure more natural resources will be inevitable.
- Changing paradigm in countries' efforts to secure resource hegemony.
  - Countries will pay more attention to developing renewable energies and energy-efficient technologies rather than securing more fossil fuels.
- The Europe and the US will maintain their resource hegemony.
  - They are superior in securing development rights of overseas resources, leaders in sophistication of the industry and the development of renewable energies.
- Emerging countries (China/India) will step up efforts to secure fossil fuels by leveraging their ample capital.

## 5. Science & Technology (Knowledge Capital)

### Current Status

- Since World War II, the US has led in science and technology.
- The US holds a superior position in the science and technology sector.
  - The US ranks first in terms of science and technology competitiveness according to the IMD.
  - The US accounts for one third of the world's R&D.
  - The US has 54 universities included in the world's top 100 universities(2007)
    - Only six Asian universities on the list.
  - The US ranks first in terms of the numbers of science papers and novel prize winners.
  - The US ranks first among Triad Patent Families
  - The US is the world's biggest technology exporter and posts trade surplus in technology sector.
    - The US exported US\$75.4 billion technology in 2006 with surplus of US\$50 billion.
    - Germany, the second-biggest technology exporter posted US\$34.3 billion in technology exports in 2006.
  - The US is superior in terms of corporate competitiveness.
    - There are 152 US companies included in the Fortune's global top 500 list.
    - The US accounts for 63% of the total value of the world's top 100 brands.
- China is chasing highly industrialized countries based on its strong economic power.

### Mid- and Long-Term Outlook

- The US will maintain its hegemony in the scientific and technology sectors until 2030.
  - Competitor countries will pose a threat to the US in some of high-tech industries.
- Countries with advanced technologies such as the US will continue to take the lead in the high-tech sector until 2020.
- China could jump to No. 2 globally by 2030 in terms of technology development.
  - R&D investment of China will likely amount to US\$300 billion in 2020, surpassing those of Germany and Japan.
  - China will rise as an Asian technology powerhouse in terms of the number of papers, the number of citations, and competitiveness of universities.
  - In some areas, China and India could surpass the US in terms of scientific knowledg.

## 6. Regional Leadership

### Current Status

- Regionalism is spreading around the world.
- Strengthened regional integration for FTA and economic/political integration
  - Intensified competition to increase power among superpowers (i.e., EU and the US)
- EU is most advanced economic community.
  - Seeking political integration following economic integration
  - 16 out of 27 members using euro
- The US is now on track to establish the FTAA with Latin America, based on NAFTA.
  - South America is seeking its own union with 12 countries participating.
- From an economic perspective, East Asia has formed "de facto regionalism"
  - Asian region also seeks regional integration in earnest (i.e., ASEAN+3)

### Mid/Long-Term Forecast

- Through the spread of FTAs, free trade system promoted by WTO is realized.
- Regionalism will accelerate further.
  - Regionalism, which was limited to trade and investment, expands in financial and monetary sectors.
- Tripolar System formed among Americas, Europe and Asia
  - The Americas: Forming Common Market
    - North America: Seeking common market led by the US
    - South America: Common currency
  - Europe: Realizes United Europe
  - East Asia: Forming "de facto common market"
    - Under Japan's check, regional community led by China is formed
- EU and US spearhead regionalism; Asia centering on China emerges as a counter force.

# 7. Global Governance

## Current Status

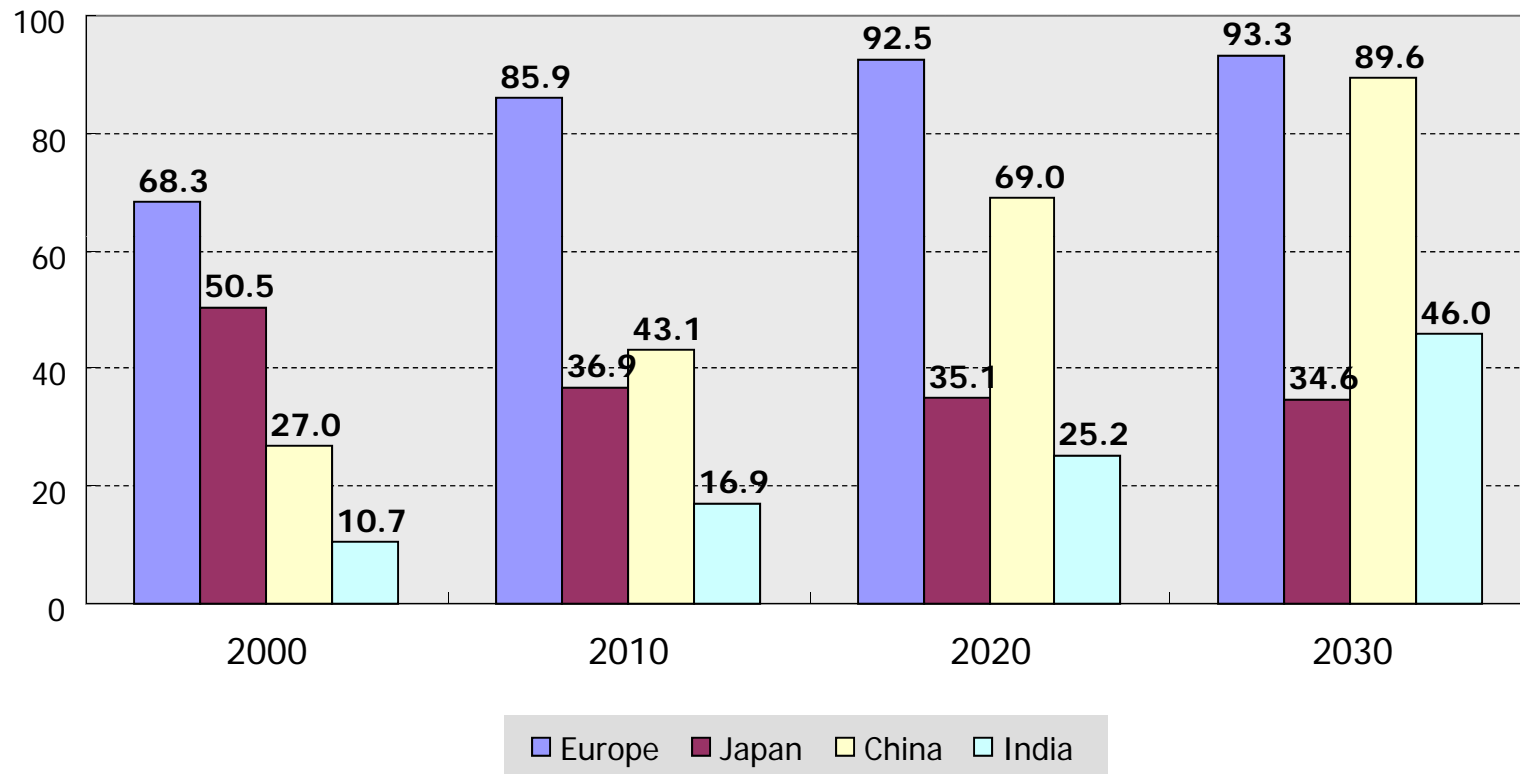
- Due to progress of globalization, global governance became more important
  - Global governance is a system to address issues that cannot be easily solved at individual country level
  - Meaning ability to set international norms
  - Spreading into various sectors such as international politics, economy, society, culture and environment
- Industrialized countries (i.e., the US and EU) are leading the decision making.
  - The US and Europe are exclusively taking presidents of IMF, World Bank and OECD, and voting right is assigned in favor of advanced countries
- Rising voice of emerging countries (along with their economic growth) is challenging US-led global governance.

## Mid/Long-Term Forecast

- Through Atlantic cooperation with Europe, the US seeks to maintain leadership
  - Decreasing US influence as superpower
  - Increasing voting right of EU, which is equipped with soft power
  - Taking pan-global issues in advance such as global warming
- China emerges as a counter-power to the US
  - China wants to act as a leader among emerging countries.
- Emergence of regional governance, which replaces global governance
- Wider diversity of global governance participants
  - Countries, international bodies, NGOs, multinational corporations, etc.

# Creation of a Tri-polar Global Structure by 2030

## SERI EPI (Economic Power Index)



Note : The Economic Power Index (EPI) represents the sum of comparative scores based on the outlook in seven areas (US=100) – economic scale, key currency, financial power, resource-securing capability, science & technology, regional leadership, and global governance.

# Europe and China Threaten US Leadership on Many Fronts

## Outlook for the Change in Global Economic Leadership in 2030

Classification	No. 1 country	No. 2 country	Remarks
Economic scale	China	Europe/US	Key variables include the impact of the financial crisis, foreign exchange rate and the economically-active population
Key international currency (International monetary system)	US (dollar)	Europe (euro)	Yuan will serve as a key regional currency in Asia
Financial power	US	Europe	Two pole system: US and Europe
Science and technology	US	China	Key variables include the acquisition of brains and financial power
Resource-securing capability (Resource power)	US	Europe/China	Paradigm change in competition for resource hegemony Stumbling blocks against the continuous growth of emerging economies
Norm-setting ability (Global governance)	US/Europe	China	The integrated Europe will have a stronger say
Regionalism	Europe	US/China	Three-pole system
Overall overview	US	Europe/China	The US will maintain the economic hegemony

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# China's Emergence Could Spark Both Growth and Conflicts

## 2030 Scenario for Global Economic Order

- ◎ **The keywords of the 2030 world economy are “growth and stagnancy” and “harmony and disharmony.”**
  - **It is a question of whether the world economy can sustain its dynamism.**
    - **Growth (60% possibility?)**
      - \* **Globalization expands market opportunities. Technology innovation leads to new growth.**
    - **Stagnation (40% possibility?)**
      - \* **Economic growth declines amid population aging. The world faces limits in growth due to energy and environmental problems.**
  - **How to resolve global issues such as environment and poverty and resolve various conflicting interests.**
    - **Harmony (40% possibility?)**
      - \* **Market and democratic values set as common human values.**  
**China leads international cooperation as a mature superpower.**
    - **Disharmony (60% possibility?)**
      - \* **The emergence of China as an unbalanced power (meaning not fully accepting market economy and democracy, while becoming the biggest economy) leads to a clash between western values and non-western values.**