

# **Globalization / Competitiveness of the Forest Sector**

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FTP Conference  
Kranjska Gora, Slovenia, 20 May 2008



Forestry  
Program

# Globalization

## Chanda (2007) concludes:

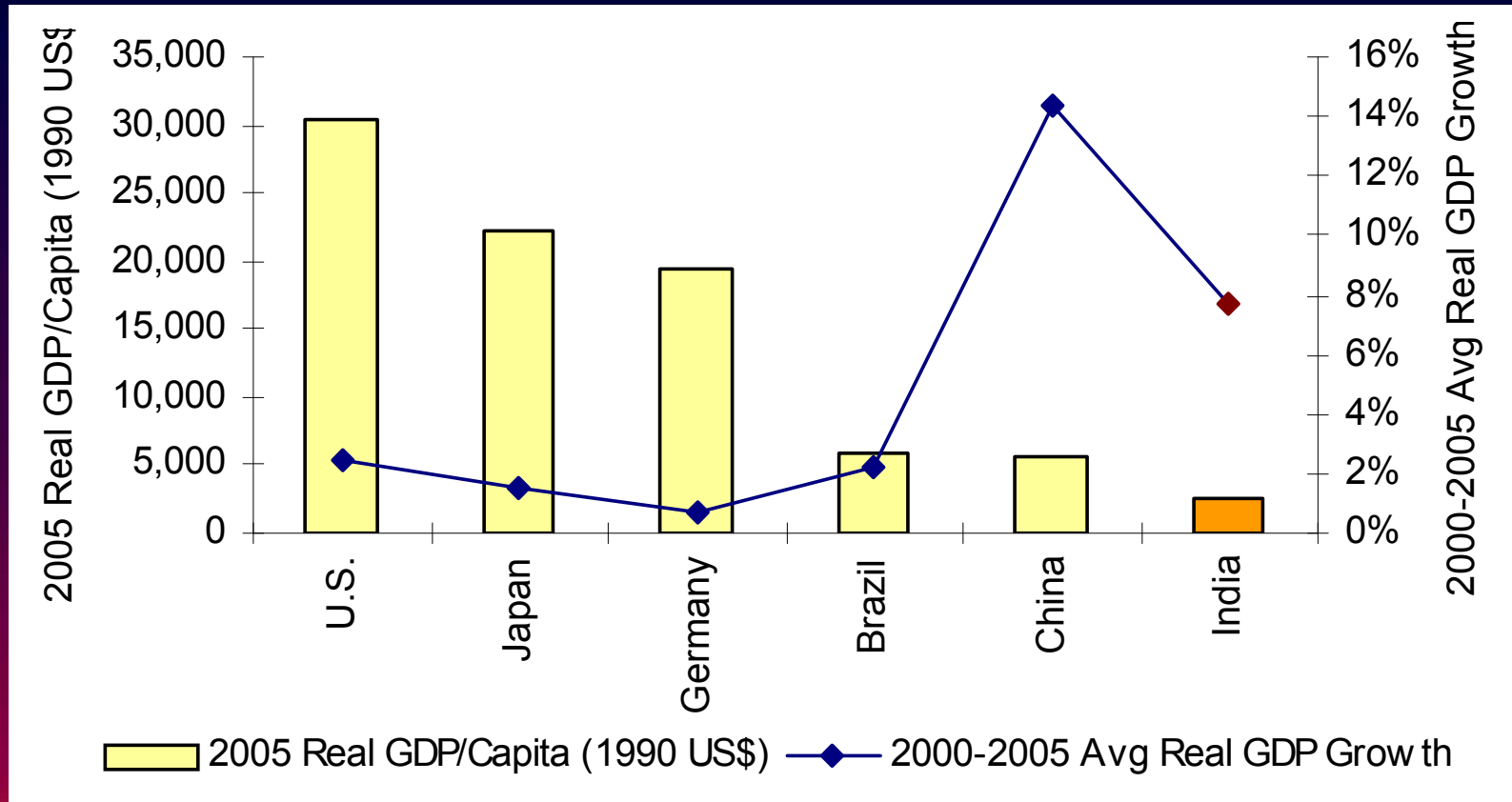
- **Globalization is probably as old as humanity itself and as complex and unpredictable**
- **It moves through a multitude of threads connecting us to far away places from an ancient time**
- **The processes of globalization are continuously evolving and are driven by economic aspirations and desires by hundreds of millions of people around the globe**

# Overall Current Globalization Issues in the Forest Sector

- **Shift in the Global Footprint of Growth**
- **Globalization of Fiber Markets**
- **Globalization of Product Markets**
- **Globalization of Energy Markets**
- **Climate Change**

# Shift in Global Growth

## Real GDP/Capita and Average Real GDP Growth

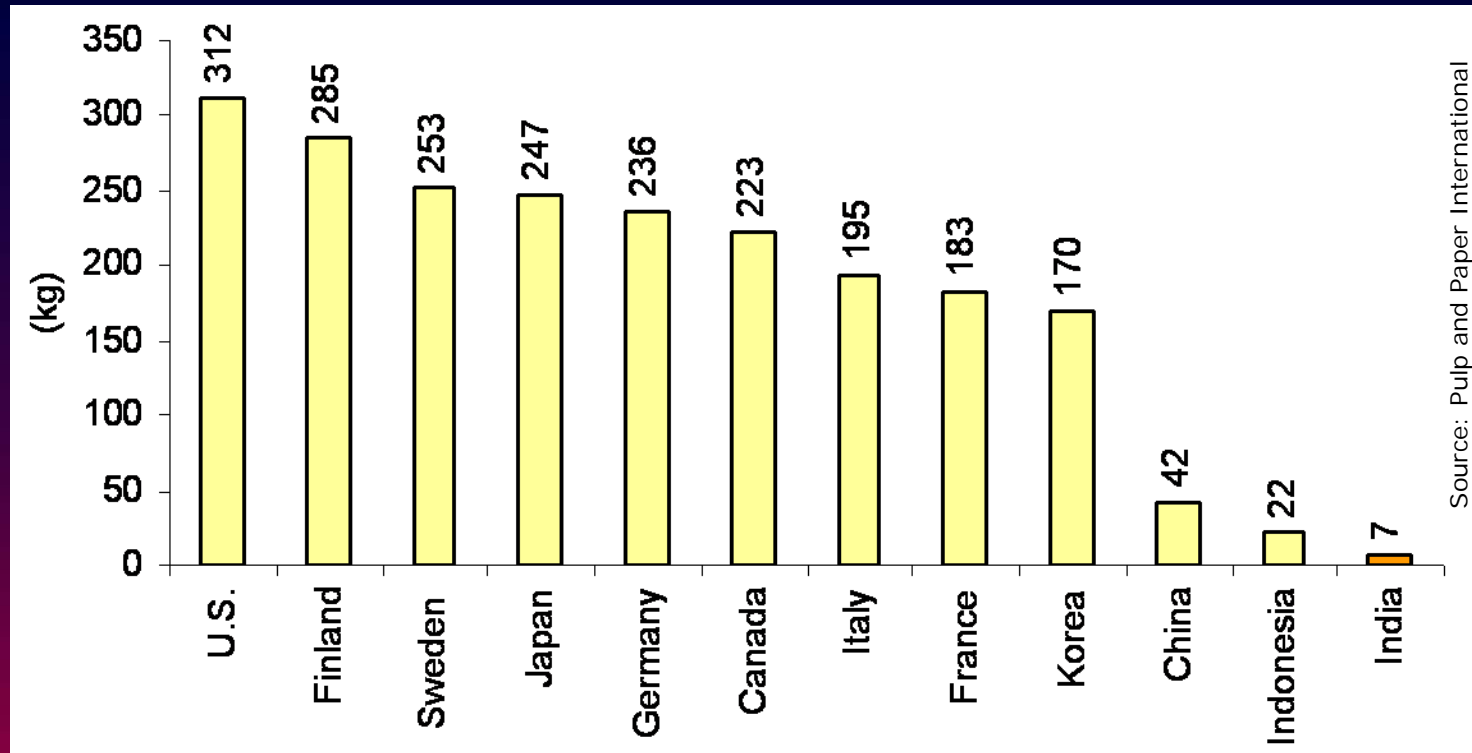


Source: The Conference Board and Groningen Growth and Development Centre, Total Economy Database, January 2007

- **The fastest economic growth is generally occurring in the countries with the lowest GDP/capita**

# Shift in Global Growth

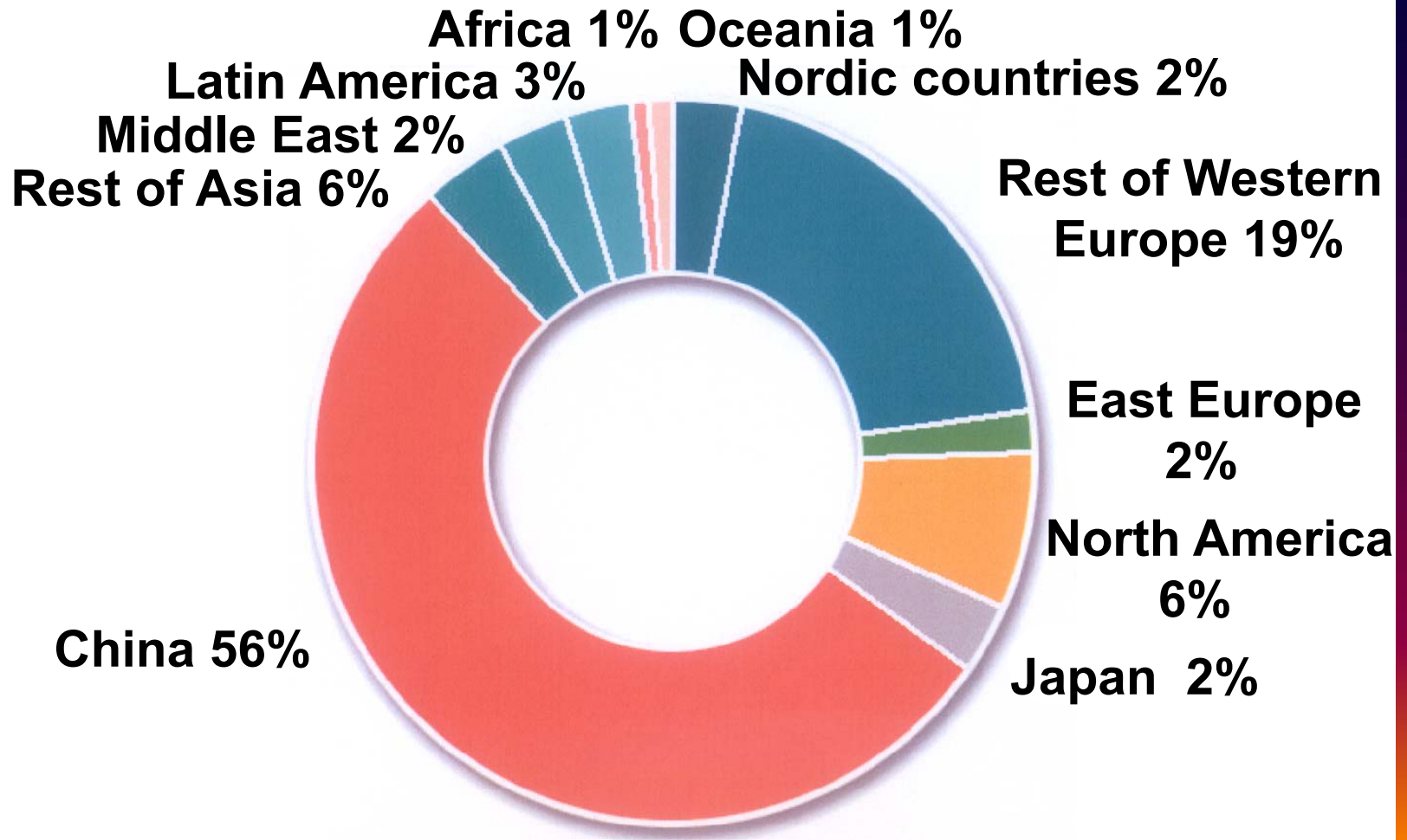
## Per Capita Consumption of Paper and Board (2004)



- Despite its significant middle class, India's per capita consumption of paper and paperboard remains the lowest among the major countries
- Compared to India, Indonesia's per capita consumption is 3 times, China's is 6 times, and the USA's is 45 times

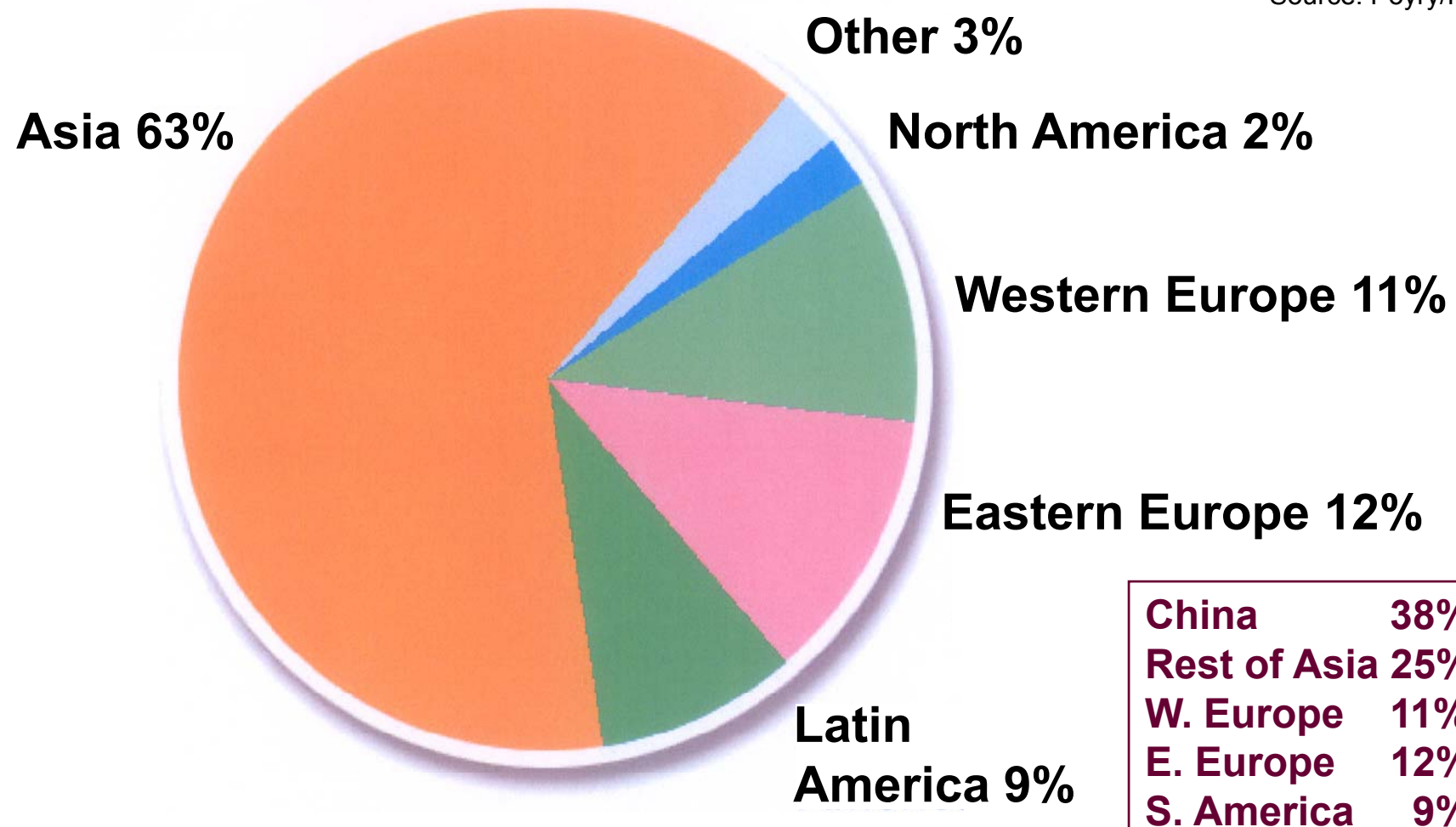
# Regional Changes in Paper Capacities

New Paper Machine Investments 2001–2006  
Share of Total New Capacity (approx. 34 mtonnes)



# Incremental Production 2004–2020 by Main Region

Source: Pöyry/Metso (2008)

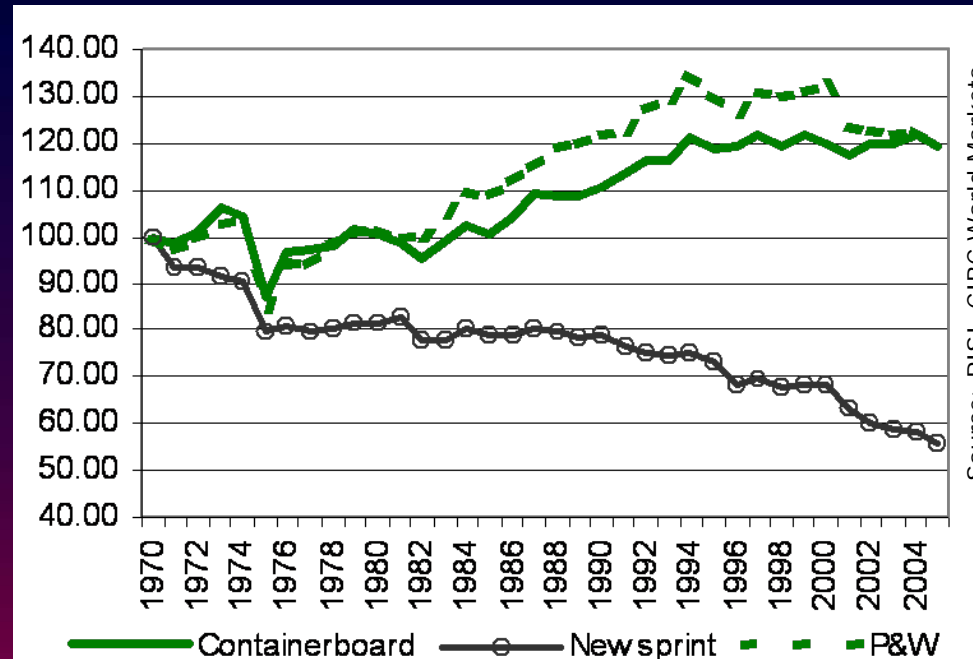


China	38%	52 mt
Rest of Asia	25%	34 mt
W. Europe	11%	15 mt
E. Europe	12%	16 mt
S. America	9%	12 mt

Total incremental production 2004–2020: 135 million

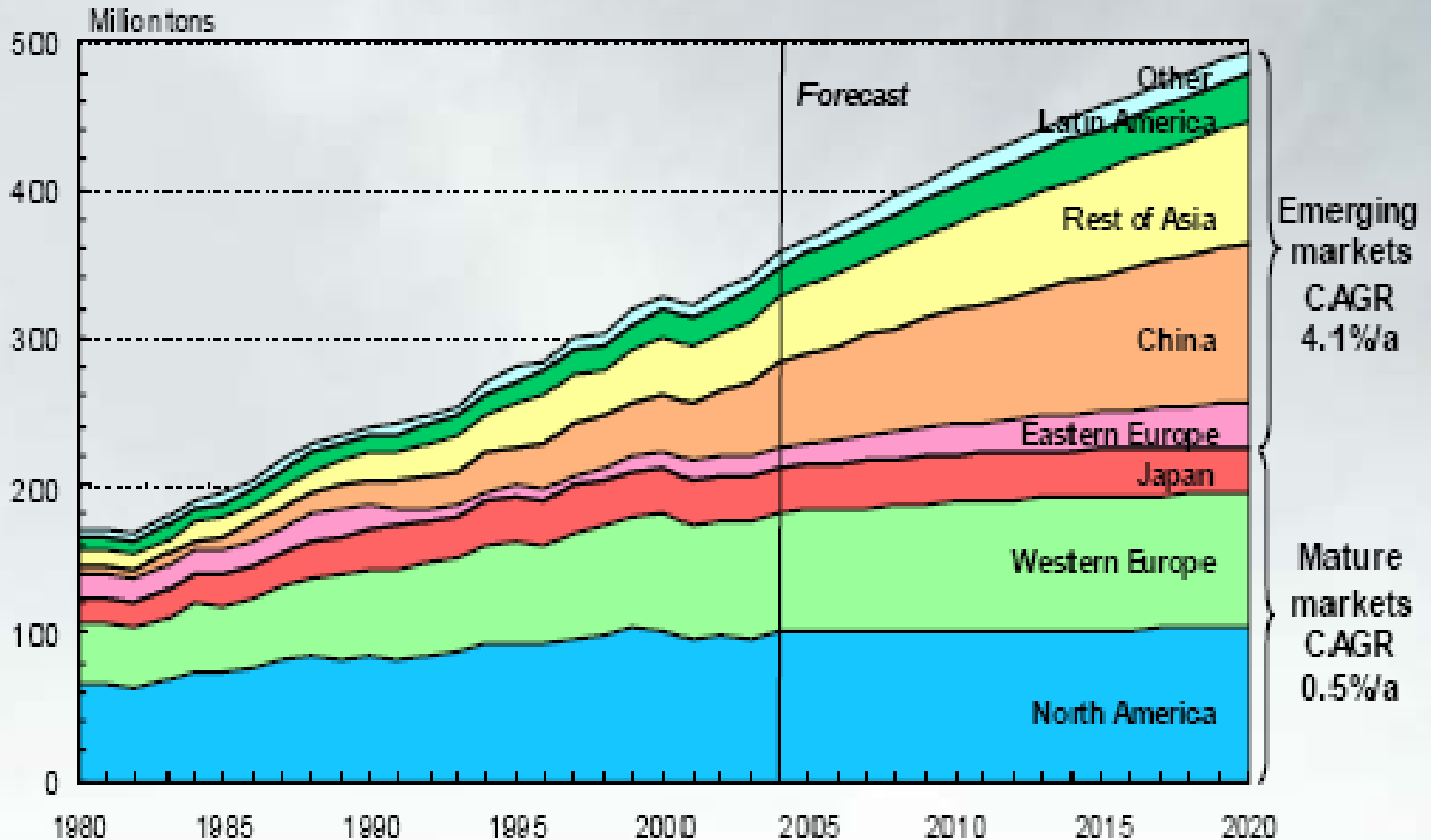
# Shift in Global Growth

## Global Consumption Per Unit of Real GDP



- Electronic communication is having a meaningful impact on the consumption of paper
- At the global level, the “intensity of consumption” in the economy has been declining for newsprint since 1970, and started to decline for printing and writing papers in 2000
- Packaging is more associated with overall economic activity, and is “holding its own”

# Globalization



# Shift in Global Growth

In the solidwood sector, China has also been the major source of global growth in both production and consumption. For example:

## Plywood:

- Roughly 10x increase in Chinese capacity since mid-1990s
- Now the world's largest producer (mostly hardwood)
- Currently exporting about 20% of its production

## Medium Density Fiberboard (MDF):

- Roughly 8x increase in Chinese capacity since mid 1990s
- Capacity in 2007 increased by 6.7 million m<sup>3</sup>  
Capacity in 2008: +30 million m<sup>3</sup>
- Now the world's largest producer
- Significant indirect exporter, mostly in the form of furniture

# Globalization of Fiber Markets

**We are likely at an inflection point regarding the perception of scarcity**

**The combination of 6 shocks will likely shift the perception at the global level from “relative abundance” to “relative scarcity” of wood fiber:**

- 1. Continuing Growth In Chinese Demand**
- 2. Increase in Russian Log Export Tax**
- 3. Reduction in Supply of Illegal Logs**
- 4. Insect Infestation in British Columbia**
- 5. Rising Bio-energy Demand for Wood Fiber**
- 6. Over-harvesting**

# Globalization of Fiber Markets

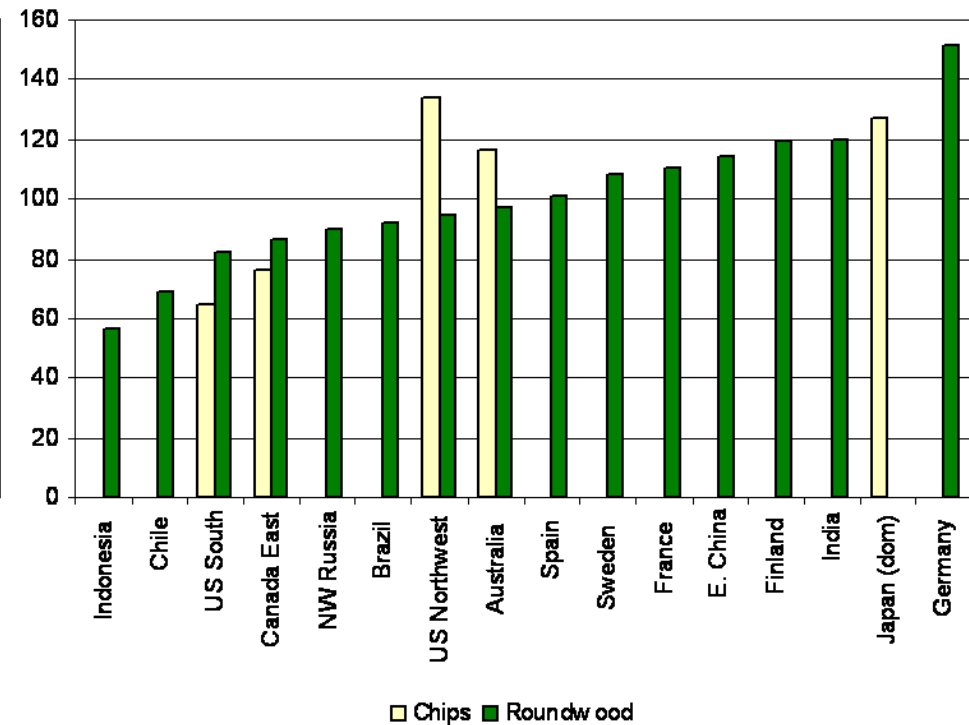
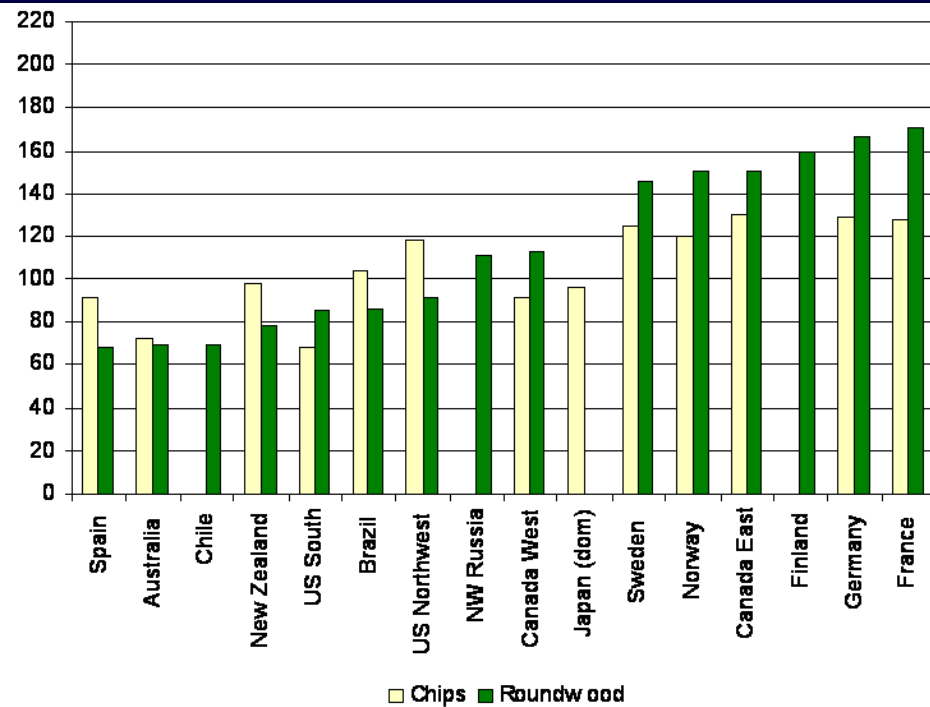
## Future Scenario on Wood Fibers

Region	Accessibility of Wood Fiber	Demand Forest Industry Products	Wood Fuel	Balance Supply/Demand Wood Fibers
Nordic	Slight increase	Slight increase	Strong increase	Reduced
EU15	Slight decrease	Slight increase	Strong increase	Reduced
Former East Europe and CIS	Slight decrease	Increase	Strong increase	Reduced
Russia	Slight increase	Strong increase	Strong increase	Unchanged
Africa	Unchanged/Increase	Slight increase	Increase	Reduced
China	Slight increase	Strong increase	Increase	Strongly reduced
India	Strong decrease	Strong increase	Increase	Strongly reduced
SE Asia	Strong decrease	Strong increase	Increase	Strongly reduced
Oceania	Increase	Slight increase	Slight increase	Improved
USA	Slight decrease	Unchanged	Slight increase	Reduced
Canada	Strong decrease	Slight increase	Strong increase	Strongly reduced
Latin America	Increase	Strong increase	Increase	Reduced

# Context

**Average Delivered Softwood Fiber Prices for Q2/2007 (US\$/ODMT)**

**Average Delivered Hardwood Fiber Prices for Q2/2007 (US\$/ODMT)**



- There are major differences in pulpwood prices around the world, which have a major impact on the relative competitiveness of national industries—roughly 3 times higher in the highest-cost than lowest-cost countries, and true for both hard- and softwood
- Surprising changes are occurring (e.g., higher prices in Brazil than in the USA)
- By 2015, we expect the price curve to rise and become flatter

# Globalization of Product Markets

More than a 40% increase in the value of global forest product exports since 2000

Increase driven by:

- Economic growth
- Reductions in tariff and non-tariff barriers to trade

# Globalization of Energy Markets

Growth in global energy demand is now being driven mainly by economic growth in Asia, and this is expected to support a secular rise in real energy prices

In response, a range of “high-tech” and “low-tech” alternatives are available to make cellulose-based biofuels

- The “high-tech” options include fuels from bio-refiners and black liquor gasification in kraft pulp mills (e.g., dimethyle ether/DME, Fischer-Tropsch fuels)
- The “low-tech” options include wood pellets

# The Three Fs: A Political Hot Issue

## ➤ The political heat driven by:

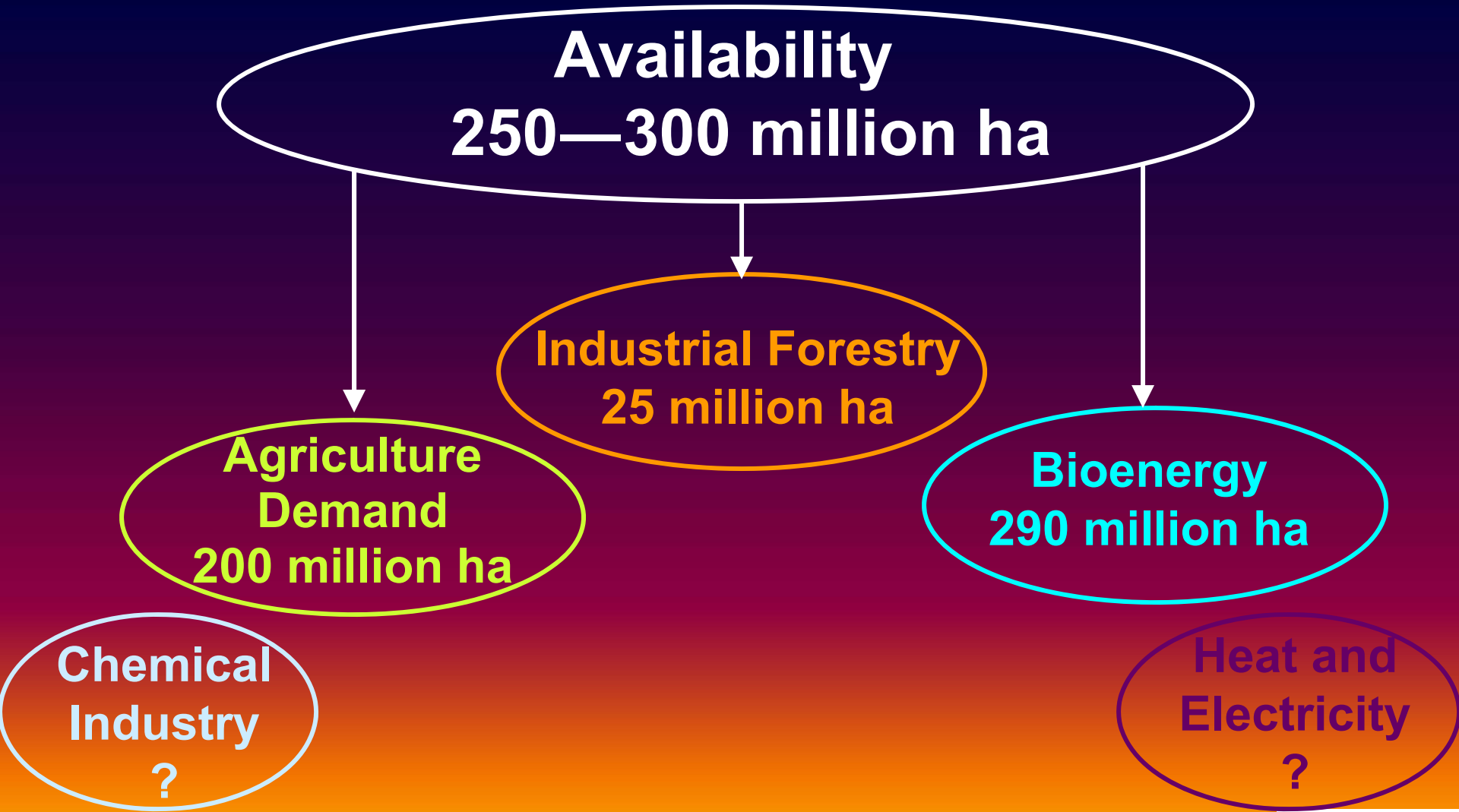
- ❖ **Food Security:** Access to food at reasonable prices
- ❖ **Energy Security:** Access to energy at reasonable prices and maintaining economic growth
- ❖ **National Security:** Diversification of energy supply
- ❖ **Environmental Security:** Combat climate change and sustain local environments
- ❖ **Political Security:** Secure political support at local level by rural development

# Aggregated Environment Impacts of Biofuels

## Winners

- **Bio-waste**  
(recycled plant oil, bio-waste, etc.)
- **Ligno cellulosic fibers**

# Where is the Land Coming From—2030? How to Balance the Demand?



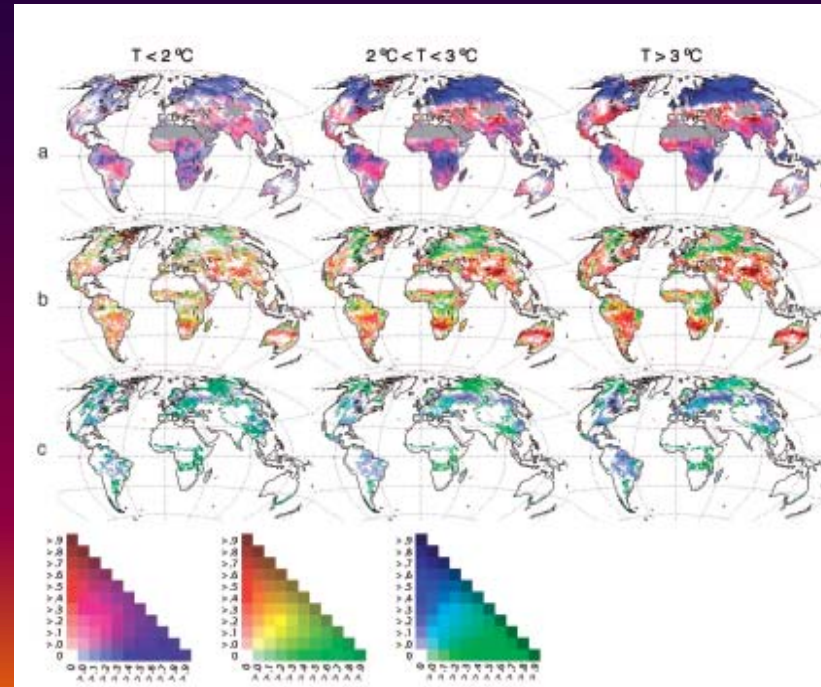
# Conclusions

- a) **F–F–F demands difficult to meet due to limited availability of suitable land**
  
- b) **Many uncertain issues at hand**
  - ❖ **Climate change/water/agriculture and biomass production**
  - ❖ **Fertilizers/productivity gains/land demands**
  
- c) **Integrated planning a must**

# Economic Growth/Climate Change/Energy

- What are the most plausible land-use structures and forest industry strategies with increased forest raw material costs, energy costs and climate impacts?
- Climate Impacts

Probability of exceeding critical levels of change between 1961–1990 and 2071–2100 for three levels of global warming. For quantitative variables (freshwater runoff and wildfire frequency), critical change is defined where the change in the mean of 2071–2100 exceeds  $\pm 1\sigma$  of the observed (1961–1990) interannual variability. (a) Freshwater runoff (blue for increase, red for decrease; mixed colors show cases where different runs produce changes in opposite directions, i.e., there are runs of both exceeding the critical level by  $+1\sigma$  as well as by  $-1\sigma$ ). Gray areas denote grid cells with  $\leq 10 \text{ mm}\cdot\text{yr}^{-1}$  mean runoff for 1961–1990. (b) Wildfire frequency (red, increase; green, decrease). (c) Biome change from forest to nonforest (blue or vice versa (green)). For wildfire frequency and biome change, colors are shown only for grid cells with  $< 75\%$  cultivated and managed areas



Source: Scholze *et al.* (2006); PNAS 103(35): 13116–13120.

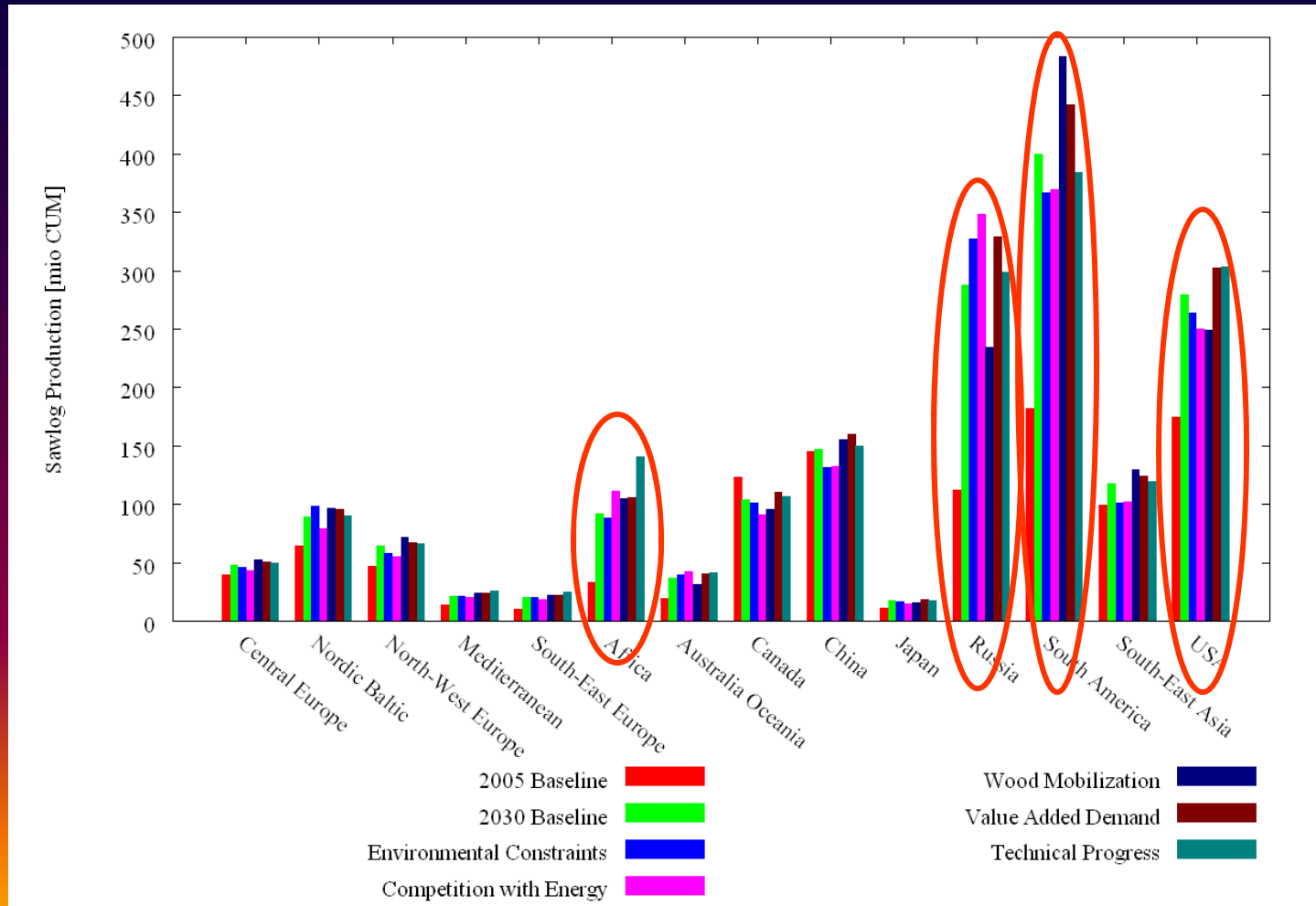
# How has the EU Managed Globalization So Far?

(Percentage of Export Values)

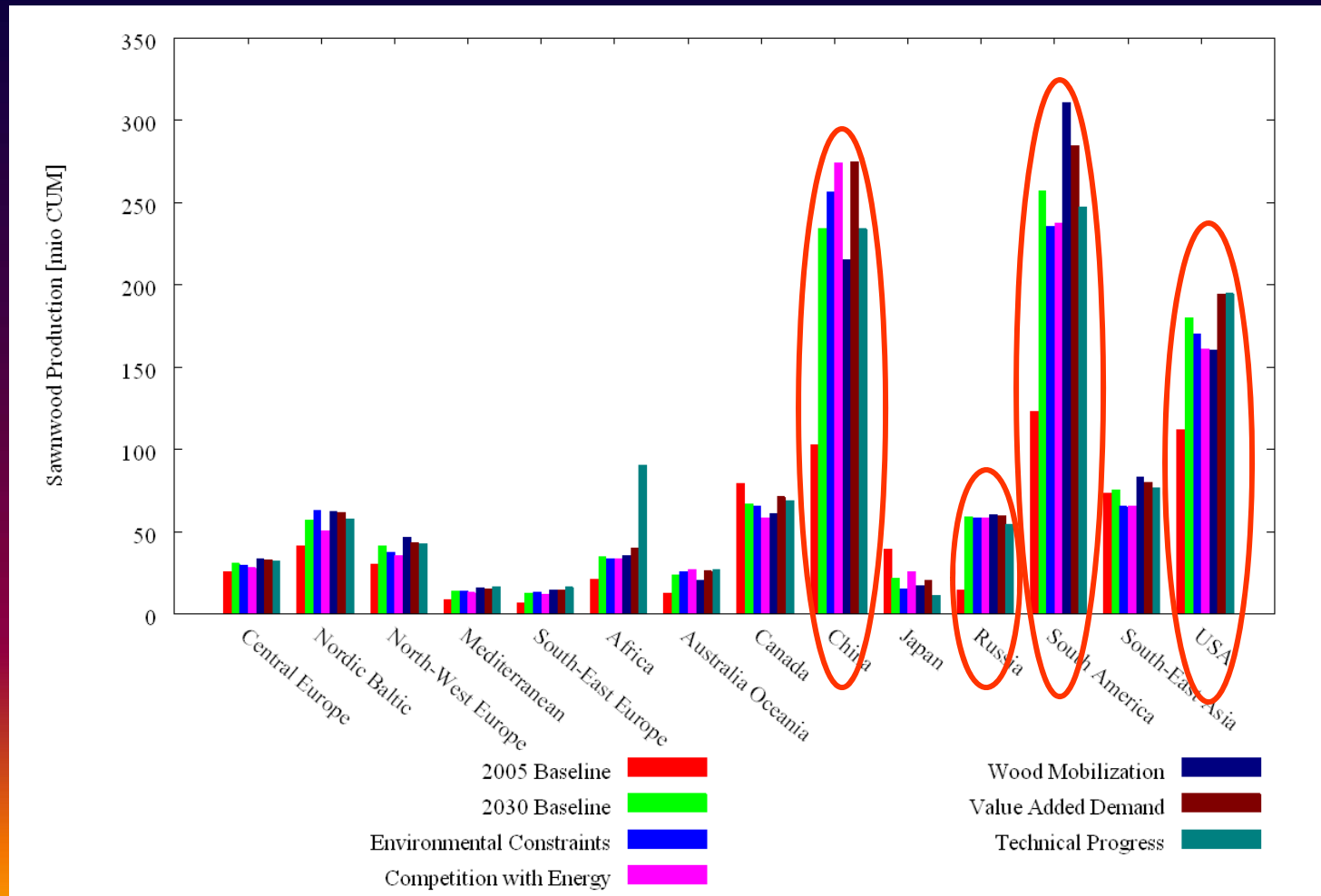
Industrial Roundwood		Sawnwood	
1985	2005	1985	2005
16.9	21.0	30.7	36.0
Wood-based Panels		Pulp	
1985	2005	1985	2005
34.6	40.5	32.8	23.9
Paper and Paperboard		Newsprint	
1985	2005	1985	2005
56.1	59.4	21.0	31.6
Printing and Writing Paper		Wrapping, Packaging Paper and Board	
1985	2005	1985	2005
76.5	81.2	64.5	59.0

- **Globalization taken place so far has been favorable for the development of the EU forest sector**
- **Not only the impact factors of wood costs, energy costs, etc., decide the competitive position in a globalized world. There are many other factors decisive to the competitiveness of the forest sector such as know-how, quality, logistics, institutions, etc.**

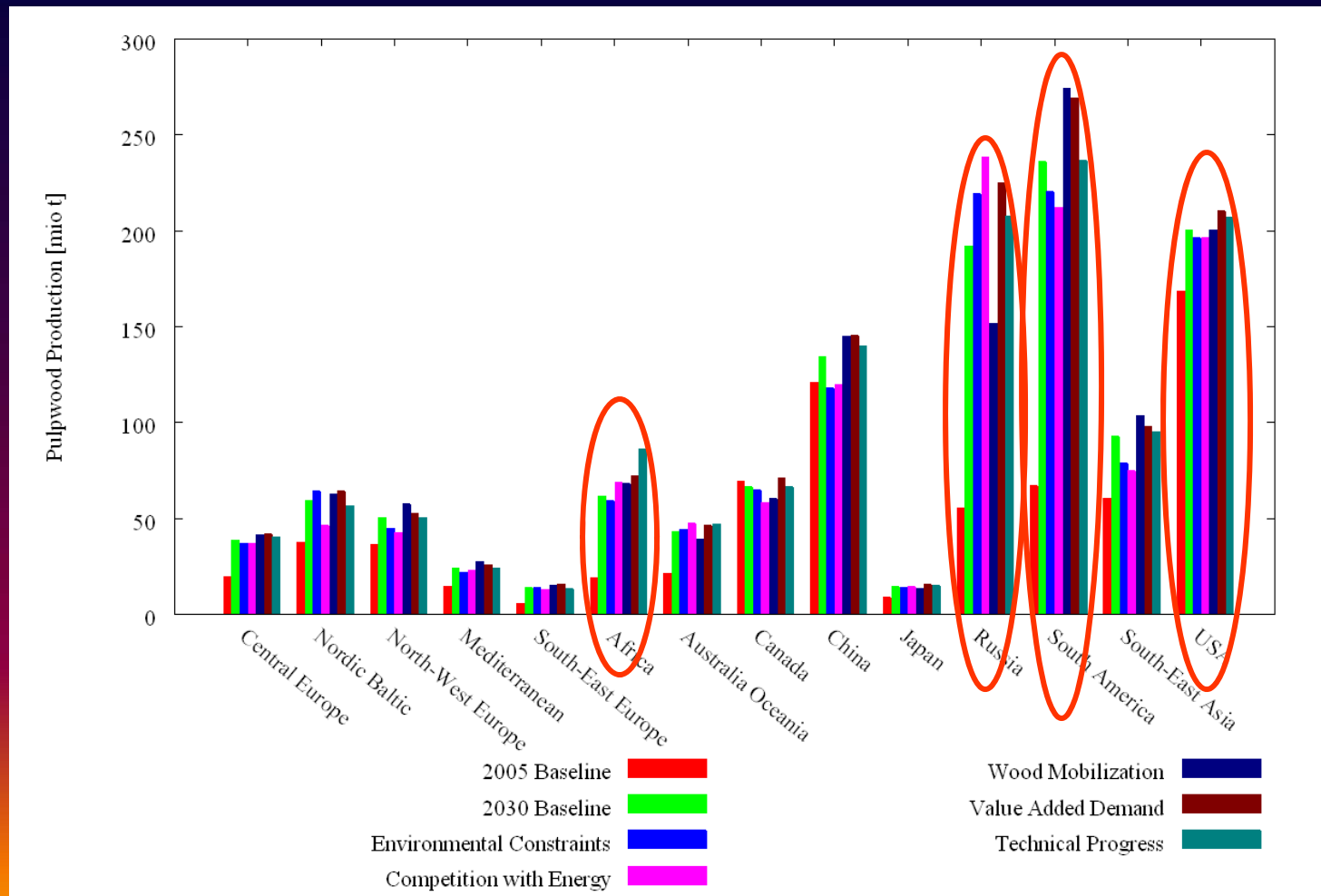
# Expected Supply/Production Quantity of Sawlogs in World Regions in 2030 for Different Scenarios (million CUM)



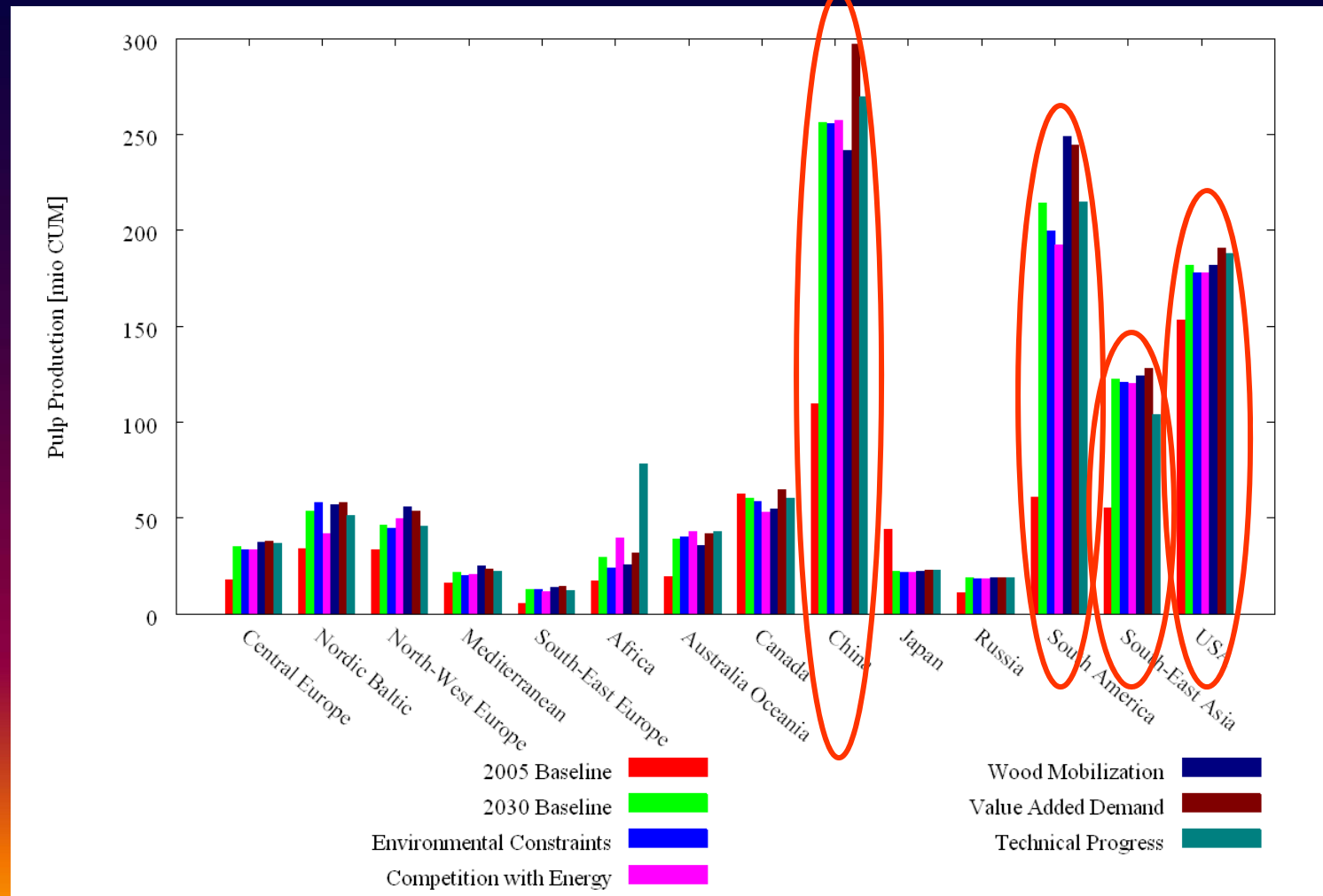
# Expected Supply/Production Quantity of Sawnwood in World Regions in 2030 for Different Scenarios (million CUM)



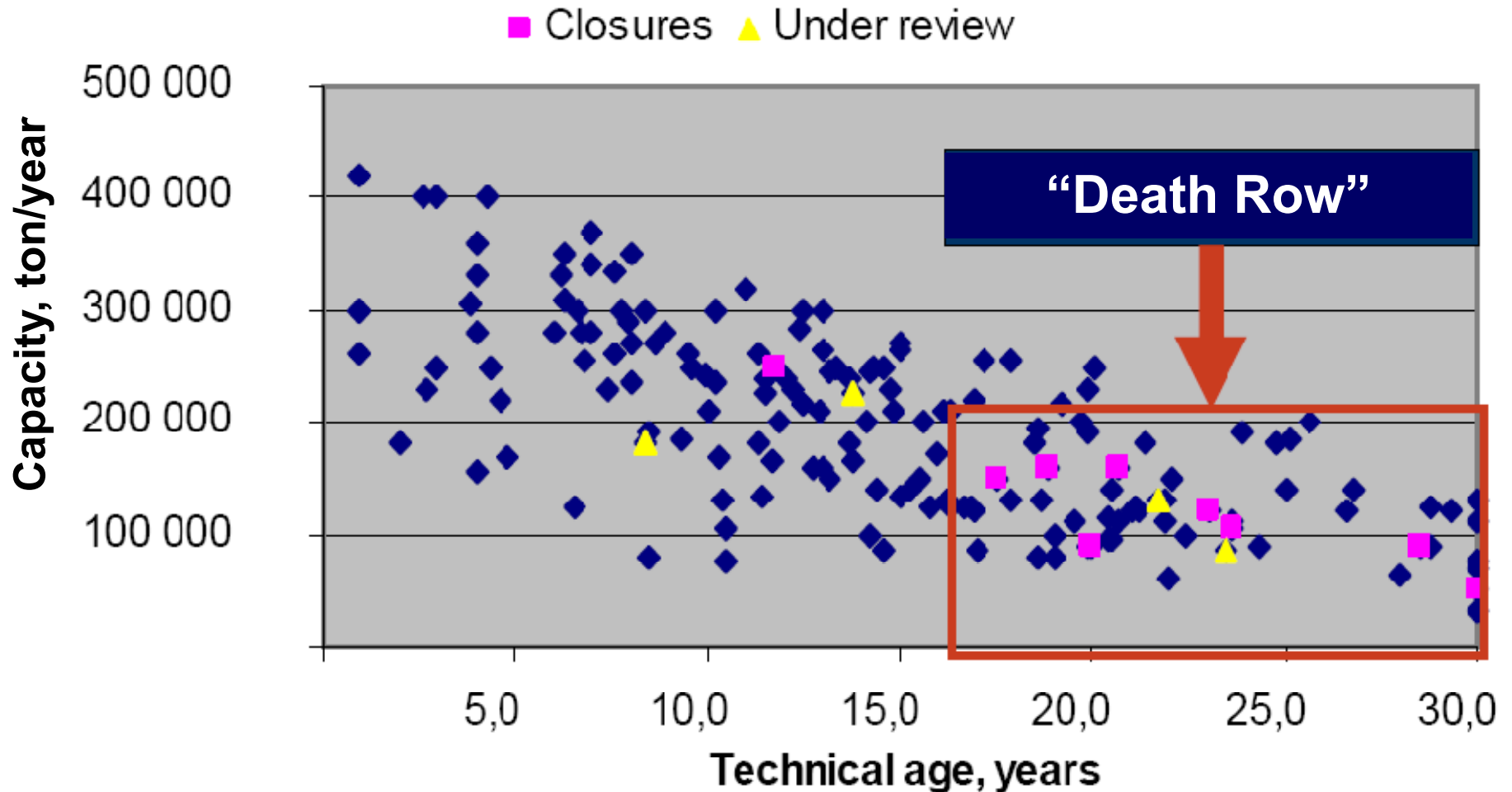
# Expected Supply/Production of Pulpwood by Region and Impact Scenario (million tons)



# Expected Paper and Paperboard Production by Region and Impact Scenario (million tons)



# Printing/Writing Machines in Europe

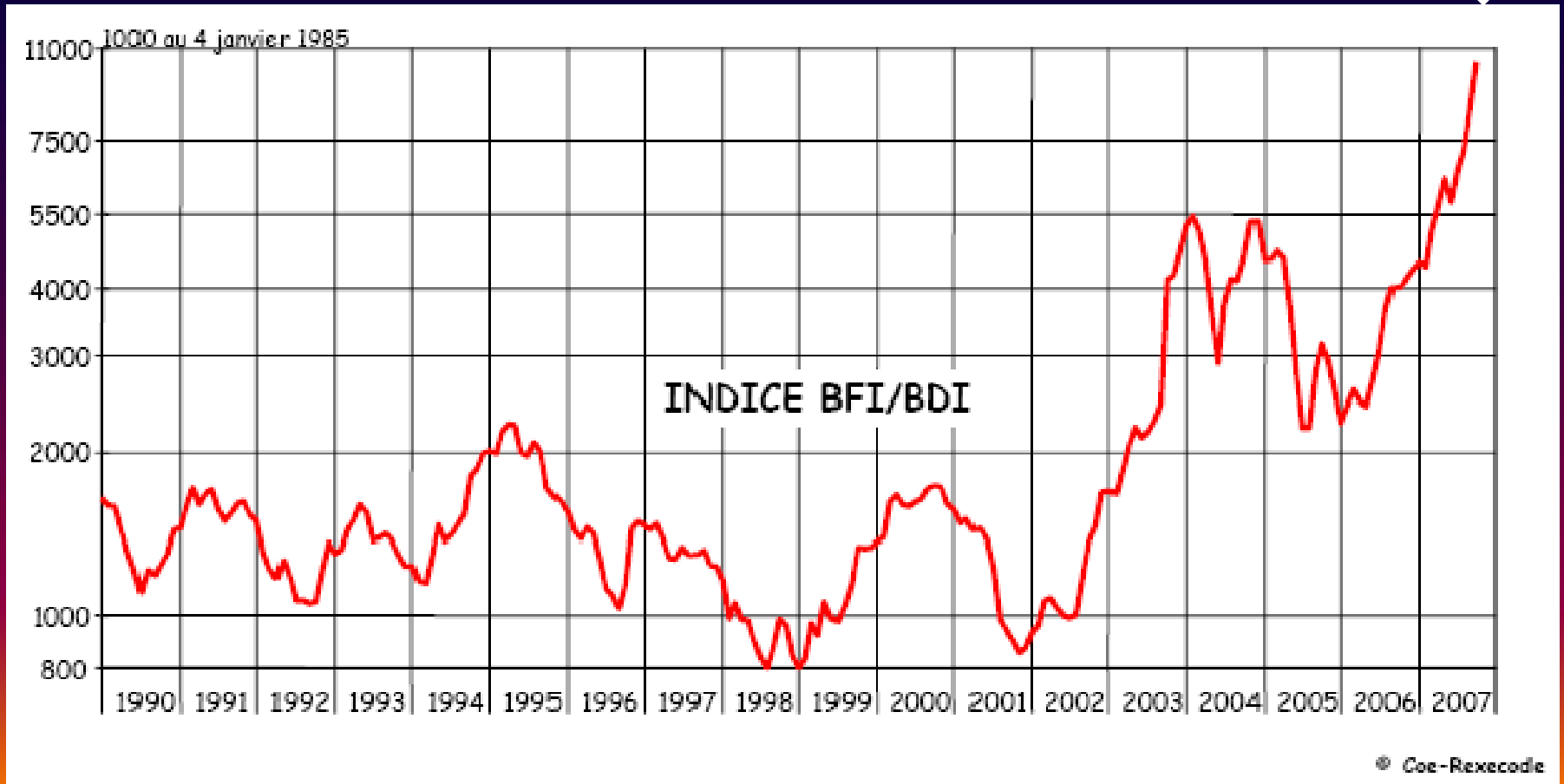


# Conclusions

- **The EU Forest Sector—A Competitive Sector**
- **Tight Wood Supply**
- **South America a High Growth Region**
- **Energy Development Crucial**
- **Renaissance for EU Sawmilling Industry**
- **Shifts in Demand**
- **Shifts in Supply**
- **Increased Prices**

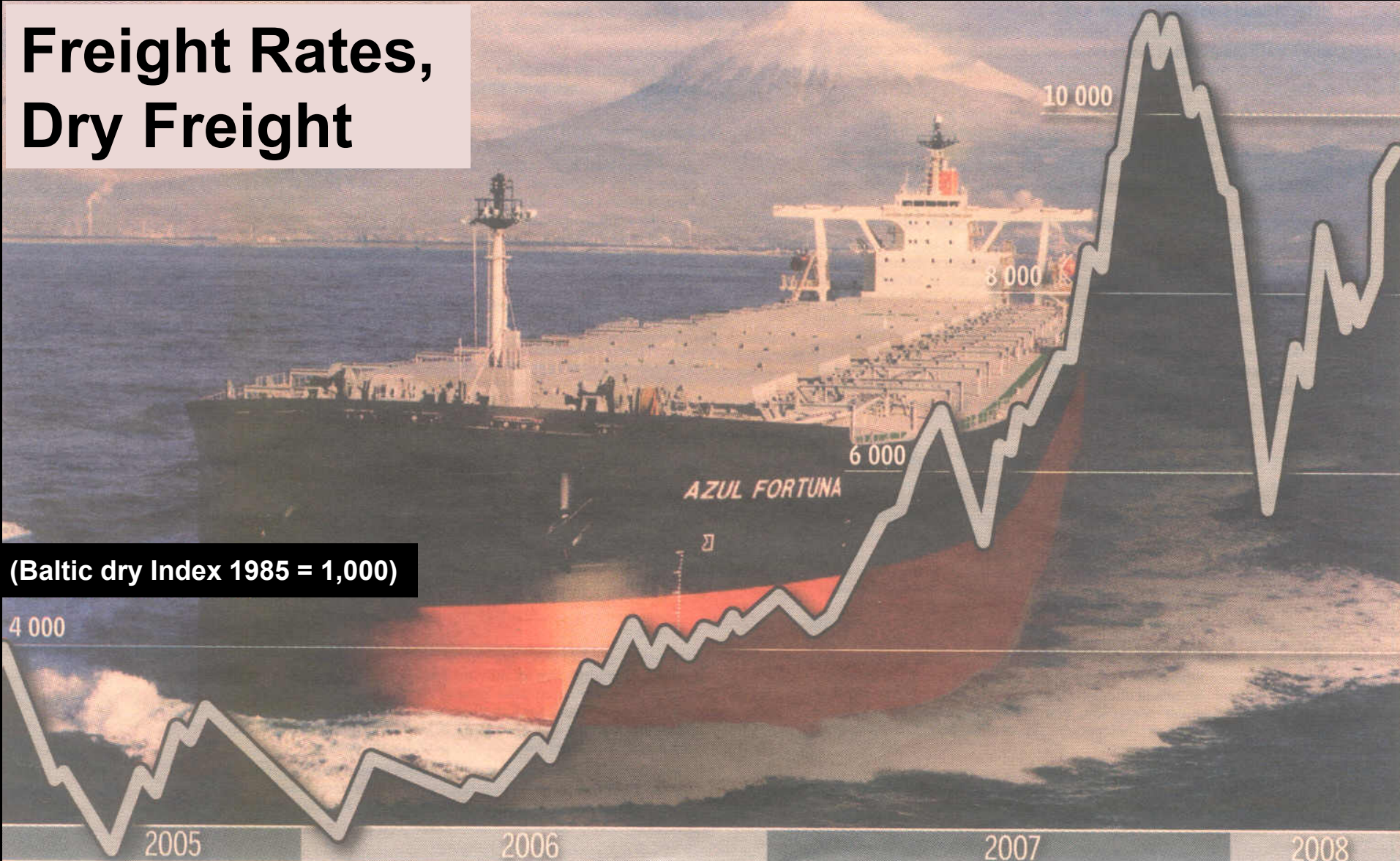
# The Fantastic Rise of Dry Maritime Freight

10 times increase since 2002



# Price Increase Since Early 2006: 4–5 Times

## Freight Rates, Dry Freight



# Procurement Logistics German Industry

## ~350 Companies

### *Procurement Costs Without Logistics*

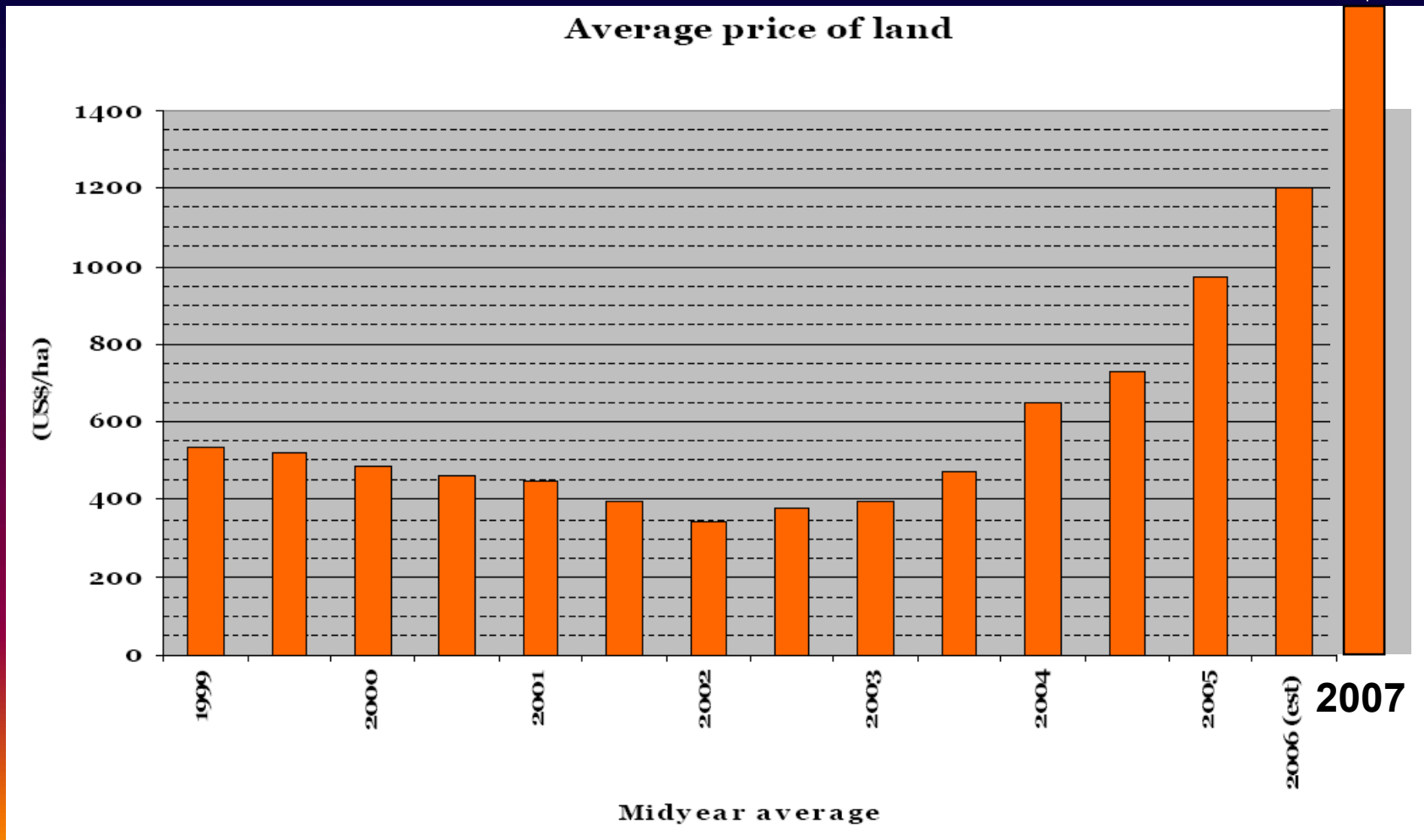
	Advantage over Germany
Most favorable conditions:	-30–45%
Less favorable conditions:	-5%

### *Procurement Costs With Logistics*

Most favorable conditions:	-15–25%
Less favorable conditions:	+10–15%

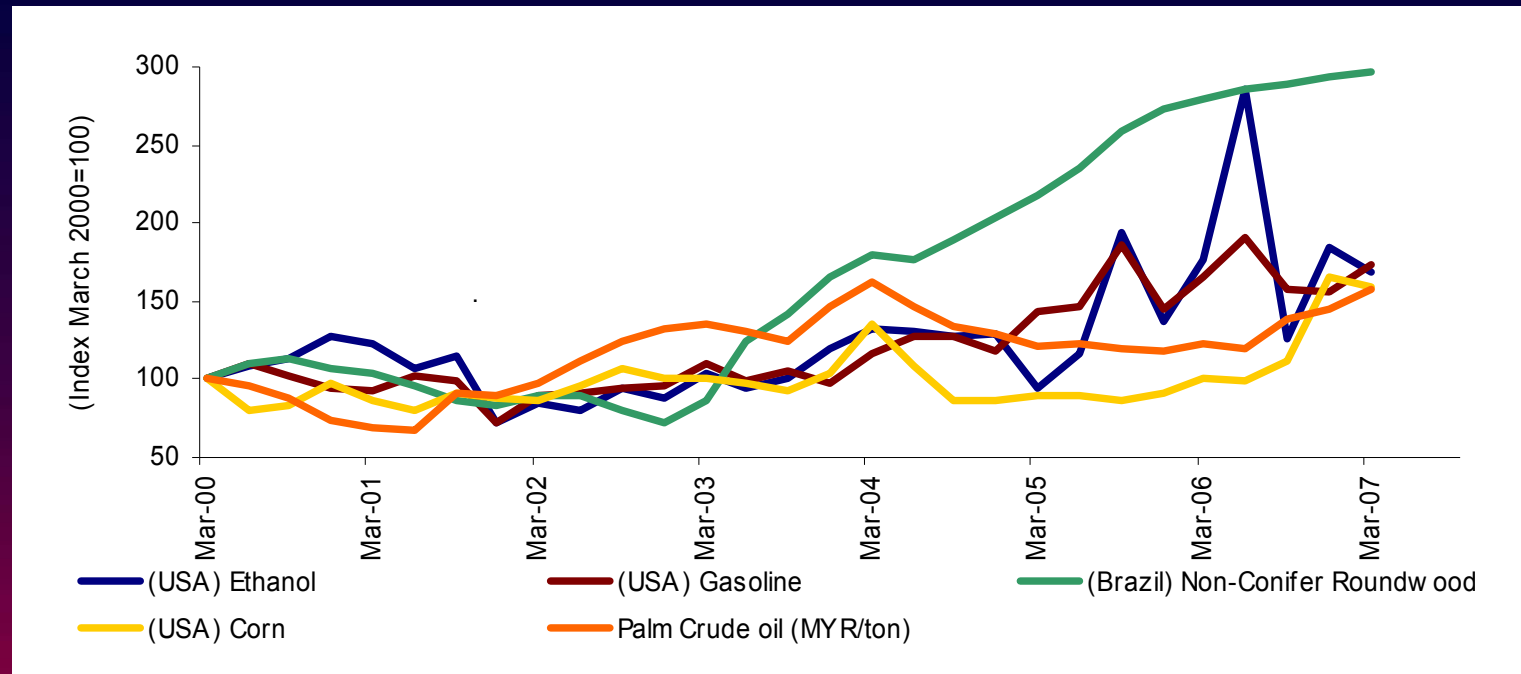
- Average logistics costs ~10–15% of total procurement costs
- In spite of increased liberalization and improved infrastructure the costs of logistics will continue to increase

# Price Evolution: Uruguay Land Price (\$/ha)



# Hypothesis

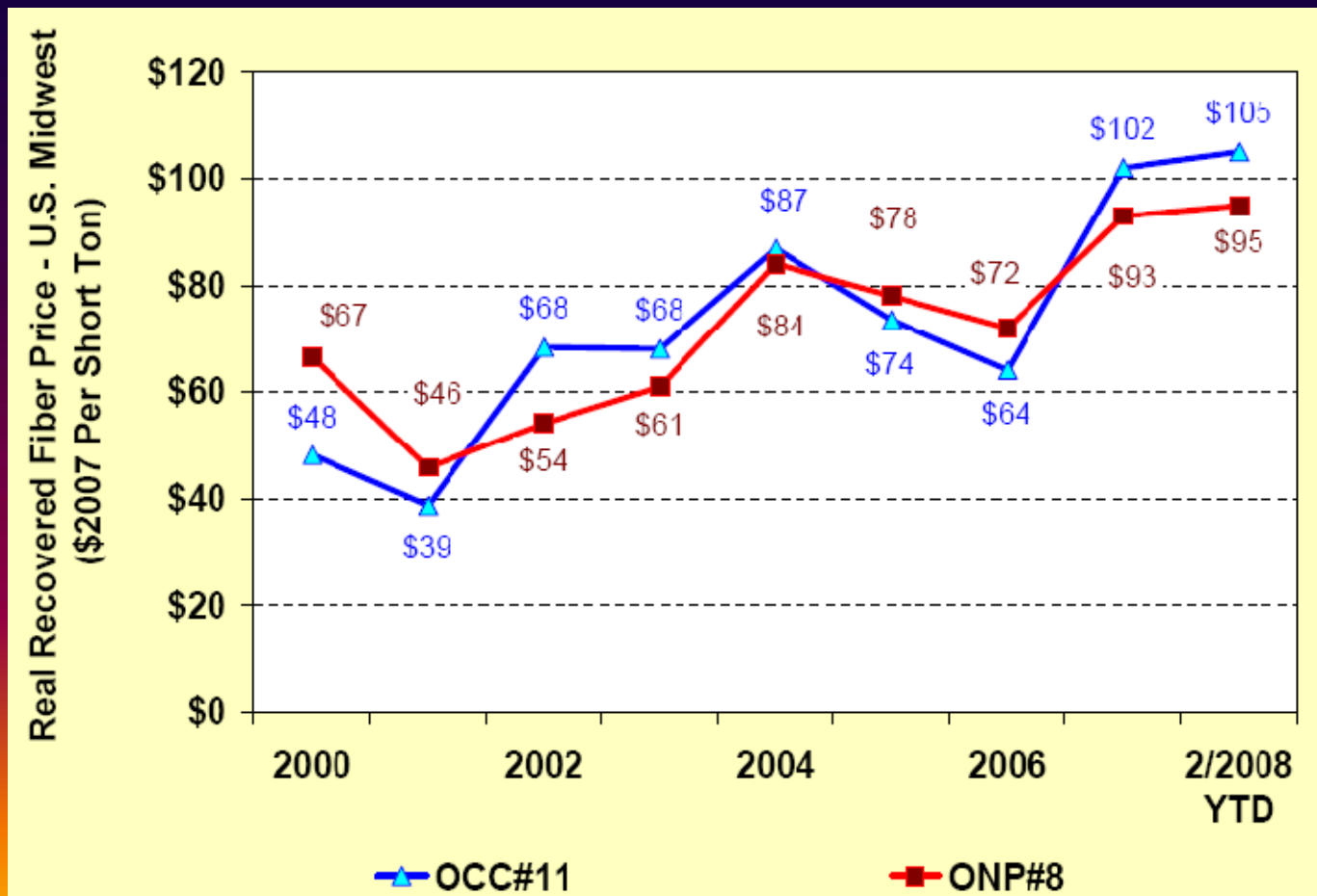
## Food, Fuel and Fiber Prices: (Q1/00 to Q1/07)



- Key food, fuel and fiber prices have been on an upward trend—is there any causation or just correlation?
- With biofuel production spreading, will the world price for oil become a support price for farm and forest products?

# Outlook—Recovered Fiber

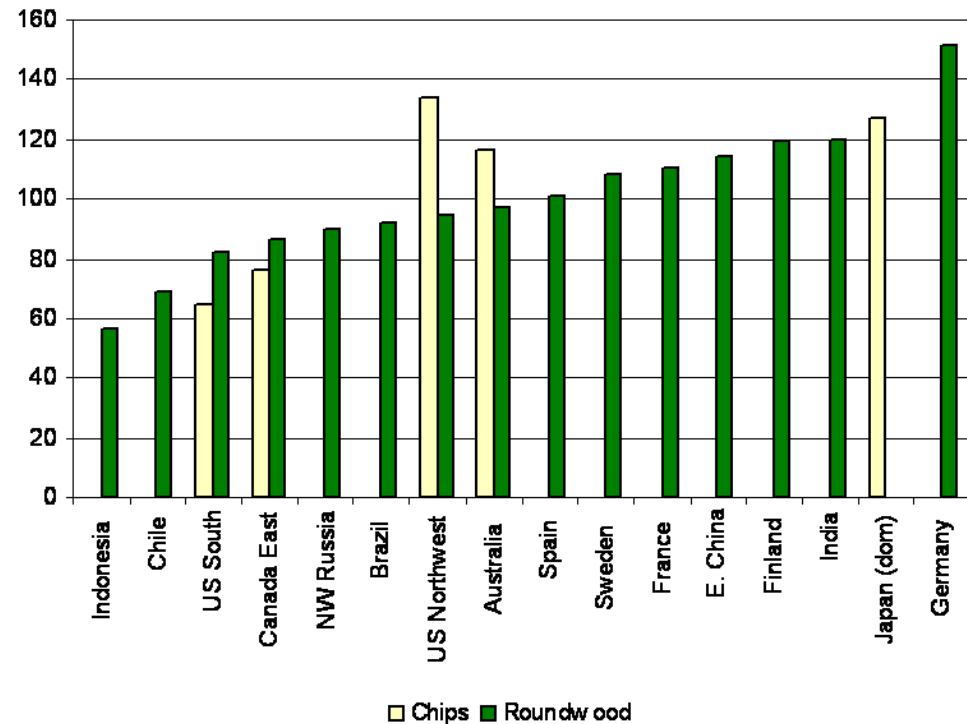
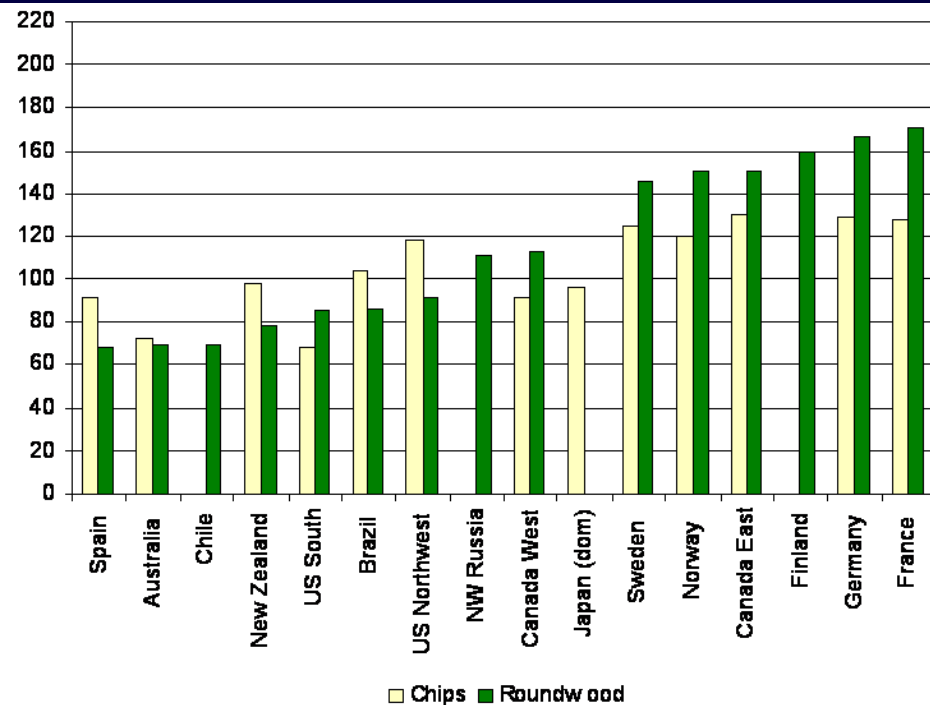
Recovered Fiber Prices—*Rising With Export Demand and Higher Domestic Consumption*



# Context

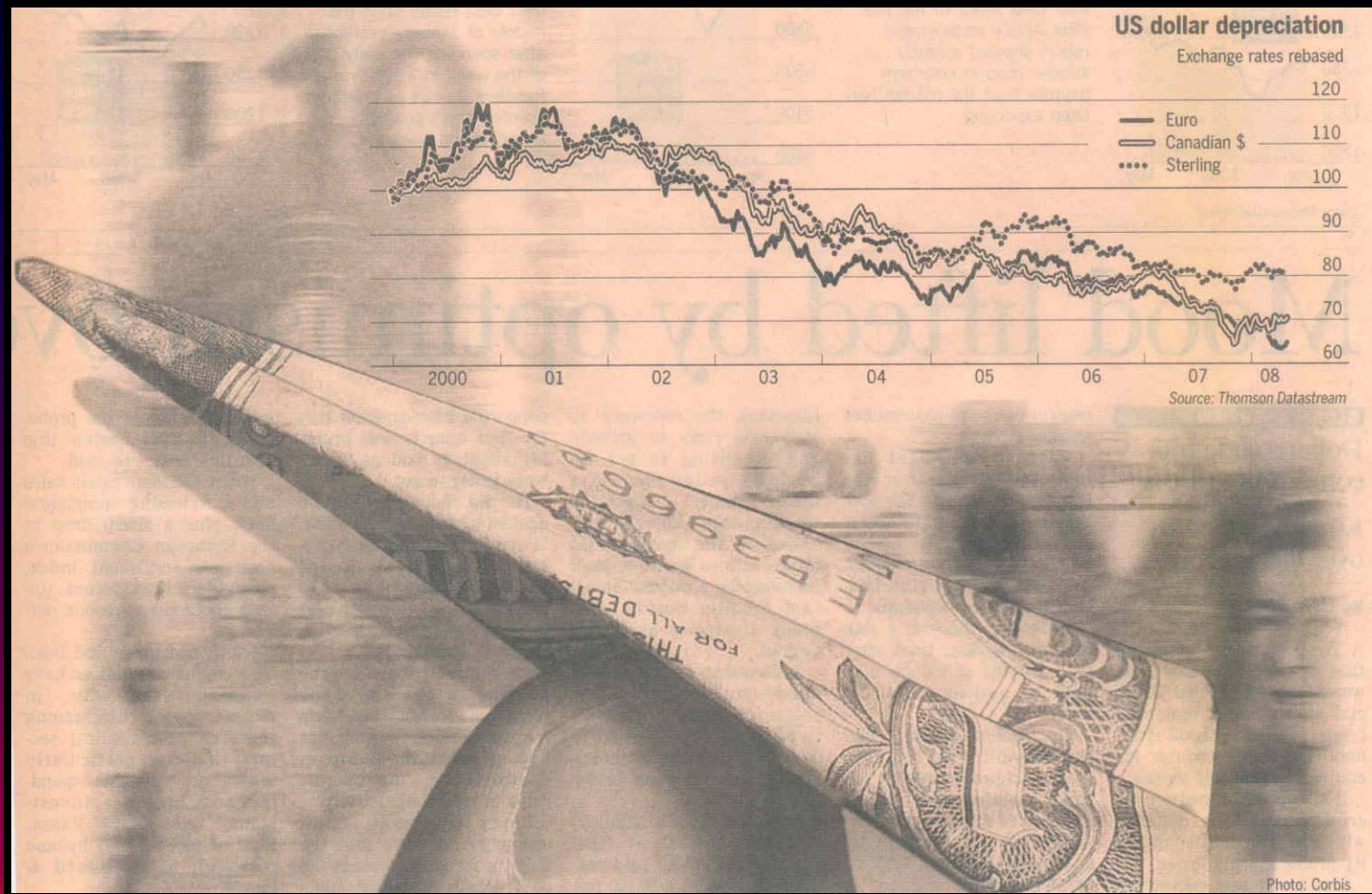
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# US Dollar Depreciation



**“Forget dollars — in the Solomon Islands dolphin teeth are seen as better value”**

**(Wall Street Journal, 1 May 2008)**

# Exchange Rates 2002–2008

	2002	2003	2004	2005	2006	2007	2008	Change 2002/2008
<b>Brazil</b>								
Real → USD	2.92	3.08	2.93	2.44	2.17	1.95	1.72	+70%
Real → EUR	2.58	3.41	3.62	2.72	2.72	2.72	2.69	-4%
<b>India</b>								
Rupee → USD	48.63	46.59	45.26	44.00	45.19	41.18	39.90	+22%
Rupee → EUR	45.66	52.63	56.18	54.64	56.66	56.50	62.89	-38%
<b>USA</b>								
USD → EUR	0.94	1.12	1.24	1.24	1.25	1.37	1.57	-67%
<b>South Africa</b>								
Rand → USD	10.52	7.56	6.44	6.36	6.76	7.05	7.81	+35%
Rand → EUR	9.90	8.47	7.94	7.87	8.40	9.62	12.35	-25%
<b>Chile</b>								
Pesos → USD	688.94	691.43	609.40	560.10	530.29	522.50	438.60	+57%
Pesos → EUR	628.93	769.23	740.73	689.66	653.59	714.29	694.44	-10%
<b>Mexico</b>								
Pesos → USD	9.62	10.76	11.26	10.87	10.87	10.92	10.55	-10%
Pesos → EUR	9.10	12.15	13.99	13.51	13.70	14.93	16.58	-82%
<b>Russia</b>								
Ruble → USD	31.35	30.67	28.82	28.25	27.17	25.58	24.21	+29%
Ruble → EUR	29.59	34.60	35.71	35.21	34.13	34.97	37.04	-25%

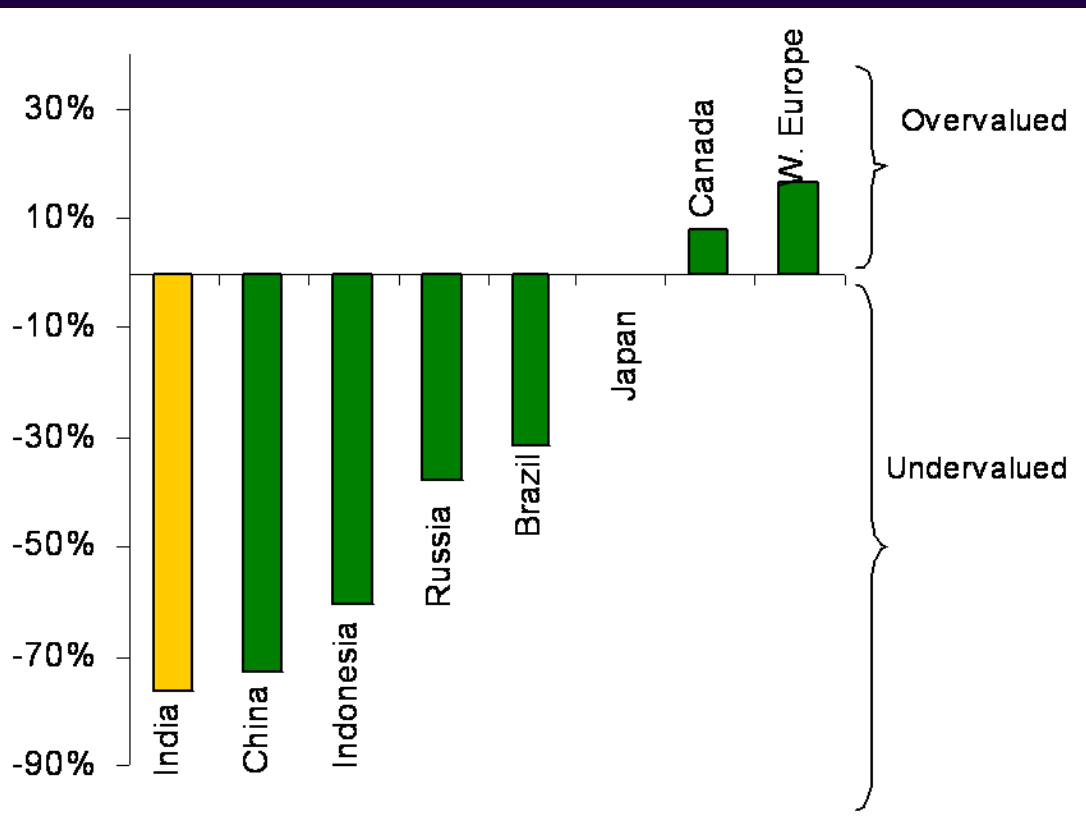
# Currency

**With stronger currency:** More difficult to export  
Getting less money  
Compensate by increased volumes

**With weaker currency:** More expensive to import  
Domestic production cheaper

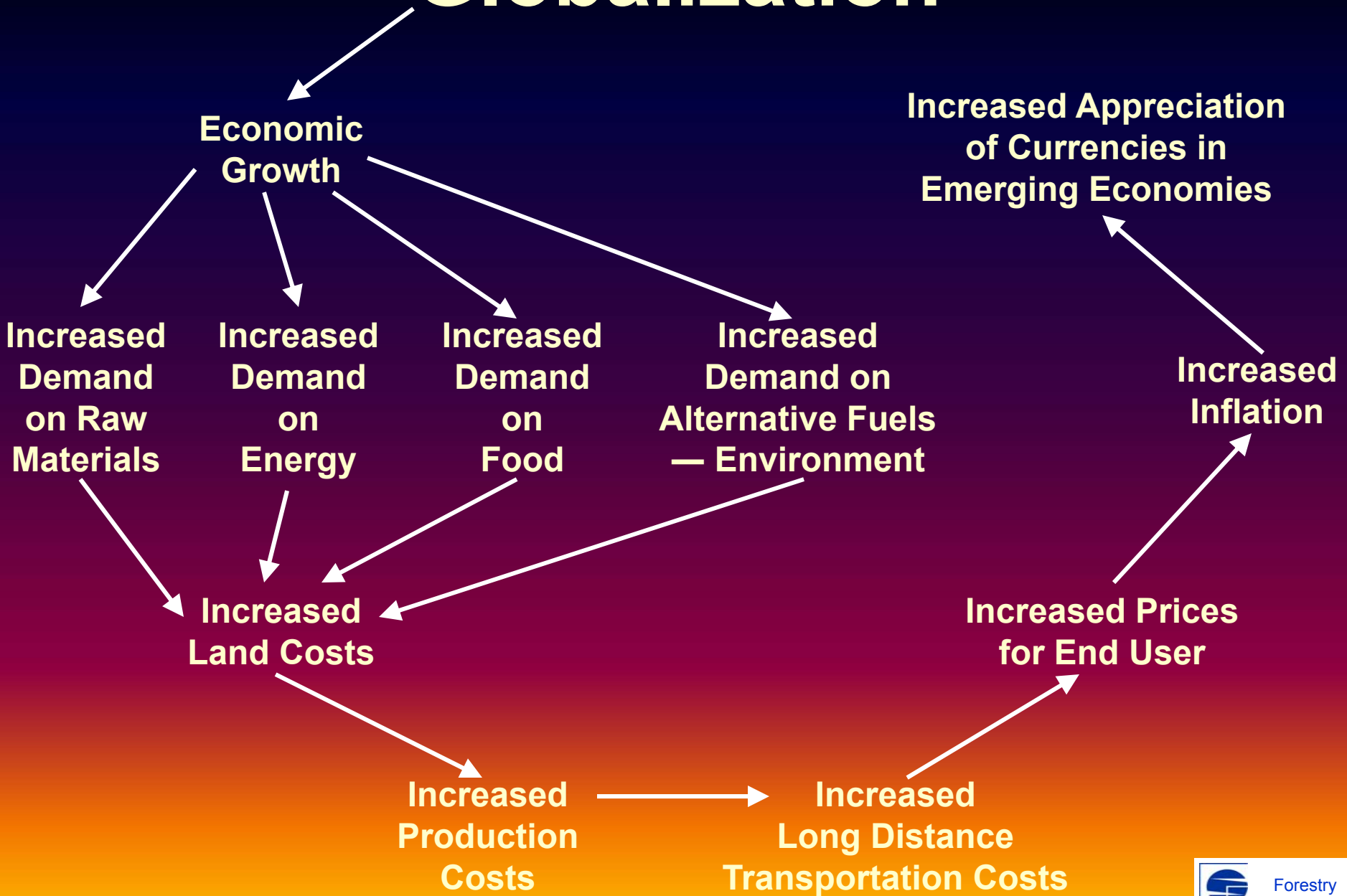
# Globalization of Capital Markets

## Percent Change from the Current to the PPP Implied Exchange Rate (2007)



- The Purchasing Power Parity concept is one approach to estimating the long-run exchange rate
- Over the medium term, the Chinese, Indian and Indonesian currencies are likely to appreciate the most; the Russian and Brazilian currencies also have upward pressure
- The Canadian and European currencies may be slightly overvalued

# Globalization

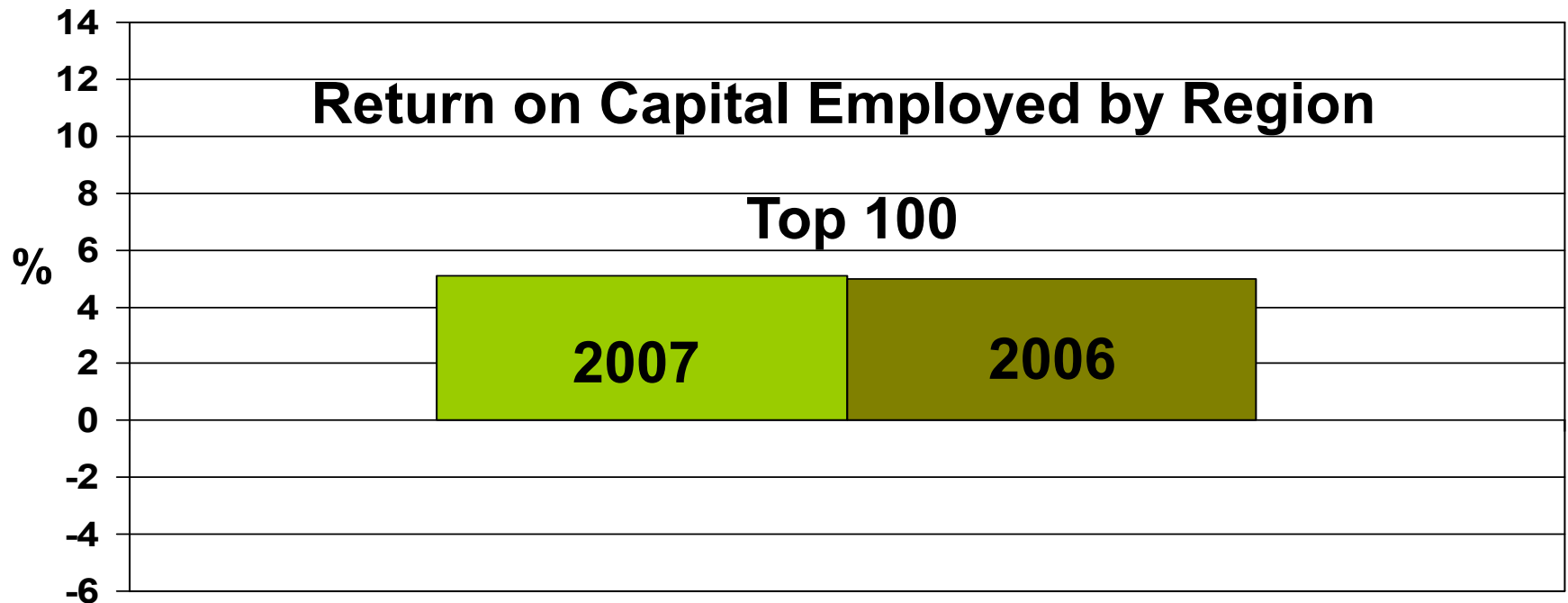


# All of This Strengthening Northern Hemisphere Forestry!

# The Big Failure!

# Financial Performance

In 2006, the Global Forest Industry had a rate of return of 5.1% on capital employed



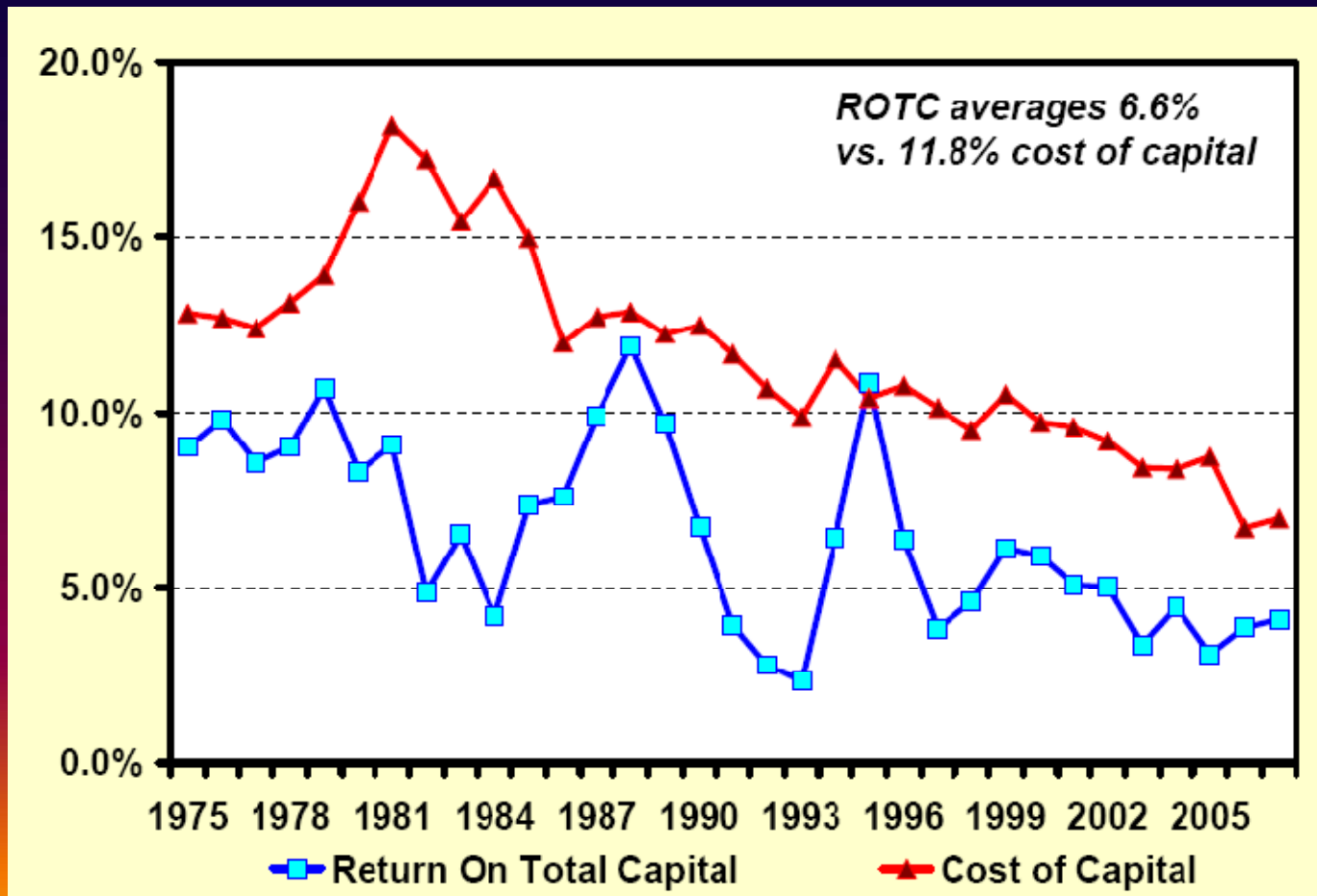
- **In 2006, the Global Forest Industry had a rate of return of 5.1% on employed capital**
- **The focus by the industry has been on:**
  - ❖ **Production efficiency**
  - ❖ **Minimizing costs**
  - ❖ **Enormous values have been transferred back to shareholders (transfer of values to shareholders is not any value creation like long-term investments—it is value exploitation)**
  - ❖ **“Improve cash flows and a slimmed organization”—the 2008 strategic plan of one of Europe’s largest forest industries**

# Rate of Return on Capital Employed Forest Industry, Average 1990–2001

<b>USA</b>	<b>5.1</b>
<b>Canada</b>	<b>3.0</b>
<b>Sweden</b>	<b>7.4</b>
<b>Finland</b>	<b>7.3</b>
<b>Europe, Other</b>	<b>5.4</b>
<b>Japan</b>	<b>4.2</b>
<b>India</b>	<b>8.7</b>
<b>Asia, Other</b>	<b>2.5</b>
<b>South America</b>	<b>5.9</b>
<b>Australia/New Zealand</b>	<b>4.2</b>
<b>South Africa</b>	<b>7.1</b>

# Financial Performance

Returns on Book Value of Total Capital—*Covers Debt* But Remains Below Cost of Capital



# Rate of Return on Capital Employed Forest Industry, 1990–2006

	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06
USA	6.0	3.0	2.0	3.2	5.5	9.3	5.7	3.9	4.0	6.8	7.4	4.2	4.5	4.3	6.3	5.7	5.4
Canada	0.9	-4.0	-2.0	0.2	5.8	9.5	4.2	2.1	2.4	5.9	7.8	3.1	3.0	4.0	4.6	4.5	2.0
Sweden	-	-	-	-	-	-	5.5	5.2	6.5	4.7	14.4	8.0	6.8	6.2	5.3	3.0	5.6
Finland	-	-	-	-	-	-	5.6	7.4	6.5	9.0	8.8	6.5	4.5	2.5	4.9	2.0	4.2
Europe, Other	-	-	-	-	-	-	5.1	4.3	5.2	5.0	6.4	6.3	5.6	4.2	4.2	3.2	4.2
Japan	-	-	-	-	-	-	5.5	3.7	3.3	3.4	5.0	4.5	2.9	7.0	5.4	5.5	3.9
India	-	-	-	-	-	-	-	-	6.6	7.8	8.3	11.9	7.4	8.5	8.9	9.3	12.5
Asia, Other	-	-	-	-	-	-	3.0	2.9	3.6	3.4	3.5	-1.2	-0.2	8.3	6.8	6.4	6.5
S. America	-	-	-	-	-	-	3.0	4.0	3.4	6.2	12.0	6.6	7.2	8.3	9.7	8.7	9.3
Australia/NZ*	-	-	-	-	-	-	5.5	3.7	3.3	3.4	5.0	4.5	2.9	7.0	5.4	5.5	4.9
South Africa	-	-	-	-	-	-	5.6	6.3	6.2	4.6	10.5	9.1	7.6	6.3	4.2	1.5	5.5

\* New Zealand

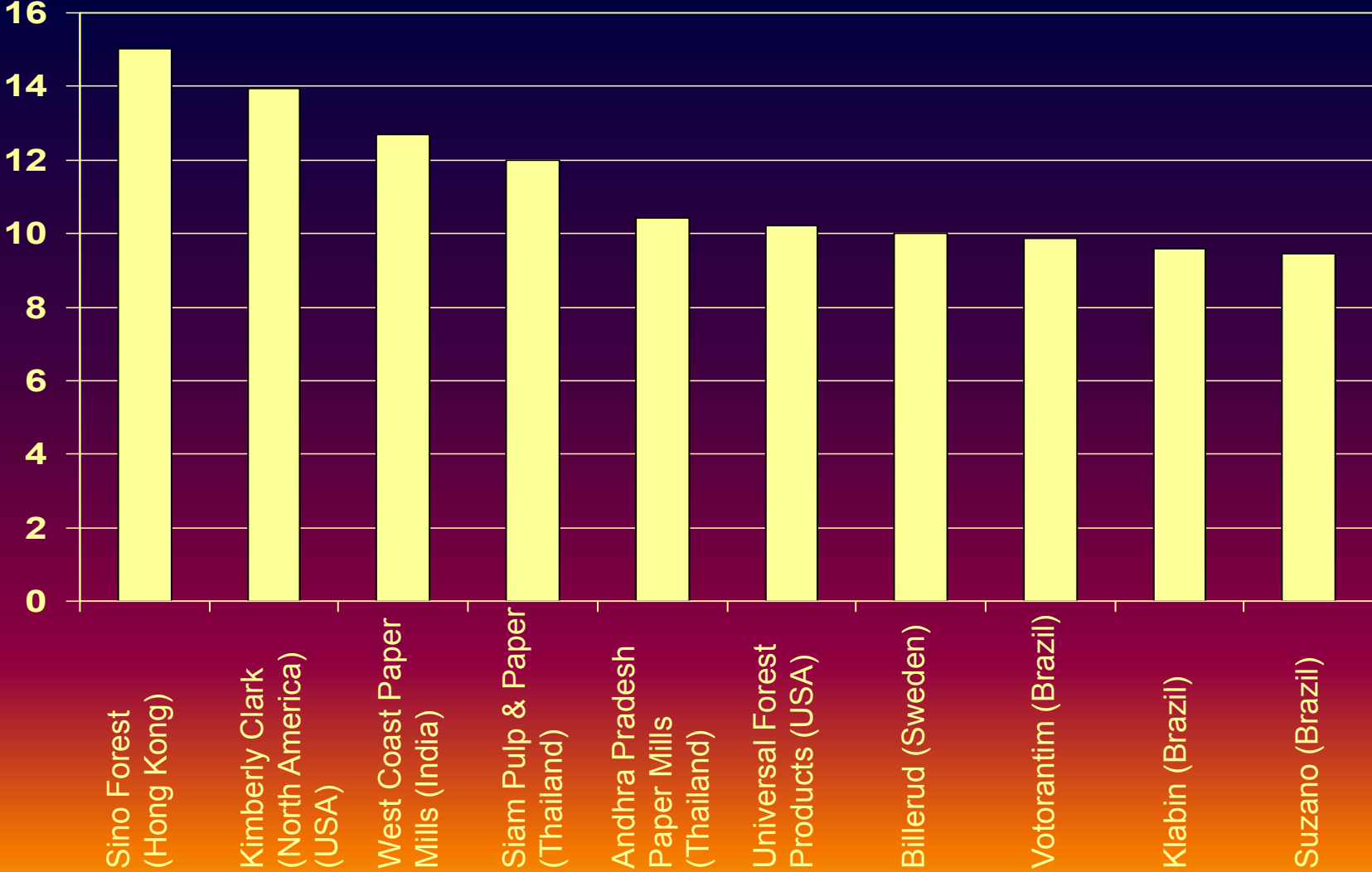
Source: Courtesy CIBC Markets (2007)

# Rate of Return on Capital Employed Forest Industry, 1996–2006

	96	97	98	99	00	01	02	03	04	05	06	Average 90–01
<b>Södra, Sweden</b>	-	-	0.5	2.5	18.7	4.5	5.8	10.0	7.7	6.1	10.5	6.5
<b>Aracruz, Brazil</b>	3.0	1.5	0.4	3.6	9.2	1.1	4.7	6.4	8.0	12.9	15.8	3.1
<b>West Coast Paper Mill, Kolkata, India</b>	-	-	10.7	11.6	13.6	18.3	15.2	12.5	9.4	8.7	14.2	-
<b>Sino Forest, Hong Kong</b>	-	-	27.1	23.5	16.2	9.3	9.6	11.7	12.0	14.3	11.5	-

# Top 10 Average ROCE Between 1998—2006

Rate of Return (%)



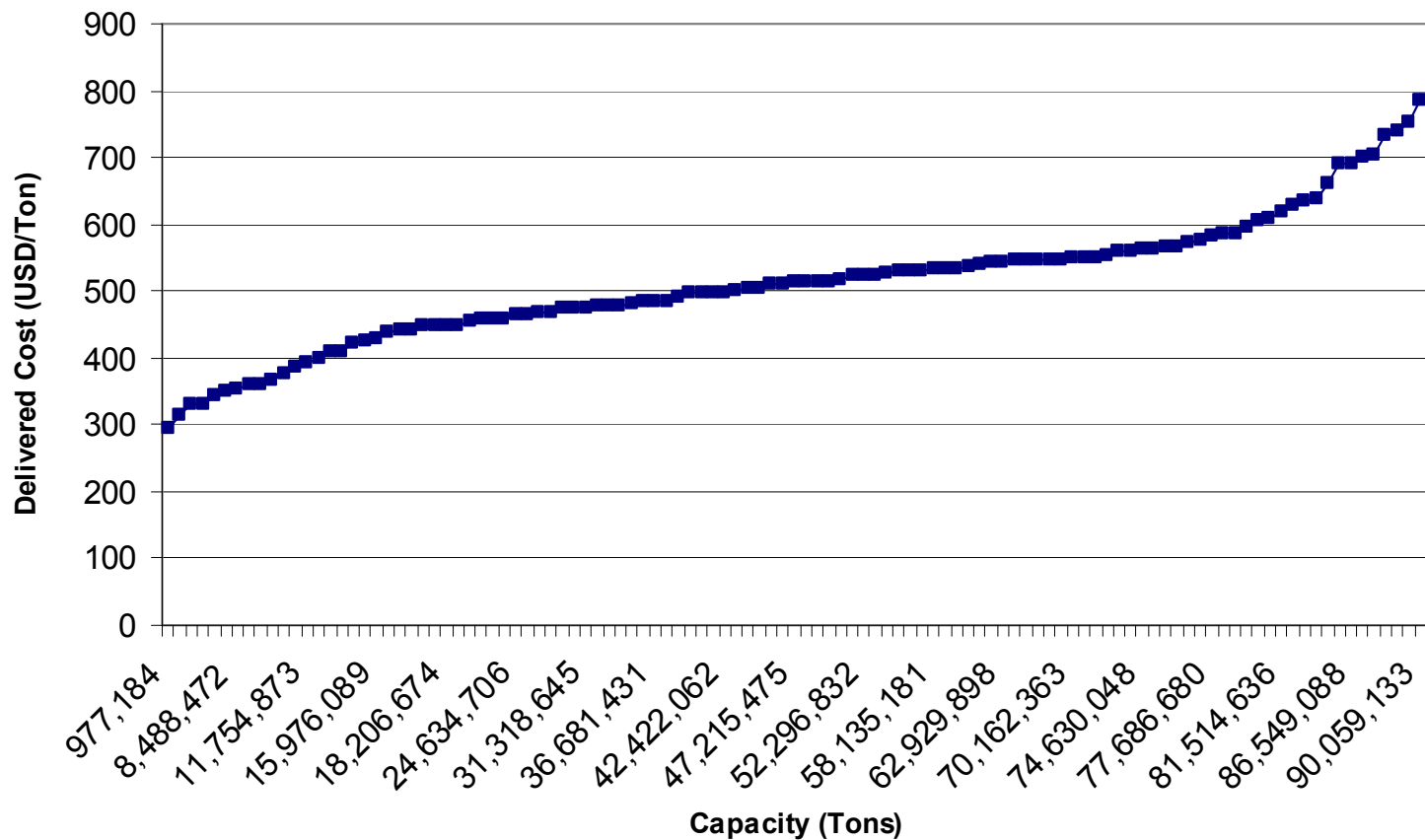
Company/Country

# ROC for Energy Use Alternatives Higher than FBI

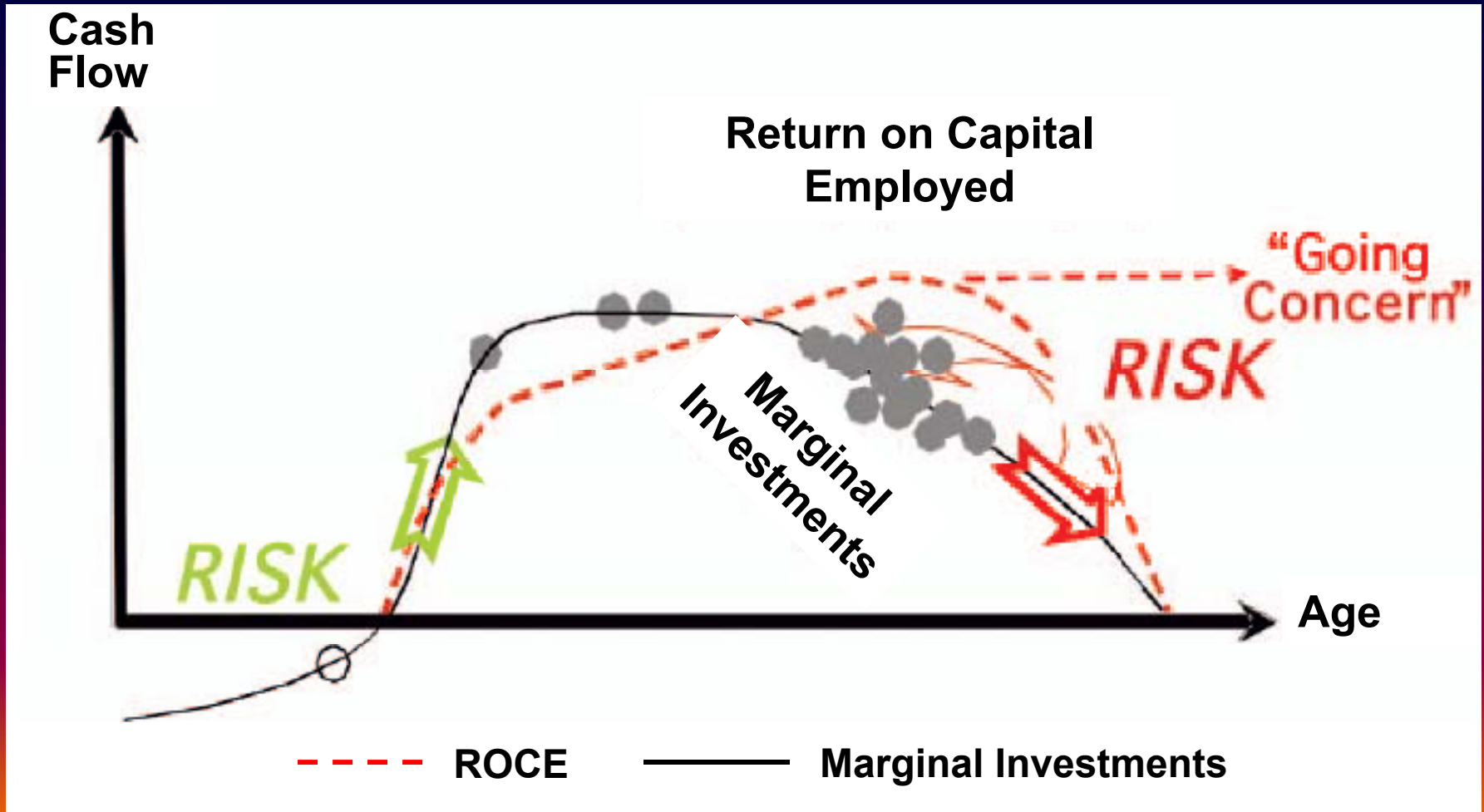
**“If higher prices for commodities such as pulp and lumber are not realized, considering returns on capital investment, investment will only flow to new biomass energy projects in the future. This redirection in investment will occur until pulp and lumber prices reflect an adequate premium above their energy value”**

(Jimmy Lee Mercer)

# World Capacity of Market Bleached Softwood Kraft



# Investments/Profitability



# How Competitive?

## Competitiveness is Multidimensional

- **Mill Performance vs. International Competition, i.e., Europe/NA/SA/Asian mills' productivity and quality**
- **Product Performance vs. Substitutes, i.e., plastic, ICT**
- **End-user Performance vs. International Competitors, i.e., domestic vs. international manufacturers**
- **Financial Performance vs. Other Investments, i.e., returns on forest products investments vs. alternative investments of similar risk**

# New Business Concepts Required

- **The lousy financial performance by the forest industry is not fixed by *Technical Innovations***
- **New Business Concepts with new and different products are required in order to improve the financial performance**

# Final Thoughts

- **The essential forces we should have in the forest sector's path forward is that the future is *ours to create*—timidity and business as usual will undermine our efforts...**
- **Our challenge is to seize the opportunities instead of simply enjoying our respite—to implement new *business concepts* and *products* in new and novel ways**