

# Commodities World: the new Eldorado ? Or just a new battle field in a globalized economy ?



# A first vision

«When they rise they transfer riches and power from consumers to producers; when they fall, it is as near as anything in economics to a free lunch for consumers»

(C. Giles,

FT,24.10.2014)

# Defining the commodities

- Generic term for any marketable item produced to satisfy want or need - Economic commodities comprise goods and service
- The more specific meaning of the term *commodity* is applied to goods only. It is used to describe a class of goods for which there is demand, but which is supplied without qualitative differentiation across a market
- A commodity has full or partial fungibility; that is, the market treats its instances as equivalent or nearly so with no regard to who produced them. What is the taste of wheat ? Can you where it comes from ?

# The new consumption areas

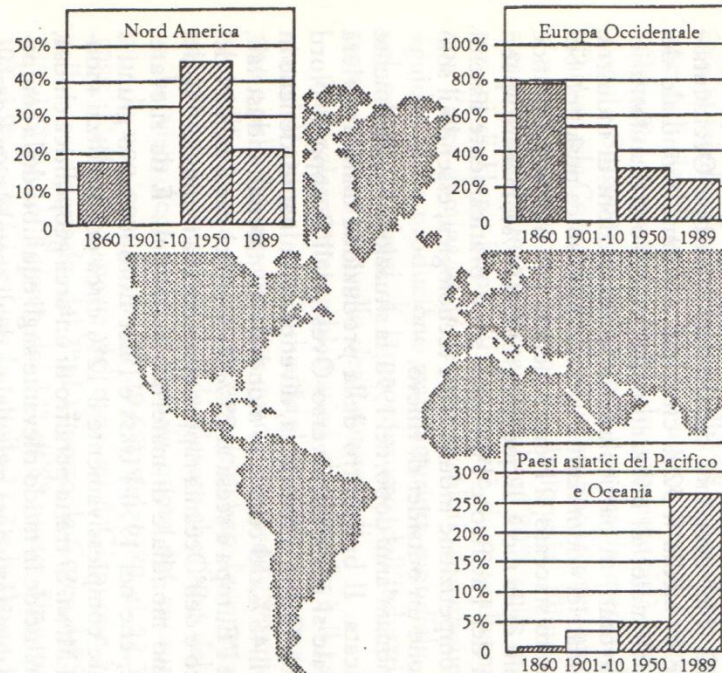


FIG. 11.1. Evoluzione delle quote di consumo dei materiali industriali detenute dalle aree dell'economia mondiale: 1860-1989 (quote percentuali sul totale mondiale).

Fonte: Elaborazione dell'autore sui dati della tabella 11.1.

# The oldest index

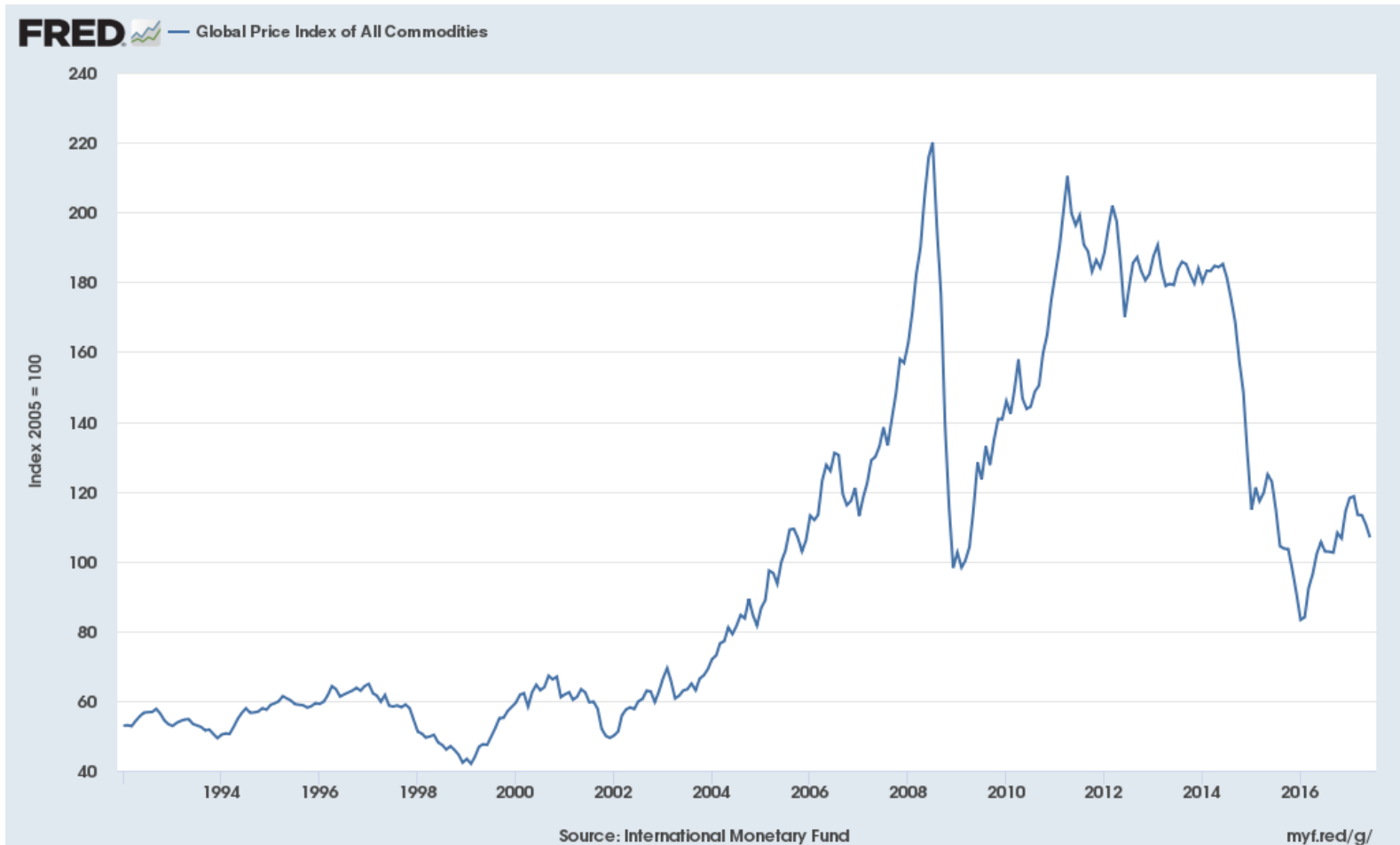
## A century of decline

*The Economist* industrial commodity-price index  
real\* \$ terms, 1845-50 = 100

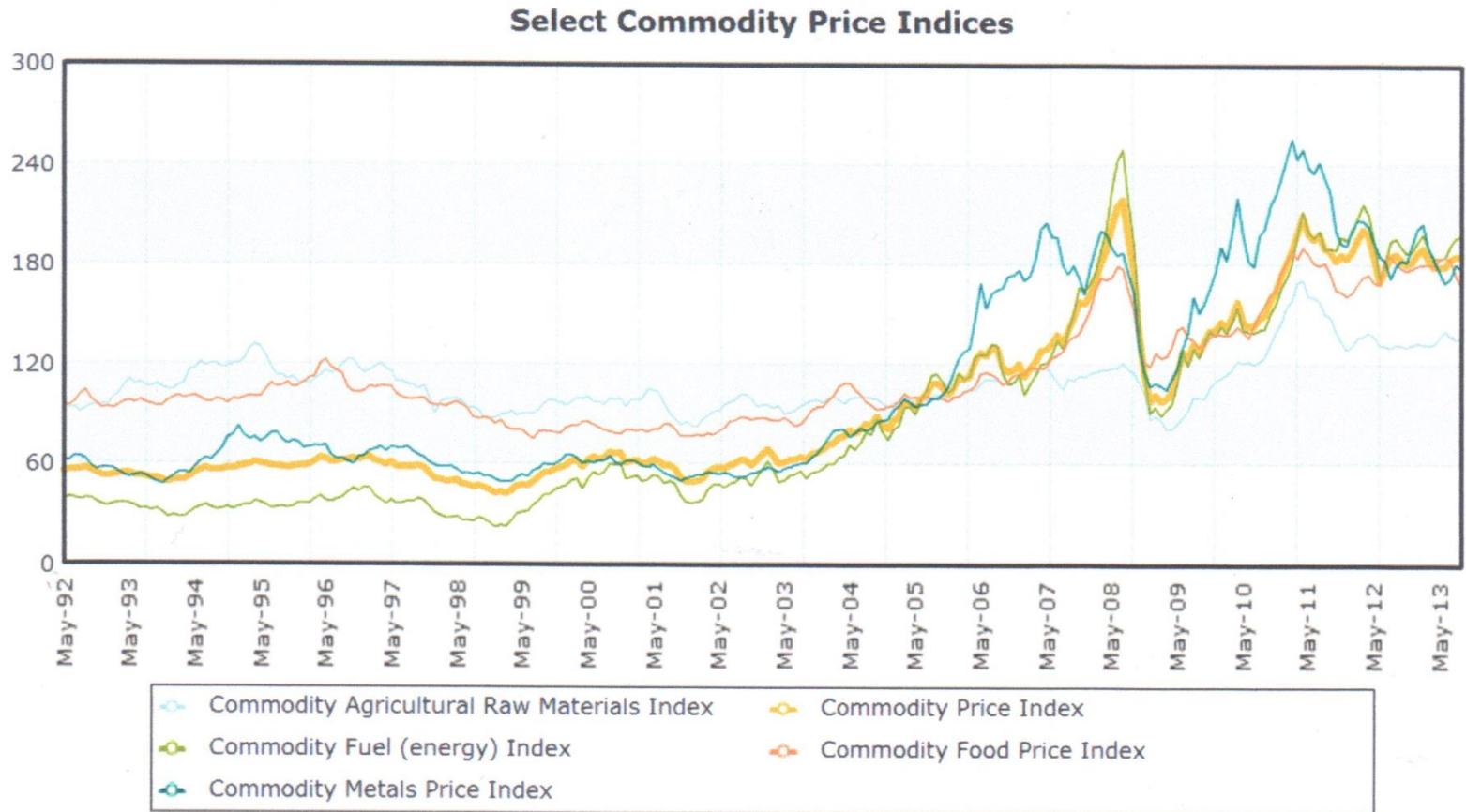


\*Adjusted by US GDP deflator

# The global index



# Commodities prices: twenty years of growth



## Oil

Brent crude (\$ per barrel)



Source: Thomson Reuters Datastream

FT

## Corn

CBOT futures (\$ per bushel)



Source: Thomson Reuters Datastream

FT

## Iron ore

\$ per tonne



Source: Thomson Reuters Datastream

FT

## Cotton

Cotlook A (cents per pound)



Source: Thomson Reuters Datastream

FT

## Copper

LME 3-month (\$ per tonne)



Source: Thomson Reuters Datastream

FT

## Coal

Thermal market (\$ per tonne)



Source: Thomson Reuters Datastream

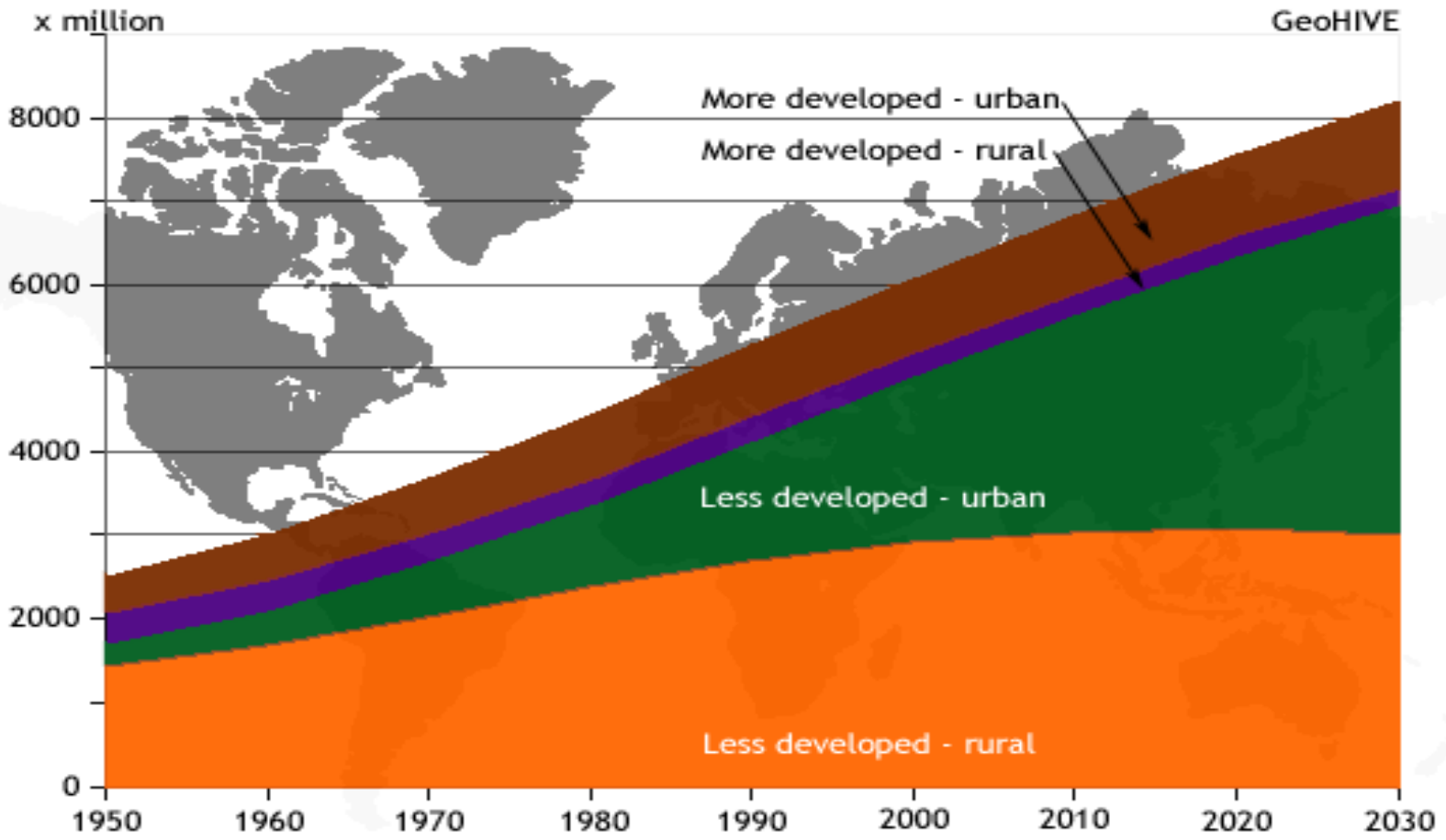
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# Food commodities



# A growing population in a different geographical distribution

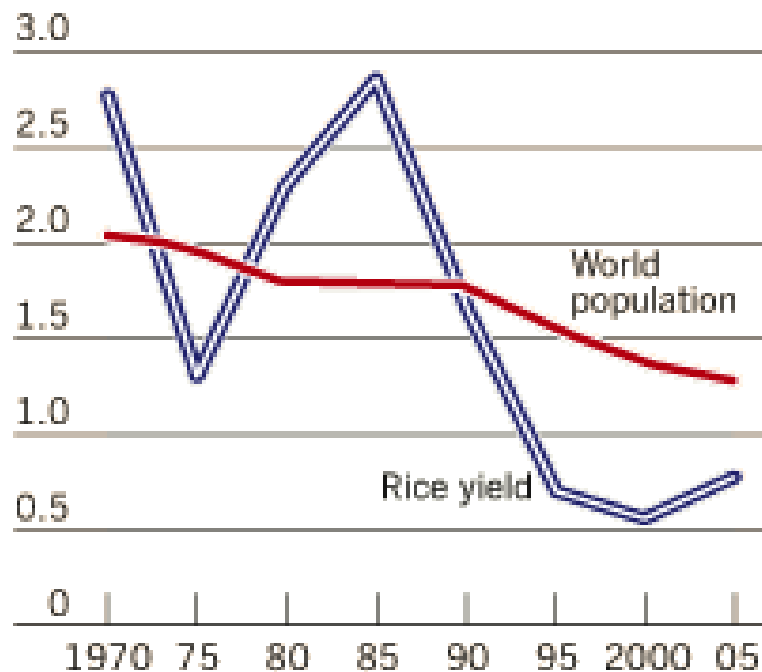


Urban/rural population for less and more developed regions

“Every six seconds a child dies of hunger.  
More people are going to bed hungry now  
than two to three years ago”  
(Paul Polman, CEO of Unilever, January 2012)

## Higher prices for the hungry

**Agricultural yield and population growth**  
Annual average growth (%)

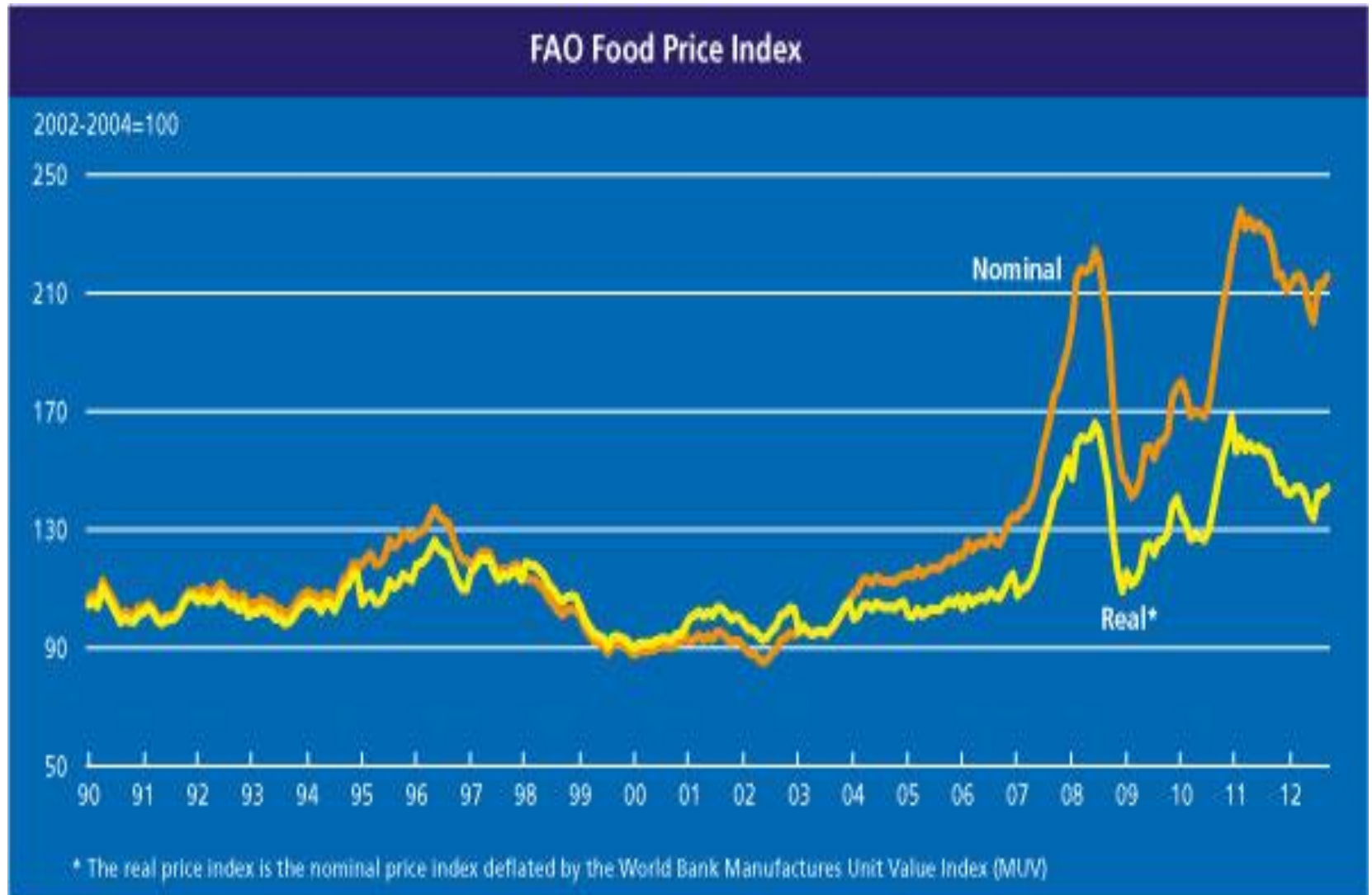


Source: FAO

**Global food prices**  
FAO index (2002-04 = 100)



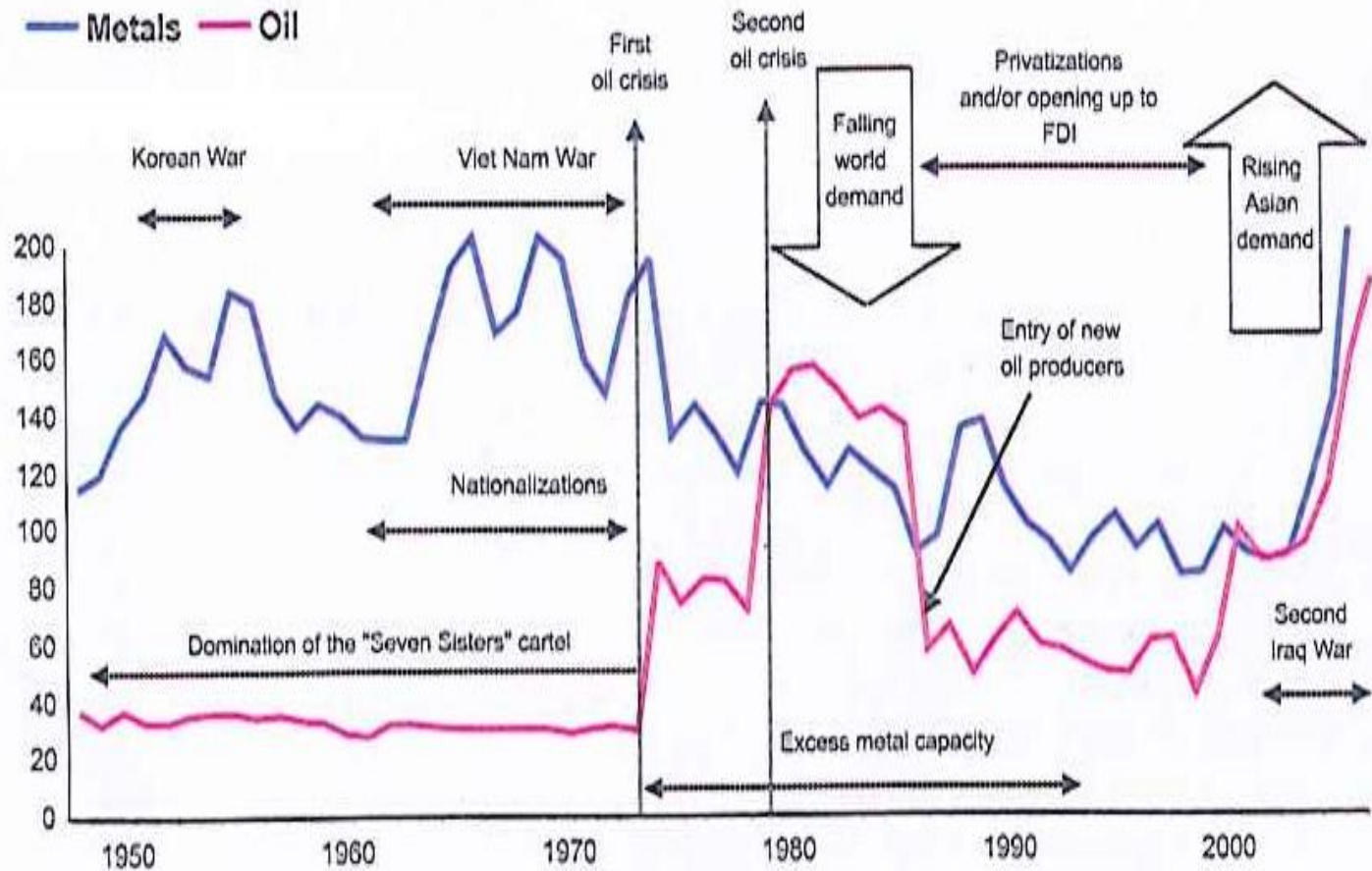
# 55 food commodities index



# Similarities and differences in the long run

<b>Common characteristics</b>				
	1915-17	1950-57	1973-74	2003-08
Commodities boom				
<b>Rapid global real growth</b> (average annual % change)	<b>n.a.</b>	<b>4.8</b>	<b>4.0</b>	<b>3.5</b>
<b>Conflict and geopolitical uncertainty</b>	First world war	Korean war	Yom Kippur war, Vietnam war	Iraq conflict
<b>Inflation</b>	Widespread	Limited	Widespread	Limited
<b>Significant infrastructure investment</b>	First world war	Postwar reconstruction	None	China
<b>Centred on</b>	Metals, agriculture	Metals, agriculture	Oil, agriculture	Oil, metals, agriculture
<b>% increase in prices</b> (previous trough to peak)	<b>34</b>	<b>47</b>	<b>59</b>	<b>131</b>
<b>Years of rising prices prior to peak</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>5</b>
<b>Years of declining prices prior to trough</b>	<b>4</b>	<b>11</b>	<b>19</b>	<b>n.a.</b>

Figure III.1. Real price index of crude oil and metallic minerals, 1948-2006  
(Base year 2000 = 100)



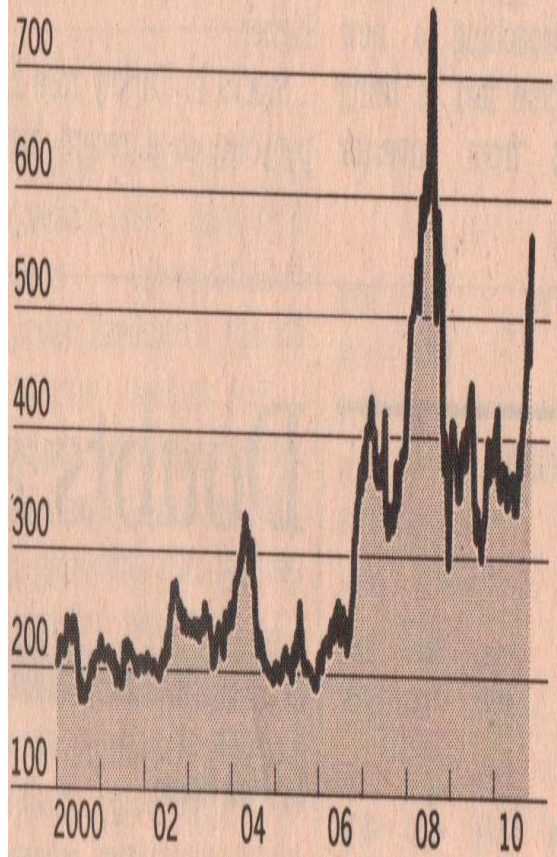
Source: UNCTAD and Radetzki, forthcoming.

There is no better fertilizer than high prices”  
(old farming proverb)



### Corn price

US cents per bushel

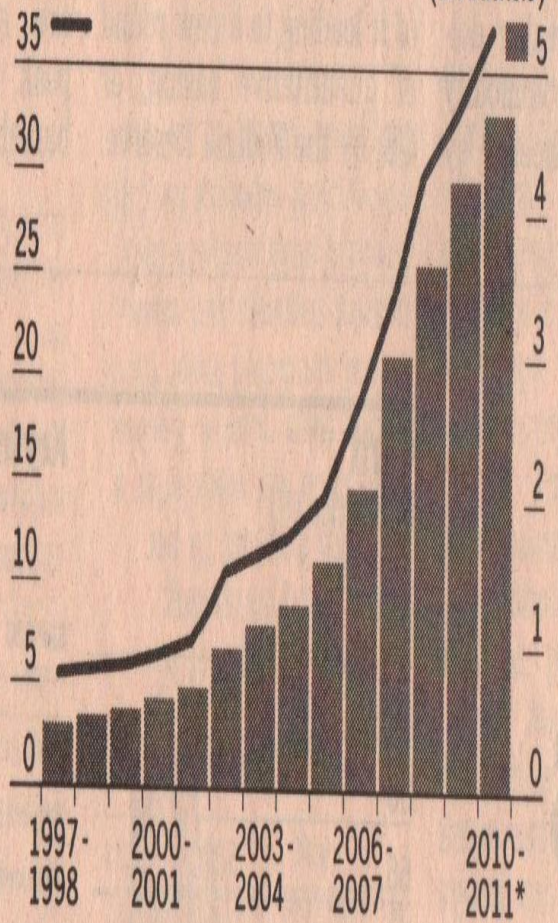


Sources: Thomson Reuters; USDA

### Corn use in US ethanol production

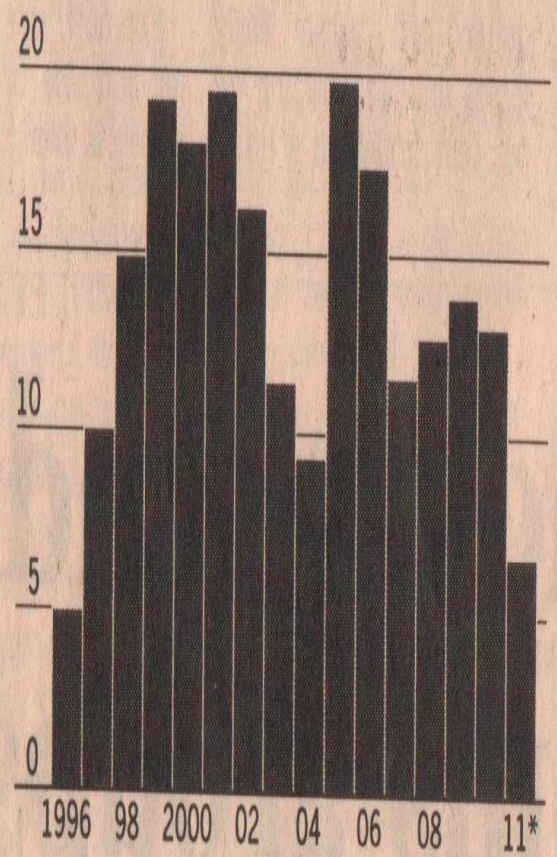
Ethanol share of corn crop (%)

Ethanol corn use (bn bushels)



### US corn stocks

As a % of use



\* Forecast

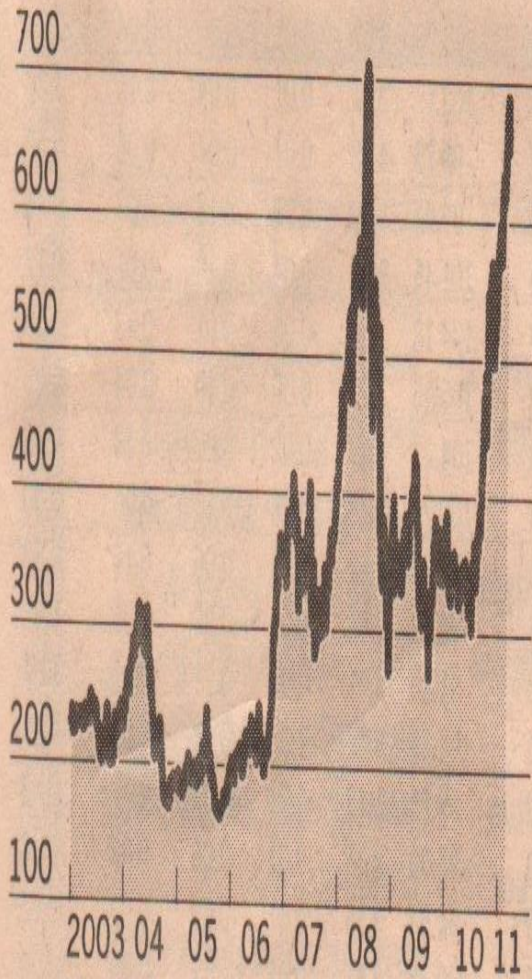
Years ending August

The rise in ethanol commercial producers

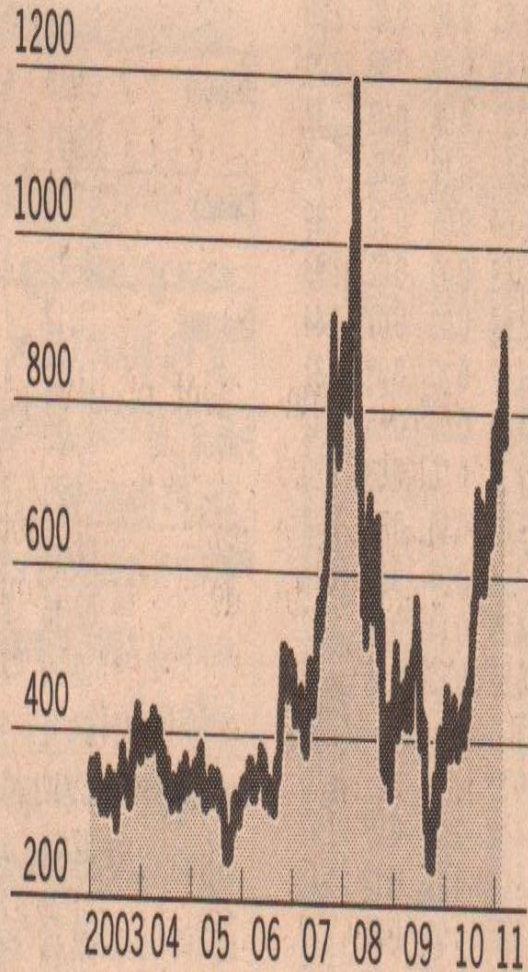


# Core crop price spikes stoke food inflation

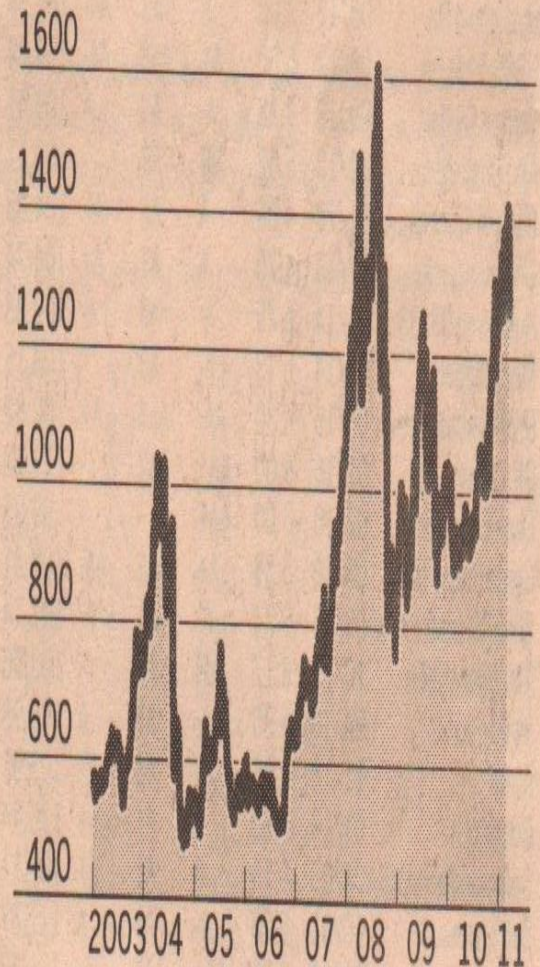
Corn price (cents per bushel)



Wheat price (cents per bushel)



Soyabean price (cents per bushel)



Source: Thomson Reuters Datastream

# Food security and state intervention

## Government interventions

- Export restrictions
- Recent food protests

**KAZAKHSTAN**  
One of the world's largest grain exporters. It imposed a total ban this month on wheat exports to keep local prices down

**RUSSIA**  
Introduced price controls on some basic foods ahead of the country's parliamentary polls at the end of 2007 and imposed a large export tariff on wheat

**EGYPT**  
Leading rice exporter. In late March, it imposed a formal ban on selling rice abroad to keep local prices down

UKRAINE

CHINA

VIETNAM

CAMBODIA

Mexico City, Mexico

Port-au-Prince, Haiti

Sefrou, Morocco

Nouakchott, Mauritania

Dakar, Senegal

Conakry, Guinea

Abidjan, Ivory Coast

Douala, Cameroon

Sanaa, Yemen

Bankura

**INDIA**  
The world's third largest exporter of rice. In late 2007, it banned exports of non-basmati rice

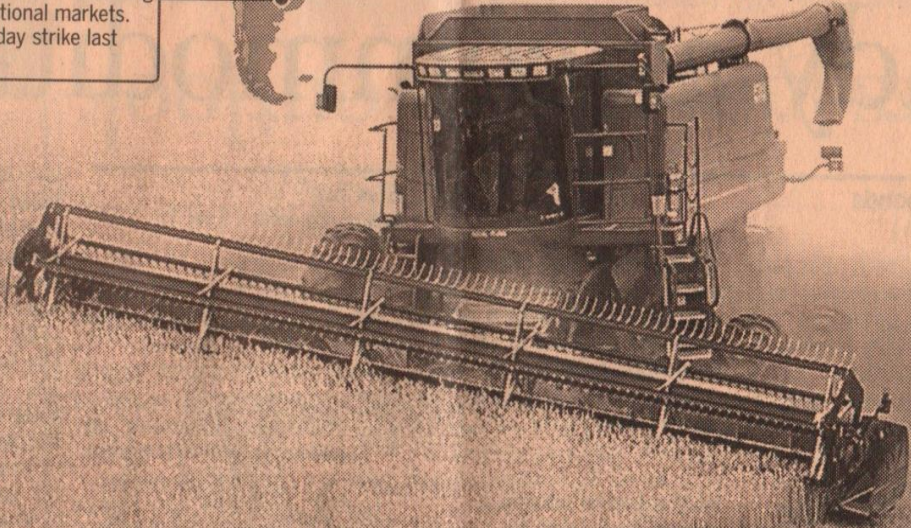
Jakarta, Indonesia

Maputo, Mozambique

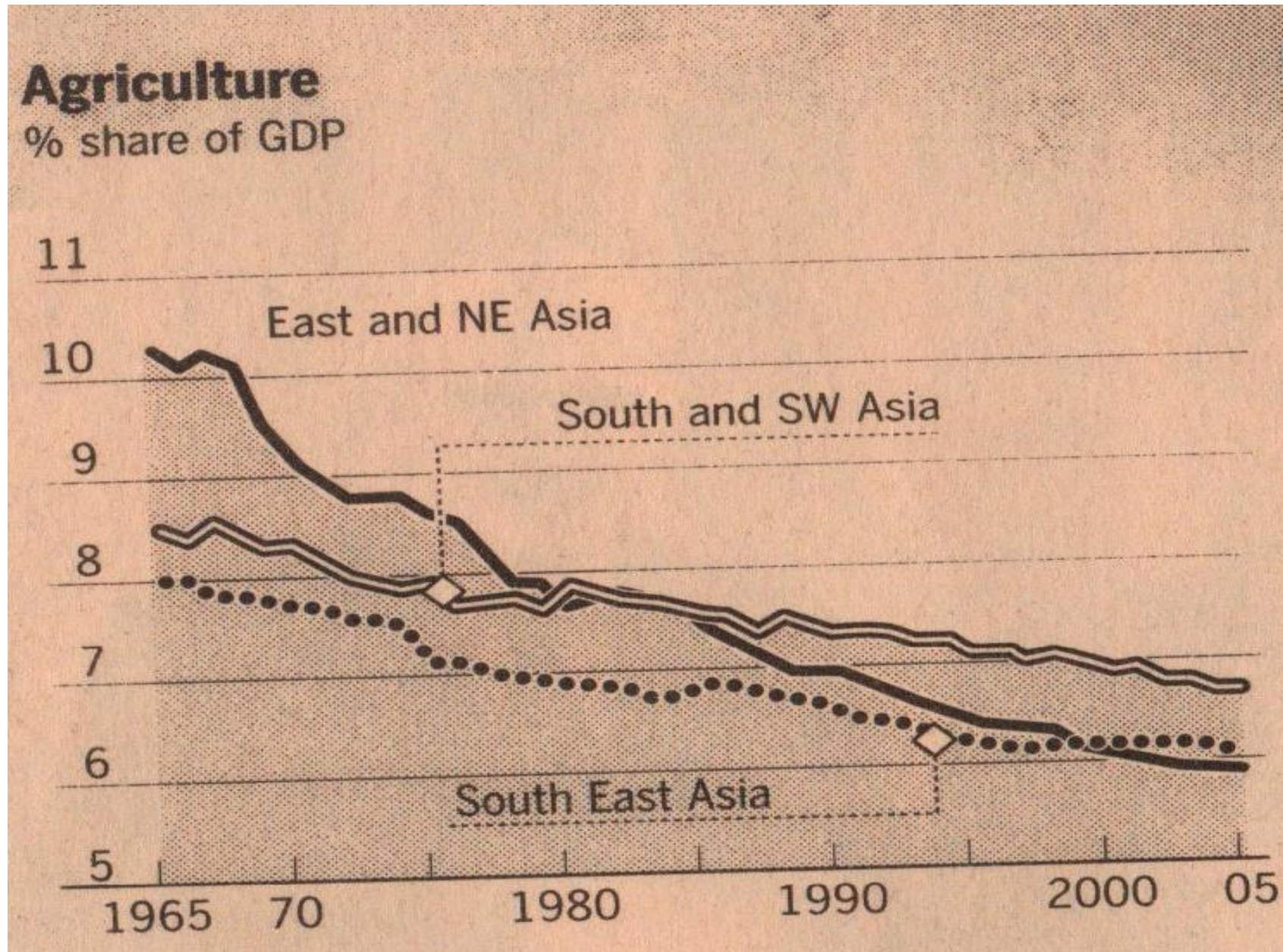
**ARGENTINA**  
The government has introduced a new sliding scale of export tariffs of up to 44% on grains and cereals which it says protects local prices from following record rises on international markets. Farmers staged a 21-day strike last month in protest

**INDONESIA**  
South-east Asia's largest rice consumer. This month, it announced a reduction in medium-grade rice exports in order to maintain stocks and stabilize local prices

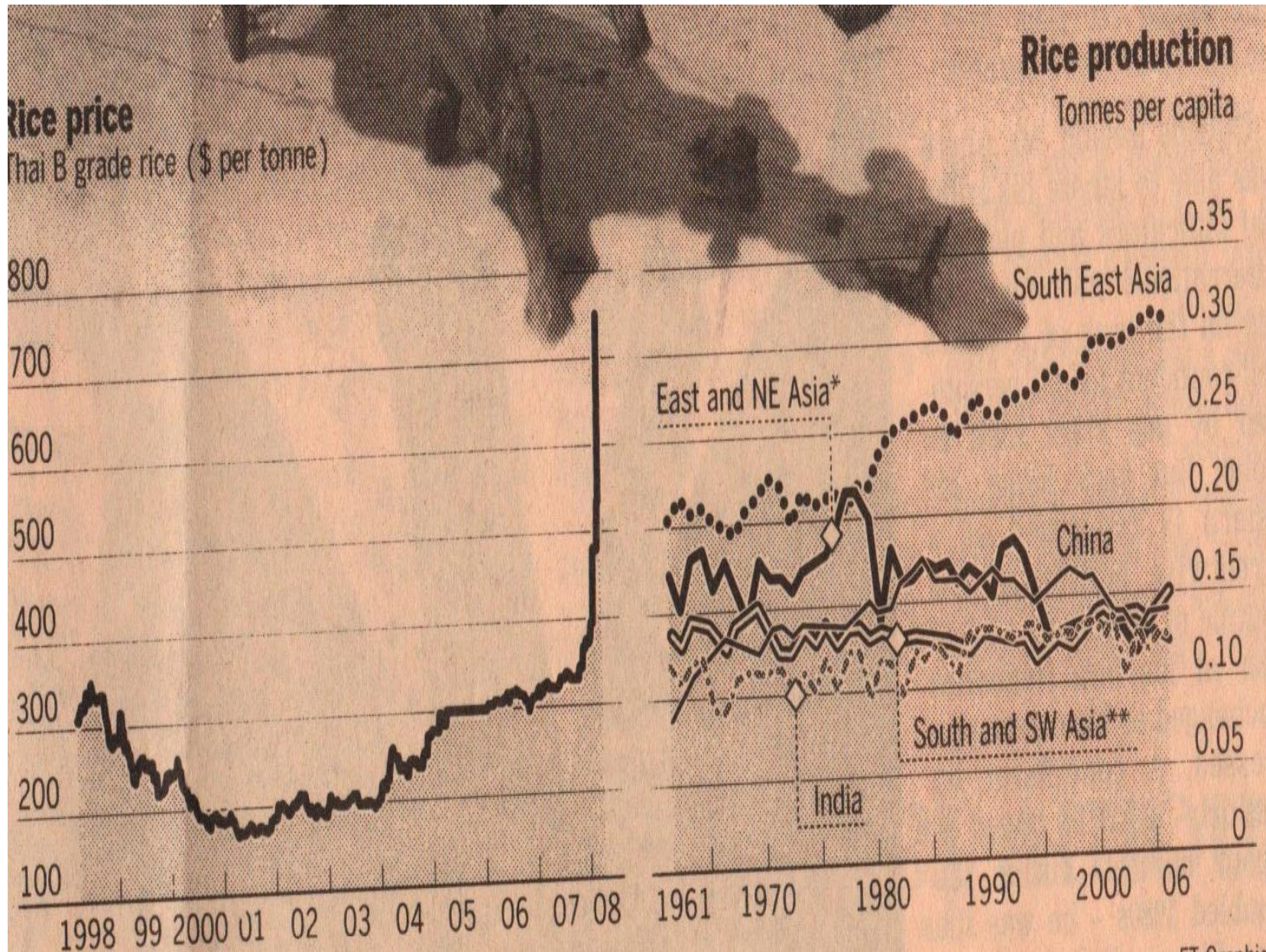
FT Graphic Photo: AP



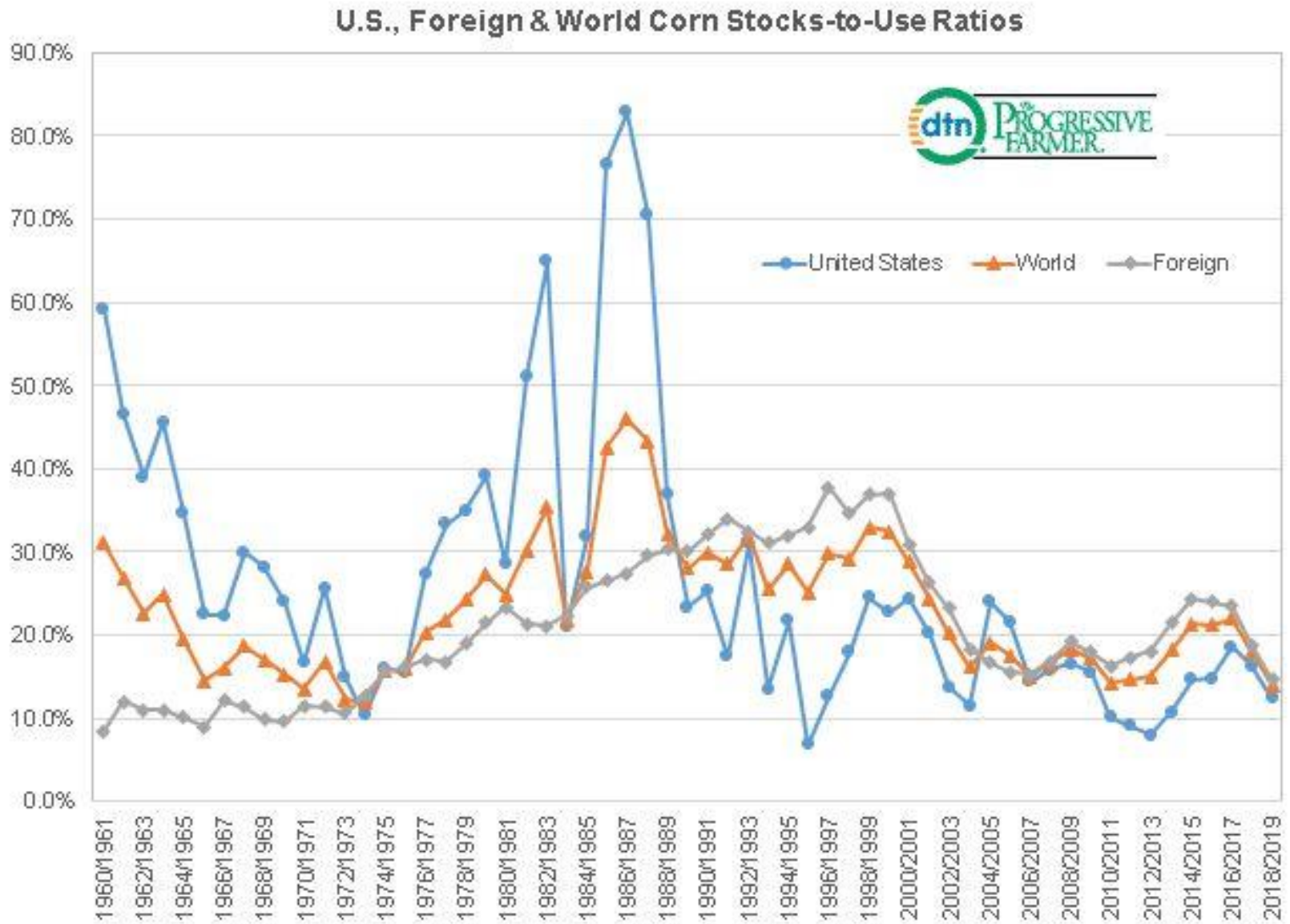
# The cost of reducing agricultural sector



# Reducing agricultural sector



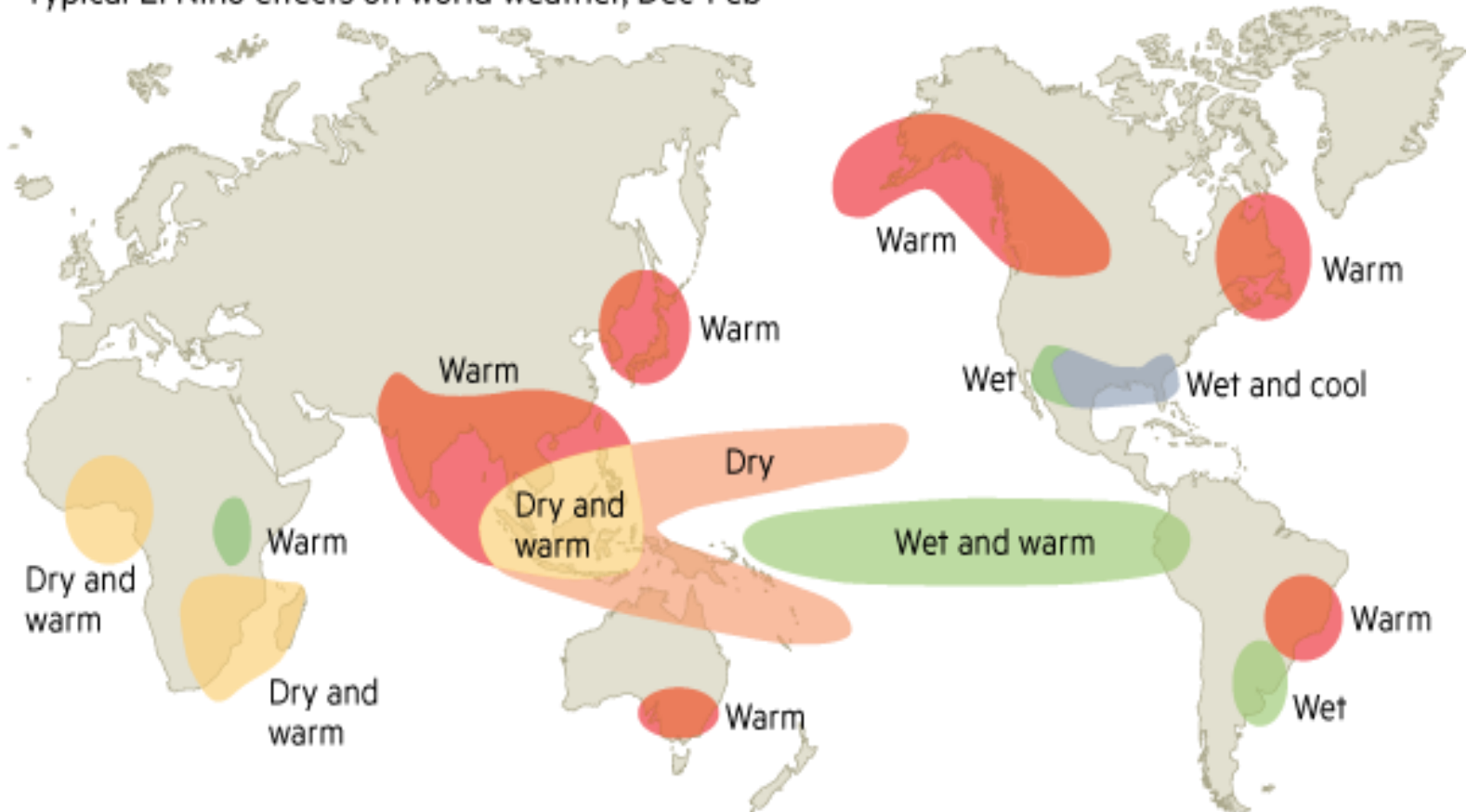
# The stock, even more important



# Don't forget the nature, and el Niño

## Hotting up

Typical El Niño effects on world weather, Dec-Feb

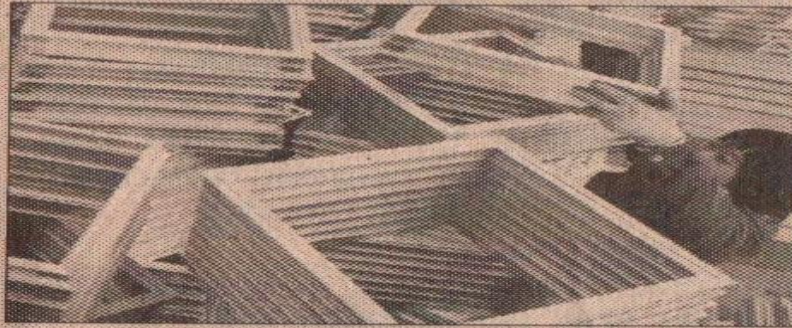


FT graphic Sources: NOAA; FT research

# Industrial commodities



## Aluminium



- Lightweight but strong. Used in aircraft, building materials, cooking utensils, electronics, food packaging.
- Most abundant metallic element in earth's crust.
- Largest producers: China, Russia.
- Largest consumers: China, US, Japan, Germany.
- Leading miners: UC Rusal (Russia), Rio Tinto (UK), Alcoa (US), Norsk Hydro (Norway).
- 2009 output: 36.3m tonnes.
- Current price per tonne: \$2,430. Record price (July 10 2008): \$3,380.

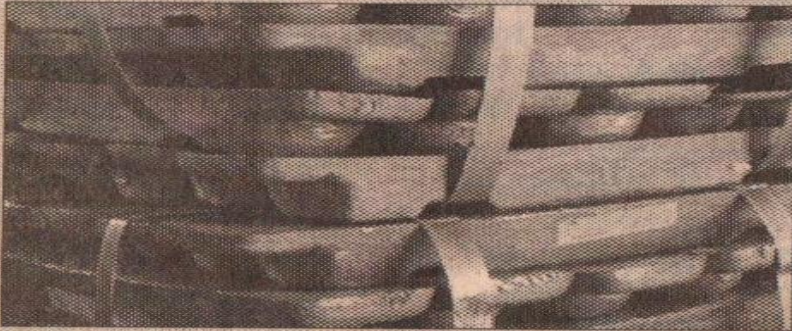
## Copper



- Effective conductor. Used mainly in electrical wiring and connections, as well as coins.
- First used circa 8,000BC as a substitute for stone.
- Largest producers: Chile, US, Peru, Australia.
- Largest consumers: China, US, Germany and Japan.
- Leading miners: Codelco (Chile), Freeport-McMoRan (US), BHP Billiton (Australia), Xstrata (Switzerland), Rio Tinto (UK).
- 2009 output: 18.4m tonnes.
- Current price per tonne: \$8,345 per tonne. Record price (July 2 2008): \$8,940.



## Lead



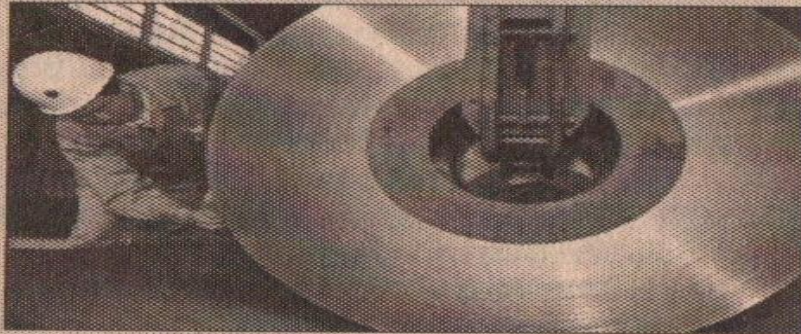
- Malleable, ductile, resistant to corrosion. Used in batteries but no longer in plumbing and petroleum because of toxicity.
- One of first metals used by humans.
- Largest producers: China, Australia, US, Peru.
- Largest consumers: China, US, Germany and South Korea.
- Leading miners: BHP Billiton, Doe Run (US), Xstrata, Teck Cominco (Canada).
- 2009 output: 8.7m tonnes.
- Current price per tonne: \$2,370. Record price (October 11 2007): \$3,890.

## Nickel



- Hard, malleable, ductile. Used in production of corrosion-resistant alloys such as stainless steel.
- Isolated in 1751 by Swedish mineralogist Baron Cronstedt.
- Largest producers: Russia, Canada, Indonesia and Australia.
- Largest consumers: China, Japan, US, Germany.
- Leading miners: Norilsk Nickel (Russia), Vale (Brazil), BHP Billiton, PT Antam (Indonesia).
- 2009 output: 1.3m tonnes.
- Current price per tonne: \$24,100. Record price (May 9 2007): \$51,800.

## Tin



- Soft and pliable, it is used by electronics industry in solder and to coat steel food cans.
- Early mines found in Cornwall, south-west England, date back more than 2,000 years.
- Largest producers: China, Indonesia, Peru.
- Largest consumers: China, US, Japan, Germany, South Korea, Taiwan.
- Leading miners: PT Timah (Indonesia), Minsur (Peru).
- 2009 output: 323,000 tonnes.
- Current price per tonne: \$26,500. Record price (October 13 2010): \$27,100.

## Zinc



- Low melting point. Used in production of die castings in automotive, electrical and hardware industries.
- Essential to life, found in high concentrations in red blood cells.
- Largest producers: China, Australia, Peru.
- Largest consumers: China, US, Japan, Germany.
- Leading miners: Xstrata, Teck Cominco, Glencore (Switzerland), Oz Minerals (Australia).
- 2009 output: 11.3m tonnes.
- Current price per tonne: \$2,380. Record price (November 10 2006): \$4,580.



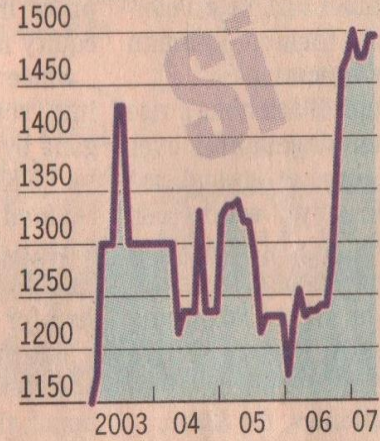
### Cobalt

\$ per lb



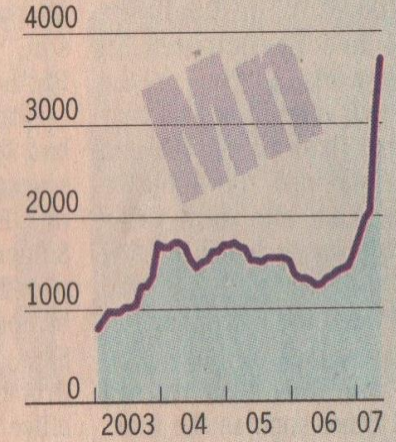
### Silicon

€ per tonne



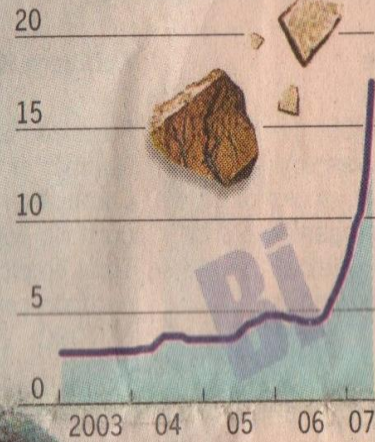
### Manganese

\$ per tonne



### Bismuth

\$ per lb



### Molybdenum

\$ per lb



### Rhodium

\$ per ounce

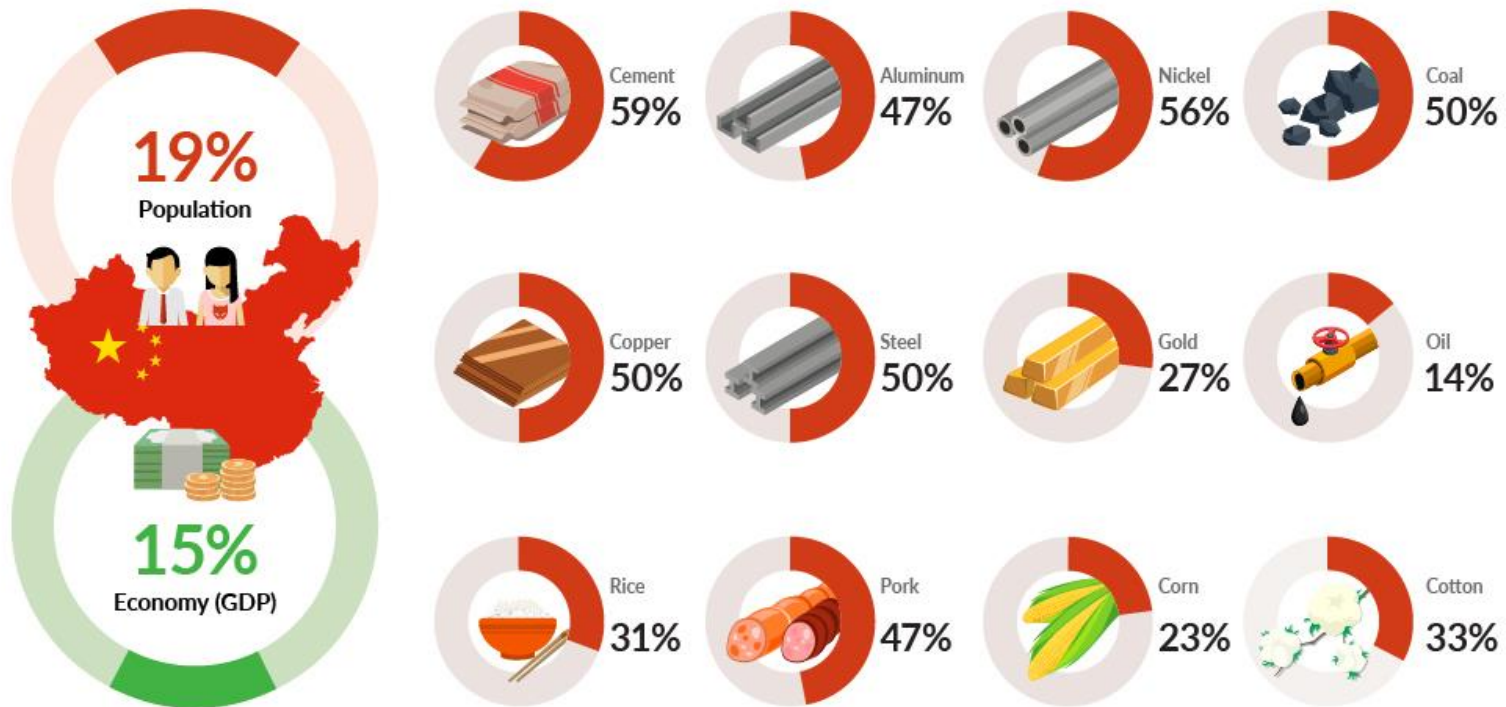


# The biggest consumer

Chart of the Week

## CHINA'S STAGGERING DEMAND FOR COMMODITIES

Half or more of all steel, copper, coal, nickel, and cement goes there

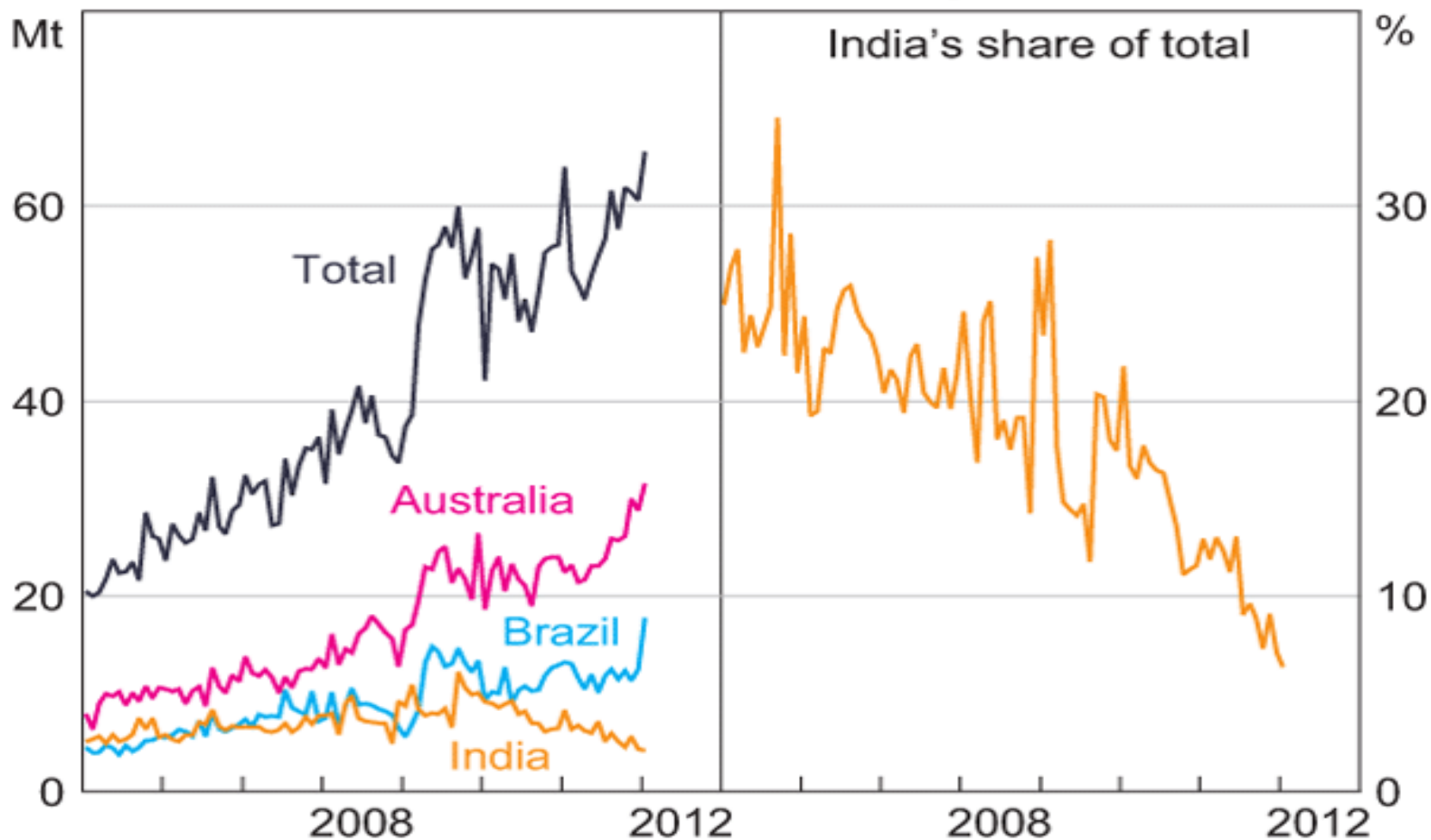


Source: Statista, MC Group, Global X Funds, World Steel Association, World Gold, Council, China Gold Association, NAB, OECD, Enerdata, USDA

visualcapitalist.com

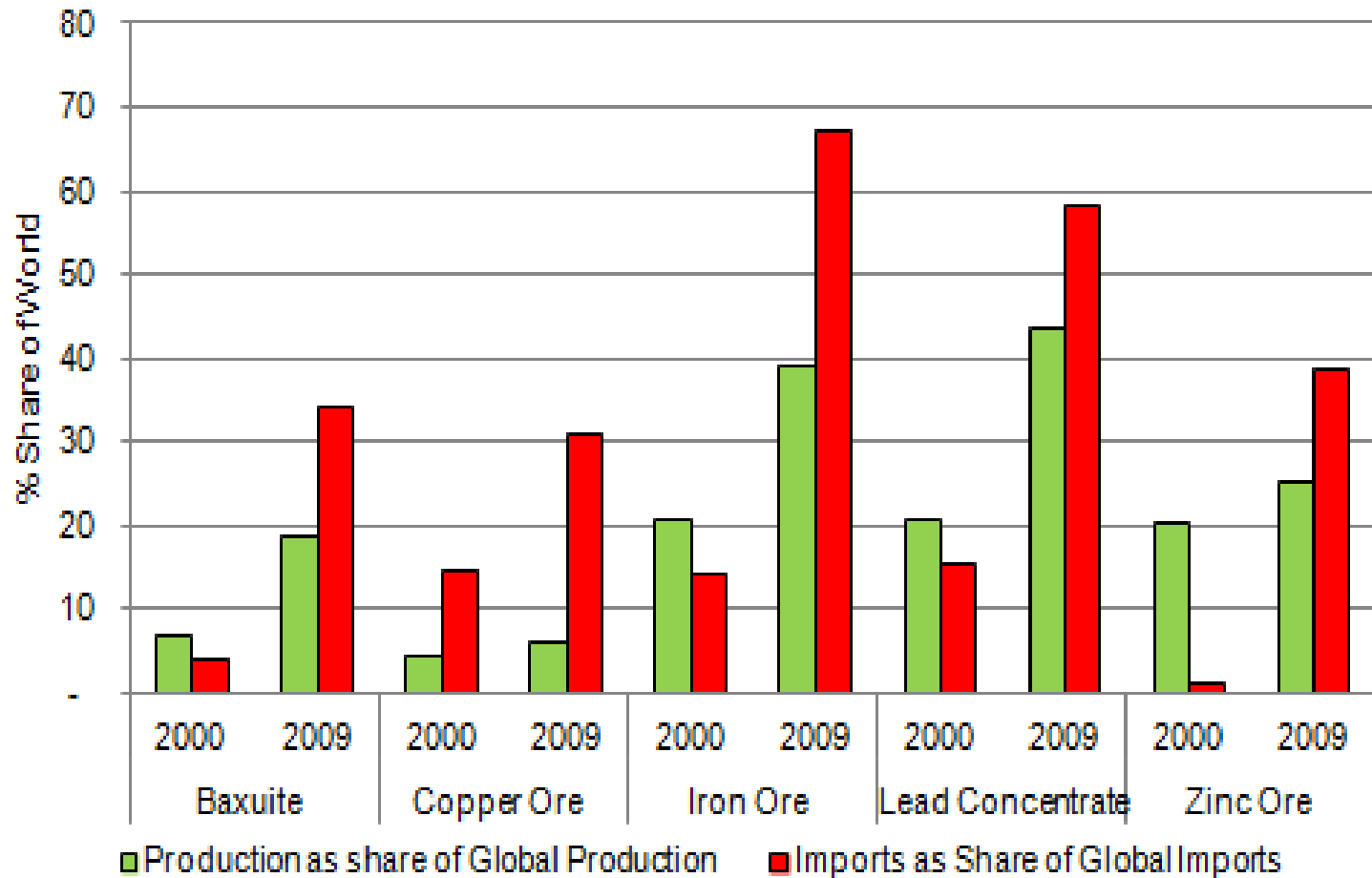


# China – Iron Ore Imports

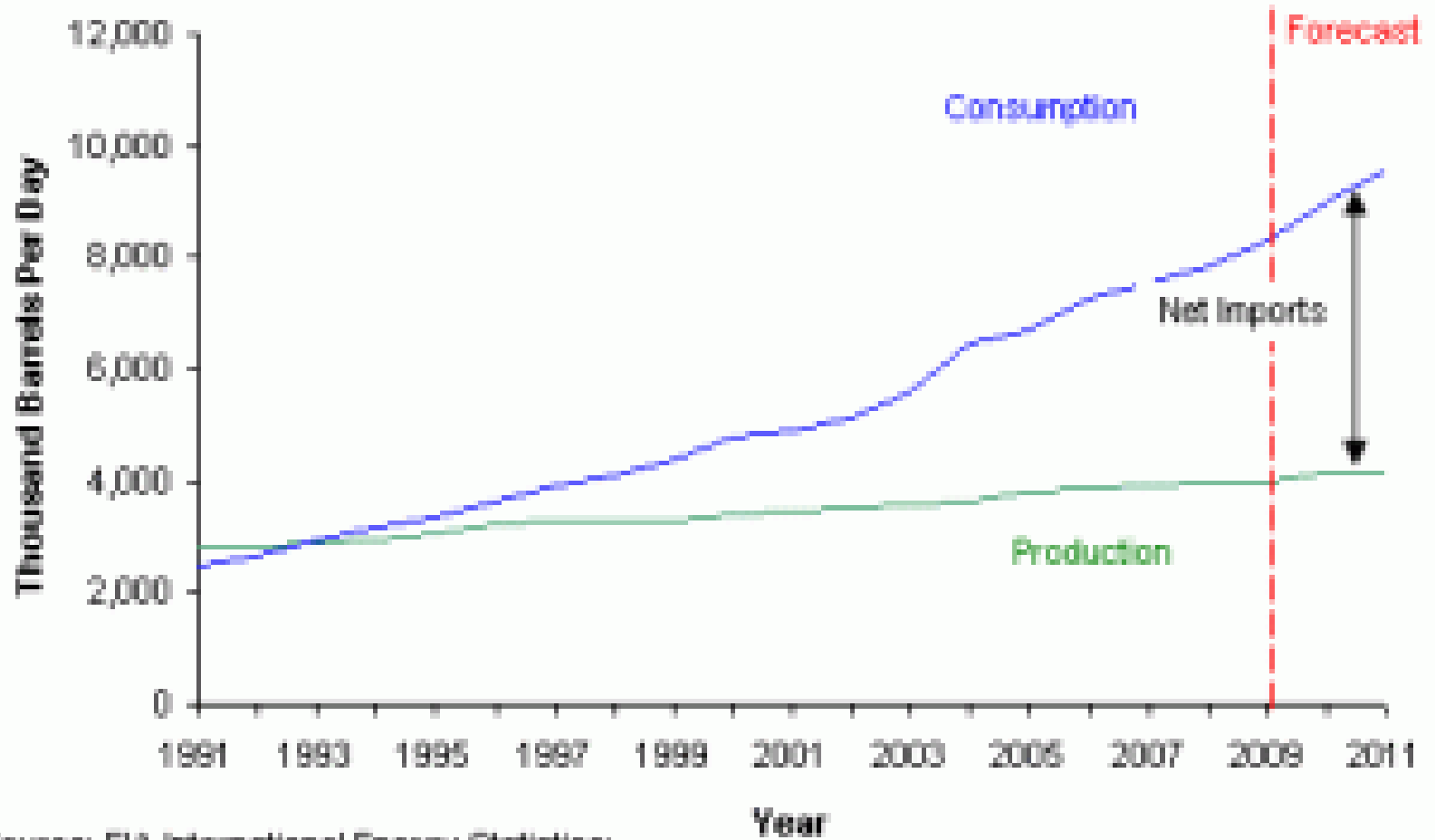


Sources: Bloomberg; CEIC; RBA

# Domestic Production < Domestic Consumption



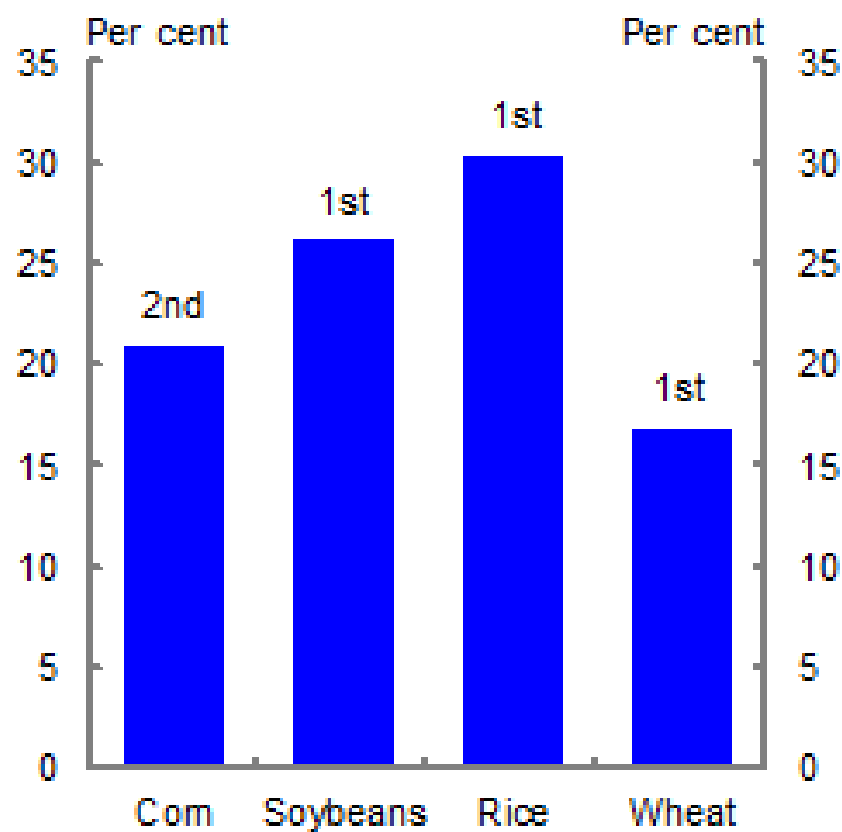
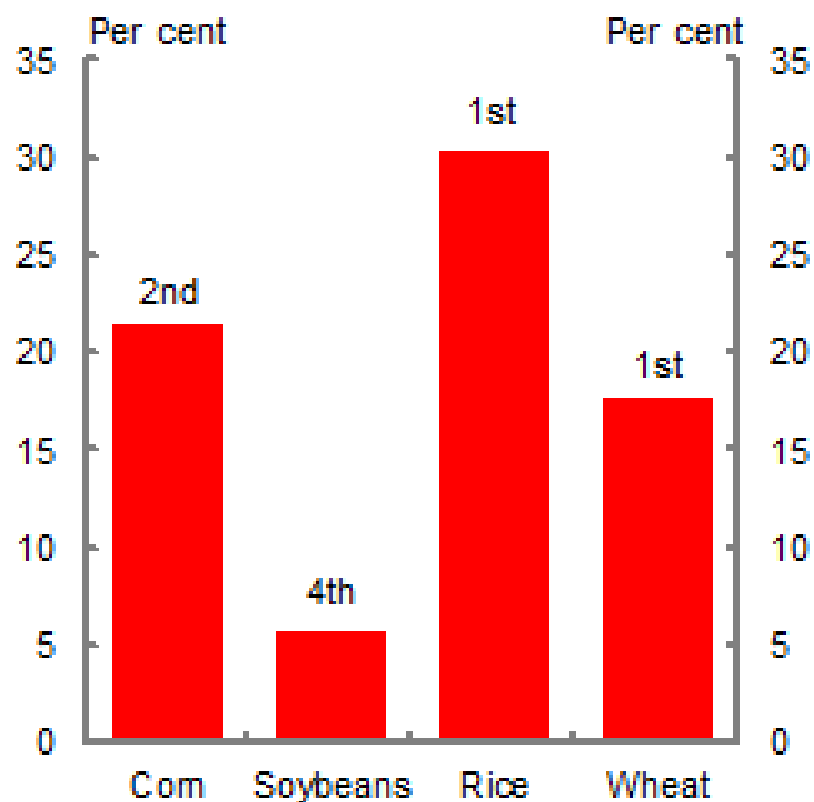
## China's Oil Production and Consumption, 1991-2011\*



Source: EIA International Energy Statistics;  
Short-Term Energy Outlook (September 2010)

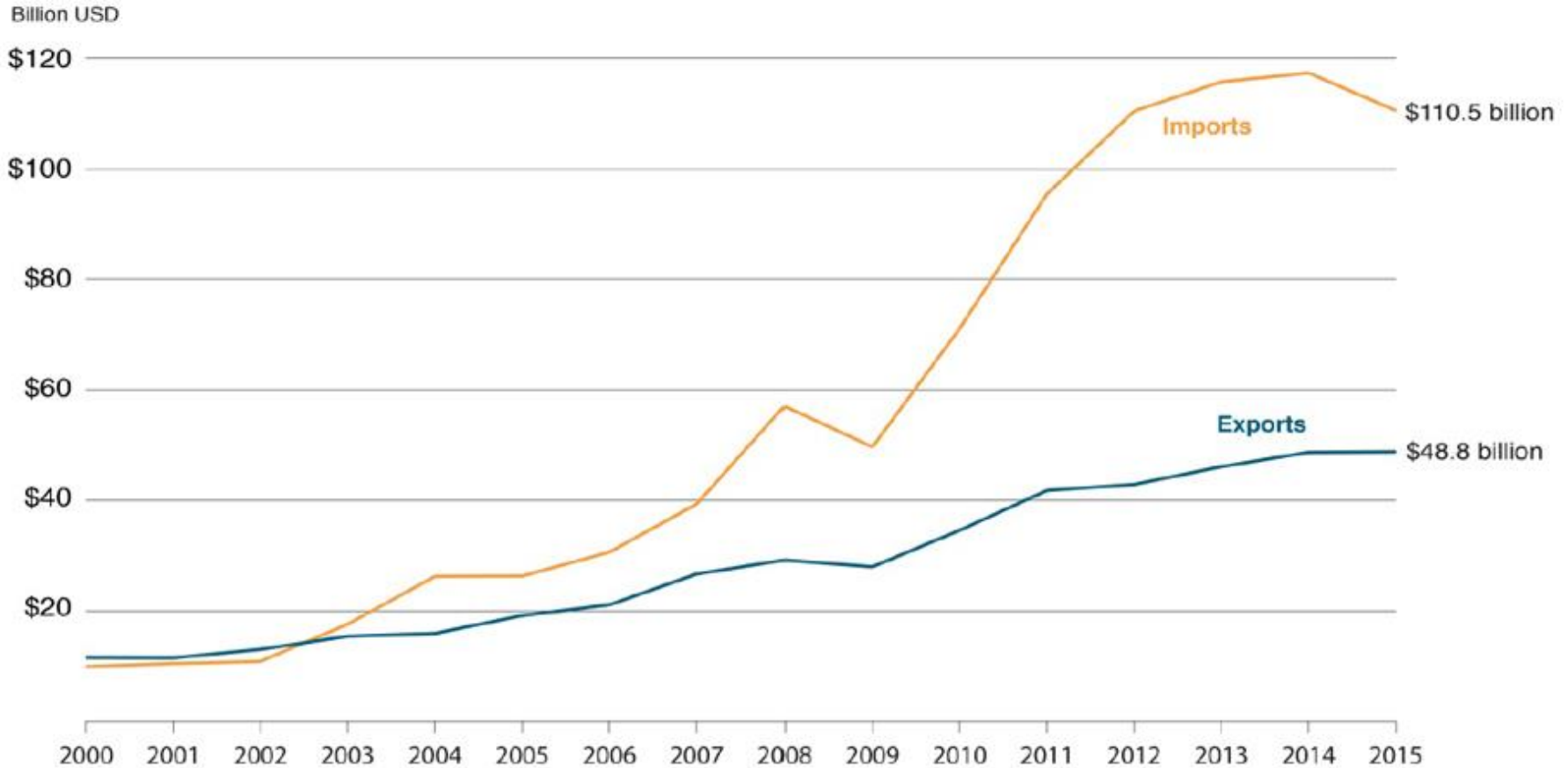
\*forecasted

# China production and consumption





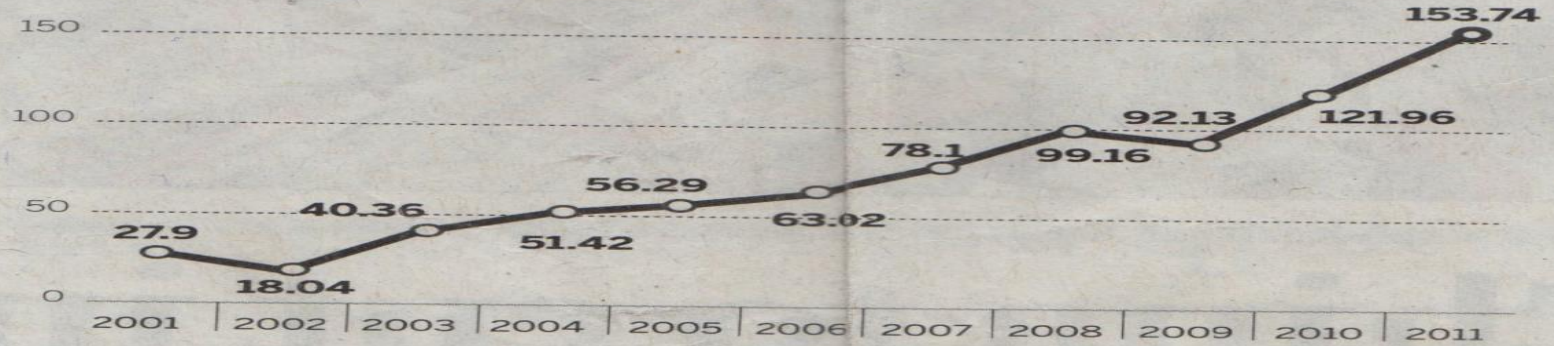
## China's Agricultural Imports and Exports, 2000-2015



Source: USDA-FAS Global Agricultural Trade System (GATS)

# CHINA AGRICULTURAL TRADE

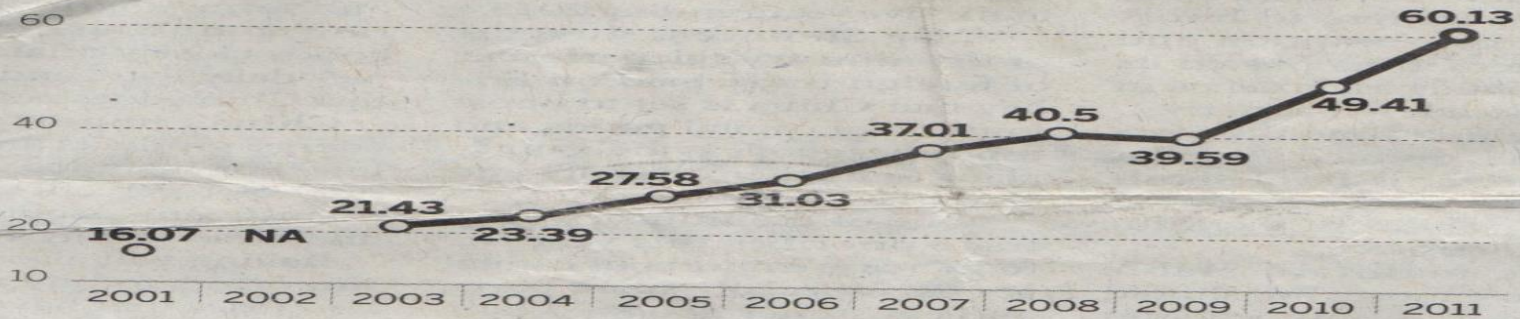
## TOTAL TRADE VOLUME (\$b)



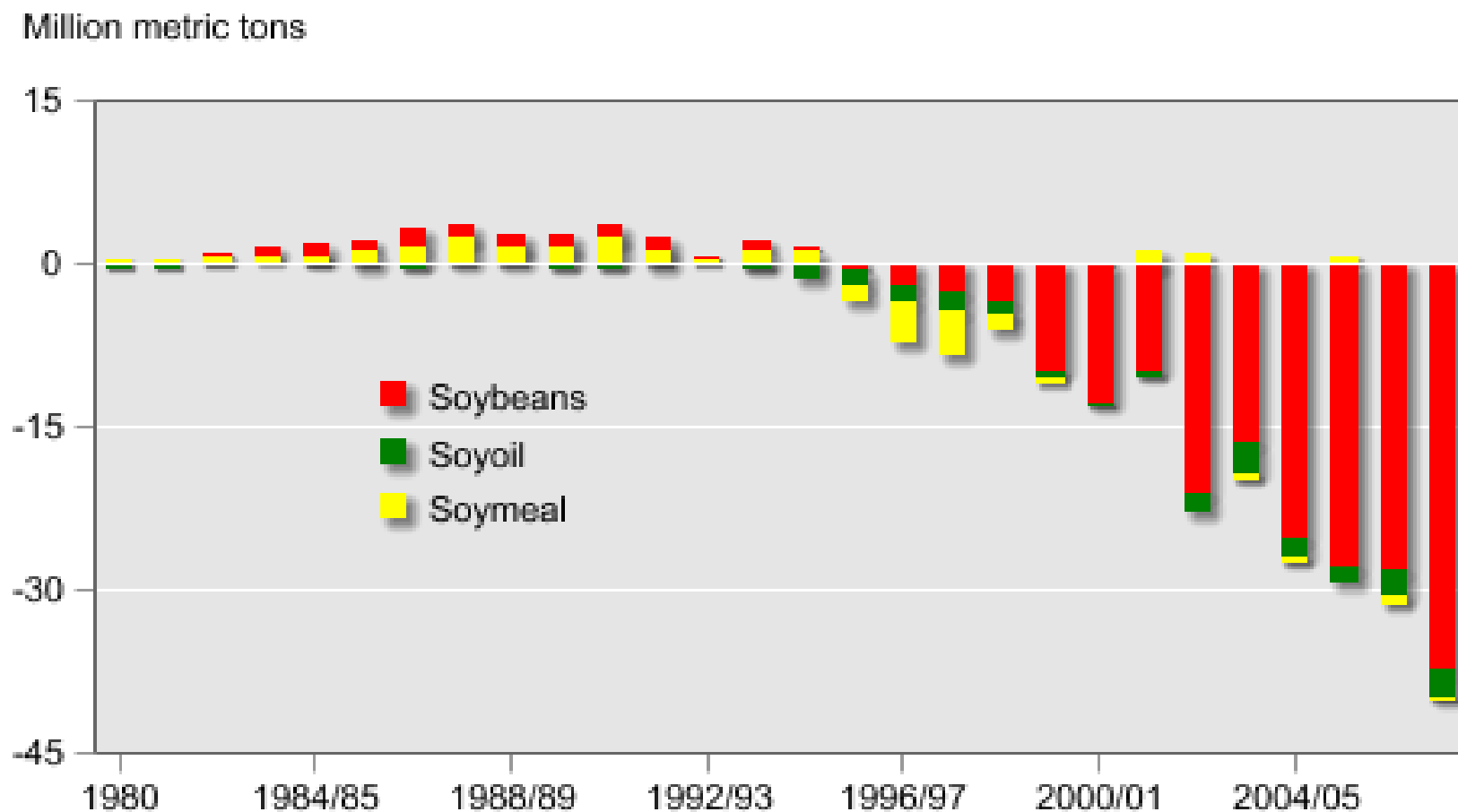
## IMPORTS (\$b)



## EXPORTS (\$b)

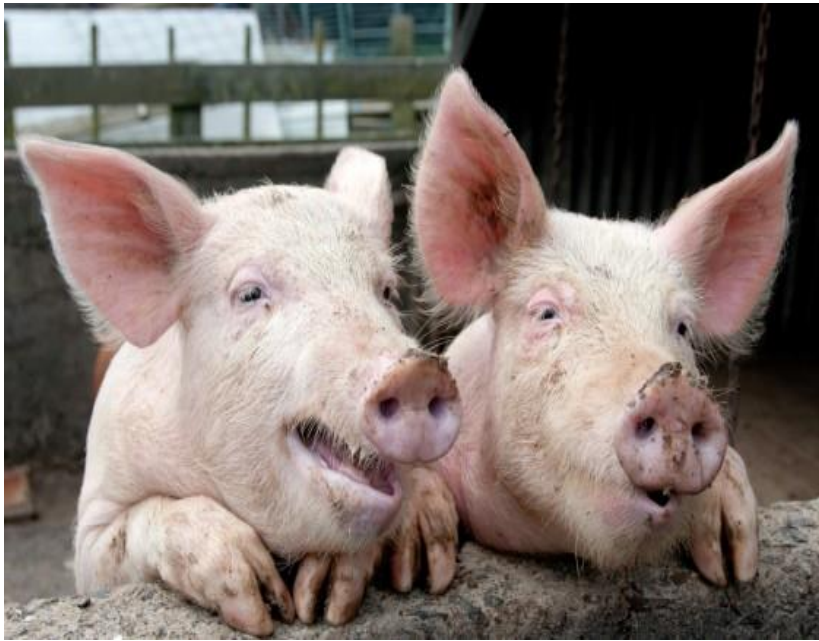


## China net trade in soybeans, oil and meal, 1980-2008



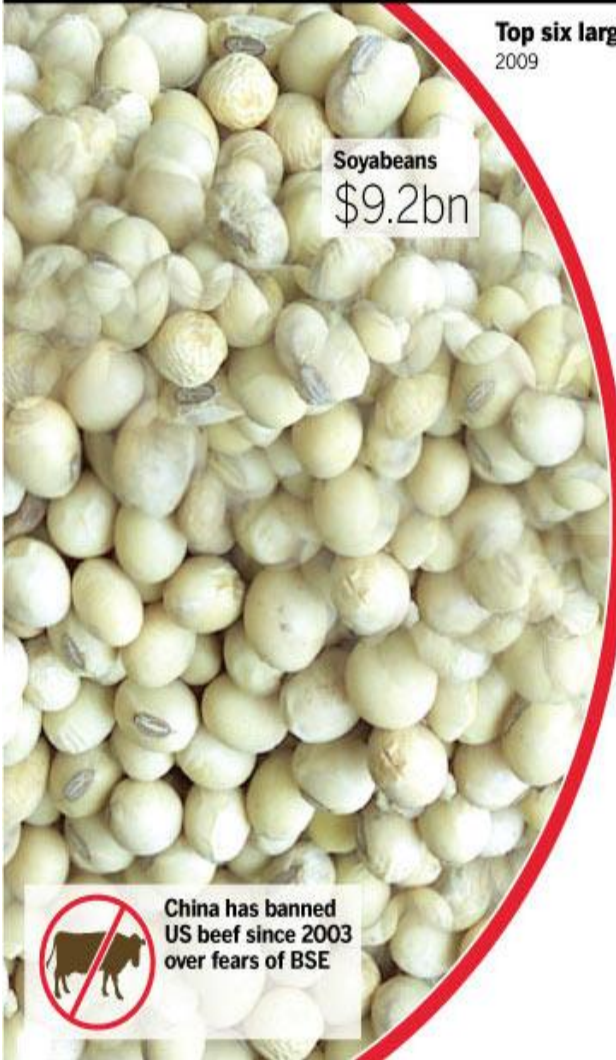
Note: net trade = exports - imports. Data are for October-September market years.

Source: USDA, Economic Research Service using data from USDA, Foreign Agricultural Service, Production, Supply, and Distribution (PS&D) database.



# A very strong mutual attraction 1.0

## Soaring US agricultural exports



### Top six largest exports to China 2009



**Corn**  
\$54m



**Wheat**  
\$87m



**Tobacco**  
\$121m



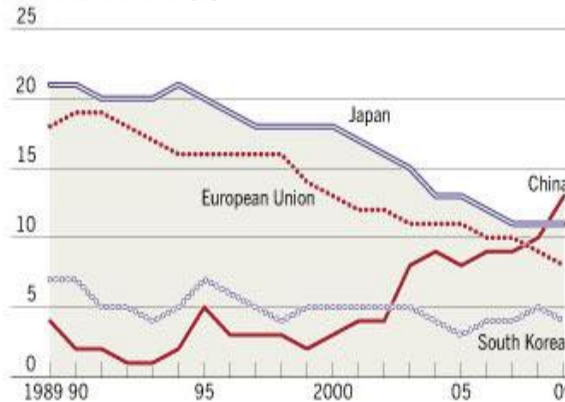
**Nuts**  
\$140m



**Cotton**  
\$825m

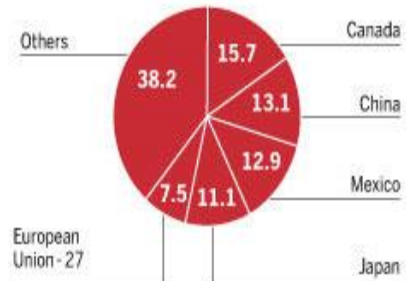
### US agricultural exports

Selected destinations (%)



Sources: USDA; US Census Bureau

Top destinations, 2009 (value, \$bn)



# The mutual attraction

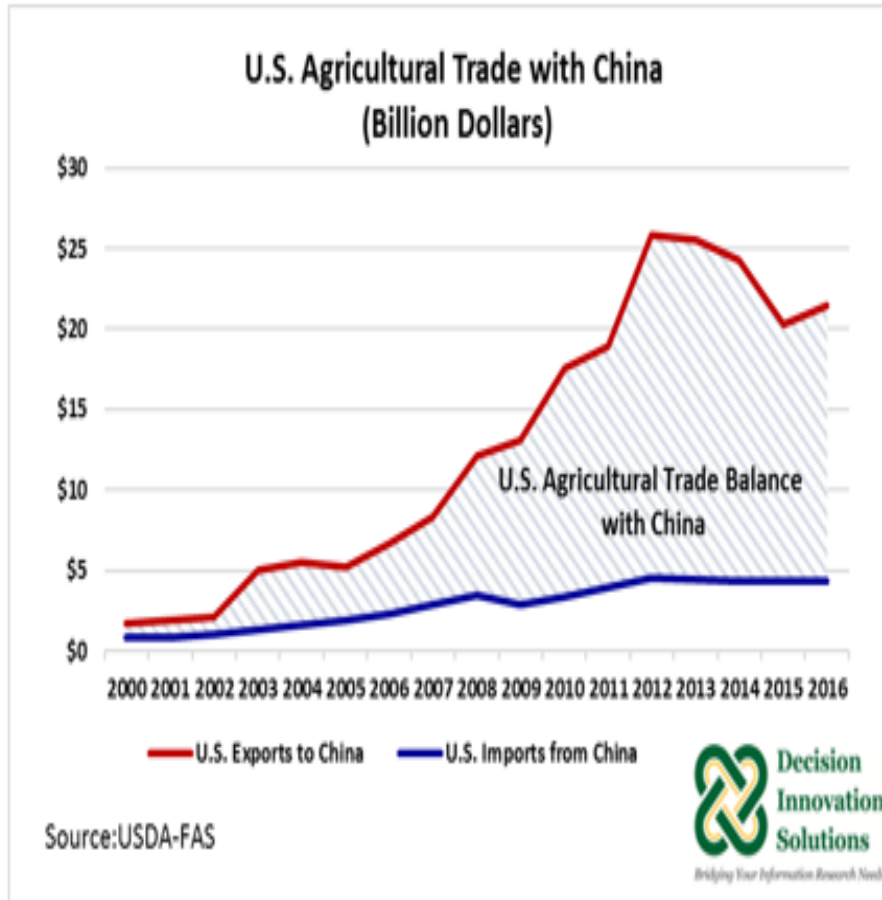


Figure 2. U.S. Agricultural Trade with China (Billion Dollars)

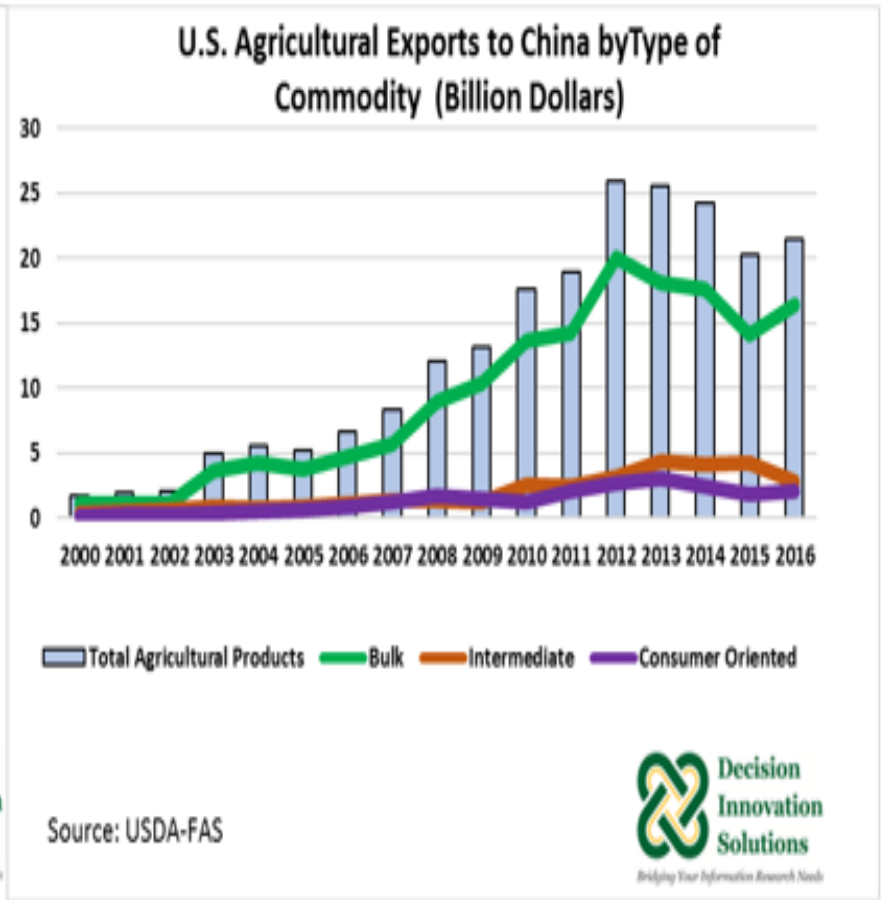
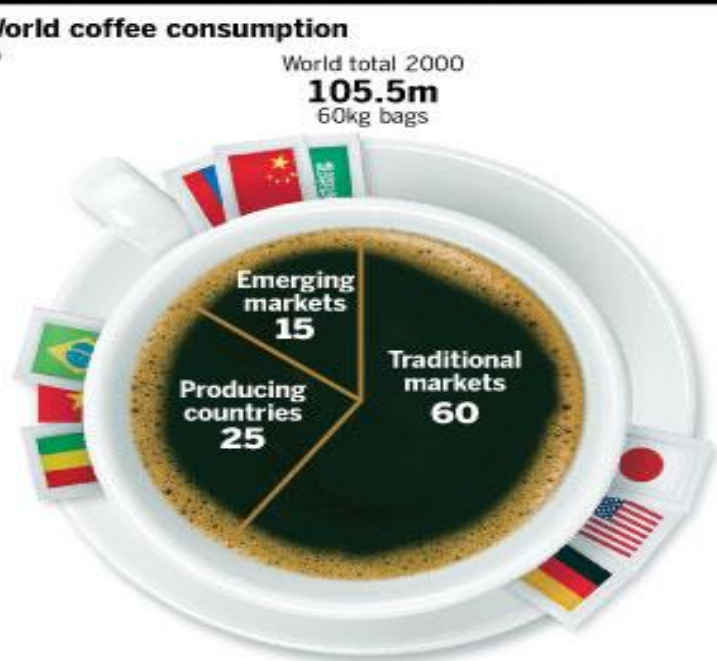


Figure 3. U.S. Agricultural Exports to China by Type of Commodity (Billion Dollars)

## Producers acquiring the taste

### World coffee consumption

%



World total 2010\*

**134m**

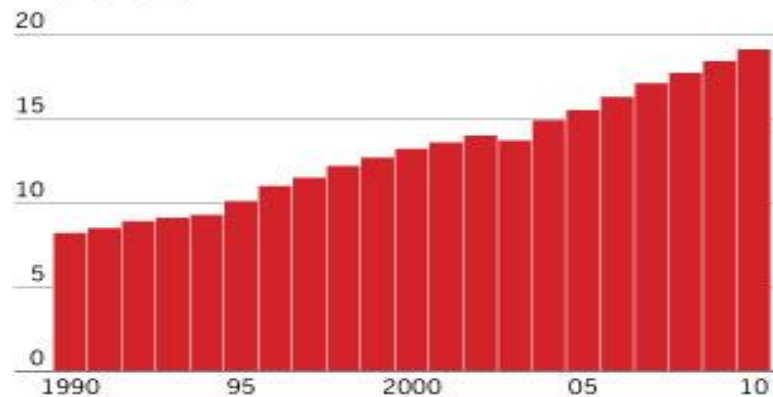
60kg bags



\* Estimate

### Consumption in Brazil climbs inexorably...

60kg bags (m)

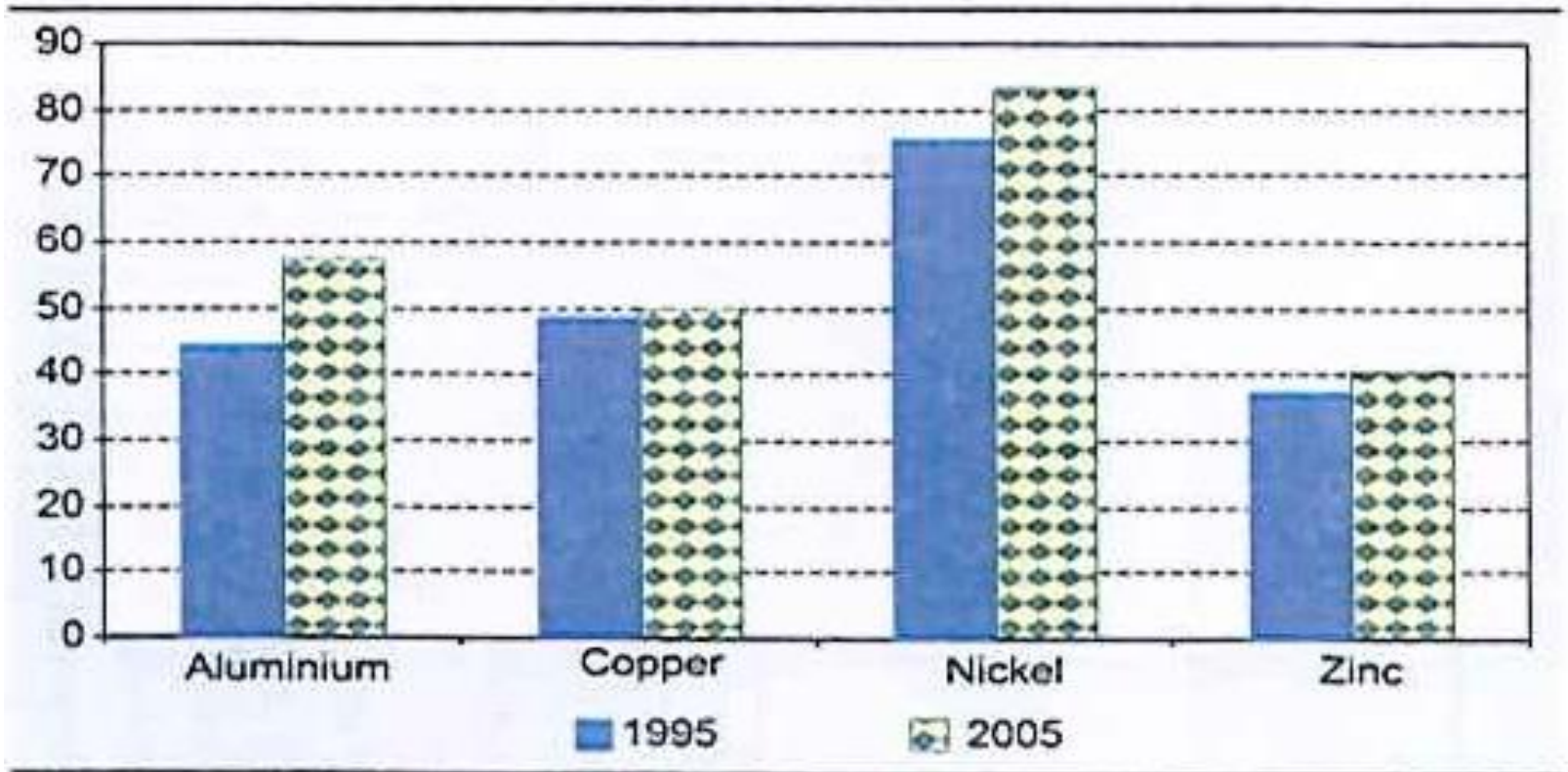


### ... Arabica coffee price hits 34-year high

New York (cents per lb)



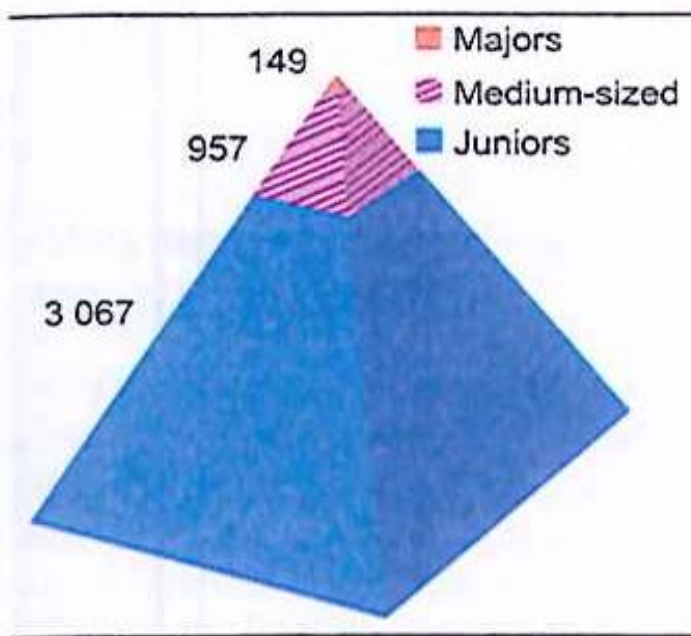
**Figure IV.7. Top 20 mining companies' share in the value of refined production, 1995 and 2005**  
(Per cent)



Source: UNCTAD, based on data from the Raw Materials Group.



**Figure IV.6. The pyramid of metal mining companies, 2006**  
(Number of companies)



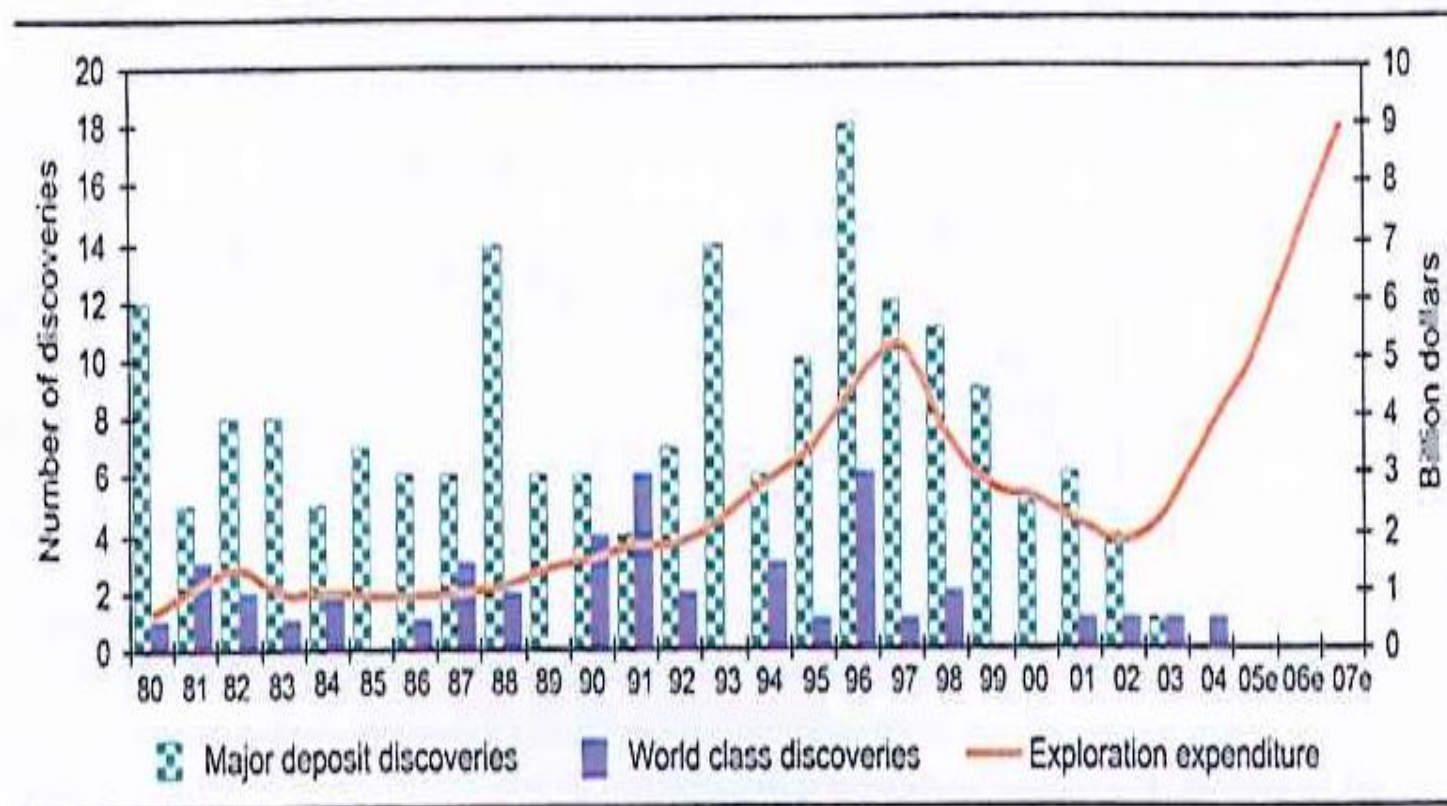
Source: UNCTAD, based on data from the Raw Materials Group.

**Table IV.4. Top 25 metal mining companies, 2005<sup>a</sup>**

Rank 2005	Rank 1995	Company name	Country	State ownership (%)	Share in the value of world production (%)	Cumulative (%)
1	4	BHP Billiton	Australia	-	4.8	4.8
2	2	Rio Tinto	United Kingdom	-	4.6	9.4
3	6	CVRD	Brazil	12	4.4	13.8
4	1	Anglo American	United Kingdom	-	4.3	18.1
5	5	Codelco	Chile	100	3.2	21.3
6	7	Norilsk Nickel	Russian Federation	-	2.2	23.5
7	9	Phelps Dodge	United States	-	2.0	25.5
8	22	Grupo México	Mexico	-	1.6	27.1
9	26	Newmont Mining	United States	-	1.3	28.4
10	11	Freeport McMoran	United States	-	1.3	29.7
11	13	Falconbridge	Canada	-	1.2	30.9
12	53	Anglogold Ashanti	South Africa	3	1.1	32.0
13	15	Inco	Canada	-	1.0	33.0
14	.. <sup>b</sup>	Xstrata	Switzerland	-	1.0	34.0
15	14	Barrick Gold	Canada	-	1.0	35.0
16	.. <sup>c</sup>	Alrosa	Russian Federation	69	0.9	35.9
17	18	Placer Dome	Canada	-	0.9	36.8
18	31	Teck Cominco	Canada	-	0.8	37.6
19	10	Gold Fields	South Africa	10	0.8	38.4
20	19	KGHM Polska Miedz	Poland	44	0.7	39.1
21	88	Antofagasta	United Kingdom	-	0.7	39.8
22	8 <sup>d</sup>	Impala Platinum	South Africa	-	0.7	40.5
23	113	Glencore	Switzerland	-	0.6	41.1
24	.. <sup>e</sup>	Harmony Gold Mining	South Africa	-	0.6	41.7
25	37	Debswana	Botswana	50	0.6	42.3

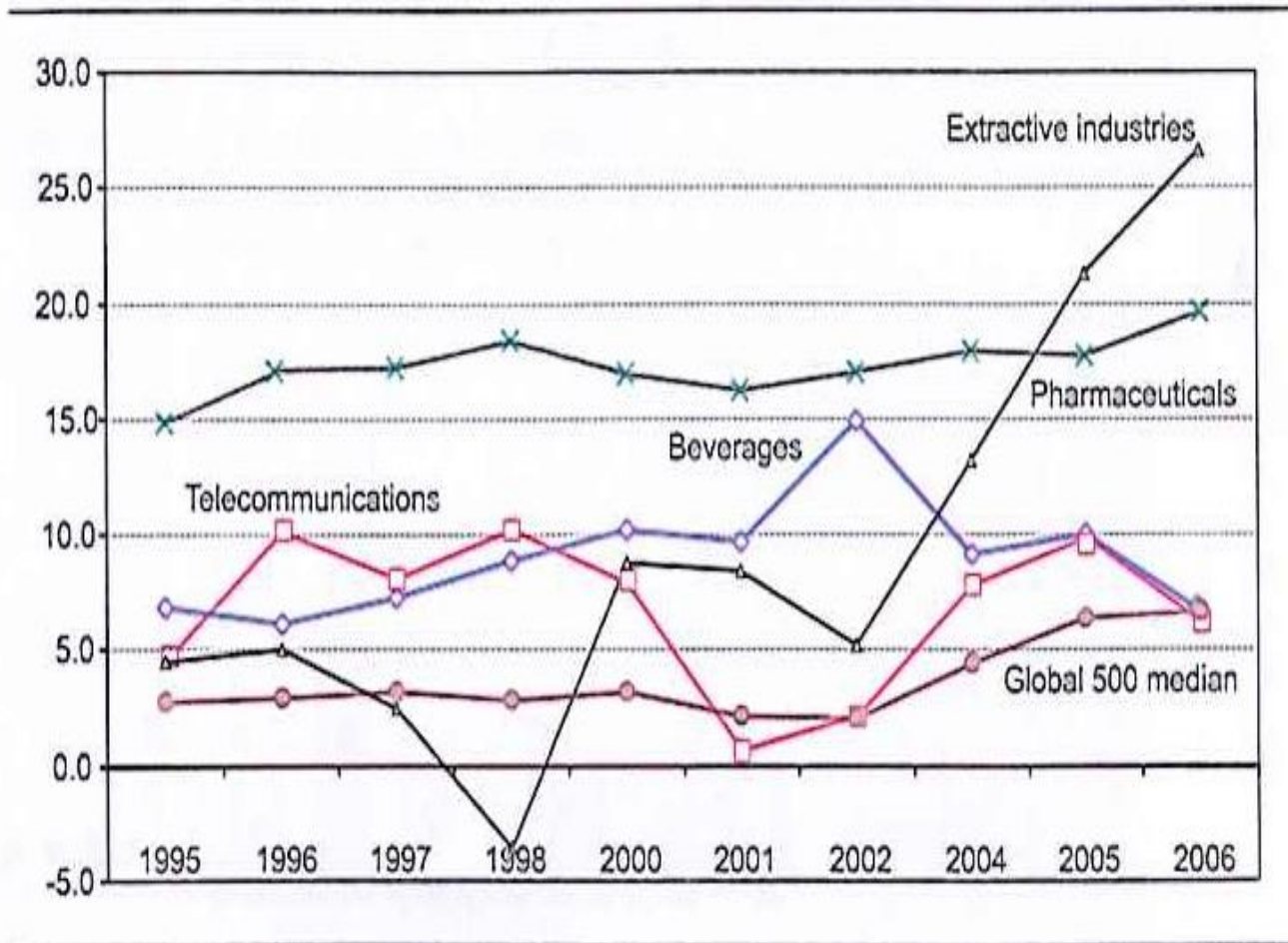
Source: UNCTAD, based on data from the Raw Materials Group.

Figure III.3. Number of major discoveries and private non-ferrous mineral exploration expenditure, 1980-2007  
(Billion dollars and number of discoveries)



Source: UNCTAD, based on Mineral Economic Group, 2006; and data provided by the Raw Materials Group and BHP Billiton.  
e Estimates.

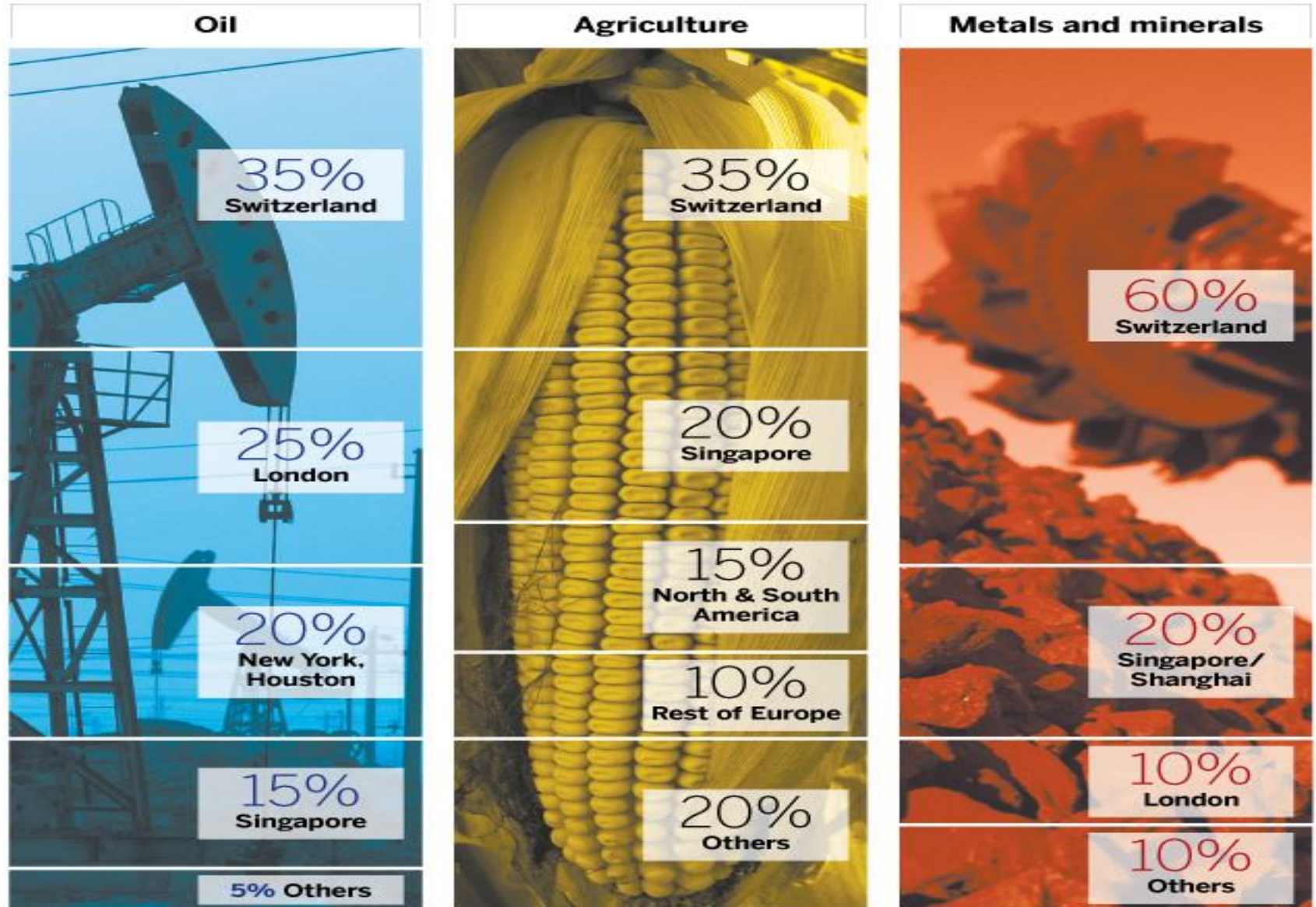
Figure III.2. Profitability of Fortune Global 500 companies in extractive industries and other industries, 1995-2006  
(Profits in percentage of revenues)



Source: UNCTAD, based on data from the Fortune Global 500 (various years).

## Trading places

### Market share of main commodities hubs



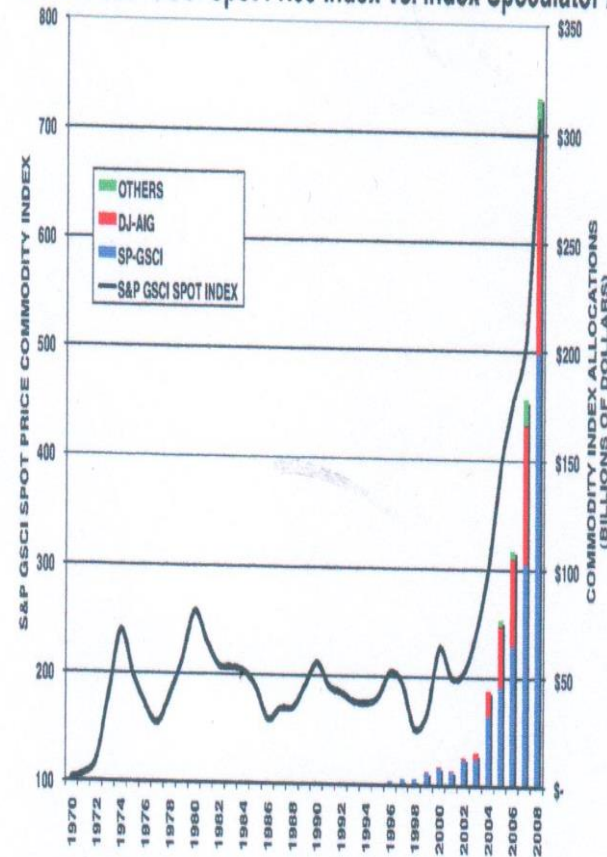


Commodities futures markets have existed in the United States since 1865. A commodities futures contract is a standardized legal agreement to transact in a physical commodity at some designated future time. It is standardized in the sense that it spells out the time and place of delivery as well as the quantity and quality of commodity to be delivered. The only unspecified portion of the contract is the price, which is determined in the commodities futures marketplace.

- “A Tidal Wave of Fund Flow - Despite the economic gloom many commodity prices hit new highs in recent weeks, driven largely by investment inflows”
  - *(Citigroup - April 7, 2008)*
- “You have a generalized commodity bubble due to commodities having become an asset class that institutions use to an increasing extent”
  - *(George Soros, April 17, 2008)*
- “Without question increased fund flow into commodities has boosted prices”
  - *(Goldman Sachs - May 5, 2008)*

In the five years from 2003 to July 2008 commodity index investment rose by a factor of 25 times from \$13 billion to \$317 billion, and commodities prices have tripled

Chart 5. S&P GSCI Spot Price Index vs. Index Speculator Assets



Source: Bloomberg, Goldman Sachs, CFTC Commitments of Traders CIT Supplement, calculations based upon CFTC COT/CIT report (see appendix). 2008 figure is as of July 1, 2008

Every single one of the 25 commodities which make up the S&P GSCI and the DJ-AIG indices have all risen.

If purely fundamental economic factors were at work, the one would expect to see some prices going up and some prices going down.

By average all prices skyrocketed more than 200%

**Table 2. Commodity Futures Prices**

*July 1, 2003 – July 1, 2008*

<i>Agricultural</i>	Cocoa	+ 101%
	Coffee	+ 160%
	Corn	+ 214%
	Cotton	+ 18%
	Soybean Oil	+ 196%
	Soybeans	+ 160%
	Sugar	+ 121%
	Wheat	+ 177%
	Wheat KC	+ 190%
<i>Livestock</i>	Feed Cattle	+ 30%
	Lean Hogs	+ 11%
	Live Cattle	+ 48%
<i>Energy</i>	Brent Crude Oil	+ 397%
	WTI Crude Oil	+ 364%
	Gasoil	+ 448%
	Heating Oil	+ 399%
	Unleaded Gas	+ 298%
	Natural Gas	+ 154%
<i>Base Metals</i>	Aluminum	+ 124%
	Lead	+ 265%
	Nickel	+ 157%
	Zinc	+ 141%
	Copper	+ 433%
<i>Precious Metals</i>	Gold	+ 169%
	Silver	+ 298%
Average		+ 203%

Source: Bloomberg



Speculators have increased their demand for oil by 919 million barrels between 2003 and 2008. This increase is nearly equivalent to the increase in Chinese demand

**Table 4. Increase in Chinese Demand for Petroleum (Last 5½ Years)**

Year	Consumption (Barrels Per Year)	Year over Year Change
2002	1,883,660,777	
2003	2,036,010,338	152,349,561
2004	2,349,681,577	313,671,240
2005	2,452,800,000	103,118,423
2006	2,654,750,989	201,950,989
2007	2,803,010,200	148,259,211
2008	2,948,835,000	72,912,400
<b>Total Change</b>		<b>992,261,824</b>

Source: Energy Information Administration, U.S. Department of Energy. Note: 2008 figure is an estimate and change figure is for half a year.

**Table 5. Increase in Index Speculator Demand for Petroleum (Last 5½ Years)**

Petroleum Product	Barrels
Brent Crude Oil	161,236,643
WTI Crude Oil	580,433,259
Gas Oil	49,045,744
Heating Oil	65,229,771
Unleaded Gas	63,021,514
<b>Total Change</b>	<b>918,966,932</b>

Source: CFTC Commitments of Traders CIT Supplement, calculations based upon CFTC COT/CIT report (see Appendix: How to Calculate Index Speculators' Positions)

U.S. Commodity Futures Trading Modernization Act passed in 2000 liberalized the market. It opened the door to all investors (hedge funds, pension funds, investment banks) to trade commodities futures without any kind of limitation concerning the market position, the disclosure and transparency issues, and the supervision of the supervision authorities

**Exhibit 1. Four Distinct Markets**

<b>COMMODITY MARKETS</b>	<b>CAPITAL MARKETS</b>
Crude Oil, Corn, Copper, etc.	Stocks, Bonds, Real Estate, etc.
\$1.6 Trillion (2002)	\$97.9+ Trillion (2004-2005)
Physical Commodity Producers and Consumers	Investors / Speculators
<b>COMMODITIES FUTURES</b>	<b>FINANCIAL FUTURES</b>
Derive their value from physical commodities	Derive their value from capital markets securities
\$0.18 Trillion (2004)	\$21 Trillion (2008)
Physical Hedgers <b>AND</b> Speculators	Investors / Speculators