

# CARIBBEAN POULTRY ASSOCIATION

Poultry & Egg School, UWI, St Augustine, 8 – 10 Aug 2005

## CARIBBEAN TABLE EGG INDUSTRY COMPETITIVNESS STUDY

GLOBAL EGG INDUSTRY PROFILE

Lessons For Caribbean Producers

# Contents

- Markets
  - Market Size, Growth, Regional Distribution
  - Product Category Mix
- Consumers
  - Per Capita Consumption
  - Preferences/ Attitudes
- Trade
  - Consumption, Production, Exports, Imports
- Industry
  - Prices
  - Scale
  - Integration

# Egg Industry Product Categories

- Product Categories
  - Shell Eggs
  - Specialty Shell Eggs
    - Cereal/ Vegetarian Eggs
    - Omega / Low Cholesterol
    - Free Range/ Organic
    - Vitamin Enriched
  - Processed Eggs
    - Liquid/ Frozen/ Dried/ Cooked
    - Whole/ White/ Yolk/ Additives

# Standard Eggs Brown & White



# Specialty Eggs - Omega 3



- Produced by flax-fed hens
- All-natural feed ration
- higher gross margins
- Low in saturated fat
- 8 times more omega-3 fats & 7 times more vitamin E

# Specialty Eggs - Cereal/ Vegetarian



- Less cholesterol (eg 17% )
- All-natural vegetarian feed ration
- No medications or antibiotics

# Specialty Eggs - Free Run/ Range



- Produced from hens free to roam in wide open concept barns with nests & perches
- All-natural feed ration - no antibiotics or medications
- Higher margins for retailers

# Specialty Eggs - Organic



- Produced by Free Run hens
- Certified organic feed ration
- No medications or antibiotics

# Specialty Eggs - Vitamin Enriched

- Extra vitamin B12, vitamin E and folic acid

# Egg Products

## A Wide & Growing Range

Product	Use	Properties
<b>Liquid Whole Egg</b>	Bakery products, Omelette mix, Pie Filling etc	
<b>Liquid Egg White (Albumen)</b>	Bakery products, high protein foods, sausages	Binding, whipping
<b>Liquid Egg Yolk (Yellow)</b>	Salad Dressings, Sauces, Mayonnaise	Emulsifying
<b>Frozen Salted Yolk</b>	Salad Dressings, Sauces, Mayonnaise	Emulsifying
<b>Frozen Salted Whole</b>	Salad Dressings, Sauces, Mayonnaise	Emulsifying
<b>Frozen Sugared Yolk</b>	Bakery Items	Emulsifying
<b>Frozen Whole Egg</b>	Replacement for Shell or Liquid Egg	
<b>Dried Egg Whites</b>	Replacement for bakery , high protein, sausages	Binding, whipping
<b>Dried Egg Yolks</b>	Replacement for liquid or frozen yolks	Emulsifying
<b>Dried Whole Egg</b>	Replacement for liquid or frozen whole egg	
<b>Peeled Hard Boiled Eggs</b>	Salads, hors d'oeuvres etc	
<b>Pickled Hard Boiled Eggs</b>	Salads, hors d'oeuvres etc	
<b>Omelettes/ Scrambled Eggs</b>		
<b>Egg Pellets</b>		

# Egg Products – Liquid Eggs



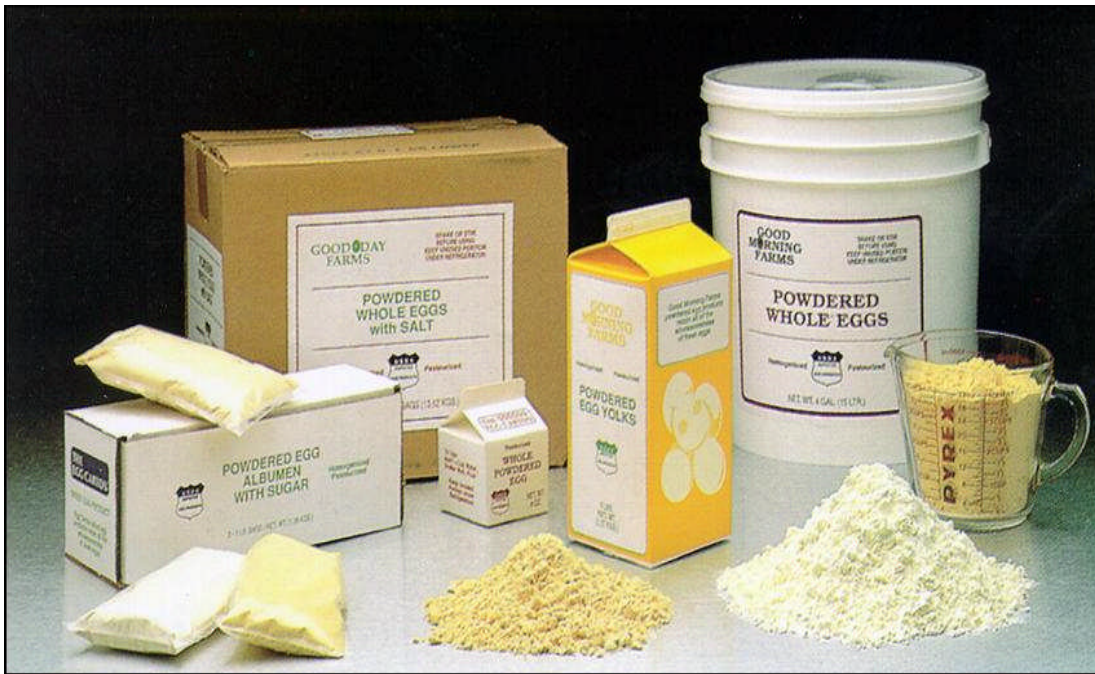
- Whole/ Yolk/ Albumen
- Frozen
- Additives
  - Sugar
  - Seasoning
  - Coloring
- Attributes
  - Convenient
  - Storage/ Wastage
  - Shelf life

# Egg Products – Frozen Eggs

- Like Liquid Eggs
- Longer Shelf Life
- More Likely to be Traded



# Egg Products – Dried Eggs



- Whole/ Yolk/ Albumen
- Liquid / Frozen
- Additives
  - Sugar
  - Seasoning
  - Coloring
- Attributes
  - Convenient
  - Storage/ Wastage
  - Shelf life
  - Choice – Parts of Egg

# Preserved Egg Products – Pickled (hard boiled peeled in brine)

- Popular in Some Markets
- Long Shelf life



# Importance egg processing

- EU: 25 -30% of eggs are processed
- US: 30 – 40% of eggs are processed
- Asia: less than 2% of eggs are processed
- Processed eggs increasingly important; especially in export/import due to longer shelf life as compared to shell eggs
- As industry grows more eggs are processed

# Variety of Packaging Formats

## The Traditionalist

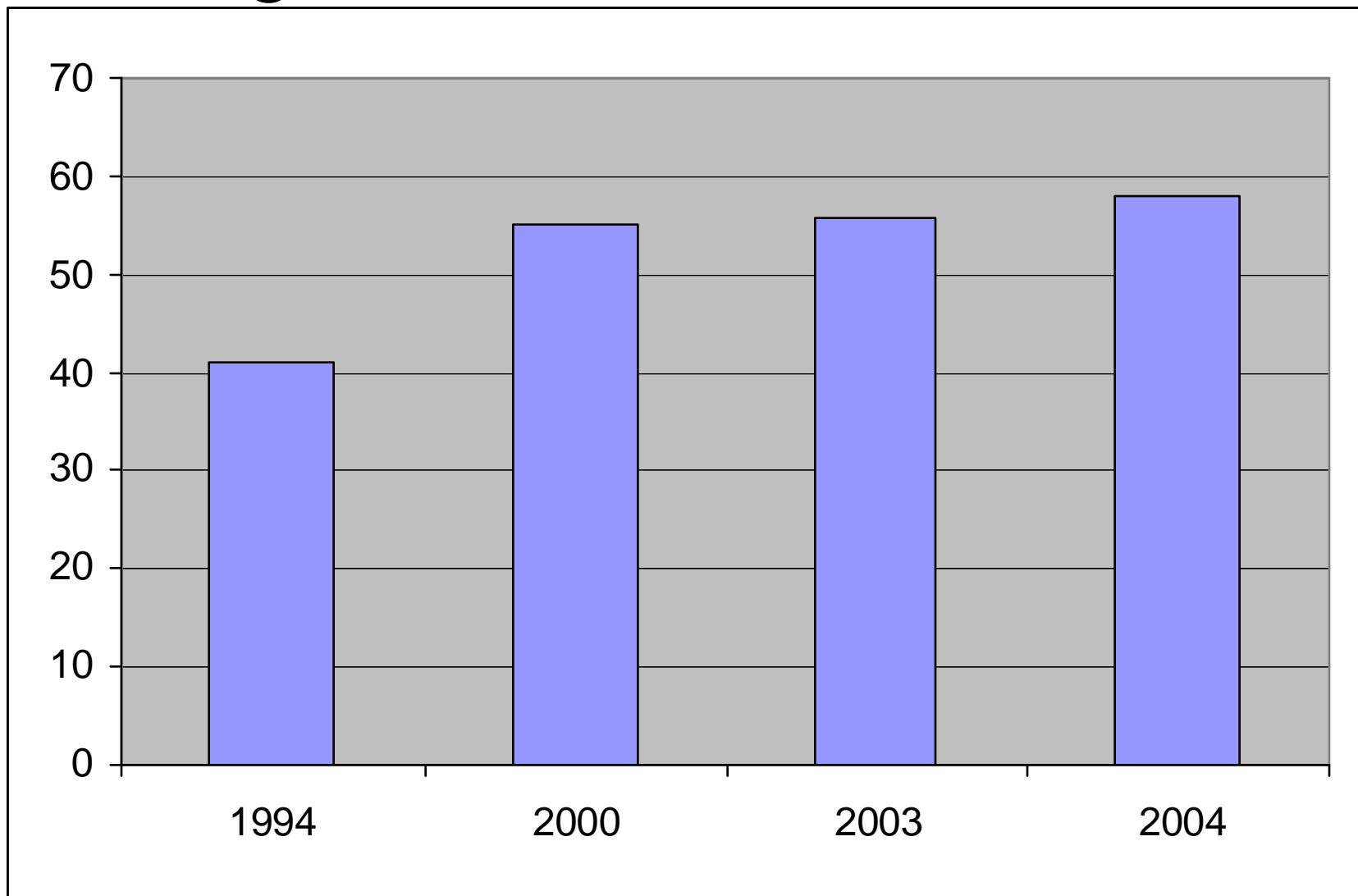


# Global Egg Markets

- Market Size & Growth
- Regional Egg Consumption
- Selected Country Per Capita Consumption
- Developed Country Market Segmentation

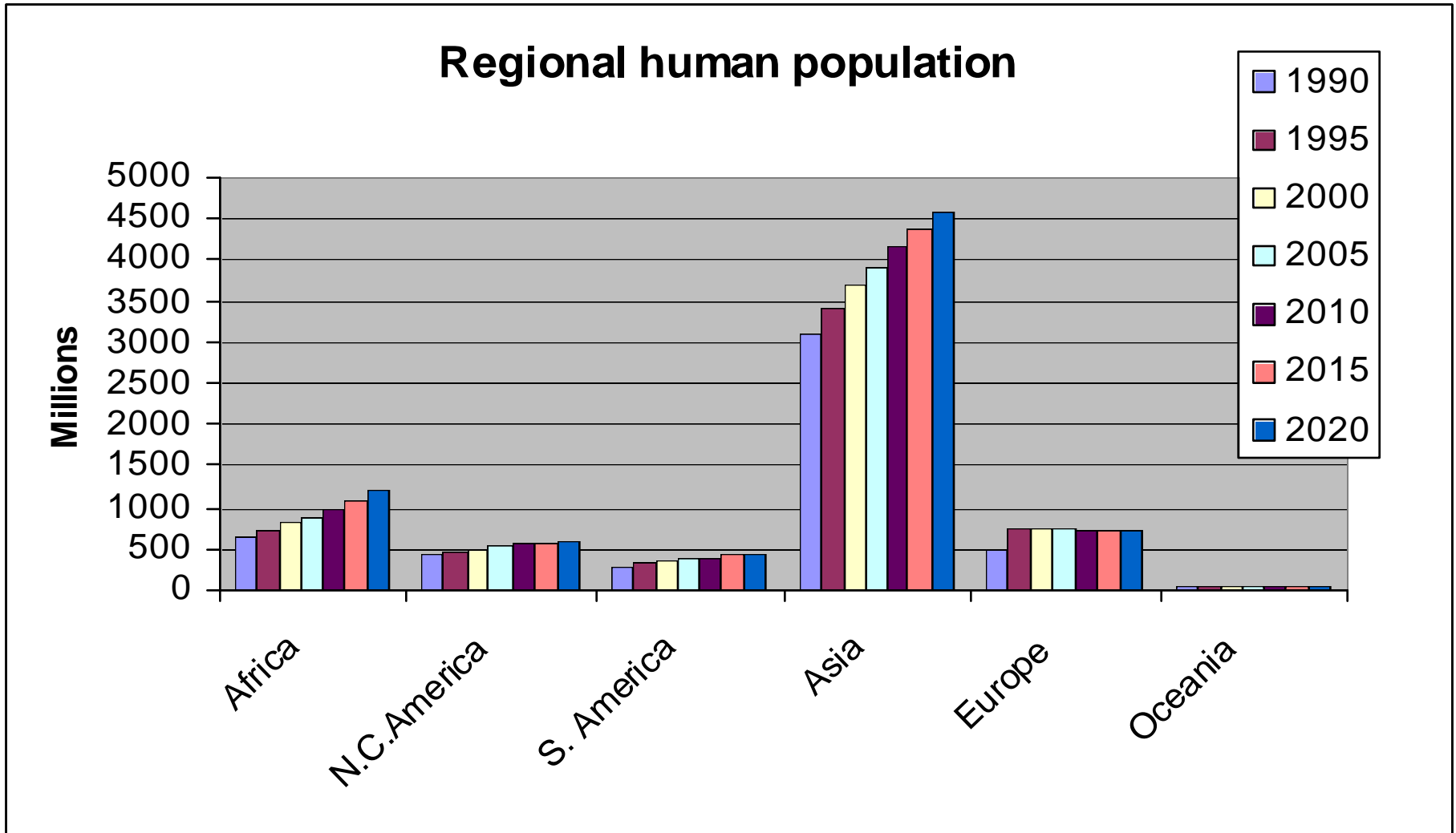
# Global Egg Market Size - 58 M MT

## Strong Growth Over Recent Years



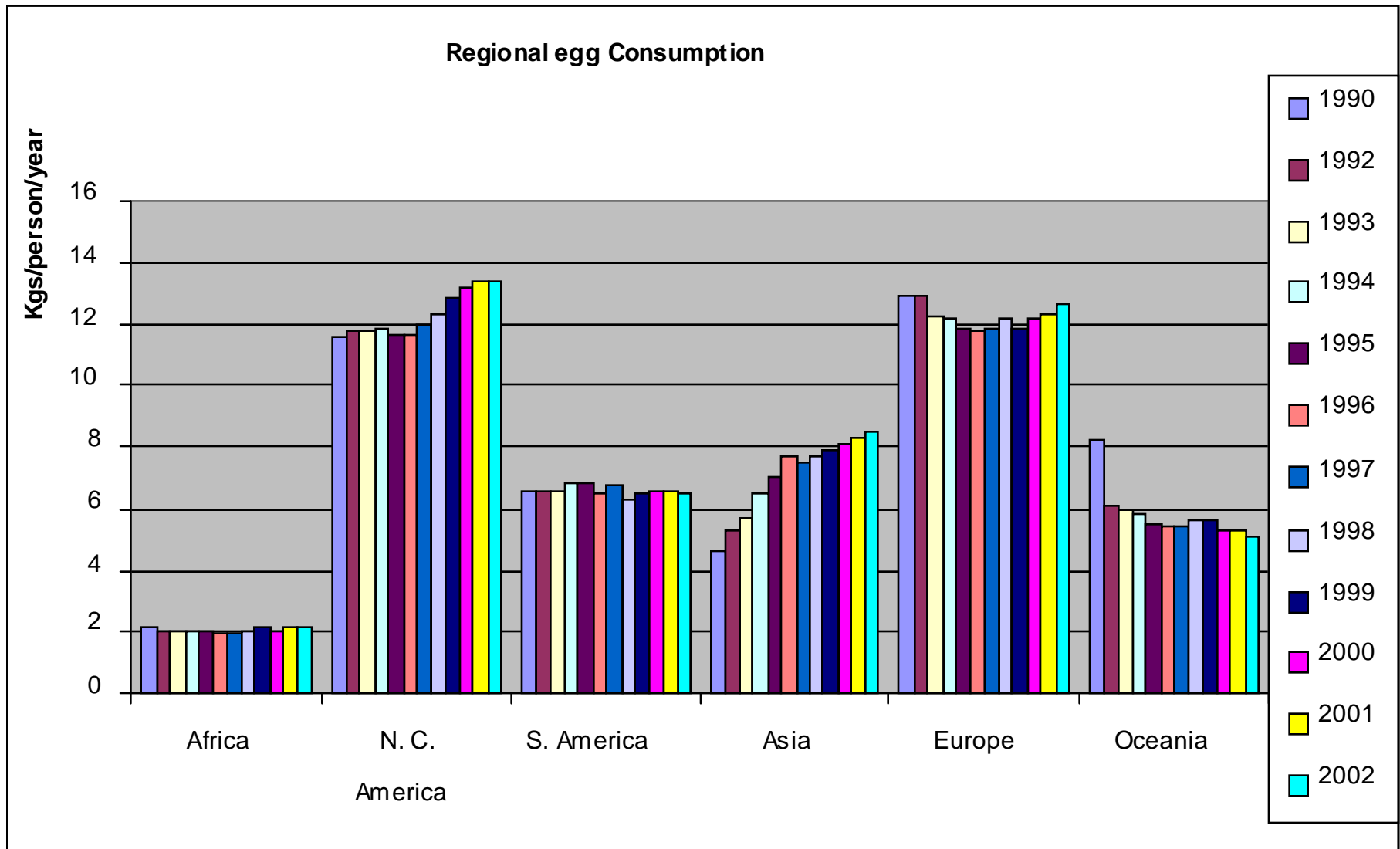
# Regional Human Population

Growth in Developing Countries Driving Consumption



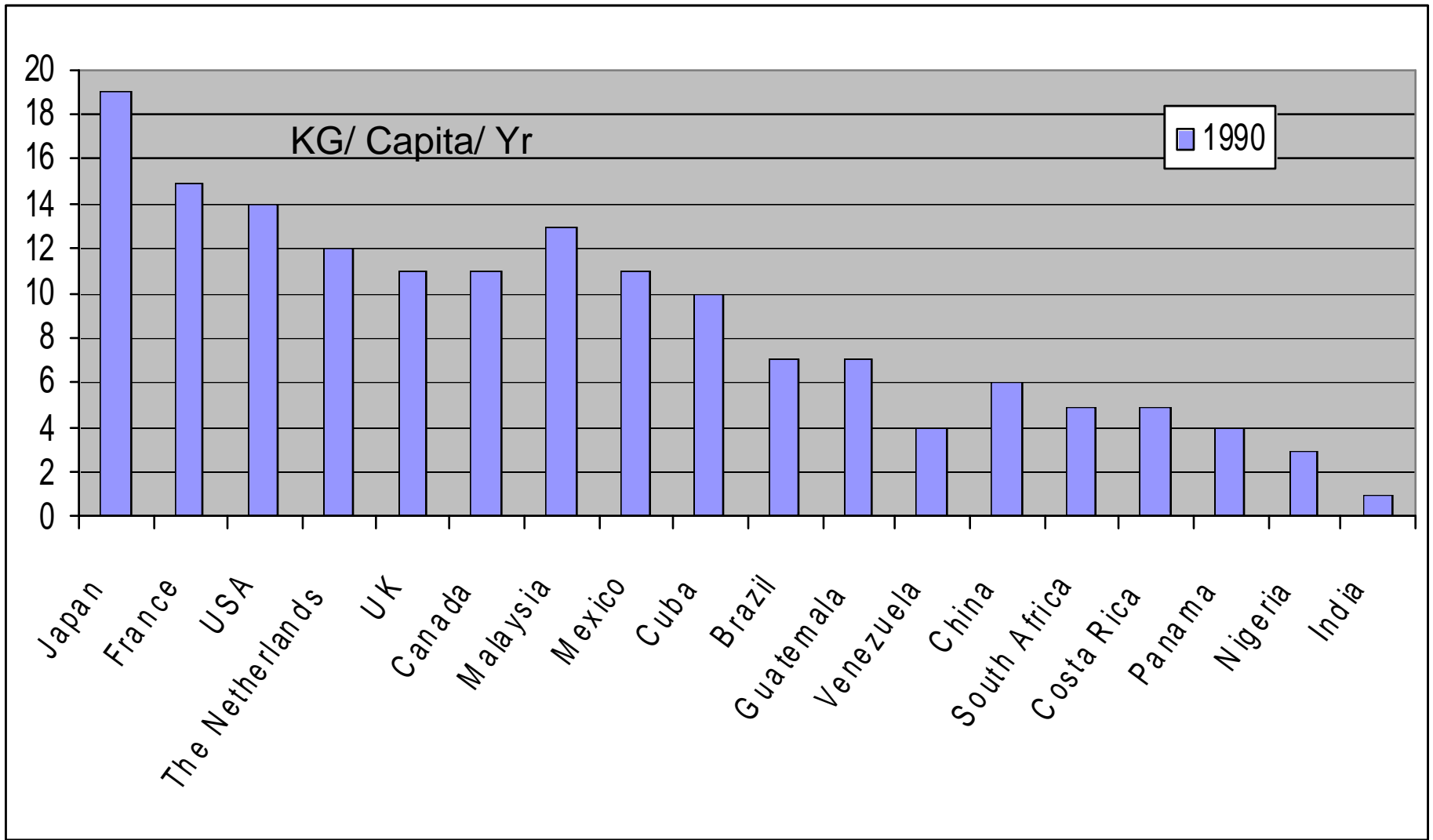
# Regional Egg Consumption

## Developed Countries Higher Income & Intake



# Egg Consumption in Selected Int. Markets

## Strong Correlation Of Intake with Income



# Good News for Eggs

## OFF THE FORBIDDEN LIST

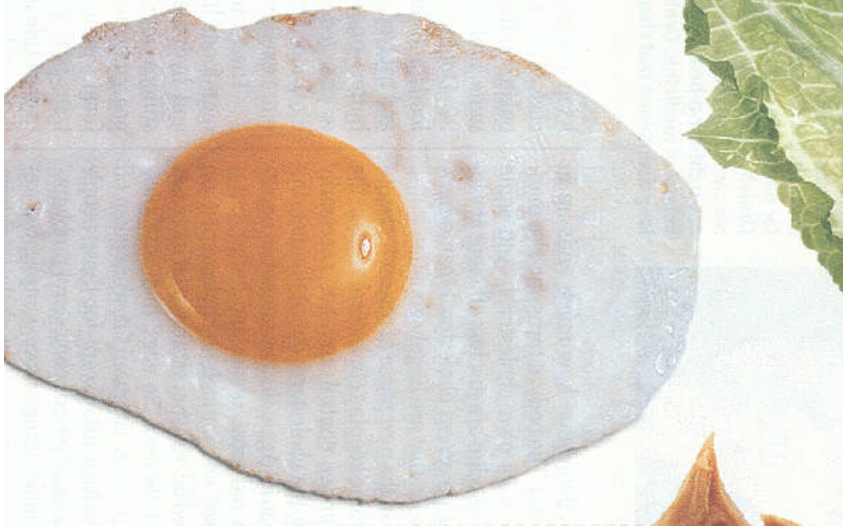
### WHAT WE USED TO THINK

Eggs are so full of cholesterol they might as well be poison. Stay away

**WHAT DOCTORS SAY NOW** Cholesterol in food doesn't necessarily raise blood-cholesterol levels

**WHAT TO DO** If you've got cholesterol problems, avoid eggs. If not, they are fine in moderation

**THE SCORE** ♥ ♥

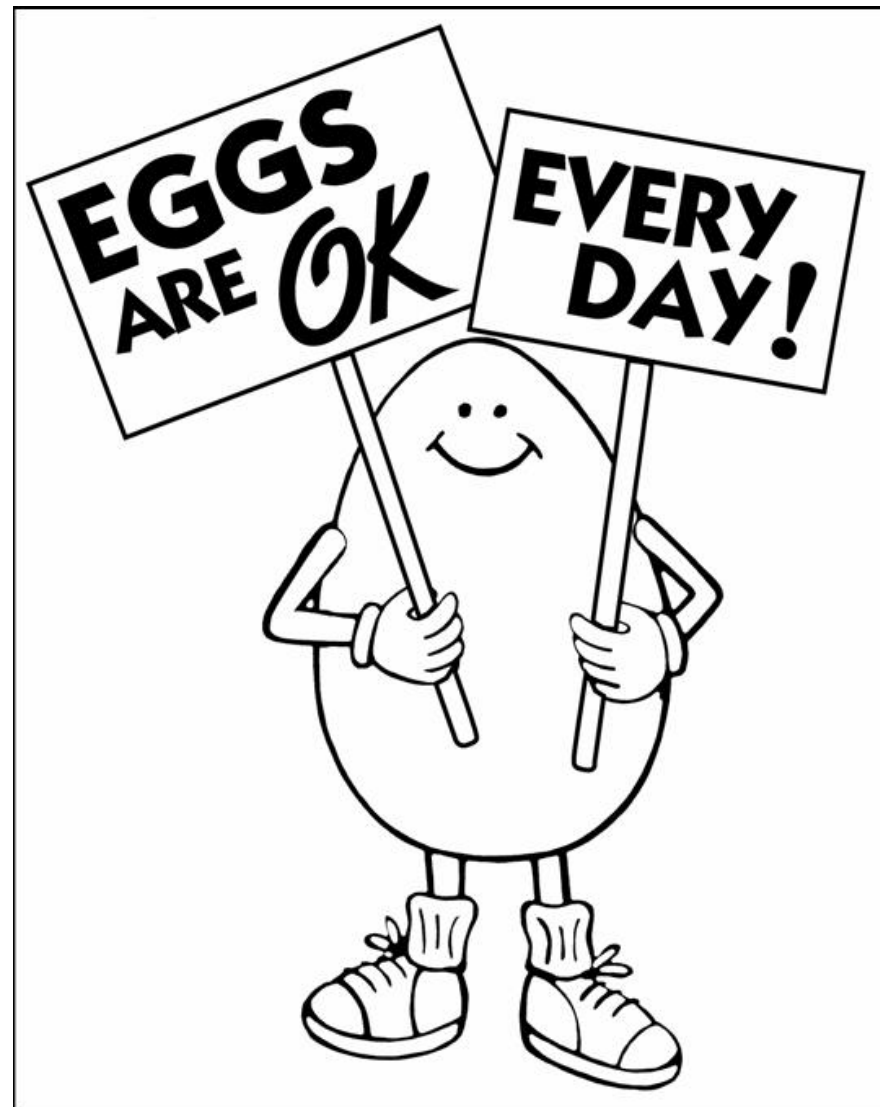


**“... there’s no connection whatsoever between cholesterol in food and cholesterol in the blood. None. And we’ve known that all along.”**

Dr. Ancel Keys - *Eating Well*  
[March/April 1997]

TIME Magazine, 19 July 1999

# American Heart Association



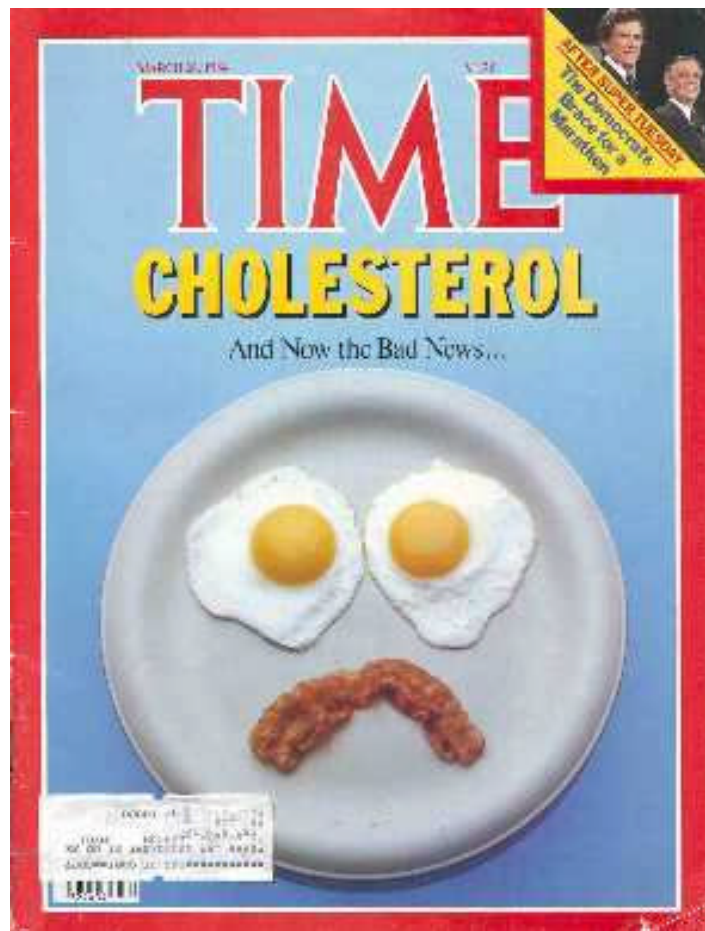
# Animal Protein Source Cheapest in Many Countries Eg USA

## Cost of 20 grams of protein:

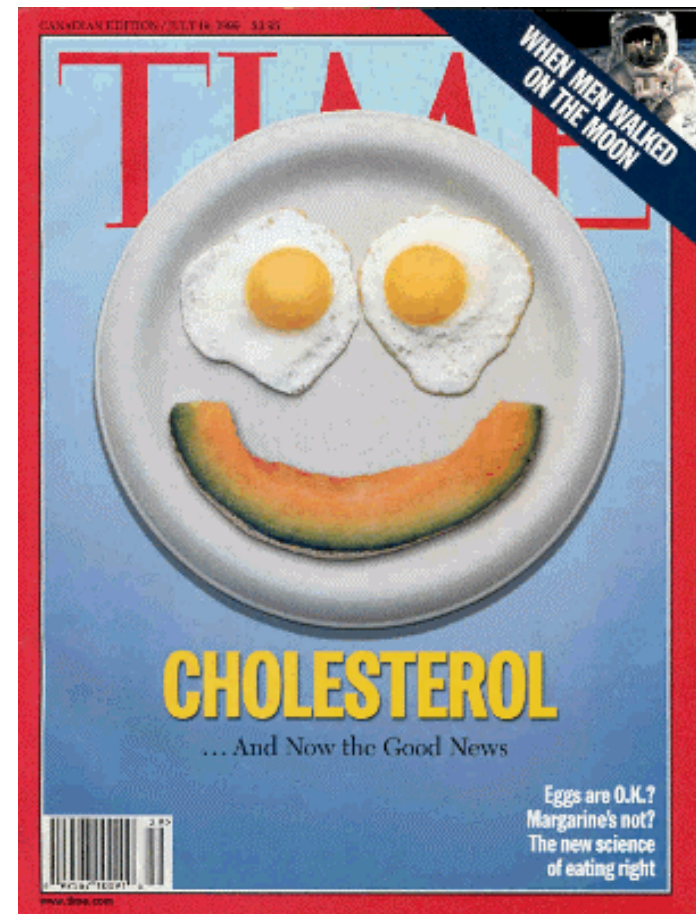
eggs	\$0.25
pork shoulder	\$0.40
ground beef	\$0.42
chicken breast	\$0.50
frankfurter	\$0.94
pork chop	\$1.09
rib roast	\$1.43

# THEN AND NOW

1984



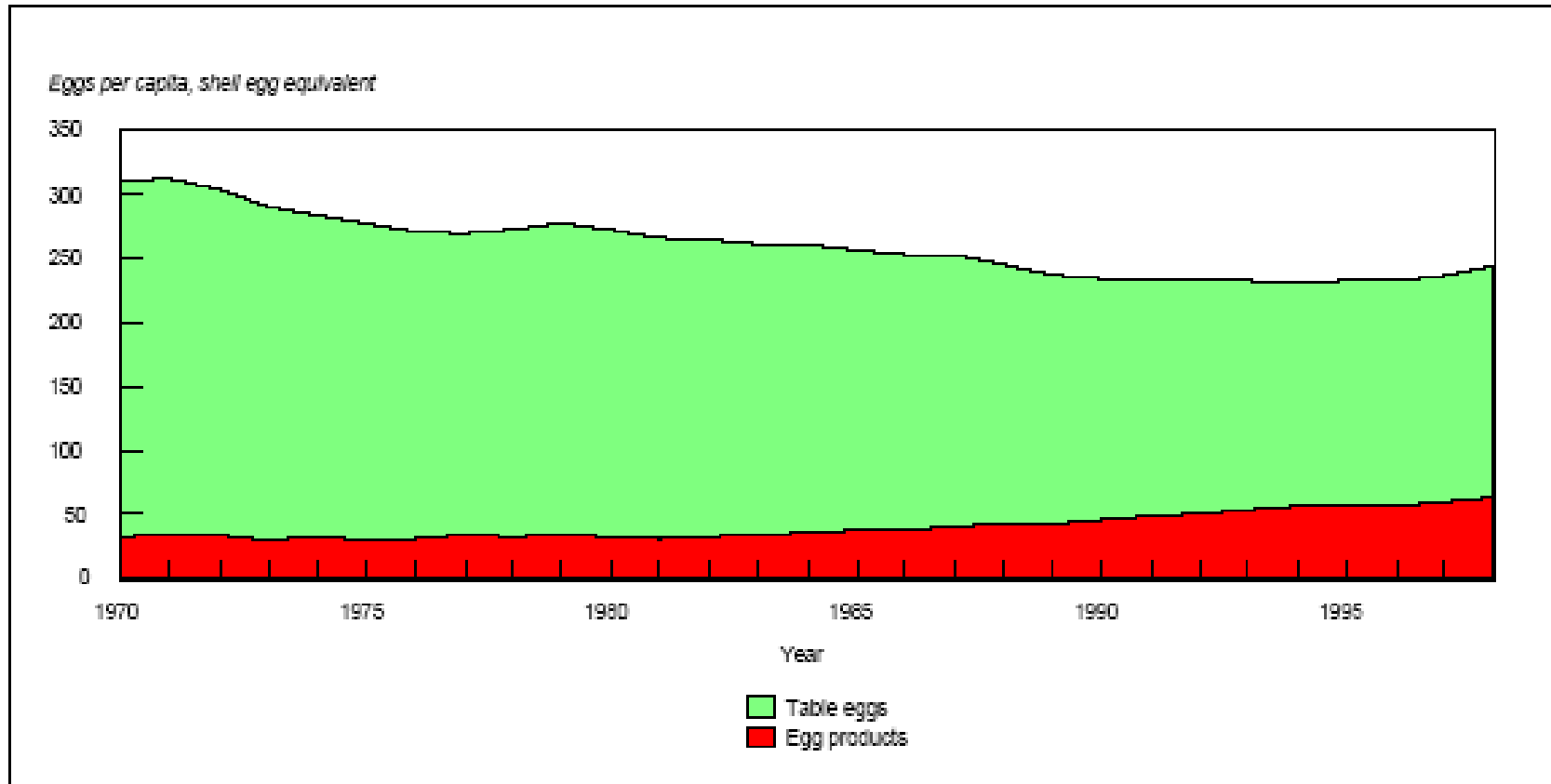
1999



# US Egg Consumption Growth By Product Type Although Long Term Decline Since 1950s!!!

Figure 4

Eggs: U.S. annual per capita consumption, by type, 1970-98



Source: USDA, ERS, *U.S. Egg and Poultry Statistical Series*, 1960-92; and USDA, ERS, *Livestock Situation and Outlook*, various issues

# US Egg Consumption Growth By Product Type

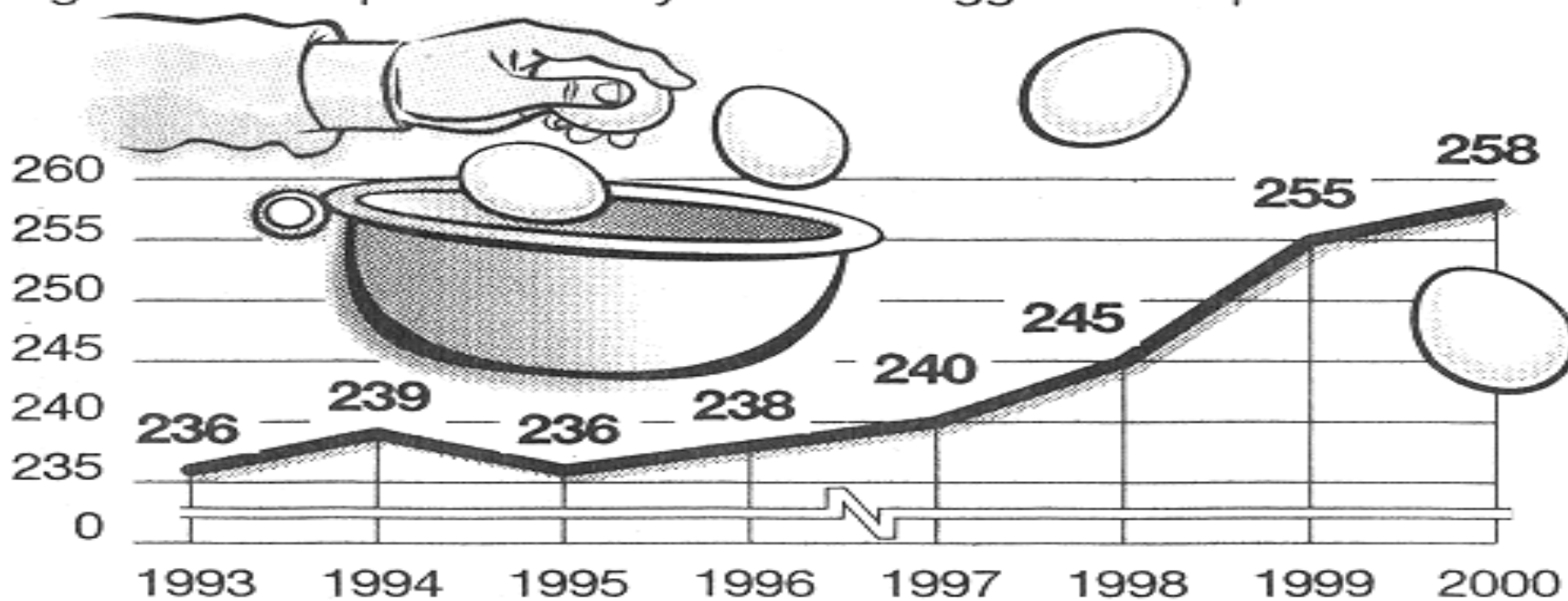
## Recent Increase In Consumption

### USA SNAPSHOTS®

A look at statistics that shape the nation

#### Egg consumption rising

Americans will eat an average of 258 eggs each this year, the Agriculture Department says. Annual egg consumption:



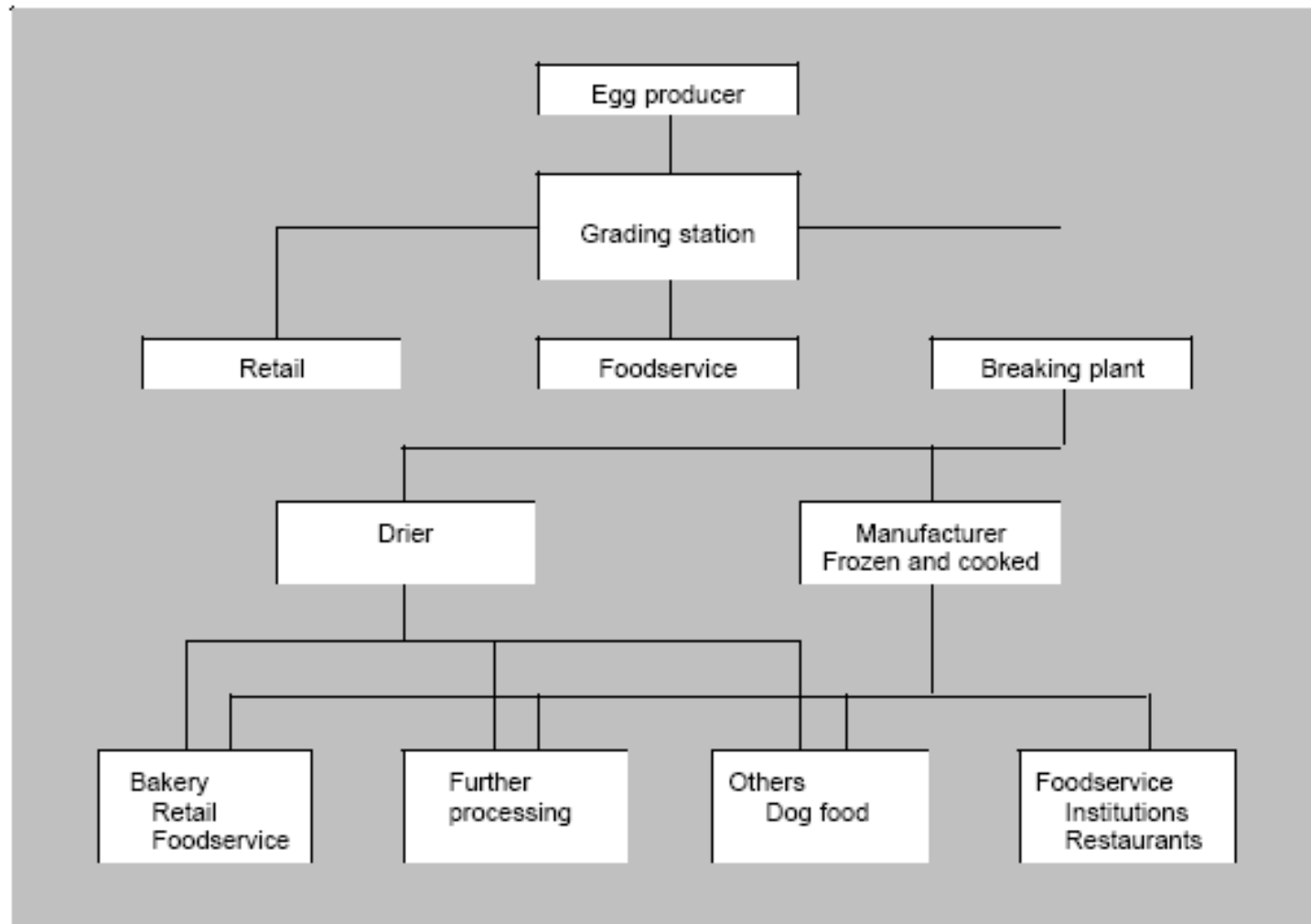
Source: USDA Economic Research Service

By Hilary Wasson and Bob Laird, USA TODAY

# Global Egg Industry

- Global Production
- Regional Production
- Supply Chain
- Cost Competitive
- Production System Comparison

# Developed Country Egg Industry Supply Chain

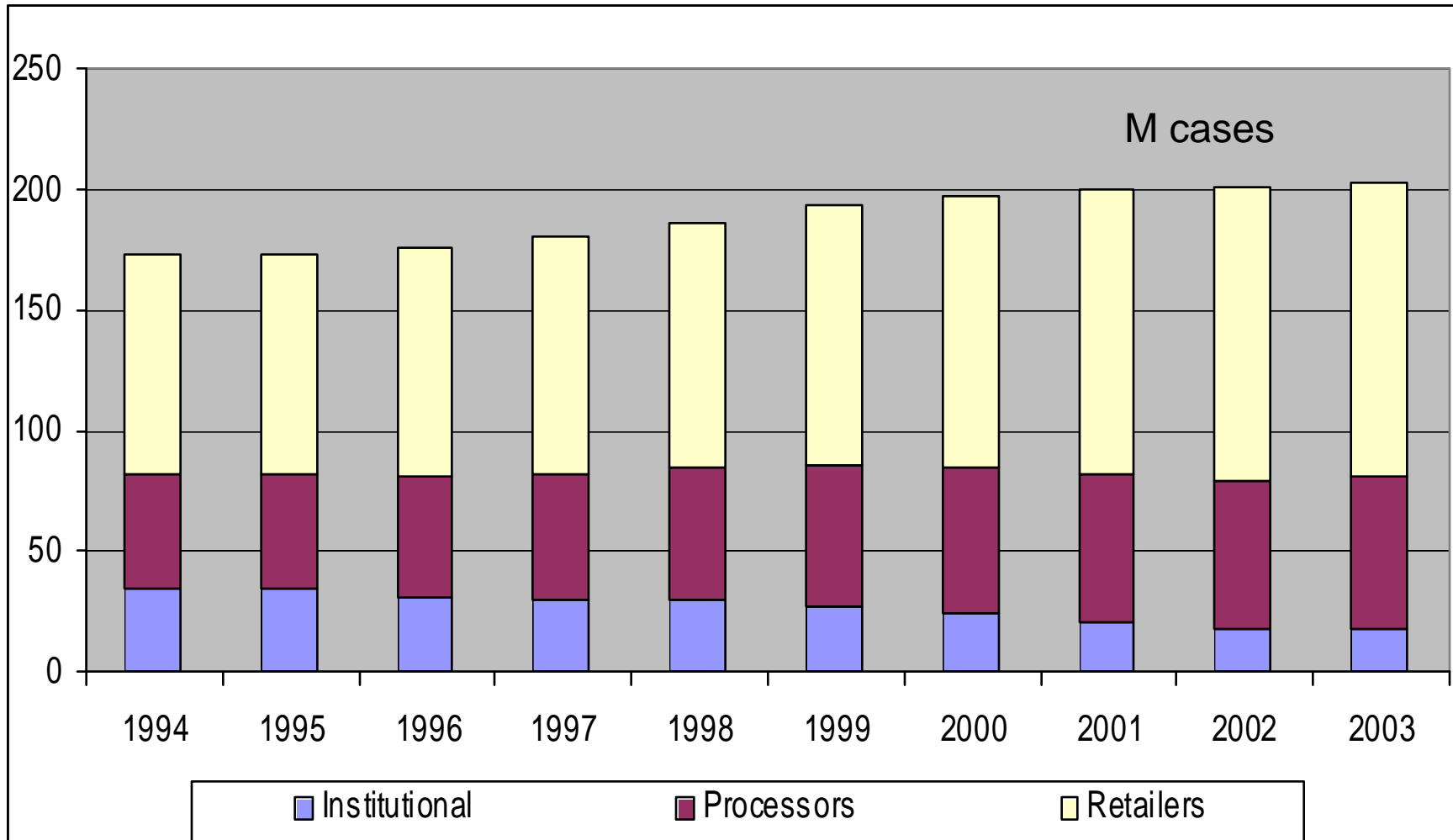


Source: U.S. International Trade Commission.

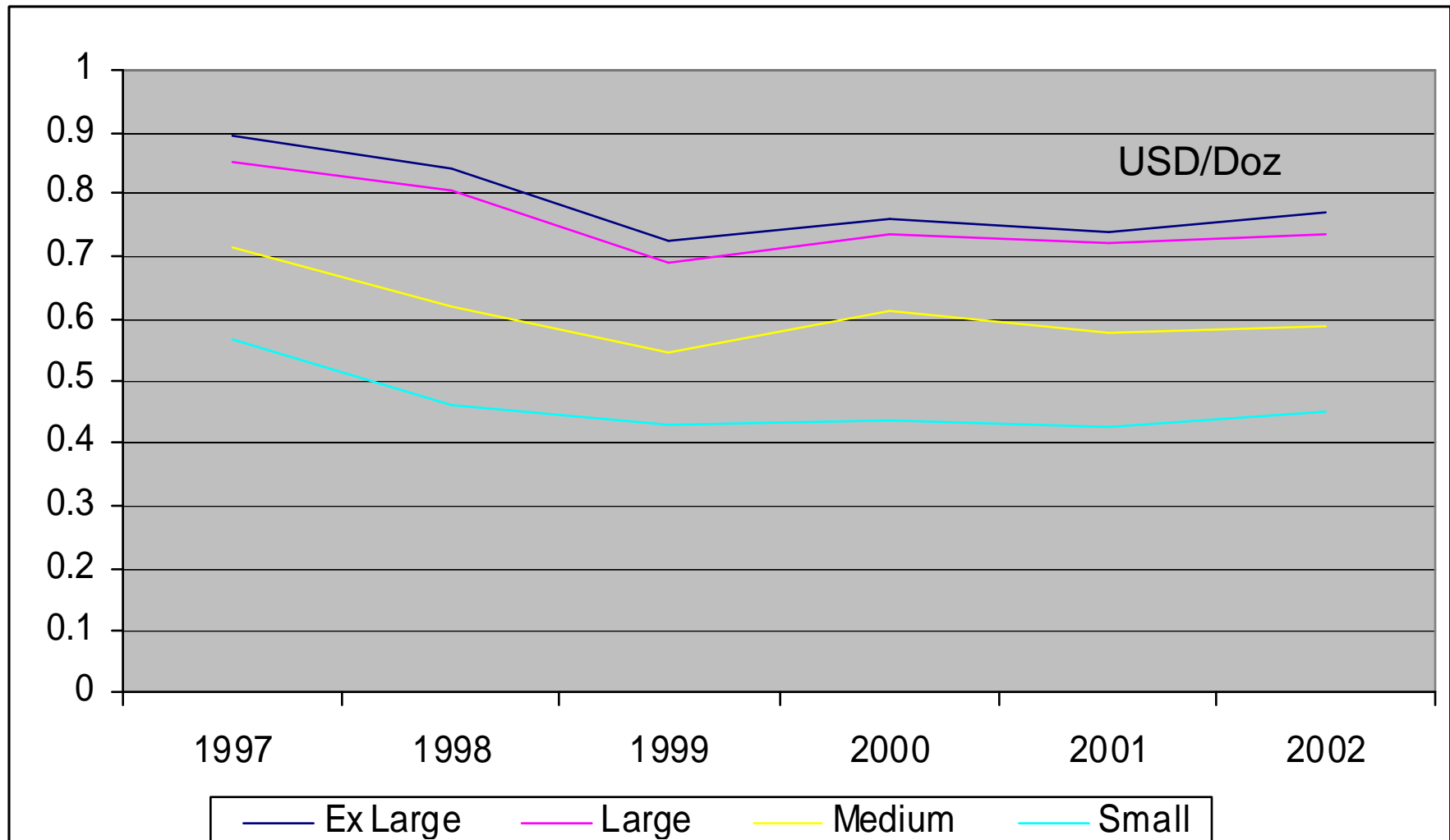


# Developed Country Distribution Channels

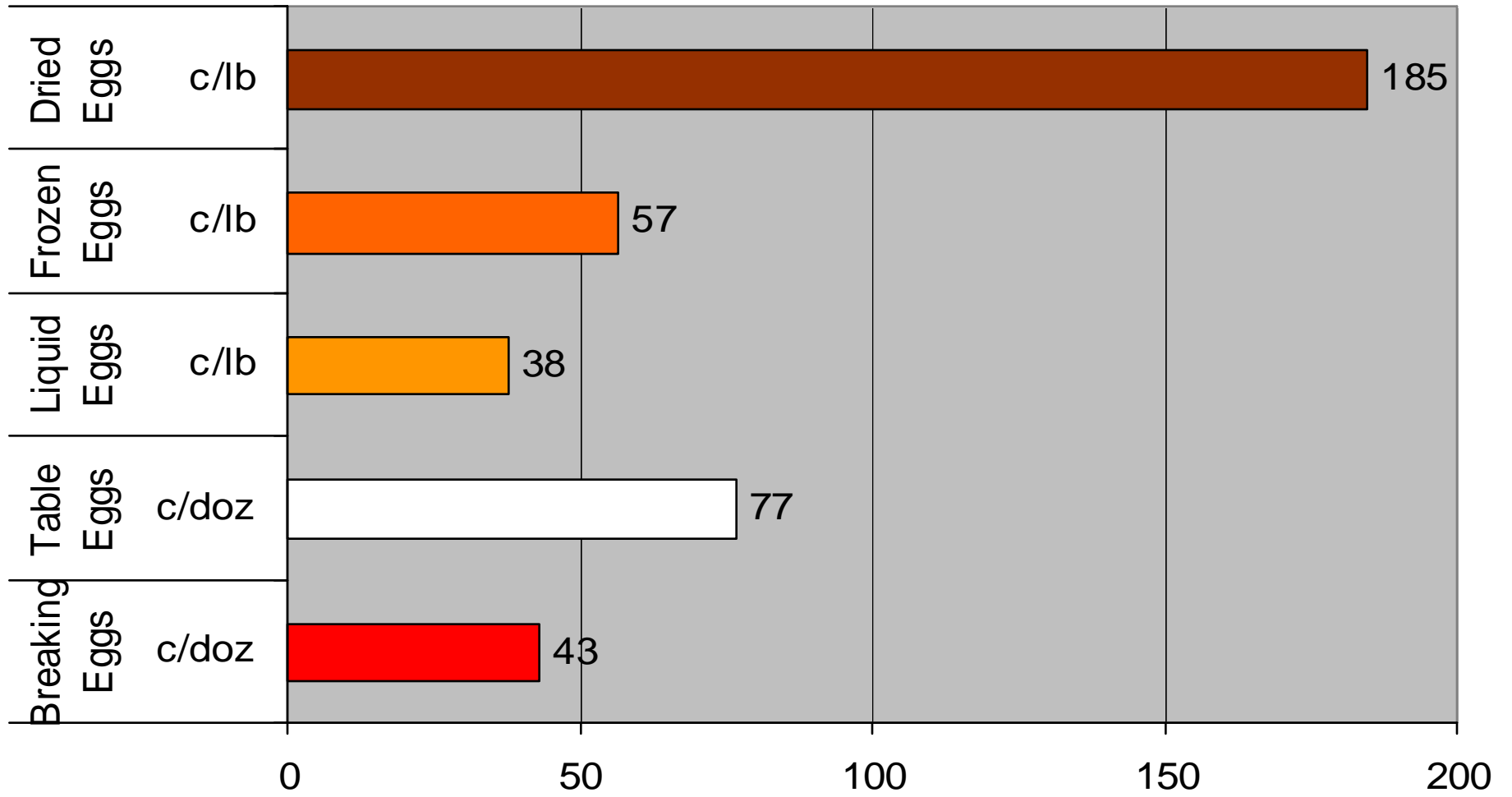
## USA Growth Driven by Retail Sales & Processed Products



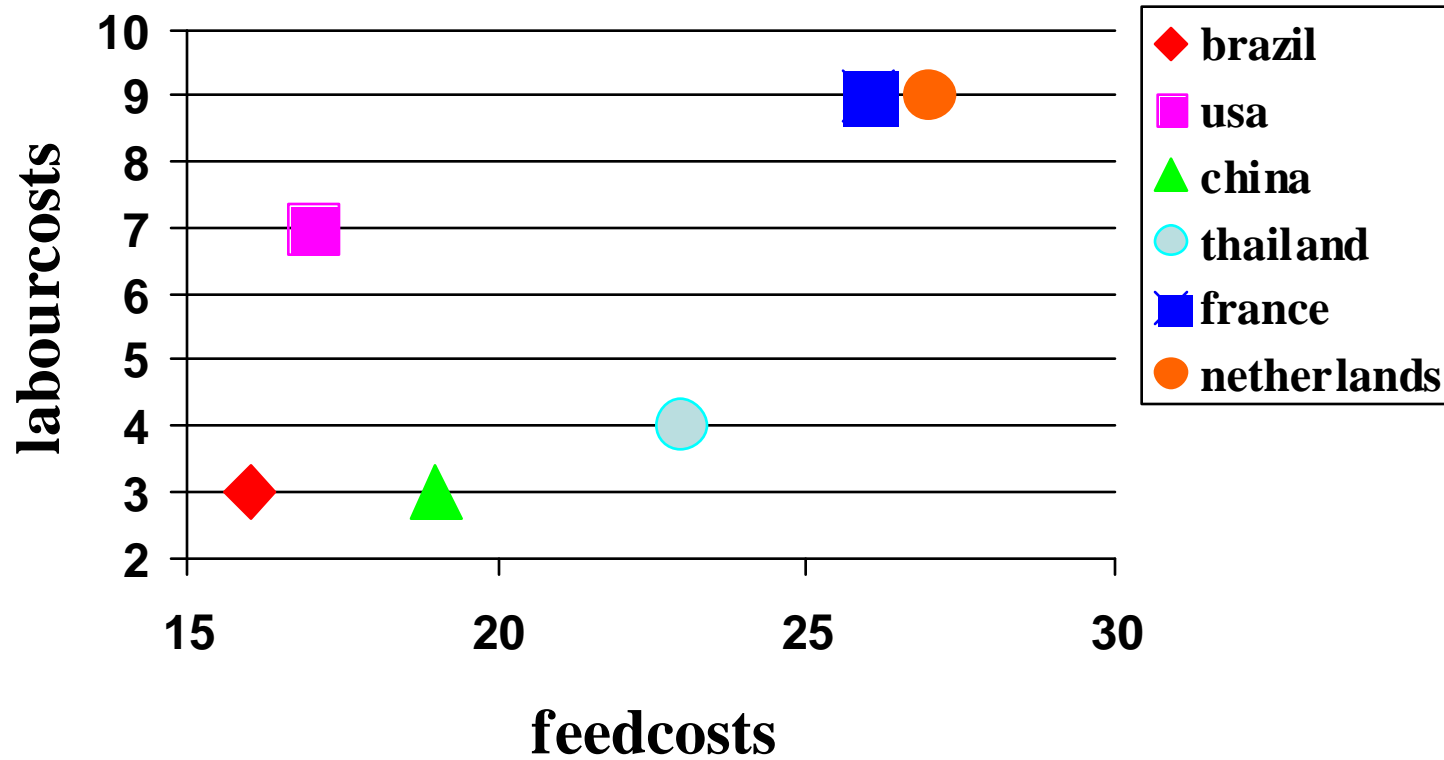
# SE USA White Egg Prices



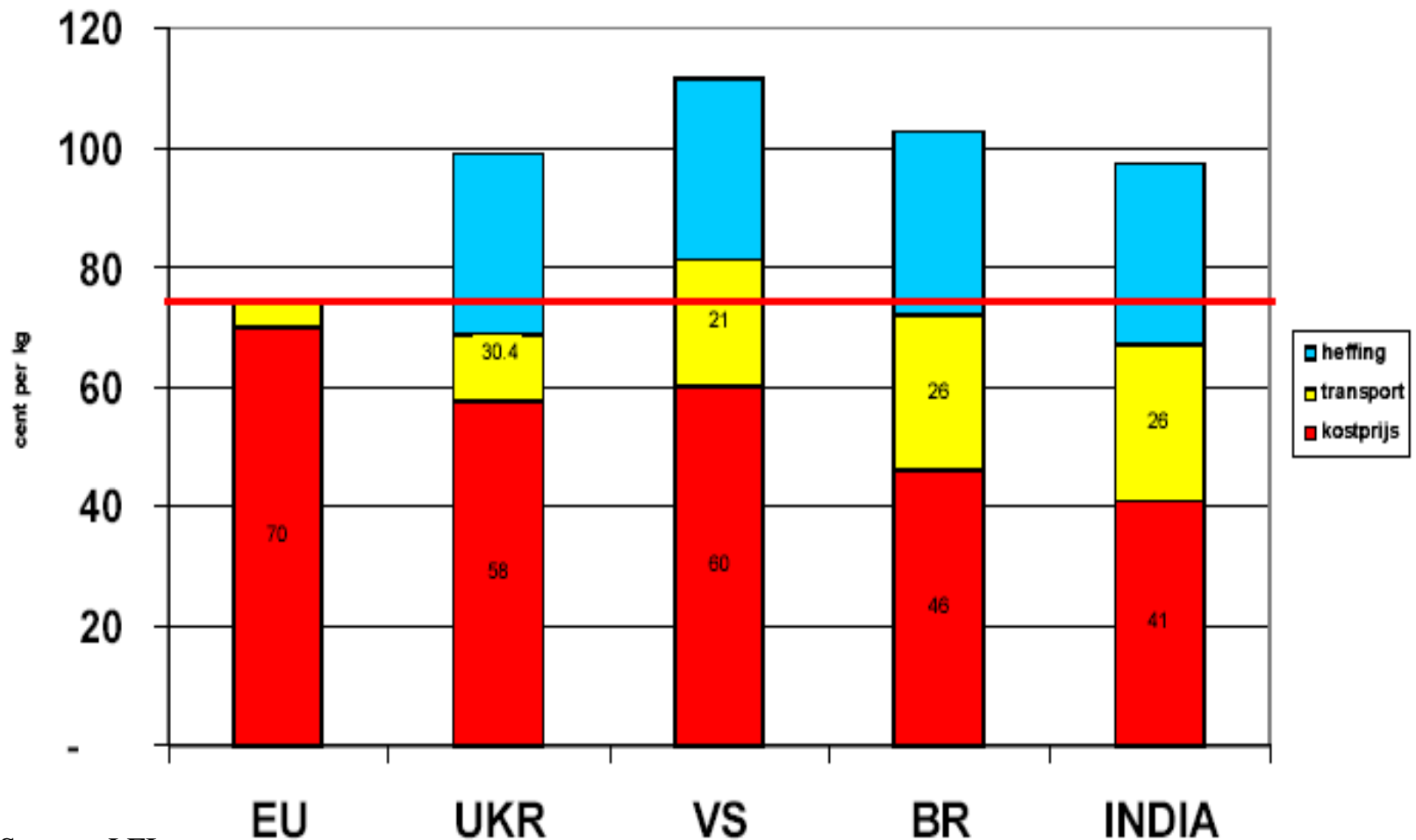
# Average US Prices, 1998



# Global Competitiveness



# Price of eggs on EU-market, 2001



Source: LEI

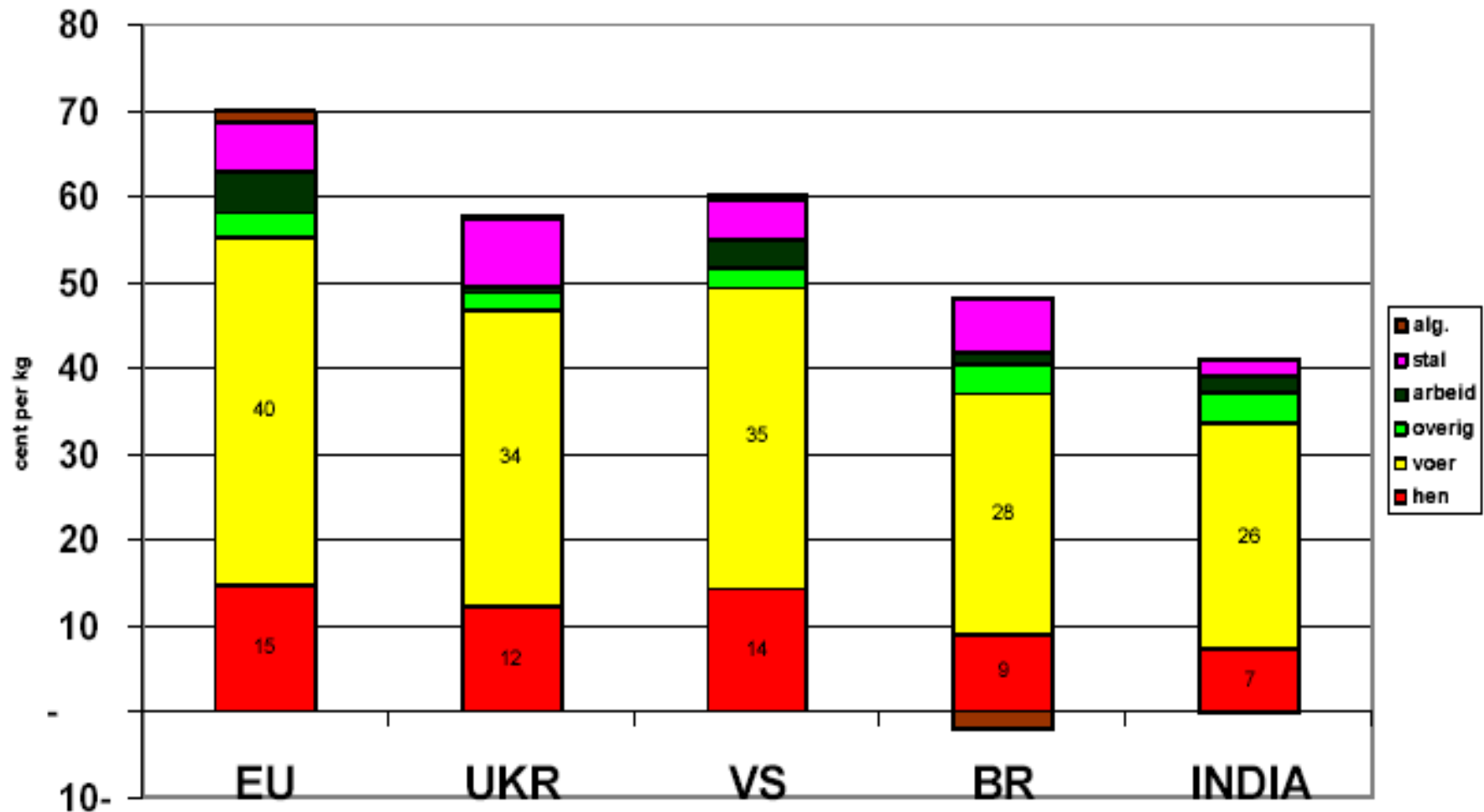
# International egg costing

(snapshot 1 july 2003, in US \$ cents)

<b>(ratio egg price : feed price)</b>	<b>1 kg egg</b>	<b>1 kg feed</b>	<b>Value 18 kg eggs</b>	<b>Pullet + 39.6 kg feed</b>	<b>“Profit”</b>
<b>China (2.6)</b>	<b>45.31</b>	<b>17.52</b>	<b>815.58</b>	<b>872.38</b>	<b>-56.80</b>
<b>USA (5.4)</b>	<b>72.24</b>	<b>13.50</b>	<b>1300.32</b>	<b>709.60</b>	<b>590.72</b>
<b>Japan (3.0)</b>	<b>86.25</b>	<b>28.47</b>	<b>1552.50</b>	<b>1713.58</b>	<b>-161.08</b>
<b>Russia (4.9)</b>	<b>72.22</b>	<b>14.83</b>	<b>1299.96</b>	<b>803.03</b>	<b>496.93</b>
<b>India (3.7)</b>	<b>49.52</b>	<b>13.32</b>	<b>891.36</b>	<b>700.50</b>	<b>190.86</b>
<b>Mexico (4.3)</b>	<b>77.11</b>	<b>17.96</b>	<b>1387.98</b>	<b>889.38</b>	<b>498.60</b>
<b>Average of 49 countries (3.9)</b>	<b>86.36</b>	<b>21.92</b>	<b>1554.44</b>	<b>1190.85</b>	<b>363.60</b>

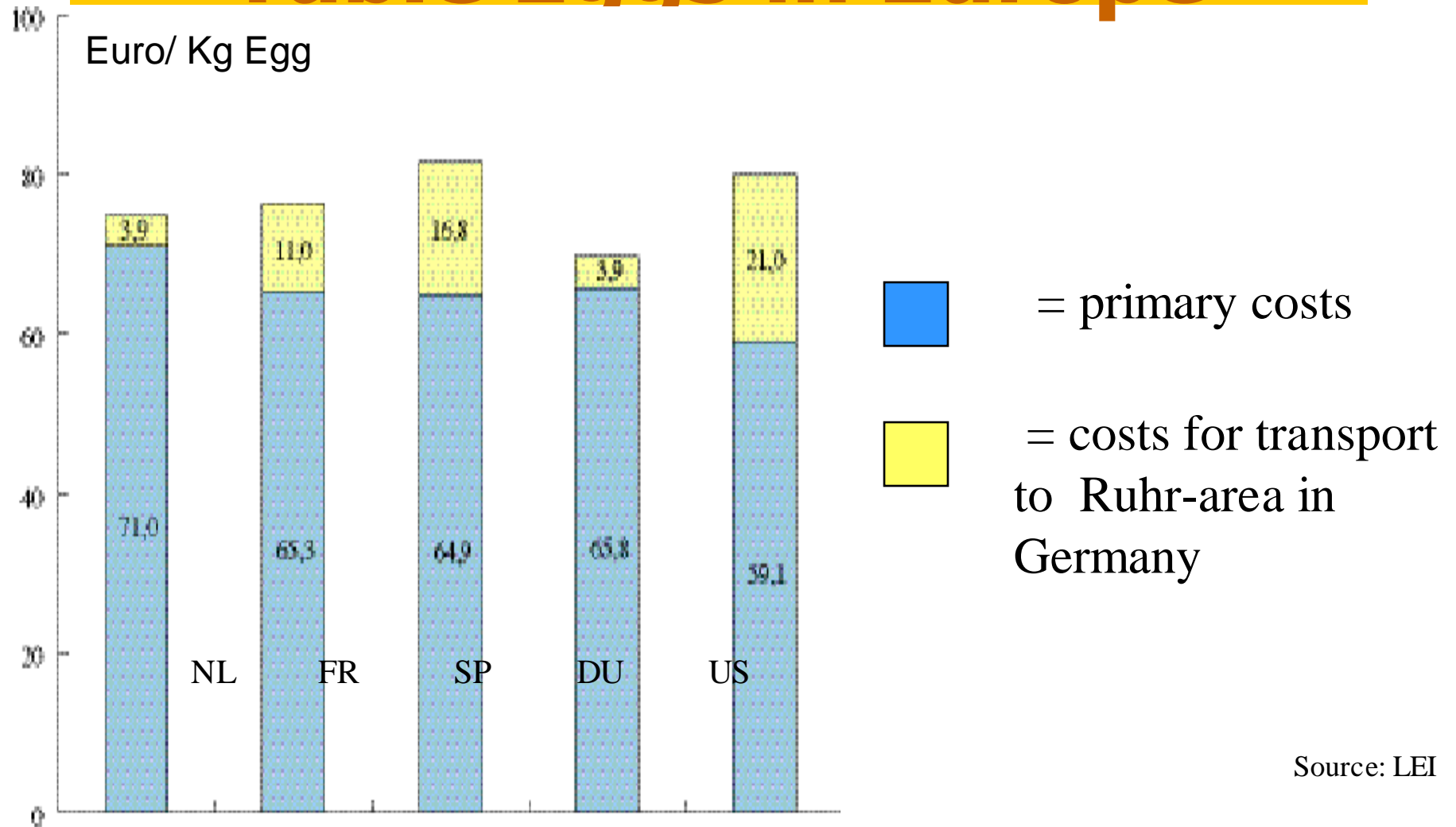
Source: World Poultry

# Global Table Egg Production Costs, 2001



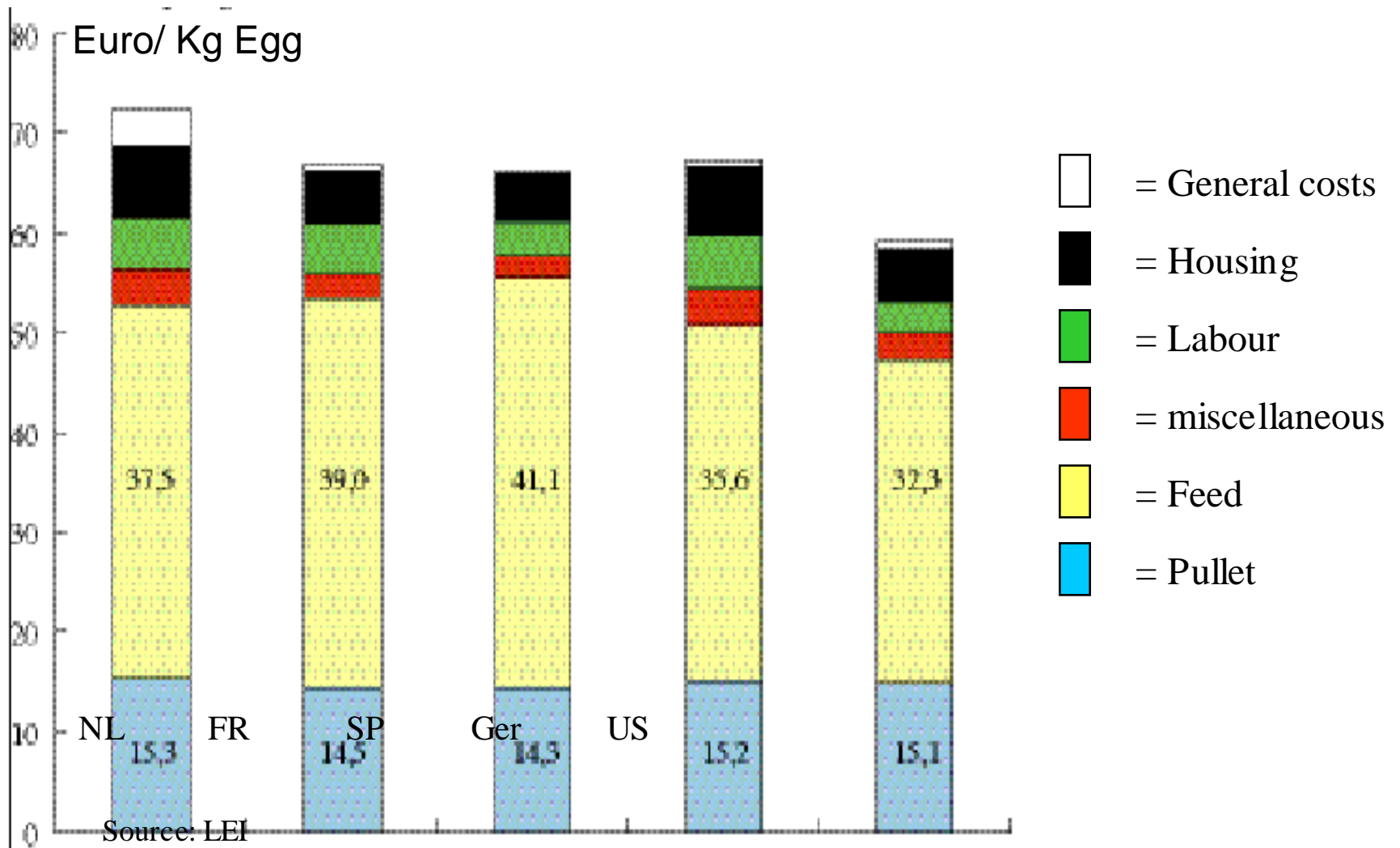
Source: LEI

# Comparison Primary Costs Table Eggs in Europe



Source: LEI

# Structure Primary Costs of Table Eggs



# Comparison of Global Productivity / Economic Results

	The Netherlands	France	Germany	Spain	USA
Feed price (euro/100 kg)	17.8	18,3	19	16,9	15
Pullet price (20 wk euro)	3,04	2,95	2,09	3,04	2,77
Eggs/ bird	323	323	321	323	300
Egg weight (g)	62	63	63	62	61
FCR	2,11	2,13	2,16	2,11	2,15
Cum. Mort. (%)	7	6	7	8	8

Source: Lei

# But Profitability Fluctuates Depending on Egg and Commodity

<b>Cages</b>	<b>97/98</b>	<b>98/99</b>	<b>99/00</b>	<b>00/01</b>	<b>01/02 (prognose)</b>
<b>Egg production / bird/ year</b>	<b>310</b>	<b>305</b>	<b>307</b>	<b>308</b>	<b>308</b>
<b>Feed price/ 100 kg (euro)</b>	<b>19,82</b>	<b>17,40</b>	<b>16,55</b>	<b>18,40</b>	<b>19,05</b>
<b>Farm gate price /100 eieren (euro)</b>	<b>4,70</b>	<b>3,94</b>	<b>4,13</b>	<b>5,00</b>	<b>4,65</b>
<b>Total revenues (euro/layer)</b>	<b>15,62</b>	<b>12,20</b>	<b>13,11</b>	<b>15,80</b>	<b>14,85</b>
<b>Total costs (excl. labour (euro/bird)</b>	<b>13,91</b>	<b>12,49</b>	<b>12,57</b>	<b>13,35</b>	<b>13,65</b>
<b>Compensation for Labour (euro/bird)</b>	<b>1,71</b>	<b>-0,29</b>	<b>0,54</b>	<b>2,54</b>	<b>1,20</b>

Source: LEI

# Strong fluctuations in prices

(US\$ cents; average 49 countries)

date	Eggs/kg	Feed/kg	d.o.c.	“profit”
July, 2003	86.4	21.9	66.3	364
Nov., 2003	98.2	22.4	65.2	562
March, 2004	95.3	24.2	72.0	399
July 2004	90.7	23.7	71.3	372

Source: World Poultry Vol. 21 No. 1 2005

# **EU Specialty Eggs Production Systems Comparison**

- **Systems**

- Floor
- Cages
- Organic
- Free Range

- **Comparison**

- Prices
- Technical Efficiency
- Production Cost
- Gross Margins

# Comparison of Egg Production Systems

## Specialty Eggs Attract Higher Prices

Farm Gate Prices	Price/kg (euro)	Price/100 eggs
Cage	0,72	4,50
Litter	0,86	5,40
Free range	1,00	6,25
Organic	1,70	10,80

Source:KWIN

# Comparison of Egg Production Systems

## Specialty Eggs - Lower Farm Productivity

(Comparison 2002)

	Cages		Floor/ litter system	Free Range	Organic
	White	Medium	Medium	Medium	Several
Breed	White	Medium	Medium	Medium	Several
End Rearing (wks)	20	20	21	21	21
Laying period (dg)	415	385	385	375	350
Cleaning period	16	16	21	21	21
Mort.% (Pre lay)	0,3	0,3	0,3	0,3	n.a.
Cu. Mortality %(lay)	7	6	9	11	12
Eggs per layer	349	319	316	303	264
Kg eggs/layer	21,7	19,9	19,8	18,8	16,7
Egg weight (g)	62,3	62,5	62,5	62,5	63,4
Feed per bird per day (g)	109,5	110	121	124,5	132
FCR	2,02	2,06	2,25	2,35	2,59

Source: LEI/KWIN

# Comparison of Egg Production Systems

## Specialty Have Higher Gross Margin

Euros	<b>Cages (WL)</b>	<b>Floor/litter volière</b>	<b>Free range systems</b>	<b>Organic farms</b>
Revenues Eggs	1583	1706	1875	2845
Revenues spent layers	24	35	32	57
Minus: costs pullets	305	335	350	520
Minus: Feed costs	834	845	838	1411
Feed Profit	437	521	679	892
Minus: Paid costs	87	84	94	80
Gross margin per 100 layers/year	<b>273</b>	<b>362</b>	<b>500</b>	<b>741</b>

Source: KWIN

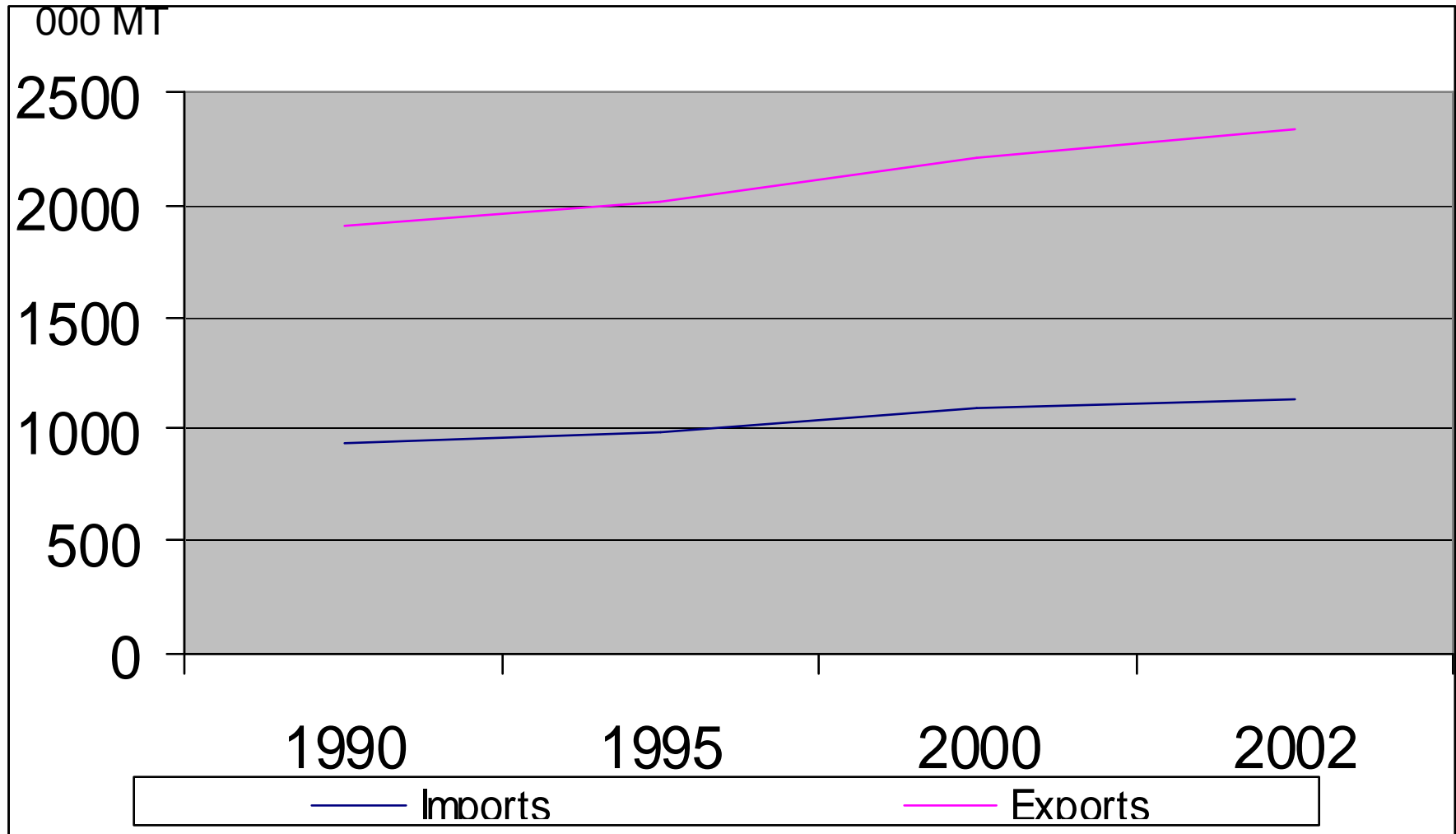
# Global Trade In Eggs

- Imports By Region
- Exports By region
- Top 10 Importers
- Top 10 Exporters
- Categories Traded
- USA Export Mix
- EU Export Mix
- Export Prices

# Trade as % Production – 2002

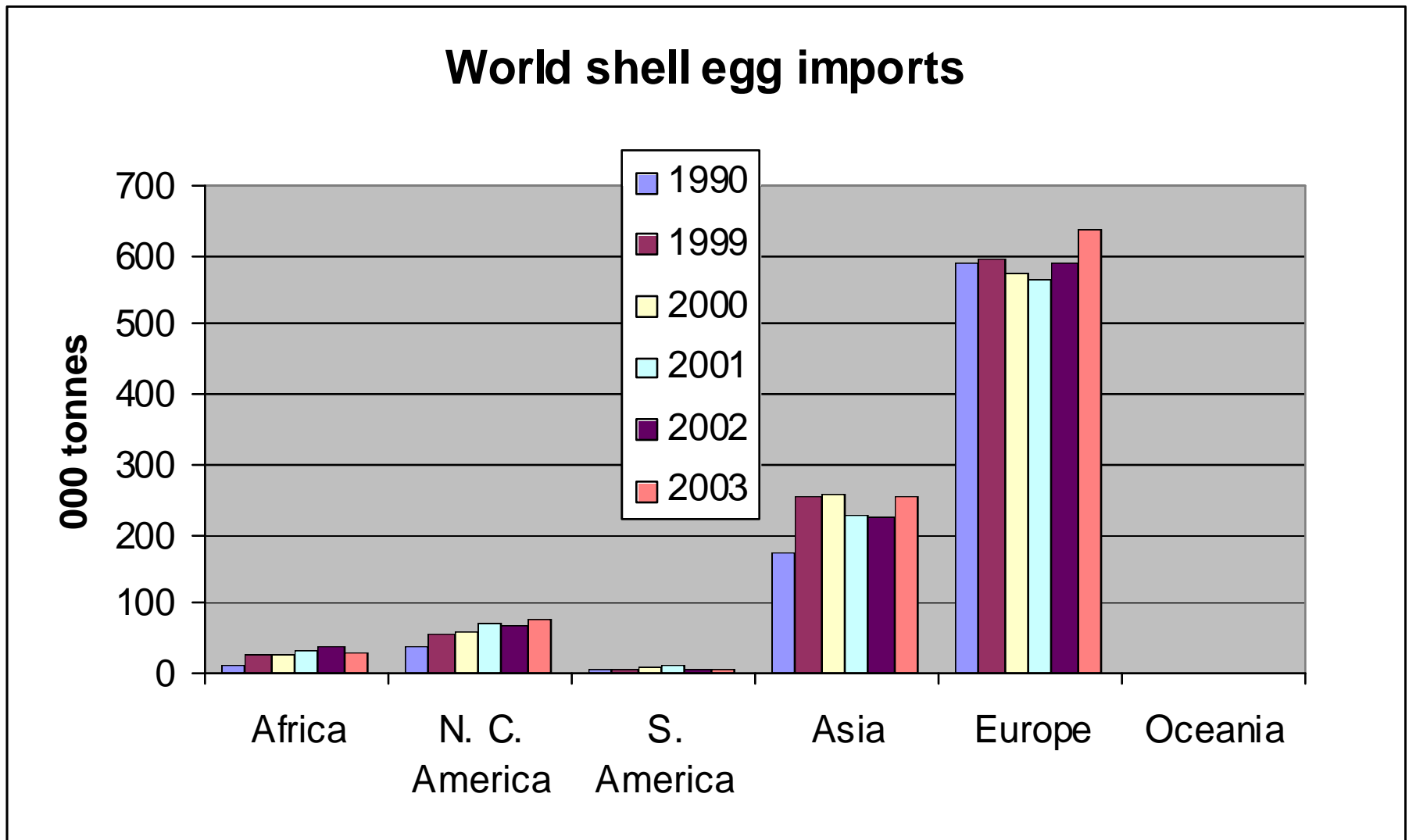
- Global Consumption - 58, 000,000 MT
- Global Trade
  - Shell Eggs - 1,885,000 MT
  - Liquid Eggs - 268,456 MT
  - Dried Eggs - 63,760 MT
  - Total - 2,217,216 MT
- Trade / Production - 3.8%

# 12 Yr Growth in Imports/ Exports Steady Growth From Small Base

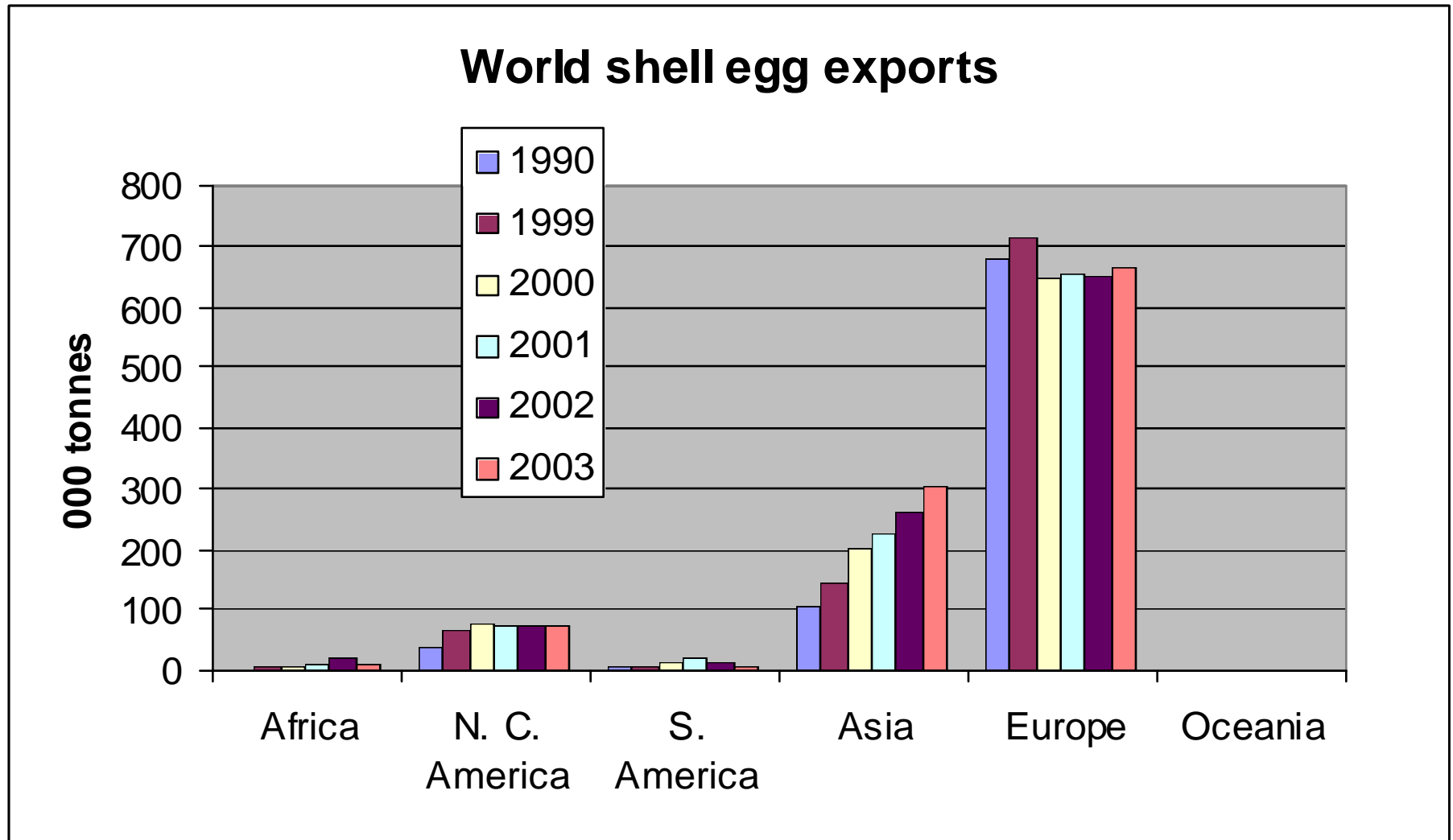


# World Shell Egg Imports By Region

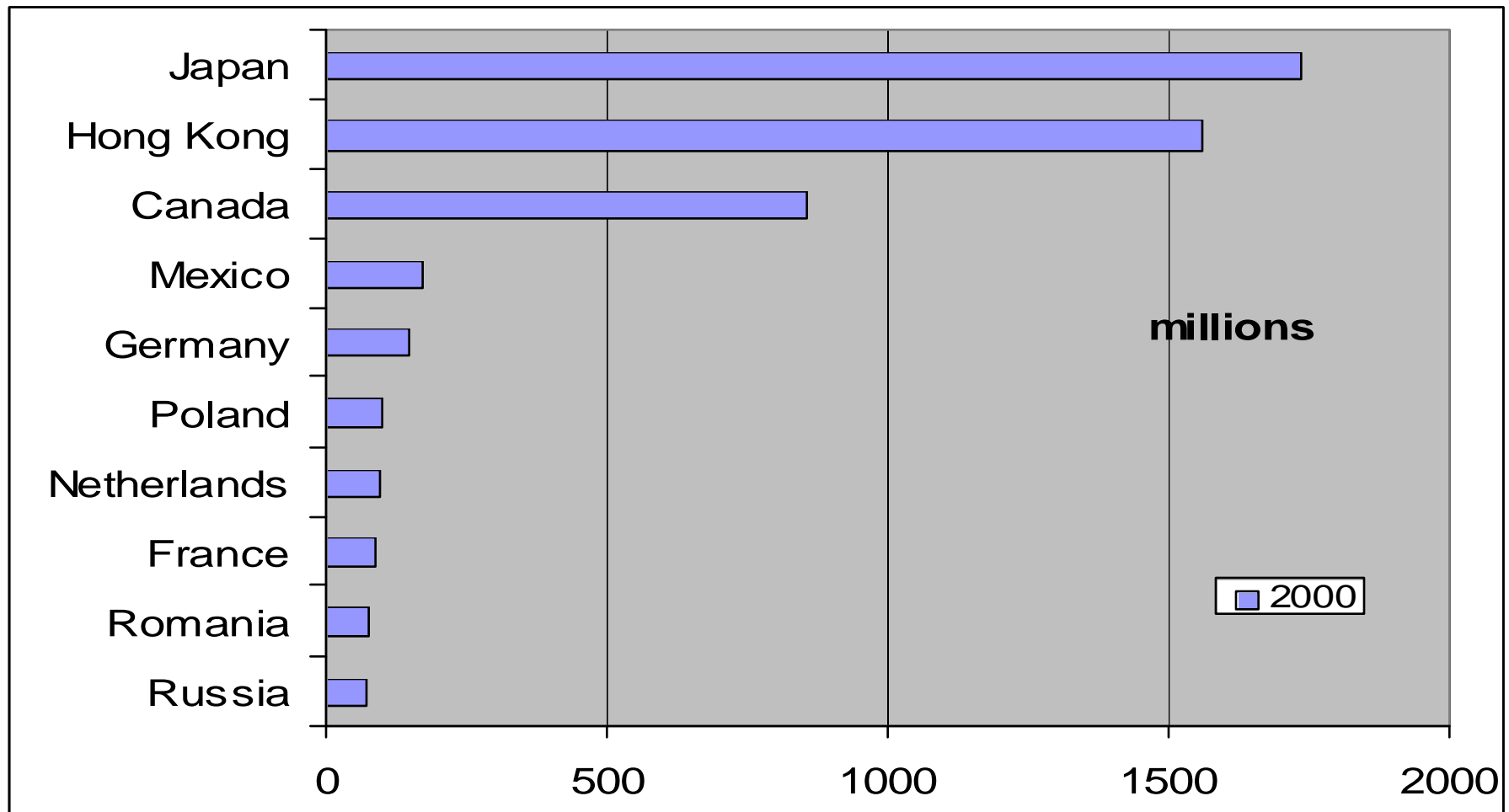
## EU And Asia Largest Importing Regions



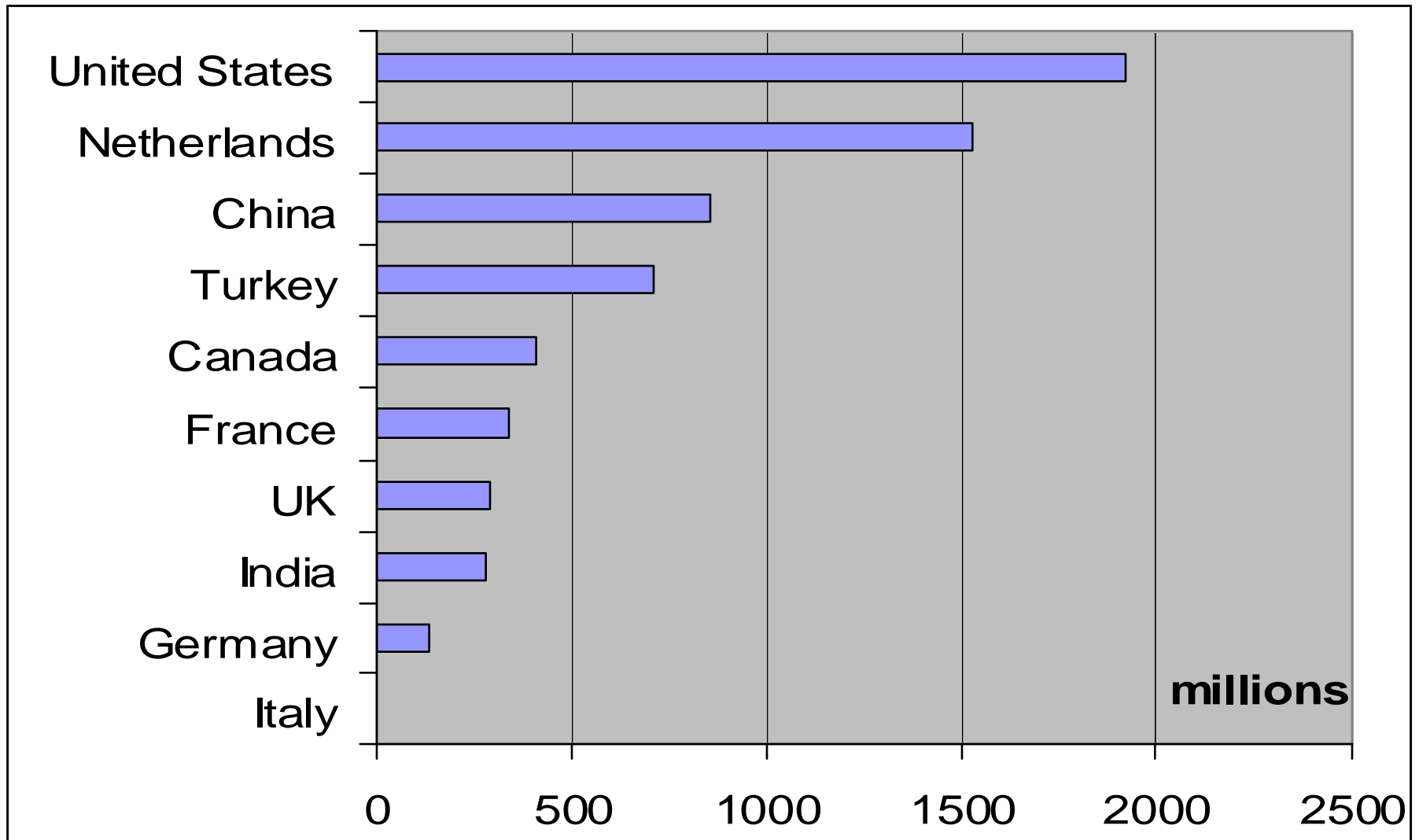
# World Shell Egg Exports By Region And Also Largest Exporting Regions



# Top 10 Importing Countries Dominated by Developed Countries

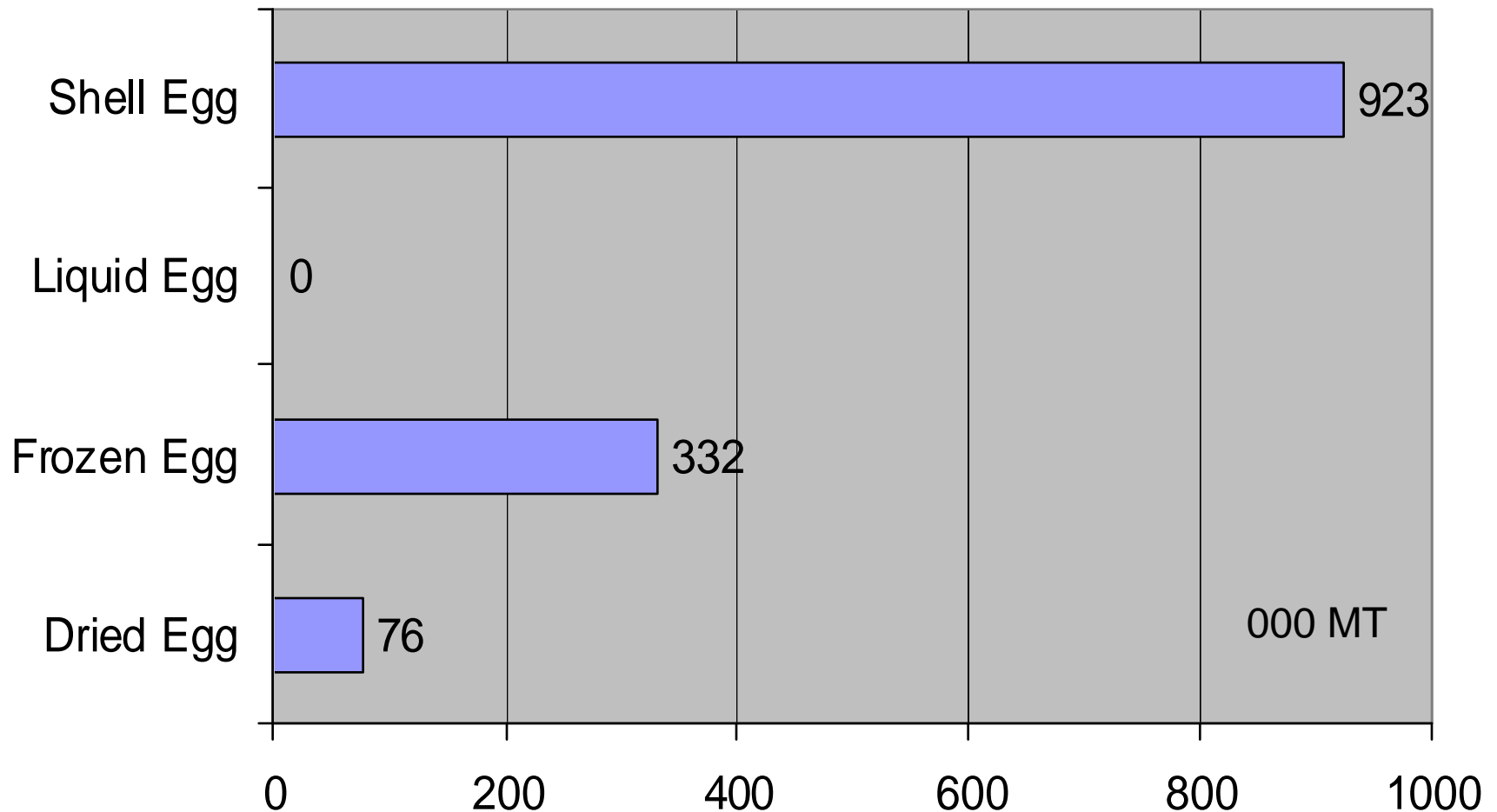


# Top 10 Exporting Countries



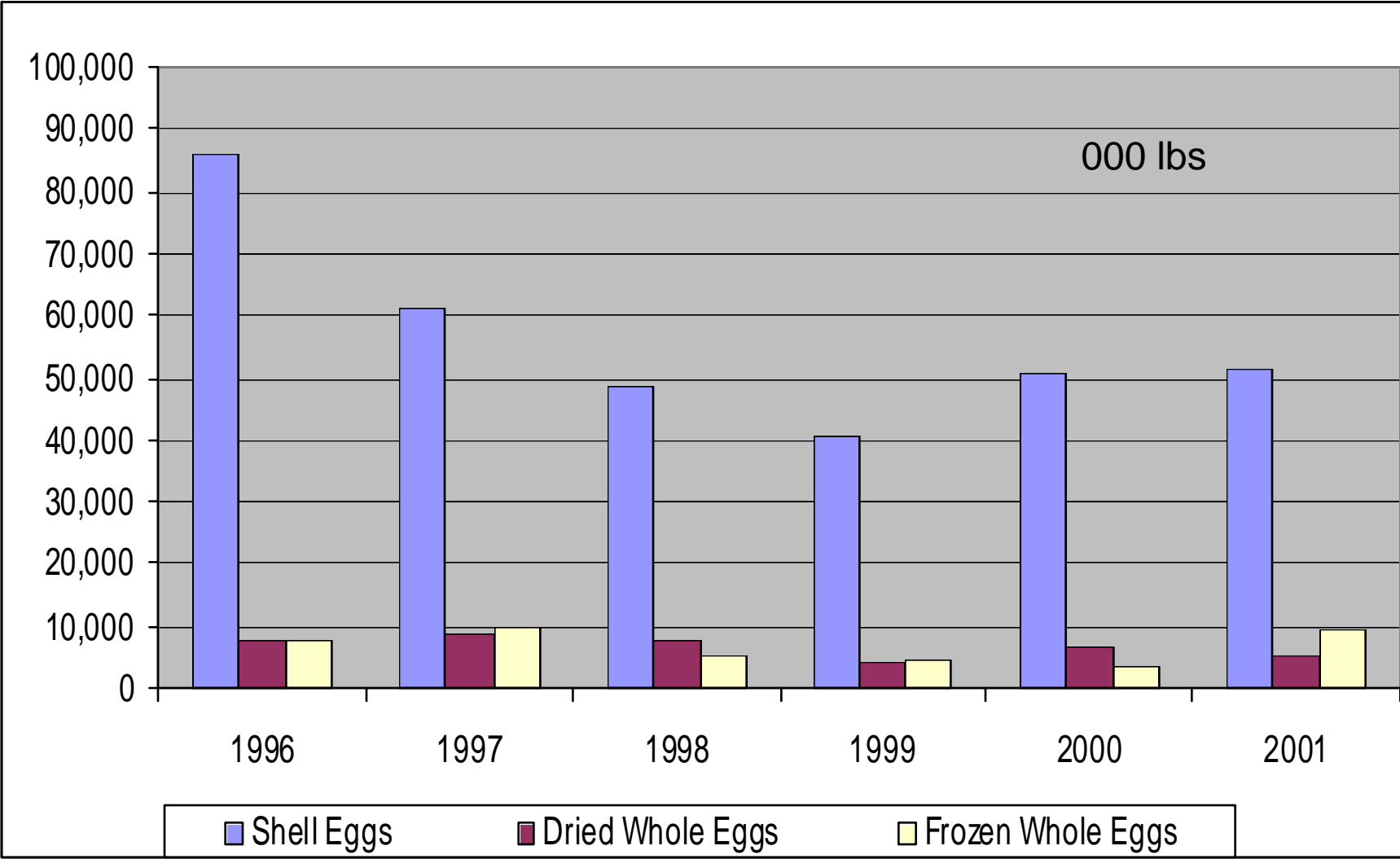
# Categories Traded 2002

## Shell Eggs Dominate Global Trade



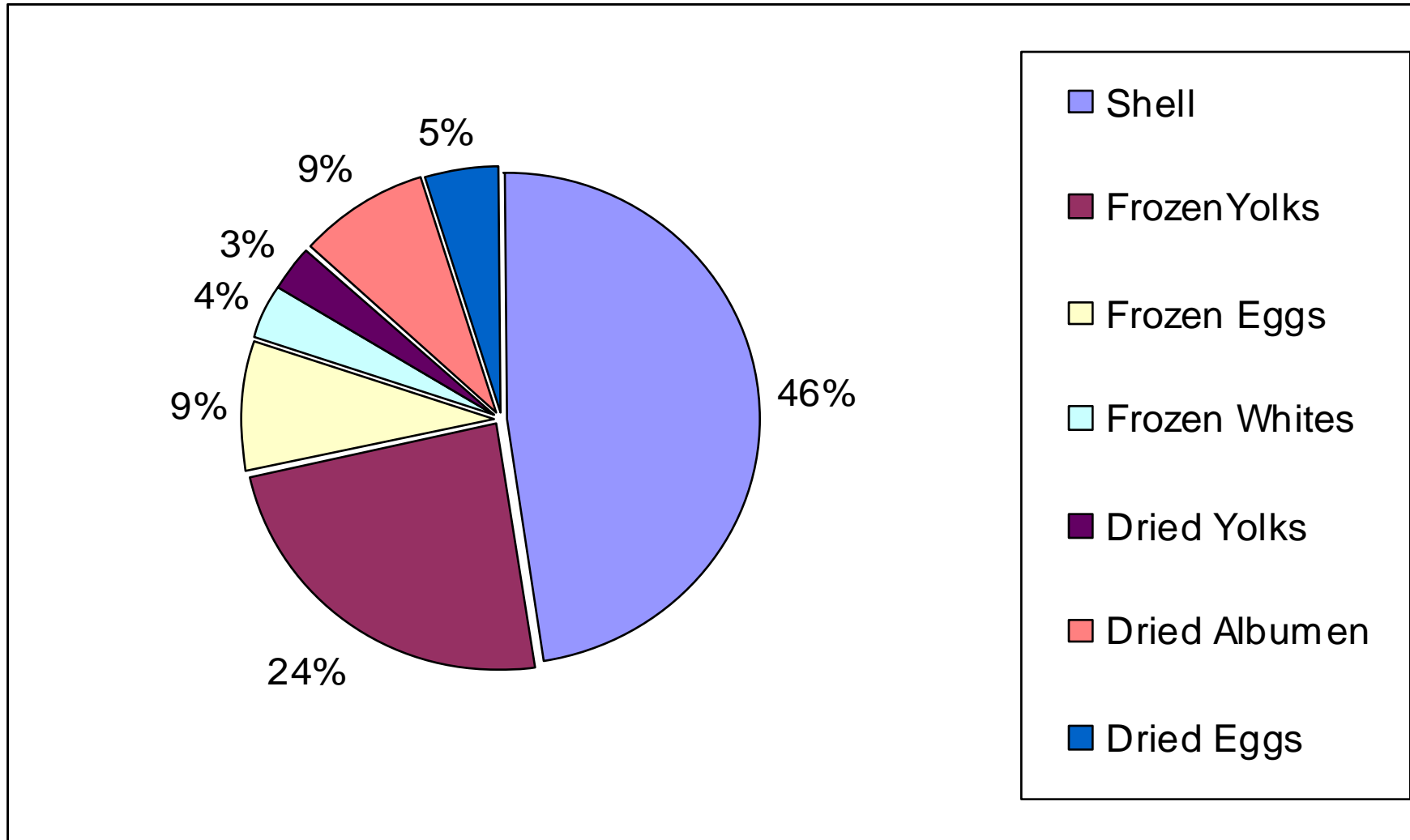
# USA Export Egg Industry Export Mix

## Exports Very Cyclical



# US Export Mix 200X?

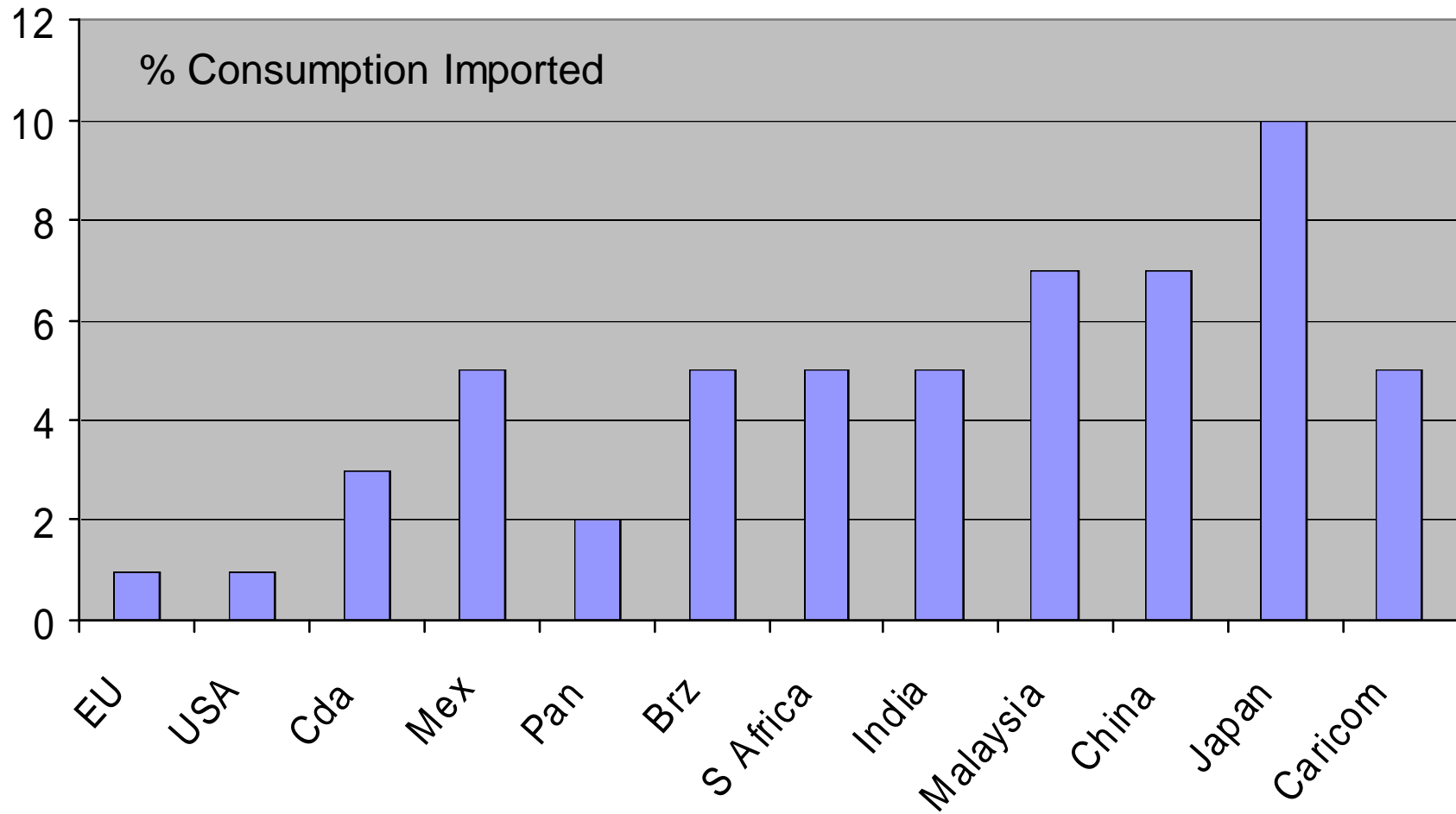
## Shell Eggs Dominate Exports



# Global Egg Industry Policy Environment

- Market Access
  - Selected Markets
- Tariffs
- Domestic Support
- Export Competition
- SPS Measures
  - Food Safety
  - Animal Health
- TBT Measures
  - Quality & Labeling Standards
  - Animal Welfare
  - Environment

# Market Access of Key Int. Markets



# Wide Variety of Tariffs

## Tend to be High in Developed Mkts

<u>State</u>	<u>Tariff System</u>	<u>Range of Tariffs</u>
• EU	TRQ	167 – 1,423 E / MT
• USA	Specific	2.9 – 49.6c / Kg
• Canada	TRQ	1.52 – 5.12/ Kg
• Mexico	Simple Ad Val	37 – 45%
• Brazil	Simple Ad Val	
• India		
• Japan	Simple Ad Val	
• China		
• H-Kong	Free	

# EU Tariff Structure For Eggs

Product	HS Code	Applicable Preferential Tariff		WTO Quota
		within access	over access	
<b>Birds Eggs in Shell Fresh, Preserved or Cooked, Table Eggs</b>	<b>0407.00.30</b>	152 E/MT	304 E/MT	
<b>Egg Yolks - Dried</b>	<b>0408.11.80</b>	711 E/MT	1423 E/MT	
<b>Egg Yolks - Other Liquid</b>	<b>0408.19.81</b>	310 E/MT	620 E/MT	
<b>Egg Yolks - Other Frozen</b>	<b>0408.19.89</b>	331 E/MT	663 E/MT	
<b>Other - Dried</b>	<b>0408.91.80</b>	687 E/MT	1374 E/MT	
<b>Other - Liquid &amp; Frozen</b>		176 E/MT	353 E/MT	
<b>Egg Albumin - dried</b>		617 E/MT	1235 E/MT	
<b>Egg Albumin - liquid/ frozen</b>	<b>3502.19.90</b>	83 E/MT	167 E/MT	

# US Tariff Schedule For Eggs

Product	HS Code	WTO Bound
<b>Birds Eggs in Shell Fresh, Preserved or Cooked, Table Eggs</b>	<b>0407.00.00.20</b>	2.9 c/ Kg
<b>Birds Eggs in Shell Fresh, Preserved or Cooked, Other</b>	<b>0407.00.00.30</b>	2.9 c/ Kg
<b>Egg Yolks - dried</b>	<b>0408.11.00</b>	49.6 c/ Kg
<b>Egg Yolks - Other than dried - liquid/frozen</b>	<b>0408.19.00.00</b>	10.1 c/ Kg
<b>Processed Eggs (other than yolk or albumen) – dried</b>	<b>0408.91.00.00</b>	49.6 c/ Kg
<b>Processed Eggs (other than yolk or albumen) – frozen/liquid</b>	<b>0408.99.00.00</b>	10.1 c/ Kg
<b>Egg Albumin - dried</b>	<b>3502.11.00.00</b>	49.6 c/ Kg
<b>Egg Albumin - liquid/frozen</b>	<b>3502.19.00.00</b>	10.1 c/ Kg

# Canada Tariff Schedule For Eggs

Product	HS Code	WTO Bound	Applicable Preferential Tariff		WTO Quota
			within access	over access	
<b>Birds Eggs in Shell Fresh, Preserved or Cooked, Table Eggs</b>	<b>0407.00.18/19</b>	1.51 cents/dozen	UST, CCCT, CT: Free	163.5% but not less than 79.9 cents/dozen	21,370 thousands dozen egg equivalents
<b>Egg Yolks - dried</b>	<b>0404.11.11/20</b>	8.50%	UST, CCCT, CT: Free	\$6.12/kg	
<b>Egg Yolks - Other than dried - liquid/frozen</b>	<b>0408.19.10/20</b>	6.63 cents/kg	UST, CCCT, CT: Free	\$1.52/kg	
<b>Processed Eggs, other than yolk/ albumen – dried</b>	<b>0408.99.11/20</b>	8.50%	UST, CCCT, CT: Free	\$6.12/kg	
<b>Processed Eggs (other than yolk or albumen) – frozen/liquid</b>	<b>0408.99.10/20</b>	6.63 cents/kg	UST, CCCT, CT: Free	\$1.52/kg	
<b>Egg Preparations</b>	<b>0408.99.00.00</b>	6.68 cents/kg	UST, CCCT, CT: Free	\$1.45/kg	
<b>Egg Albumin - dried</b>	<b>3502.11.10/20</b>	8.50%	UST, CCCT, CT: Free	\$6.12/kg	
<b>Egg Albumin - liquid/frozen</b>	<b>3502.19.10/20</b>	6.63 cents/kg	UST, CCCT, CT: Free	\$1.52/kg	

# Mexico Tariff Structure For Eggs

<b>Product</b>	<b>HS Code</b>	<b>WTO Bound</b>
<b>Birds Eggs in Shell Fresh, Preserved or Cooked, Table Eggs</b>	<b>0407.00.02</b>	45%
<b>Birds Eggs in Shell Fresh, Preserved or Cooked, Other</b>	<b>0404.11.11/20</b>	37.50%
<b>Birds Eggs Not in Shell</b>	<b>0408</b>	37.50%
<b>Egg Albumin - dried</b>	<b>3502.11.01</b>	37.00%
<b>Egg Albumin - liquid/frozen</b>	<b>3502.19.99</b>	37%

# Brazil Tariff Structure For Eggs

<b>Product</b>	<b>HS Code</b>	<b>WTO Bound</b>
<b>Birds Eggs in Shell Fresh, Preserved or Cooked, Table Eggs</b>	<b>0407</b>	20?
<b>Birds Egg Not in Shell &amp; Egg Yolks</b>	<b>0408</b>	20?
<b>Egg Albumin</b>	<b>3502</b>	20?

# India Tariff Structure For Eggs

<b>Product</b>	<b>HS Code</b>	<b>WTO Bound</b>
<b>Birds Eggs in Shell Fresh, Preserved or Cooked, Table Eggs</b>	<b>0407</b>	100?
<b>Birds Egg Not in Shell &amp; Egg Yolks</b>	<b>0408</b>	100?
<b>Egg Albumin</b>	<b>3502</b>	100?

# Japan Tariff Structure For Eggs

Product	HS Code	WTO Bound
<b>Birds Eggs in Shell Fresh, Preserved or Cooked, Table Eggs</b>	<b>0407.00.21</b>	17%
<b>Egg Yolks - dried</b>	<b>0408.11</b>	18.80%
<b>Egg Yolks - Other - liquid/frozen</b>	<b>0408.19</b>	> 20% or 48Y/Kg
<b>Other - Dried</b>	<b>0408.91</b>	21.30%
<b>Other - Frozen</b>	<b>0408.99</b>	>21.3% or 51Y/ Kg
<b>Egg Albumin - Dried</b>	<b>3502.11</b>	8%
<b>Egg Albumin - Other - liquid/frozen</b>	<b>3502.19</b>	2.90%

# Hong Kong Tariff Structure For Eggs

<b>Product</b>	<b>HS Code</b>	<b>WTO Bound</b>
<b>Birds Eggs in Shell Fresh, Preserved or Cooked, Table Eggs</b>	<b>0407</b>	Free
<b>Birds Egg Not in Shell &amp; Egg Yolks</b>	<b>0408</b>	Free
<b>Egg Albumin</b>	<b>3502</b>	Free

# Domestic Support

- USA - No Egg Industry Specific Production Assistance Programs.
  - Indirect support by Farmers Home Admin. Loans at below-market rates
  - Federal and State inspection, and government-funded research services.
  - Feed Grain Industry Programs (mainly corn) - Conservation Reserve Program, crop insurance, marketing loans to producers, Export Enhancement Programs

# Export Competition

- USA - EEP program for eggs exports to markets where subsidized product eg EU.
  - 260 million dozen eggs sold between 1994 – 1998 to Hong Kong and the Near East countries
  - Half in 1994 – 1996
  - Total amount of assistance for period was \$63 m
  - None during 1996-98, as exports were profitable

# SPS Measures – Food Safety

- Food Safety
  - Salmonella – Major concern for Egg Industry
    - Shell Eggs
    - Processed Eggs
  - Residues – Consumers Increasingly Concerned
    - Antibiotics – Many Countries Reducing / Eliminating Use of Antibiotics
    - Heavy Metals – Major Problem in EU

# SPS Measures – Avian Health

## Countries Impacted by Poultry Disease Outbreaks 2000 - 2005

- **Bird Flu 2000/04**
  - Canada
  - USA
  - Holland
  - China
  - Japan
  - Thailand
  - Vietnam
  - Cambodia
  - Indonesia
  - South Korea
  - Laos
  - Pakistan
  - Chile
- **New Castle Disease Virus**
  - USA
  - Holland

# SPS Measures – Avian Health

## Impact of Outbreaks 2000 - 2005

- Trade Losses & Gains
  - Shell Eggs
- Destabilized Markets
- Fluctuating Prices
  - In exporting country (USA/Cda) domestic surpluses cause downward pressure on domestic meat prices
  - In importing country ( Japan) it has led to 40% increase in prices
- Increased Farm Costs for Depopulation
- Public Disease Control Costs
- Income Vulnerability of Small Producers

# TBT Measures – Animal Welfare

- **European Egg Marketing Regulations**
  - **Existing conventional cages** - Minimum of 550cm per hen
  - **Enriched cages** – Minimum of 750cm<sup>2</sup> per bird, with a nest, perching space and a scratching area.
  - **Barn system** - Maximum stocking density of 9 hens/ SM of useable floor space. Perches for the birds must be installed to allow 15 centimetres of perch per hen.
  - **Deep litter system** - Maximum permissible stocking density for the deep litter system of 7 birds/ SM. In both systems one nest box per five birds or communal nests, at the rate of 120 birds /m<sup>2</sup> of floor area of communal nest, are provided.
  - **Free range system** – Maximum stocking density of 2,500 birds per hectare. Houses similar to Barns above. Must have continuous daytime access to vegetated runs

# TBT Measures – Animal Welfare

- **West Germany**

- Conventional cages will be banned - from 1 January 2007
- Enriched cages will also be prohibited - From 1 January 2012
- While Germany currently imports 4 billion shell eggs year, it is estimated that the proposed bans will increase imports to 9.5 billion eggs or about two-thirds of all the shell eggs traded worldwide!
- It is estimated that this will stimulate production in new EU member States of the European Union, and from non-EU countries in eastern Europe, northern Africa and possibly even India!

- **Other EU countries follow at different speeds**

# Environment Issues

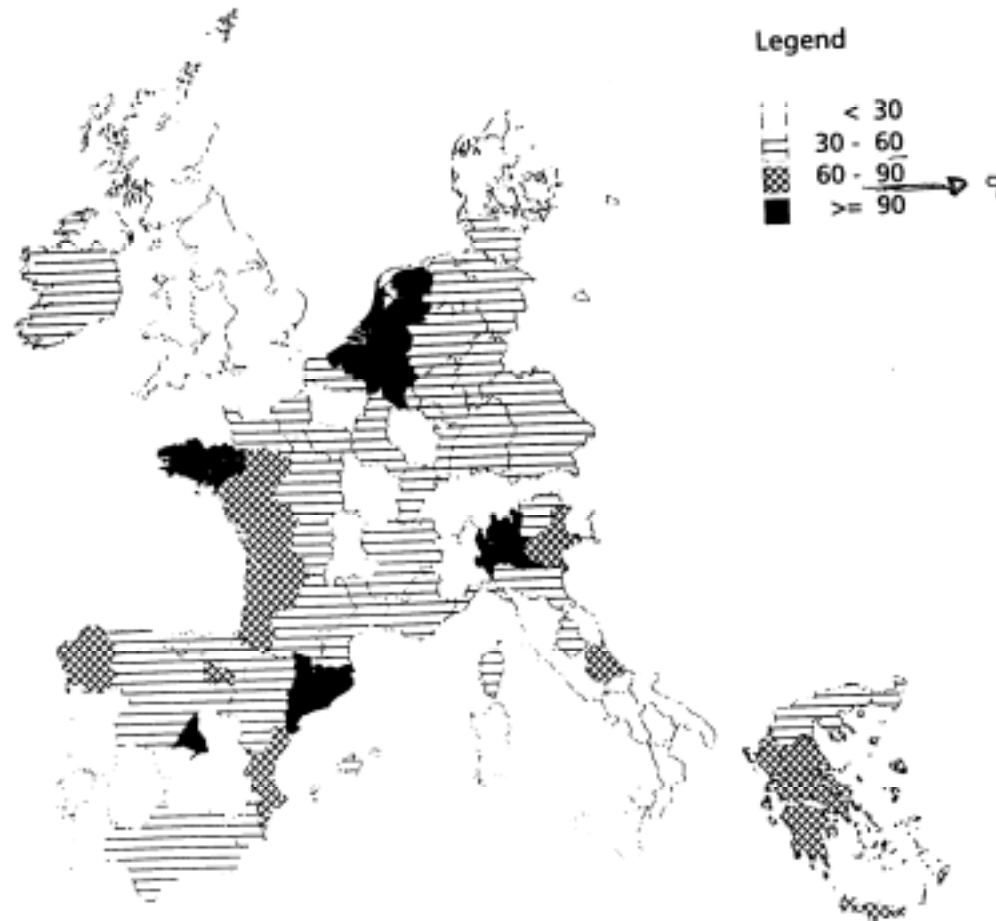
- EU Example
- USA
- Other Countries

# EU Egg Industry Environment Issues

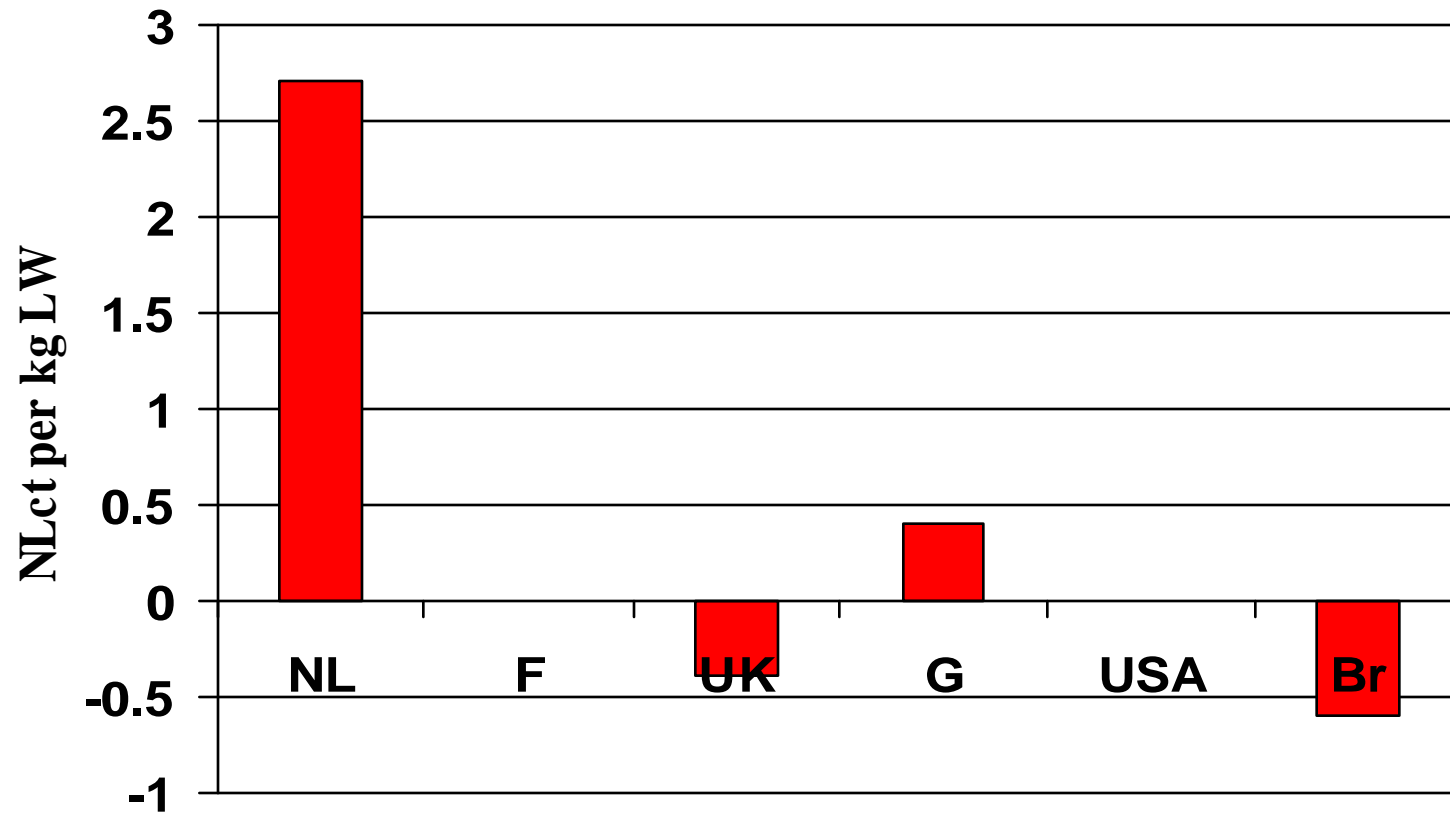
**Balance between in and output disturbed**

- **Mineral accumulation - Phosphorus**
- **Acid Rain – Ammonia emission**
- **Surface/ Ground Water Contamination**
  - **Phosphorus**
  - **Nitrates**
  - **Dead Bird disposal**

# Phosphate surplus / ha in EU per region



# Manure Disposal Cost



# The Nitrate Problem

## Drinking Water Directive (European Union)

- guide level of nitrate of 25 mg/l
- maximum admissible 50 mg/l

## Nitrate concentrations in the groundwater

- 87% of agricultural area in Europe > 25 mg/l
- 22% of agricultural area in Europe > 50 mg/l

# Lessons for Caribbean Producers

1. Other countries protect their markets → should you allow “cheap” imports?
2. Lower your cost price by:
  - Increased hen housed production
  - Lower FCR
  - Might require technical support and training

# Lessons for Caribbean Producers

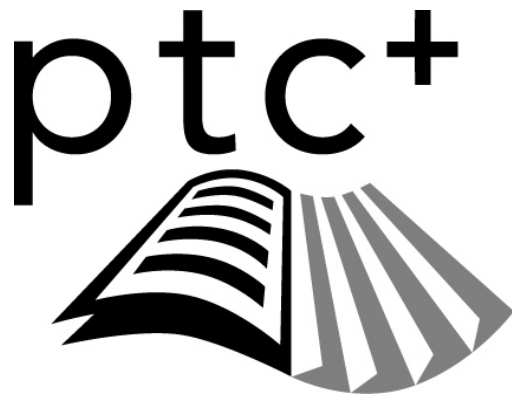
3. Export not easy due to tariffs and non tariff measures
4. Go for self-sufficiency and increase domestic consumption (potential is there → use it!)
  - Promotion
  - New product development (brands, packaging, processed eggs)
  - Study consumer requirements and respond

# Lessons for Caribbean Producers

5. Egg products become increasingly important
  
6. Do not neglect food safety
  - Important for domestic market
  - But also or tourism industry and institutions



**THANK YOU**



**CARIBBEAN  
POULTRY ASSOCIATION**

# Thank you for your attention

More information: [www.ptcplus.com](http://www.ptcplus.com)

