

Global Value Chains and Air Transport Policy

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ACDEG Group
Western Aviation Summit
Winnipeg, Manitoba, Canada
May 2, 2013

Globalization Reality

Globe & Mail April 11, 2012

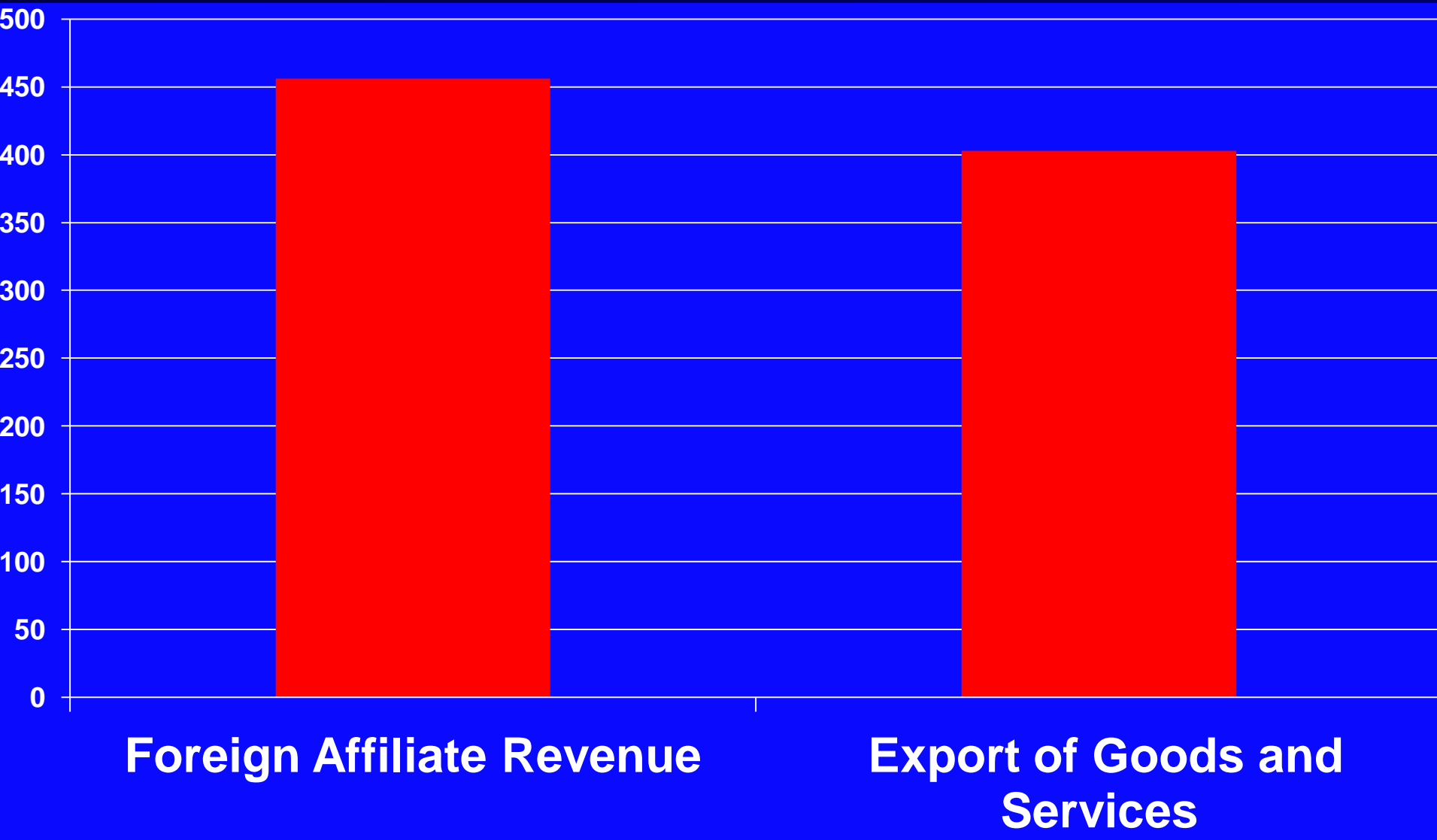
Foreign investments vital to global competitiveness



Todd Evans, Director of Corporate Research, EDC

Growth of Canadian Globalization - 2009

(C\$ billion)



Presentation

- The ACDEG Group
- Driving Forces in Global Value Chains
- Canadian participation in Evolving Markets and Supply Chains
- Innovative transportation policies to encourage competition and global access
- Summary

ACDEG Businesses

Energy

Environment

Efficiency

ACDEG Characteristics

Risks seekers

--

Unwanted >>> Value

Partnerships and Joint Ventures

- Waste gas to electrical power
- Renewable energy
- Recycling packaging wastes
- Forestry wastes to bio-fuels
- Wood pulps to paper products
- Specialty chemicals distribution
- Products fabrication and branding
- Marine Equipment
- Agri-food and seafood

Distribution Innovation



Unit
Trains of
Sulphuric
Acid



Economic Distance of Acid Distribution



300 km
extended

to

2,000
km

Source: NorFalco LLC

Shanghai WEI-Gang Energy Co., Ltd.



Container Cranes for Tuen Mun Port (Hong Kong)



Fireboats in Hong Kong



Container Barges



14 1 2004

Manufacturing

- Drywall Finishing Tools



Consumer and Industrial Hardware



Small solar and wind turbine powered lamp standards

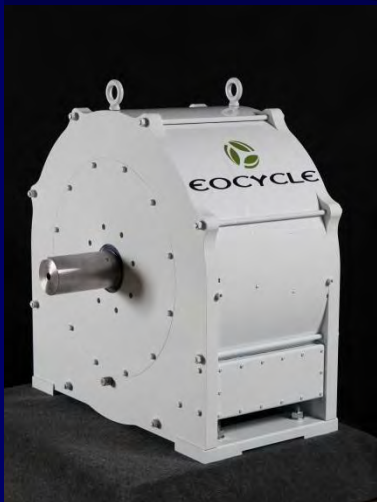
Courtesy of Anthony Ivanoff

Energy Equipment Packages





TFPM – Transverse Flux Permanent Magnet



***Leading designer and manufacturer of
Transverse Flux Permanent Magnet (TFPM)
Generators & Motors***

Large wind

Eocycle TFPM competitive advantage



Eocycle' TFPM generator technology offers significant cost reduction when compared to the best PM alternative:

<i>Overall smaller generator volume</i>	<i>→ 50% less</i>
<i>Overall lighter generator</i>	<i>→ 25% less</i>
<i>Less permanent magnets</i>	<i>→ 35% less</i>
<i>Lower quality permanent magnets</i>	<i>→ Easier supply – lower price</i>
<i>Significant copper reduction</i>	<i>→ 75% less</i>

Those estimates are based on replacing the highest quality RFPM generator combined with a single stage - 1:10 gearbox (see next slide).

Source: Cycle Capital management

New Products from Recycled Plastics



**German
Recycling
Plants**

Plastics Pallets

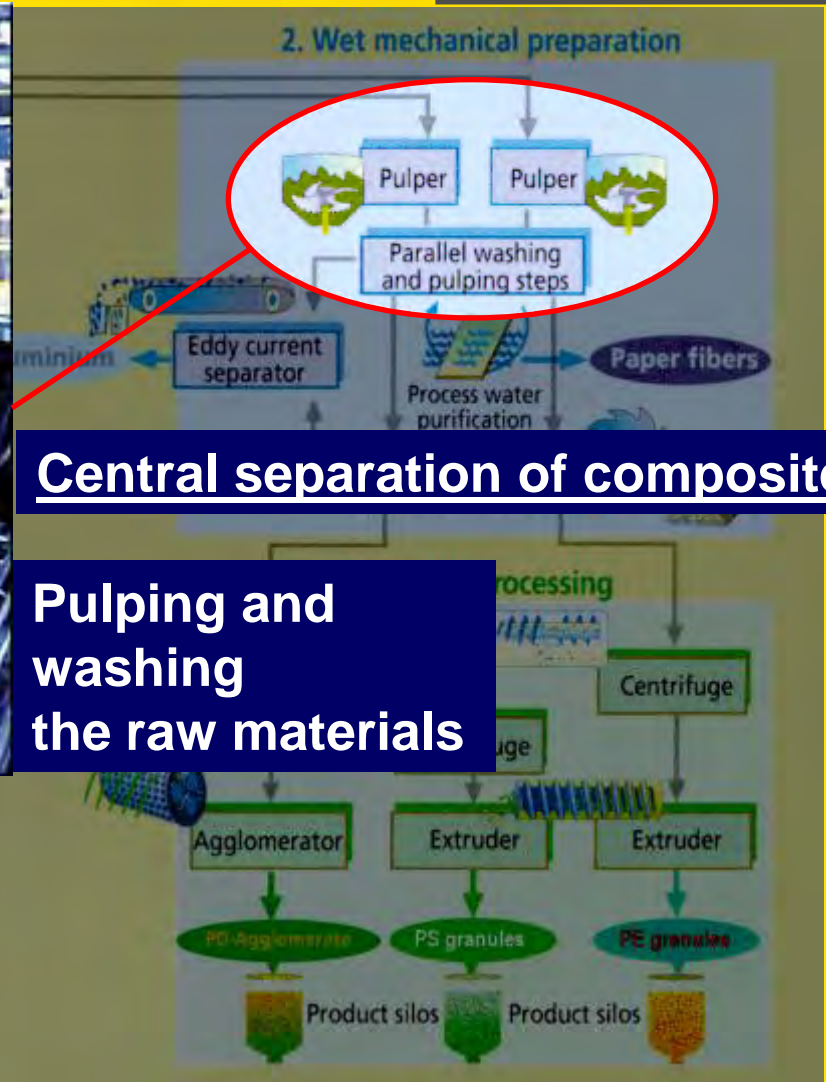
Wet Mechanical Preparation

 SORTEchnology 3.0

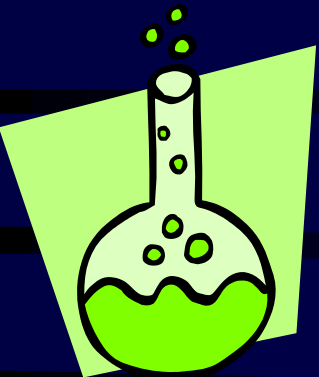


Central separation of composites

Pulping and
washing
the raw materials



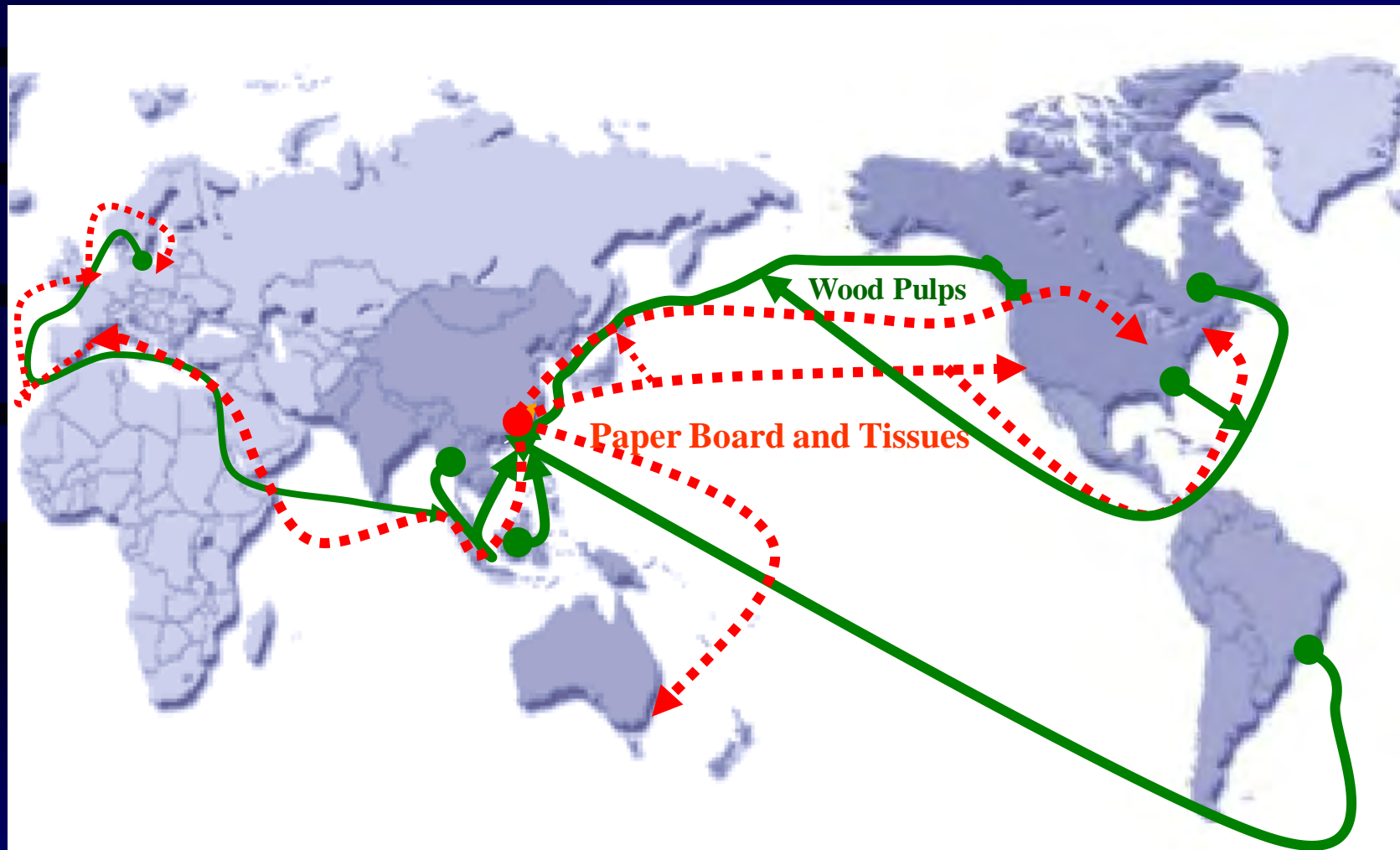
A Virtual Specialty Chemicals Business



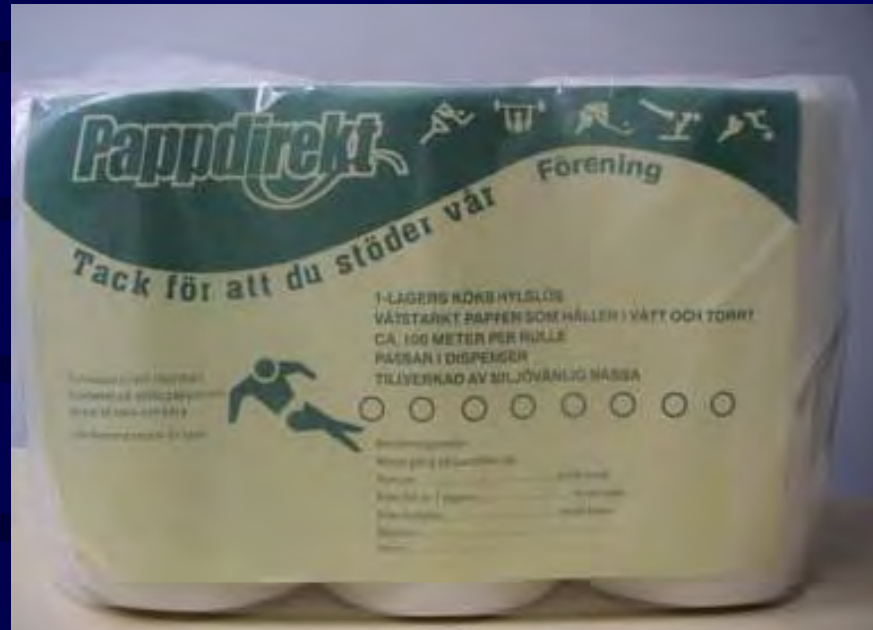
- Markets in **North America**
- Sourcing from **China and Europe**
- Quality control at ports of shipment
- Marketing and logistics from **Montreal**
- Technical support from **Toronto**
- Financing from **Vancouver**



Global Supply Chain and Marketing Pulp and Paper



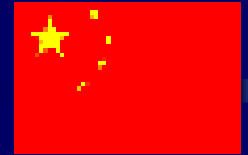
Decorative and Consumer Products



Sustainable Aquaculture



Location



Biofans



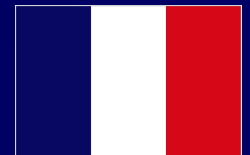
Management



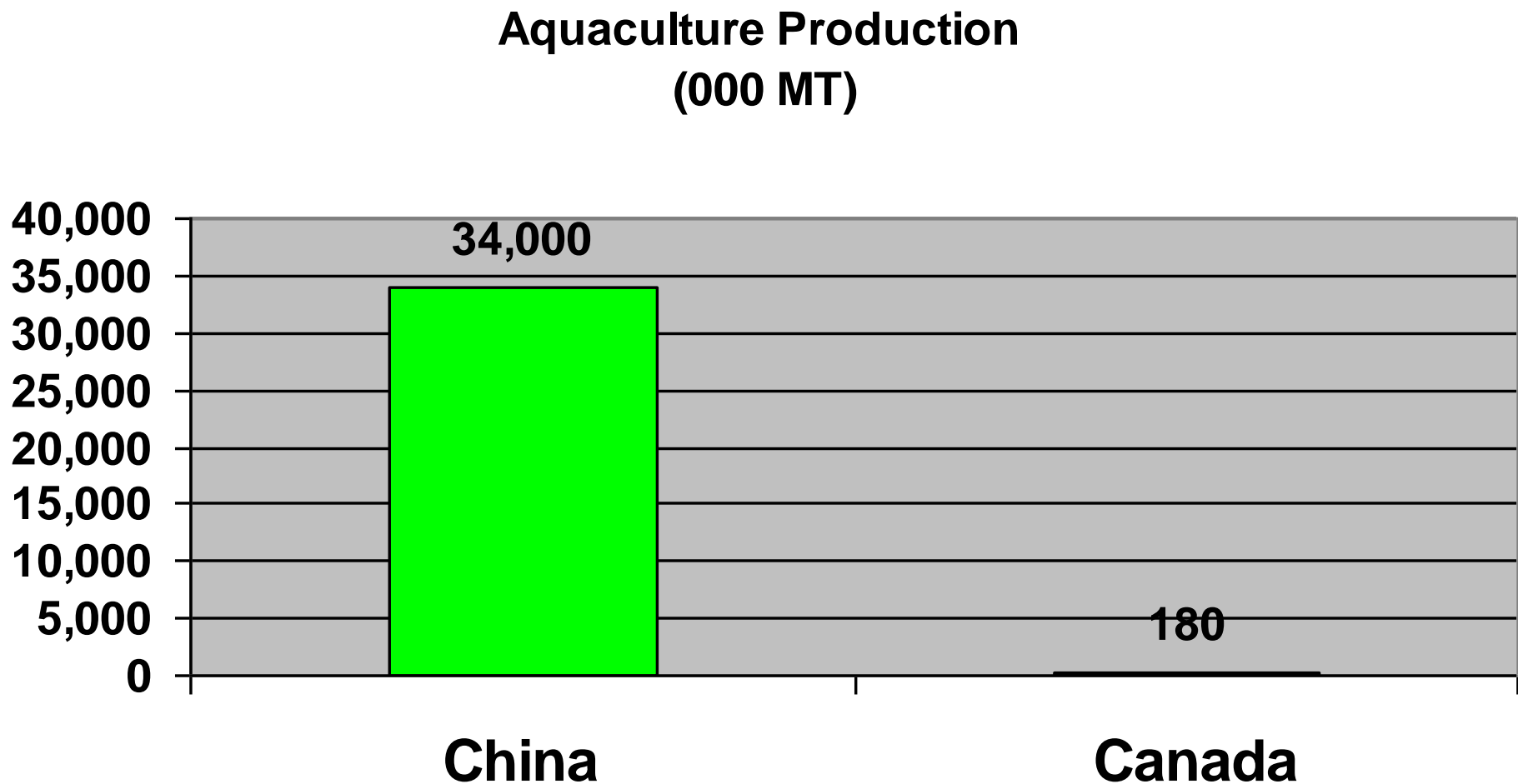
Biotech



Manufacturing



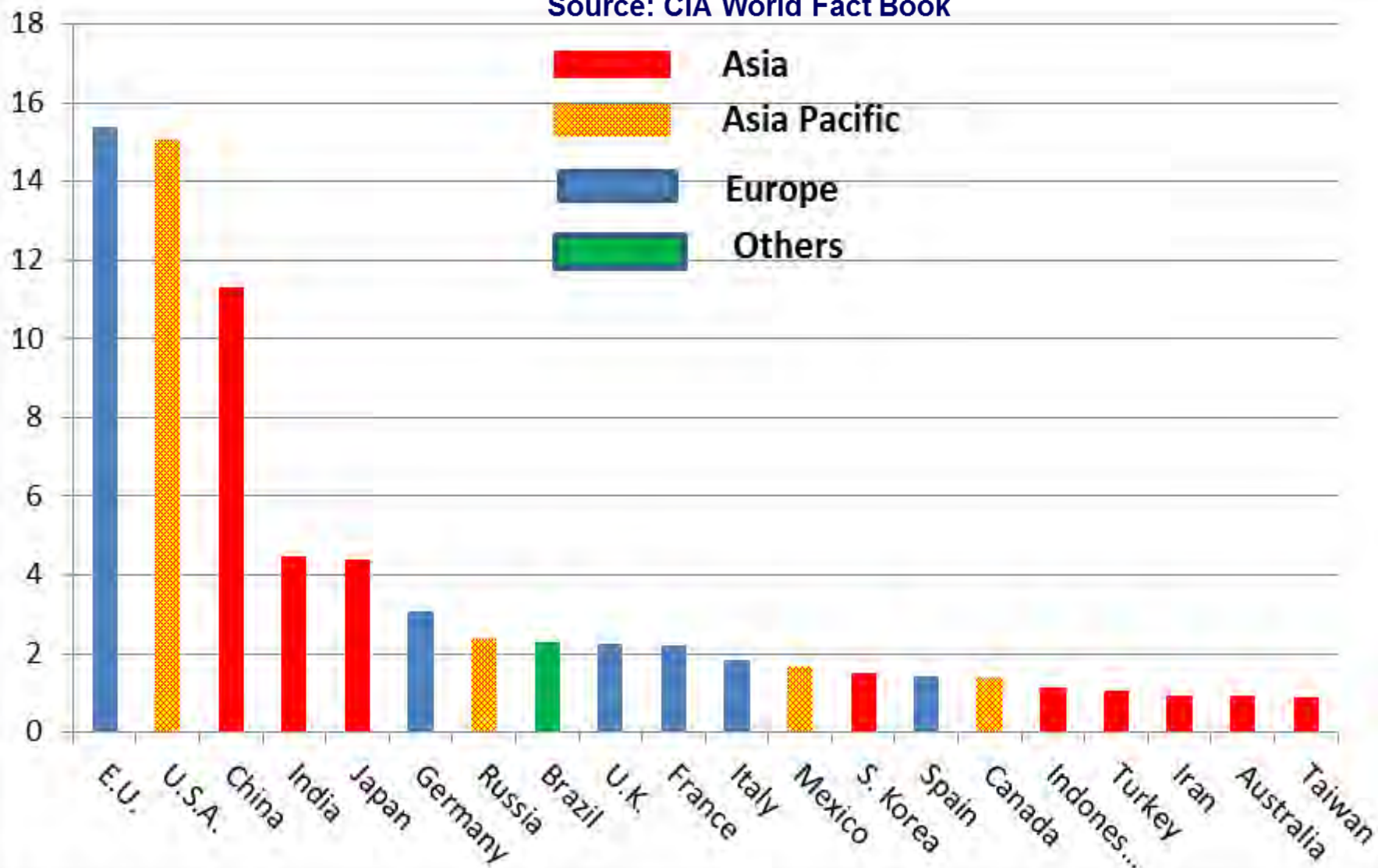
Economy of Scale



2011 GDP Ranking

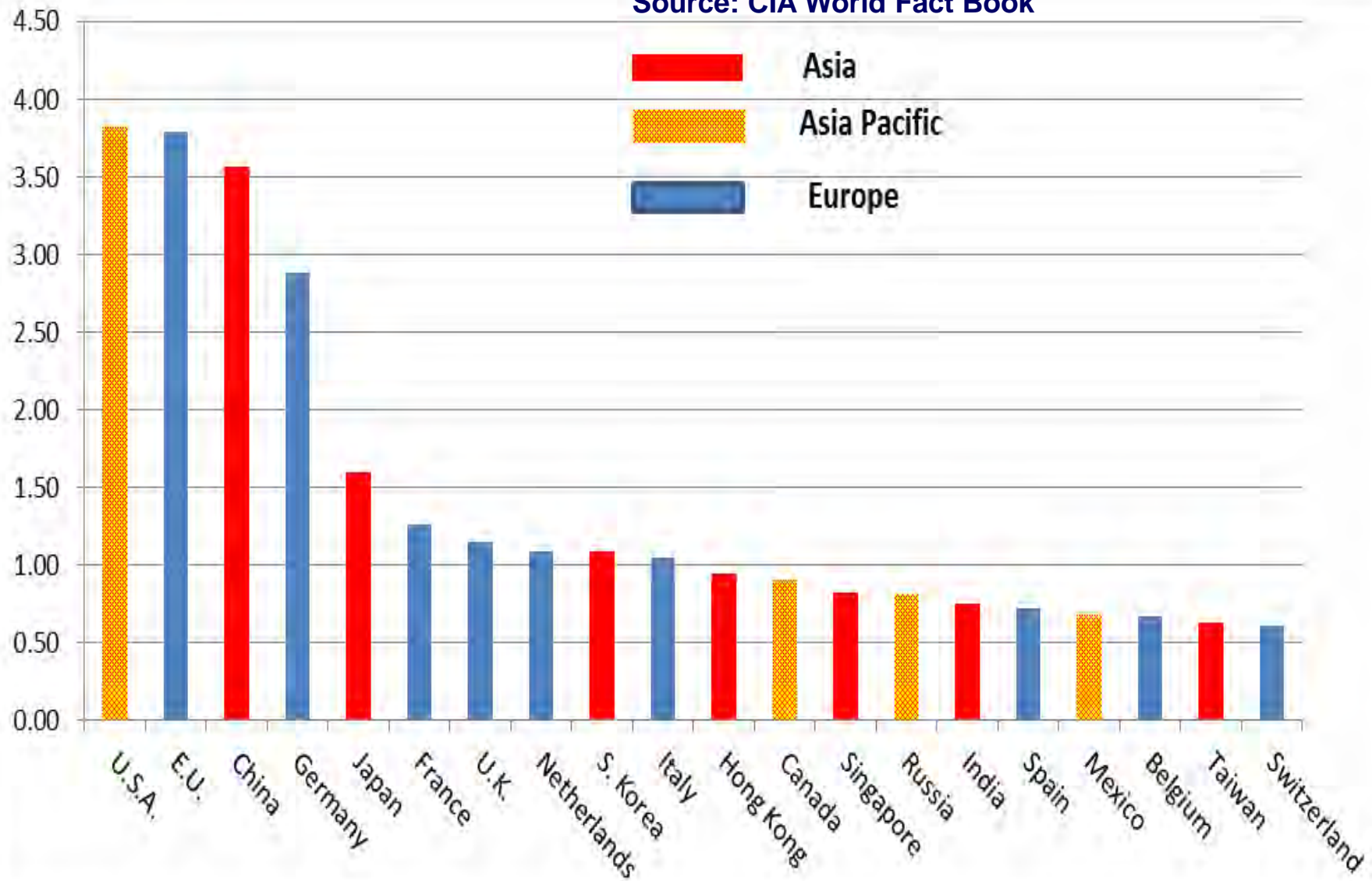
(Purchasing Power Parity Basis)

Source: CIA World Fact Book



2011 Trading Country Ranking

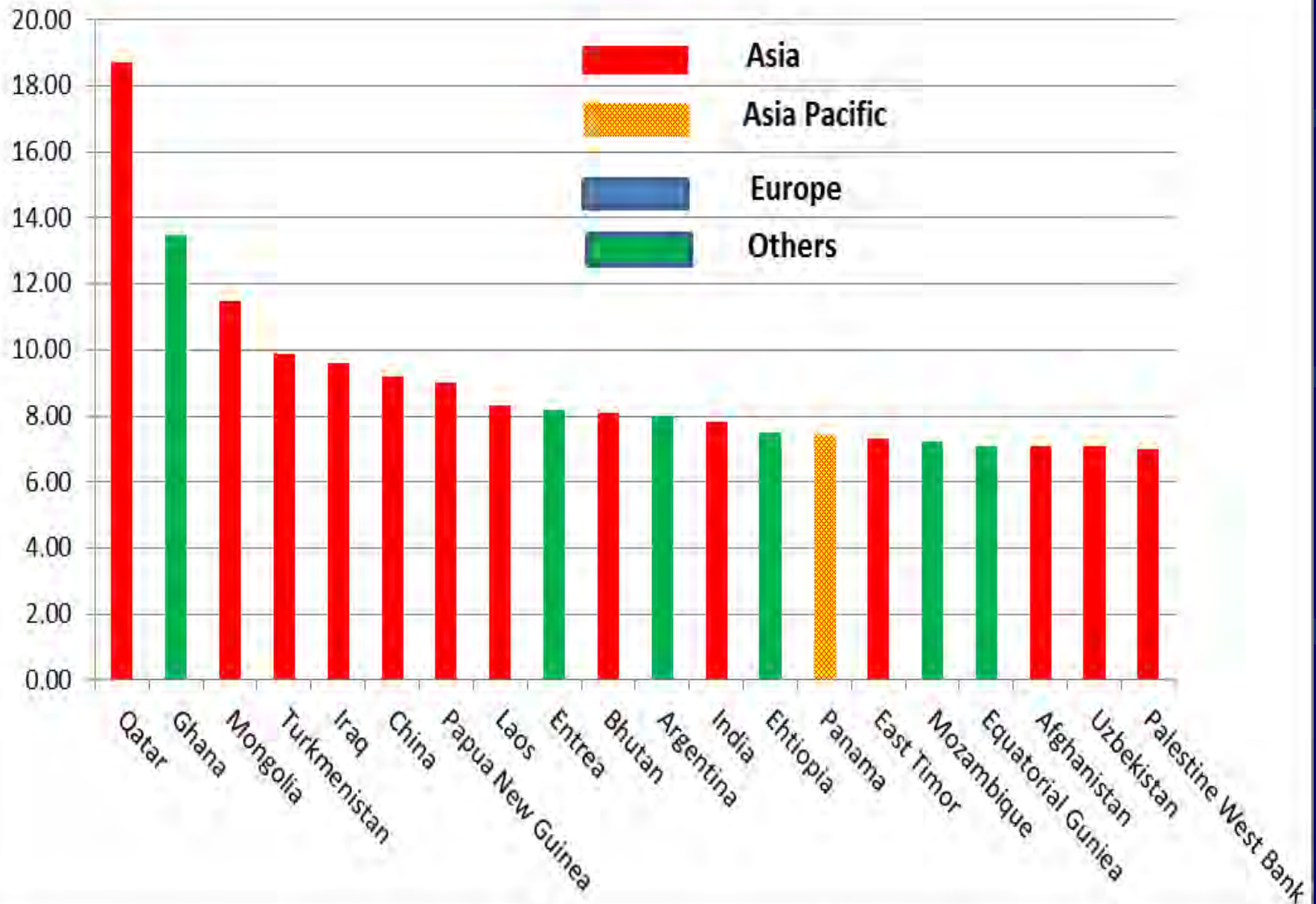
Source: CIA World Fact Book



GDP (US\$ Trillion)

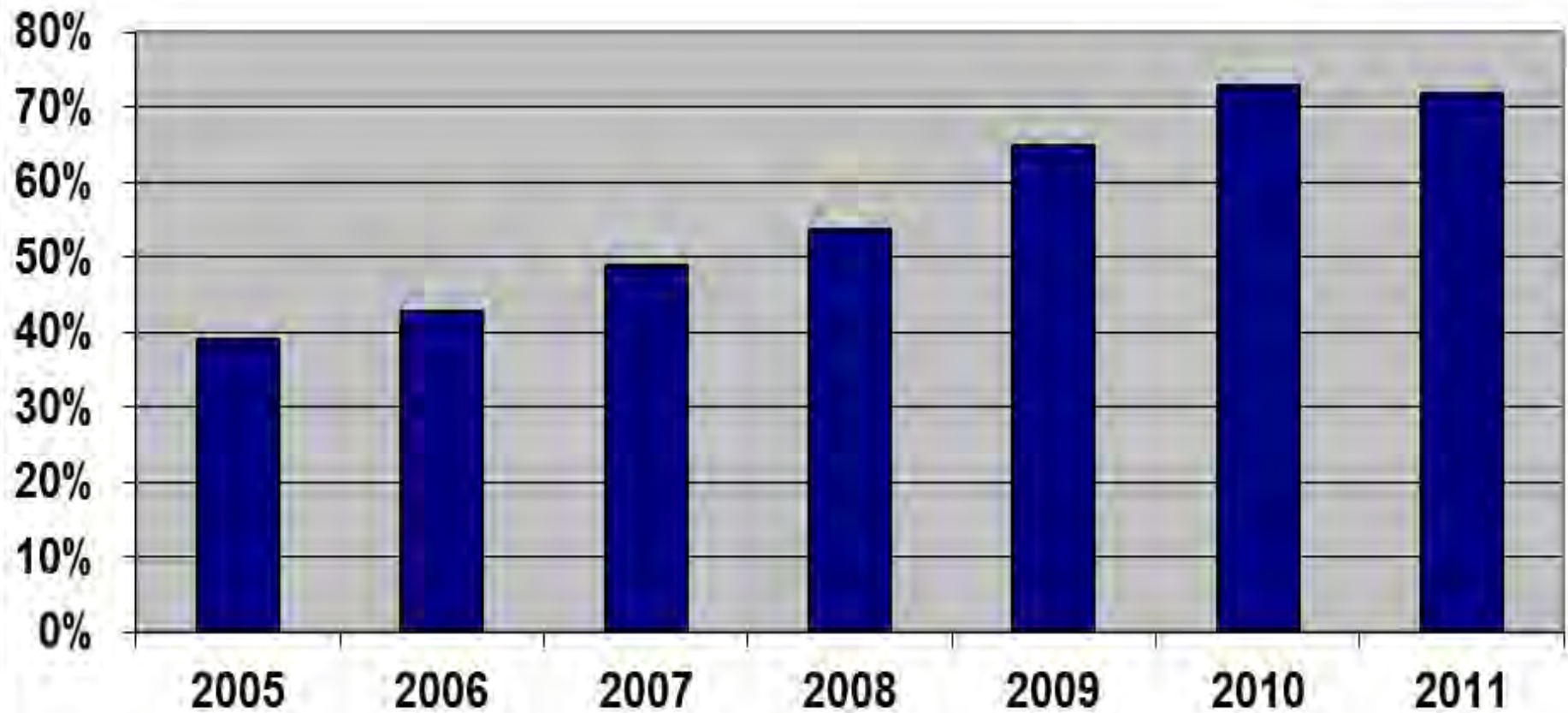
2011 Real GDP Growth Rate (%)

GDP Growth Rate (%)



China Imports Growth

(% of U.S. Imports)

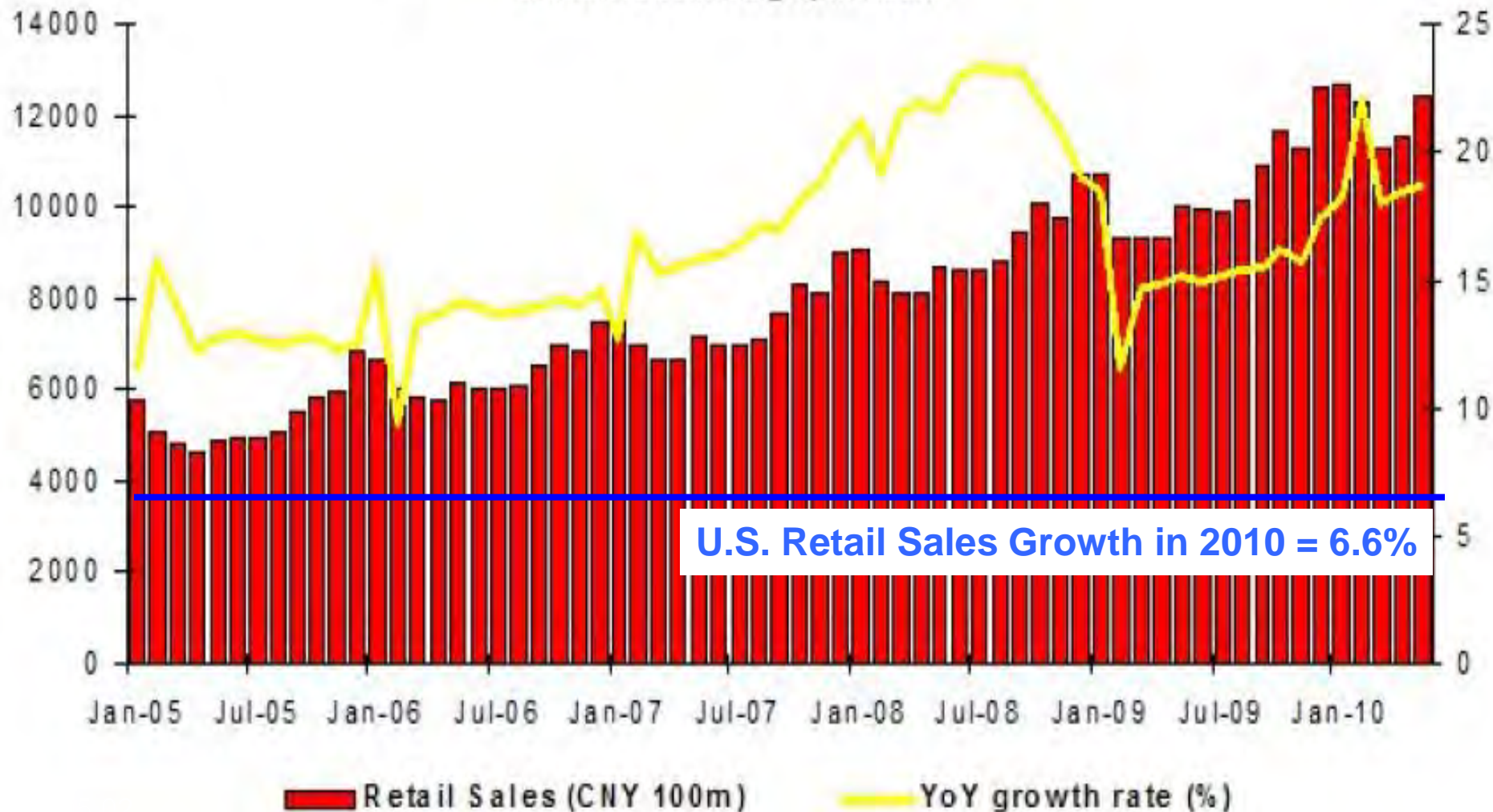


Sources: Statistics Canada, PRC Ministry of Commerce, U.S. Census Bureau, CIA World Fact

Retails Sales Growth - China (2005-2010)

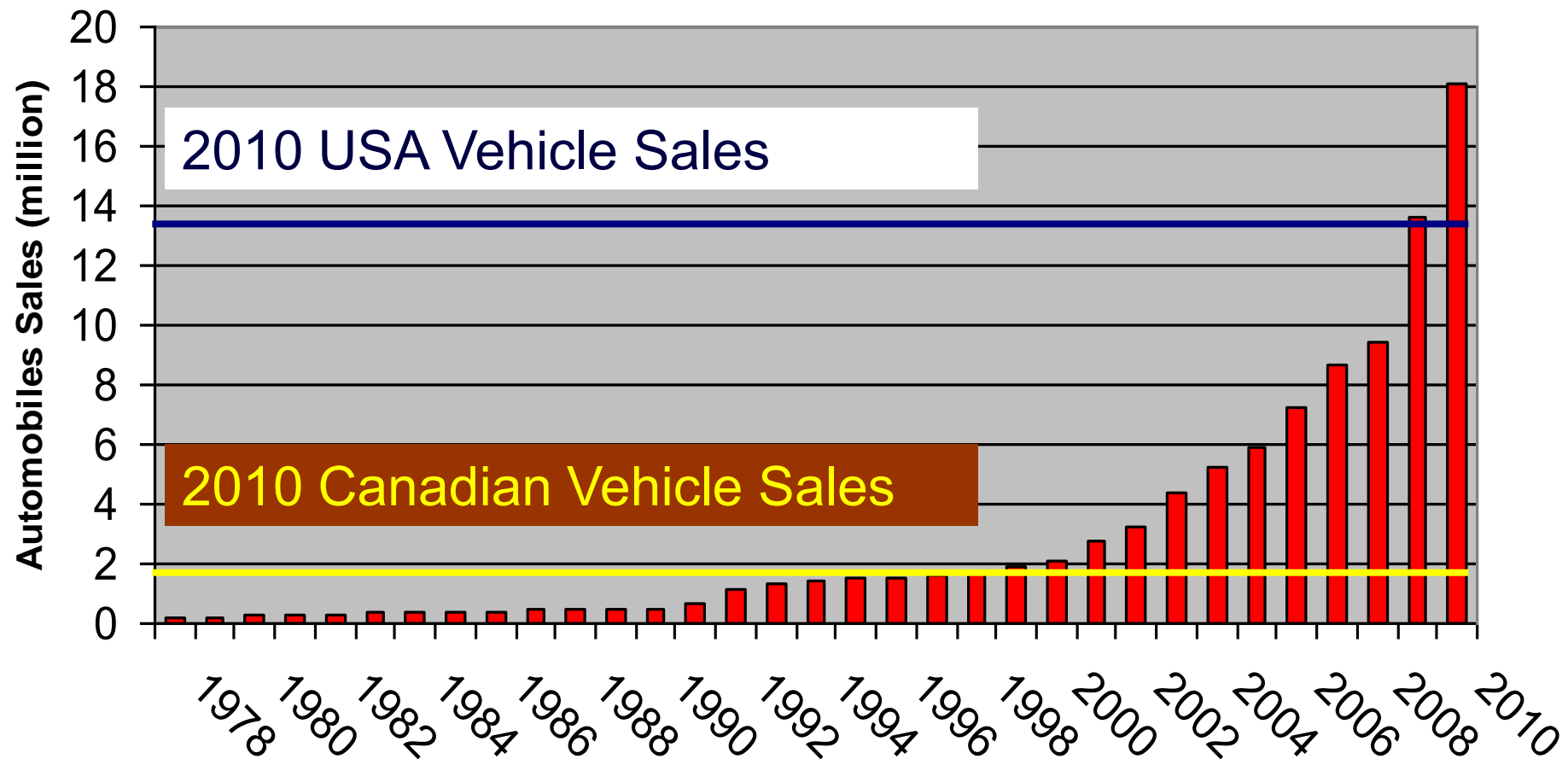
EconGrapher

China Consumer - Retail Sales

Source: www.econgrapher.com

China Grew While North America Diddled

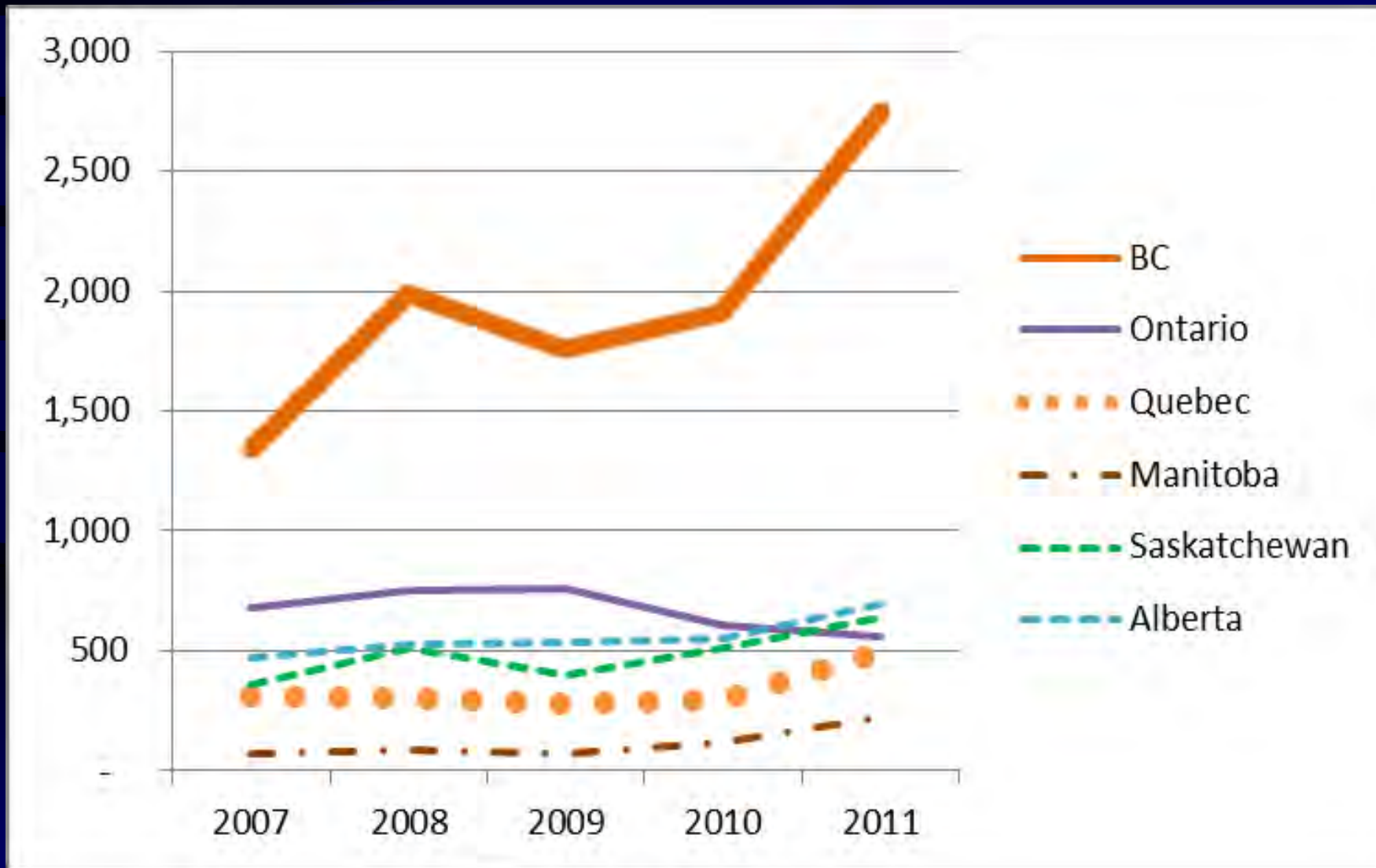
Automobiles Sales in China (1978-2010)



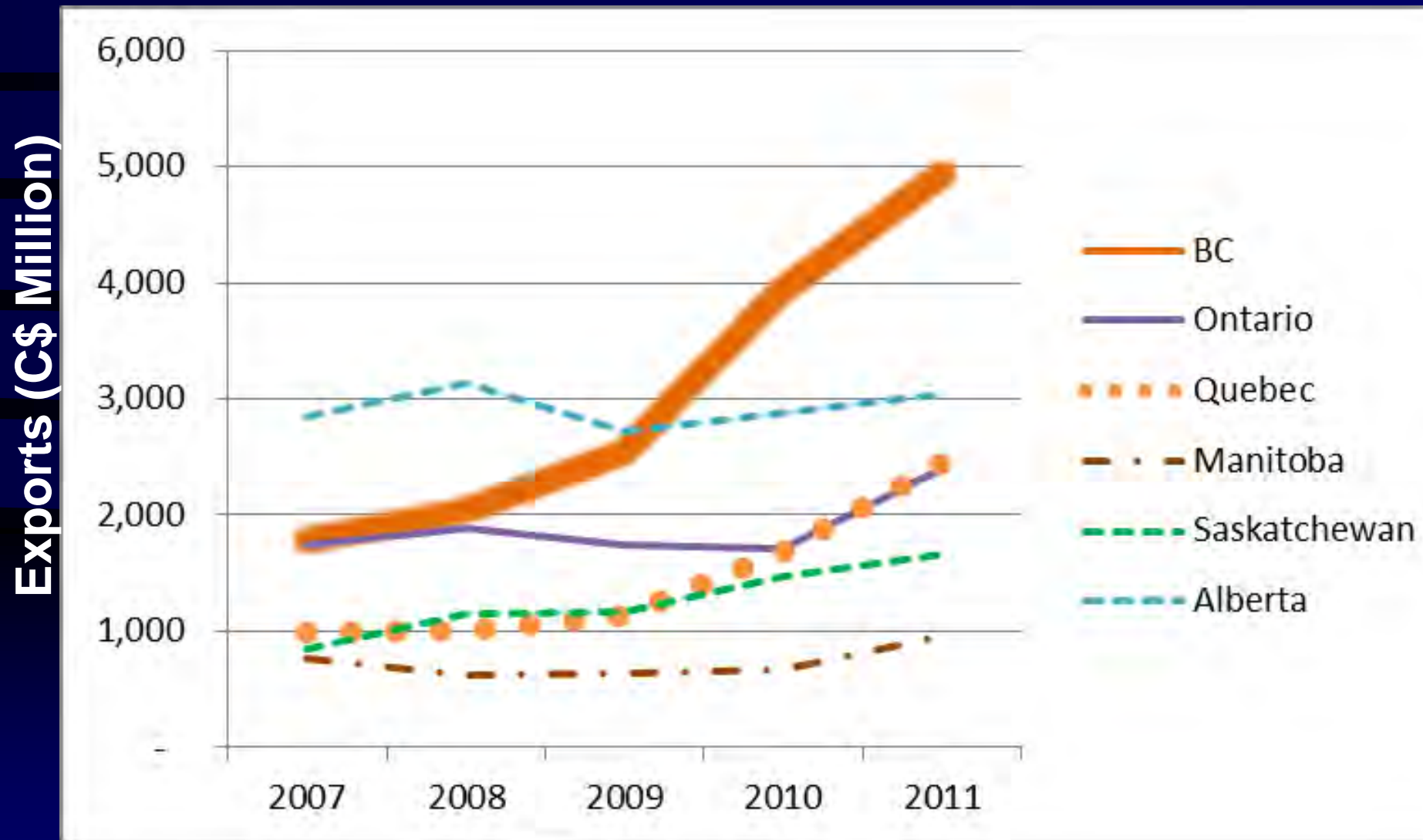
Source: Automobile Association of China

Canadian Exports to South Korea

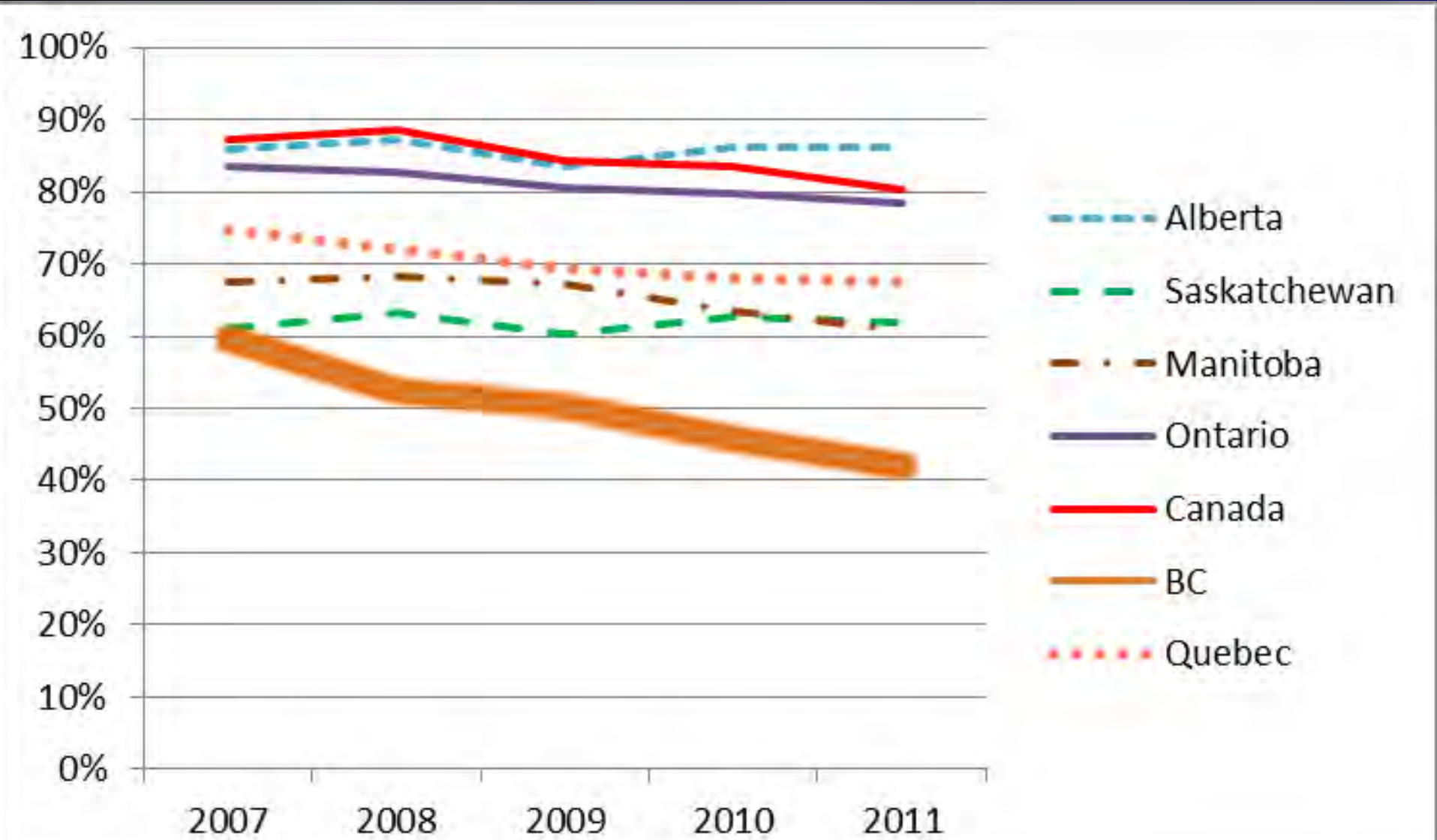
Exports (C\$ Million)



Canadian Exports to China



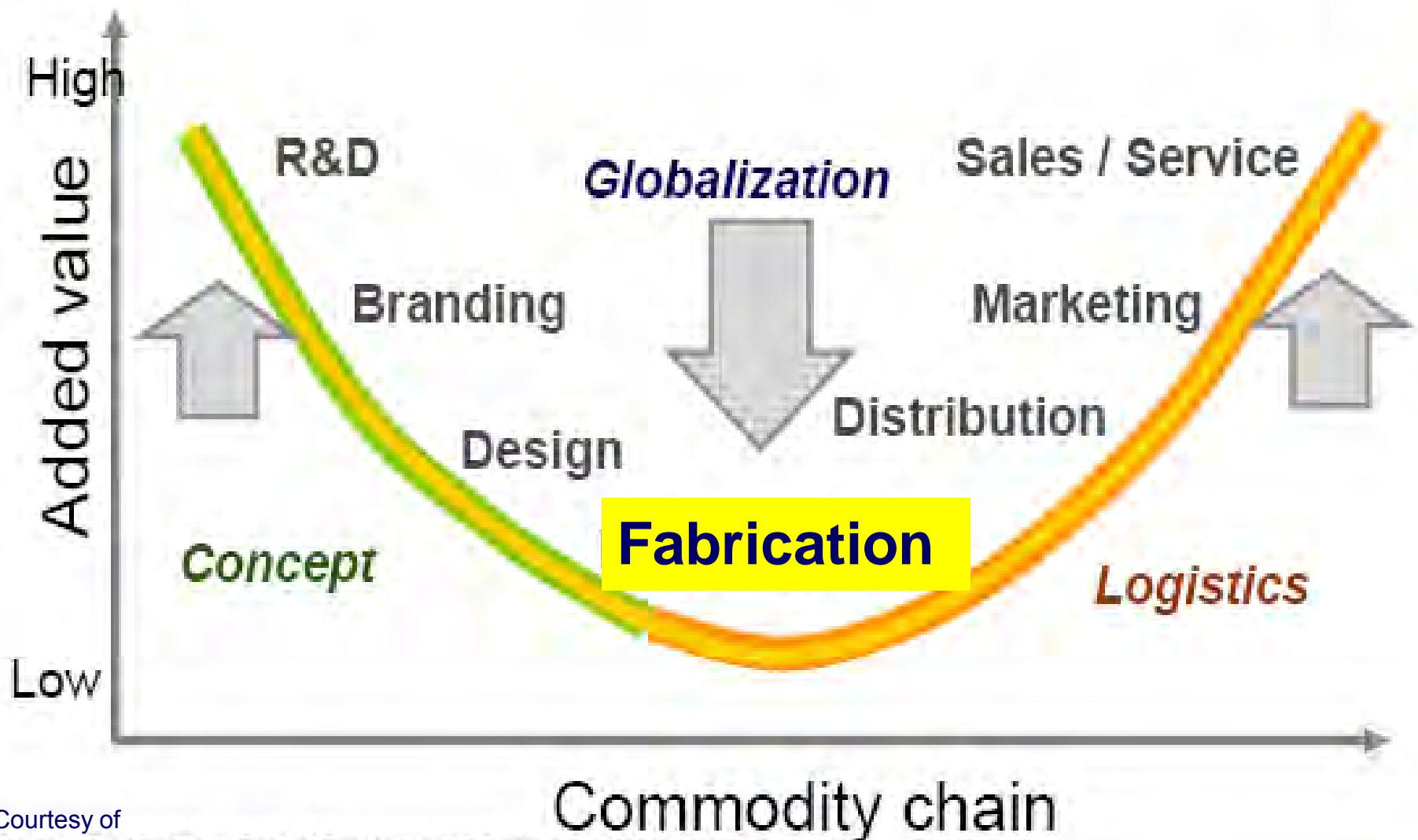
Canadian Exports to U.S.A. as % of Total



Driving Forces in Global Value Chains

- **Labour and skills** availability
 - Education and training
- **Innovations**
 - Technologies and business models
- **Infrastructure**
- **Resources**
 - Natural and recovered
- **Global Partnerships and markets**

Economics of Advanced Technology Industries



The Apple I-Pod



Parts

23.5 Cents

Assembly

1.5 Cents



25 Cents

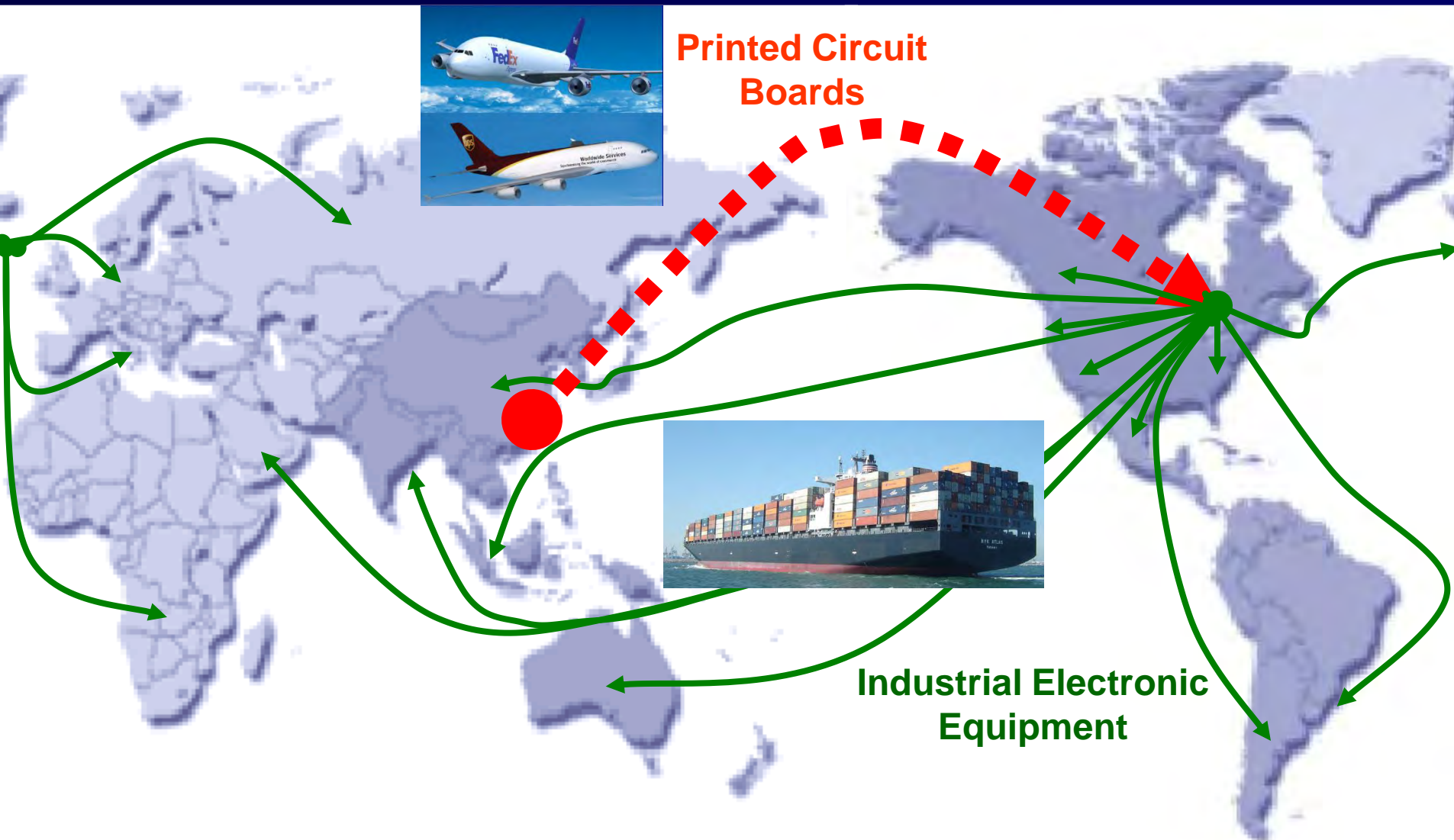


**Distribution
& Retail**

50 Cents

Worldwide Sourcing

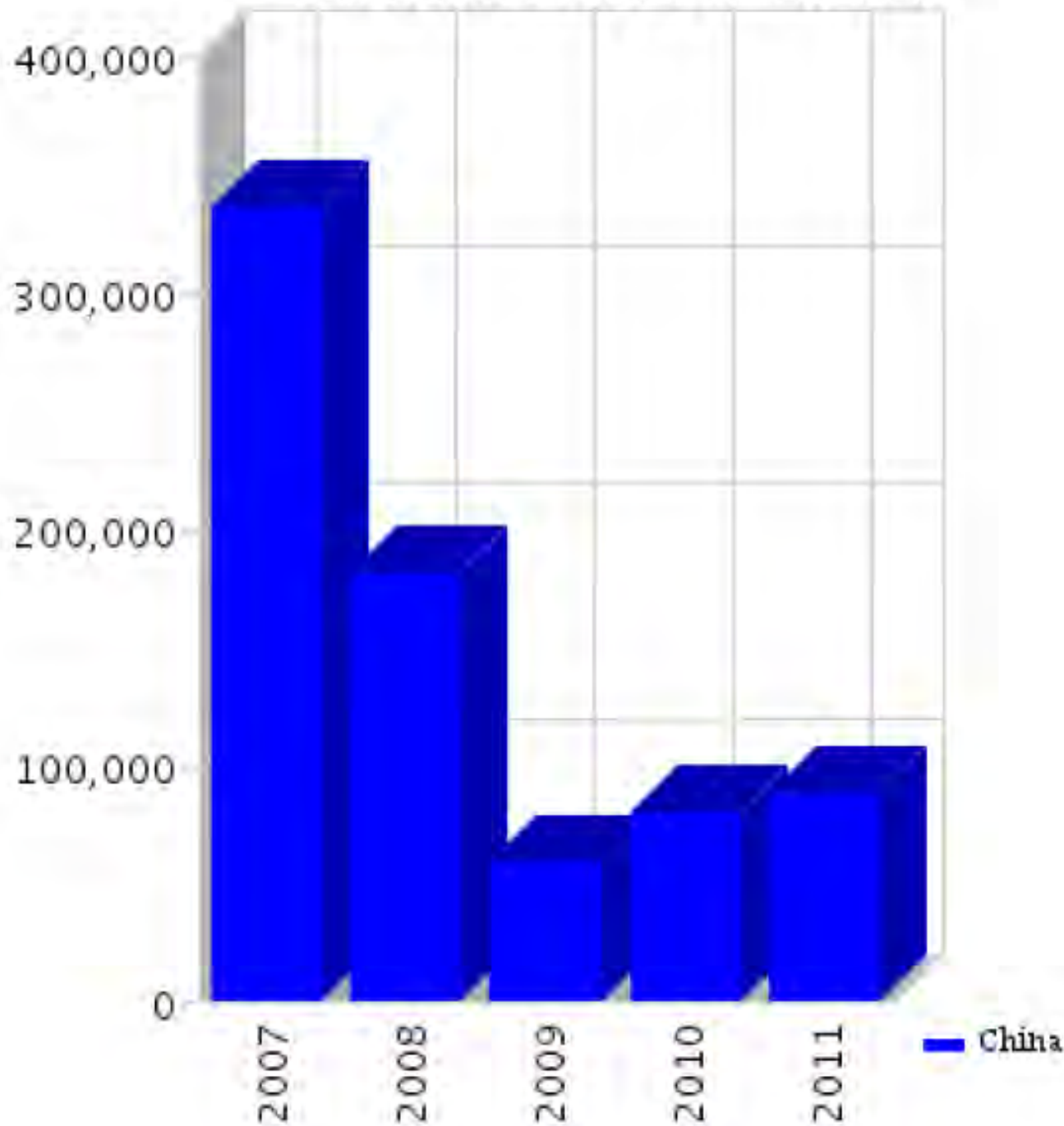
– Industrial Electronic Equipment



Victoria's Secrets Lingerie

- 2005
 - 65% by marine
 - **35% by air**
- 2009
 - 10% by marine
 - **90% by air**





Canadian Auto Parts Export to China

Source: Statistics Canada

Global Vision

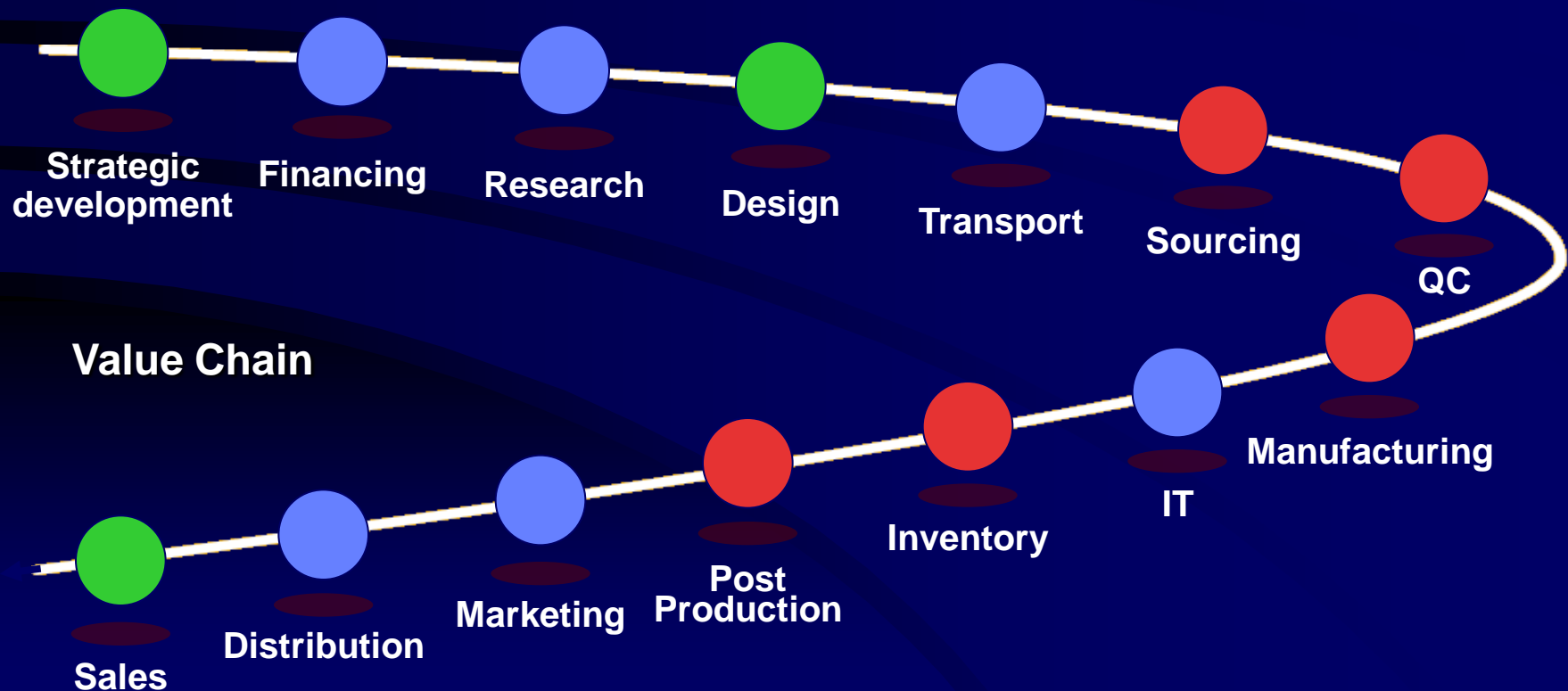
Flexible business models

In Home Market

In China

In Hong Kong

Producing in China for global markets



Courtesy of HKTDC

Managing Risks for Canadian Manufacturers and Exporters

- **Risks**
 - Currency volatility
 - Commodities price volatility
 - Skilled labour availability
 - Regulatory changes
- Risks management through **diversification**

Risks Management through Diversification

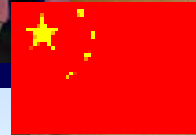
- Natural **currency** hedging
- Geographically distributed **skilled labour** availability and costs
- **Technologies exposure** beyond Canada
- Alternative **materials and process** options
- Minimize impact of localized “**Black Swans**”

Strategic Opportunities for Canadian Manufacturers and Exporters

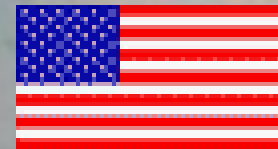
- Leverage natural resources into **high value services and solutions**
- Leverage **fabrication competitiveness** in emerging economies to expand global market share
- Adapt **strategy, culture and skills** to manage rapidly growing emerging economies

Global Value Generation

Recovery



Global value



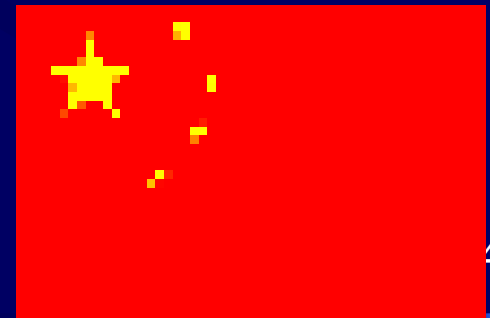
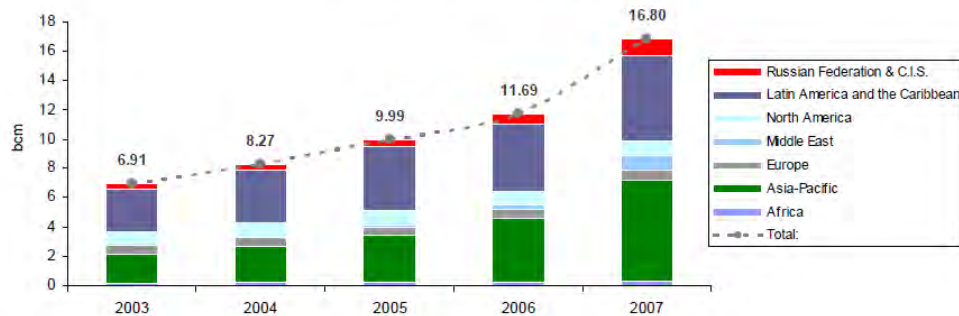
Left to Rot



Westport™

The global leader in natural gas engines—setting the technology standard.

Estimated natural gas consumption by NGVs

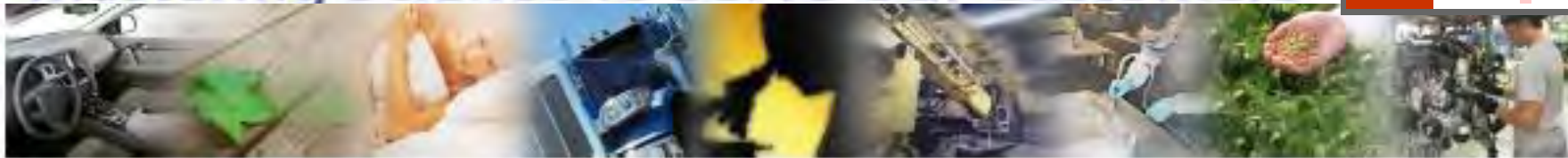




THE WOODBRIDGE GROUP™

Mastering Science To Serve Our Customers™

ACDEG



GreenLite™
Low Mass Environmental Automotive Technologies

Low Mass Environmental
Foam Technologies



COMFORTSense™
Textured Surface Comfort Technology

Textured Surface
Comfort Technology



TrimVisible™
Visual Performance For Trim Apertures

Visual Performance
For Trim Apertures



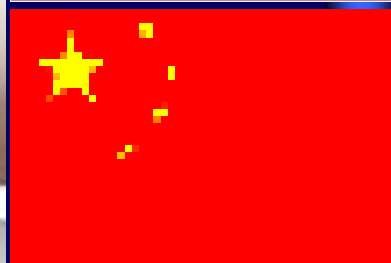
VibControl™
Vibration Management Foams

Vibration Management
Foam Technology



ComforTechLE™
Performance Seating Low Emission Foams

Performance Seating
Low Emission Foams



15 of 62

Factories

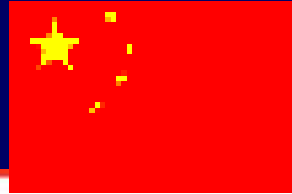
in China

More, Better, Faster™

CMP
GLOBAL



ACDEG



PROVIDERS OF COMPLETE DIECAST SOLUTIONS



2013.05.02

Investment and Management of Global Ventures

- **International talent flow**
- Direct international flights
- Competitive air fares
- Flight frequencies

Air Cargoes Service for Wealth Generation

- Access to global markets
- Access to global supply chains
- Access to **high-valued niche markets**

BOMBARDIER

Planes. Trains. Worldwide.

Aerospace

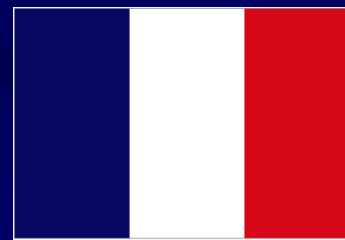
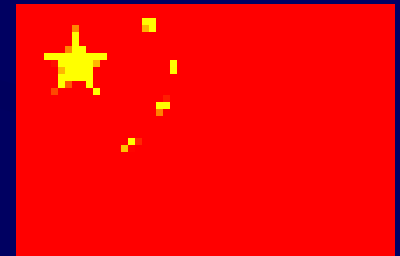


- Products -

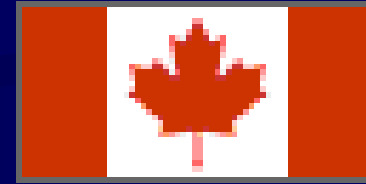
Transportation



- Products & Services -



High Liner Foods



Clearwater Seafood



frozen-at-sea
arctic
surf
clams
(Hokkigai)



frozen-at-sea
argentine
scallops



TVI-C-07010



Fish Can Fly Too!



圖利用循環水養殖系統飼養的斑鰾，無論
質量及數量，都大大提高，穩定性極高。

Hog Industry in China (2012)

- Pork Production
 - 80 million MT
 - 1,000 million animals

Source: Chinese Ministry of Agriculture and Chinese National Bureau of Statistics

Canadian Advantages

- Carcass Weight per Animal
 - 77 kg (Species in China)
 - 89 kg (Species in Canada)

Pigs Can Fly



- 800 breeder sows per flight from Canada by air
- 200,000 pigs for slaughter in China

Pigs Can Fly



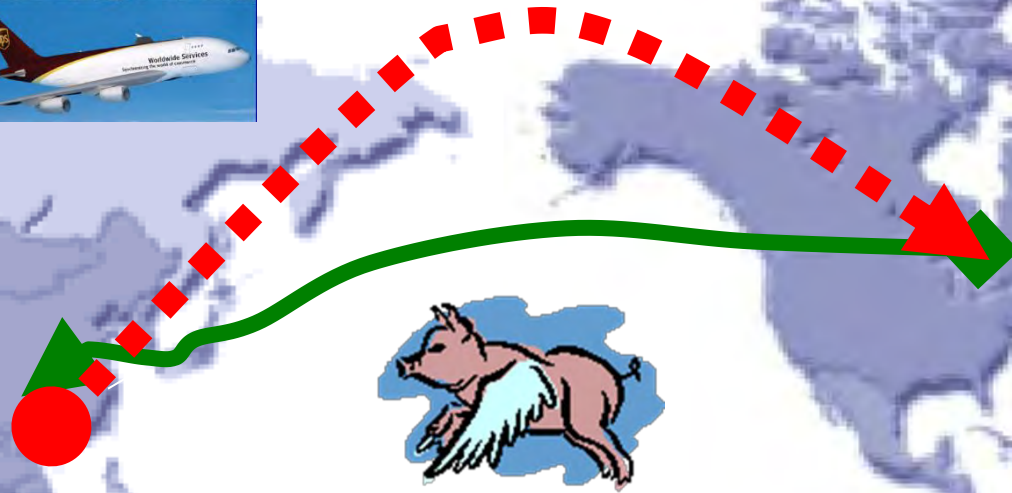
- 1 Airbus A340 flight /day everyday from Winnipeg International Airport
- 73 million pigs per year for slaughter in China (8% of China's pork consumption)
- Annual export value – \$930 million

Trans-oceanic Air Cargoes City-Pairs

Guangzhou - Chicago



Printed Circuit
Boards, I-phones



Guangzhou

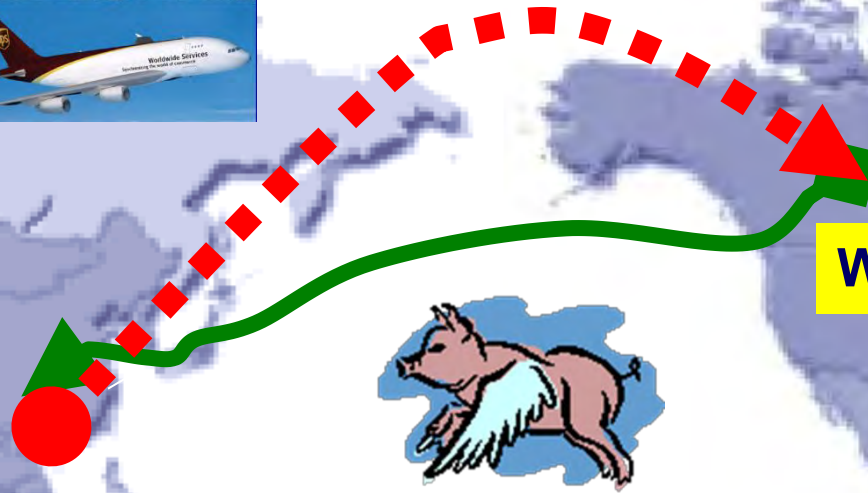
Chicago

Trans-oceanic Air Cargoes City-Pairs

Chongqing - Winnipeg



?????????

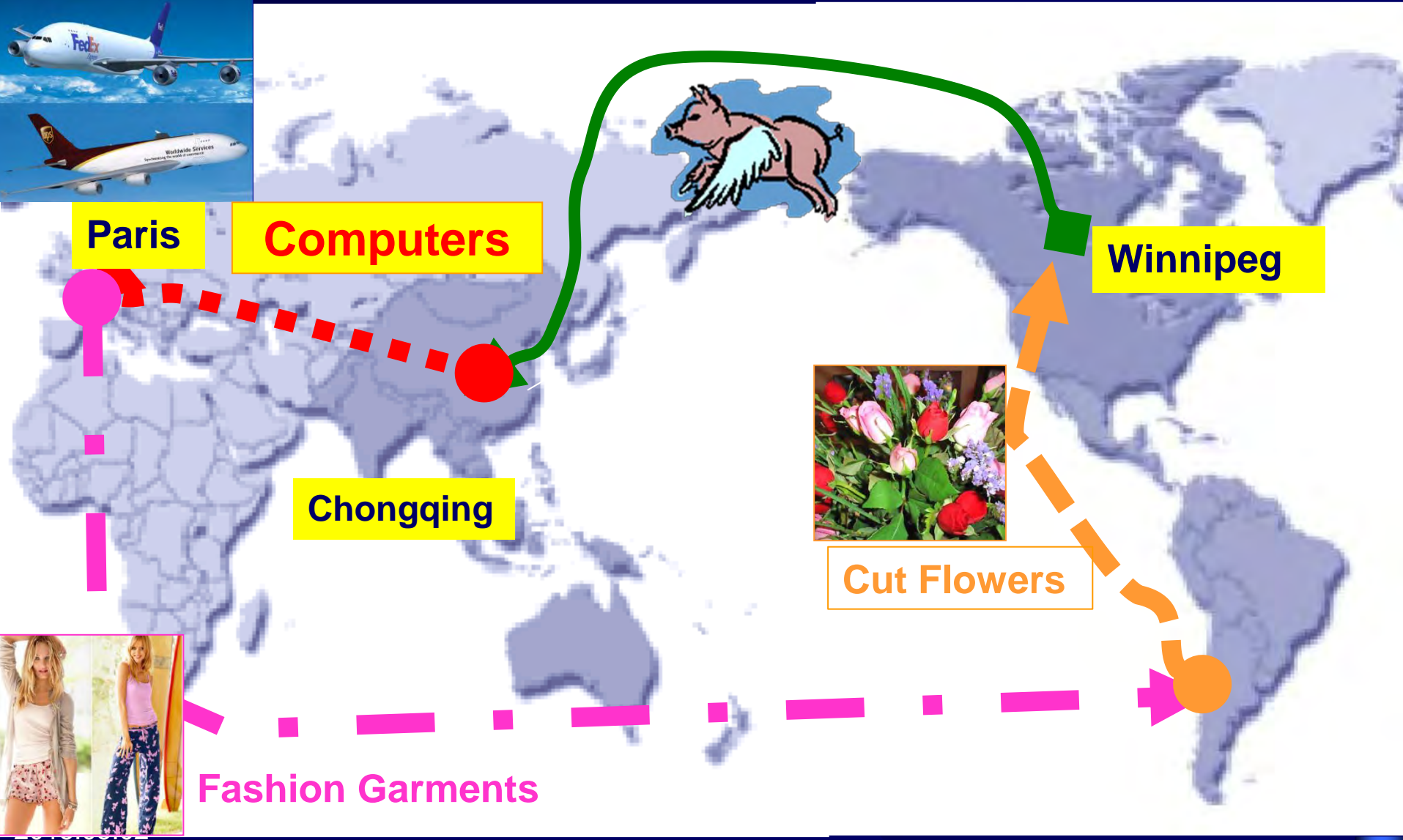


Chongqing

Winnipeg

Air Cargoes Global Routes

Santiago – Winnipeg – Chongqing – Paris



Policy Innovations to Meet Market Needs

- Define a reasonable scope to protect Air Canada's interests as a **national carrier**
- Open up the rest to **international competition**
- Offer subsidized services to **low-density domestic destinations** through tendering by private carriers
- Encourage **open sky global route air cargo service**

Summary (1)

- Canada has a favorable manufacturing environment
- Driving forces of global value chains
 - Resistance is futile
- Risks management through diversification of markets and supply chains

Summary (2/2)

- Offer reasonable but limited scope of protection to Air Canada as a national carrier
- Support **low-density destinations** with subsidies through open competition
- Encourage **open sky air cargo policies** as an economic development tool to help Canadian businesses access global markets and supply chains