Duke | CENTER on GLOBALIZATION, GOVERNANCE & COMPETITIVENESS at the Social Science Research Institute

Latin America's Prospects for Upgrading in Global Value Chains

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El Colegio de Mexico, Mexico City

March 14-15, 2012

Agenda

1 **Global Value Chains: An Integrated Diagnostic Tool**

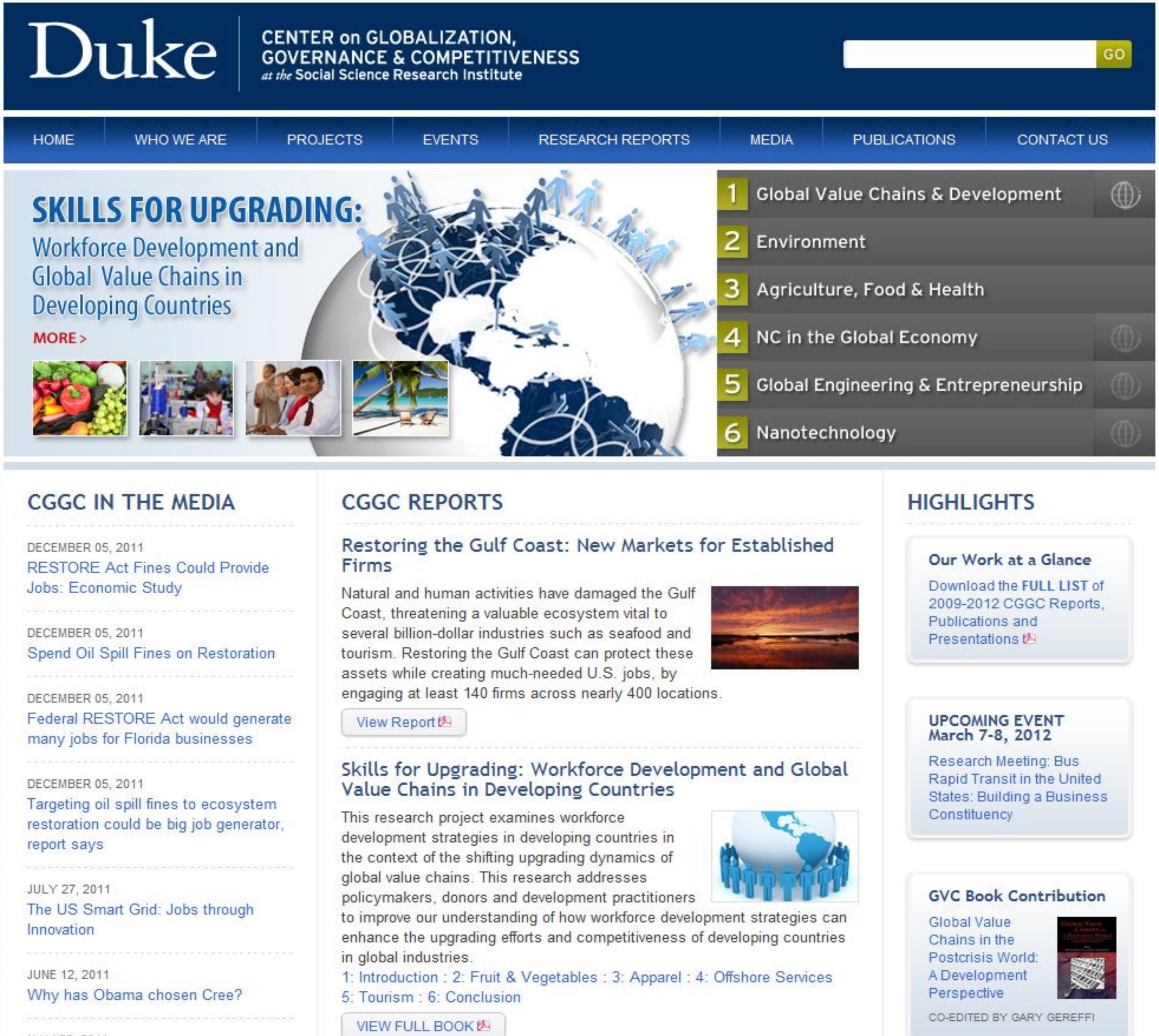
- Mapping of Value Chain Actors
- Goals and Dimensions of Value Chain Development
- Widespread and Rapid Diffusion of GVC Framework

2 **GVC Governance**

3 **Upgrading in Latin America and the Caribbean**

4 **Emerging Themes for GVC Analysis**

- Workforce Development
- Inclusive Development: Linking Social and Economic Upgrading
- New Metrics to Determine Where Value is Created and Captured in GVCs



Website: Duke CGGC

Key GVC Concepts: Governance & Upgrading

The global value chain framework was developed over the past decade by a diverse interdisciplinary and international group of researchers who have tracked the global spread of industries and their implications for both corporations and countries

Global value chain analysis provides both conceptual and methodological tools for looking at the global economy

- **Top down** – a focus on lead firms and inter-firm networks, using varied typologies of industrial "governance"
- **Bottom up** – a focus on countries and regions, which are analyzed in terms of various trajectories of economic and social "upgrading" or "downgrading"

GVC Analysis: Actor-Centered and Holistic

Three main outputs:

1. A detailed mapping of the actors in specific value chains in particular countries or regions

2. An assessment of the development status in the value chain with regard to multiple analytical dimensions

3. The identification of constraints, opportunities and leverage points for value chain development leading to strategies to implement and finance interventions

Value Chain Development: An Integrated Diagnostic Tool

5 Development Goals

1. Poverty Reduction
2. Employment Creation and Income Generation
3. Economic Growth
4. Firm Development
5. Environmental Stability and Cleaner Production

7 Dimensions of Value Chain Analysis

1. Sourcing of inputs and supplies
2. Production capacity and technology
3. End markets and trade
4. Governance
5. Value chain finance
6. Sustainable production and energy use
7. Business environment and socio-political context

Source: *UNIDO, Diagnostics for Value Chain Development* (2011).

Relationship Between Value Chain Dimensions and Development Goals

(data are hypothetical)

	DEVELOPMENT GOALS				
Value Chain Development Dimensions	**Poverty Reduction**	**Employment and Income**	**Economic Growth**	**Firm Development**	**Cleaner Production & Environmental Sustainability**
Improving sourcing of inputs and supplies	+++	++	+++	++	-
Improved production capacity and technology	+	++	+	++	++
End-markets and trade	--		+	+	
Improved governance of value chain	++	+	+	++	
Improved sustainable production and energy use	-	+	++	-	++
Value chain finance	++	++	++	+++	+
Improved business environment and socio-political context	+	+	+++	+	++
TOTAL	++	+	++	++	+

+ Slight positive	++ Positive	+++ Very Positive
- Slight negative	-- Negative	--- Very Negative

Source: UNIDO, *Diagnostics for Value Chain Development: An Integrated Tool* (2011), p. 10.

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

UNITED STATES AGENCY INTERNATIONAL DEVELOPMENT
USAID

Department of Foreign Affairs and International Trade

DFID Department for International Development

OECD

ADB

International development agencies using the GVC framework in 2012

ILO
International Labour Organization

gtz

UNIDO

UNITED NATIONS
UNCTAD

WORLD TRADE ORGANIZATION

IABD
Inter-American Development Bank

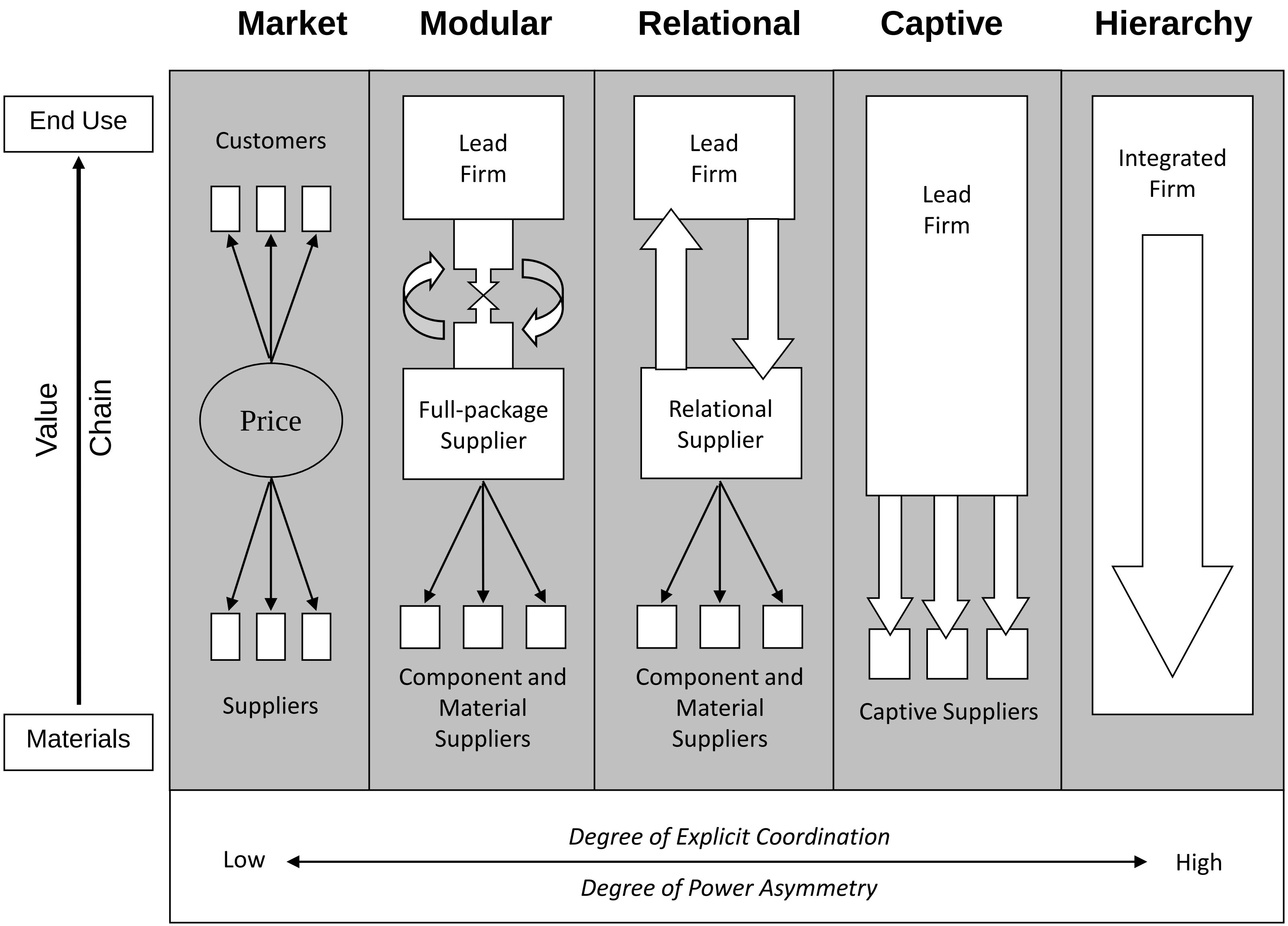
Danida

GVCs and contending development paradigms in IOs

	GVC	LED	Clusters	PSD	TVET	Poverty Reduction	Micro-finance
World Bank	x	x	x	x	x	x	x
IDB	x	x	x	x	x	x	x
DFID	x	x		x	x	x	
USAID	x		x	x	x	x	x
GTZ/GIZ	x	x		x	x	x	x
WTO	x						
OECD	x		x	x	x	x	
ILO	x	x		x	x	x	x

2. GVC GOVERNANCE

Five GVC Governance Types

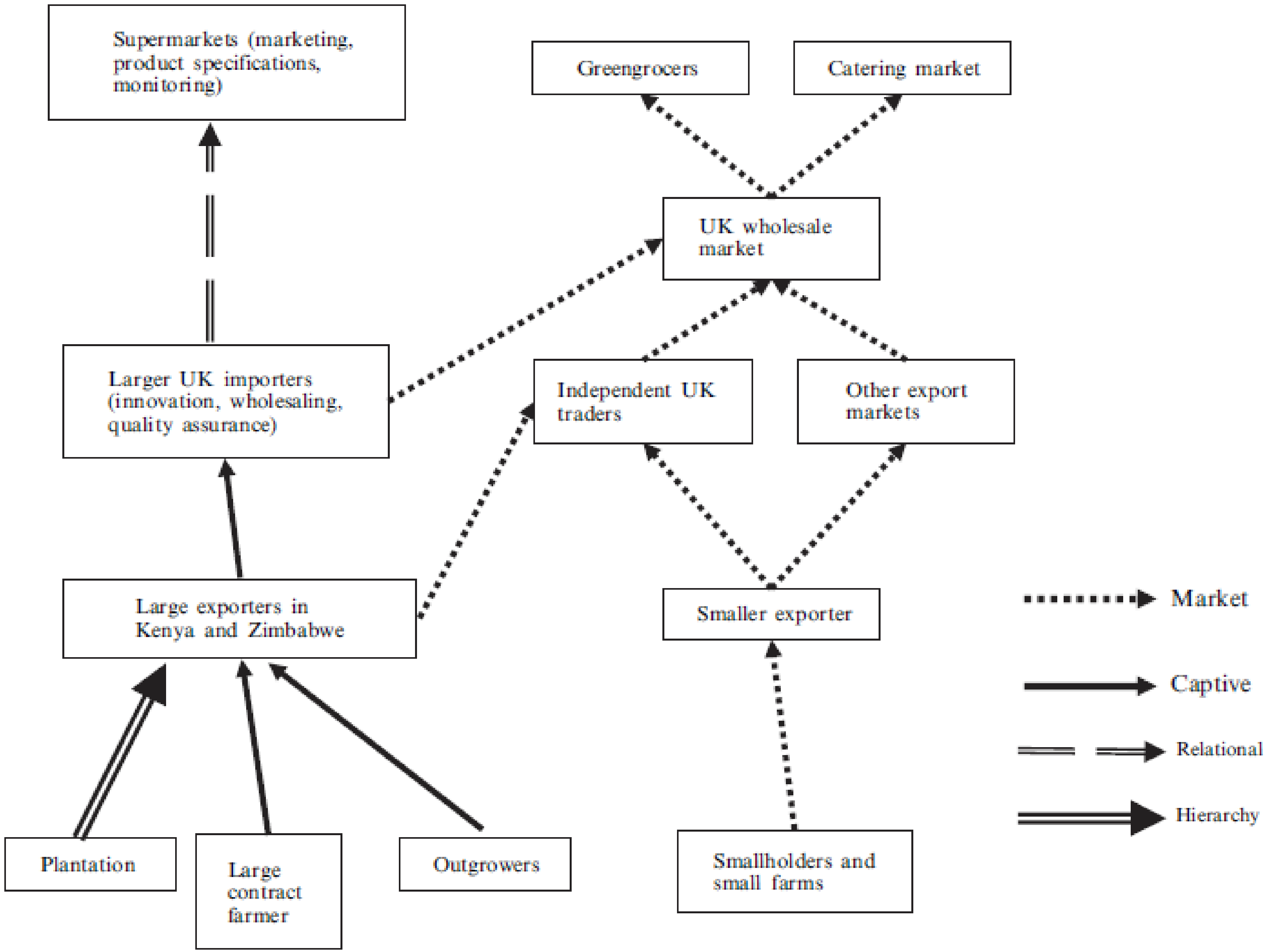


Dynamics in Global Value Chain Governance

Governance Type	Complexity of transactions	Ability to codify transactions	Capabilities in the supply-base
Market	Low	High	High
Modular	① High ②	High ④	High
Relational	High	③ Low	⑤ High ⑥
Captive	High	High	Low
Hierarchy	High	Low	Low

① increasing complexity of transactions (codifiable transactions; decrease in supplier competence)
② decreasing complexity of transactions (easier to codify transactions; high supplier competence)
③ better codification of transactions (open or de facto standards; computerization)
④ de-codification of transactions (new products; new processes)
⑤ increasing supplier competence (technological learning)
⑥ decreasing supplier competence (new technologies; high switching costs)

Multiple governance structures in fresh vegetable value chain: Kenya and Zimbabwe to Europe, late 1990s.



Source: C. Dolan and J. Humphrey, "Changing governance patterns in the trade in fresh vegetables between Africa and the United Kingdom, *Environment and Planning A* (2004), p. 497.

GVCs Matter for Trade Promotion

Traditional Trade Model

- Arms'-length trade:
  - Identify & match buyers and sellers
- Market access:
  - Opportunities for exporting & importing "final" goods
  - Foreign economy as end market for exports
- Market information:
  - Focusing on sales, marketing & distribution
  - Emphasizing final consumption trends

GVC Trade Model

- Value chain trade:
  - identify lead firms & inter-firm governance
- Value chain access:
  - Opportunities for "intermediate" goods & various services
  - Foreign economy as a site for market, production, R&D, etc.
- Value chain information:
  - Activities across the value chain, particularly specialized suppliers & R&D/production service providers
  - Emphasize value chain cooperation & upgrading
  - Benchmark best practices for upgrading

3. ECONOMIC UPGRADING

Economic Upgrading Strategies

Product upgrading

- better quality
- more features
- improved design

Process upgrading

- increase scale and speed
- improve efficiency and productivity (e.g., lean production)
- Introduce new technology

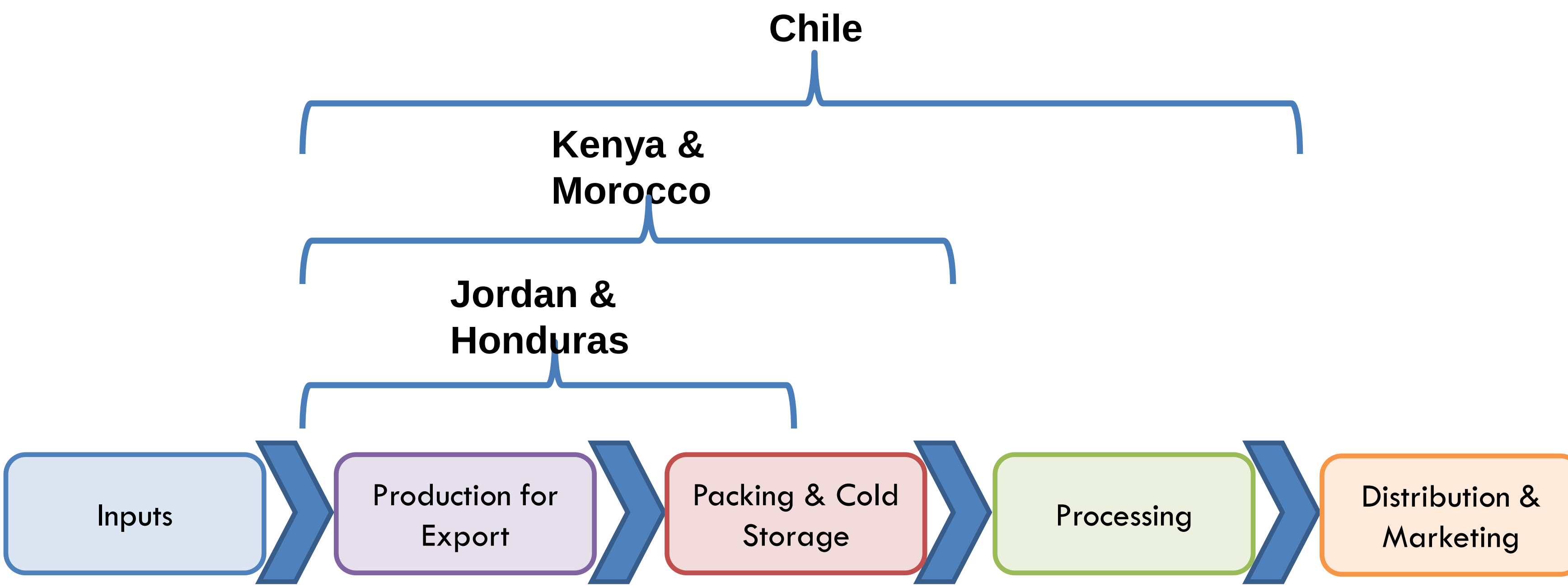
Functional upgrading

- acquiring new functions (or abandoning existing ones) to increase the overall skill content of the activities.

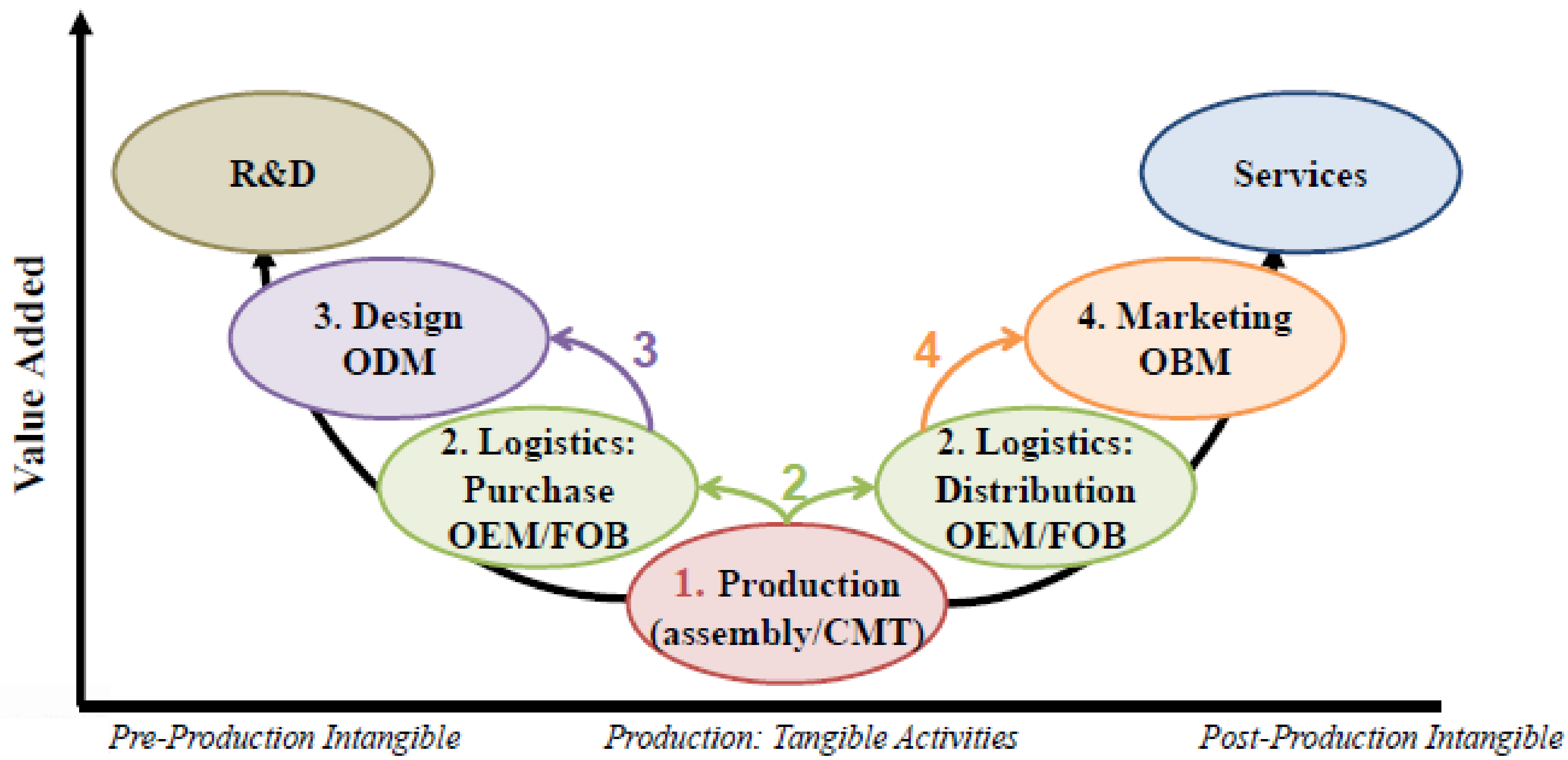
Both upgrading and downgrading can occur in an industry, and different types of firms (SMEs or large; local private, foreign or state-owned) can be affected.

Functional Upgrading:

Fruit & Vegetables Value Chain (simplified)

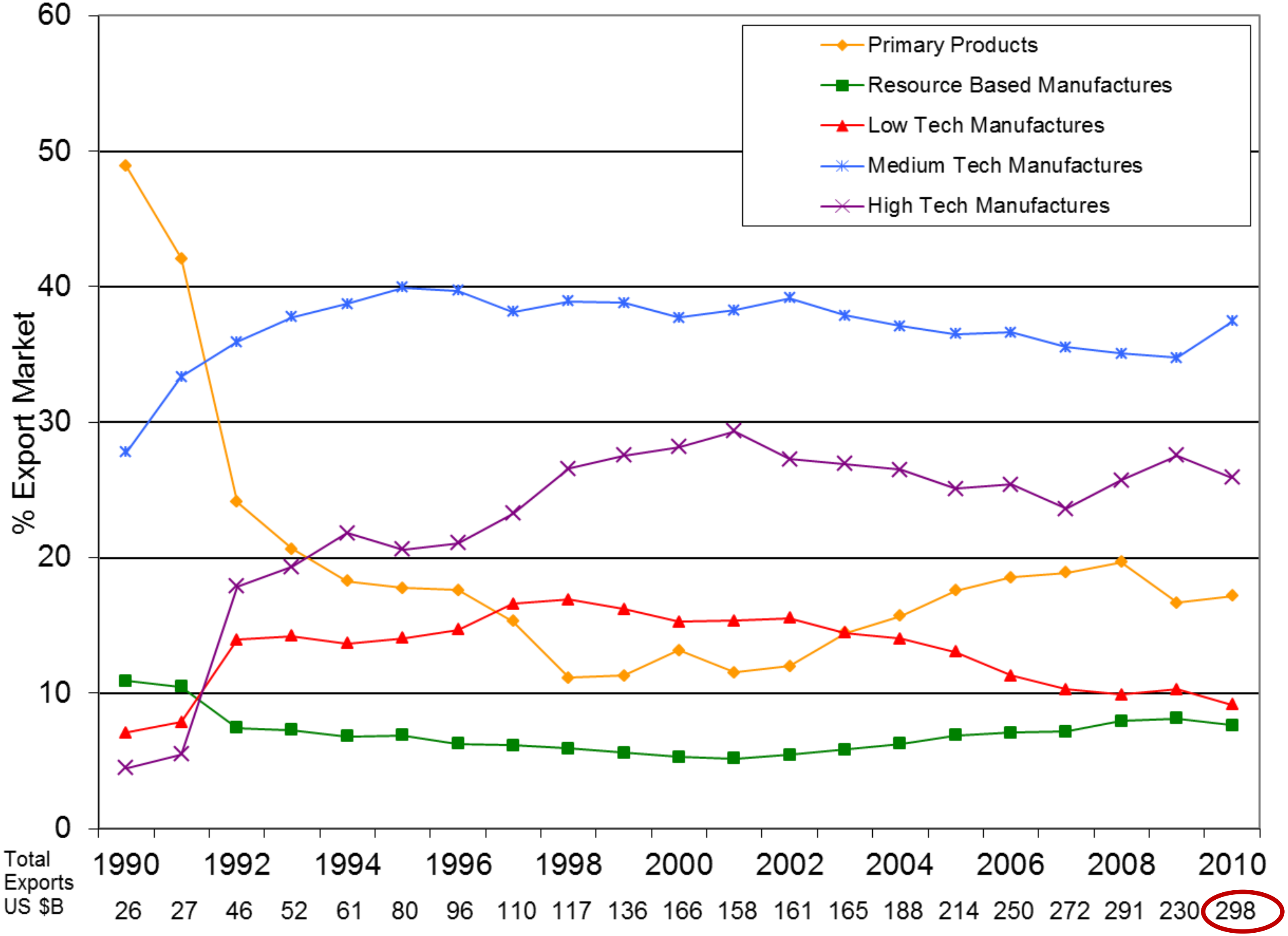


Upgrading and the Value-added Curve



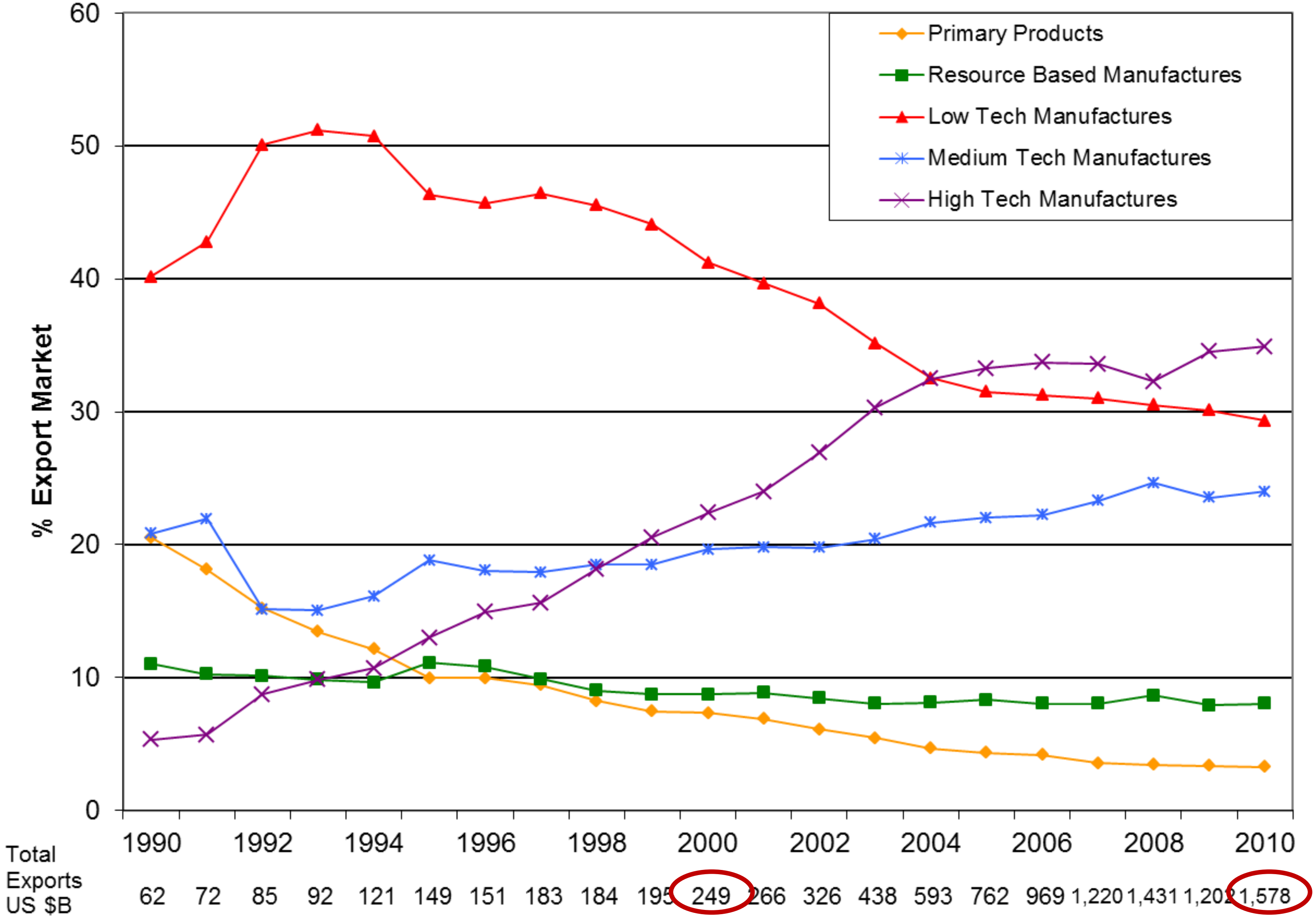
Source: CGGC

Composition of Mexico's Exports to the World Market, 1990-2010



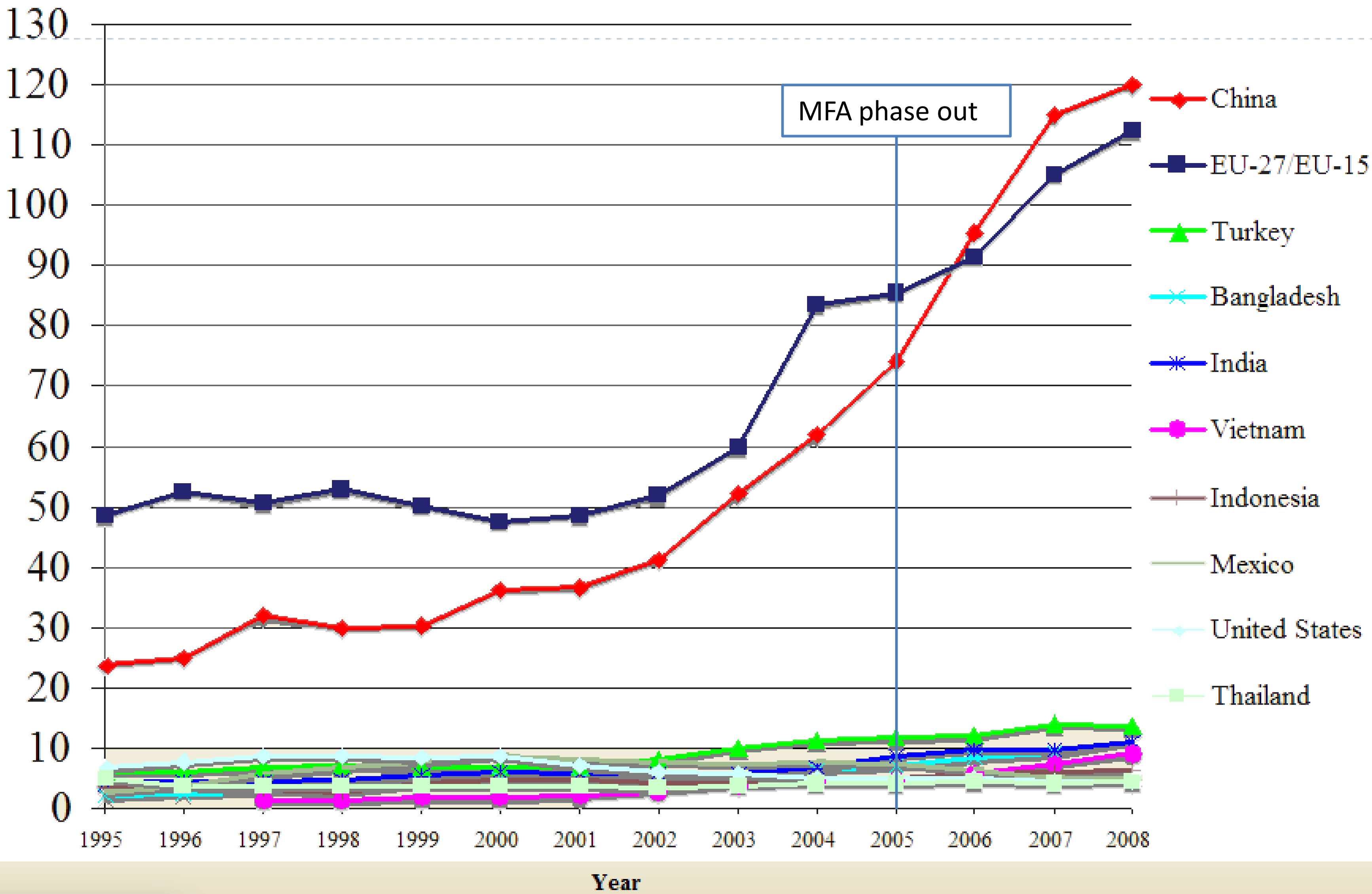
Source: UN Comtrade.

Composition of China's Exports to the World Market, 1990-2010



Source: UN Comtrade.

Shifts in Top 10 Apparel Exporters: 1995-2008

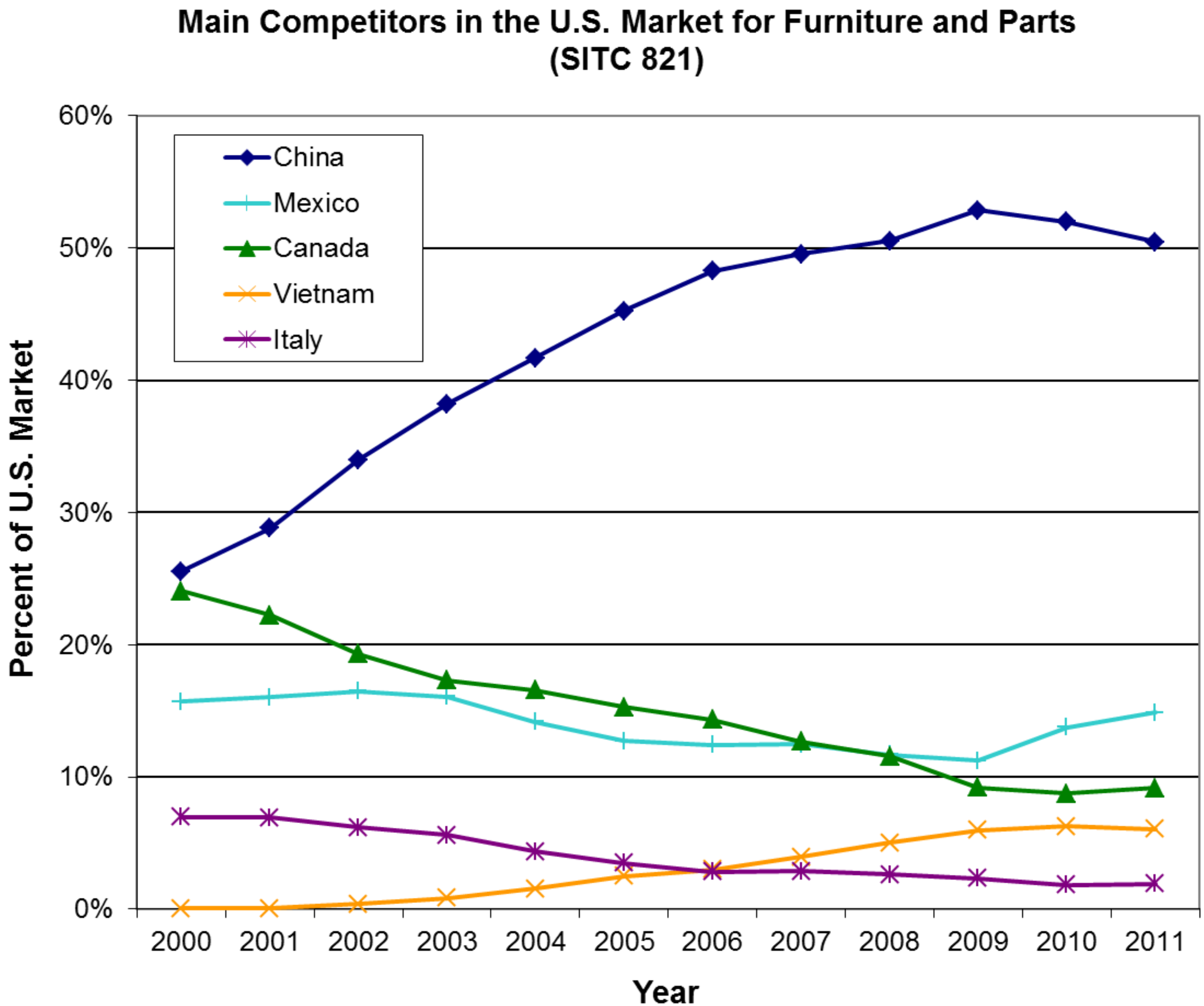


Source: WTO Interactive International Trade Statistics: Top 10 based on 2008 statistics (US$ billions).

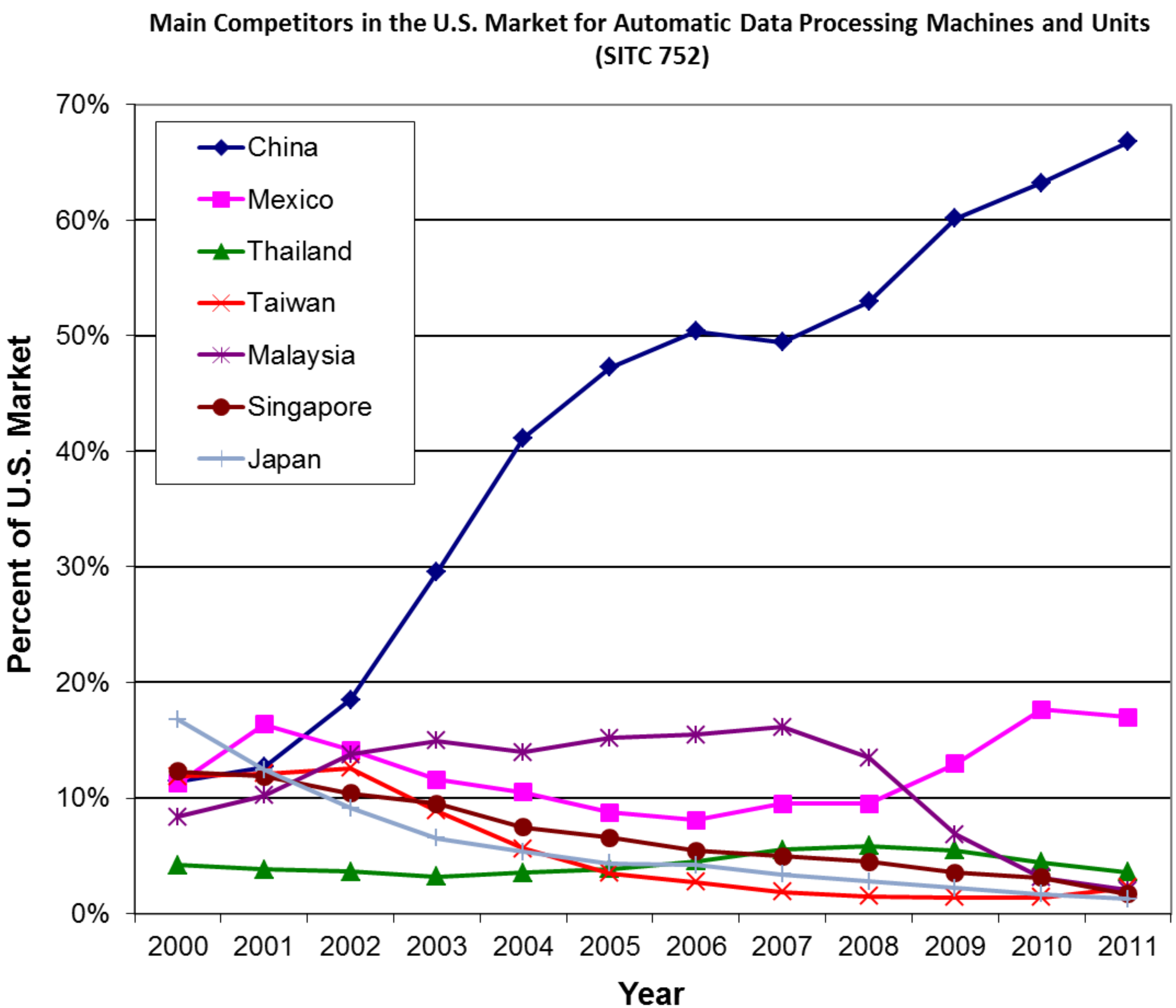
Mexico's and China's Leading Exports to the United States, 2000-2011

SITC	Product		2000 Value (billions)	2000 Share of US market	2011 Value (billions)	2011 Share of US market	Change in Market Share 2000-2011
752	Automatic Data Processing Machines and Units	Mexico	6.4	11.2	13.8	17.0	5.8
		China	6.5	11.4	54.2	66.7	55.4
		US Total	57.1		81.2		
764	Telecommunications Equipments and Parts	Mexico	9.2	20.4	13.0	12.9	-7.5
		China	4.8	10.6	46.2	45.9	35.3
		US Total	45.1		100.6		
778	Electrical Machinery and Apparatus	Mexico	3.2	18.2	5.3	18.0	-0.2
		China	2.1	11.9	10.9	36.9	25.0
		US Total	17.6		29.5		
784	Auto Parts and Accessories	Mexico	4.7	16.1	14.0	27.5	11.4
		China	0.5	1.7	5.9	11.6	9.9
		US Total	29.2		51.0		
821	Furniture	Mexico	3.2	15.5	5.2	14.8	-0.8
		China	5.3	25.7	17.8	50.6	24.8
		US Total	20.6		35.2		
84	Articles of Apparel and Cothing	Mexico	8.8	13.1	4.1	4.6	-8.5
		China	8.9	13.3	34.9	39.4	26.1
		US Total	67.1		88.6		

Source: U.S. Department of Commerce (http://dataweb.usitc.gov), Downloaded Feb 13, 2012
U.S. General Imports, CIF Value



Source: USITC http://dataweb.usitc.gov downloaded Feb 14, 2012
U.S. General Imports, CIF Import Values



Source: USITC http://dataweb.usitc.gov downloaded Feb 14, 2012
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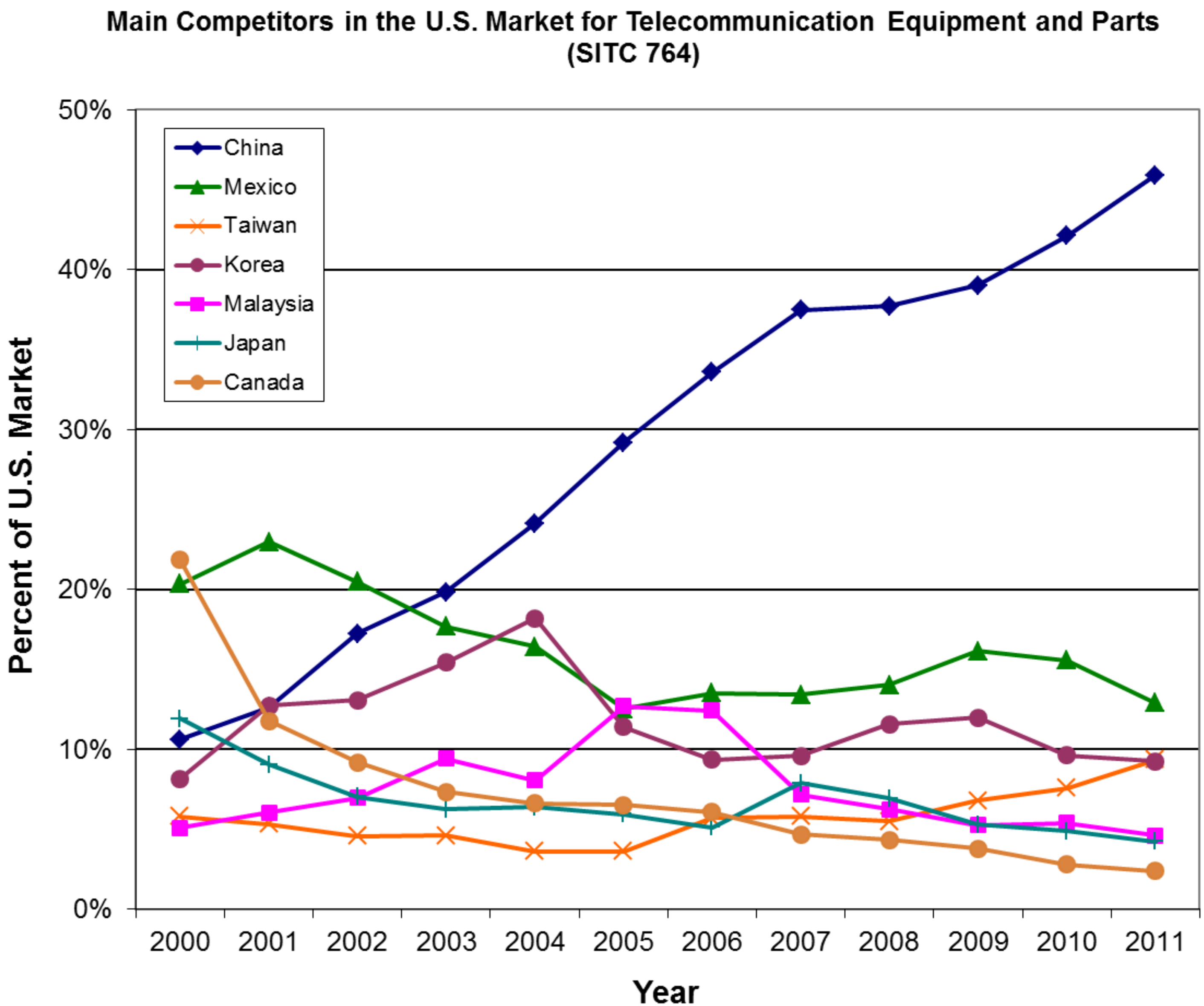


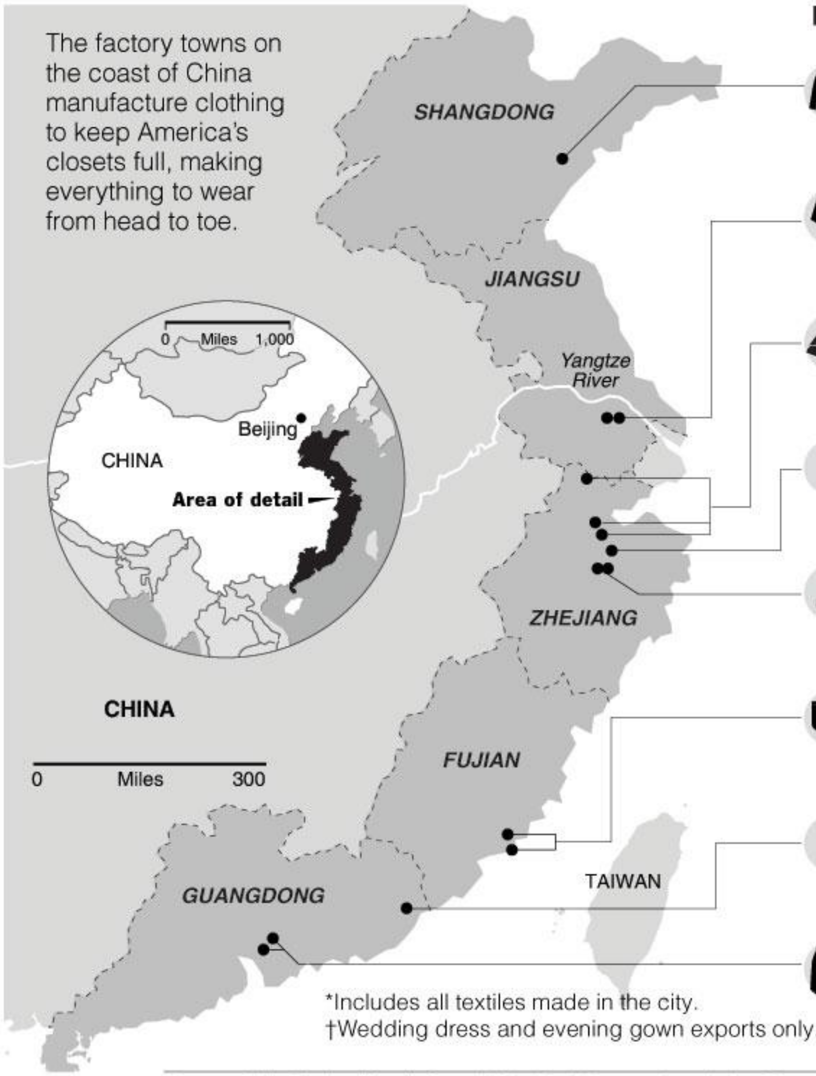
Source: USITC http://dataweb.usitc.gov downloaded Feb 14, 2012
U.S. General Imports, CIF Import Values

Why is China gaining U.S. market share over Mexico and other competitors?

- China is a lower-cost producer overall (labor costs lower, but not transport & tariffs)
- China has huge scale economies
- China has a coherent and multidimensional upgrading strategy – diversify and add high value activities
- China is using direct foreign investment to promote “fast learning” in new industries
- China uses access to its domestic market to attract TNCs and promote knowledge spillovers

China’s Supply Chain Cities in Apparel

Made in China, Shipped Worldwide



Factory orders, 2003	PRODUCTION	TOTAL SALES	U.S. EXPORTS
MEN'S WEAR *Zhucheng*	100 MILLION PIECES	$600 MILLION	$100 MILLION
CASUAL WEAR *Haiyu, Changshu*	160 MILLION PIECES	$260 MILLION	$ 58 MILLION
DOWN-FILLED PRODUCTS *Xintang, Hangzhou, Xiaoshan*	26 MILLION PIECES	$470 MILLION	$290 MILLION
TIES *Shengzhou*	300 MILLION PIECES	$1.21 BILLION	$384 MILLION
SOCKS *Datang, Zhuji*	9 billion PAIRS	$1.57 BILLION	$240 MILLION
UNDERWEAR *Jinjiang, Shenhu*	969 million PIECES	$360 MILLION	$290 MILLION
WEDDING DRESSES, EVENING GOWNS *Chaozhou*	510 million PIECES	$950 MILLION*	$640 MILLION†
JEANS *Xintang, Zengcheng*	225 million PIECES	$1.04 BILLION	$480 MILLION

*Includes all textiles made in the city.
†Wedding dress and evening gown exports only.

Sources: China National Textile Council; Shenhu Underwear Association; Datang Town Government

The New York Times

Source: David Barboza, “In roaring China, sweaters are west of socks city,” New York Times, Dec. 24, 2004.

China assembles all iPods, but it only gets about $4 per unit – or just over 1% of the US retail price of $300

451 parts that go into the iPod

The retail value of the 30-gigabyte video iPod that the authors examined was $299 in June, 2007

Hard Drive by Toshiba → Japanese company, most of its hard drives made in the Philippines and China; it costs about $73 - $54 in parts and labor -- so the value that Toshiba added to the hard drive was $19 plus its own direct labor costs

Video/multimedia processor chip by Broadcom→ American company with manufactures facilities in Taiwan. This component costs $8.

Controller chip by Portal Player→ American company with manufactures .This component costs $5 .

-**Final assembly→** done in China, costs only about $4 a unit

The unaccounted-for parts and labor costs involved in making the iPod came to about $110

The largest share of the value added in the iPod goes to enterprises in the United States→ $163 of the iPod's $299 retail value in the United States was captured by American companies and workers, breaking it down to $75 for distribution and retail costs, $80 to Apple, and $8 to various domestic component makers.

The bulk of the iPod's value is in the conception and design of the iPod. That is why Apple gets $80 for each of these video iPods it sells, which is by far the largest piece of value added in the entire supply chain. Apple figured out how to combine 451 mostly generic parts into a valuable product.

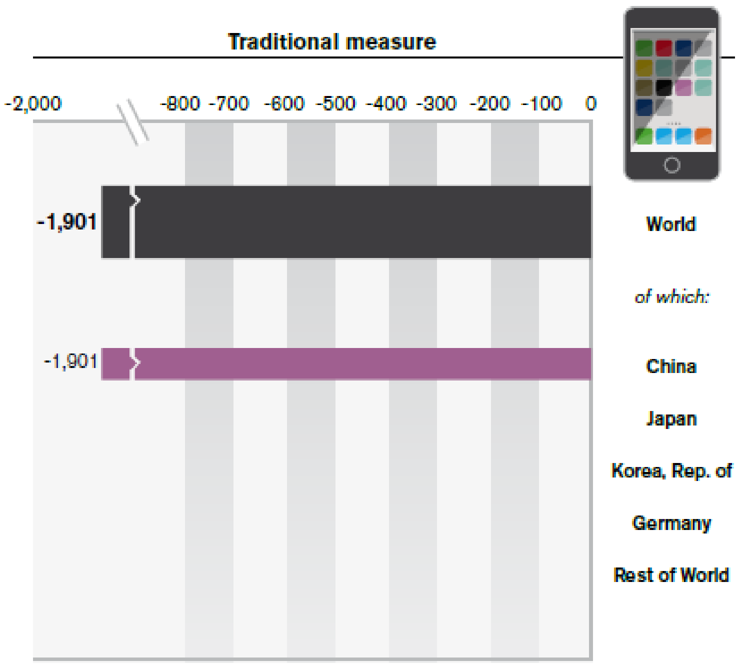
Source: Varian, Hal R. The New York Times, June 28, 2007. An iPod Has Global Value. Ask the (Many) Countries That Make It.

Value capture in global production

- Value unevenly captured by countries, depending on their role and position within global industries

U.S. trade deficits from iPhones

(In USD Millions)

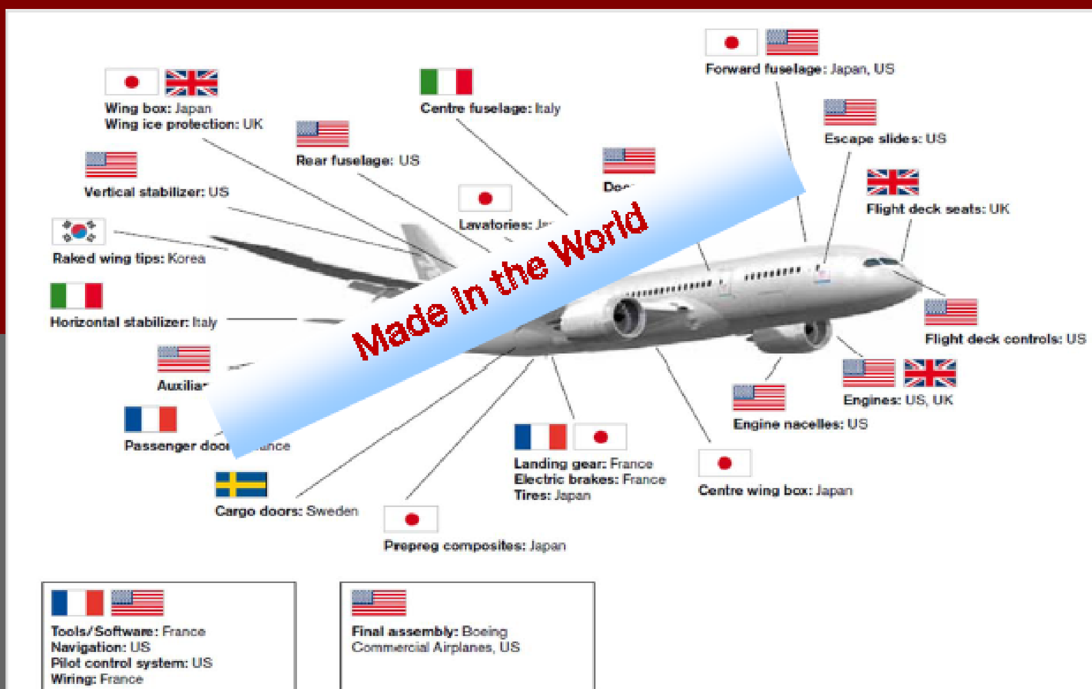


Source: WTO & IDE-JETRO (2011)

WTO’s Made in the World Initiative (MiWi)

Made in the World Initiative (MiWi)

A Paradigm Shift to Analyzing Trade



Source: Meng & Miroudot (2011)

World Trade Organization

LINES DELIVERED

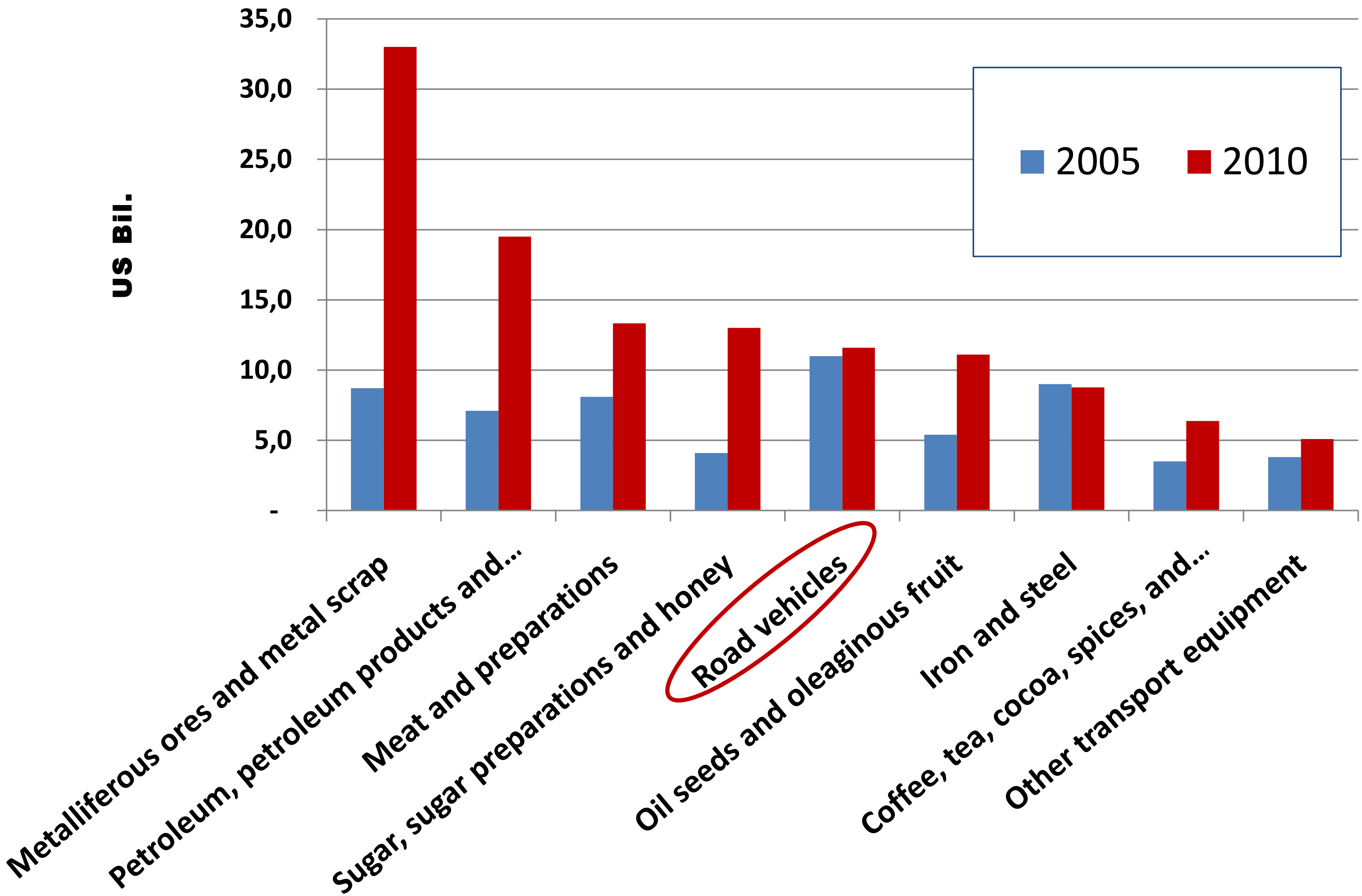
“With the international fragmentation of production, traditional boundaries and distances are collapsing. Reductions in transport costs, the information technology revolution, and more open economic policies have made it easier to “unbundle” production not only within countries, but across.”

Pascal Lamy,
WTO Director General

MADE IN THE WORLD INITIATIVE (MIWI) AIMS TO SUPPORT THE EXCHANGE OF PROJECTS, EXPERIENCES AND PRACTICAL APPROACHES IN MEASURING AND ANALYSING TRADE IN VALUE ADDED.

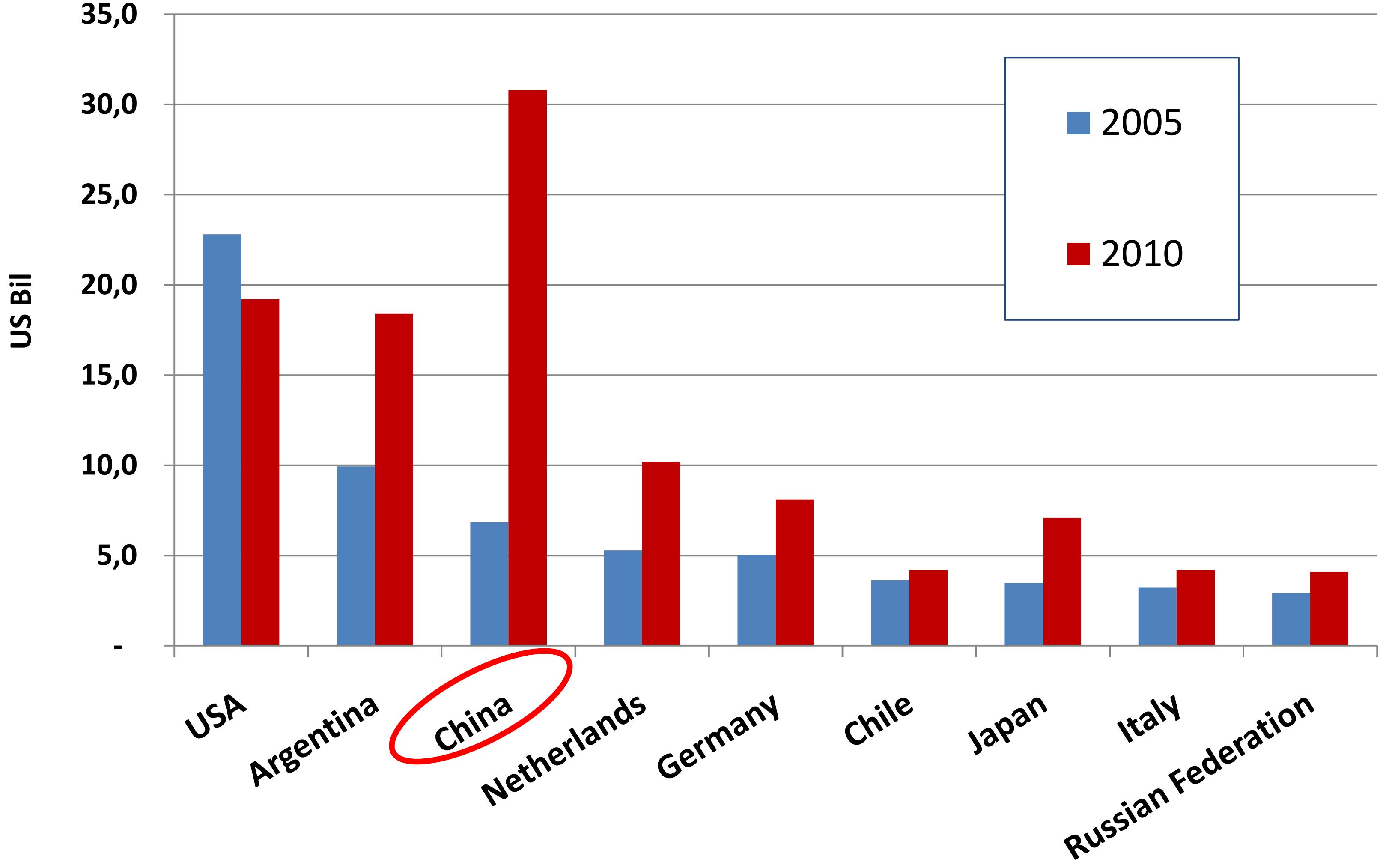
SOURCE: WTO. Made in the World Initiative Flyer. Electronic access: http://www.wto.org/english/res_e/statis_e/miwi_e/flyer_miwi_e.pdf

Brazil's Top Export Categories, 2005-2010



Source: UN Comtrade

Brazil's Top Export Partners, 2005-2010



Source: UN Comtrade

Upgrading in LAC: Primary Product Industries

Primary Products Global Value Chain

- Adding value **moving to higher value segments** of the chain (move beyond extraction of raw materials to additional processing and commercialization within the country)
- **Improving processes** (e.g., fruit and vegetables diversification to generate income all year round)
- **Improving products** (e.g., produce organic or specialized crops that earn premium price)
- **Diversify end markets** to improve earnings and spread risk

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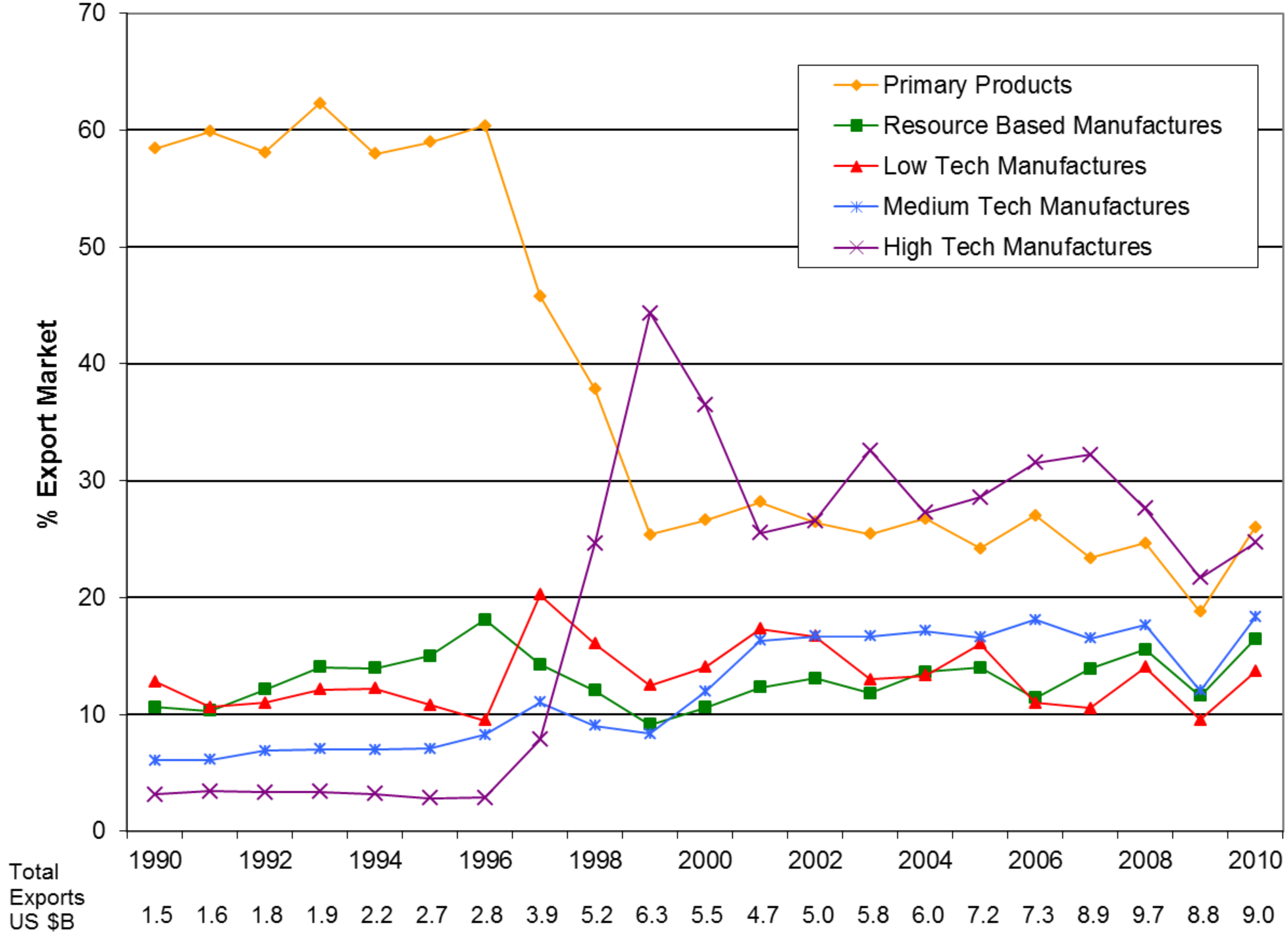
Composition of Costa Rica's Exports to the World Market, 1990–2010



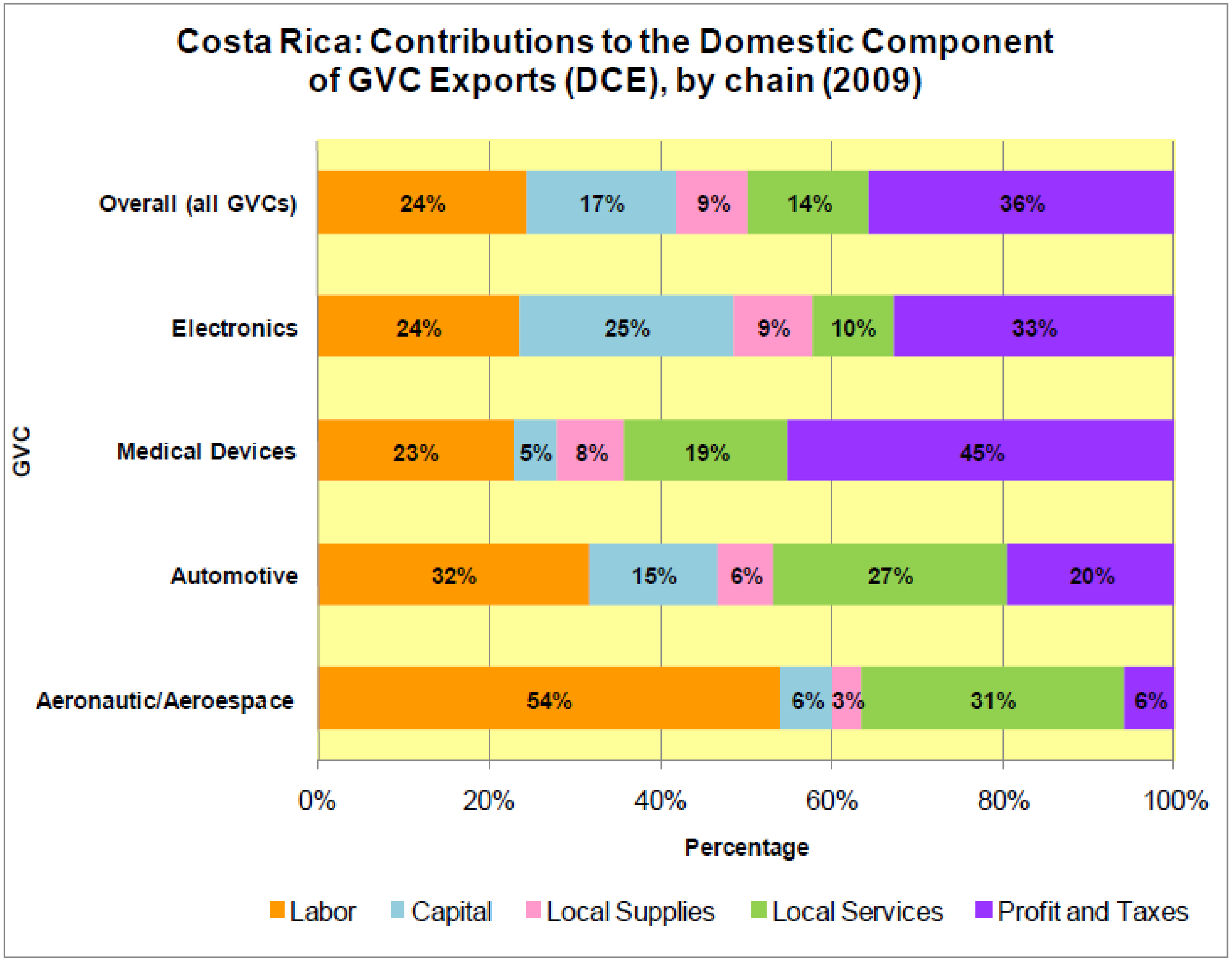
Source: UN Comtrade.

Upgrading in Costa Rica: High-Tech Value Chains

GVC	Total Firms	Firms in EPZ	Average employees per firm	Main Products	Exports 2009 (US$ million)	Share in Total Exports *	Main destination	Share in GVC Exports
Electronics	10	90%	571	- Computer parts and accesories - Digital microprocessors - Electrical switches - Electronic filters for TV sets	2.196,6	25,5%	China	35%
Medical Devices	25	80%	475	- Needles, catheters and equipment for serum infusion and transfusion - Other medical devices - Devices for electro-diagnose - Devices for electro-diagnose - Medicaments put up for retail sale	1.268,8	14,7%	USA	60%
Automotive	9	89%	273	- Tires - Shock-absorbing systems for cars - Incandescent lamps and electric tubes - Seats for vehicles and their parts - Lubricant or fuel filters - Plastic manufactures for injection equipment - Film and foil of polymers of vinyl chloride - Parts for vehicles' seats	180,0	2,1%	USA	75%
Aeronautic / Aeroespace	16	69%	137	- Design of turbines for airplanes - Design and testing of electronic devices for airplanes - Machined parts for airplanes - Printed circuit boards for airplanes - Thermostats - Repair of mother boards for airplanes - Maintenance for helicopters - Metal coatings for airplane parts - Wire harnesses for airplanes - Turbines for airplanes - Lasers for airplanes - Circuit protection gas tubes - Design of plasma engines for space shuttles	21,9	0,3%	USA	34%
Film / Broadcasting Devices	1	0%	N/A	- Tripods for videocameras	20,4	0,2%	USA	53%
Sub-Total	60	80%	---	---	3.687,8	42,8%	---	---
TOTAL	---	---	---	---	8.611,3	100,0%	---	---

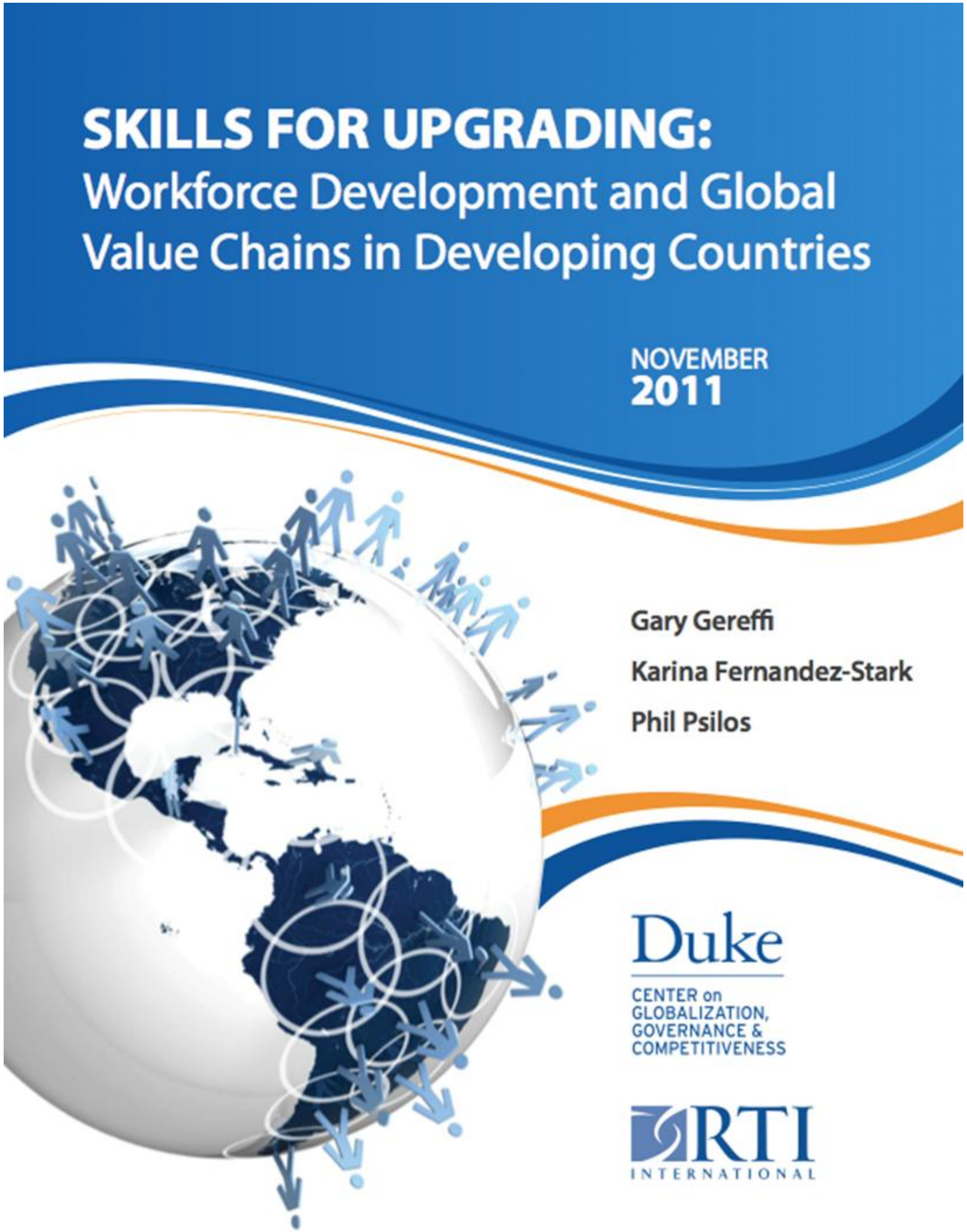
Source: Franciso Monge-Ariño, "Costa Rica: Trade Opening, FDI Attraction and Global Production Sharing," World Trade Organization, Staff Working Paper ERSD-2011-09, May 23, 2011.

Unpacking the Domestic Content of Exports



Source: Franciso Monge-Ariño, "Costa Rica: Trade Opening, FDI Attraction and Global Production Sharing," World Trade Organization, Staff Working Paper ERSD-2011-09, May 23, 2011.

4. WORKFORCE DEVELOPMENT AND GLOBAL VALUE CHAINS



Social Upgrading –Workforce Development in GVCs

Commissioned by RTI International

- Analyze labor force readiness for industry upgrading

- Explore the alignment of education institutions with industry needs

- Examine institutional arrangements and initiative to overcome skills gaps

Industry and Country Selection

Comparative Analysis on Relevant Industries for Developing Countries

FRUIT & VEGETABLES

Chile
Jordan
Honduras
Kenya
Morocco

APPAREL

Bangladesh
Lesotho
Nicaragua
Sri Lanka
Turkey

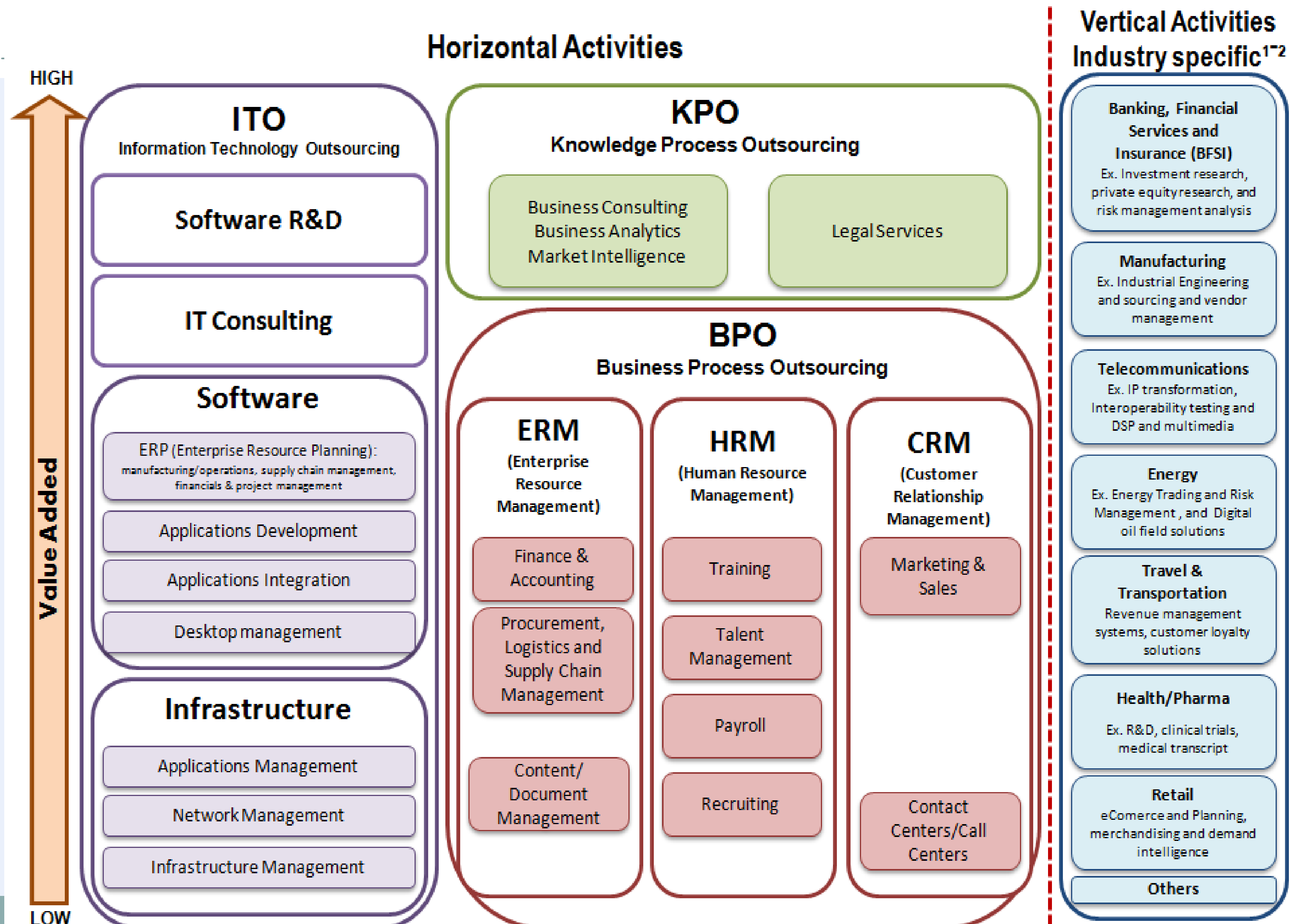
OFFSHORE SERVICES

Chile
India
Philippines
Spanish Speaking Central American and Caribbean Countries

TOURISM

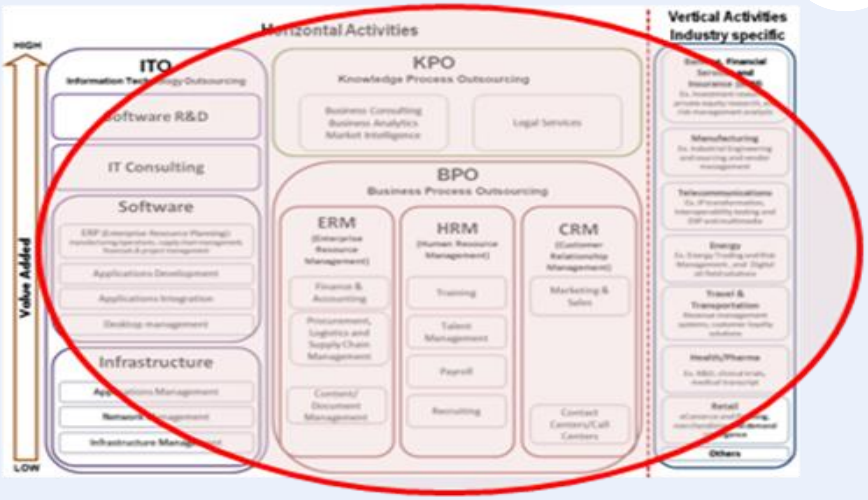
Costa Rica
Jordan
Vietnam

Offshore Services Value Chain



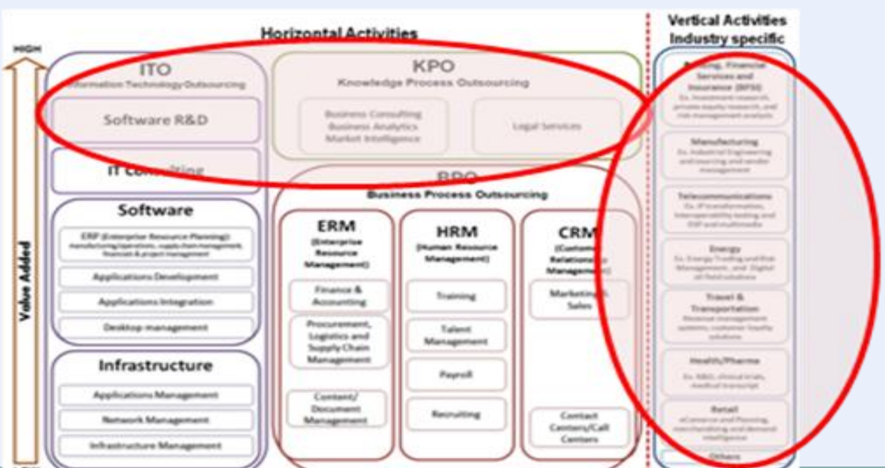
Mapping Selected Countries in the Offshore Services Value Chain

India



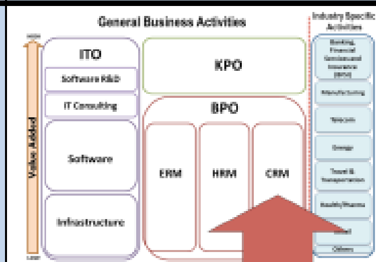
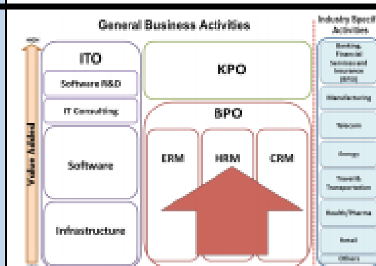
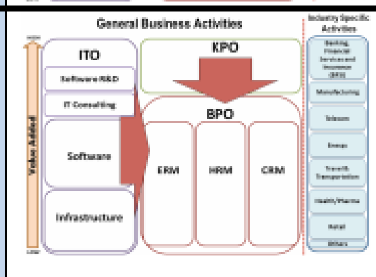
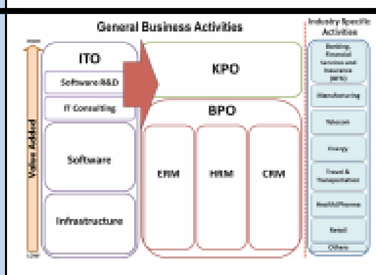
Philippines

Czech Republic

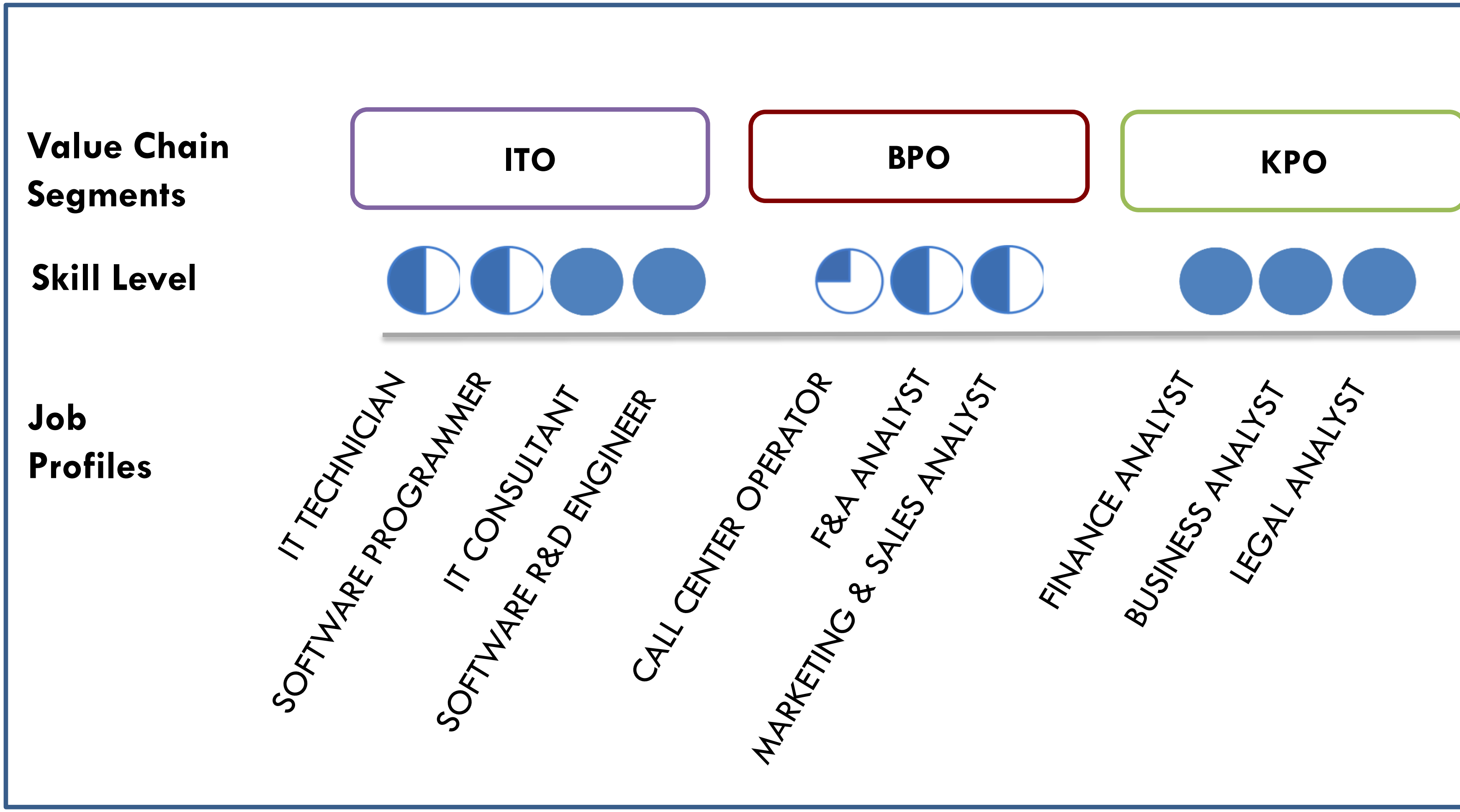


Chile

Offshore Services: Upgrading Trajectories and Workforce Development

<table>
<tr><th></th><th>Diagram</th><th colspan="2">Workforce Development Implications</th></tr>
<tr><td rowspan="2">Entry into the Value Chain</td><td rowspan="2">
</td><td colspan="2">Call centers hire people with high school diplomas or Bachelor's degrees. Further skills training is provided by the company or private training institutions.</td></tr>
<tr><td>Skills Preparation
Short technical training</td><td>Institutions
Private sector
Government</td></tr>
<tr><td rowspan="2">Upgrading within the BPO Segment (Functional Upgrading)</td><td rowspan="2">
</td><td colspan="2">Skills development is carried out by the private sector, either through in-house or contracted training programs. Further technical training is provided to existing and new employees.</td></tr>
<tr><td>Skills Preparation
Short technical training
Formal education (degree required)</td><td>Institutions
Private sector
Government
Tertiary educational institutions</td></tr>
<tr><td rowspan="2">Full Package Services (Functional Expansion)</td><td rowspan="2">
</td><td colspan="2">Expansive hiring process targets candidates with high school diploma and/or colleges graduates to work in the BPO segment. New hires must complete BPO training programs to guarantee quality services.</td></tr>
<tr><td>Skills Preparation
Short technical training
Formal education (degree required)</td><td>Institutions
Private sector
Government</td></tr>
<tr><td rowspan="2">Upgrading from ITO to KPO functions (Chain Upgrading)</td><td rowspan="2">
</td><td colspan="2">Personnel with higher education qualifications recruited. Typically MBA graduates and workers with business experience. Workers must have sharp analytical skills.</td></tr>
<tr><td>Skills Preparation
Formal education (degree required)</td><td>Institutions
Tertiary educational institutions</td></tr>
</table>

Offshore Services: Job Profiles and Upgrading



Skill Level	Low	Low-Medium	Medium	Medium – High	High
	No formal education; experience	Literacy and numeracy skills; experience	Technical education/certification	Technical education /undergraduate degree	University degree and higher

Inclusion of Small and Medium Enterprises (SMEs) in the Value Chain

To participate in the value chain SMEs needs to be competitive:

- Productivity level, product/service quality, standards and certifications, produce/service image, packing, logistics, economies of scale, potential to add value to the product/service , identify product/service suitable for SMEs?, etc.

Mayor SMEs Constraints to Participate in Value Chains

1. Access to Finance
2. Access to Training (technical and business)
3. Coordination and Collaboration Building
4. Access to Markets

Research commissioned by FOMIN-IADB

Opportunities for GVC Upgrading in Latin America and the Caribbean

- Post-economic crisis → growth in South to South trade.
- Emerging economy domestic markets → key sources of growth and upgrading.
- Latin America → add value to extractive, mfg. and service industries.
- Public- private partnerships → coordinated action among stakeholders helps to drive upgrading.
- Educational institutions → align labor market needs to global demand
- Sustainable inclusion of SMEs → increase impact of economic upgrading in value chains
- Global standards and certifications → increase export potential
- Economic upgrading → promotes innovation & sustainable development

THANK YOU FOR YOUR ATTENTION!

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