



Mexico's Evolving Sweet Spot in the Globalization Landscape

July 2009

THE BOSTON CONSULTING GROUP

Introduction

Rapid rise of globalization, as well as recent economic recession continues to drive off-shoring by US companies for activities such as sourcing and manufacturing

Mexico, albeit with much cheaper labor costs vis-à-vis the US, is nevertheless more expensive than many Rapidly Developing Economies (RDEs) such as China or India

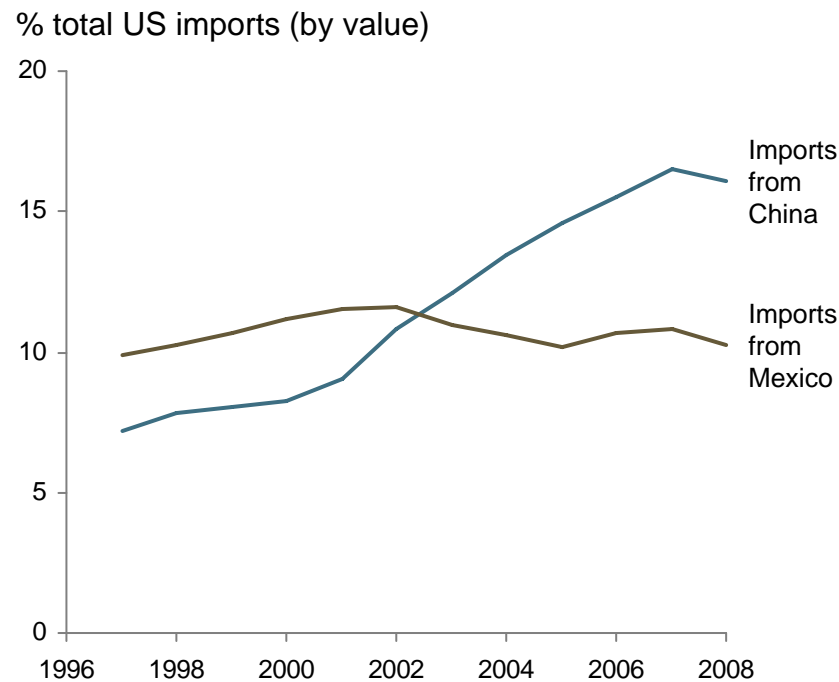
Thus, the question arises: what, if any, role remains for Mexico in global playing field?

- Are there compelling reasons to locate facilities in Mexico vs. China, India, etc?
- Is Mexico doomed to lose its global competitiveness to said RDEs?

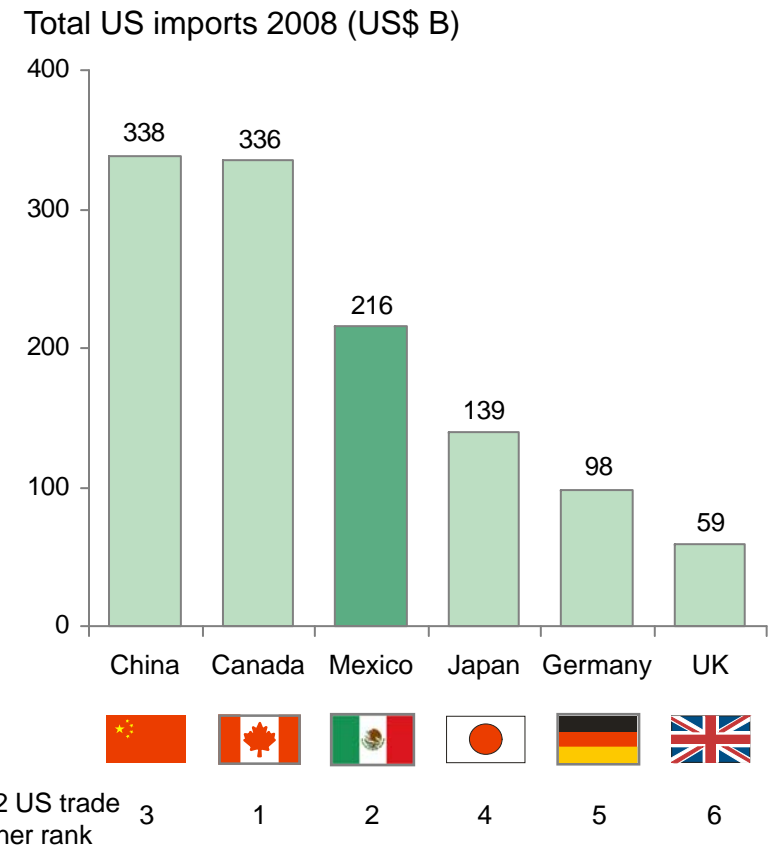
Initial findings unfavorable for competitiveness of Mexico

Although exports to US growing in dollar amounts, Mexico displaced on percentage basis

US imports from China have passed those from Mexico...



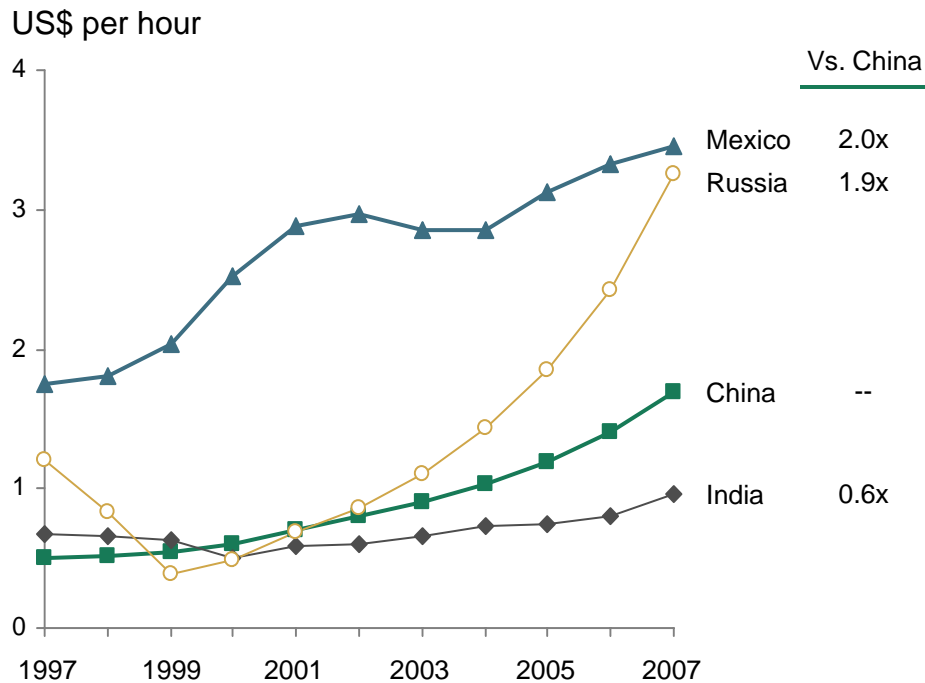
...leaving Mexico US #3 trade partner



Main reason for lost ground is significant cost differences

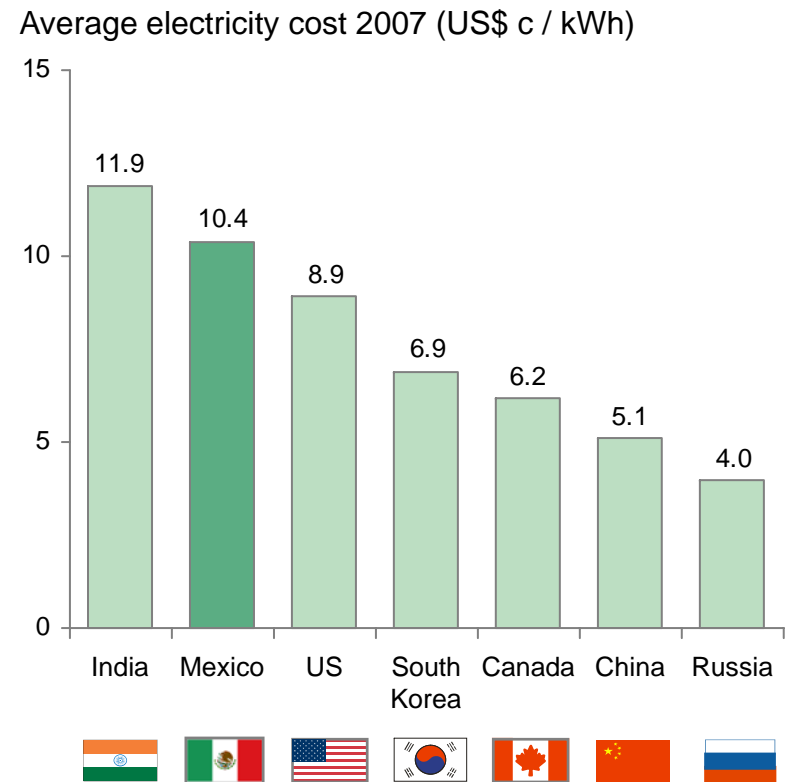
Mexican labor and electricity two examples

Mexico labor rates double China's...



US labor rate
~\$25/hr

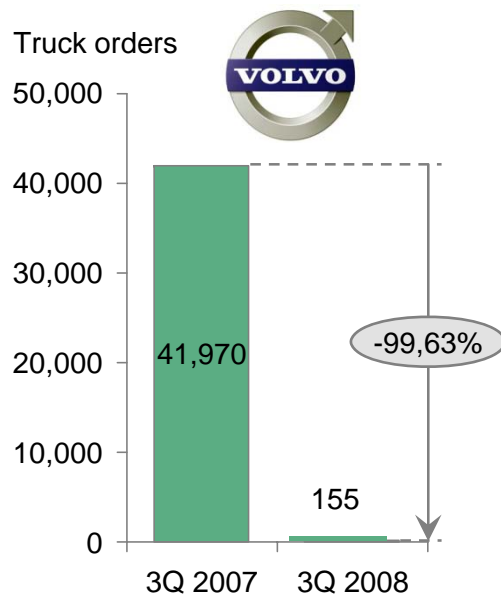
...And energy costs higher as well



Note: Canadian and Russian electricity costs estimated from 2006 data
Source: The Economist Intelligence Unit; Mexico Secretary of Energy; China Electricity Council; US Energy Information Administration; India Central Electricity Authority; BCG analysis

Deteriorating economic environment will cause foreign companies to reassess their production bases

Collapse in number of VOLVO truck orders



Global economy Prediction

Car Sales in USA Worst month in 25 years



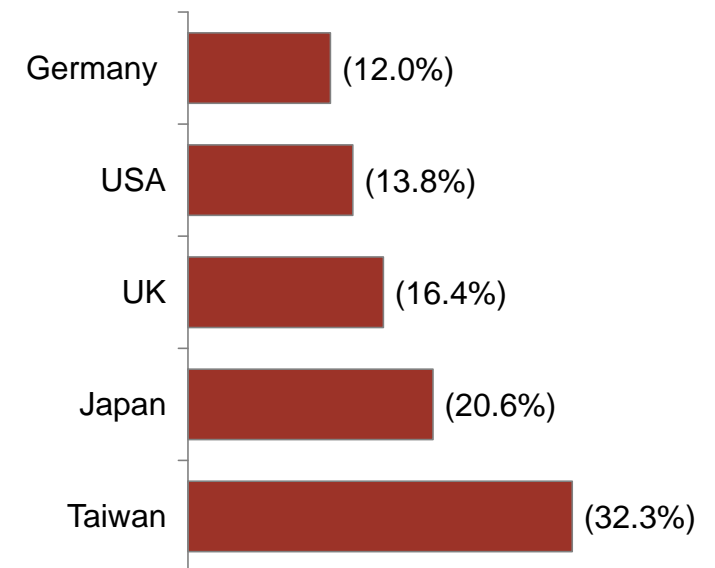
Annual Sales decrease of 37% as for January 2009

- GM (49%)
- Chrysler (50%)
- Ford (40%)
- Nissan (30%)
- Toyota (32%)

Worst monthly sales for GM since WWII

Industrial Production Worst fall since 1970

Annual production decrease – January 09

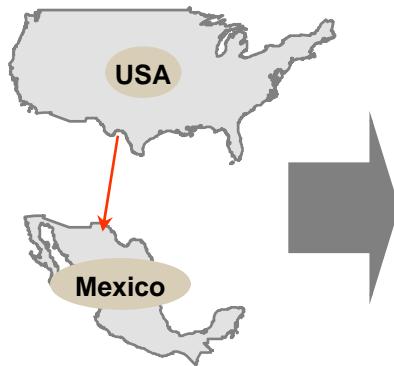


The world has not seen a contraction like this since the first oil shock in the 1970s

The Economist Feb 19th, 2009

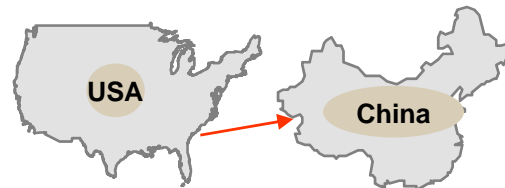
Decisions on where to invest have followed changing tendencies over time

1st Wave: Outsource to the closest available option



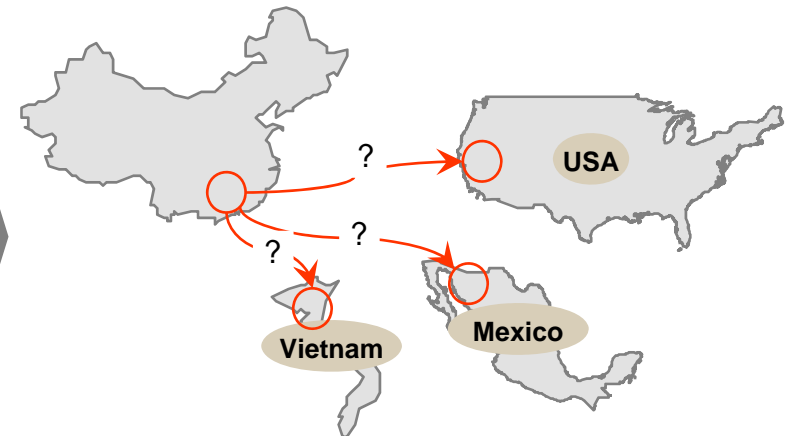
"Near-shore"

2nd Wave: Leverage China's scale and low-cost suppliers



"Off-shore"

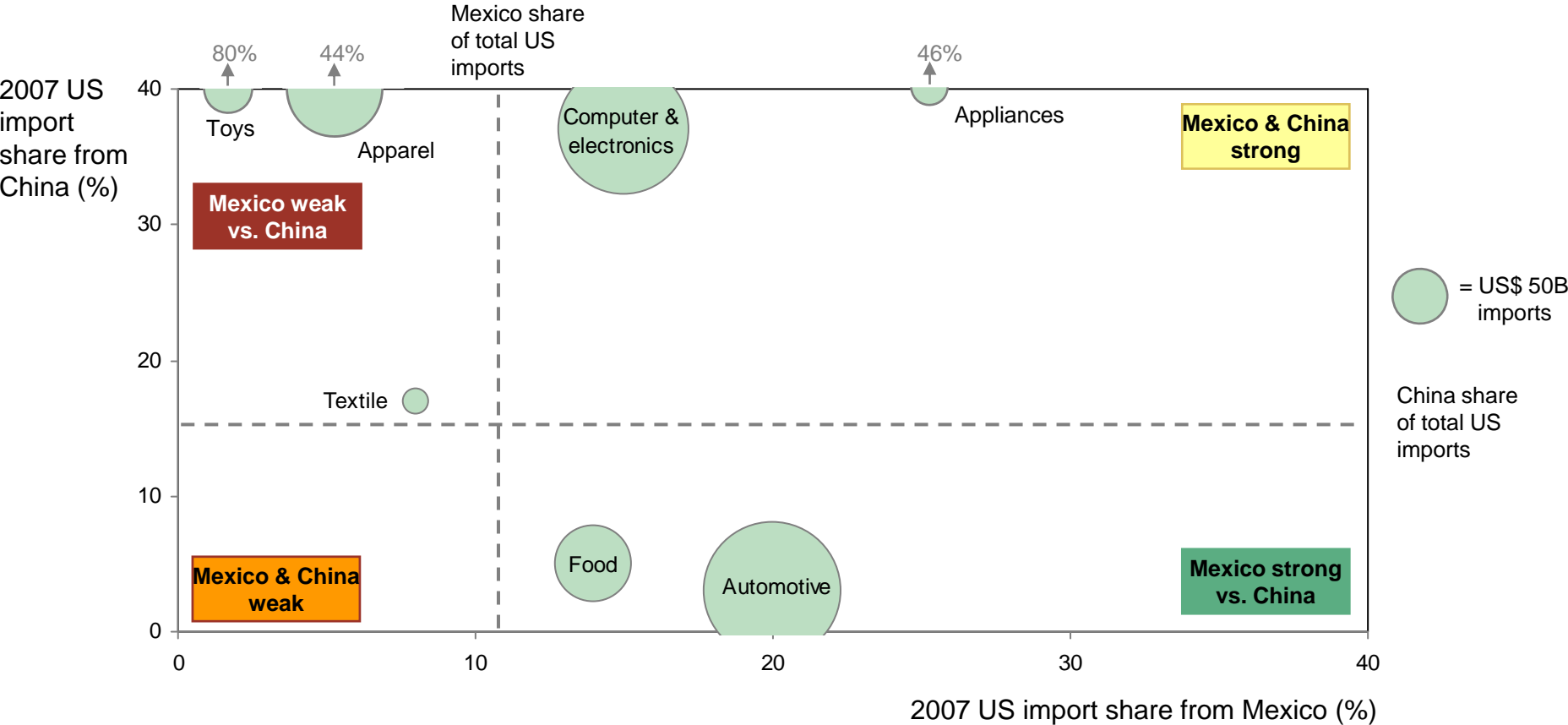
3rd Wave: Which are China's alternatives?



"Off-shore" vs. "Near shore" vs. "On-shore"

Despite cost differences, Mexico affected less than expected

Some businesses adversely affected but other industries thriving



What factors contribute to help create an apparent "Sweet Spot" for some Mexican industries?

Source: International Trade Commission; US Census Bureau, Foreign Trade Division; BCG analysis

Mexico's "Sweet Spot" in global trade owes itself to several converging factors



Four main levers to benefit from Mexico's "Sweet Spot"

Type of products benefiting

Output

Significant logistics costs

- High volume-to-weight and/or volume-to-value ratios
 - Large bulky products where shipping costs represent a sizable share of the cost structure



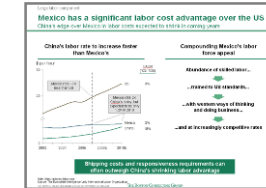
Stringent responsiveness requirements

- Short, tightly scheduled supply chains
 - I.e. those with high volatility or short order cycles



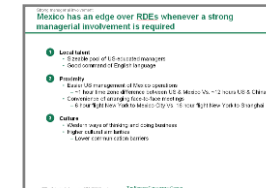
Large labor component

- Large labor component in cost structure given that Mexico's average labor is ~7 times lower than US
 - Although beneficial, not a source of Mexican competitive advantage



Strong managerial involvement

- Require strong degree of managerial involvement, including physical presence
 - Continuous US management supervision
 - High quality local managerial talent



Mexico with advantage when shipping costs represent sizable share of cost structure

Product	Typical US retail price	Units per two-TEU container ¹	Freight costs / unit (China ²) (% retail price)	Freight costs / unit (Mexico ³) (% retail price)	Advantage
Refrigerator	\$500	~ 55	\$100.00 (20%)	\$48.70 (9.7%)	Mexico
Stove	\$450	~ 95	\$58.00 (13%)	\$28.20 (6.3%)	Mexico
29-inch TV set	\$450	~ 170	\$32.00 (7.1%)	\$15.90 (3.5%)	China
DVD/CD player	\$150	~ 3,700	\$1.50 (1.0%)	\$0.73 (0.5%)	China

Other cost factors include raw materials, depreciation, electricity & tariffs

Logistic costs outweigh China's labor advantage on high volume-to-weight or volume-to-value products



1. TEU = 20-foot equivalent unit (container). 2. Door-to-door freight costs from Shanghai to Pittsburgh, Pennsylvania. 3. Door-to-door freight costs from Aguascalientes to Pittsburgh, Pennsylvania
Source: BCG analysis; maritimeChain.com

Mexico's advantage greatest for high volume-to-weight ratio products where freight costs are significant

Mexico's advantage in bulky products

Considerable portion of global trade consists of high volume-to-weight ratio items (i.e. bulky)

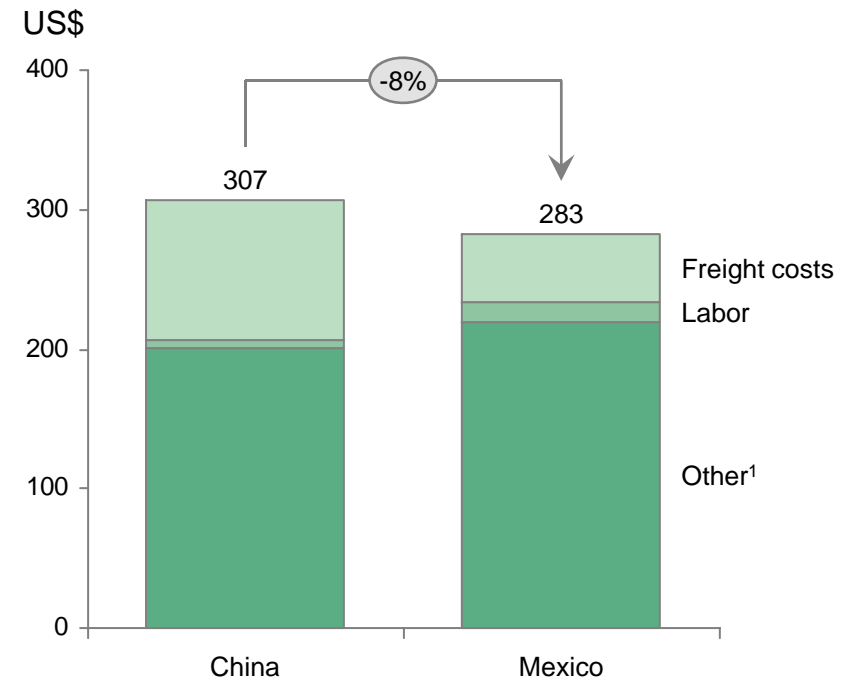
Shipping for these products represents a sizable component of retail price

Freight differentials can outweigh higher labor cost rates

"As [U.S.] retail prices begin falling towards \$600 [per PC unit], the cost of logistics involved will put Mexico back on the map"

— Peter Wiegandt, Dell Latin America

Cost of producing a refrigerator



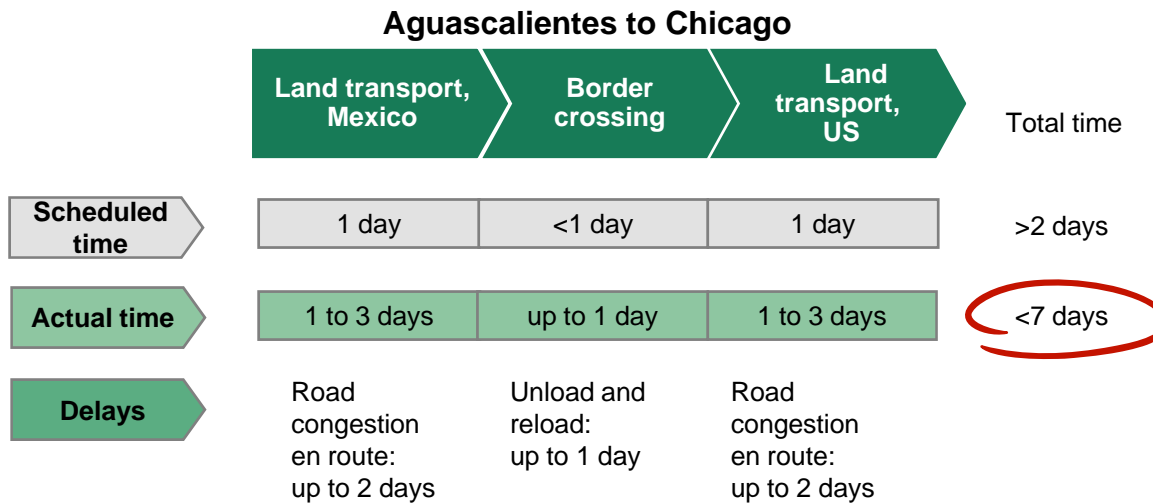
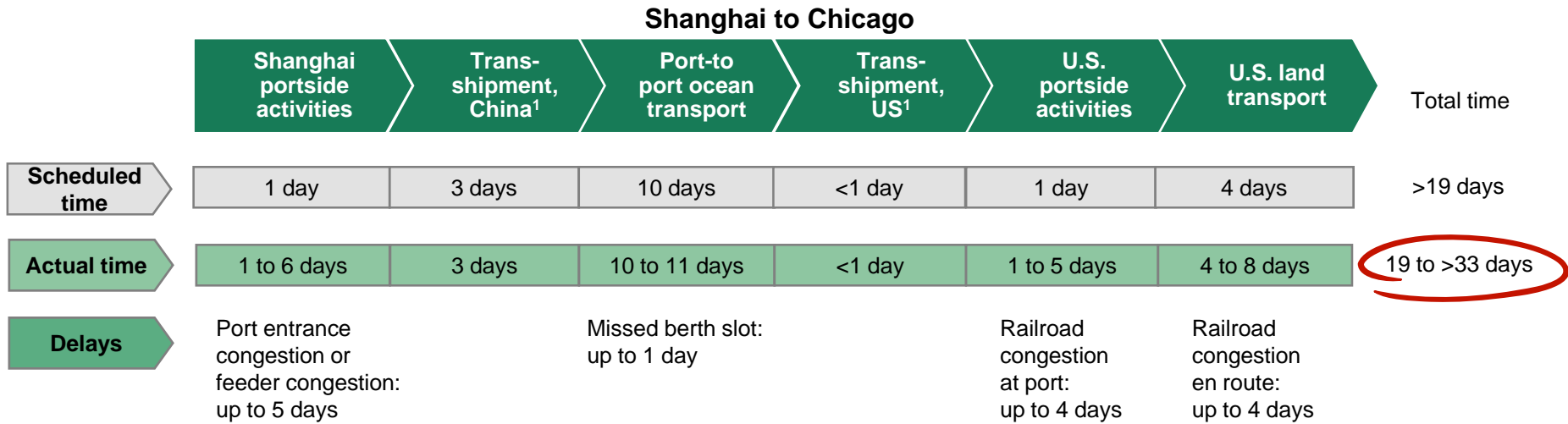
Key will be to find cheapest labor force within reasonable shipping distance to final market

1. Raw materials, depreciation, electricity, tariffs
Note: Assumes 4 hours of labor per unit
Source: Press and web research, BCG analysis
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Stringent responsiveness requirements

Shipping from China to US slower and less predictable than shipping from Mexico



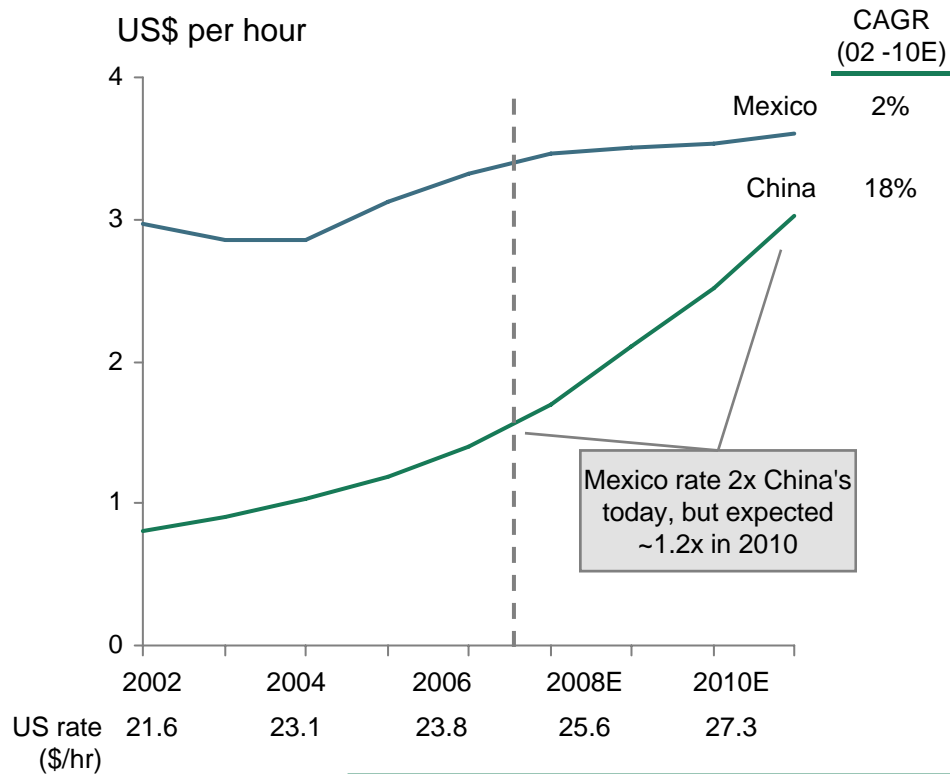
1. Trans-shipment is the transfer of a container from one conveyance to another, such as from truck to ship or vice versa
Source: BCG analysis



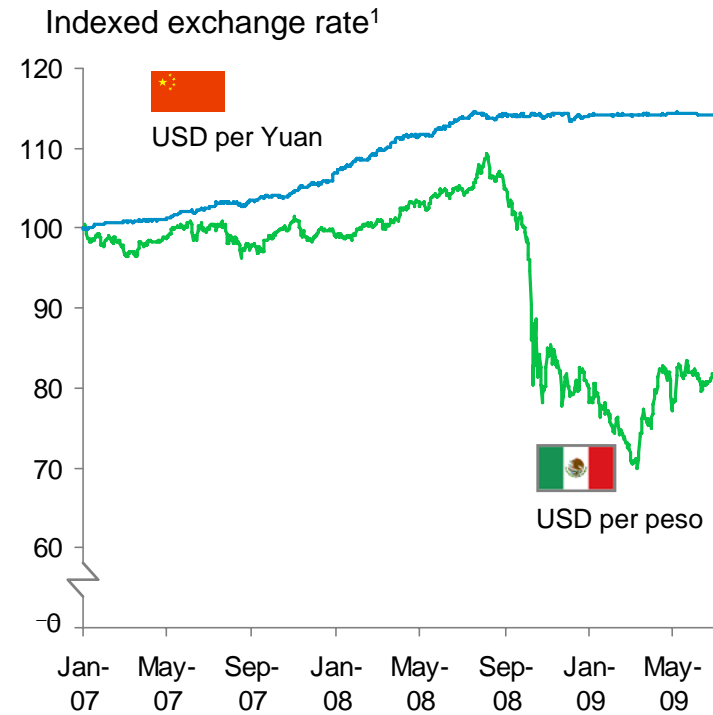
Mexico has significant labor cost advantage over US

China's edge over Mexico in labor costs expected to shrink in coming years

China's labor rate to increase faster than Mexico's



Peso sharp devaluation also reducing China's cost advantage



Labor economics and Yuan appreciation quickly eroding China's cost advantage

1. Indexed to January 1, 2007 exchange rate (MX\$ 10.82 = US\$ 1; CH\$ 7.81 = US\$ 1)

Note: Manufacturing labor rate

Source: The Economist Intelligence Unit; International Labor Organization; FX History, Oanda Corporation; BCG analysis



Mexico with edge over RDEs whenever strong managerial involvement required

Local talent

- Sizeable pool of US-educated managers
- Good command of English language

Proximity

- Easier US management of Mexico operations
 - ~1 hour time zone difference between US & Mexico vs. ~12 hours US & China
- Convenience of arranging face-to-face meetings
 - 6 hour flight New York to Mexico City vs. 16 hour flight New York to Shanghai

Culture

- Western ways of thinking and doing business
- Higher cultural similarities causing low communication barriers



Some industries already enjoying Mexico's "Sweet Spot" (I)

"Cluster phenomenon" of cost-effective industry groupings

Favorable product characteristics...

Bulky with high weight-to-value ratio

Labor intensive process

Management involvement necessary



...with right geographical setting...



...leads to "cluster phenomenon"



Cluster value US\$ 1.1B with 9% growth in 2006-2007

Note: Even Chinese companies joining the cluster: Golden Dragon Precise Copper Tube Group announced the opening in 2008 of a plant in Saltillo, Mexico to supply the cluster
Source: INEGI; Bank of Mexico; Company websites; BCG analysis

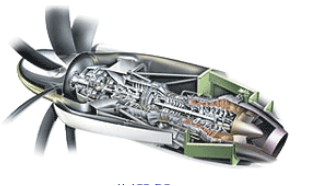
Some industries already enjoying Mexico's "Sweet Spot" (II)

"Cluster phenomenon" of cost-effective industry groupings

Favorable product characteristics...

Strong management involvement because of strict quality requirements

High premium on intellectual property protection



...with right geographical setting...



...leads to "cluster phenomenon"



Cluster value US\$ 1.8B from >160 companies and >17,000 employees

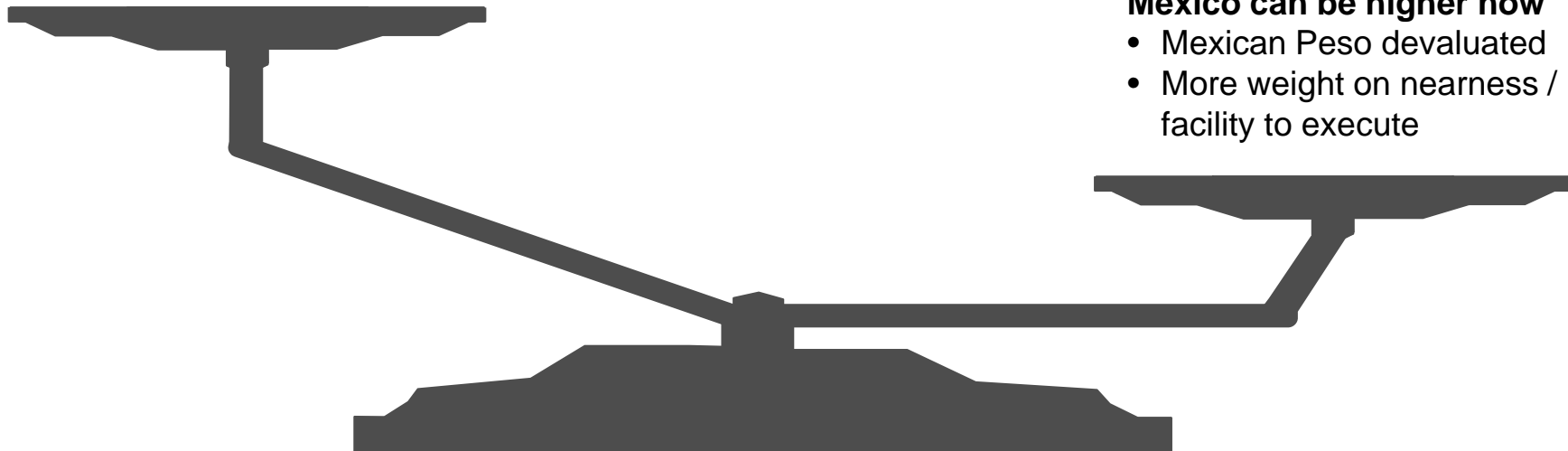
Current situation creates challenges and opportunities for Mexico

Challenges

- 1 Strong fall on main markets
- 2 Perception of increased risk
- 3 Uncertainty on macroeconomic stability

Opportunities

- 1 Companies require solutions to reduce costs in the short term
- 2 Mexico can offer attractive opportunities
- 3 Relative advantage of Mexico can be higher now
 - Mexican Peso devaluated
 - More weight on nearness / facility to execute



Mexico not only has "Sweet Spot" to leverage global position but also off-shoring consultants to help facilitate opportunity

"Sweet Spot" for many product types...

Products with significant logistics costs

- High volume-to-weight or volume-to-value ratios

Products that require responsive supply chains

Large bulky products with significant labor content

Products that require significant managerial involvement

...With support system to capitalize advantages

Off-shoring partners provide abundant industrial real estate options...

- Variety of locations
- World class facilities

...As well as attractive value-added Shelter opportunities



- Local expertise at hands of foreign companies
- Ability to start Mexican operations at remarkable speed

Despite Mexico's advantages, no single solution for all products (ie. labor intensive products with low logistics costs)

Agenda

Backup

Off-shoring service providers help foreign companies set-up and operate in Mexico through two main offerings

Distinct value offering	Description	Market players
<p>Real Estate</p>	<ul style="list-style-type: none"> Site selection → Expert advise on Mexican industrial real estate market Build to suit → Develop land and construct a building to client's specifications in ~6 months Inventory facilities → Many buildings already constructed and ready to occupy Shared leases → Share a building with another company, while operating independently Sale-lease-back → Offshore company buys the client's building and leases it back to them to free up working capital 	
<p>Shelter</p>	<ul style="list-style-type: none"> Model → Client manages manufacturing operation and offshore services company manages administrative functions: HR → Recruitment, selection, payroll, health & safety, labor issues Accounting → Accounting, financial control & reporting Customs → Import & export transactions Legal → Permits and special government requirements 	

Source: Company websites; BCG interviews
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Service providers help clients with everything from site selection to custom-made facilities and other benefits

1

Optimum site selection...

Analyze specifics to select optimal location for new facility

- HR requirements & capabilities
- Logistics costs
- Supply base proximity
- Industry clusters
- Time constraints



2

...with already built or build-to-suit facilities...

Sizeable portfolio of ready-built facilities available for immediate occupancy

Build-to-suit services with tight quality controls and aggressive delivery timelines

- Guaranteed start-to-finish in 6 months



3

...and added value services

Sale-lease-back

- Opportunity for established companies to free up working capital by selling their facility and leasing it back long term

Shared leases

- Modular buildings with option to lease only a portion

Off-shore shelters provide expertise to launch and manage human resources/back office aspects of Mexico operations

Manages client administrative functions...

Human resources

- Recruitment, selection & hiring of entire work force to client's capability requirements
- Payroll, health & safety management
- Expatriate relocation & support services

Customs

- All import & export transactions
- ALTEX¹ certified to ensure a smooth operation

Legal

- All permits & government requirements
- Maintain up to date environmental regulations

Accounting

- Book keeping to Mexican GAAP
- Financial control & reporting to client requirements
- Control of all tax obligations

... allowing client to focus on manufacturing

Client operates in Mexico without need to incorporate a subsidiary

- Income tax exempt until 2011
- Avoid legal paperwork & responsibilities
- No need for external accounting audits

Little local knowledge required for Client to launch operation in Mexico





Shelter service independent but complementary to industrial real estate services

Total start-up time 45 days for company to begin operations in Mexico using shelter

1. High exports certification by Mexican government which allows for preferential customs treatment
Source: Company websites; BCG interviews

Highly attractive economic factor another value creation lever

Sample estimated monthly costs for a 220,000 ft² facility with 250 operators

Location		Labor	Building	Logistics	Shelter services	Total cost	Total cost / labor hr
Juárez		\$243k	\$133k	\$41k	\$67k	\$484k	\$10.49
Chihuahua		\$231k	\$132k	\$73k	\$67k	\$503k	\$10.89
Reynosa		\$226k	\$133k	\$62k	\$67k	\$488k	\$10.57
Monterrey		\$269k	\$136k	\$83k	\$67k	\$555k	\$12.01

"All in" costs including logistics to border still less than half of average US labor rate (~\$25/hr)

Note: All figures in USD
 Source: Mexican shelter services company
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