

AlixPartners 2009 Manufacturing-Outsourcing Cost Index™ – Overview & Highlights

May 2009

Chicago Dallas Detroit Düsseldorf London Los Angeles Milan Munich New York Paris San Francisco Shanghai Tokyo Washington, DC



AlixPartners
When it really matters.

Agenda

- ▶ Introduction and Approach
- ▶ Key Findings

If You Outsourced Significant Manufacturing to China in the Last Few Years, Have You Made a Big Mistake?

*“The rising cost of labor and shipping abroad **are driving manufacturing back to the U.S.** So are the logistics of dealing with far-flung suppliers.”*

Fortune, September 11, 2008

*“Rising transportation costs **are encouraging companies to buy and produce more goods closer to home.**”*

Wall Street Journal, July 18, 2008

*“...if oil and shipping prices stay high, many Western companies that now outsource their manufacturing to China **might decide that it makes more sense to shift production closer to their customers at home.**”*

Economist, August 7, 2008

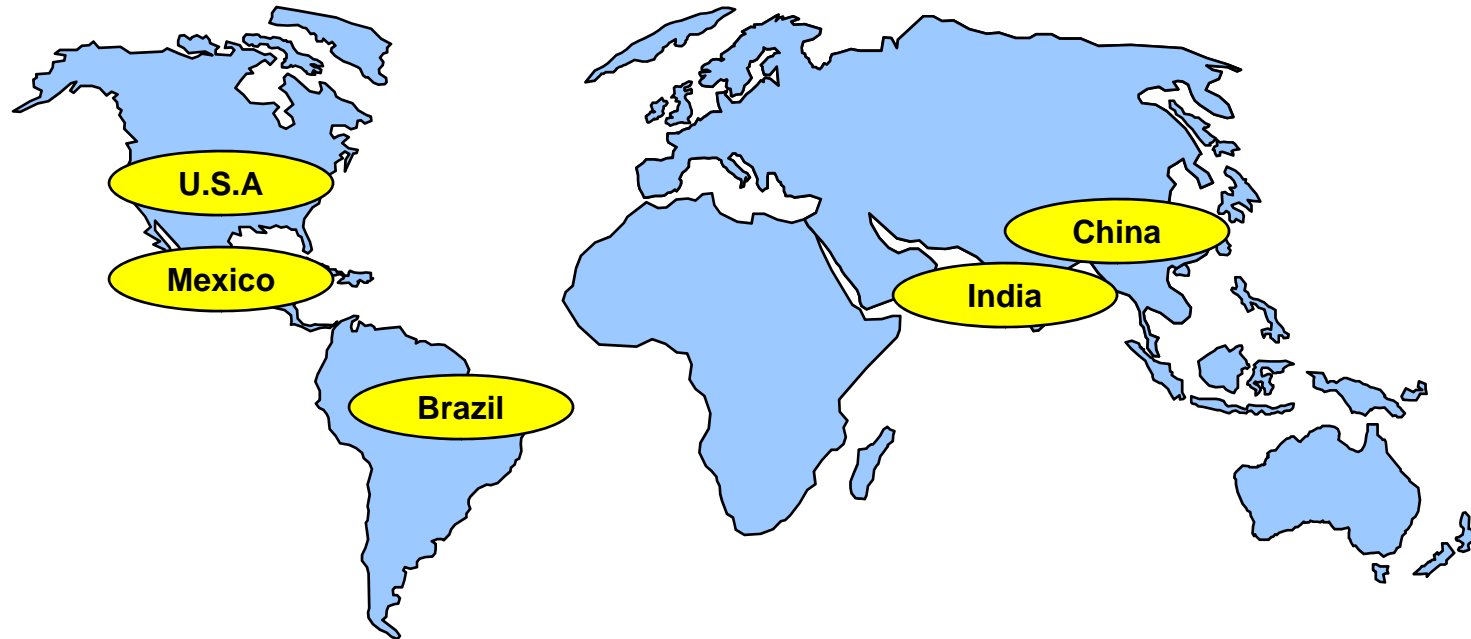
Finding the Right Answer for a Given Product Isn't Simple

- ▶ Meaningful data is hard to find:
 - Many factors – local wage rates, local raw material costs, relative productivity rates, cost of capital issues, shipping rates, etc.
 - Lots of sources – international agencies, local government statistics, trade organizations, etc.
- ▶ Data available from centralized sources are often incomplete or not current:
 - e.g., U.S. Bureau of Labor Statistics data:
 - » Doesn't specifically address many LCCs (e.g., China, India)
 - » Often lags 1-2 years or more
 - » No longer includes an ocean freight index (discontinued in 2008)
- ▶ Relevant data still needs to be built into a *model*, to tell the complete story for a particular product and point of manufacture

Objectives of Our Study and Index

- ▶ Establish an index that accurately reflects the expected cost/benefit of outsourcing manufacturing from the U.S. to key LCCs
 - Using a market basket of real-world parts
 - Addressing the major cost-drivers of LCC sourcing
 - Using the most current data available
- ▶ Calculate the index over time to understand trends in detail
 - Using 2005 as the baseline
 - Calculating for each subsequent through 2008
- ▶ Going forward, analyze potential scenarios based on current trends in the global economy
- ▶ Update and publish the index annually to provide more accurate and timely data to manufacturing decision-makers

Study Approach: Cost of Manufacturing in the U.S. vs. Cost of Outsourcing to a Selection of Key LCCs



- ▶ Baseline: Typical expected cost to manufacture in the United States
- ▶ Initial LCCs for the study were selected based on the following criteria:
 - Major recipients of recent manufacturing outsourcing from the U.S.
 - Representative geographic cross section
 - Competent outsourcing supply base for the items being evaluated

Analyzed: A Selection of Components and Simple Assemblies, With a Range of Cost Structures...

Initial Market Basket Cost as % of Total Cost

Part Type	Labor ¹	Overhead ¹	Freight ¹	Import Duties ²
Complex machined aluminum die casting	High, fabrication only	Moderate capital equipment	Moderate value per weigh - weigh out container	Moderate (2% - 4%)
Small precision blanked and fabricated steel part	Moderate, fabrication only	Moderate capital equipment, tooling	Low value for weight – weigh out container	Moderate (2% - 4%)
A simple “deep-draw” stamped steel part	Low, fabrication only	High capital equipment, tooling	Low density shipping – cube out container	Moderate (2% - 4%)
Small injection molded plastic part	Low, fabrication only	High capital equipment, tooling	Low value per weigh – cube out container	High (>4%)
Electronic Module (position sensor)	Moderate, fabrication and assembly	Low capital equipment, tooling	High value for cube and weight	Low (<2%)
Small DC motor assembly with brake	High, fabrication and assembly	Low capital equipment, tooling	High value for cube and weight	Low (<2%)

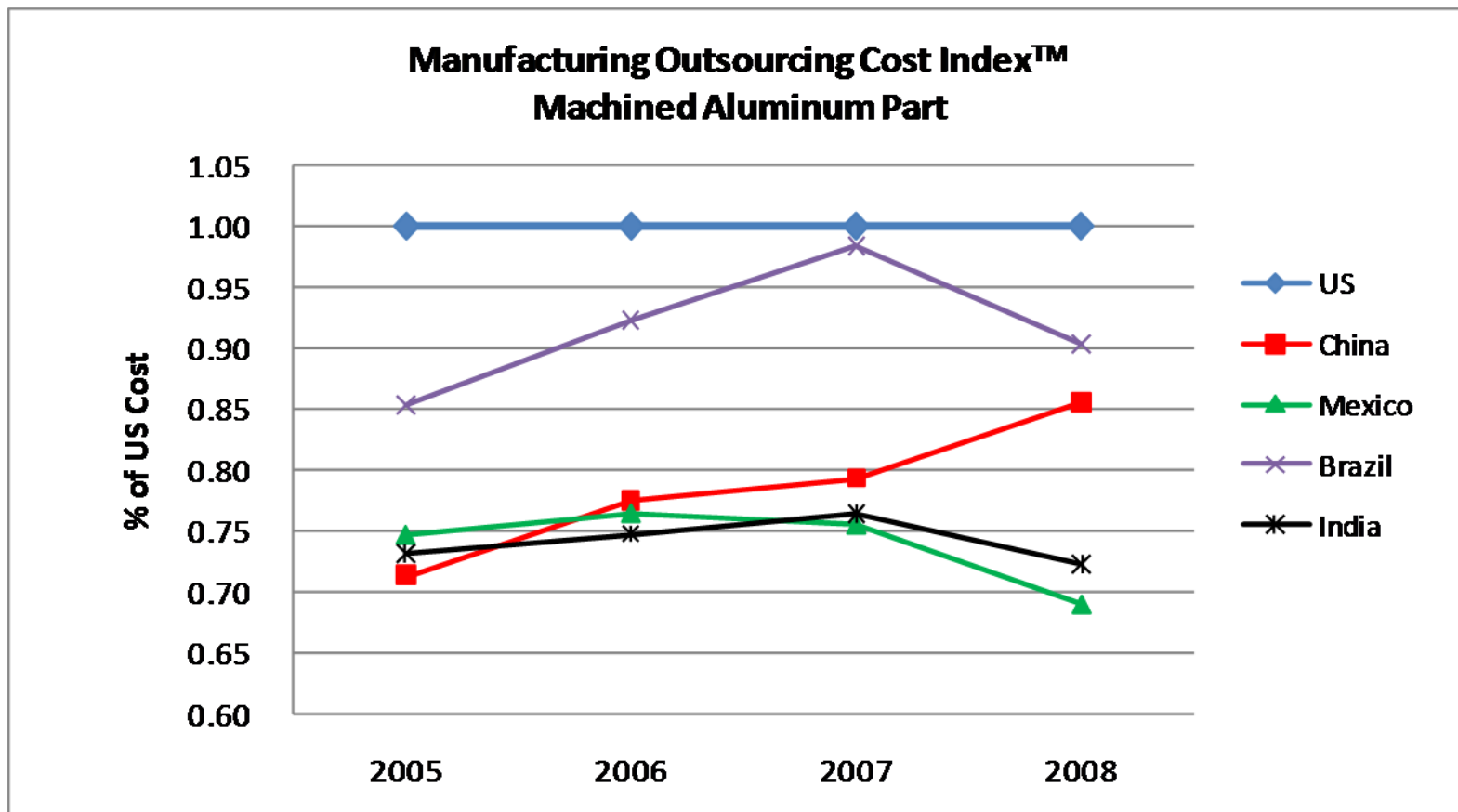
- ▶ Sample parts included piece parts and simple assemblies, making the analysis more of a “pure play” for the LCC in question
- ▶ Items selected to have significantly different cost structures, in order to understand the relative impact of changes in raw-material, labor content and shipping costs

Notes:
 1) Cost as a percentage of total product cost
 2) Non-NAFTA countries only

...And Seven Key Cost Drivers, Modeled for Each Type of Part and Country (Adjusted Annually)

- ▶ **Raw Materials** – Assumed material was sourced locally at global commodity prices
- ▶ **Labor** (hourly and salaried) – Differences in average wages, benefits and productivity
- ▶ **Overhead** – Relative cost of energy, plant and equipment, taxes, other services like insurance, and a typical profit margin for the supplier
- ▶ **Exchange Rate** – Changes in exchange rate applied to total production cost (capped at 10% on material)
- ▶ **Freight** – Typical cost from each country to the U.S. port, including an estimate of inland freight at the country of origin
- ▶ **Duties** – U.S. import duties for the type of part where applicable
- ▶ **Inventory** – Assumed 45-day incremental in-transit inventory for intercontinental (inland transportation, ocean freight, customs, etc.) and seven days for Mexico

The Result: A Market-Basket Index & Part-Specific Cost Indices For Each Country

EXAMPLE

Agenda

- ▶ Introduction and Approach
- ▶ Key Findings

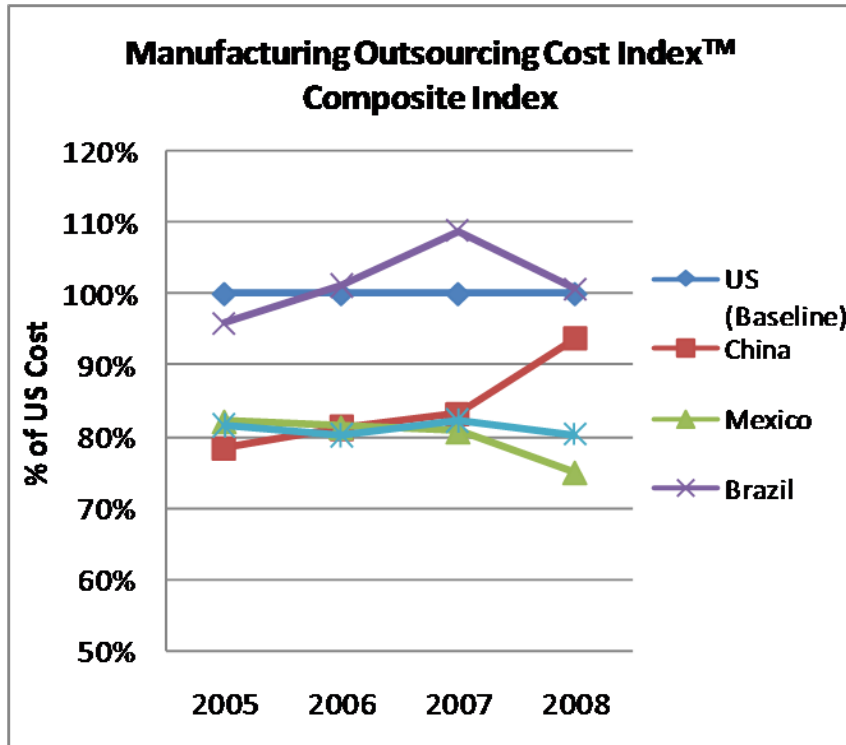
Cost Ranking of Benchmark Countries Shifted Markedly From 2005 to 2008, with Mexico Overtaking China and India

Change in Manufacturing Cost Ranking for LCCs Analyzed

2005 Cost Ranking ¹	End of 2008 Ranking ¹
1. China	1. Mexico
2. India	2. India
3. Mexico	3. China
4. Brazil	4. U.S.
5. U.S.	5. Brazil

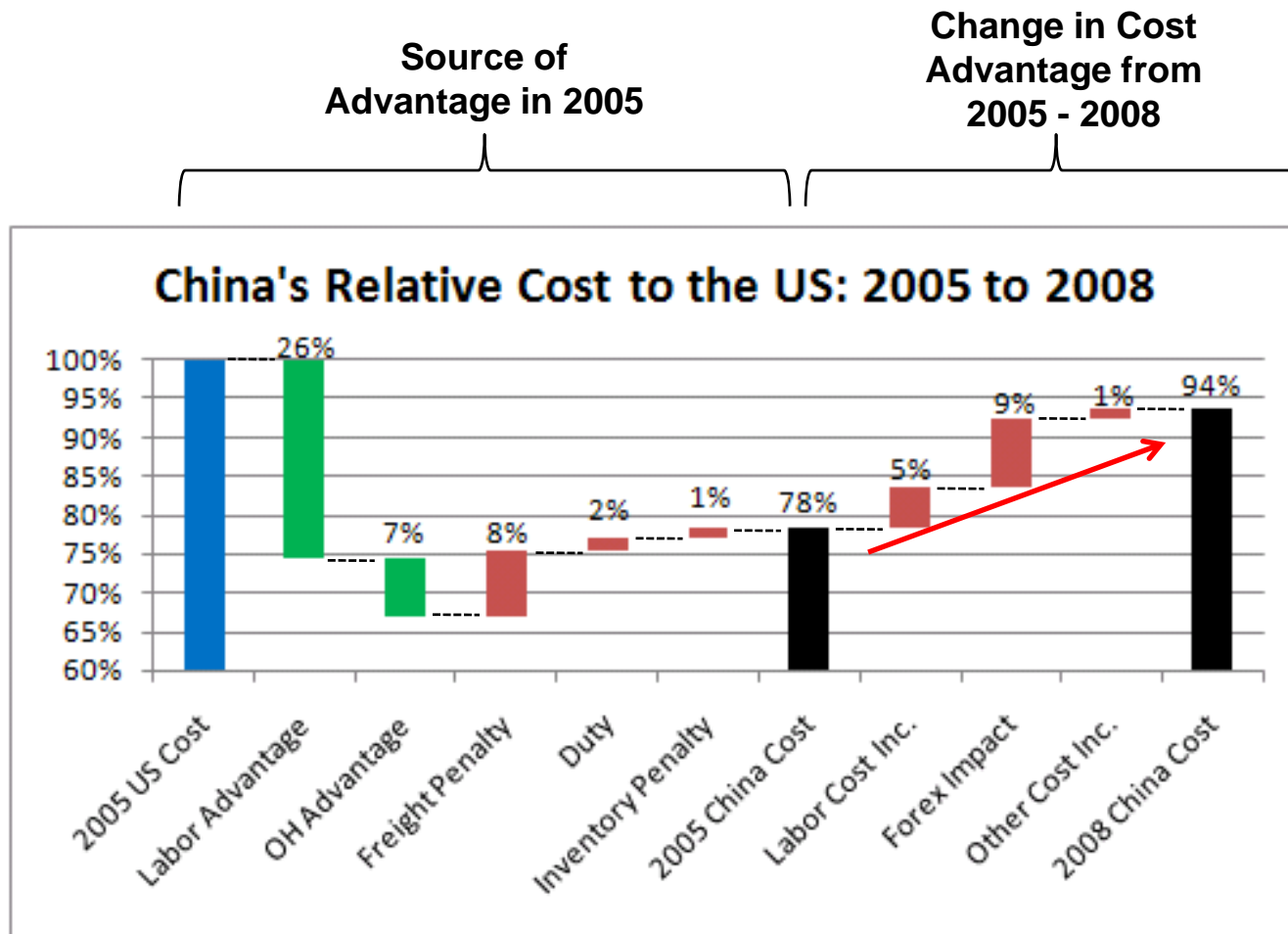
* Lower total landed cost countries are ranked higher

The Drivers: Different for Each Country Analyzed



- ▶ **China:** Its 20%+ cost advantage has eroded to about 5% driven by a wide range of cost increases
- ▶ **Mexico:** Saw biggest improvement, driven by favorable exchange rate, relatively low transportation costs and free-trade status
- ▶ **India:** Maintaining competitive position, with weak rupee offsetting increases in internal costs and freight
- ▶ **Brazil:** Improvement in 2008 due to a drop in the real, but still not as attractive as the other LCCs

China's Total Landed Cost Has Increased to an Average 94% of Current U.S. Cost*...



The most significant drivers of change in cost advantage:

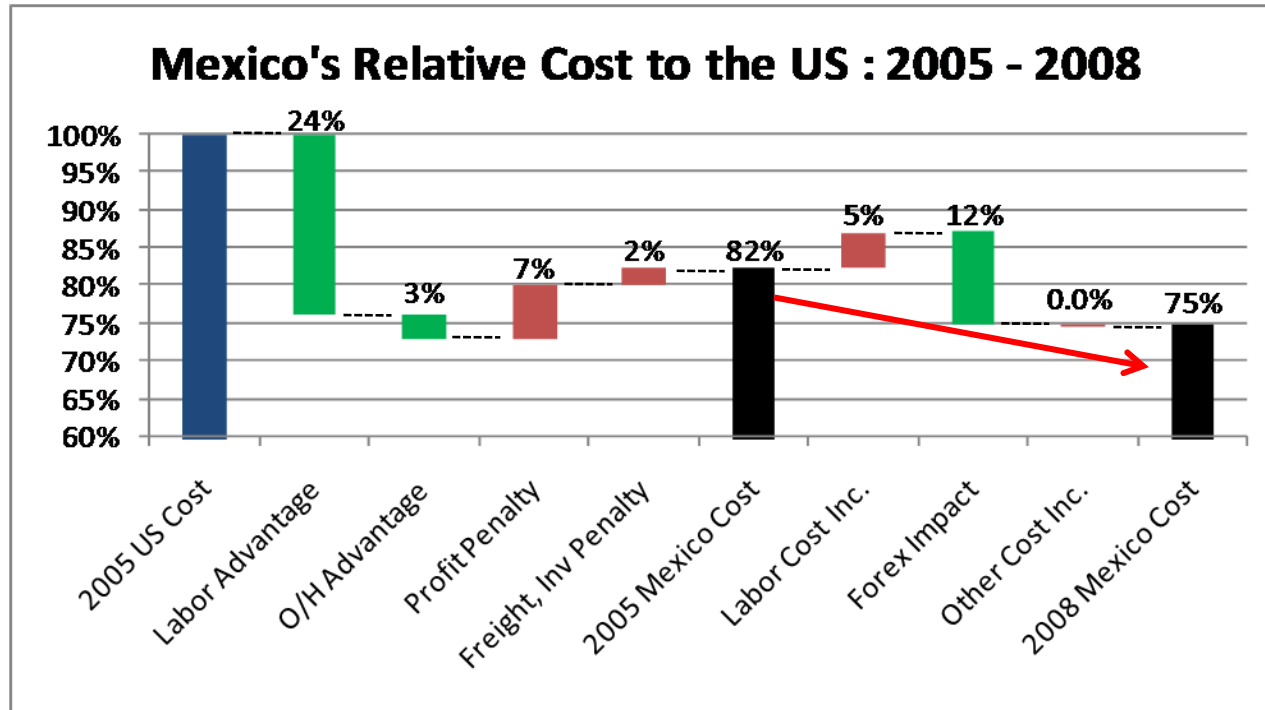
- 20+% appreciation of the Chinese Yuan
- Freight cost increases
- Labor cost inflation

■ = Improvement in Cost Advantage vs. US (reduction in total part cost)

■ = Decrease in Cost Advantage vs. US (reduction in total part cost)

* For market basket of parts in Index

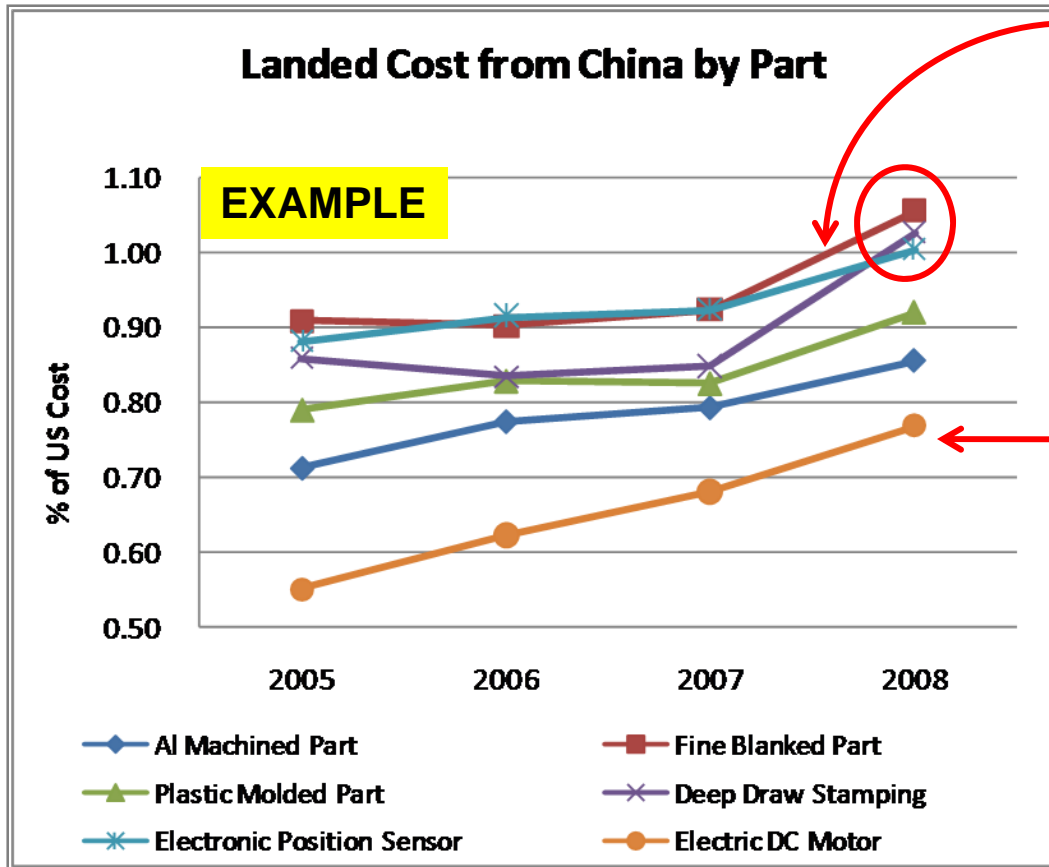
... While Mexico's Position Has Improved Dramatically



▶ The most significant drivers:

- The almost 20% drop in the peso, most of which happened in the last half of 2008 more than offset the local wage inflation over the last three years
- Mexico was not impacted as significantly by the change in freight rates as other LCCs
- Duty-free status avoided the increase in the import duty driven by the escalating material cost and exchange rate in other LCCs

...However, the Advantages/Disadvantages Vary by Part Type



▶ Fine Blanked Part

- Low value add
- More influenced by shipping cost and material cost impact on inventory, duties, etc.
- Went from 10% savings to 5% cost increase

▶ Motor Assembly

- Relatively high value add and highest value density for shipping
- More influenced by local wage growth and FX
- Still significant savings, but decreased from 45% to 25%

- ▶ China's cost now comparable to U.S. cost for items like low-value-added stampings and highly automated parts

Variables are too complex to use simple "rules for thumb" across part types

The Best-Cost Country (BCC) Per Part Type Has Generally Changed

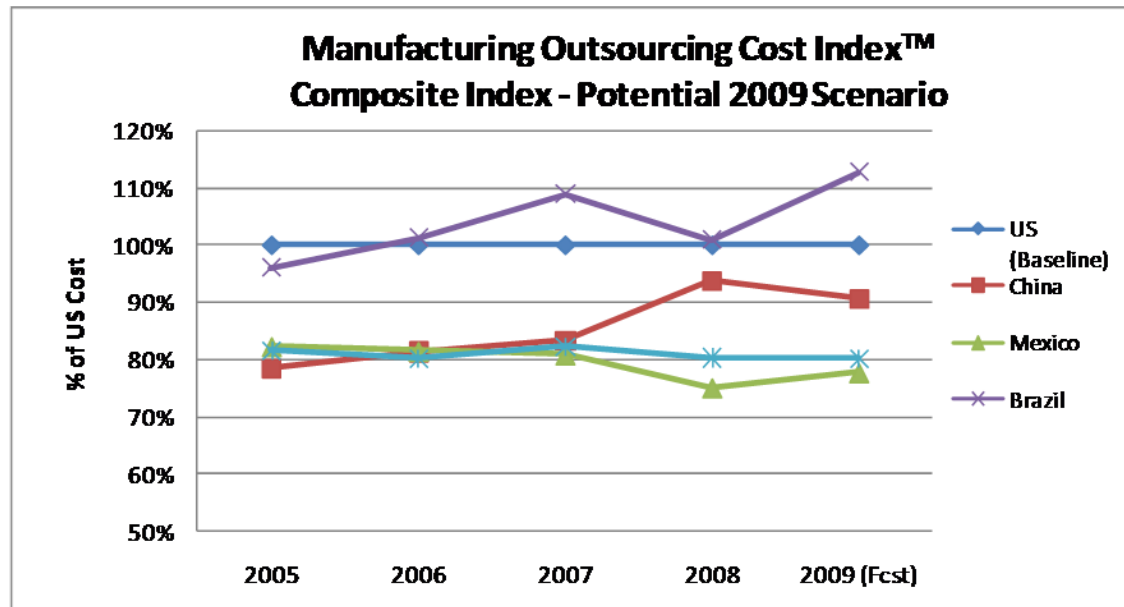
Part Type	2005 BCC	2005 Cost vs. U.S.	2008 BCC	2008 Cost vs. U.S.
Al Machined Part	China	71%	Mexico	69%
Fine Blanked Part	Mexico	90%	Mexico	82%
Plastic Molded Part	China	79%	Mexico	75%
Deep Draw Stamping	Mexico	82%	Mexico	75%
Electronic Position Sensor	China	88%	Mexico	82%
Electric DC Motor	China	55%	India	66%

- ▶ Mexico retained its cost advantage on very low value-added and high-shipping-cost metal stampings, and the expected savings increased
- ▶ Mexico's cost advantage surpassed China for the moderate labor and shipping cost parts – the expected cost is slightly lower than China's 2005 cost
- ▶ The high-labor-cost motor assembly had small decrease in the outsourcing savings opportunity, and should have a slight total landed cost advantage over Mexico

What's Likely to Happen in the Future?

- ▶ **Exchange rates:** Most economists are predicting a strengthening rupee, and a continuing weak peso relative to the U.S. dollar. The yuan seems to be holding its ground.
- ▶ **Transportation costs:** Likely to drop back to 2007 levels or less, as oil prices stabilize at below \$60/barrel and the world economy remains soft
- ▶ **Raw material costs:** Should not be a big differentiator since prices for global commodities are dropping everywhere, including in the U.S.
- ▶ **Local wage inflation:** Will likely be slowed by a weakening global economy; however, this would have a very small impact on overall landed costs
- ▶ **Taxes/duties:** Import duties from China, India and Brazil will likely fall as falling material costs and weaker currencies reduce the base product cost. More of the effect of China's elimination of VAT rebates will flow through to U.S. customers as fixed-price contracts expire.

If These Trends Continue, China's Cost Position Will Improve, But Not Enough to Overtake Mexico and India



- ▶ **China:** A small improvement in cost competitiveness, as the yuan strengthens and transportation costs drop
- ▶ **Mexico:** Still the lowest delivered cost to the U.S., but loses some of its exchange-rate-driven advantage of 2008
- ▶ **India:** Continues to be strong as favorable exchange rates are expected to continue, and transportation costs and effective duties drop
- ▶ **Brazil:** If exchange rates swing back to 2007 levels as expected, Brazil's manufacturing cost will again exceed that of manufacturing in the U.S.

Smart Companies Will Do Their Homework On the Options/ Risks Before Making a Next Move

- ▶ Step 1 – Understand your true cost structure
 - Analyze parts based on key drivers of the cost structure
 - Do sensitivity analysis to understand how much key factors need to change in order to change the sourcing location answer
- ▶ Step 2 – Develop a 3-5 year plan for product sourcing
 - Balance switching costs with short term gains to generate the best overall return
 - Build in an “operational hedge” so that you can shift volume without starting over to take advantage of ebbs and flows in the outsourcing tides
 - Watch which bridges you burn with suppliers – you may need to use them again
- ▶ Step 3 – Aggressively execute the plan
 - Plan well, but move fast – In this fast changing environment, you can't take three years to respond to major shifts in economic forces
 - Watch for significant changes and have contingency plans in place – it looks like it is going to be a bumpy ride for the next several years

***For a complete version of the study report, or to discuss
the impact of our findings on your business, please
contact us at:***

<http://www.alixpartners.com/>

AlixPartners – Global Offices



AlixPartners is a global business advisory firm offering comprehensive services to improve corporate performance, execute corporate turnarounds, and provide litigation consulting and forensic accounting services. The firm's specialty is urgent, high-impact situations when results really matter.

CHICAGO

300 N. LaSalle Street
Suite 1900
Chicago, IL 60654
312.346.2500

DALLAS

2100 McKinney Ave.
Suite 800
Dallas, TX 75201
214.647.7500

DETROIT

2000 Town Center
Suite 2400
Southfield, MI 48075
248.358.4420

DÜSSELDORF

Königsallee 59 a
40215 Düsseldorf
Germany
+49.211.97.55.10.00

LONDON

20 North Audley Street
London W1K 6WE
United Kingdom
+44.20.7098.7400

LOS ANGELES

515 S. Flower Street
Suite 3050
Los Angeles, CA 90071
213.437.7100

MILAN

Corso Matteotti 9
20121 Milan
Italy
+39.02.360.12000

MUNICH

Mauerkircherstr. 1 a
81679 Munchen
Germany
+49.89.20.30.40.00

NEW YORK

9 West 57th Street
Suite 3420
New York, NY 10019
212.490.2500

PARIS

49/51 Avenue George V
75008 Paris
France
+33.1.76.74.72.00

SAN FRANCISCO

4 Embarcadero Center
Suite 3110
San Francisco, CA 94111
415.848.0283

SHANGHAI

Suite 6111
Plaza 66 Building I
1266 Nan Jing West Road
Shanghai, 200040 China
+8621.6171.7555

TOKYO

Marunouchi Building 24F
2-4-1 Marunouchi
Chiyoda-ku
Tokyo 100-6324 Japan
+81.3.5533.4800

WASHINGTON, DC

1602 L Street, NW
Suite 300
Washington, DC 20036
202.756.9000