

The Rise of Foreign Aerospace Suppliers in Mexico

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U.S. and foreign aerospace component suppliers have been increasingly locating production facilities in Mexico. Lower manufacturing costs (largely due to a lower wage structure), proximity to original equipment manufacturers (OEMs) in the United States, duty-free access to other important aerospace markets, and a Bilateral Aviation Safety Agreement (BASA) with the United States all contribute to Mexico's greater appeal compared with other global manufacturing locations.

Mexico's base of aerospace suppliers expanded rapidly from 109 firms to 249 during 2006–11. Employment also grew from 10,000 to 31,000 workers during this period, and by 2012, companies located in Mexico were supplying parts and structures to U.S. and foreign transport aircraft OEMs (table 1) and OEMs of general aviation aircraft (Bombardier Learjet, Cessna, and Hawker Beechcraft).

TABLE 1 Aerospace models by major OEMs, and number of suppliers (worldwide and Mexico), as of 2012

Corporation	Model	Number of suppliers (worldwide)	Number of suppliers (Mexico)	Percentage of suppliers in Mexico
Airbus	330-300	355	16	4.5
Airbus	A380	399	20	5.0
Boeing	787	299	14	4.7
Boeing	747-400	354	12	3.4
Bombardier	CRJ-200	299	13	4.3
Embraer	ERJ-135	279	17	6.1

Source: Mexico's Secretariat of the Economy and Aerospace Database, Program Tracker, February, 2012.

The majority of aerospace component suppliers in Mexico are subsidiaries of international aerospace companies (table 2). Mexico was reportedly the largest recipient of aerospace FDI during 2009–11, with over a \$1 billion of FDI per year.

TABLE 2 Aerospace companies with subsidiaries in Mexico

U.S. Companies		European Companies
Bombardier's Learjet division	Hawker Beechcraft	Eurocopter
Cambrian Industries	Honeywell	Fokker Technologies
Capsonic Automotive and Aerospace	Horst Engineering	Grupo Aernnova
Cessna, a division of Textron	Lockheed Martin	Labinal
Ducommun AeroStructures	Parker Hannifin	Meggitt PLC
John Bean Technologies Corp.	Paradigm Precision	Safran
General Electric	Rockwell Collins	Zodiac Aerospace
Goodrich	Electro Switch Corp	
Gulfstream Aerospace	Williams International	

Source: Company websites.

Factors contributing to growth

- **Cost advantages:** Suppliers in Mexico enjoyed a 15.7 percent cost advantage over their U.S. counterparts, with total labor costs that were only 32 percent of those in the United States, but higher transportation and other costs erode some of the labor advantage. Companies locating in Mexico also minimize their exposure to currency fluctuations, as the Mexican peso is linked to the U.S. dollar.
- **Free Trade Agreements:** The North American Free Trade Agreement (NAFTA), which entered into force in 1994, provides Mexican manufacturers with duty-free access to the U.S. and Canadian aerospace markets, reducing the cost to U.S. and Canadian OEMs of importing parts from Mexico. In July 2000, Mexico and the EU also formalized their free trade agreement. These agreements and Mexico's geographic proximity to manufacturers in the United States make Mexico an attractive market for investment by North American and European aerospace parts manufacturers.

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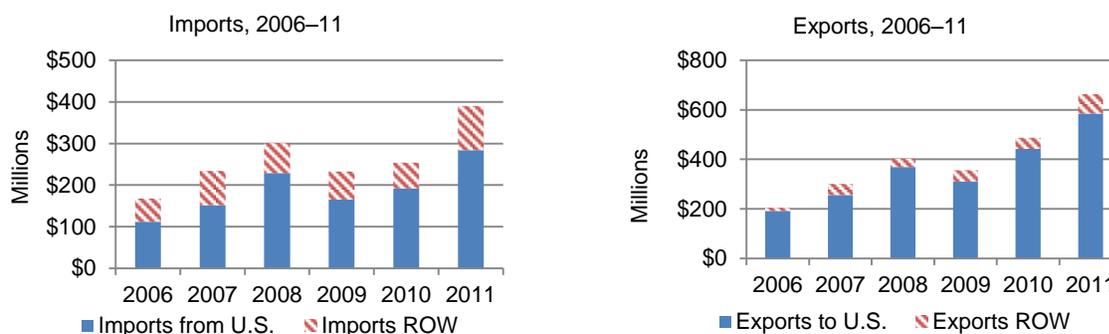
- Bilateral Aviation Safety Agreement:** Mexico signed a BASA with the United States on September 18, 2007. BASAs include detailed implementation procedures that identify the scope and terms of the cooperation between the regulating agencies, and enable aerospace companies in Mexico to certify aerospace designs and components in accordance with U.S. standards and in compliance with FAA regulatory rules. Previously, parts imported from Mexico would have to be inspected before they could be incorporated into airplanes in the United States.
- Government Assistance:** Mexico has five aerospace clusters, which are located in Sonora, Baja California, Chihuahua, Nuevo Leon, and Querétaro. Mexico's design capabilities and engineering expertise have grown with the opening of research and design centers near manufacturing clusters, accounting for 10 percent of Mexico's aerospace operations in 2010. For example, the state of Querétaro built a \$50 million aeronautical testing laboratory, which will conduct quality control tests for aerospace components. The goal of these research and design centers is to facilitate Mexico's transition from a low-cost manufacturing site to a participant in higher technology aerospace development, as part of Mexico's national strategy to serve the complete cycle of an aircraft.
- Workforce Development:** Educating and developing a highly skilled workforce has been a focus of the Mexican government in order to promote domestic manufacturing, with 115,000 engineering and technology students graduating from Mexican institutions each year.

Trade

Trade data illustrates the growth of Mexico's aerospace industry. Mexico's aerospace component exports to the world increased by \$460 million during 2006–11 (figure 1), driven in large part by greater exports to the United States, which accounted for 95 to 99 percent of such exports from Mexico.

Estimates from a Mexico-specific value-added database show Mexico's value-added share of its aerospace exports as 38 percent in 2003.¹ Estimates from a global value-added database show Mexico's value-added share of transportation exports at over 60 percent during 2000–09, and the U.S. share to have declined by nearly 10 percent during that period.² However, the Mexico-specific estimate for 2003 is likely more accurate because it includes additional data on processing trade.

FIGURE 1 Mexico's global trade in aerospace parts, with the United States and rest of world (ROW), 2006–11



Source: GTIS, Global Trade Atlas Database (accessed: December 2012).

Sources: Industry officials; Federación Mexicana de la Industria Aeroespacial, A.C., powerpoint presentation; Garvey, William, "Mexican Cluster," *Aviation Week & Space Technology*, March 28, 2011, 52; KPMG, *Competitive Alternatives: KPMG Guide to International Business Locations 2012 Edition*; Mexico's Aerospace Industry Road Map National Flight Plan, I; Manufacturing in Mexico, "Aerospace Manufacturing in Mexico; The Offshore Group, "Aerospace Manufacturing in Mexico;" ProMexico Investment and Trade, "Why Mexico: Aerospace: Industry Profile;" The Sacramento Bee, "Mexico's Aerospace Industry Takes Flight," July 22, 2012.

¹ Data not available for other years. De La Cruz et al. "Estimating Foreign Value-added in Mexico's Manufacturing Exports, April 2011.

² Calculations use the World Input-Output Tables for 2000-2009 using the entire transportation equipment sector. World Input-Output Database.

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