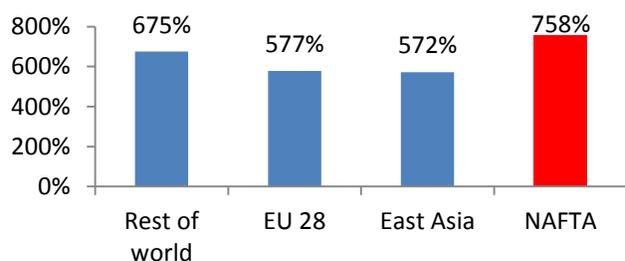


NAFTA and Medical Device Trade in North America

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Total medical device trade between the United States and its regional partners has grown faster than with any other leading trading bloc in the time since NAFTA’s inception (figure 1). Bilateral trade between the United States and Mexico is characterized by finished goods of low-value as well as parts, while Canada serves as a principal destination for U.S.-produced high-end devices. NAFTA has especially enabled the close collaboration of regional manufacturing clusters.

Figure 1. Total trade between the U.S. and its NAFTA partners expanded by more than with any other major trading bloc during 1994-2016 (%)

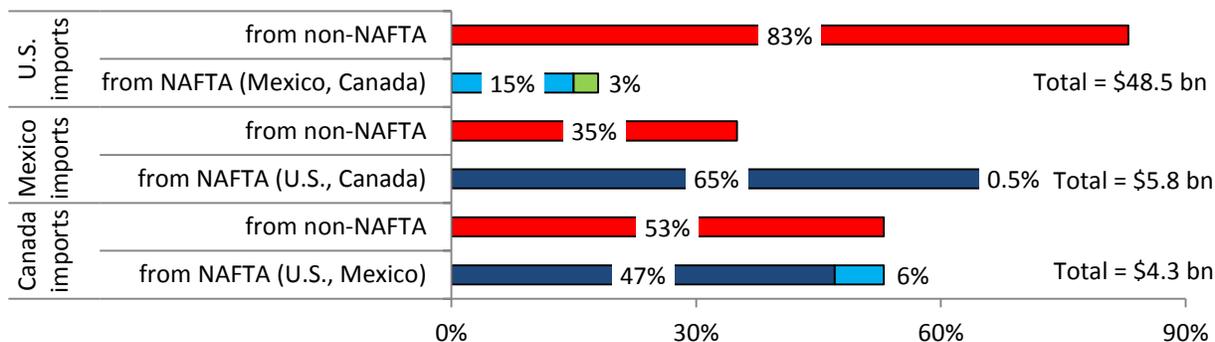


Source: Compiled by Commission staff from IHS Markit, GTA.

U.S.-NAFTA medical device trade has been primarily driven by trade with Mexico.

Since 2011, Mexico has emerged as the United States’ largest medical device trading partner; bilateral medical device trade reached \$11.1 billion in 2016. Moreover, Mexico was the largest single-country supplier of medical devices to the United States, representing 15% of such imports during 2016 (figure 2). Nearly two-thirds of these imports are instruments, appliances, needles, catheters and other goods of low-value, all of which enter the United States duty-free under NAFTA.

Figure 2. In 2016, the United States was by far the single-largest supplier of medical devices to Canada and Mexico, while Mexico was the largest source of medical devices for the United States (% share).



Source: Compiled by Commission staff from IHS Markit, GTA.

U.S.-Mexico medical device trade is driven by parts and finished goods of low-value (surgical instruments)

Total trade in medical device parts,¹ between the United States and Mexico is likely significant; 20 of the 50 largest product categories comprising medical device trade identified in the *Harmonized Tariff Schedule* (HTS) include “parts” in their product descriptions. However, the HTS often conflates finished goods with parts, making it difficult to parse out parts from final goods. Although in some cases, such as with cardiac pacemakers, parts are distinctly identified from finished goods in the HTS. According to the Department of Commerce, Mexico supplied more than half of such parts to the United States in 2016.² Further, two-thirds of

¹ The diversity of medical devices is reflected in their various parts. Such parts include plastic components used for intravenous drug delivery catheters, steel used for orthopedic implants, and electronic components used for devices from pacemakers to diagnostic equipment.

² Parts for pacemakers are listed under HS 9021.90.4080, but these data are only available for U.S. imports.

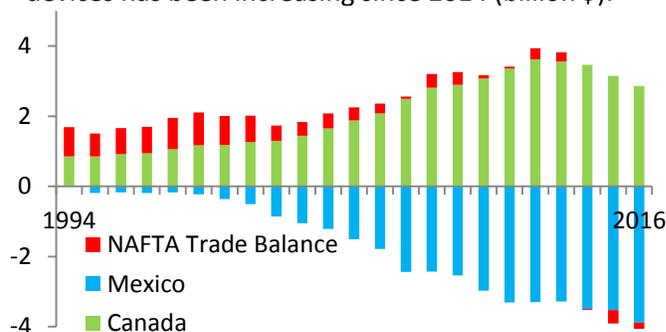
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total trade between U.S.-Medical device trade is of surgical instruments—a category of goods that are low in value.

The U.S. medical device trade deficit with its NAFTA partners has increased in recent years (figure 3)

During 1994–2014, the United States maintained a trade surplus in medical devices with its NAFTA partners, due primarily to robust Canadian imports of surgical equipment, implantable devices, and intravenous diagnostic equipment from the United States. However, this trend reversed during 2014–16, reflecting slightly reduced demand from Canada’s relatively mature medical device market; the U.S. trade deficit with Mexico has remained consistent, driven by U.S. imports of surgical equipment.

Figure 3. The U.S-NAFTA trade deficit for medical devices has been increasing since 2014 (billion \$).



Source: Compiled by Commission staff from IHS Markit, GTA.

NAFTA spawns regional medical device manufacturing clusters

The duty-free provisions of NAFTA have contributed to the presence of medical device manufacturing clusters—defined as geographically concentrated, interconnected entities—across North America. In Mexico, clusters are referred to as “maquiladoras,” and the largest is in Baja, California (a region in Mexico that borders California). This maquiladora boasts nearly 70 medical device manufacturing facilities, many of which are owned by U.S. firms (e.g., CareFusion, DJO Global, Hill-Rom-Welch-Allyn, Integer, and Medtronic). These companies have benefitted from labor-cost arbitrage opportunities by relocating much of the labor-intensive manufacturing activities into Mexico. In one example, wages for medical device technicians in Tijuana—Mexico’s largest medical device producing city—are roughly 44% less than similar jobs in the United States, according to the *New York Times*. In contrast, most of the high-value-added activities, such as research and development, are largely conducted in the United States.

Likewise, a prominent U.S. medical-device manufacturing cluster operating in San Diego works closely with the maquiladora in Baja California; bilateral trade between Mexico and the United States is largely driven by these respective clusters and reflects an integrated supply chain. For example, the San Diego-based cluster accounted for nearly one-half of U.S. medical device imports from Mexico in 2016. At the same time, the Baja California-based maquiladora accounted for nearly one-quarter of Mexico’s medical device imports from the United States in 2016. In Canada, clusters operating in Ontario and Quebec account for some 80 % of the country’s medical device production and 84% of regional trade with its NAFTA partners. As in the case with Mexico’s Baja California maquiladora, Canada’s clusters are principally led by U.S. firms, such as Abbot, Baxter, GE Healthcare, Phillips Healthcare, and Zimmer.

Canada has largely served as a leading market for U.S.-finished medical devices

Canada’s principal role in the North American medical device supply chain is that of a consumer of high-end medical devices from the United States, which is facilitated by NAFTA-enabled duty-free treatment. In 2016, Canada was the United States’ fifth-largest medical device export market and a leading consumer of U.S.-produced, high-end medical goods, ranging from orthopedic devices and intravenous diagnostic equipment to diagnostic technologies.

Sources: *New York Times*, “Revisiting Nafta,” April 27, 2017; Varney, “Also Made in Mexico,” March 31, 2017; Government of Canada, Canadian Trade Commissioner Service, Invest, *Medical Devices*, 2014; Cluster de Productos Médicos, “Medical Device Industry,” PowerPoint presentation, n.d.; IHS Markit, Global Trade Atlas (GTA) (accessed July–August 2017); Official Statistics of the U.S. Department of Commerce (accessed August 15, 2017).