



2016 Top Markets Report **Manufacturing Technology** Country Case Study

Germany

Germany ranks fourth overall in this year's Manufacturing Technology Top Markets Report. Germany is Europe's largest economy and a top global manufacturing market. Germany benefits from a highly skilled labor force and is a leading supplier of machinery, motor vehicles, household appliances, and other manufacturing sectors.

Overall Rank

4

U.S. Exports:
4th

Export Growth:
13th

2012 UNIDO Industrial
Competitiveness
Ranking:
1st

UNIDO Industrial
Competitiveness
Growth Ranking:
21st

Subsector Ranking

Machine
Tools
(Cutting):
5th

Machine
Tools
(Forming):
6th

Welding &
Soldering
Equipment:
5th

Plastics &
Rubber
Equipment:
3rd

Tools, Dies,
Jigs, and
Fixtures:
3rd

Machine Tool
Parts:
8th

Industrial
Molds:
3rd

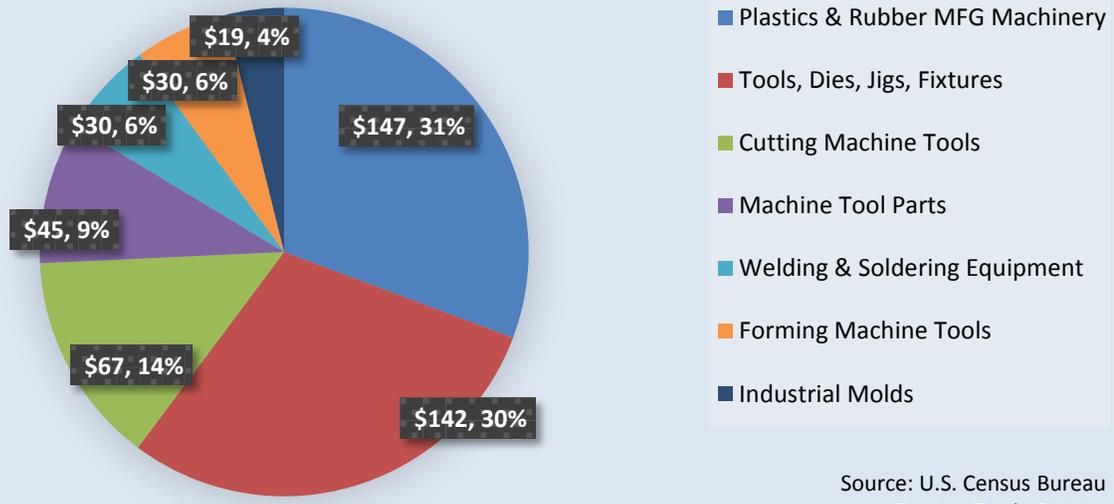
Additive
Manufacturing
Equipment:
1st

ITA expects that U.S. manufacturing technology exports to Germany will grow through 2017. In 2015, U.S. exports in the sector were valued at just under \$480 million. Germany is the largest European recipient of U.S. manufacturing machinery. Exports to Germany decreased by 3.0 percent between 2014 and 2015, marking the first decline since 2011. This was largely due to appreciating value of the U.S. Dollar against the Euro. At the beginning of 2014, exchange rates were 1USD:0.73EUR. By the end of

2015, rates had reached 1USD:0.92EUR, resulting in headwinds for U.S. exports. Between 2009 and 2015, exports grew at an average annual rate (CAGR) of 7.0 percent. Despite the single year decline in 2014, ITA expects that exports to Germany will grow on the continuing strength of the country's manufacturing output, both in the short-term and long-term.

Country Overview

Figure 1: U.S. Manufacturing Technology Exports to Germany, 2015 (in USD millions)



Source: U.S. Census Bureau Foreign Trade Division

Germany is the economic powerhouse of Europe. It is the most populous European country with roughly 81 million residents, and it is the fourth largest global economy by GDP. Germany is a major consumer and also net exporter of motor vehicles, machinery, electrical equipment, rubber and plastics products, and more. The country’s emphasis on advanced vocational apprenticeship programs has helped to make “German engineering” synonymous with advanced, precision manufacturing. As of 2015, Germany is the largest global supplier of manufacturing technology products. According to latest available U.N. trade data, the United States was the 6th largest supplier of manufacturing technology products to Germany, behind Switzerland, Italy, China, Austria and Japan. The United States captured 5.4 percent of the import market in 2014, a position it has sustained with relative stability since 2009.

Despite being the largest competing supplier of manufacturing technology products, Germany remains a growing consumer of U.S. exports in this sector, particularly for highly specialized items. For many companies, entering the German market is an important element of any comprehensive export strategy to Europe.

Export Overview

In 2015, Germany was the third largest recipient of U.S. products in three manufacturing technology subsectors. Plastics and rubber working equipment accounted for \$147 million and was the largest

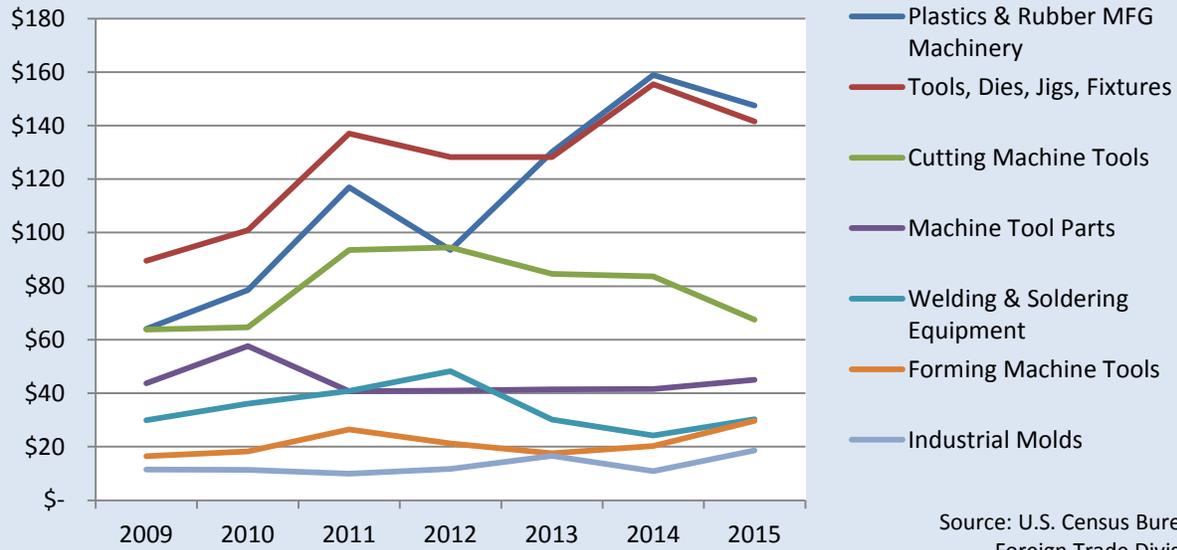
volume of exports to Germany in 2015. Between 2009 and 2015, exports in the subsector grew at an average annual rate (CAGR) of 14.9 percent. ITA expects that sales opportunities for machinery and parts to Germany will continue to be strong in this subsector through 2017.

Tools, dies, jigs and fixtures represent another major subsector. In 2015, sales were \$141 million. Between 2009 and 2015, sales of these products grew by 7.9 percent annually (CAGR). Subsector growth was bolstered largely by sales of inserts and accessories made from sintered carbides, which accounted for \$65 million in 2015, or just under half of sales in this subsector. Sintered carbide toolmakers experienced 13.3 percent sales growth (CAGR) between 2009 and 2015, and ITA expects further growth opportunity particularly for this product in Germany through 2017.

Despite accounting for a relatively small proportion of total manufacturing technology exports to Germany, industrial mold sales in 2015 were \$18.6 million, making Germany the 3rd largest export market for U.S. mold makers. Sales in this subsector have increased at an average annual rate of 8.3 percent (CAGR) from 2009 to 2015. However, it is important to note that sales to Germany remain relatively marginal, accounting for less than 3 percent of total U.S. mold exports in 2015.

Germany is a major consumer of machine tools, and in 2014 it was the fifth and sixth largest recipient of U.S. cutting and forming machine tools, respectively.

Figure 2: Annual U.S. Manufacturing Technology Exports to Germany, by Subsector (in USD Millions)



Source: U.S. Census Bureau Foreign Trade Division

Sales of cutting tools, typically higher valued machines, have declined consistently since 2012, and were \$67 million in 2015, the lowest since 2010. Exports of forming tools, however, saw improvements in 2015, accounting for just under \$30 million. Average annual growth between 2009 and 2015 in this subsector was 10.2 percent (CAGR). According to latest available United Nations trade data, between 2009 and 2014, U.S. share of the German import market for both subsectors remained relatively stable, at roughly 3.5 percent for cutting tools and 4.2 percent for forming tools. The greatest value of U.S. exports in the subsector came from highly advanced computer-numerical control (CNC) laser and photon beam machine tools to achieve highly precise cuts. This is important to note as it highlights the continued opportunities for U.S. companies with competitive products regardless of subsector. As noted in the Executive Summary and later in the Sector Snapshots, Germany is the dominant global supplier of manufacturing technology outlined in this report. Trumpf, Schuler and DMG Mori Seiki AG all are prominent machine tool producers in Germany. However, U.S. companies that produce high-tech, high-quality products will still find opportunities in advanced manufacturing markets.

Germany was the 8th largest export market in 2015 for U.S. machine tool parts, as well as welding and soldering equipment. Sales of components and after-market parts for machine tools accounted for \$45

million in sales that year, while sales in welding and soldering equipment were \$30 million.

Germany is a growing market for additive manufacturing equipment, and is a major global competitor in the powdered metal realm. Additive manufacturing has garnered considerable attention in Germany as it relates to the Industrie 4.0 initiative, which focuses on machine connectivity and supply-chain integration. According to Wohlers Associates, Germany holds approximately 8.7 percent of the global installed base for additive manufacturing equipment, and is home to top companies like EOS, Arburg, Concept Laser, and more.¹ With machine tool giants Trumpf Group and DMG Mori Seiki AG also entering the additive manufacturing subsector, Germany will remain a top market for additive manufacturing equipment.

Challenges & Barriers

Germany maintains a highly open and transparent business environment, and there are few formal market access barriers. However, navigating the complex German regulatory landscape can present challenges. Regulations are heavily enforced, though they are applied consistently.

Probably the greatest challenge to entering the German market is overcoming German electro-technical standards and conformity assessment procedures, which differ markedly from those in the United States. For most electrical components such

as plugs and cables, U.S. and European standards are nonaligned. In practice this means that for most U.S. machinery makers, the additional labor required to assemble machinery for the German market will affect pricing, inflating the price paid by the customer while decreasing the cost competitiveness compared with domestic and other European-made machines. This is also true for German manufacturers in the U.S. market.

To date, standards nonalignment remains a controversial topic between the U.S. Government and the European Commission, particularly in the context of the ongoing Transatlantic Trade and Investment (T-TIP) negotiations. To overcome this obstacle, U.S. companies are advised to be well-versed in the relevant standards in place for the German market.ⁱⁱ

As part of the European Commission's "Machinery Directive," machinery sold within Germany and the EU is required to obtain a CE marking whenever the product is covered by specific product legislation. CE stands for "Conformité Européenne," and it is intended to demonstrate compliance with European safety and environmental standards.

In many regards, the intense competitive nature of the German market cannot be overlooked as a market barrier. According to a joint study by McKinsey and VDMA, one of the largest German trade associations for mechanical engineering industries, less than one percent of German companies operate in the low-price segment. The remaining companies operate in the medium- or premium- price segment, with 64 percent identified as operating in only the premium.ⁱⁱⁱ As a result, the competitive landscape for U.S. firms is quite stiff, and success is highly dependent on superior quality product offerings and robust localized customer service.

Know Your Buyer

In Germany, arguably more so than any other country, the role of trade fairs is critical to facilitating commerce, especially among larger items like capital goods. Germany is home to the world's largest industrial technology trade show, the Hannover Fair, as well as many of the largest vertical international trade events such as METAV, EuroMold, and AMB. Germany fosters a free market

system, and there are no regulations to bind U.S. exporters to a particular sales channel. Direct sales or indirect sales through distributors, agents, commercial representatives, and more are the norm, and the country's transparent business climate makes conducting due diligence more practical.

National and Regional Trade Shows

HANNOVER MESSE

April 25-29, 2016 — Hannover Exhibition Grounds, Hannover, Germany

<http://www.hannovermesse.de/home>

Poznan MACHTOOL

June 7 - 10, 2016 — Poznan, Poland

<http://machtool.mtp.pl/en/>

AMB

September 13-17, 2016 – Stuttgart, Germany

<http://www.messe-stuttgart.de/en/amb/>

Motek

October 10-13, 2016 – Stuttgart, Germany

<http://www.motek-messe.de/en/motek/>

K – Trade Fair for Plastics and Rubber

October 19-26, 2016 – Düsseldorf, Germany

<http://www.k-online.com/>

Euromold

December 6-9, 2016 – Düsseldorf, Germany

www.euromold.com/en/

EMO Hannover 2017

September 18-23, 2017 – Hannover, Germany

www.emo-hannover.de

International Trade Fair Joining, Cutting, Surfacing

September 18-23, 2017 – Essen, Germany

<http://www.schweissen-schneiden.com/joining-cutting-surfacing/>

METAV

February 20-24, 2018 – Düsseldorf, Germany

www.metav.com

Plast 2018

May 29-June 1, 2018 – Milan, Italy

<http://www.plastonline.org/en/>

ⁱ Tim Caffrey, Terry Wohlers “Wohlers Report 2015: 3D Printing and Additive Manufacturing State of the Industry” *Wohlers Associates, Inc.*, 2015. p. 30, 167.

ⁱⁱ For more information on trade regulations, customs, and standards, see the “Germany Country Commercial Guide” provided by ITA.

<http://export.gov/Germany/MarketResearchonGermany/CountryCommercialGuide/index.asp>

ⁱⁱⁱ McKinsey & Company, VDMA “The Future of German mechanical engineering: Operating successfully in a dynamic environment” July 24, pg. 28

http://www.mckinsey.com/client_service/automotive_and_assembly/latest_thinking/future_of_german_mechanical_engineering