OECD-WTO
Trade in Value Added
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TRADE IN VALUE ADDED: GERMANY

The international fragmentation of production in global value chains (GVCs) challenges the way we look at the global economy. Today, “what you do” - the activities a firm or country is involved in - matters more for growth and employment than “what you sell” - the products that make up final sales or exports.

Understanding how GVCs work and how they affect economic performance is essential, as is determining which policies help derive the greatest benefits, and reduce the risks. The OECD-WTO Trade in Value Added (TiVA) database facilitates analysis of GVCs by measuring trade in value-added terms to generate new insights about the commercial relations among economies and the process of value creation. Drawing on the third version of the TiVA database, this note describes Germany’s trade patterns in value-added terms, with a view to informing policy debates in a range of areas, including trade, innovation, and investment.

Accompanying this note is a User Guide designed to assist interpretation and provide context to the indicators presented: http://www.oecd.org/sti/ind/TiVA_2015_Guide_to_Country_Notes.pdf

Key findings

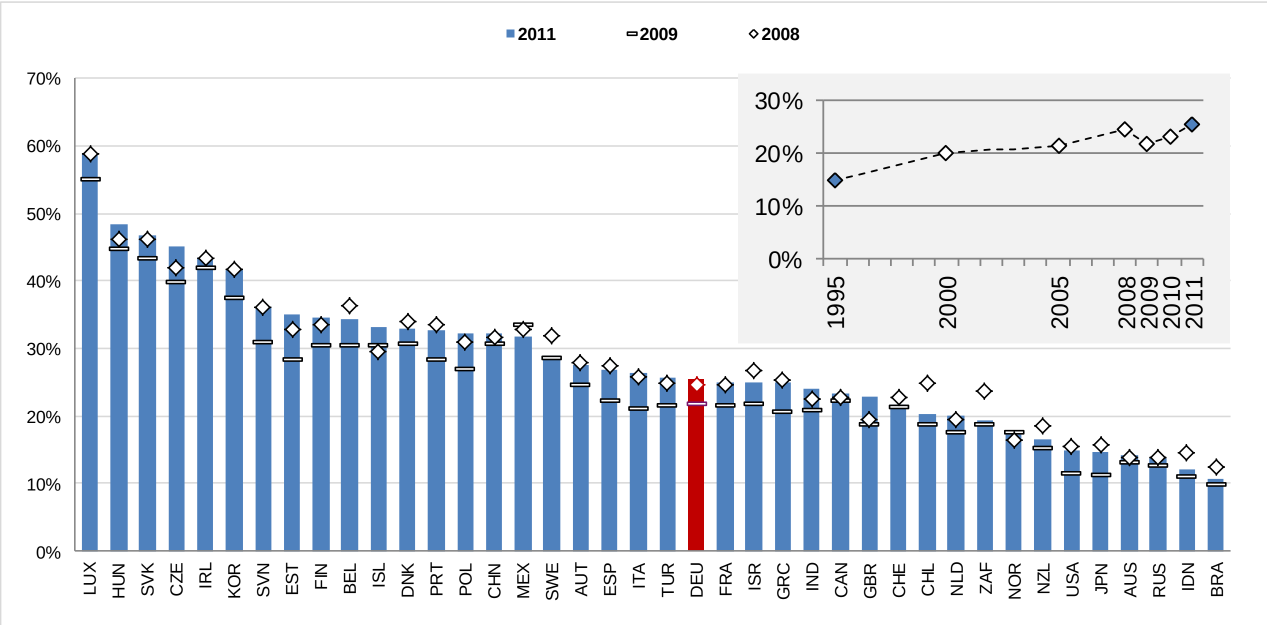
- The foreign content of Germany’s exports reached a new high in 2011, nudging above 25% and is now significantly higher (nearly 70% higher) than in 1995, reflecting in large part significant integration with a European value chain.
- But this growing integration is increasingly moving beyond Europe with nearly one-tenth of all Germany’s intermediate exports (in value-added terms) going to China in 2011 for further processing.
- These shifts also change the perspective on bilateral trade. In value-added terms the United States was Germany’s largest export market, with China slipping from third (in gross terms) to fifth (in value added terms).
- German Manufacturing drives Germany’s integration within value-chains, with the highest export orientation of manufacturing among the G7 and BRIICS economies, but services play an important role too, contributing 37.5% to the value of all manufactured exports in 2011.

The role of foreign and domestic value added in exports

The foreign content of Germany's exports increased to 25.5% in 2011, rebounding from the recent crisis low in 2009 (21.8%) and moving above the previous pre-crisis high in 2008 (24.7%) (Figure 1). The foreign content of German exports has increased significantly, by 10.6 percentage points, since 1995.

Figure 1. Foreign value added content of gross exports by country

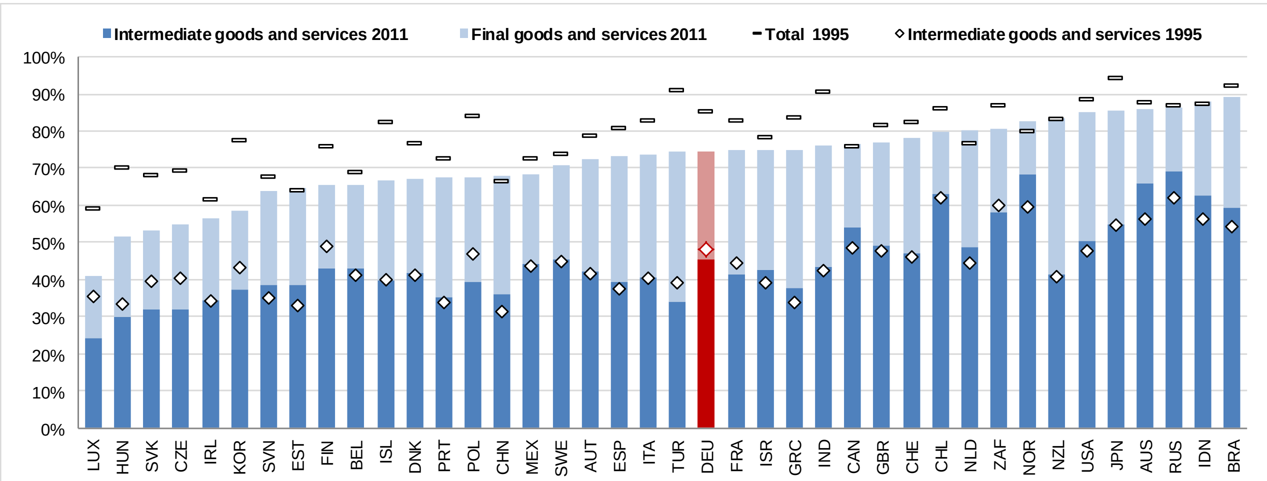
percent, 2008, 2009, and 2011 (right insert = time series for Germany)



Of Germany's total exports of domestic value-added in 2011, 61.2% reflected exports of intermediates, higher than in 2009 (55.9%), in part reflecting the rebound in GVCs that were disproportionally affected by the crisis, and in 1995 (56.5%) (Figure 2). Germany's share of intermediates in total exports of domestic value added in 2011 was marginally below the OECD average of 61.5%.

Figure 2. Domestic value added content of gross exports by end-use category by country

percent, 1995 and 2011



Direct exports by the Motor Vehicles industry generated the greatest source (both direct and upstream) of domestic value added in 2011, accounting for 9.9% of the total value added of exports. The next three most important industries were Machinery (8.4%), Wholesale, Retail & Hotels (8.1%, reflecting in part tourism and upstream distribution services), and Chemicals at 6.9% (Figure 3a). The large foreign contributions were in the Motor vehicles and Machinery industries, which together contributed 7.6% of Germany's total exports.

The foreign content of exports increased across all sectors between 1995 and 2011, largely reflecting increasing fragmentation of production within the European value chain. The three industries with the highest foreign value added shares in 2011 were Coke & petroleum, Basic metals and Other transport, with 63.7%, 45.2% and 35.4% respectively, compared to 28.5%, 22.6% and 24.5% in 1995 (Figure 3b).

Figure 3a. Germany's industry share of domestic and foreign value content of gross exports
percent of total gross exports, 2011

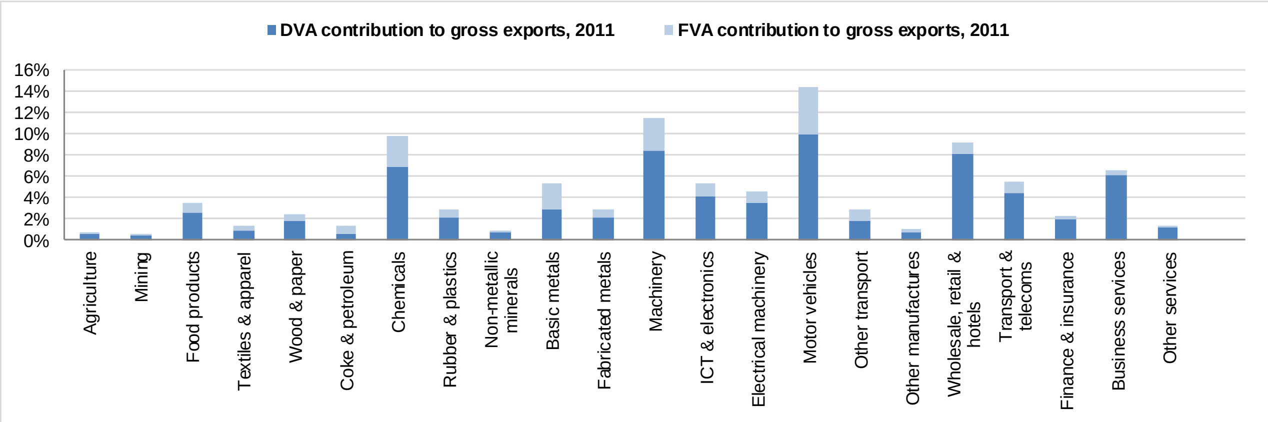
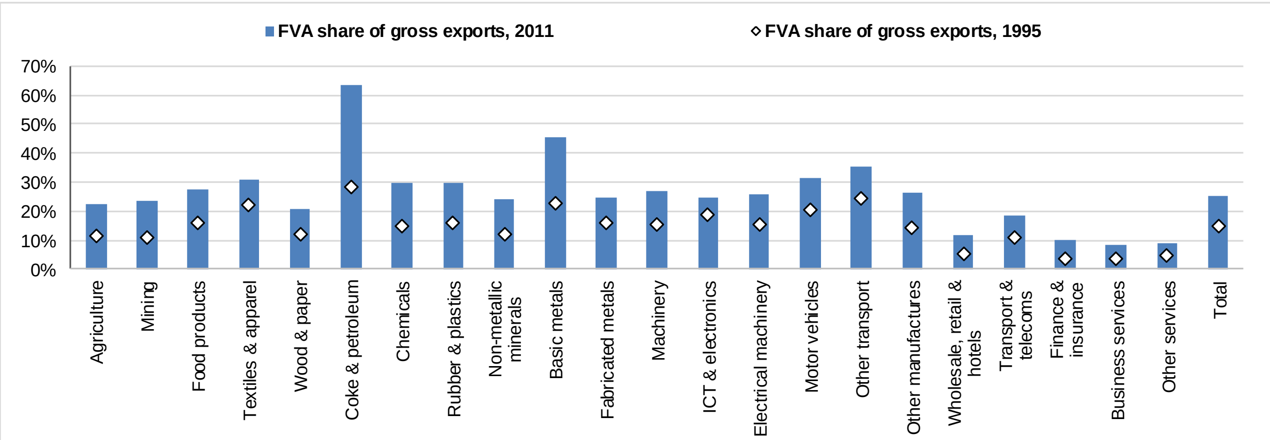
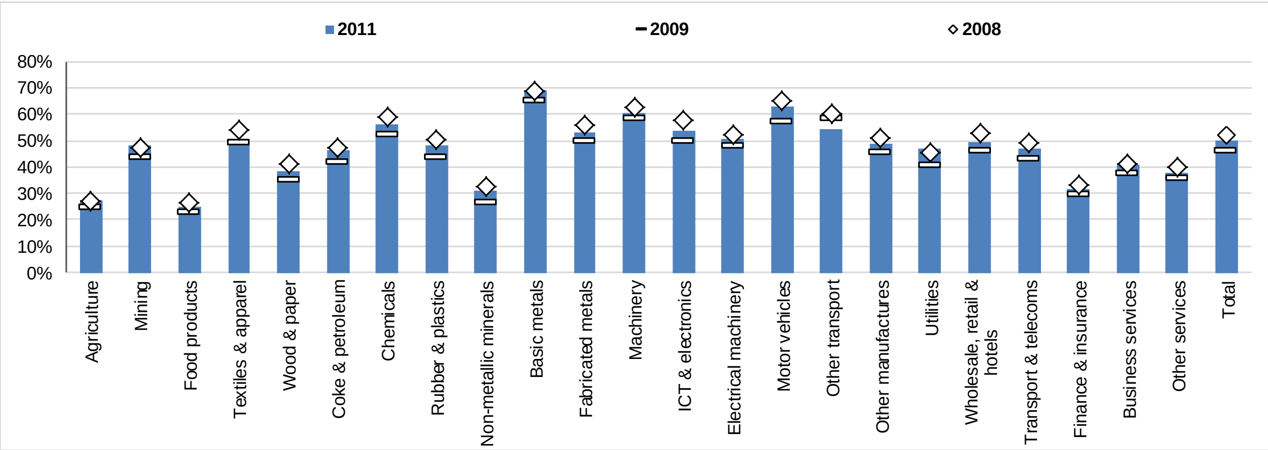


Figure 3b. Germany's foreign value added content of gross exports
1995 and 2011



Of the total value of Germany's imports of intermediate products and services in 2011, nearly half (49.9%) was subsequently embodied in exports, higher than the OECD average (39.3%) and the 2009 share (46.5%). The products with the highest shares were Basic metals, Motor vehicles and Machinery, at 68.8%, 62.9% and 60.4% respectively (Figure 4).

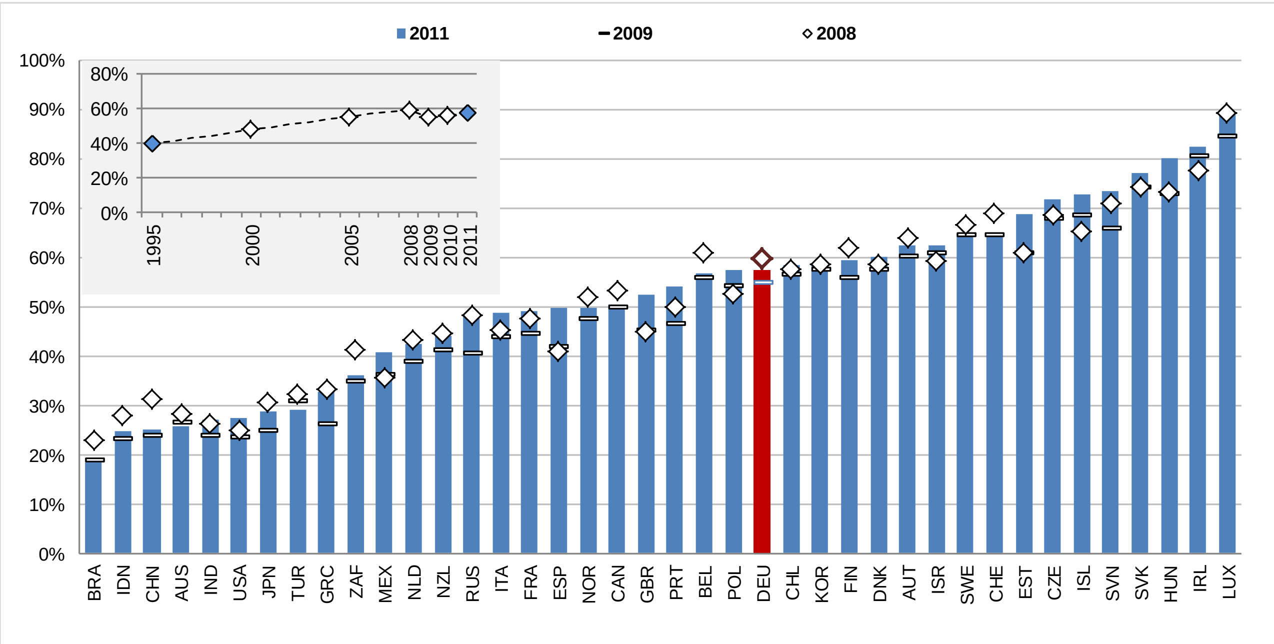
Figure 4. Germany's imported intermediate inputs used for exports, by import category
percent of intermediate imports, 2008, 2009, and 2011



The destination of domestic value added produced in Germany

Of the total domestic value added produced by the manufacturing sector in Germany, 57.5% reflected foreign final demand in 2011, the highest rate among the G7 and BRIICS economies, and higher than in 2009 (54.8%) though still below the 2008 high (59.5%) (Figure 5).

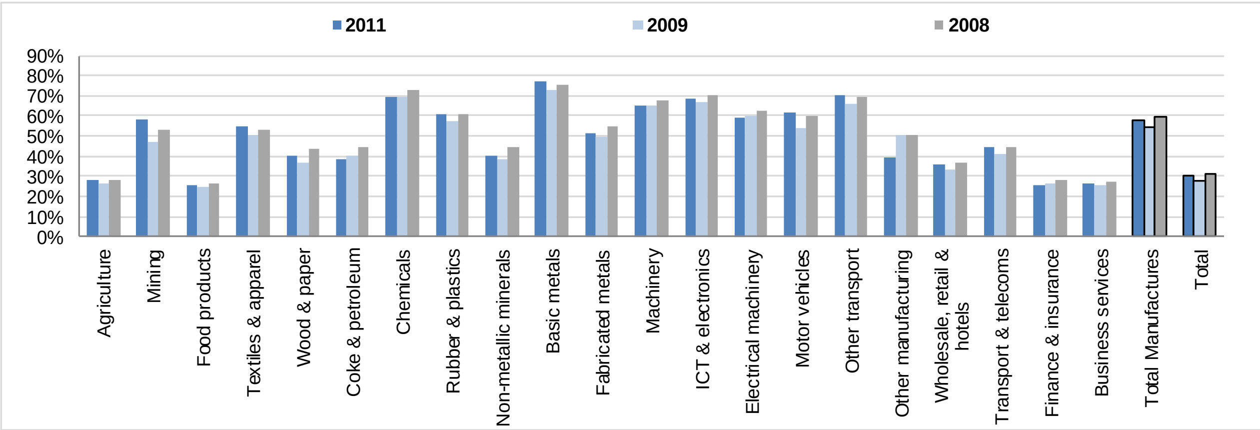
Figure 5. Manufacturing domestic value added in foreign final demand by country,
percent of total manufacturing value added, 2008, 2009, and 2011 (left insert = time series for Germany)



Note: Final demand excludes inventories: See also http://www.oecd.org/sti/ind/TiVA_2015_Guide_to_Country_Notes.pdf

At the total economy level, 30.0 % of Germany's domestic value added was driven by foreign final demand, but significant differences exist across industries. Basic metals (77.2%) and Other transport equipment (69.9%) had the highest levels of export orientation in Germany, with the lowest shares in Food products (25.8%) and Finance & Insurance (26.0%) (Figure 6).

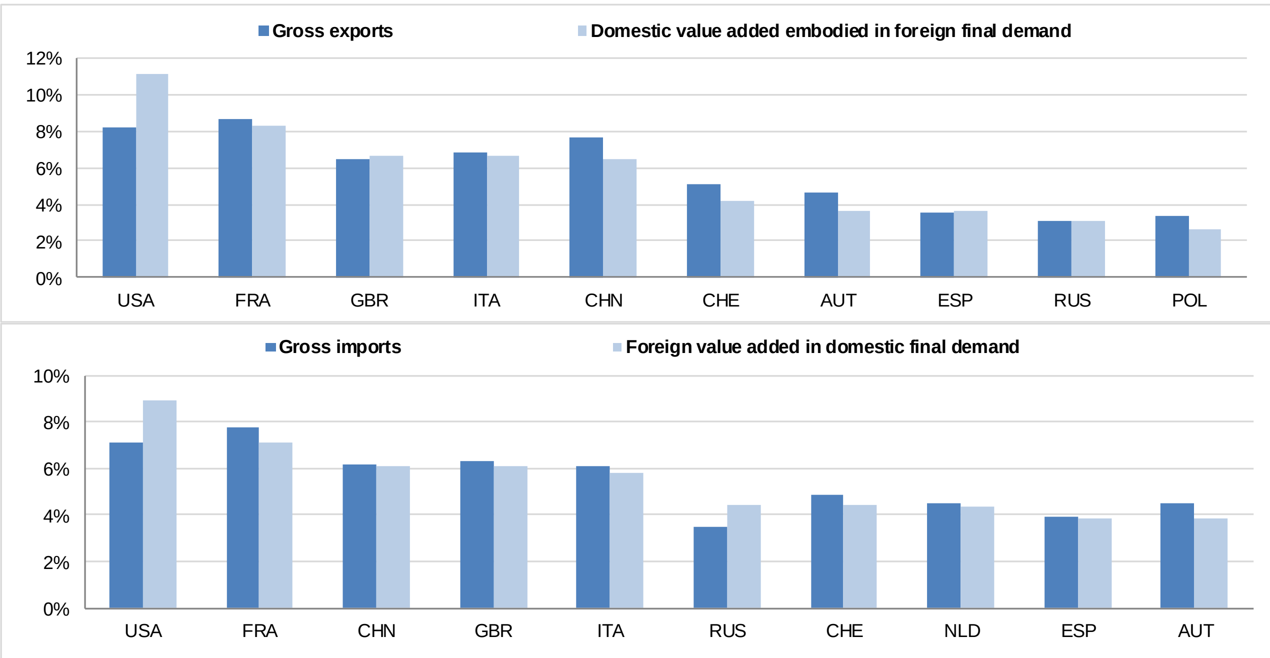
Figure 6. Germany's domestic value added in foreign final demand,
percent of value added by industry, *2008, 2009, and 2011*



Note: Final demand excludes inventories: See also http://www.oecd.org/sti/ind/TiVA_2015_Guide_to_Country_Notes.pdf

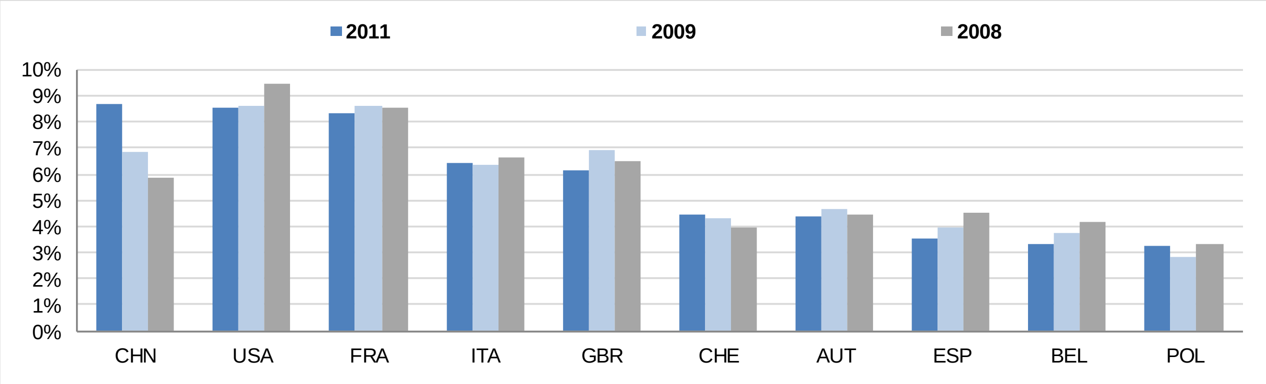
German trade in value added terms is significantly different from gross measures. In gross terms, France (8.7%) was the largest export destination, followed by the United States (8.2%) and China (7.7%). But in value-added terms the United States (11.2%) was by some distance the largest export market, with China falling to fifth. This partly reflects German value-added embodied in Chinese exports to the United States (Figure 7, top). Similarly, the United States, with a relatively high domestic value-added content of exports, was the largest source of imports in value-added terms (9.0%) (Figure 7, bottom).

Figure 7. Germany's exports to and imports from main partner countries
percent of total gross and value added exports and imports, 2011



Looking only at exports of intermediate goods and services, China has now become Germany's most important destination of intermediate exports in value-added terms replacing the United States in that position; reflecting rapid growth in recent years (Figure 8).

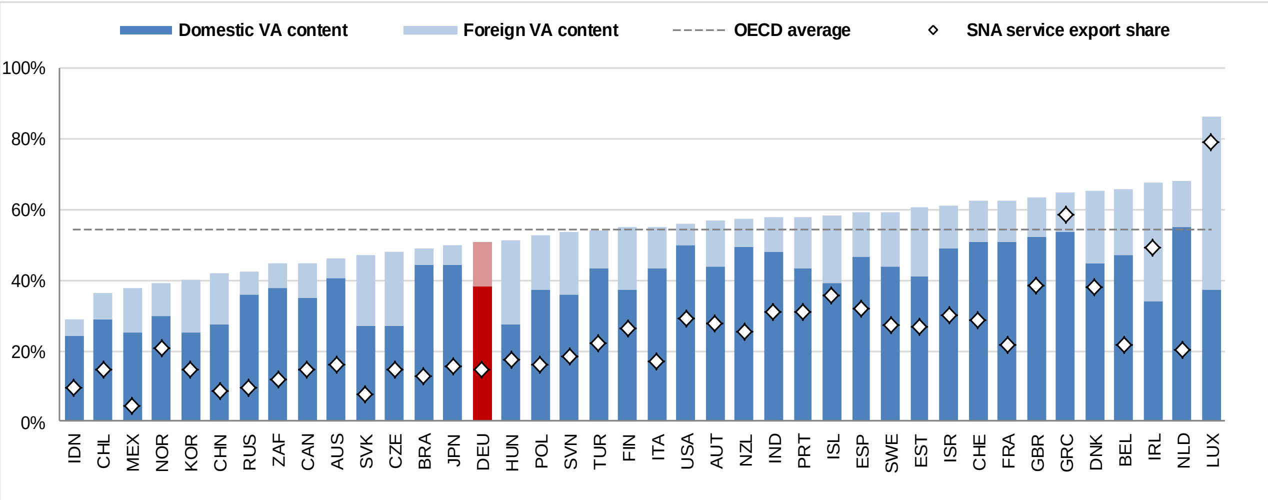
Figure 8. Germany's domestic value added embodied in intermediate exports to main partner countries
percent of total intermediate exports, in value added terms, 2008, 2009, and 2011



The importance of services

In 2011 the services content of total exports in Germany was just over half (51.0%), below the OECD average of 54.3% (Figure 9).

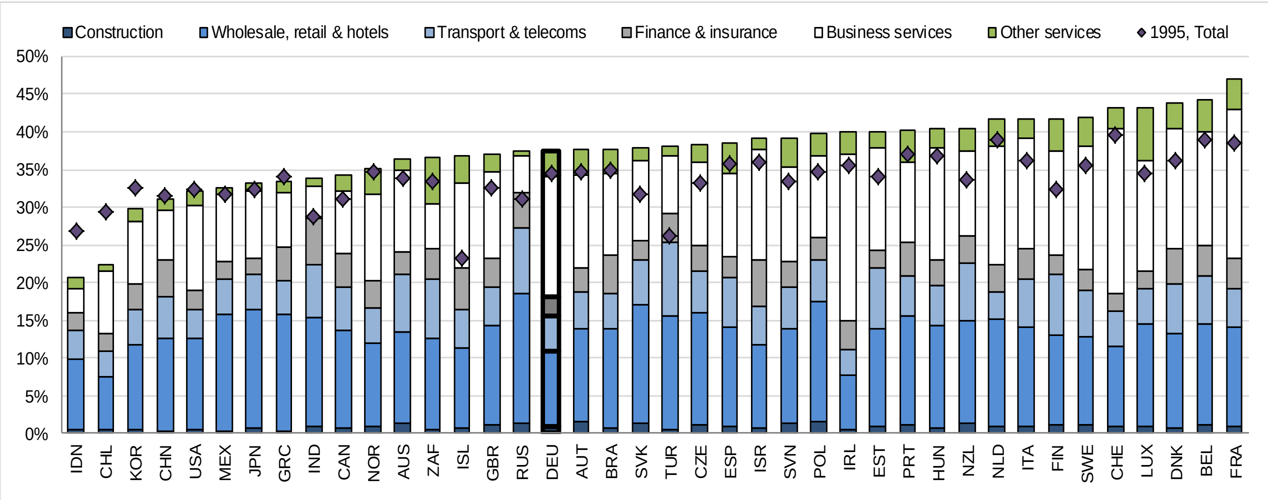
Figure 9. Services content of gross exports by country, gross and value-added terms,
percent of total gross exports, 2011



Note: SNA services export shares include re-exports in the denominator, and include any actual differences in free on board and basic prices (the distribution margin provided by resident distributors to resident exporters) in goods.

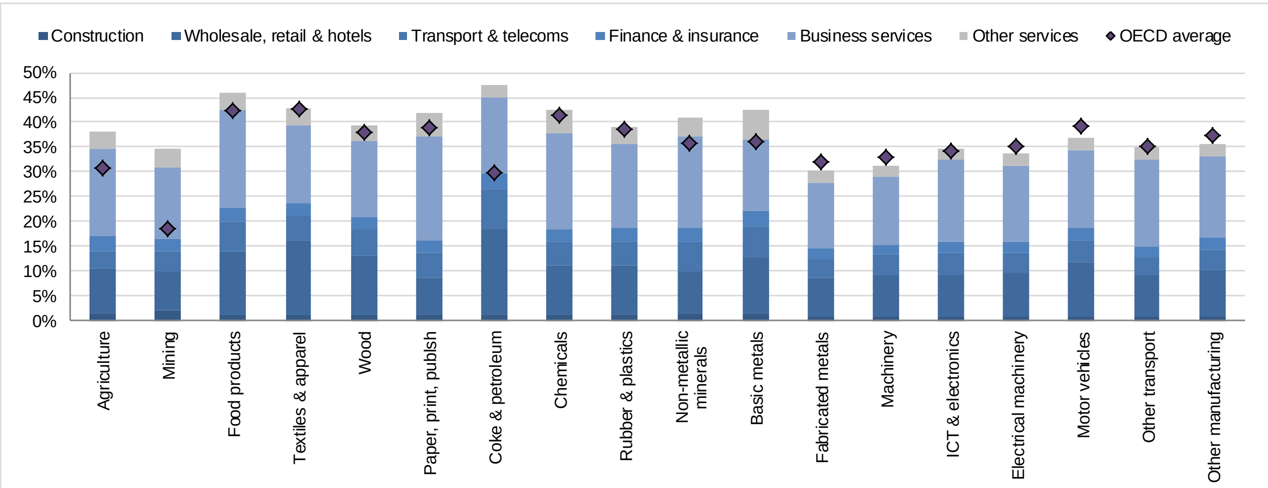
For exports of manufactured goods alone, 37.5% of the total value reflected services sector value-added, marginally above the OECD average (36.9%). Of this share, the Business services sector accounted for 16.3% of total gross exports, with the Wholesale, retail & hotels and Transport & telecoms sectors accounting for 10.0% and 4.6% respectively, (Figure 10).

Figure 10. Services value added embodied in manufacturing exports, by country,
percent of total gross exports, 1995 and 2011



In most industries the services content was around the OECD average, however in Coke & petroleum where services accounted for 47.4% of the value, shares were significantly above the OECD average, (Figure 11).

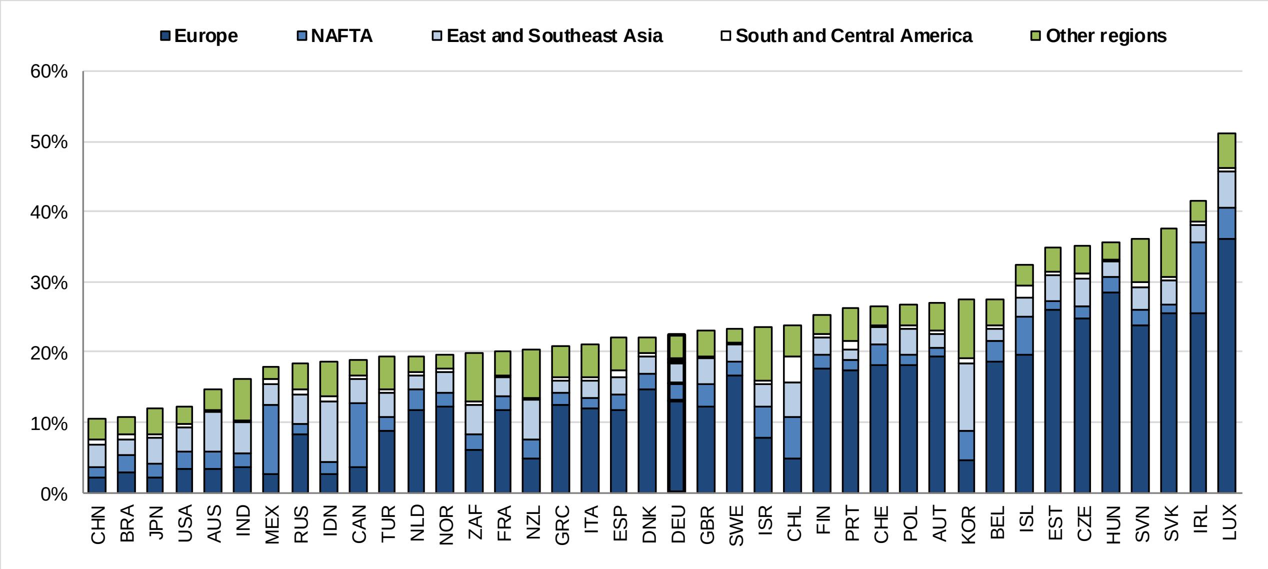
Figure 11. Germany's Services content of gross exports, by exporting industry and service category
percent of gross exports by industry 2011



The origin of domestic consumption

In 2011, 22.5% of Germany's total final domestic consumption reflected foreign content, of which Europe contributed 13.1 percentage points, NAFTA 2.3 pp, East and Southeast Asia 3.1 pp, South and Central America 0.6 pp and other regions 3.4 pp (Figure12).

Figure 12. Foreign value added content of domestic consumption by country
by source region, 2011



Further Information

The information included in this note is based on the 2015 edition of the Trade in Value Added (TiVA) database.

» Access the data at http://oe.cd/tiva

» Please contact us with your questions at tiva.contact@oecd.org