SIDEBAR 📋

Measurement of Trade in Value-Added Terms

Manufactured goods increasingly embody elements produced by global supply chains, and the conventional trade measures reported throughout this chapter count the gross value of both intermediate and final goods upon crossing international borders. The Trade in Value Added joint initiative of the Organisation for Economic Co-operation and Development (OECD) and the World Trade Organization (WTO) aims to correct this shortcoming by recording only net value added at each crossing. This approach has two advantages: First, it provides more accurate measures of the value of global trade; and second, it enables better estimates of national contributions to the value of goods and services—their value-added—in international trade.

Although it does not cover all six high-technology goods, the OECD/WTO database has value-added and conventional data on the computer, electrical, and optical equipment category. This category is roughly equivalent to four of the six products classified as high technology—communications, computers, semiconductors, and scientific measuring instruments. These industries are most often produced in complex and dispersed global supply chains across multiple countries. Foreign content accounted for 42% of global exports of optical and electrical equipment in 2011, the highest share among the OECD/WTO classified manufacturing industries.*

The OECD/WTO data suggest that China has a weaker position in trade of computer, electrical, and optical equipment on a value-added basis compared to a conventional basis. China is the world's largest exporter (33% global share) on a conventional basis, with a wide lead over the EU, the United States, Japan, South Korea, and Taiwan (Figure 6-E). Although it continues to be the largest global exporter on a value-added basis, China's global share is comparatively lower (19%), and its lead over the United States and other major exporters is far narrower. The large decline of China's global share moving from a conventional to a value-added basis is due to the high share of foreign content in China's exports. The value-added measurement of China's exports attributes the foreign content of China's exports to the countries that supplied the components. These countries include the EU, the United States, Japan, and other Asian countries.

FIGURE 6-E

Exports of computer, electrical, and optical equipment, by selected region, country, or economy on conventional and value-added basis: 2011

EU = European Union.

Note(s)

Exports measured on a conventional basis are based on customs data and include intermediate inputs and components imported from other countries. Exports measured on a value-added basis estimate the value added of inputs and components originating from the region, country, or economy and exclude intermediate inputs and components imported from other countries. The EU includes the current 28 member countries. EU exports exclude exports among EU member countries. China includes Hong Kong. China's exports exclude exports between China and Hong Kong. U.S. exports exclude exports to Canada and Mexico.
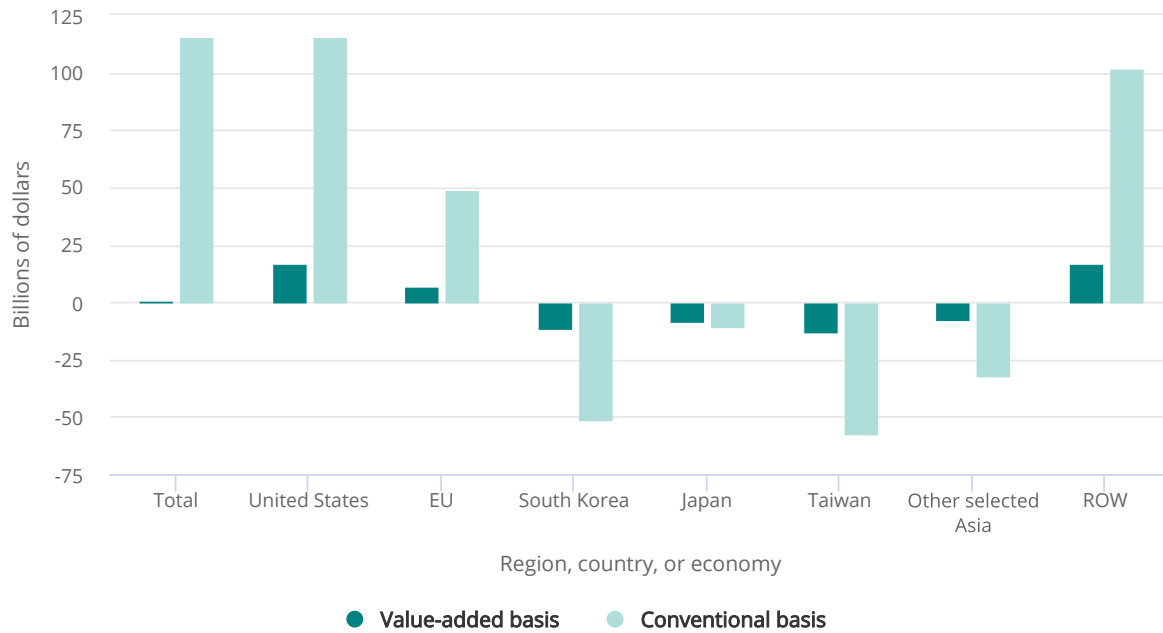
Source(s)

Organisation for Economic Co-operation and Development, Trade in Value Added Database, https://stats.oecd.org/Index.aspx?DataSetCode=TIVA2015_C1, accessed 3 November 2017.

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In addition to a smaller global export share, China's trade surplus shrank from $120 billion on a conventional basis in 2011 to $1 billion on a value-added basis (Figure 6-F). The decline in China's overall trade surplus is largely due to a sharp fall in its bilateral surplus with the United States, which declined from nearly $120 billion to under $20 billion. The decline in China's trade surplus with the United States was mainly due to increases in imports from the United States, which rose from 6% of total imports on a conventional basis to 13% on a value-added basis. This suggests that China's imports contain inputs and components supplied by the United States that are credited to the United States when utilizing the value-added basis. China's trade deficits with South Korea and Taiwan fell, coinciding with a decline in their share of China's total imports.

FIGURE 6-F ▮▮▮

China's trade balance in the electrical and optical equipment industry, by selected region, country, or economy on conventional and value-added basis: 2011

EU = European Union; ROW = rest of world.

Note(s)

Exports and imports measured on a conventional basis are based on customs data and include intermediate inputs and components imported from other countries. Exports and imports measured on a value added basis estimate the value added of inputs and components originating from the region, country, or economy and exclude intermediate inputs and components imported from other countries. The EU includes the current 28 member countries. EU exports exclude exports and imports among EU member countries. China includes Hong Kong. China's exports and imports exclude exports and imports between China and Hong Kong. U.S. exports and imports exclude exports and imports to Canada and Mexico. Other selected Asia includes India, Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam.

Source(s)

Organisation for Economic Co-operation and Development, Trade in Value Added Database, https://stats.oecd.org/Index.aspx?DataSetCode=TIVA2015_C1, accessed 3 November 2017.

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The United States had a comparatively stronger trading position on a value-added basis compared to a conventional basis. On a conventional basis, the United States was tied with Japan, South Korea, and Taiwan as the world's third-largest exporter (7% global share), and is far below China (Figure 6-E). On a value-added basis, the U.S. export share jumped to 16%, making it the world's second-largest exporter, with a far narrower gap with first-ranked China. Measuring U.S. exports on a value-added basis credited the United States for the exports of inputs and components to China and other countries, which were credited to the location of final assembly on a conventional basis.

The higher U.S. global export share on a value-added basis coincides with a much narrower U.S. trade deficit, which dropped from nearly $150 billion on a conventional basis to $21 billion on a value-added basis (Figure 6-G). The narrower trade deficit is largely due to a much smaller bilateral trade deficit with China. The improvement in the bilateral deficit is primarily due to lower Chinese imports, which declined from about half of total U.S. imports on a conventional basis to 30% on a value-added basis. The import shares of Japan, South Korea, and Taiwan, which are major suppliers of inputs to China, rose from a collective share of 17% to 33% of total U.S. imports, suggesting that these three economies were exporting intermediate inputs to the United States that were then further processed and exported to China.

FIGURE 6-G

U.S. trade balance in the electrical and optical equipment industry, by selected country or economy on conventional and value-added basis: 2011

● Value-added basis   ● Conventional basis

EU = European Union; ROW = rest of world.

Note(s)

Exports and imports measured on a conventional basis are based on customs data and include intermediate inputs and components from other countries. Exports and imports measured on a value added basis estimate the value added of inputs and components originating from the region, country, or economy and exclude imports of inputs and components from other countries. The EU includes the current 28 member countries. EU exports exclude exports and imports among EU member countries. China includes Hong Kong. China's exports and imports exclude exports and imports between China and Hong Kong. U.S. exports and imports exclude exports and imports to Canada and Mexico. Other selected Asia includes India, Indonesia, Malaysia, Philippines, Thailand, and Vietnam.

Source(s)

Organisation for Economic Co-operation and Development, Trade in Value Added Database, https://stats.oecd.org/Index.aspx?DataSetCode=TIVA2015_C1, accessed 3 November 2017.

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Data on the OECD/WTO trade in value-added indicators and additional information are available at https://www.oecd.org/industry/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm.

* OECD, Trade in Value Added Database, October 2015 http://stats.oecd.org/Index.aspx?DataSetCode=TIVA2015_C1.