

OECD-WTO Database on Trade in Value-Added

May 2013 Release

The May 2013 release of the OECD-WTO Trade in Value-Added database includes new data on 16 economies, in addition to the 40 economies (OECD countries, Brazil, Russia, India, Indonesia, Russian Federation and South Africa) released in January. Information for 1995 and 2000 is now also available.

Main Facts

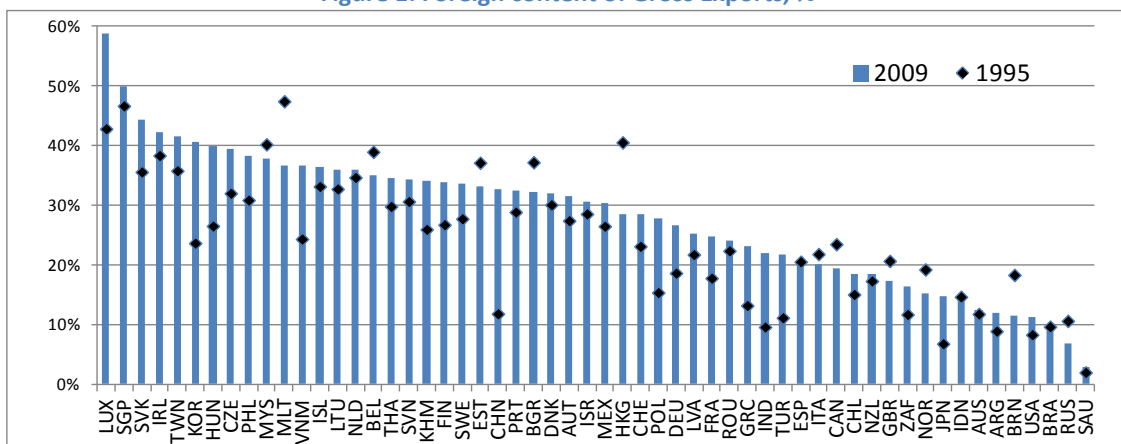
International 'Fragmentation of Production' has increased rapidly in the last two decades

Countries with relatively open and liberal trade regimes and high degrees of foreign investment will be typically expected to have higher foreign content in their exports. But a number of other factors impact on the extent of a country's integration into, and specialisation within, global value chains (GVCs). Larger economies, those with significant mineral resources, and those that are far from foreign markets and suppliers tend to have lower foreign content in their exports than smaller economies, as do those with high specialisation in services. This helps to explain the relative positions of countries shown in Figure 1 below which points to increasing foreign content in the exports of most countries in the last two decades and, so, increasing integration within GVCs.

...for example in Factory Europe and Factory Asia...

In Europe, the foreign content of exports in former transition economies, such as the Czech Republic, Hungary and Slovakia, stood at around 40% in 2009, significantly up in 1995, as these countries began to specialise in stages of the electronic and automotive value chains revolving in large part around Germany where the foreign content of exports rose from one-fifth in 1995 to one-third in 2009.

Figure 1: Foreign content of Gross Exports, %

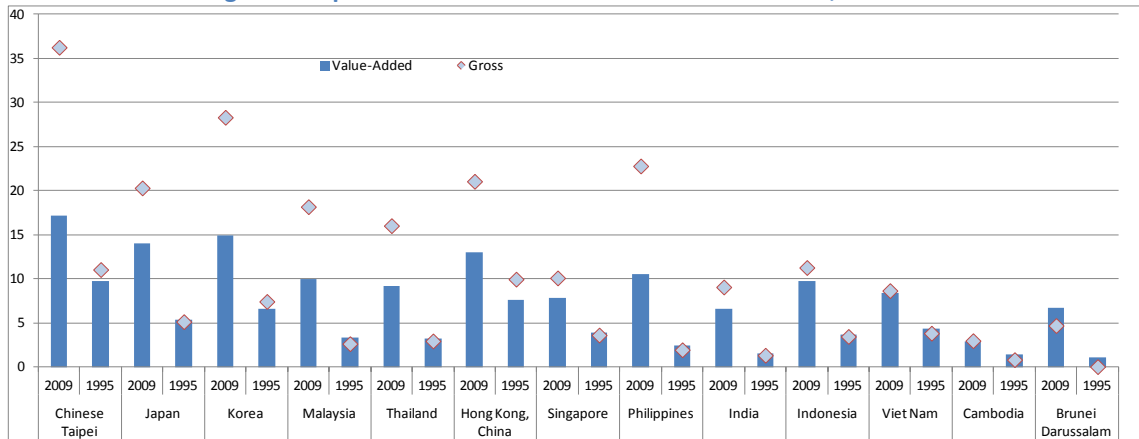


Similar patterns have emerged in Asia, reflecting in particular China's emergence and rapid integration into GVCs since its accession to the WTO in 2001. One-third of all Chinese exports in 2009 reflected foreign content, significantly up on the 12% in 1995, reflecting in large part China's specialisation in the assembly and processing of electronic components. Significant changes were seen in other parts of Factory Asia too, such as Korea (41% in 2009) and Japan (15%), where the foreign content of exports doubled over the period. Data also show that the domestic value-added content of China's exports rose between 2005 and 2009; indicating a move up the value chain, with other low labour cost countries such as Vietnam and Cambodia moving into processing. The database also shows that in most countries, the foreign content of exports fell in 2009 compared to 2008, indicating that the more internationally fragmented the chain the more vulnerable production was to the synchronised slowdown in trade that occurred at the height of the crisis.

...and has changed the pattern of trade - who trades with who?

Increasing fragmentation of production, driven by trade in intermediates, means that gross measures of trade may distort our interpretation of trade. Typically, gross trade statistics overstate the importance of neighbouring economies, and, so, understate the importance of distant economies driving demand at the end of the chain. In gross terms, 28% of Korea's exports in 2009 went to China (Figure 2) but in value-added terms only 14% of Korea's exports were destined for Chinese final consumers; a difference that in large part reflects China's processing of Korean intermediates for export to third countries. Similar patterns exist for many other economies upstream of China in 2009, such as Malaysia and Thailand, while in Indonesia and Vietnam, which are further downstream, value-added and gross shares were relatively similar, partly reflecting their emergence as processors. Data also show that China had relatively limited integration within GVCs in 1995.

Figure 2: Exports to China: Gross and Value-added terms, % of total

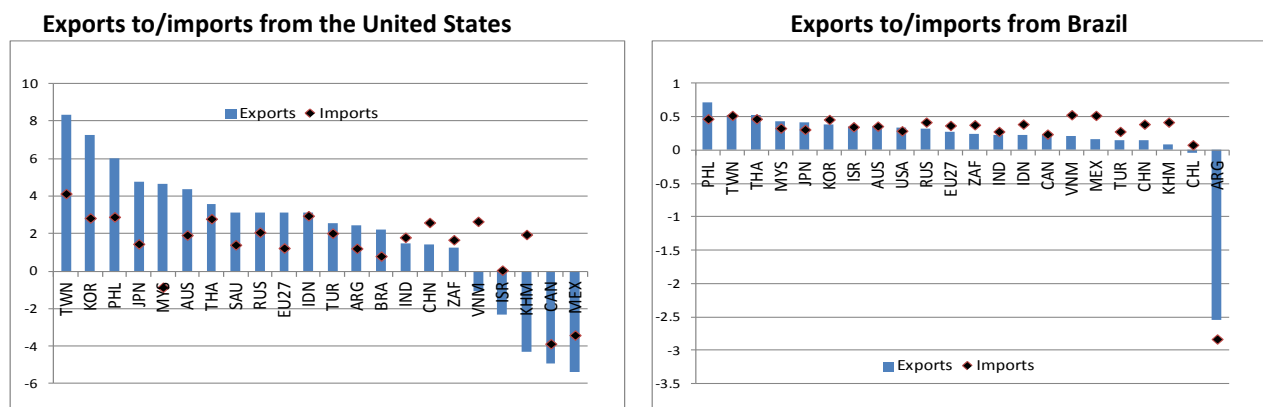


Value-added trade measures also reveal the growing importance of China as a final destination market. For example, Japan and Korea's value-added exports in 2009 destined for Chinese consumers were two to three times their rate in 1995. The partial corollary of this has been a decline in the importance of Japan as a final destination market, partly reflecting Japan's sluggish nominal economic growth in recent years. In value-added terms, 6.2% of the United States' exports in 2009 were destined for China, just shy of the 6.8% exported to Japan. The corresponding figures for 1995 were 2.3% and 12.7% respectively.

TiVA reveals more trade with the United States but also more North-South trade...

In value-added terms the importance of the United States as a source of imports and also as a destination for exports is higher than gross measures (Figure 3). Export shares, for example, were lower in value-added terms in only four countries in 2009: Vietnam, Israel, Cambodia, Canada and Mexico, partly reflecting the relatively high degree of integration of these countries in United States production chains. The database also reveals that gross measures of trade may understate North-South trade relationships. Figure 3 for example reveals that Brazil is a more important market for OECD and ASEAN economies in value-added terms.

Figure 3: Export and Import shares (Value-added shares minus gross shares), percentage points, 2009



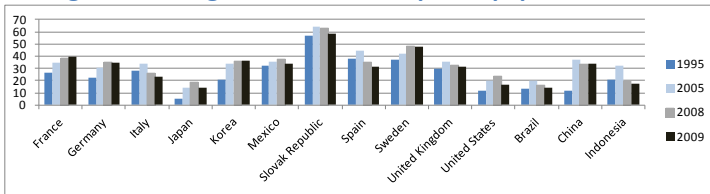
Global rankings change too

Gross trade statistics show that China's share of global exports was 9.4% in 2009, higher than Germany (8.4%) and marginally behind the United States (10.6%), and significantly up on its share in 1995 (2.5%). But its share in global exports in value-added terms, whilst still significant, was lower; rising from 2.8% to 8.3%, marginally ahead of Germany (8.0%) but 3.5 percentage points behind the United States (11.8%). In value-added terms (4.5%) the United Kingdom was the World's 5th largest exporter in 2009 displacing France (4.2%), whilst Korea fell from 8th in gross terms to 11th in value-added terms.

Competitiveness increasingly depends on access to imports

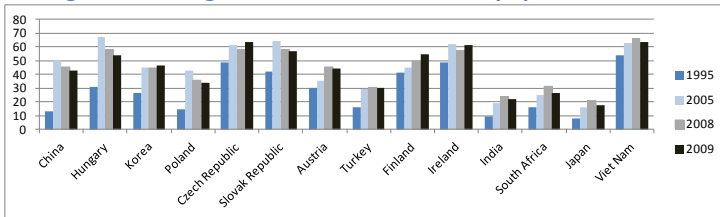
To improve productivity and remain competitive in a world dominated by GVCs requires access to efficient imports of intermediate goods. Figure 1 reveals that the trend in recent years has been for rising foreign content in exports. This comes through more clearly when looking at specific industries.

Figure 4: Foreign content of transport equipment, % total



In the transport equipment sector (Figure 4), the foreign content of exports was high and rose strongly in many countries between 1995 and 2009, nearly doubling in Germany and France.

Figure 5: Foreign content of electronic equipment, % total

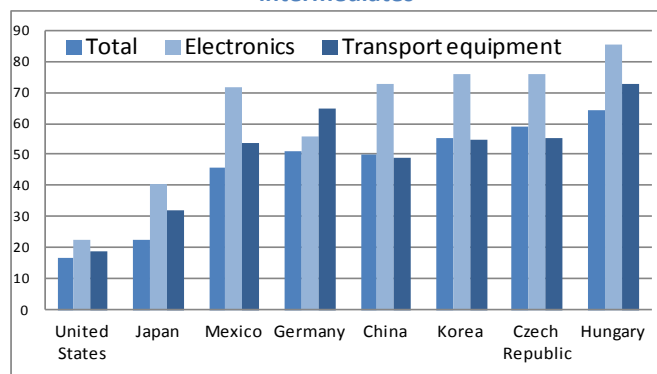


Similar patterns emerge in other industries with high international fragmentation, such as the electronic equipment industry (Figure 5). In China for example, the foreign content of exports trebled between 1995 and 2009, and in Hungary, Korea, India and Japan, it broadly doubled.

And significant shares of intermediate imports are used to produce exports

In most economies, the share of intermediate imports used to produce exports is around one-third. But for some sectors and economies the share can be significantly higher. In Hungary, China, Korea and Mexico for example, around three-quarters of all intermediate imports of electronics are used in producing exports. Shares are generally lower the larger the economy but even in Japan 40% of total intermediate imports of transport parts are used to produce exports.

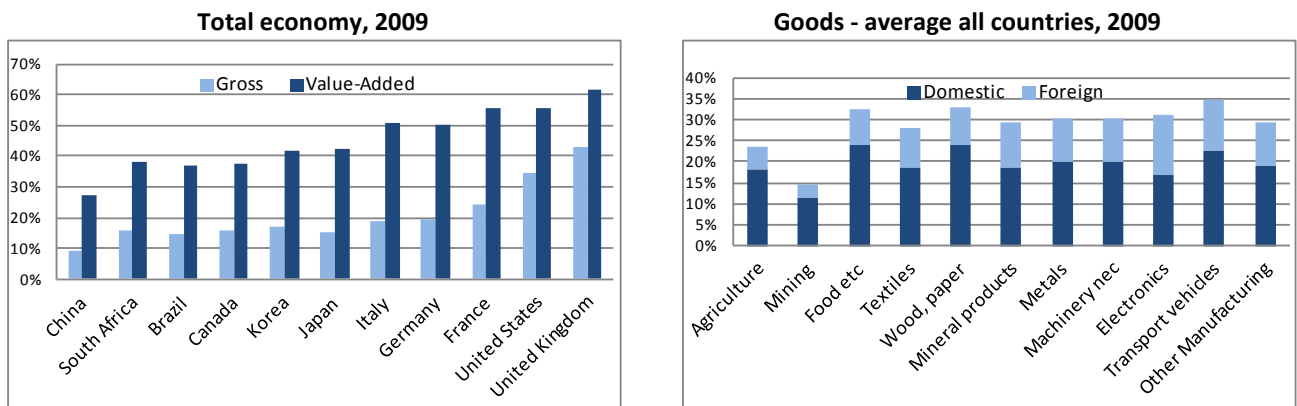
Figure 6: Intermediate imports used in exports, % total intermediates



But competitiveness also, and increasingly, depends on access to efficient services

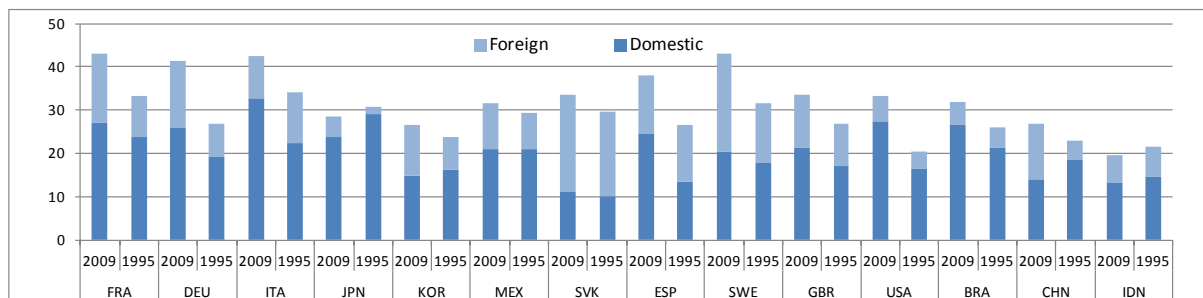
Services comprise about two-thirds of GDP in most developed economies. However, based on gross terms, trade in services typically account for less than one-quarter of total trade. But accounting for the value-added by services in the production of goods shows that the service sector contributes over 50% of total exports in the United States, the United Kingdom, France, Germany and Italy and nearly one-third in China (Figure 7), with a significant contribution (typically one-third in 2009) across all manufactured goods provided by both foreign and domestic service providers, with the contribution rising between 5 and 10% in many countries since 1995.

Figure 7: Services content of exports



In the transport equipment sector, for example, the services content of exports was over 40% in a number of countries, partly reflecting the increased knowledge intensity (e.g. design, R&D, software) of transport equipment. But even these estimates to some extent underestimate the true services 'tasks' and knowledge content, as they only record the upstream value-added purchased, directly and indirectly, from the services sector, and, not the in-house services, including knowledge activities, produced within the transport equipment sector itself. The share of services rose in nearly all countries; indeed in France and Germany the domestic services content rose, despite the more than 10 percentage point fall in the overall domestic value-added content of exports between 1995 and 2009.

Figure 8: Services content of transport equipment



Accessing the Database

For more information on the methodology and to access the database, see: www.oecd.org/trade/valueadded.
For any queries on the database please contact: TIVA.contact@oecd.org

Statistical Quality

It is important to stress that the indicators shown in the TiVA database are estimates. Official gross statistics on international trade produced by national statistics institutions result in inconsistent figures on global trade. The global input-output tables from which TiVA indicators are derived, necessarily eliminate these inconsistencies, such as those that reflect different national treatments of re-exports and transit trade (e.g. through hubs such as the Netherlands and Hong Kong), to achieve a coherent picture of global trade. Work is on-going within the international statistics community to achieve coherence in international trade flows, particularly in the area of trade in services, where significant differences exist when comparing national statistics.

Revisions

This update incorporate revisions in national estimates of international trade and refinements to the methods used to achieve coherence in official estimates of international trade statistics and also to the methods used to estimate bilateral trade in services; both areas where the international statistics community is engaged in on-going efforts to improve coherence, coverage and quality of international trade data. It also incorporates new data made available by many countries, for example on re-exports.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.