# International trade, foreign direct investment and global value chains

OECD

2017

# KOREA

## TRADE AND INVESTMENT STATISTICAL NOTE

International trade and foreign direct investment (FDI) are the main defining features and key drivers of global value chains (GVCs). However, despite their strong complementarities, the two flows are typically presented and treated separately in the statistical information system. Drawing on new and improved measures of trade and investment, this country note provides relevant statistical information from OECD databases on trade, investment, the activities of multinational enterprises (MNEs) and global value chains (TiVA). It sheds new light on the trade-investment nexus by highlighting the interrelationships between trade and FDI, their economic impact in the context of GVCs, and the role of MNEs as the main directors of these flows. The data are as of 1 May 2017. More information and country notes are available at www.oecd.org/investment/trade-investment-gvc.htm.

Over one-third (33% in 2014) of economic activity (GDP) in Korea depends on foreign markets, at the upper end of larger OECD countries. Korea's outward investment (equivalent to 22% of GDP in 2015) was larger than its inward investment (13%), and suggests that a broader notion of international orientation, which captures the impact on national income of exports and sales through foreign affiliates, would be higher than the trade only measure of export orientation.

Gross bilateral trade figures can disguise the true nature of trade interdependencies, particularly between final consumers in one country and producers at upstream parts of the value chain. For example, value added data show that less than one-quarter of Korean value added is destined for China, while gross data suggest it is more than one third of exports. Gross data overstate the importance of the Indonesian market for Korean exports when, in fact, India consumes more Korean value added. On the import side, China remains the most important supplier to the Korean market using value added data.

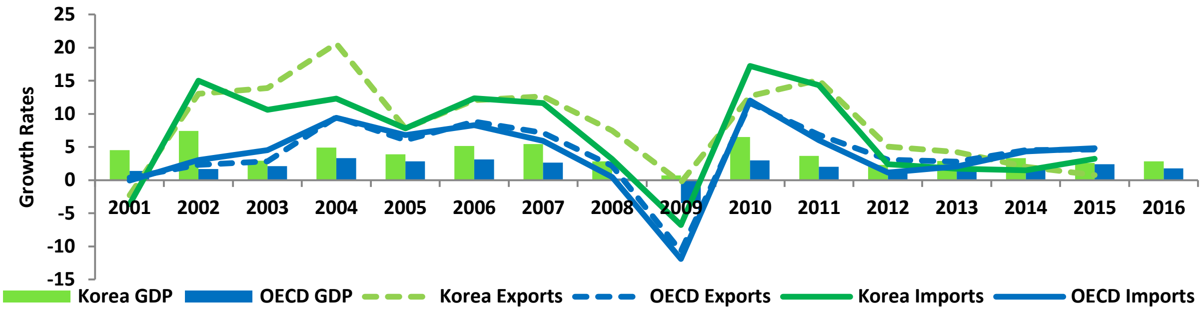
The top manufacturing exporting industries in Korea are computers and electronics (CEQ), motor vehicles (MTR) and chemicals and chemical products (CHM). These industries have a high import content of exports, an indicator of GVC integration. Korea has one of the lowest services content in its exports at 42% even though a substantial share of its inward investment is destined for the services sector.

# Trade and investment in Korea

## Growth in trade has recovered since the global and euro crises but slowed in 2015

Like many European economies, Korean trade contracted significantly at the height of the global crisis and again albeit slightly during the euro crisis. Korean trade growth rates were above the OECD rates in the pre-crisis years, and have mainly continued this pattern since the recovery. However, in 2015, export growth fell to 0.8% and import growth was 3.3%.

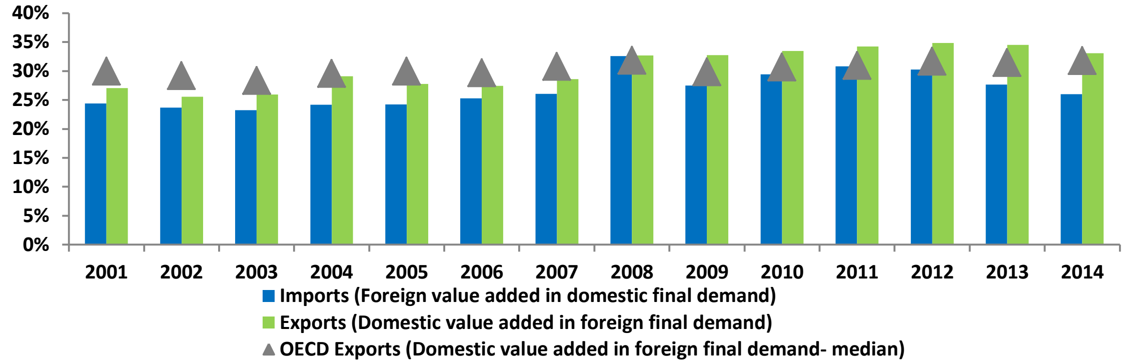
**Figure 1. Growth rates of trade and GDP for the OECD and Korea, 2001-2016**




Source: OECD SNA

Gross exports amounted to USD 633 billion in 2015 (50% of GDP), and gross imports to USD 537 billion (43% of GDP). Gross trade figures, however, overstate the ‘real’ contribution of trade to the economy. In value-added terms, exports contributed 33% of total GDP in 2014, above the OECD median but fractionally below recent years. The contribution of direct and indirect imports to domestic final demand measured 26% in 2014.

**Figure 2. Trade in value added terms, imports and exports, 2001-2014**

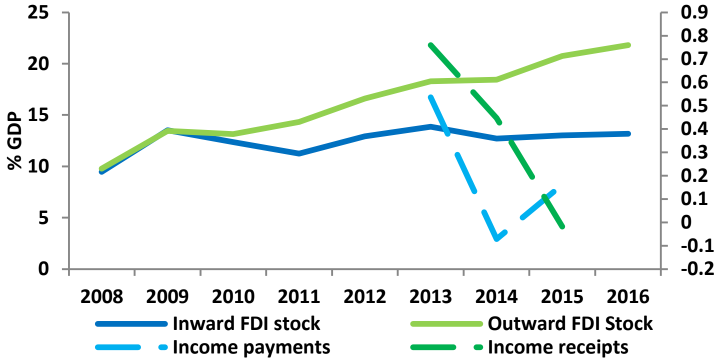



Source: OECD-WTO Trade in Value Added Data

## Investment is more outward than inward

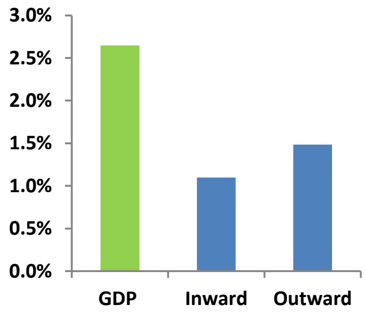
Although both outward and inward FDI stocks have been growing relative to GDP since 2008, outward FDI grew faster and was equivalent to 22% of GDP in 2016 (Figure 3). In 2015, Korea’s share of the OECD total inward FDI stock (1.1%) less than half its share of GDP (2.6%), and its share in outward stock was 1.5% of the OECD total, also lower than its share of GDP (Figure 4).

**Figure 3. FDI stocks and income as a share of GDP total**




Source: OECD FDI Statistics (BMD4)

**Figure 4. FDI stocks and GDP as a share of OECD total, 2015**

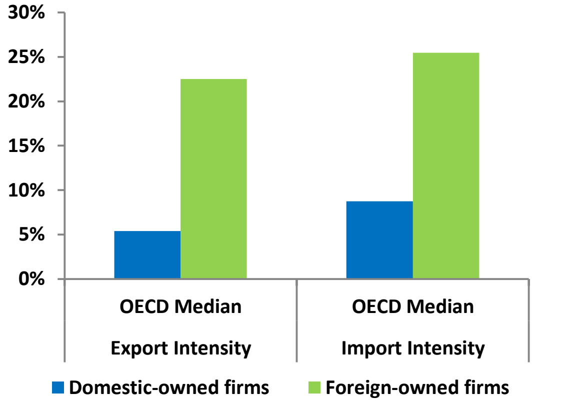



Source: OECD FDI Statistics (BMD4)

### Foreign-owned firms are more export intensive than domestically owned firms

On average, foreign-owned firms in the OECD are more export intensive (share of exports in turnover) than domestically owned firms. The import intensity of foreign-owned firms (share of imports in purchases) is also typically higher for foreign-owned than domestic firms. These intensities cannot be calculated for Korea due to data availability but it is likely that foreign-owned firms in Korea would also be more trade intensive than their domestic counterparts.

**Figure 5. Export and import intensity of domestic and foreign-owned enterprises**

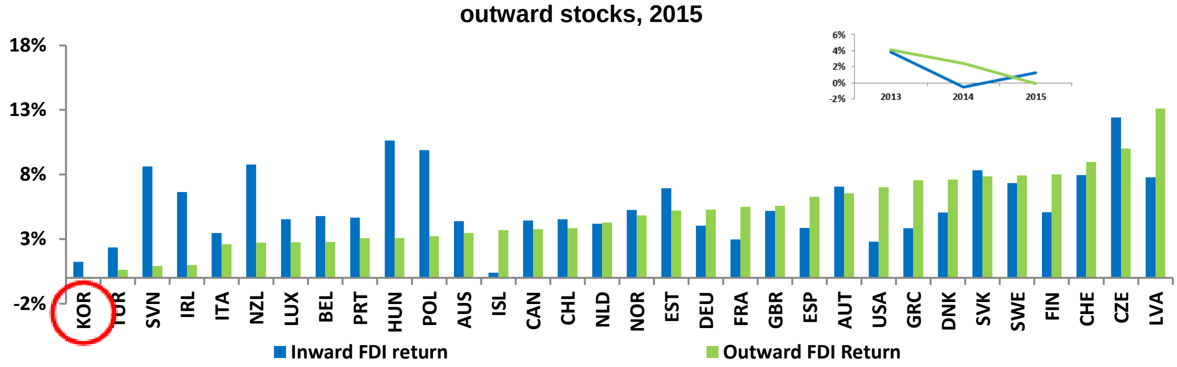



Source: OECD AMNE and Trade by Enterprise Characteristics (TEC) statistics (2011)

### Domestic MNEs provide important channels to penetrate foreign markets via affiliates…

In 2015, Korea received USD -257 million in income from its outward investment, equivalent to approximately 0.02% of GDP as there were losses at their foreign affiliates. Korea's rate of return at negative 0.01% (green bar) on its outward FDI is the lowest in the OECD for 2015 and below its recent rates (see chart insert). On the other side, the return to foreign investors in Korea was 1.2% in 2015, at the lower end of OECD countries.

**Figure 6. Return on investment, income receipts and payments as a share of inward and outward stocks, 2015**

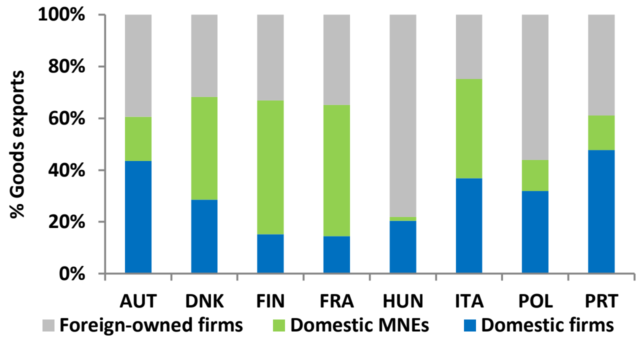



Source: OECD FDI Statistics (BMD4)

### …and via exports

Looking across a selection of European economies, MNEs play a significant role in GVC integration. In some countries it is through the activity of MNE parents, while for other it is foreign-owned firms. In each country with available data, at least half of all goods exports are conducted by MNEs.

Figure 7. Goods Exports by firm type, the role of MNEs

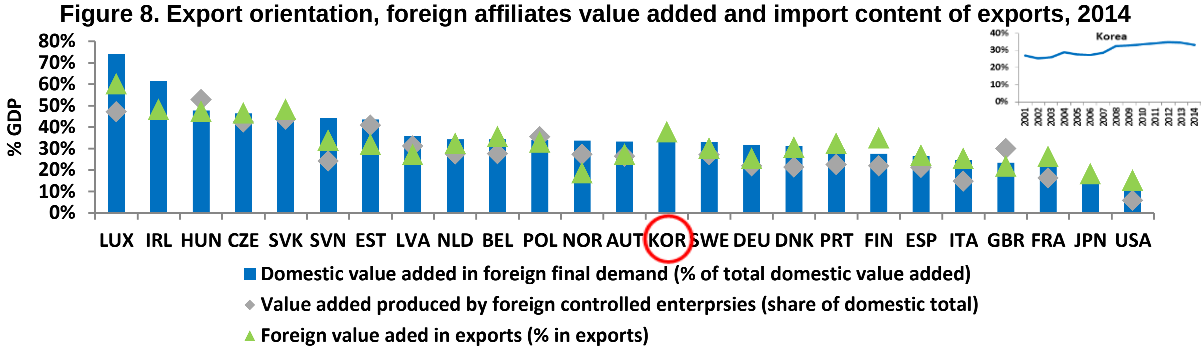



Source: OECD TEC statistics (2011)

### Korea's export orientation is just below the OECD median

Exports (in value added terms) contribute around 33% of Korean GDP, slightly below the OECD median but high relative to other large OECD countries. This may in part reflect outward investment as a vehicle for GVC integration as measured by the import content of exports. Export orientation has increased since the crisis (see insert chart).

Figure 8. Export orientation, foreign affiliates value added and import content of exports, 2014

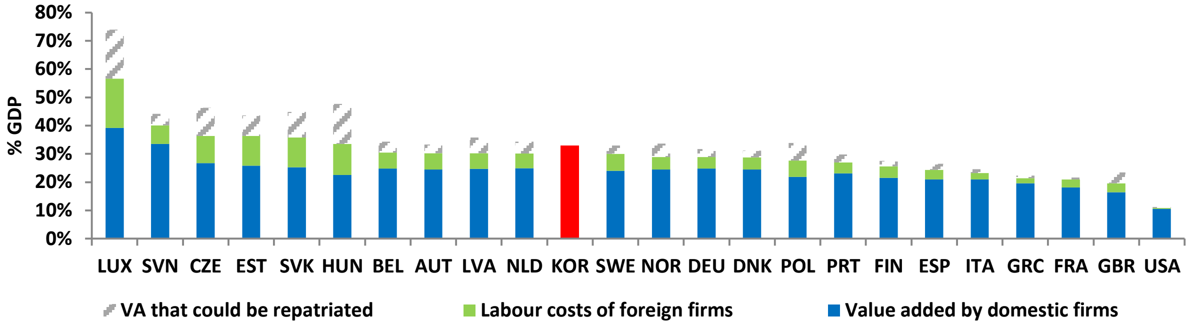



Source: OECD-WTO Trade in Value Added Data and OECD AMNE statistics

### Not all of the domestic value added content of exports sticks in the economy…

Gross export figures overstate the real economic impacts of trade to the exporting economy, but TiVA estimates can also overstate these impacts as the profits earned by foreign-owned firms through exports are repatriated if they are not reinvested. Figure 9 illustrates the importance of these flows across countries by showing the value added in exports of domestically-owned firms (blue bar), wages paid by foreign-owned firms (green bar), and profits of foreign-owned firms (grey bar), which in practice can be repatriated. The split cannot be calculated for Korea due to data availability.

**Figure 9. Exports by ownership and their contribution to income, as a share of GDP, 2014**

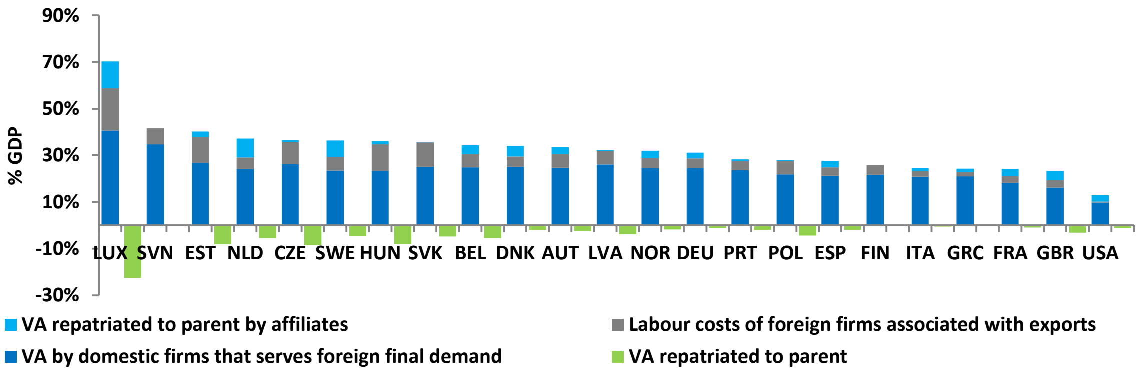



Source: OECD-WTO Trade in Value Added Data and OECD AMNE statistics

### Taking a broader view by including the income of foreign affiliates can provide a more complete picture of the international orientation of the domestic economy

Firms serve foreign markets by exporting or by selling through their foreign affiliates. Figure 10 takes a broader view of an economy's international orientation by taking account of both trade and investment. The chart begins with the domestic value added in exports that remains in the economy – exports of value added by domestic firms (blue bar) and wages paid by foreign-owned firms associated with exporting (grey bar) – and adds to it the profits that domestic MNEs receive from the activities of their foreign affiliates as measured by FDI income receipts (light blue bar). The income payments made to foreign parents are presented for information purposes (green bar). This broader measure cannot be calculated for Korea due to data availability, but it would likely be higher than its export orientation as Korea is a net outward direct investor.

**Figure 10. Supplying markets through trade and investment: a broader perspective, 2014**

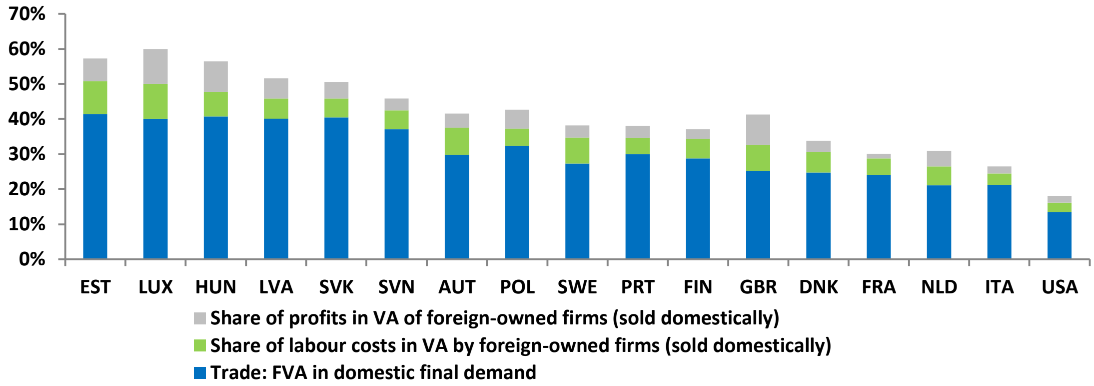



Source: OECD-WTO Trade in Value Added Data, OECD AMNE and OECD FDI (BMD4) statistics

### This broader perspective can also shed light on how foreign firms serve the domestic market

Foreign producers supply products and services for final consumption through trade (foreign value added in domestic final demand) blue bar, and sales by foreign affiliates sold domestically (green and grey bar) (Figure 11). Foreign production can be split between labour costs and profits, the profit component of value added by foreign-owned firms can be repatriated to the parents. Due to limited data availability, the following chart cannot be produced for Korea, but it is likely that foreign firms serve the Korean market more through trade than through investment as in other economies.

**Figure 11. How foreign firms serve your market: a value added perspective, 2014**



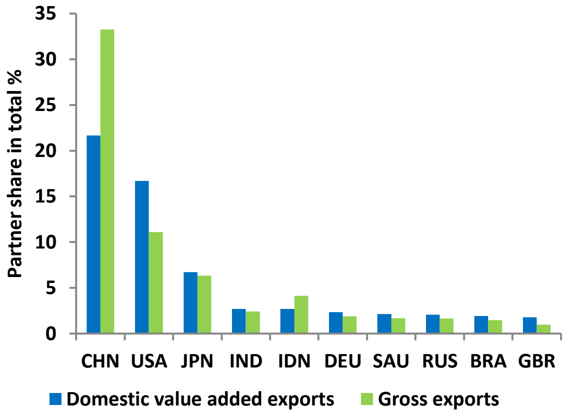

Source: OECD-WTO Trade in Value Added Data, OECD AMNE and OECD TEC statistics

# Trade and investment by partner country

### Trade measured from a value added perspective better reflects the bilateral relationships

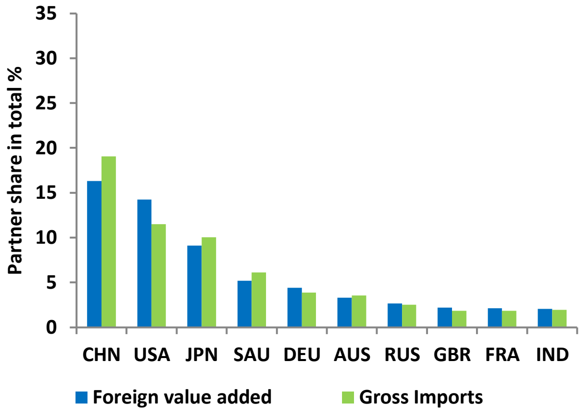
Gross bilateral trade figures can disguise the true nature of trade interdependencies, particularly between final consumers in one country and producers at upstream parts of the value chain. For example, value added data show that less than one-quarter of Korean value added is destined for China, while gross data suggest it is more than one third of exports. Gross data overstate the importance of the Indonesian market for Korean exports; in fact Germany, India and Russia consume more Korean value added.

**Figure 12. Exports: gross and value added terms, by partner country, 2014**




Source: OECD-WTO TiVA Data

**Figure 13. Imports: gross and value added terms, by partner country, 2014**



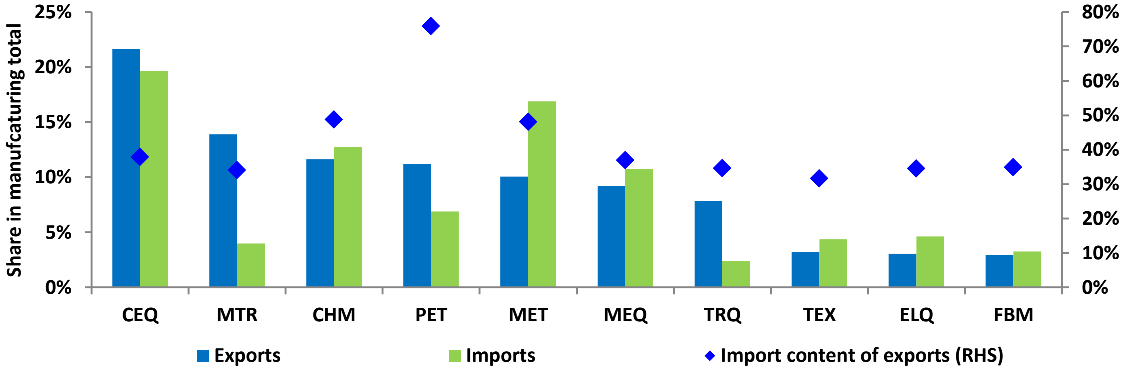

Source: OECD-WTO TiVA Data

Figure 14, supplying the domestic market through trade and investment, cannot be produced for Korea due to data availability.

# Trade and investment by industry

The top manufacturing exporting industries in Korea are computers and electronics (CEQ), motor vehicles (MTR) and chemicals and chemical products (CHM). The import content of exports is relatively high across these industries–illustrating the role that importing plays in supporting exports and indicating the degree of GVC integration in these industries.

**Figure 15. Top exporting manufacturing industries in Korea, 2014**

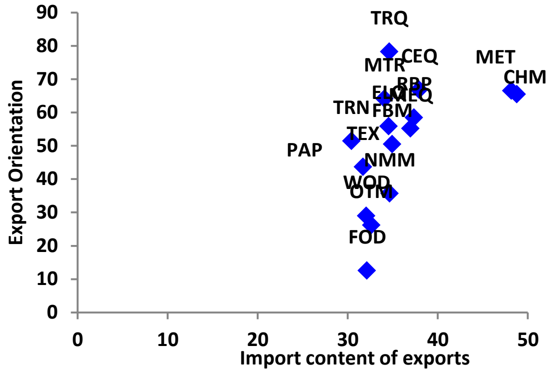



Source: OECD-WTO Trade in Value Added Data and OECD AMNE statistics. See page 10 for a description of industry codes.

### Exports and imports go hand in hand…

Across most industries there is a strong positive correlation between higher import content of exports and a higher share of their domestic value-added being exported (export orientation) illustrating the strong complementarity of exports and imports (Figure 16). Figure 17, foreign investment and export orientation, and figure 18, goods trade by ownership and industry, cannot be produced for Korea due to data limitations.

**Figure 16. Import content of exports and export orientation, 2014**

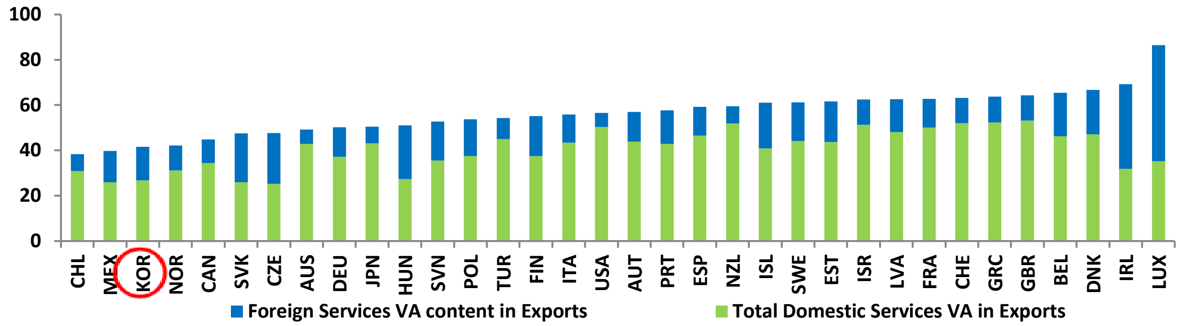



Source: OECD-WTO TiVA Data and OECD AMNE statistics

### Service industries play an important role in the export orientation of an economy…

Typically, services account for a large share of the value added in the economy but conventional gross trade statistics understate this as they cannot reveal the contribution that the upstream services industry plays in the production of goods exports. Accounting for this contribution, the services content of Korea's total exports of goods and services was 42% in 2014 (Figure 19), towards the lower end of OECD countries. Considering the services content of manufactured goods alone, 30% of manufacturing exports reflects services value added, below the OECD average of 36%.

**Figure 19. Services content of gross exports for OECD countries, 2014**

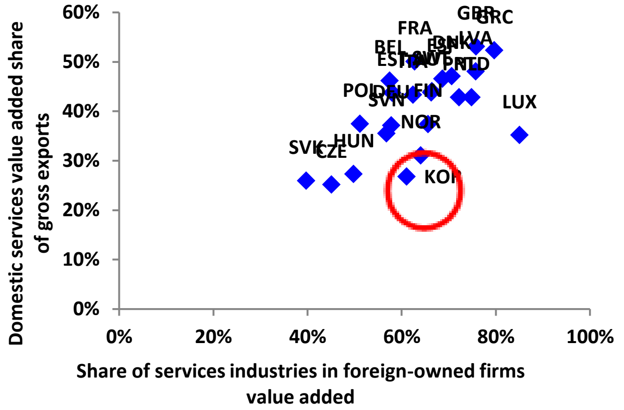



Source: OECD-WTO TiVA Data

## …and so inward FDI in the services sector can be an important channel for export success

Greater foreign investment in the services sector is associated with higher services content in exports. For Korea, its domestic services content in exports remains comparatively low despite the substantial share of investment in services.

**Figure 20. Share of services industries in foreign-owned firms' value added and domestic services value added share of gross exports, OECD countries, 2014**




Source: OECD-WTO TiVA Data and OECD AMNE statistics

## Links and data sources

**Guide to the trade and investment statistical notes**
www.oecd.org/investment/Guide-trade-investment-statistical-country-notes.pdf

**Activity of Multinational Enterprises - AMNE** www.oecd.org/sti/ind/amne.htm

**OECD Benchmark Definition of Foreign Direct Investment - 4th Edition (BMD4)**
(see Chapter 8 for information on the intersection of AMNE and FDI data)
www.oecd.org/investment/fdibenchmarkdefinition.htm

**Foreign Direct Investment (FDI) Statistics** www.oecd.org/investment/statistics.htm

**Trade by Enterprise Characteristics - TEC**
www.oecd.org/std/its/trade-by-enterprise-characteristics.htm

**Trade in Value Added - TiVA**
www.oecd.org/sti/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm

## Annex: Further data requirements

To make this note as informative as those of other OECD countries, more detailed data about Korea trade and investment are needed.

Primarily, more complete data on foreign-owned firms or inward AMNE statistics at the aggregate, industry and partner country level. Data on the value added by foreign-owned firms, their labour and personnel costs and gross operating surplus would greatly enhance the extent of the analysis that could be completed (Figures 8, 9, 10, 11, 13,16, 17).

Secondly, data on trade by enterprise characteristics (TEC) would greatly benefit the analysis, facilitating the calculation of the export intensities of domestic and foreign firms so that Figures 5, 7, 14 and 18 could be produced.

## Table of industry codes

| Industry Type | Ind Code | Industry Description |
|---|---|---|
| Primary Industries | AGR | Agriculture, hunting, forestry and fishing |
| | MIN | Mining and quarrying |
| Manufacturing | FOD | Food products, beverages and tobacco |
| | TEX | Textiles, textile products, leather and footwear |
| | WOD | Wood and products of wood and cork |
| | PAP | Pulp, paper, paper products, printing and publishing |
| | PET | Coke, refined petroleum products and nuclear fuel |
| | CHM | Chemicals and chemical products |
| | RBP | Rubber and plastics products |
| | NMM | Other non-metallic mineral products |
| | MET | Basic metals |
| | FBM | Fabricated metal products except machinery and equipment |
| | MEQ | Machinery and equipment n.e.c |
| | CEQ | Computer, electronic and optical products |
| | ELQ | Electrical machinery and apparatus n.e.c |
| | MTR | Motor vehicles, trailers and semi-trailers |
| | TRQ | Other transport equipment |
| | OTM | Manufacturing n.e.c; recycling |
| Services | EGW | Electricity, gas and water supply |
| | CON | Construction |
| | WRT | Wholesale and retail trade; repairs |
| | HTR | Hotels and restaurants |
| | TRN | Transport and storage |
| | PTL | Post and telecommunications |
| | FIN | Finance and insurance |
| | REA | Real estate activities |
| | RMQ | Renting of machinery and equipment |
| | ITS | Computer and related activities |
| | BZS | Research and development & Other Business Activities |
| | GOV | Public admin. and defence; compulsory social security |
| | EDU | Education |
| | HTH | Health and social work |
| | OTS | Other community, social and personal services |
| | PVH | Private households with employed persons |