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Statistics Finland

GLOBALISATION AND ECONOMIC STATISTICS

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Foreword

Globalisation is a mega trend that touches statistics compilation on many levels. Digitalisation has strengthened globalisation development during recent decades. Enterprises' structures become more complicated and value chains get fragmented. Both data that better describe globalisation, and more advanced ways to measure national output and income are needed for economic statistics.

The statistical challenges of globalisation featured prominently in discussions in autumn 2016 when Ireland published national accounts figures according to which the GDP of Ireland grew by more than 26 per cent in 2015. The level shift was a consequence of global restructuring of multinational enterprises. Since then, globalisation management in statistics has been raised as a key focus area of development, for example, by Eurostat, the OECD and the United Nations, next to digitalisation, sustainable development and measurement of welfare.

Globalisation affects nearly all statistical phenomena in some way. This report focuses on the challenges multinational enterprises present on current statistics that describe the real economy. The household sector (for example, travel and e-commerce) and global cash flows (for example, intra-group liabilities and assets) are primarily excluded from this report. However, there are many, often very challenging statistical questions, related to these that would be great topics for a separate report.

After the introduction, chapter 2 of the report introduces European cooperation in business registers and its role in global business statistics. Chapter 3 presents statistics that describe globalisation and examples of globalisation analysis enabled by statistical data. Chapter 4 describes enterprises' global production arrangements and their measuring in various

statistics. Chapter 5 discusses the international development trends within the topic, and the final chapter of the report presents the focus areas of the development work in coming years. In addition, a separate appendix contains examples of global phenomena and their treatment in different statistics.

The authors of the report would like to thank all the people who took part in compiling the report and who commented on it, and hope that the report provides for interesting reading!

Contents

Abbreviations

BOP = Balance of Payments
CIF-FOB = Cost, Insurance, Freight – Free on Board (customs valuation principles)
CPA = Classification of Products by Activity
CN = Combined Nomenclature of Goods
EBOPS = Extended Balance of Payments Services Classification
EGR = EuroGroups Register
ESA = European System of National and Regional Accounts
ESBRs = European System of Interoperable Business Registers
ESS = European Statistical System
EWS = Early-Warning system
FATS = Foreign Affiliates Statistics
FDI = Foreign Direct Investment
FIGARO = Full International and Global Accounts for Research in Input-Output Analysis
FRIBS = Framework Regulation Integrating Business Statistics
GNI = Gross National Income
GVC = Global Value Chain
IGA = Integrated Global Accounts
ISIC = International Standard Industrial Classification
IS(S) = International Sourcing (Survey)
LCU = Large Cases Unit
MDL = Micro Data Linking
MNE = Multinational Enterprise
NACE = Nomenclature statistique des activités économiques dans la Communauté européenne, the EU's classification of economic activities
PPP = Purchasing Power Parities
SPE = Special Purpose Entity
STEC = Services Trade by Enterprise Characteristics
TiVA = Trade in Value Added

1 Introduction

Previously, the core competence of manufacturing enterprises was to manufacture products in their home countries. Now, manufacturing knowledge has spread throughout the world, which means businesses have to differentiate themselves in some other way. Companies develop technology and build brands to create added value for products, which the buyers are prepared to pay for. Enterprises' purchases of production inputs and components are increasingly directed outside Finland.

Service enterprises have also become more international in the twenty-first century. However, many services must be produced close to their users, which means chopping of the value chains is not as easy as in other production. Although, for example, on the single EU market, expansion of operations should be simple, in practice, business regulations differ widely from one country to another. Cultural and language differences may also limit the internationalisation of service enterprises. Earning consumers' confidence and success in public procurement tenders may require the enterprise to look like a local operator, which is why service industry enterprises often have chosen acquisitions as their internationalisation strategy.

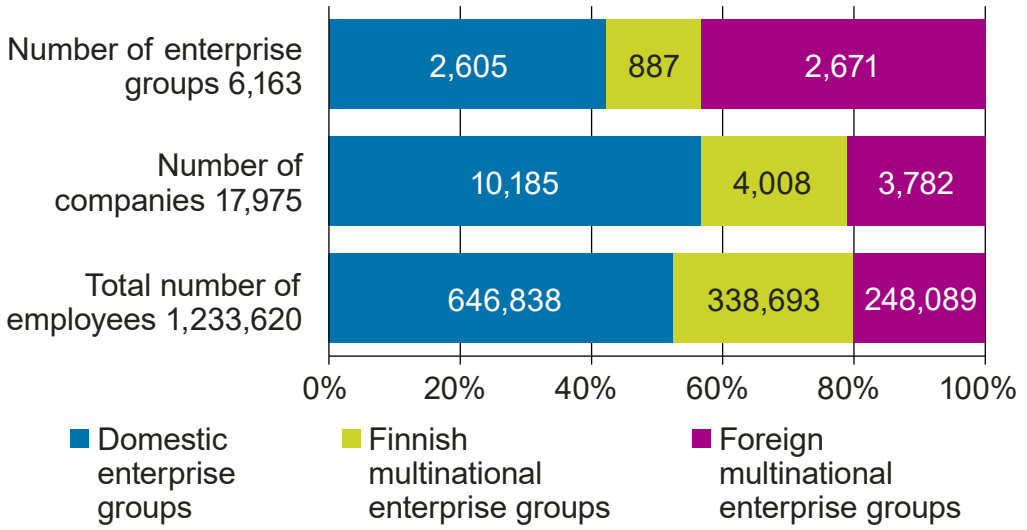
One consequence of enterprises' international activity is that goods and cash flows have separated from each other. This is partially visible in, e.g. merchanting, where a company manufactures the product in another country from where it is directly exported to a third country, while the invoices travel another route. Statistics on globally decentralised production include difficult questions, and this report describes how to handle these in statistics: What is included in Finnish production? Is the unit domestic or foreign? In which country is the economic ownership of factors of production located and where is the income accumulated?

2 Interoperable European business registers

Global phenomena demand consistent and high-quality recognition and description of multinational actors from business registers, which, in turn, often requires cross-border coordination and international cooperation. Taking control over businesses that decentralise their activities globally in statistics starts with recognising and defining groups, group enterprises and their business segments.

Statistics Finland's Business Register contains almost 18,000 companies (business IDs) that belong to an enterprise group. Some are fully domestic groups, whose all companies are located in Finland. Some are Finnish multinational groups, whose ultimate owner, or in layman's terms, head office is located in Finland and the groups ownership and control lead abroad from Finland. Some groups are foreign multinationals, whose head office is located abroad.

Figure 1. Enterprise groups operating in Finland in 2016, companies belonging to the groups and the number of employees of the companies



Source: Statistics Finland's Business Register.

Enterprise group involvement is important, when we examine the company's independence in decision making concerning its activities. Some companies only form a functional entity that it makes sense to described as an enterprise from an economic viewpoint together with another company/other companies.

The enterprise group's multi-national nature, that is, the enterprise group's companies being located in more than one country, is important when describing the economic activity of the group or company. Is the company part of an internationally decentralised business entity, a segment? Pricing of intra-group trade does not always reflect market prices. The turnover and profits of the group can be recorded to a different company than where the actual production takes place. In these cases, only examining the operation taking place within Finnish borders does not always give a correct image of the company's operations.

2.1 Business Register: units and variables

Three EU regulations govern the business register: Regulation (EC) No 177/2008 of the European Parliament and of the Council establishing a common framework for business registers for statistical purposes, Council Regulation (EEC) No 696/93 on the statistical units for the observation and analysis of the production system in the Community, and Regulation (EC) No 1893/2006 of the European Parliament and of the Council establishing the statistical classification of economic activities NACE Revision 2, as well as the Business registers - recommendations manual (2010 Edition). The Framework Regulation Integrating Business Statistics (FRIBS) that is under preparation will replace these three regulations at the earliest in 2021.

The regulation establishing a common framework for business registers for statistical purposes defines the scope of the register, units, the data content, updating sources and frequency, use of administrative data, the international data exchange and quality reporting. The requirement is to cover all industries

and units whose activities contribute to the gross domestic product. The international data exchange requirements apply to multinational groups and data exchange between Eurostat and the member states related to the EuroGroups Register EGR.

The objective of the business register is to act as a preparation and coordination tool in data collections, offer a basic enterprise unit population, act as a data source for statistical analysis on enterprise demography, promote the use of administrative data, and recognise, create and classify statistical units. Because economic statistics cover the entire economy, the business register should also cover all economic sectors.

Data on ownership and links of control between legal units are needed to define enterprise groups and delineate enterprises, as well as to study the level of concentration on particular markets. Certain financial data are often more meaningful at the level of the group or subgroup than at that of the individual enterprise, and they may be available only at these levels. Recording enterprise group data makes possible, when necessary, surveys of the group rather than of the group's enterprises, and this may reduce the response burden significantly.

Uniform registration of multinational groups makes Eurostat's group register and national business registers a basic tool that can help improve many statistics related to globalisation.

Business Register units

Based on the regulation establishing a common framework for business registers for statistical purposes, a business register must cover all enterprises carrying out economic activities contributing to the gross domestic product and their local units, the legal units of which those enterprises consist and enterprise groups. These units are defined in detail in the regulation on statistical units. The regulation was issued because monitoring of the European internal market required better comparability between statistics. To achieve this, the units applied in the European Statistical System (ESS) needed uniform definitions and descriptions.

A legal unit is an administrative unit identified for national use and regulated by national legislation. In Finland, the Board of Patents and Registration identifies legal units with a Business ID. In the business world we talk about a company. A legal unit by itself or together with other legal units belonging to the same enterprise group form the legal basis for the statistical enterprise.

According to the regulation, **the enterprise** is the smallest combination of legal units that forms an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of the current resources. In other words, one or several companies belonging to the same enterprise group can form an enterprise. This is not an industry-pure or geographical unit, an enterprise can carry out one or more activities at one or more locations. In the non-financial corporations sector, enterprises correspond with institutional units in national accounts.

An establishment is an industry-pure geographical unit. It is an enterprise or part of an enterprise, for example, a workshop, factory, shop, office, mine or warehouse that is located at one address and whose activity can be classified under one industry category. Establishment corresponds with the local-kind-of-activity-unit of the regulation on statistical units. The local unit required by the regulation on business registers can be derived from the enterprise and the establishment. For local units, the practice of Statistics Finland's Business Register is more detailed than the requirement of the regulation.

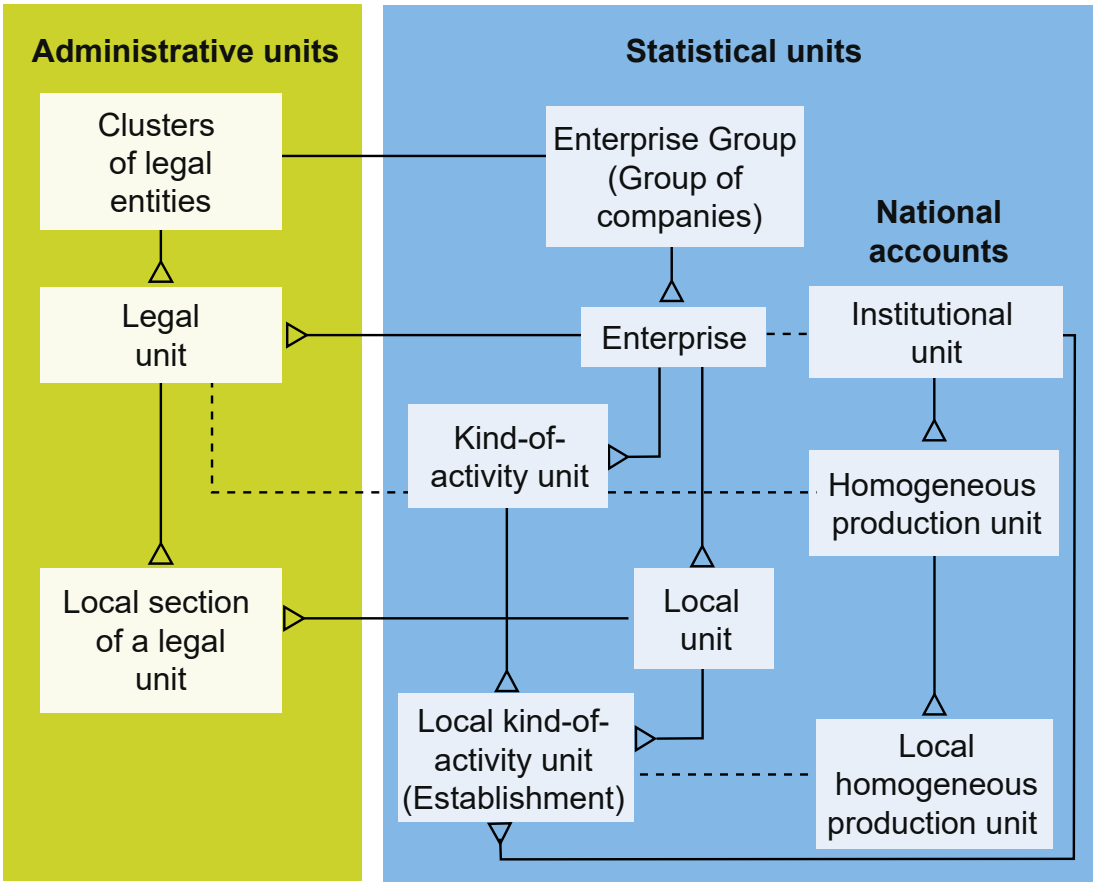
An enterprise group is a group of companies where a control relationship is identified between one or several legal units (Business ID in Finland). An enterprise group can have several decision-making centres, such as companies deciding on production, sales and recording of profits. An enterprise group can centralise its financial administration and centrally optimise its taxation. An enterprise group can be seen as a financial entity that has the power to decide about the activities of the companies under its control.

As a result of the FRIBS regulation, **the kind-of-activity unit**, KAU is becoming a new unit to be maintained in the business register. The kind-of-activity unit

consists of enterprise unit components whose activities can be classified under one industry category. In practice, the establishments of an enterprise that operate in the same industry will form a kind-of-activity unit.

The statistical unit of business statistics is, as a general rule, the enterprise, with regional statistics that use establishments, as well as statistics on economic trends and statistics on production of commodities that use kind-of-activity units as the exceptions.

Figure 2. Statistical units in different statistical systems



Source: Standard Industrial Classification 2008, Statistics Finland.

Variables of statistical units in the business register

The statistical units in the business register must include financial data that enable, e.g. drawing of samples. A local unit, that in Finland is derived from an establishment, must include main industry, possible secondary industry, data describing the number of employees and geographic location.

Excluding geographic location, enterprises must include all the same data as local units, as well as turnover and sector data.

The section of a domestic or multinational enterprise group located in Finland must include data on the main industry and number of employees. It is also recommended to include data on possible secondary industry and consolidated turnover.

Recommended data for multinational groups include the number of global personnel, global consolidated total turnover, the country where the head office is located, and the countries where the group's enterprises and local units are located.

Among the variables, **industry** has generated a lot of debate both at Statistics Finland and externally. Attention has focused on the shortcomings in uniform application of industry data, as well as the challenges in describing the industrial structure in an environment where decentralisation and outsourcing of activities is widespread and rapidly evolving, and where multinational enterprise groups represent significant volumes. Activities of very different nature are classified under manufacturing. Occupations, average wages, production volumes, etc. do, however, provide a picture of service activities "serving manufacturing".

Statistics Finland examined the challenges presented by global decentralisation and outsourcing of business activities on the Standard Industrial Classification in 2012. Based on the report, it was decided that **enterprises that have outsourced their production activity are kept in the industry indicated by the global end products, i.e. the enterprise is not moved from manufacturing to services.**

The discussion to reform the Standard Industrial Classification has already begun. It is important to participate in this development work in order to also achieve a more precise and internationally uniform classification of global activities.

2.2 EuroGroups Register (EGR), the European enterprise group register

The statistical institutes of EU and EFTA countries have, in cooperation with Eurostat, created the European enterprise group register (EuroGroups Register, EGR). It contains basic data describing the economic activities of multinational groups operating in Europe and their enterprises defined for national statistical purposes. EGR also contains data on internal ownership and control chains of multinational groups, and in addition to actual affiliates, also covers associated companies in which the enterprise group holds at least 10 per cent. This is in line with the definitions of the statistics on foreign direct investments. EGR data is harmonised between EU and EFTA countries.

The use of EGR is limited exclusively to statistical purposes. National statistical institutes and the central banks, as well as the European Central Bank, have been defined as user groups.

The content on the EGR, data exchange, and usage rights are regulated by the same regulation on statistical units as the national business registers. In addition, a regulation on establishing a common framework for business registers for statistical purposes, as regards the exchange of confidential data between the Commission (Eurostat) and Member States (No 192/2009) and between the central banks and Eurostat (No 1097/2010) have been issued.

Data on multinational enterprise groups are needed to produce statistics that describe the globalisation of business activities, such as foreign affiliates statistics, FATS, and foreign direct investment statistics, FDI. But how do these globalisation statistics differ from other types of business and economic

statistics so that there has been a need to invest in creating a European enterprise group register? The national business registers should serve as the basis for all business and economic statistics and the regulation stipulates that enterprise group data (incl. multinational group data) are part of national business registers.

National views on multinational enterprise groups sadly often differ from one another. EGR is expected to increase uniformity between national registers when it comes to data concerning internationally operating enterprise groups. Conquering the globalisation phenomenon through statistics seems to require cross-border coordination in order to avoid overlapping, missing and erroneous data.

The aim of EGR is to centrally coordinate the frameworks of national business registers and their quality. The aim is cross-border uniform data on multinational enterprise groups operating in Europe.

Globalisation statistics can benefit from EGR as a framework coordinated at a European level that, in turn, supports compilation of harmonised statistical data and uniform measuring of global activities. Many other statistics besides FATS and FDI need to better understand the cross-border ownership and control chains of enterprises and their financial transactions.

2.3 The European System of Interoperable Statistical Business Registers (ESBRs)

ESBRs is the European System of Interoperable Statistical Business Registers. ESBRs is one of the eight projects in the European Statistical System's ESS Vision 2020 portfolio.

The main objective of the project is to develop infrastructure that supports the quality of business statistics: common methodologies, processes and IT systems. The ESBRs project tries to provide solutions for three identified

problems: 1) inconsistencies in business statistics due to different practices as concerns the production, use and role of national statistical business registers; 2) inconsistencies in statistics on globalisation due to the absence of a shared view on the operational structure of global enterprise groups; 3) inefficiencies in business register processes and in statistical production processes due to the absence of common infrastructure for linking and sharing business register information.

2.4 European profiling – defining multinational enterprise groups in European cooperation

Profiling is a method to analyse the legal, economic and operational structure of an enterprise group in order to define the statistical units of one enterprise group and recognise the structures that serve data collections. Profiling analyses the legal, economic and operational structure of the enterprise group, both from a national and international perspective. Profiling as a method is described, e.g. in the Business registers - recommendations manual.

National profiling focuses on the enterprise groups located in the home country that either form a fully domestic group or, a so-called, truncated enterprise group that are part of either a domestic or global multinational enterprise group. The units used in national statistics are profiled from the domestic part of the enterprise group.

Next to national profiling, a **European profiling** method has been developed in European cooperation. The crucial difference is that profiling from an enterprise group to statistical units is carried out in cooperation between the national business registers of EU and EFTA countries and Eurostat's EGR. Only the largest and most complex multinational groups that have considerable activities in Europe are profiled with this method. In so-called intensive profiling, cooperation is carried out, in addition to between registers, also with the financial management of the enterprise group.

The aim of European profiling is the same as for national profiling, to create a statistical units for national statistics. The objective is also that national business registers and EGR would include uniform data on the largest multinational groups that are most important in describing the European economy. These uniform data refer to

– the country where the global decision-making centre, usually the head office, is located, based on which the nationality of the enterprise group is determined.
– enterprise groups or legal units, their countries of location and their ownership and control links.
– national enterprises.

Uniformity of statistics on subsidiary companies requires a common view on the home country of the enterprise group or the location of the head office, as well as a comprehensive and common view on the companies and their countries of location. Statistical results are tabulated based on the nationality of the group.

Comparable enterprise units that have been produced with similar principles are seen to increase the value of statistics, especially when examining the role of large multinational enterprise groups in national economies and more widely within Europe. In terms of these actors, it has been pointed out in various instances that ignoring the international dimension can result in statistics becoming distorted and even in erroneous data and/or interpretations. The hope is that European profiling, or the cooperation between national business registers and EGR, would help solve the situation and improve the relevance of statistics as a tool for financial analysis, especially in terms of multinational business activities.

2.5 Global enterprise reorganisations

Global reorganisations of multinational enterprise groups are usually the result of activities being reorganised (e.g. head office relocated abroad or incorporation of a branch) or corporate acquisitions (a business segment or individual company or part of such is sold, merged or divided). Such reorganisations affect enterprise group structures and, thus, statistical units. As a result of reorganisations, the figures describing the finances and activities of continuing units usually also change.

In order to comprehend large reorganisations, the enterprise group should be re-profiled. Uniform handling of such cases in different economic statistics also requires cooperation between statistical experts. Balance of payments and the statistics on foreign direct investments follow international corporate acquisitions, as they have, almost without exception, direct effects on financial assets and liabilities between countries. The effects of the cases recognised here on financial items should also be assessed more systematically in non-financial items in order to reduce the revisions to statistical figures caused by reorganisations. Among business statistics, the statistics on foreign affiliates also follow changes in enterprise group structures in cooperation with the business register.

In addition, high-quality international statistics production requires that the handling of global reorganisations is also uniform between different countries in order to avoid asymmetries between the statistics of different countries. Practices have been created and tools built (e.g. the FDI network of the statistics on foreign direct investments and the EarlyWarning System) to analyse reorganisations between EU countries.

Global reorganisations of multinational groups can also have big effects on the statistical figures that are released. These are, however, changes caused by an individual enterprise, so the guidelines on data protection related to releasing statistical data often makes communication difficult.

3 Globalisation statistics

Globalisation statistics refer to statistics and statistical wholes produced by Statistics Finland or Customs that describe transactions and links between Finland and rest of the world. All these statistics are produced in accordance with EU regulations and, thus, they are internationally comparable.

Globalisation statistics include:
- International trade in goods
- International trade in goods and services
- Export turnover (part of the Index of turnover in industry)
- Foreign affiliates in Finland
- Finnish affiliates abroad
- Foreign direct investments
- Balance of payments and international investment position
- National accounts

Customs compile statistics on international trade in goods and Statistics Finland produces the other above-mentioned statistics.

In addition, new globalisation data sources are created in international cooperation under the guidance of Eurostat and OECD. Of them, this report presents the following in more detail:

- ISS, International Sourcing Survey (Eurostat)
- MDL, Micro Data Linking projects (Eurostat)
- TiVA, Trade in Value Added (OECD, WTO)

As a result of the Framework regulation integrating business statistics (FRIBS) that is under preparation, the product family of globalisation statistics will grow, when the International sourcing survey ISS, to be produced at fixed intervals, will establish its place in statistics production. FRIBS will also cover the majority of other statistics describing globalisation.

This chapter introduces all above-mentioned globalisation statistics and other key data sources in brief, and gives examples on how the data of different statistics can be used to analyse the global economy.

3.1 International trade in goods

At its most traditional, enterprises' global activities are imports and exports of goods that is described comprehensively in the International trade in goods statistics published monthly by Customs. It depicts the goods trade between Finland and other EU member countries and between Finland and third countries, that is internal and external trade. An inclusion in these statistics requires the goods physically arrive in or depart from this country., which does not always include exchange of economic ownership required by national accounts and statistics on balance of payments. So, in terms of statistics on goods trade it does not matter whether the export involves payment transactions or not.

Uutiset | Talous

Suomi vie Saksaan saksalaisia autoja - vienti nousi ennätyslukemiin

29.12.2017 klo 20:48

Kauppa Saksan kanssa nousi euroajan ennätykseen tammi-syyskuussa. Suomesta vietiin Saksaan henkilöautoja lähes 1,3 miljardin euron edestä.

Valmet Automotiven tehtaalla rakennetaan Mercedes-Benzin A-sarjaa ja GLC-katumaastureita. PETTERI PAALASMAA/IL

Assembly of German cars in Finland is growing clearly.
Source: Iltalehti 29 December 2017

The statistical data required by the statistics on goods trade with countries outside the EU are obtained from the customs clearance system. Data on trade between EU member states are, in turn, collected from statistical declarations lodged by enterprises through the Intrastat system of internal trade. In terms of exports, the international trade statistics records export of goods by destination country. The statistics includes both the value and volume data of exports by product heading. In exports, the statistical value is the FOB value (free on board).

The benefit of the International trade in goods statistics is its coverage and production speed - as a general rule all goods that are exported from Finland and imported to Finland are recorded. The requirement of the statistics is that the goods physically arrive in or leave the country. The exception is, however, ships and aeroplanes that are recorded when the economic ownership changes. For example, transit transport and economic transactions that do not have considerable commercial value are not included in the statistics. In addition, smaller companies have been freed from the obligation to report internal trade. The value of these companies' EU trade is estimated based on the value added tax data collected monthly by the Tax Administration.

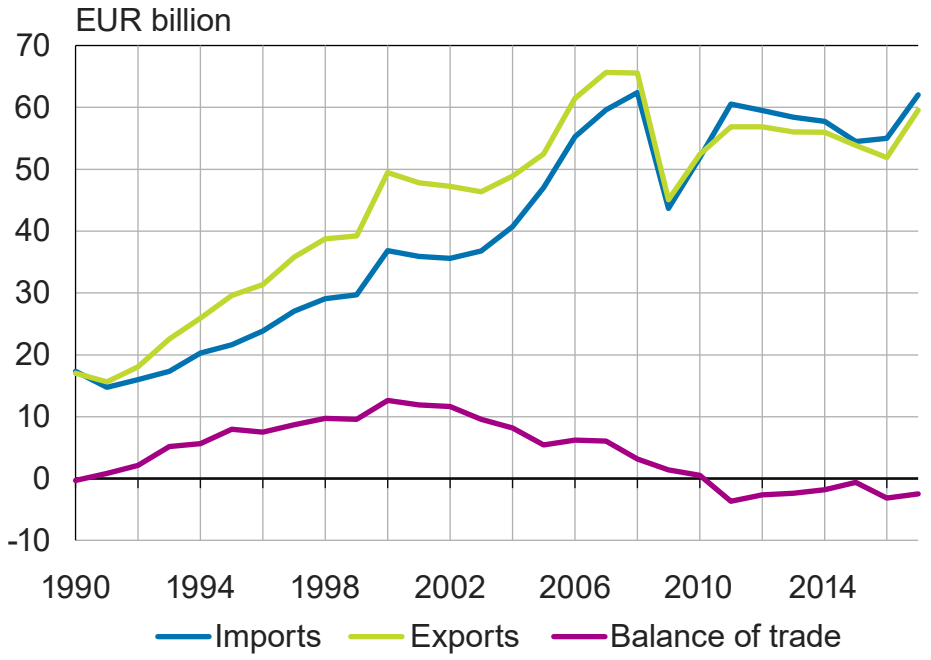
The preliminary monthly data on international trade in goods are released at a lag of approximately 38 days, and the more detailed monthly statistics at a lag of 60 days from the end of the statistical month. In addition, Customs quarterly releases "International trade according to company size" and annually "International trade according to type of company ownership" data. The member countries also annually (t+18 months) deliver data on trade in goods statistics by enterprise characteristics (TEC) to Eurostat in accordance with EU's INTRASTAT regulation. Eurostat uses the data to compile the publication: https://ec.europa.eu/eurostat/web/international-trade-in-goods/data/focus-on-enterprise-characteristics-tec.

The International trade in goods statistics can be used, for example, to follow the development of goods flow in exports and imports, examinations by industry and commodity and to examine the destination countries of

exports. When using the statistics, it should be noted that the trade account of Customs' international trade statistics only depicts Finland's surplus or deficit of goods trade, so it is a more limited concept than the balance of goods and services that also includes the imports and exports of services (see Section 3.2).

More information about the International trade in goods statistics can be found in the manual of statistical principles published by Customs.

Figure 3. Exports, imports and balance of trade 1990 to 2017



Source: Graphics on Finnish international trade 2018, 28 September 2018, Customs

3.2 International trade in goods and services

Companies increasingly import and export services linked with goods deliveries or separately. The statistics on international trade in services has been published by Statistics Finland since 2003 and now the data are published as part of the quarterly statistics on international trade in goods and services. The statistics compiles data on exports and imports of goods and services, and the difference between these is the balance of goods and services that describes the surplus or deficit of Finland's **total international trade**. The data on international trade in services are released quarterly with a broad classification of products and areas. The data are consistent with the balance of payments and national accounts. It publishes all service items and adjustment items of goods trade with which the import and export data of Customs' International trade in goods statistics are converted into goods trade data compliant with the balance of payments and national accounts.

A goods or service transaction recorded in the statistics on international trade in goods and services is based on a change in economic ownership, while Customs' international trade statistics measures cross-border trade. Both also include intra-group international trade.

Goods trade data published by Customs are used as the basis for the data on goods trade published by Statistics Finland after conceptual changes required by the Balance of Payments manual. The changes include goods imports related CIF-FOB deduction[1], merchanting, increases and decreases related to goods sent abroad for processing and other increases and decreases in goods trade, such as imports of vessel deliveries, returns, smuggling and private persons' e-commerce.

1 The FOB value is achieved when the freight and insurance costs between the ports of loading and destination are deducted from the CIF valued goods imports in the Customs' statistics.

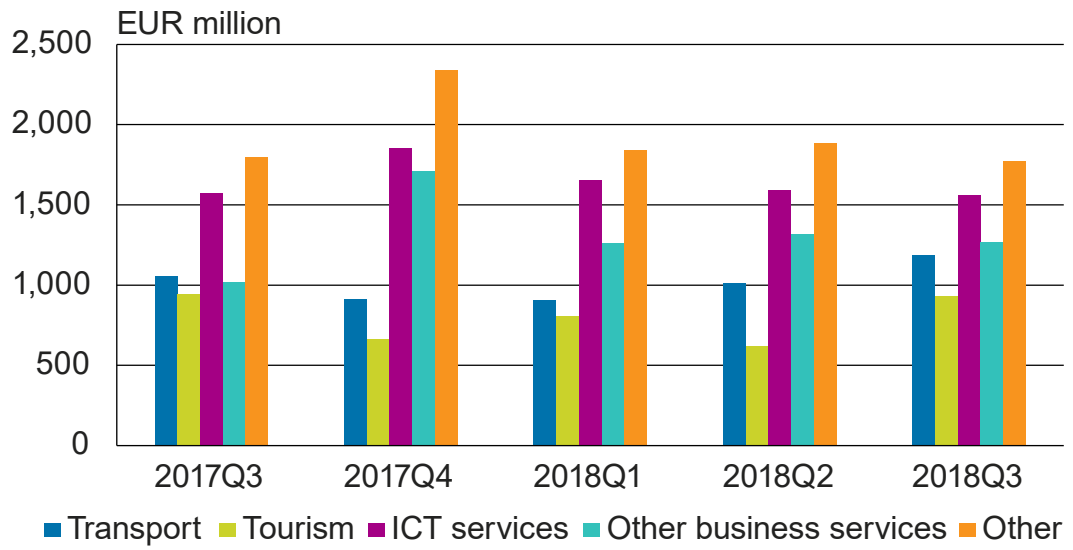
Growth in service exports has made up for Nokia's collapse.
Source: YLE news on 27 November 2017

The data on international trade in services depict the value of services purchased from abroad or sold to abroad by Finnish economic units. Statistics on services covers, in addition to business services between enterprises, also services related to tourism and financing. The classification used in the compilation of the statistics is the Extended Balance of Payments Services (EBOPS) classification, which is an international classification presented in the Manual on International Trade in Services. The division of countries used in the inquiry is based on the statistics on balance of payments and data are released by service item and country.

When compiling data on international trade in services both a direct data collection directed at enterprises and data derived from other economic statistics are used.

The statistics on international trade in goods and services provides data on the surplus or deficit (balance of goods and services) of total international trade in Finland and, in particular, data on the development of international trade in services. When using the statistics, one should note that it is based on changes in economic ownership, which means the data on international trade in goods differ from the data of Customs' international trade statistics.

Figure 4. Exports of services by service item



Source: International trade in goods and services 2018, release 14 December 2018, Statistics Finland.

3.3 Export turnover in manufacturing

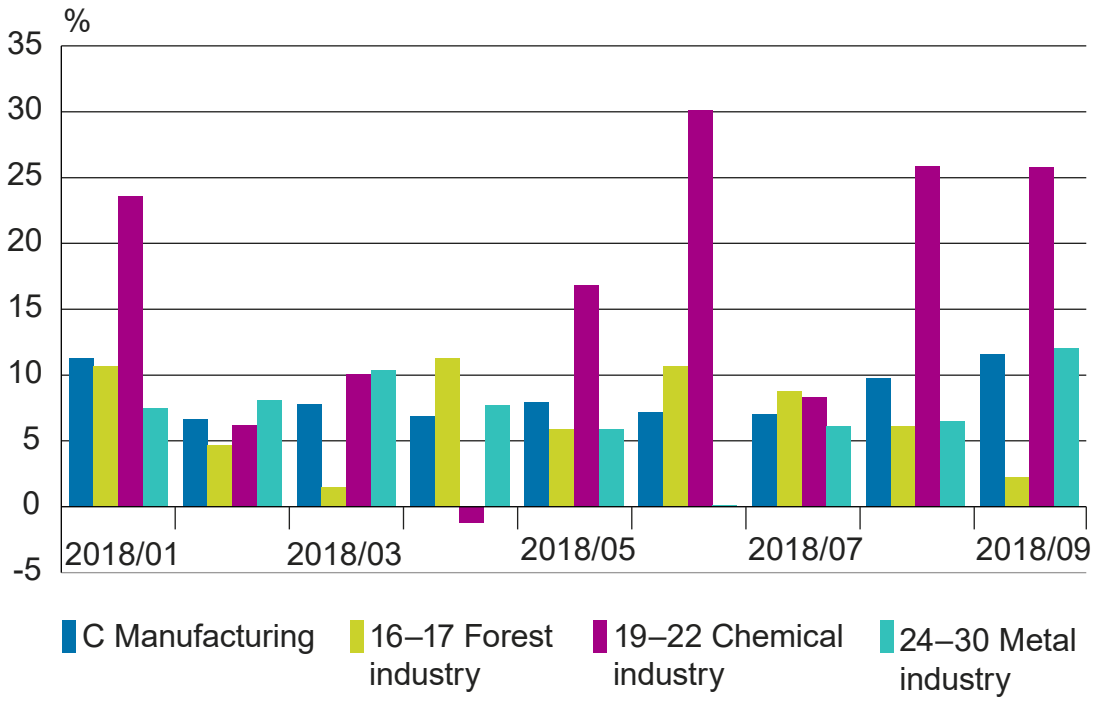
In connection with the index of turnover in industry, Statistics Finland also releases a monthly **index of export turnover in manufacturing**. It describes the share of manufacturing enterprises' turnover that is generated from sales to another country. A sales inquiry directed at the largest enterprises in each industry is used as the data and for other companies, company-specific export data derived from the Tax Administration's VAT data that include companies' turnover without tax, export of goods to the EU area and export of services to

the EU area. The statistics is currently produced monthly with a lag of 75 days from the end of the reference month. Index series are published for all 2-digit levels of the Standard Industrial Classification (NACE) and several industry combinations such as paper industry, metal industry, etc.

The strength of the index of export turnover is that the data covers all enterprises in the manufacturing industry, and the fact that the export concept includes sales of both goods and services. Differences compared to the export data of industry-specific goods trade released by Customs are caused by the following reasons related to the data: The condition of the Customs' international trade statistics is that goods physically move across the Finnish border (vessels and planes form an exception). Export turnover is, in turn, defined based on ownership changes. The data can also contain differences in timing: Export turnover is, as a rule, recorded to the months on accrual basis, while in the Customs' data deliveries are recorded in one go once all part-deliveries related to the same delivery have been despatched.

Regional data are also produced from export turnover in manufacturing as part of Statistics Finland's **information services on the tailored trend indicator** service. Regional export turnover is formed by dividing enterprises' monthly export data to regions using the Business Register's establishment level annual turnover data. Regional export data are used by, for example, regional councils and other regional actors. Customs also publishes regional goods export data.

Figure 5. Annual changes in export turnover of manufacturing 1 to 9/2018



Source: Index of turnover in industry,
published on 13 December 2018, Statistics Finland

3.4 Foreign affiliates in Finland

Statistics on foreign affiliates in Finland and on Finnish affiliates abroad describe the structures of global enterprises and the internationalisation of business activities. These data can be used to assess the ownership structure of companies operating in Finland, the effect of the EU internal market on the activity of Finnish enterprises and on the competitiveness of Finnish-owned enterprises in the world.

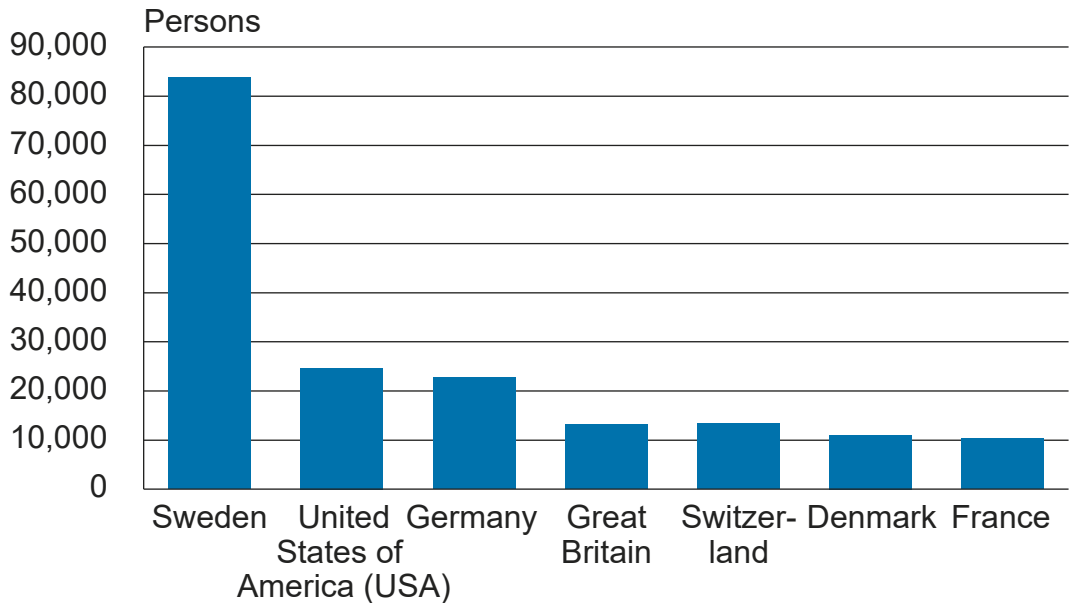
The annually published Foreign affiliates in Finland (IFATS) describes the activities of foreign affiliates located in Finland. An enterprise is classified as foreign if the institutional unit that controls it is located outside Finland. This unit is usually an enterprise whose holding in the company is over 50 per cent. The statistics contains the number of foreign-owned companies, the number

of personnel and turnover data by industry and owner countries. Together with other companies included in structural business and financial statement statistics, the foreign-owned companies form the entire group of enterprises operating in Finland. According to statistical data for 2017, foreign enterprises employed 17.5 per cent of the personnel working in enterprises operating in Finland and covered good 22 per cent of the turnover of enterprises operating in Finland.

The statistical data consists of administrative data files (e.g. data from the Tax Administration) and data collected directly from enterprises by Statistics Finland. The statistics are published once a year around 12 months after the end of the statistical reference year.

The statistics can be used for monitoring foreign enterprises' investments in Finland and assess the role of foreign-owned enterprises. The statistics are also used to examine the value chain of foreign enterprises. The relative share of international holdings in different industries can be monitored as some kind of indicator of Finland's strengths (foreign enterprises want a competitive edge or to be close to the source of strengths when deciding where to place their activities).

Figure 6. Number of personnel of foreign affiliates in Finland in 2017



Source: Foreign affiliates in Finland 2017, published on 18 December 2018, Statistics Finland

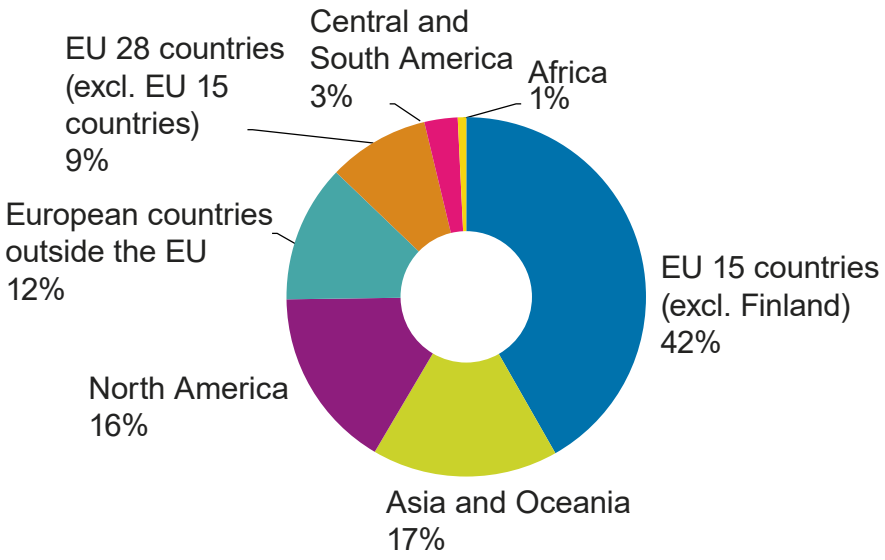
3.5 Finnish affiliates abroad

Statistics on Finnish affiliates abroad (**OFATS**) produce annual data on the number, activities and location of Finnish enterprises' affiliates and branches abroad. It describes the global placement of Finnish enterprises' activities, and contains characteristic data indicating the significance of activities located abroad, such as the number of personnel, personnel costs, gross investments in tangible assets and turnover.

The statistics are based on data collected directly from enterprises and they try to cover the entire field of Finnish affiliates. Challenges are created by the coverage of the group register in terms of small enterprises that only own a few affiliates or new enterprises. Small and new enterprises are typically visible in the group register with a lag of one or two years. Currently, the statistics are published annually with a lag of around 17 months.

The statistics are used to assess the real foreign investments of Finnish enterprises, monitoring of the placement of affiliates (number of enterprises, personnel and industries), and assessing the value chain of Finnish enterprises. The data can be used to examine the scope of Finnish enterprises' activities in different countries and compare it with domestic activities.

Figure 7. International turnover of enterprises under Finnish ownership in 2016



Source: Finnish affiliates abroad 2016, published on 6 June 2018, Statistics Finland

3.6 Foreign direct investments

The statistics on foreign direct investments annually describe investment activities that are based on considerable influence or control in the direct investment enterprise. In practice, the statistics depict financial transactions between domestic and foreign units in multinational enterprise groups and the assets and liabilities these generate, as well as international corporate acquisitions. The statistical data can be used to assess the degree of globalisation in the economy. The statistics on foreign direct investments are part of the balance of payments statistics framework, but the data are only published once a year as separate statistics, some 10 months after the end of the statistical reference year.

Ulkomaiset suorat sijoitukset Suomeen kasvoivat selvästi

30.10.2015 09:18 SIJOITTAMINEN PÄÄOMASIJOITTAMINEN

Suomeen tuli suoria sijoituksia viime vuonna 13 miljardia euroa nettomääräisesti.

Voimakas kasvu edellisvuodesta johtui erityisesti yrityskaupoista, joissa merkittäviä suomalaisessa omistuksessa olleita yrityksiä siirtyi joko kokonaan tai osittain ulkomaalaisomistukseen. Viime vuonna muun muassa ruotsalainen teräsyhtiö SSAB osti Rautaruukin.

Myös monikansallisten konsernien sisäiset lainajärjestelyt lisäsivät suoria sijoituksia Suomeen.

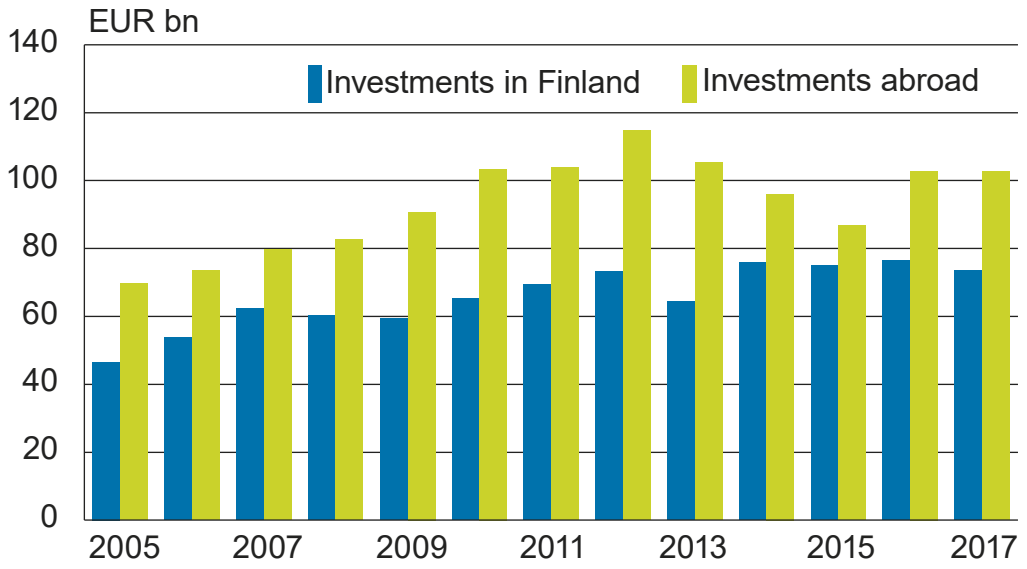
Corporate acquisitions increased foreign investments in Finland
Source: Kauppalehti 30 October 2015

The main data sources for the statistics are Statistics Finland's annual balance of payments survey on foreign financial assets and liabilities. If necessary, some respondents are asked for a separate report on acquisitions and mergers. The annual inquiry is based on a sample, where the respondents are selected so that around 95 per cent of the value of direct investments is covered.

The statistics are used to examine Finland's investment appeal and to asses investment activities to and from Finland. Investment data are examined by country and significant changes are monitored.

The statistics are often incorrectly interpreted to describe real investments even though the statistics describe financial transactions between domestic and foreign units and the assets and liabilities they generate. Direct investments are usually recorded based on the country of the immediate counterparty, which means that it does not offer a high-quality description of the ultimate investment object in case of more intricate ownership chains. Also, due to the sampling design, the statistics cannot offer reliable data on foreign investments related to small growth enterprises, even though there is demand for this kind of data.

Figure 8. FDI investment stocks in 2005 to 2017



Source: Foreign direct investments 2016,
published on 31 October 2018, Statistics Finland

3.7 Statistics on balance of payments and international investment position

The statistics on balance of payments describe the external balance of the national economy from the perspectives of both real and financial economy. The balance of payments covers transactions and investments that are carried out between economic units belonging to the national economy (resident in Finland) and economic units belonging to another country (resident abroad). The international investment position describes the foreign asset and liability stocks generated from financial account capital flows.

MAKSUTASE

Viennin alamäki jyrkkeni - vaihtotase nipin napin tasapainossa

15.3.2016 09:27 TALOUS JA POLITIIKKA

Suomen vaihtotase oli lievästi ylijäämäinen viime vuoden loka-joulukuussa, kertoo Tilastokeskus.

Viennin alamäki jyrkkeni tammikuussa ja Suomen vaihtotase jäi 0,1 miljardia alijäämäiseksi, kertoo Tilastokeskus.

Maksutaseen mukainen tavaravienti laski 9 prosenttia vuoden takaisesta. Tavaratuonti laski 8 prosenttia.Maksutaseen mukaisen kauppataseen alijäämä oli 0,1 miljardia euroa.

Olet lukenut 2/5 maksuto
uutista.

Te Talouselämä

Ota yhteyttä

Uusimmat

1 11:54 KAUPPA
Hehku-ketju vaikene
kokonaan menekistä
toivotti uuden kilpai
tervetulleeksi

2 11:27 PANKIT
"Italian Robin Hood'
rikkailta, jotta köyh
lainoja – pankinjoht
vankilan, mutta jäi
kodittomaksi

3 11:15 SISÄPIIRI
Näin kroatilainen lii
Danko Koncar otti h
suomalaisen Afaraki
Kakkonen: "Luottam
suurta"

Decreased exports pushed Finland's current account into deficit
Source: Talouselämä 15 March 2016

The statistics on balance of payments and international investment position are part of the compilation framework for national accounts. The sector data produced in the balance of payments are used as the source of the rest of the world sector in national accounts.

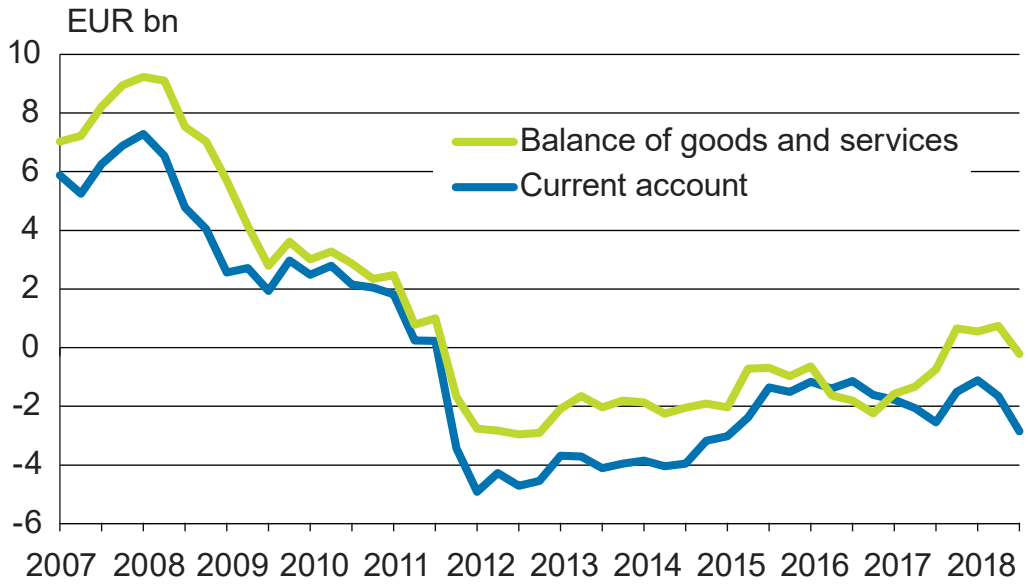
Both direct data collections and data derived from other economic statistics are used to compile the balance of payments. Customs collects data on international trade in goods. The data are complemented in order to achieve

goods trade in balance of payments terms. Statistics Finland and the Bank of Finland collect data on international trade in services, primary income, secondary income and capital transfers, and data from the financial account for compiling statistics on the international investment position.

The monthly balance of payments is released around six weeks after the end of the statistical reference month. The release includes data on the balance of payments, the current account and the financial account. Data are also released quarterly, and annual data are completed in September of the year after the statistical reference year.

The statistics are used to monitor the current account and capital flows, examine Finland's international trade and international investment position, as well as to monitor preliminary service export data and direct investments. The connection between a country's current account and net investment position (indebtedness) is complicated - especially value changes related to securities make interpretation difficult.

Figure 9. Current account and balance of goods and services, 12-month moving total



Source: Balance of payments and international investment position, published on 14 December 2018, Statistics Finland

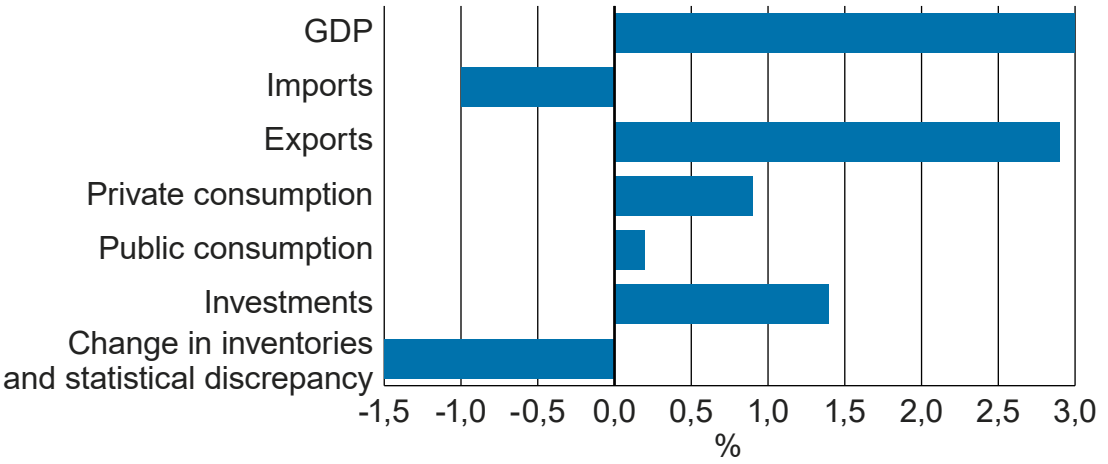
3.8 National Accounts

National accounts examine production, income formation, financial position, assets and liabilities, and other sub-areas of the economy from the viewpoint of both domestic sectors and foreign countries. Transactions between Finland and the rest of the world are visible in the figures of the rest of the world sector in national accounts. Transactions with the rest of the world are not separated by country but corresponding country-specifications can be found in balance of payments. Data are released as part of the annual accounts and quarterly accounts, as well as in statistics on quarterly sector accounts and on financial accounts.

Unlike in other statistics, in national accounts imports and exports are recorded both at current and fixed prices. Based on product data by transaction included in the supply and use tables one can also analyse, e.g. import and export input of domestic output, intermediate consumption and investments.

Example 1:
Net exports (exports minus imports) is a key demand item in the gross domestic product next to consumption and investments. The volume changes in exports and imports explain, to some extent, the GDP volume change (Figure 10).

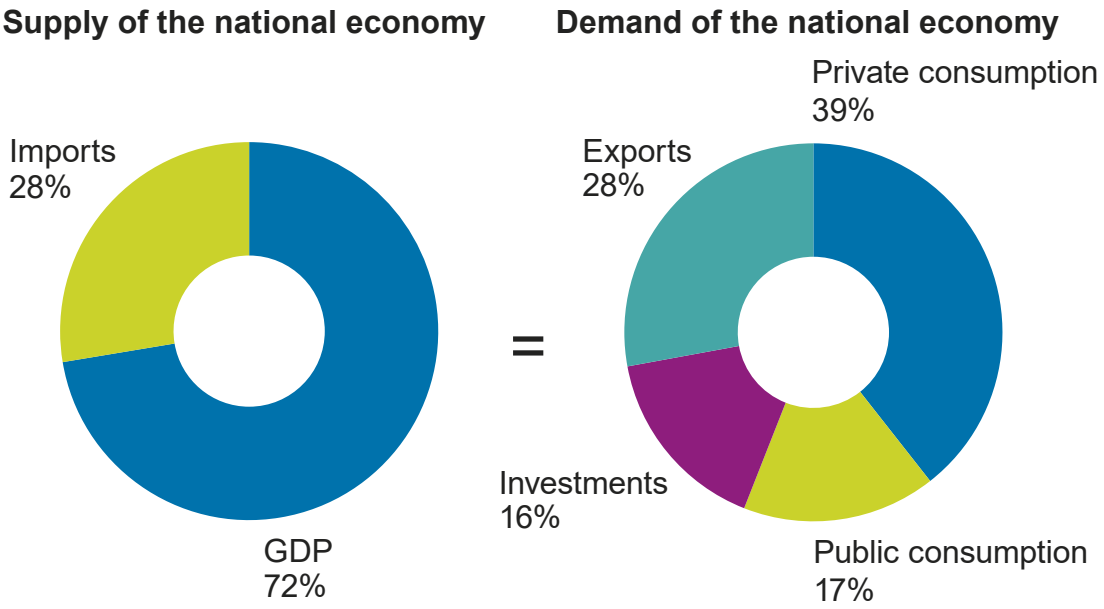
Figure 10. Gross domestic product contributions in 2017: effect of demand items on the GDP change



Source: Press conference on National Accounts, 16 March 2018

Various indicators can also be calculated from national accounts' data. For example, the share of exports in total demand in the national economy describes the share of total demand that is exported.

Figure 11. Supply and demand of the national economy in 2017



Source: National Accounts. Statistics Finland

Exports can also be proportioned to GDP, for example, in country comparisons to describe the relative size of gross exports in different national economies. It should be noted that this indicator does not describe the share of exports in GDP. For example, in 2017 Finland's **export proportion to GDP** was 38% while the corresponding figure for Luxembourg was 230%.

Many statistical challenges related to globalisation are culminated in national accounts, starting with defining the domestic production concept and ending, for example, with the staggering GDP growth figures in Ireland in 2015 that were based on transfers of intellectual property from one country to another by multinational enterprise groups. These development needs related to national accounts are discussed in more detail in chapter 4 on global production.

3.9 New globalisation data sources

As enterprises' activities are increasingly split into smaller units and different countries there is need for new data on global value formation and Finland's role in these value chains. Domestic economic policy, in turn, requires data on Finnish jobs' links to the global economy and these value chains. These kinds of data are not easily collected from a single data source, but their production requires combination of data. In recent years, description of value chains and international trade that generates value added in the home country has been promoted in several international development projects.

The information need related to value chains is being responded to e.g. in the ISS (**International Sourcing Survey**) project headed by Eurostat, where data are collected on enterprises' outsourcing in the home country and internationally, as well as on activities being transferred back to the home country. Data collection at set intervals and statistics compilation will become part of the Framework regulation integrating business statistics (FRIBS) that is under preparation. Data are collected by activity in order for things to be closer to the enterprises' practices. Enterprises are asked about activities that have been outsourced in the home country or abroad and the effects these measures have had on personnel (generated and lost jobs). In addition, enterprises are asked about transferring activities back to Finland and the employment impact this has. Enterprises are also asked about their incentives to outsource and the main obstacles related to outsourcing. The latest data collection was made in spring 2018 and results of the survey have been published at the end of 2018.

The Micro data linking project funded by Eurostat also produces new information concerning globalisation. The project has produced a micro-level enterprise database that consists of data from the business register, financial statements data, data on international trade in goods and services, on information technology in enterprises, on affiliates, on R&D and enterprise demography. Combined data enable a new type of business activity analyses. The data has been used to form tables that describe, e.g. SMEs and the groups

or enterprise groups they belong to, born globals, foreign owned enterprises, growth enterprises, as well as companies involved in international trade in services and goods.

Based on the MDL enterprise database, additional analysis is also carried out in Nordic cooperation during 2018 and 2019 funded by Nordic Innovation (Nordic Countries in value creation of global firms). The project examines growth enterprises' effects on employment and the prerequisites for growth in general. The publication channels for these statistics have been Eurostat's "Statistics Explained" encyclopaedia, Statistics Finland's Industry-specific enterprise data service (available only in Finnish) and analysis reports.

In addition, data on the trade partners of different enterprise types has been produced. Global value chains were analysed in a project in cooperation with OECD, where the so-called TiVA database (see next section) was complemented with enterprise classifications, which resulted in a fresh view on global value chains and the roles of Nordic enterprises in these chains.

OECD's and WTO's joint project TiVA (Trade in Value Added) offers valuable data for, e.g. research on international trade, global value chains, economic growth and productivity.

The key content of the TiVA project is the combination of national statistics on international trade and national accounts supply and use tables into a global research framework for value chains. The TiVA framework has also been extended by adding information on foreign investments and the revenue accrued from them to it. The addition of revenue data is important because part of national value added is directed as dividends and interest expenditure to foreign owners.

In autumn 2017, OECD published country-specific TiVA indicators. The newest indicators in the publication concerned 2014 and 2015. The figures for 2014 were based on the Inter-Country Input-Output database (ICIO), and the 2015 indicators were produced with statistical methods. The TiVA

database contains data on, e.g. intermediate goods purchased by industries from the home country and abroad, intermediate consumption and final use of commodities produced by industries in Finland and the rest of the world, as well as value added based exports by industry.

There have been discussions with OECD on how the production timetable of the indicators could be considerably accelerated by utilising various methods and statistical data that is completed faster. Based on these discussions, OECD and Statistics Finland have started a joint project for 2019 that examines the possibilities of producing preliminary TiVA indicators with a lag of around 12 months, which, based on the discussions, would be a sufficiently fast timetable for planning and monitoring economic policy, as well as for the needs of trade negotiators.

The aim of the joint project is to develop the timeliness and level of detail of Finland's TiVA indicators:

- Develop methods to produce preliminary Finnish supply and use tables, which enable accelerated production of TiVA indicators
- Combine data and develop methods to produce extended TiVA indicators at a more detailed level (more detailed industry level, by enterprise type and possibly by product group)
- Produce indicators on the effects of globalisation on jobs, and wages and salaries.

4 Handling of global production in economic statistics

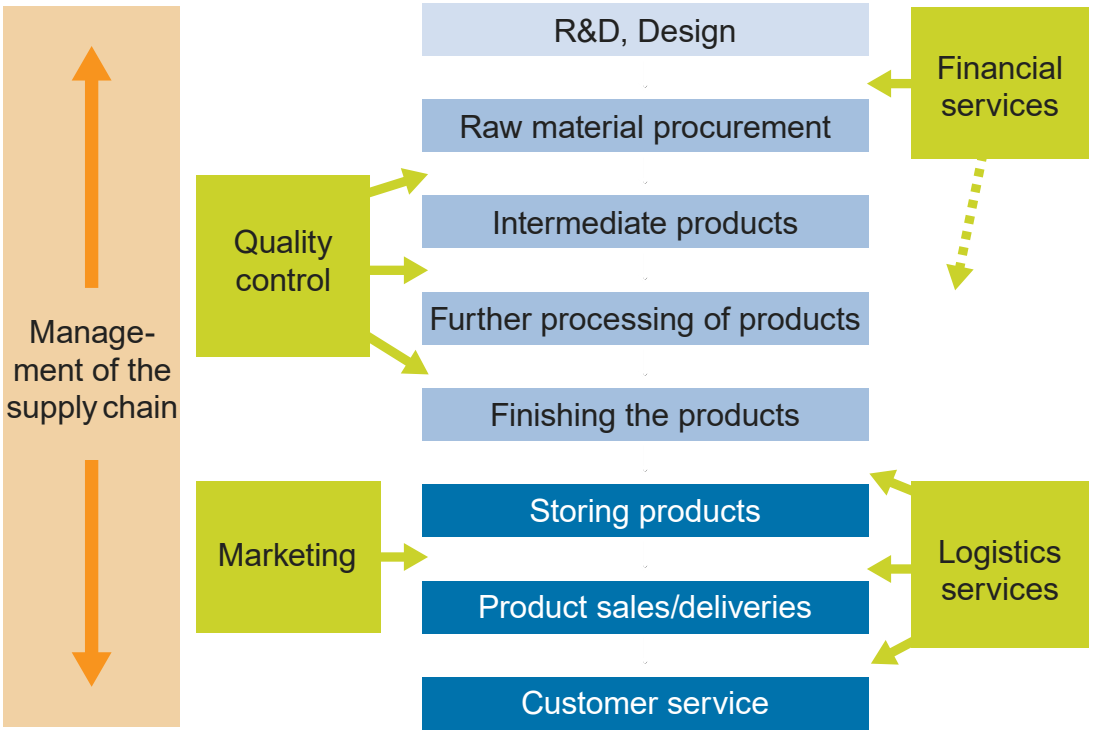
This chapter discusses the terminology and definitions of global production, as well as their application in economic statistics. The depiction of global production is examined both from the viewpoint of national accounts and relevant business statistics.

4.1 Definition of global production

Global production refers to splitting activities and production stages, part of which the enterprise has transferred or outsourced abroad. The transfer can apply to both goods and services, as in the example in the figure below.

The stages and activities depicted in blue in the figure describe the actual production process, starting from product design and purchasing raw materials and ending with retail trade of the final product and customer service. The stages shown in green depict activities related to managing the production process, such as quality control, marketing, financial and transport services. Either the parent enterprise manages the entire chain (as in the figure) or affiliates manage part of the chain.

Figure 12. Example of fragmentation of the production chain



Source: Guide to Measuring Global Production (UNECE, 2015)

International typology and guidelines concerning global production have been developed mainly in the framework of national accounts and balance of payments (SNA 2008/ESA 2010 and BPM6). As a result of the Framework regulation integrating business statistics (FRIBS), guidelines concerning global production will also be added to manuals on business statistics. They aim at as uniform handling with national accounts as possible, considering the description and purpose of the statistics.

4.2 Statistical units and economic ownership

Key questions in statistics production in general and, especially in statistics on multinational enterprise groups, are the statistical unit and its nationality, and following changes in economic ownership when recoding statistical data. The

basis for these definitions is described, for example, in the manuals that guide the compilation of national accounts and balance of payments.[2]

The statistical unit affects both the production and interpretation of the statistics. The statistical unit varies between statistics, which causes comparability problems between different statistics. For example, the statistical unit for annual business statistics is the enterprise, while statistics on economic trends are based on the more detailed kind-of-activity unit. National accounts, in turn, use either the enterprise or establishment depending on the account.

When defining the nationality of the statistical unit, one should consider the scope and duration of the activity, in addition to the location of the activity. For example, enterprises' foreign branches and VAT units are in the grey area and more attention than currently should be paid to them in different statistics, and effort should be made to handle them uniformly throughout economic statistics.

Economic ownership is the most difficult of the key concepts and causes a lot of interpretation problems. Economic ownership belongs to the institutional unit that decides, for example, on the use of a commodity, natural resource or intangible right and thus carries the risks and income related to the activity.

Recording of global production is in many statistics based on changes in economic ownership in order for income from activities to be visible in the countries where the institutional unit that collects the income is located. Recordings made like this are also better in line with enterprises' national financial statement data and to some extent make data acquisition easier. The downside is, e.g. the need to revise conventional statistics on international trade that are based on crossing national borders.

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2 System of National Accounts (SNA 2008), The European System on National and Regional Accounts (ESA 2010) and Balance of Payments and International Investment Position Manual (BPM6).

One example is the manufacture of cars in Finland. According to Customs' international trade statistics, cars are exported from Finland even though the economic ownership remains with the foreign car manufacturer throughout the production process. By contrast, in statistics based on economic ownership (national accounts and statistics on balance of payments), export and import items related to car production where ownership is not changed are removed from Finland's imports and exports. Only the manufacturing fee received for car assembly and the raw material purchases from Finland needed in the assembly are recorded as Finnish export; likewise, if a car assembled in Finland is sold here, this is added to Finnish imports. These recordings better correspond with the income flow of the Finnish enterprise and the nature of the activities.

Economic ownership usually follows legal ownership, but, especially in transactions between multinational groups and their foreign affiliates, the change is not evident - particularly in case of intangible capital.

Intangible capital, like various patents, original works and brands are nowadays increasingly important factors of production in the production of both goods and services, and, as a result of technological development, transferring them from one country to another is becoming ever easier. Income collected from intangible rights is, therefore, difficult to allocate correctly based on economic ownership. Recording them in a timely manner is particularly hard when a multinational enterprise group is reorganising its activities.

Table 1 on the following page describes the statistical units used by Statistics Finland's different economic statistics and how economic ownership is considered. Statistical units and their definitions are discussed in more detail in chapter 2. For business statistics we also present the changes brought by the Framework regulation integrating business statistics (FRIBS).

Table 1. Statistical units and consideration of economic ownership in different economic statistics

Statistics	Valid regulation / manual	Regulation accordant statistical unit	Does the valid regulation require recoding based on economic ownership, i.e. consideration of global production	Will FRIBS in future require consideration of economic ownership
National accounts	ESA 2010	Institutional unit / establishment	Yes	n.a
Balance of payments	BPM6	Institutional unit	Yes	n.a
Structural business and financial statement statistics	SBS	Enterprise / local unit for regional data	Yes	Yes
Foreign affiliates	FATS	Enterprise	Yes	Yes
International trade in services	BPM6	Institutional unit	Yes	Yes
International trade in goods	ITGS (intrastat, extrastat)	Institutional unit	No	No
Industrial output	PRODCOM	Kind-of-activity unit	No	No
Index of turnover in industry	STS	Kind-of-activity unit	No	Yes
New Orders in Manufacturing	No	Legal unit in use	n.a	n.a
Volume index of industrial output	STS	Kind-of-activity unit	No	Yes
Index of turnover of construction / volume index	STS	Kind-of-activity unit	No	Yes
Turnover of trade	STS	Enterprise	No	Yes
Turnover of service industries	STS	Enterprise	No	Yes

Global production can be included in domestic production when the statistics applies the economic ownership principle. Production on behalf of affiliates located abroad is, however, always included in the gross national product of the country of location.

Nowadays global production is, in addition to macro statistics, also included in some business statistics (e.g. structural business and financial statement statistics or turnover indices). In turnover and volume indices, the economic ownership basis is not currently mentioned in the regulations or manuals concerning these statistics, but they do try to follow the guidelines of national accounts to ensure consistency of the statistics. A discussion is also ongoing on international statistical forums on whether production that takes place in the home country of the enterprises and global production should be distinguished in statistics. Extensive inclusion of global production in, for example, the volume index of a particular industry would make comparison with domestic employment development difficult, but, on the other hand, this would mean that production concept would be uniform with GDP calculations.

4.3 Global production methods

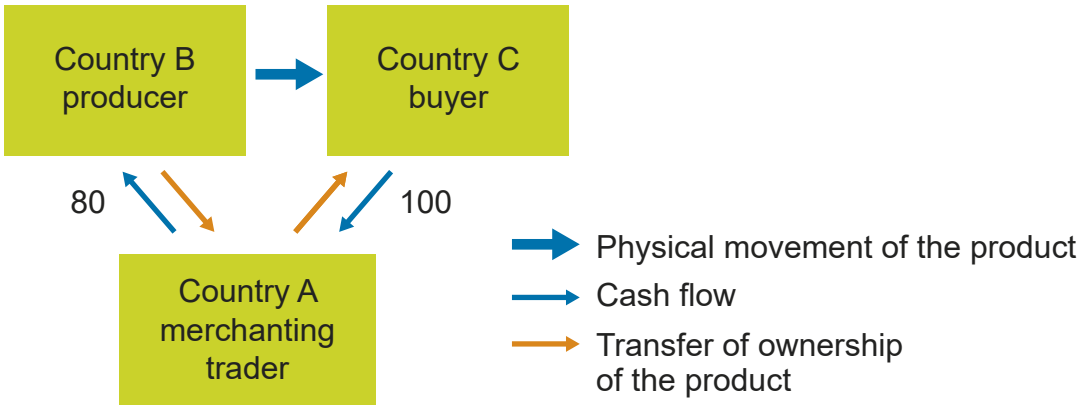
Global production can be viewed from the point of both individual business statistics and macro statistics like national accounts, which means that the described phenomena and object of interest naturally differ. It is, however, most natural to examine the definitions and typology of global production using the concepts of national accounts.

Global production arrangements can, in practice, mean any arrangement related to outsourcing or transferring of activities abroad. This report presents the key global production methods (merchanting, goods sent abroad for processing and factoryless goods production) and statistical development needs related to them. Statistical recording related to these phenomena are uniform in national accounts and balance of payments, but differ in Customs'

international trade statistics. In addition, we present some other global production arrangements (project suppliers and construction abroad, transfers of intangible rights) that are important for Finland.

In merchanting, a Finnish enterprise purchases goods from abroad and resells them without changes abroad without the goods ever entering Finland. The margin received from merchanting is generally added to the output in national accounts and goods exports, so goods exports in national accounts/balance of payments terms differs from the statistics of Customs. In value added taxation, so-called triangulation is a narrower concept than merchanting, which also covers transactions outside the European Union and service sales.

Figure 13. The merchanting trader in country A buys a product from country B and exports it to country C



In goods sent abroad for processing, a Finnish enterprise exports goods and raw materials it owns for processing abroad or a foreign enterprise imports them for processing in Finland. In the international trade statistics of Customs this is visible as Finnish goods export and import. The economic ownership of the product sent for processing does not, however, change so in national accounts Customs' goods trade data are adjusted in this respect.

In addition, the manufacturing fee paid to the foreign manufacturer is recorded in service imports and the manufacturing fee received by a Finnish manufacturer from abroad is recorded in service exports.

Factoryless goods production refers to an enterprise that does not have own manufacturing in Finland, but whose design, R&D, administration, marketing and value chain management takes place in Finland. The enterprise contracts out the processing of the actual product abroad but owns the intangible capital (IPP) utilised in the processing.

ESA 2010 does not include separate instructions on how to treat factoryless production, but it is equal to merchanting. There may also be other differences in recordings relating to global production because the implementation of ESA 2010 (and SNA 2008) is still ongoing in many countries.

The margin of factoryless production (margin of sales from abroad to abroad) was originally recorded in service exports in Finland's national accounts and balance of payments, but in 2018 it was transferred to a goods export adjustment item in accordance with the end product in question starting from 2006.

UNECE's Global Production manual[3] suggests that the industry for factoryless goods producers is trade, in accordance with UN's ISIC Rev.4. However, it also says that the IP input of a factoryless producer in the production process of the product (and at the same time the margin of the trade) is so significant that the activity does not correspond with conventional merchanting. In practice, a majority of countries record factoryless producers in trade and some primarily in manufacturing in accordance with the global production chain. Finland follows the latter practice.

A project supplier refers to an enterprise located in the home country that delivers large turnkey projects abroad. A project supplier produces itself at most part of the machines of the production plant and focuses on design and project management. A majority of the project supplier's own employees are

3 Guide to Measuring Global Production, UNECE 2015

usually salaried employees. In some cases, the project supplier establishes a foreign affiliate or branch, but often it only registers itself in the target country for example as liable to pay value added tax.

Project suppliers often use the partial debiting method as the income recognition method. This may require turnover and inventory adjustments in national accounts in order for demand and supply to be temporally allocated correctly. Typical project deliveries that often also use the partial debiting method are power plants, paper production lines, data network equipment, information systems, gas pipe networks, paper and pulp plants.

The table below presents a summary of the current application of the Standard Industrial Classification to project suppliers at Statistics Finland:

Activities of the project enterprise	Industry
Project related to building construction	Development of building projects (41100)
Project related to civil engineering	Civil engineering (industries starting with 42)
Other project suppliers (regardless of whether they have factories in Finland)	Industry based on the end product

A similar phenomenon to international project deliveries is **construction abroad**. In both, the duration of the project is crucial for statistics. Projects that last under 12 months are included in the national economy **of the country in which the enterprise that implements the project is located**, while projects that last over 12 months are included in the national economy **of the country where the project is located**. In practice, it is hard to follow the statistical guidelines because there is no source data on individual projects and their duration.

4.4 Global production in different economic statistics

Global production is differently visible in different statistics:

The guidelines for **national accounts** require that global production carried out by domestic units is recorded in Finnish production. Corresponding guidelines for short-term business statistics are still unfinished, but the premise is that they should follow the limitations of national accounts.

In **structural business and financial statement statistics**, turnover generated abroad is recorded in the financial statement of the Finnish enterprise. Likewise, products purchased from affiliates abroad resold as such are recorded in the financial statement of the Finnish enterprise.

The regional statistics on entrepreneurial activity describe the structure and activity of establishments of enterprises operating in Finland by region, industry and size category. The challenge for the statistics are data that describe global production. Currently, some enterprises have international establishments and for some the data concern the head office.

Manufacturing premiums from abroad, commissions and turnover from factoryless goods production are included in **turnover indices for manufacturing** similarly as in structural business and financial statement statistics. The volume index of industrial output should, in turn, only include the margins from the turnover of enterprises involved in merchanting and factoryless production as in national accounts, but it is often difficult to collect such data from data suppliers.

In indices of turnover of trade, primarily only enterprises that act as merchanting traders generate global activities that are included in the statistics. Otherwise, trade enterprises usually incorporate their international outlets by country, which means that their turnover is not visible in Finnish financial statements and not included in domestic production. In commission trade,

the turnover should only include commissions. In practice, these are not always available from the Tax Administration's data, so the sales inquiry for commission trade should be expanded and inquiries concerning commissions should, at the latest, start when the FRIBS renewal of business statistics enters into force, as is already done in structural business and financial statement statistics.

Enterprises in the service industry are also increasingly operating on global markets and **indices of turnover of services** cover these activities well.

Of the examined statistics, only **the index of turnover and volume index of construction** do not include global production, only the turnover of construction taking place in Finland. However, we can see in both tax data and the statistics on international trade in services that construction enterprises also have significant exports and it should be included in turnover indices.

Table 2. Depiction of global production in economic statistics

Treatment in statistics	A foreign manufacturer's manufacturing services in Finland	A Finnish manufacturer's manufacturing services abroad	Merchanting	Factoryless production
Structural business and financial statement statistics				
– gross/net	gross (manufacturing fee)	gross	gross	gross
– variable	turnover from paid work	turnover from commercial activity (incl. foreign turnover)	turnover from commercial activity (incl. sales abroad)	turnover from commercial activity (incl. sales of end products abroad) and other unspecified turnover
– industry	manufacturing	manufacturing	manufacturing	manufacturing
Indices of turnover				
– gross/net	gross	gross	gross (net for some enterprises involved in commission trade)	gross
– variable	sales abroad	sales abroad (incl. sales of goods subcontracted from abroad)	sales abroad (incl. sales of goods acquired for resale as such)	sales from abroad to abroad. Can also include merchanting. More detailed division not known.
– industry	manufacturing, services	manufacturing, services, trade	trade	manufacturing, services, trade
Volume index of industrial output				
– gross/net	gross	gross	margin	margin
– variable	industrial services (incl. paid work) or volume data	industrial services	commercial trading margin (incl. margin from merchanting)	commercial trading margin. Included for some units, but not for all.
Volume index of construction				
Currently only includes the amount of domestic sales but should be considered whether it should also describe exports and global items.				
Volume index of services				
Sales from abroad to abroad at least for industries H, J and M.				
Trend indicator of output/Quarterly national accounts				
– gross/net	index of turnover of the industry as an indicator of value added	index of turnover of the industry as an indicator of value added	index of turnover of the industry as an indicator of value added	index of turnover of the industry as an indicator of value added
National accounts				
– gross/net	gross (manufacturing fee)	gross	net	net
– output concept	manufacturing fee	output from international contracting out	merchanting margin	from abroad to abroad sales margin
– industry	manufacturing	manufacturing	manufacturing/trade	manufacturing
– product (SUT)	industrial services (fee)	goods	goods	mainly goods, a small share trade

4.5 Statistical challenges of global production

Global production and its measurement cause many types of challenges for statistics. These are, e.g. recognising global enterprises, special-purpose entities and transfer pricing. This section discusses the main challenges.

4.5.1 Applying incomplete statistical guidelines

International guidelines concerning recording of global production are partly deficient or incomplete, and there has not previously necessarily even been efforts to try to harmonise these between different statistics. However, in national statistics, there is a need to take a stance on various global production arrangements "on the fly".

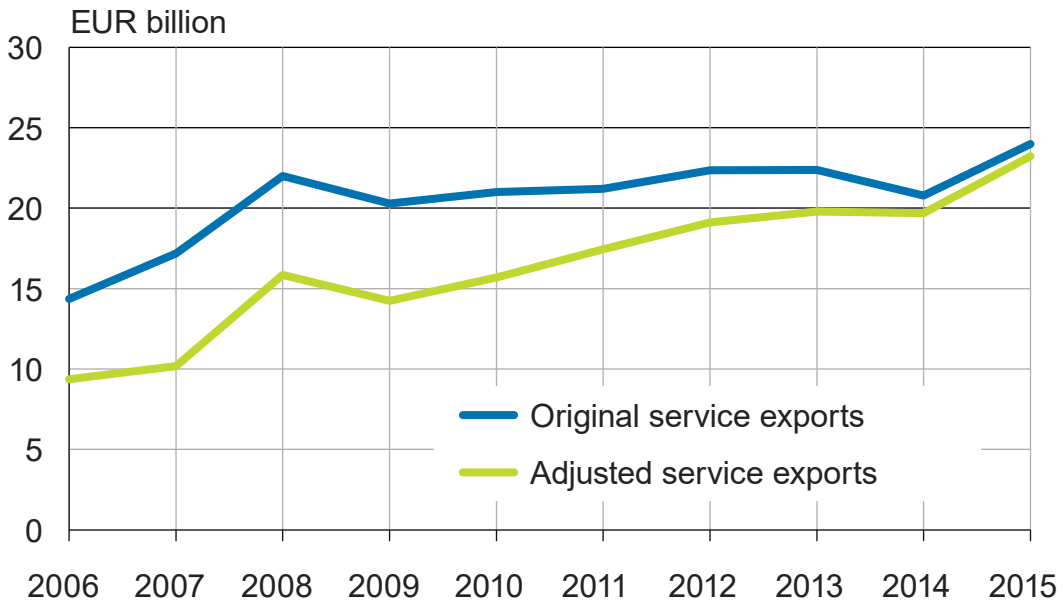
For example, the **STS manual** for short-term business statistics has not previously included clear instruction on how the production boundary for each statistics is determined, i.e. does the statistics also cover production that takes place abroad on behalf of a domestic unit. Not until the Irish GDP change in 2015 was international debate raised on how global production should be treated in business statistics. Finland has, together with other Nordic countries, tried to promote compilation of recommendations. The work has, however, progressed very slowly.

4.5.2 International trade based on economic ownership

The basic question here is, whether, Customs' goods trade figures should be adjusted even more than is currently the case in national accounts. This also concerns intra-group trade.

The margin of factoryless goods production (see section 4.3) was originally recorded in service exports in Finland's national accounts and balance of payments, but it has been transferred to a goods export adjustment item in accordance with the end product in question in 2018.[4]

Figure 14. Time series adjustment of service exports 2006 to 2015



Source: Balance of payments, Statistics Finland

Balancing global trade in statistics (so that the exports of the exporting country would correspond with the imports of the importing country) would require that factoryless production was recoded as gross and not a margin in international trade, that is, purchases from the subcontracted manufacturer as Finnish imports from country A (as intermediate products) and sales from abroad to abroad as Finnish exports to, e.g. country B (as output). Gross recording is difficult to carry out in practice because all data required for the recording are not available. Gross recoding would also expand the time series

4 Press release on the subject: http://tilastokeskus.fi/til/vtp/vtp_2017-01-31_uut_001_en.html

of exports and imports, even if the recording would not have an effect on the international trade account balance.

Defining the industry for factoryless manufacturers also raises questions. For example, in 2017, Statistics Finland decided that clothing companies that operate in Finland but have outsourced their production elsewhere will remain in the manufacturing industry and as manufacturers.

In terms of **goods sent abroad for processing**, transactions where the ownership does not change should be removed from Customs' international goods trade. Here, the commodity codes (codes starting with 4 and 5) included in the Customs' data could in practice be utilised, but enterprises do not use these codes sufficiently enough at the moment. The required manufacturer adjustments must now largely be made manually based on enterprise-specific data. In future, it should be examined whether the new variable "Trading partner's VAT code" that will be included in the data collection on internal EU trade could be utilised in the adjustments.

Re-exports included in Customs' statistics includes goods that have been imported to Finland and the re-exported and that have not changed owners in Finland or have changed owners within the same enterprise group. These goods can have been stored, repackaged or equipped, for example, with manuals in Finland so that the fundamental character and CN heading of the goods have not changed during these measures.

The source data for national accounts is Customs' data by product. Re-exports are included in the total levels of goods imports and exports in accordance with Customs' data. In supply and use tables (import use table), re-exports are recorded as exports, but, in practice, the item cannot include the entire value of re-exports included in Customs' statistics.

The reasons for the differences between the national accounts and Customs' figures have not been examined in more detail. As a rule, when a product does

not change owners, it should not be recorded in exports or imports in national accounts. How do you know if ownership is changed? And does the product only change owners inside the same enterprise group – according to experts from Customs, this cannot be traced at all. It is also unclear, whether the group contains re-exporters that do not belong to Finland's national economy. On the other hand, possible storing, further processing, etc. should be recorded in Finnish production. "Processing" taking place in Finland (or correspondingly abroad) is low in case of re-exports only in terms of processing under customs control (EU's external trade). By contrast, processing taking place within the EU in free circulation can be considerable. All these questions should be examined in more detail.

4.5.3 Recognising enterprises involved in global production and data sources

Recognition of global production is based on enterprise analysis that is carried out in cooperation between business statistics and national accounts experts. Enterprises' financial statements are key background material in enterprise analysis. Media also provides information on enterprises' activities. Company visits and communication with companies also provide information on global production arrangements and help the enterprise report global production correctly to different statistics. The Eurostat working group Task Force on Factoryless Goods Producers has worked on indicators with which factoryless production could be recognised.

In a project that started in autumn 2017, the data sources of global production have been charted and preliminary ideas on how to develop the calculation method of national accounts have been considered. Global production adjustments should also be made at an accelerated schedule in order to avoid revisions of preliminary data. In an ideal situation, a reliable calculation on global production would be made already in connection with the preliminary quarterly accounts.

4.5.4 Special-purpose entities and branches

One special case is captive financial institutions and other **special-purpose entities** (SPE) operating abroad that manage, for example, the payment traffic or investments between the parent company and its affiliates, and that often, for taxation reasons, are located in a different country than the parent company. It is difficult to collect data on special-purpose entities because they usually do not have employees and the parent company is located abroad. Many such entities have in Europe been established, e.g. in the Netherlands, Ireland and Hungary. In the renewed national accounts, such entities are treated as domestic units in the country in which they are located. If the entity is only registered as VAT liable, it is not an institutional unit and thus not a special-purpose entity.

The profits and other revenue generated from a SPE unit's activities, directly or indirectly also increase the gross national product of the country in question even if part of them flow to foreign owners. In such cases, it may be more fruitful to examine the gross national income of the country, which takes into account how much of the income generated from production is paid or computationally allocated to foreign owners and investors.

Special-purpose entities should be recognised in the business registers and specified at least in balance of payments and the statistics on foreign direct investments. It is evident that Finnish enterprise groups have special-purpose entities abroad but there is no exact data on the extent to which foreign enterprise groups have considerable special-purpose entities in Finland. This should be examined in cooperation between business register and balance of payments experts. A working group under IMF is currently defining SPEs and their characteristic, which is a good base for national actions.

Enterprises' **foreign branches** should also be differentiated when producing national statistics. The share of foreign branches should be removed from the economic data of Finnish units, and correspondingly, the share of international units' branches operating in Finland should be added. Branches usually have

low significance, but there are also large companies operating as branches, e.g. in the financial field. The data basis on branches operating in Finland is improving as a result of new data collected by the Tax Authority. The situation is more complicated in the financial field because a unit may, as a result of the branch status, be removed from the scope of financial supervision and, at the same time, from the supervision material collected by the Financial Supervision Authority.

4.5.5 Transfer pricing

Possibly the biggest challenge for calculating the gross domestic product is related to the transfer prices of multinational enterprise groups, i.e. at what price different units in the same group trade with each other. In national accounts, recording should primarily be made at market prices. It is, however, almost impossible to start "adjusting" data reported by enterprises for statistical purposes. Therefore, transfer pricing affects how the value added generated in different units of the enterprise group are divided between different countries. In practice, the gross domestic product of a particular country can for this reason be "over or underestimated" but we do not know to what extent. The problem is emphasised in the trade of intangible assets, like licences and brands, because determining their "correct" market price is difficult when there are no comparison prices.

The parent company can also transfer "intellectual" assets and the compensations paid for them from affiliates located in different countries to other countries, for example due to lower taxation. Because royalties and other compensations for use are included in GDP, such arrangements decrease the gross domestic product of one country and increases that of the "home country of the capital" at any given time. These arrangements are typically visible as one-off or extraordinary items in financial statements, but in national accounts and balance of payments they may have to be allocated over several periods.

Checking the correctness of transfer pricing carried out by multinational enterprise groups is one of the Tax Administration's key projects, which may also result in the data reported by enterprises becoming better in future.

4.5.6 International inventories

The problems related to the information basis and **treatment of inventories related to global production** have been identified as one reason behind the differences in demand and supply in national accounts. The new manual on calculating inventories published by Eurostat and OECD contains a separate chapter on global inventories.

In case on foreign inventories, the following problems that stem from deficient information basis and conceptual problems have been identified. These require examination both from the viewpoint of national accounts and business statistics:

- Does the domestic unit have economic ownership in foreign inventories? Now national accounts interpret that the ownership does not change if the enterprise exports the product to a foreign inventory, sells the product from there and records the sales in its turnover at the time of sales.
- In partial billing, the enterprise records work in-process in turnover, not in inventories. If partially billed production is exported, it may cause imbalance in supply and demand in the current calculation, as exports and turnover do not line up temporally. In shipbuilding, partial billing can be treated separately, in which case the partially billed turnover is first moved to changes in inventory and only to exports when it is handed over.
- In the financial statement of a legal unit, current assets can include inventories located abroad, like inventories of branches and inventories owned by the enterprise related to global production.
- Selling from the inventory of a foreign branch can result in imbalance between demand and supply due to the timing of the recording and

valuation changes. Valuation changes refer to a difference between the export value of goods recorded by Customs and the turnover in the financial statement and the value of sales in the sales inquiry.

4.5.7 Project deliveries and construction abroad

The accounting practices for **project deliveries and construction abroad** depend, according to international guidelines, on the duration of the project: projects lasting over 12 months are recorded in the national economy of the country where the project is carried out and projects lasting under 12 months in the national economy of the country where the enterprise that implements the project is located. In practice, it is hard to follow the statistical guidelines because there is no source data on individual construction projects and their duration. A project can also be carried out so that the necessary parts are manufactured elsewhere, transported to the site and assembled there. The assembling can take, for example, a month, but the project can have been ongoing for several years. The entire delivery value of the project is usually included in the enterprise's turnover.

Exports and imports of construction services are in national accounts recorded based on data collected in the inquiry on international trade in services, but it is impossible to collect data based on the duration of the project. In terms of national accounts, it has been essential to monitor whether the project could cause an imbalance between demand and supply.

However, the definition is also important in gross domestic income calculations. Projects taking place abroad are probably long lasting (over 12 months), in which case their GDP effect in Finland is likely to be relatively small.

Turnover from construction abroad is not included in the index of turnover of construction but including it is recommended also in this report. In terms of statistics compilation and depicting the scale of construction abroad, in

general, one should be able to separate domestic and foreign turnover, which may be difficult for the data supplier, not to mention the time limit of over or under 12 months.

4.5.8 Intangible capital

Intangible capital and its user rights like patents, royalties and licenses are so-called intellectual property products (IPP). In an economy that is becoming increasingly digitalised and global, their importance grows and international mobility increases.

Intangible capital can be bought, sold or leased. To the extent that the transactions are "caught" they are visible in statistics as revenue or expenditure, which affects, e.g. Finland's current account.

Next to "conventional" production, intangible assets can also be transferred abroad. A multinational enterprise group may, for taxation reasons or as part of enterprise reorganisation, make internal balance sheet transfers. If intangible capital found in an affiliate's balance sheet is transferred from one country to another without compensation, the transfer of IPP from one country to another is recorded as so-called other change in volume that does not affect the current account.

Transfers of intangible capital may, however, considerably fluctuate the GDP growth figures at least of small countries, as the example of an intangible capital transfer in Ireland in 2015 proves. This is due to the fact that if the economic ownership of the assets is seen to have actually been transferred to another country the corresponding depreciation should be included in the GDP of the new country of location. This also applies to income received from manufacturing abroad with the help of these intangible assets.

4.5.9 Prices and volumes of global production

In addition to determining the value of global production there are many price and volume measuring problems related to statistics compilation that are reflected in both national accounts and industry-specific volume indices. The biggest challenges are related to the availability of international price data and describing of global phenomena to compile weights and samples of price data. For example, how to treat domestic product-specific sales when the owner is a foreign company: at import price or as part of the domestic market price index?

National accounts recommendations related to volume calculation of global production are included in Eurostat's Prices and Volumes manual. They are also processed in Eurostat's Task force on price and volume measures for service activities in which Finland is a member.

Efforts have been made in recent years to harmonise volume methods used in economic statistics: for example, the deflators used in calculating the volume indices and the volume of value added in national accounts have largely been harmonised. The key methodological difference between the national accounts' value added and volume indices is double-deflation, i.e. in national accounts the volume of value added is generated by deflating both the output and intermediate consumption by product.

International expert groups have not discussed the volume calculation of global production much so far. In this respect, Finland has been ahead of other countries: e.g. the deflation of the margin of factoryless production developed by Finland has been presented in several instances. Questions have been raised also in these instances about the manufacturing industry of factoryless enterprises and the product division of the margin. In terms of the volume of international trade, the biggest shortcomings are currently related to **the producer price index for services** (SPPI) that does not separate between the price development of products remaining in the enterprise's home market and those that are exported. In addition, SPPI is missing many industries at letter, 2, 3, and 4-digit levels, not to mention the more detailed levels. One reason

is the lack of data describing service products. Product data would be needed for at least at the 4-digit industry level. After this, there would be better knowledge of which products' prices to collect and from which enterprises. In addition, import and export price indices should in future be produced from producer price indices for services.

Customs produces **international trade volume and unit value indices** for imports and exports monthly, which can be used to monitor the effects of volume and price changes on the changes in the value of goods trade. Customs' statistics contain a lot of products that should not be included in Finland's national accounts volume calculations and, thus, also not in the price weights. In national accounts, products are also added to goods exports and imports in connection with global production adjustments of international trade. **The export and import price indices** produced by Statistics Finland that depict the price development of international trade are better suited for national accounts volume calculation (in addition to Customs' unit value indices) because they are purer in describing the price change in imports and exports taking in account, e.g. quality changes in products.

Global production has been added to the volume index of industrial output over the years while the share of value data collection has increased. The basis for adding global items to the volume index was born, e.g. from the needs of national accounts and as a result of uniform treatment of enterprises. It is, however, often difficult to get production value data in the monthly cycle and, on the other hand, the users' expectations concerning this are also conflicting. On the one hand, users expect the volume index to measure the volume of industrial output actually generated in Finland, and, on the other hand, that it is consistent with the Trend Indicator of Output that includes global production.

When developing the volume index of industrial output, there has been some discussion on whether its production should have focused purely on describing domestic volume based on establishment data, in which case it would have worked as a predicting indicator for the statistics on industrial output. On

the other hand, the problem with this type of indicator is that an increasing number of manufacturing enterprises no longer have production in Finland (e.g. clothing industry). What would we actually be measuring for such industries?

Purchases from **foreign online shops** are constantly increasing and are troublesome for statistics. Eurostat has issued a recommendation according to which households' online purchases delivered to the member country (including purchases from foreign online stores) belong to the framework of private consumption in the consumer price index in the country in question. Thus, international online purchases are to be included in the weights and price collection of the consumer price index. In addition, the consumer price index should monitor the total price paid by the consumer for online purchases including postage, packing and other costs. Costs are classified in the same group as the actual commodity. Statistics Finland's objective is to develop this sub-area in coming years.

The above described treatment of international online purchases in the consumer price index corresponds with the concepts of consumption in the national accounts and its deflation needs but differs from the current instructions concerning **purchasing power parities** (**PPP**). The consumer prices used in PPP comparison should reflect the changes in the domestic price level, that is excluding foreign online purchases. On the other hand, the essential basis for PPP comparisons is conceptual coherence with national accounts and, if possible, that the instructions are specified in this respect.

5 International development projects

There are several ongoing projects in international organisations (UN, OECD, Eurostat, WTO, IMF) related to globalisation that affect statistics. This section briefly describes the main projects.

The framework regulation integrating business statistics (FRIBS) that is under preparation in the EU will also improve globalisation depiction in the next few years, e.g. in terms of international trade in services and statistics on affiliates. Among other important projects, Finland has wide interest in statistics on value added-based foreign trade.

5.1 Eurostat: Framework regulation integrating business statistics or FRIBS

EU is preparing the Framework regulation integrating business statistics (FRIBS) as we speak. The new framework regulation for business statistics will replace ten different regulations on business statistics and cover business statistics from business registers to short-term and structural business statistics, as well as international trade statistics. The main objectives of the regulation are responding to new data needs, improving the quality, timeliness and comparability of statistics, using innovative methods and data sources, reducing response burden, and mandatory data exchange for micro data on goods exports.

5.1.1. Statistics on global value chain and international sourcing

As a result of the regulation renewal, the number of statistics describing globalisation will increase by one when regular statistics compilation on global value chain and international sourcing begins. The aim of the statistics is to produce information on the extent of international sourcing, its reasons

and effects. Statistics compilation is based on data collection where data are collected on enterprises' outsourcing both in the home country and abroad. So far, data collection has been made on a project basis in a project financed by Eurostat, but in future, the statistics would be made regularly every three years.

The statistics examine activities that have been outsourced in the home country or abroad and the effects these measures have had on personnel (generated and lost jobs). In addition, the statistics also examines activities that are transferred back to the home country and the employment impact this has. Enterprises are also asked about their incentives to outsource and the main obstacles related to outsourcing.

5.1.2 Exchange of micro data becomes mandatory

It is suggested that the FRIBS regulation will make exchange of enterprise data that must be kept confidential and contains identification data (so-called micro data) mandatory between member states and Eurostat concerning goods exports and business register data. In terms of the business register, micro data exchange on multinational groups is already mandatory but it will also be extended to cover national incorporated legal units. However, micro data can only be used for statistical purposes and conducting research.

This exchange of micro data will improve the quality of the EuroGroups register (EGR) and, thus, also national business registers, and the statistics on globalisation that use or that should use the EGR as their framework.

5.1.3 Abolition of the collection of import data

In terms of statistics on international trade in goods, FRIBS brings a significant change to data collection: In future, EU export data are to be delivered to other countries and this would form the import data of the counterparty. This clearly decreases the response burden of enterprises. Exchange of micro data

on EU exports is mandatory, but using it to compile statistics on EU imports is voluntary. The schedule for collecting export data must be followed by all data suppliers in all member countries and the quality requirement of the data collection will be standardised.

5.1.4 Statistics compilation on international trade in services is renewed

Eurostat is developing separate reporting on international trade in services in connection with the regulation renewal and possibly a separate statistics based on the reporting. In practice, international trade in services would be divided between the regulation on business statistics and the regulation on balance of payments so that the BOP regulation would regulate on imputed macro items and items outside the corporations sector and the FRIBS regulation would regulate on other items.

FRIBS also includes voluntary itemisation of service trade by industry, size category and owner type (STEC). There is high demand for data on a national level, and this has already been preliminarily planned in cooperation with Customs.

Despite the regulation changes, data on international trade in services will continue to be published in connection with the current statistics on international trade in goods and services.

5.1.5 Changes to statistics on foreign affiliates

Development of Foreign affiliates in Finland (IFATS) in FRIBS largely follows the development needs of the Structural business and financial statement statistics. These include, e.g. adoption of the net turnover concept and definition changes of personnel costs that require revisions to the data collection. In addition, the wish is to extend the coverage of the statistics to financial and insurance activities.

In terms of statistics on Finnish affiliates abroad (OFATS), the data collection requires revisions, e.g. concerning the concepts of personnel costs, investments and turnover. In future, turnover data would be collected without tax, which would improve the comparability of data in the statistics to other business statistics. The coverage of the statistics is also likely to be extended to include financial and insurance activities.

5.2 Eurostat: Integrated Global Accounts (IGA)

The IGA project develops globalisation statistics at macro level mainly from one viewpoint of the real economy. The project is divided into four closely related parts: global accounts, global production, development of data sources, and competence development and dissemination of information.

With the project, Eurostat aims at EU's common vision of globalisation depiction to be the basis for worldwide manual work, tries to promote the implementation of existing manuals in the member countries, and offers a discussion forum for the member countries to support the development of the statistical depiction of a challenging phenomenon. The project has also hosted various seminars on themes related to globalisation (e.g. multinational groups, intangible capital). Statistics Finland participates in the project as we recognise the need to develop the globalisation recordings of both business and macroeconomic statistics, and the globalisation depiction offered by these statistics. Statistics Finland has also implemented a project with financing related to the IGA project that explored the data sources related to global production, developed calculation methods and harmonised the time series of national accounts and balance of payments.

5.3 Value added-based international trade (OECD/WTO:TiVA, EU:FIGARO)

In recent years, the depiction of value chains and value added-based international trade has developed enormously. The largest international projects are the EU's FIGARO (Full International and Global Accounts for Research in Input-Output Analysis) and the joint initiative of the OECD and WTO TiVA (Trade in Value Added). The TiVA project and Statistics Finland's plans related to the project are depicted in more detail in chapter 3.

5.4 UN: Handbook on Accounting for Global Value Chains

The UN handbook related to depicting global value chains is being prepared and will be published in 2019. The handbook will extensively discus the statistical problems caused by globalisation in the framework of the national accounts and offer new viewpoints to the compilation of statistics. Based on the table of contents of the handbook it covers the following topics:

- Extended supply and use tables
- Productivity calculations
- Financing of global value chains
- Satellite accounts of global value chains
- Global business register
- Asymmetries between statistics and international data exchange.

5.5 International data exchange

One challenge with statistics on multinational groups is the asymmetries between the statistics of different countries. For instance, statistical differences connected to the coverage of data or valuation bases often lead to exports of an

individual country not corresponding to imports of a counterparty although the theory assumes this, and international recording standards guide to it.

The detected asymmetries between the statistics of different countries have also shown that it is no longer possible to produce all national statistics alone in the globalised world. If data exchange becomes more common it could, if successful, also help reduce enterprises' response burden and make national statistics production more efficient.

There are many justified concerns related to the promotion of data exchange that should be noted. In addition to issues related to legislation and information security, extensive data exchange also requires a change in statistical offices' organisation cultures.

Currently, the following key projects concerning data exchange are ongoing:

- UNECE TF on Data Sharing. Finland is the chair of the three-year working group with the task to promote international data exchange. The tasks of the working group are, e.g. to define key data that describe the activities of multinational enterprises and offer tools for data exchange between the statistics producers of different countries
- Eurostat Early-Warning System (EWS). This system deals with the cross-border arrangements of multinational enterprises anonymously and tries to agree on uniform recordings between EU member countries.
- Eurostat Study on MNEs and GNI. This pilot excercise examines the data of some 25 European multinational groups in the statistics of different member countries. Especially the structures of these groups and the value added and property income recorded for these groups in the national accounts of different countries are examined.

6 Development of globalisation statistics

The previous chapters of this report have shown that the statistical problems caused by globalisation are multifaceted. Statistics Finland has decided to focus its development work in the next few years on the following issues, in order to ensure high-quality statistical production that can be renewed in a way that benefits the society:

- The development of the group and business registers as the basis for all business statistics: in terms of globalisation, the priority is coherence of the national business registers in different countries and recognition of global players.
- Development of statistics that describe service industries: from the viewpoint of globalisation, especially improving the coverage and quality of the producer price indices for services.
- Further development of the data collections of large companies and other enterprises that are important for globalisation and their treatment utilising the experiences of other countries.
- Improving communication on globalisation statistics
- Active participation in producing analysis on internal trade and new globalisation indicators

Statistics Finland has also made plans on how individual globalisation statistics will be developed in future years. We hope that the users would actively follow the development work and give feedback on it.

Appendix 1. Examples of global phenomena in statistics

This Appendix contains examples to explain what statistics reveal about certain phenomena related to globalisation. The cases that are discussed are triangulation, goods sent abroad for processing, sales from abroad to abroad, and patents and licences.

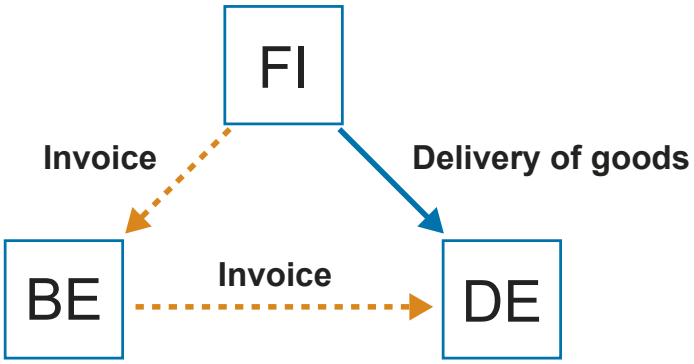
Triangulation

The concept of **triangulation** is not established, and it can mean merchanting in general (only of goods or also of services) or then only EU's value added taxation triangulation, depending on the context. According to Customs' statistics, triangulation is any type of merchanting of goods or services, where the parties have registered as liable to pay VAT in different EU countries and the commodity is sold twice in succession so that all three parties of the trade are located in different countries.

The following examples from Customs' statistics describe value added taxation triangulation and its treatment in statistics.[5]

5 Source: https://www.vero.fi/syventavat-vero-ohjeet/ohje-hakusivu/48691/arvonlisaverotus_eutavarakaupass (available only in Finnish)

Example 1: The Finnish example enterprise FI sells products to a Belgian enterprise BE that resells them to a German enterprise DE. The goods are delivered directly to Germany from Finland.

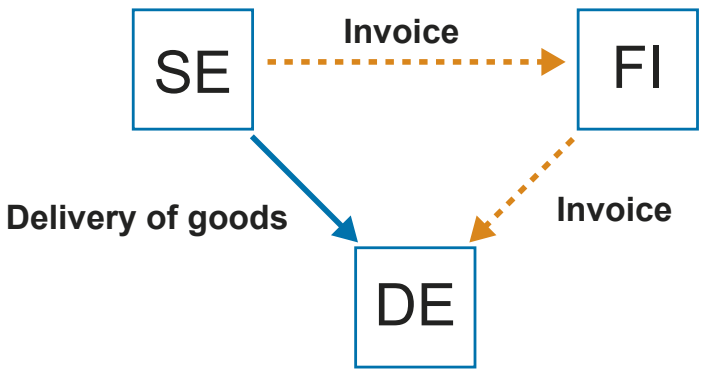


Source: Customs, Intrastat

This type of triangulation case is visible in different statistics as follows:

Statistics	Included in the statistics
Customs' international trade in goods	Export from Finland to Germany
Structural business and financial statement statistics	Sales abroad
International trade in goods and services	Export from Finland to Germany
National accounts and balance of payments	Export from Finland to Germany

Example 2: A Finnish enterprise FI purchases goods from a Swedish enterprise SE and resells them to a German enterprise. The goods are delivered directly to Germany from Sweden.



Source: Customs, Intrastat

This type of triangulation case is visible in various statistics as follows:

	Included in the statistics
Customs' international trade in goods	–
Structural business and financial statement statistics	Turnover from trade and acquisition of merchandise in expenditure
International trade in goods and services	Merchanting purchases and sales in goods export
National accounts and balance of payments	The margin of purchasing and sales of the product in goods export

Goods sent abroad for processing

In goods sent abroad for processing, a Finnish enterprise exports goods and raw materials it owns for processing abroad or a foreign enterprise imports them for processing in Finland (See chapter 4). The producer **owns** the raw materials and the finished product and carries the risk for the whole production process. Economic ownership thus lies with the producer.

Example 3: Enterprise A operates in Finland as a subcontracted manufacturer for a German enterprise B. Enterprise B owns the raw materials and the finished product. In this case, the raw materials are imported to Finland for processing and the finished products are exported abroad from Finland.

Goods sent abroad for processing is visible in different statistics as follows:

	Included in the statistics
Customs' international trade in goods	The raw material imported to Finland as goods import and the export of the finished products abroad as goods export.
Structural business and financial statement statistics	The manufacturing fee is included in the turnover
International trade in goods and services	Manufacturing fee is export of services, raw material purchases in Finland are goods export and selling of the finished products to Finland is goods import.
National accounts and balance of payments	Manufacturing fee export of services, raw material purchases in Finland goods export and selling of the finished products to Finland goods import.

The Custom's international trade statistics shows all raw material imports as goods import and, correspondingly, the entire value of outgoing production when the finished products are exported from Finland to another country. The turnover of the Finnish subcontracted manufacturer consists of the manufacturing fee paid by the foreign producer. In national accounts, this case is treated so that the country that manufactures the product, i.e. Finland, removes the goods imports and exports of the foreign owner from Customs' goods trade and records the manufacturing fee in service exports. If raw materials are purchased from Finland for the manufacturing process, they are added to Finland's goods exports. If finished goods stay in Finland, they are added to Finland's goods imports.

Sales from abroad to abroad

In sales from abroad to abroad, a Finnish enterprise has outsourced the actual manufacturing process, but, for example, the head office, design, branding, etc. are still located in Finland. The products that are manufactured in another country are sold to a third country without the products entering the merchant's economy. In national accounts, this is classified as so-called factoryless goods production. It differs from "conventional" merchanting where the merchanting enterprise buys the product from another company and resells to a third party without having any role in the actual production process of the product.

Example 4: Enterprise A operates in the clothing industry and designs all its products in Finland. The Finnish unit also owns the company brand which is one of the company's main assets. The company manufactures the clothes it has designed in Estonia and a French sales company is responsible for sales.

The clothes are manufactured in Estonia and enterprise A buys them. The products are not, however, delivered to Finland but enterprise A has the products sent from Estonia to its sales unit in France. So, the products are delivered directly from Estonia to France without them ever entering Finland. Invoicing, however, goes through Finland, as the French sales unit buys the product from enterprise A.

Enterprise A reports the sale of goods that takes place abroad in turnover from trade and purchases in acquisition of merchandise in the structural business and financial statement statistics. The trade is not visible in Customs' international trade statistics at all because the goods do not pass through Finland. In national accounts, the margin (sales minus purchases) of sales from abroad to abroad is recorded as goods exports for the product in question.

Sales from abroad to abroad is visible in different statistics as follows:

Statistics	Included in the statistics
Customs' international trade in goods	–
Structural business and financial statement statistics	Turnover from trade and purchases
International trade in goods and services	Margin of sales as goods export
National accounts and balance of payments	Margin of sales as goods export

Income from leasing patents and licenses

In the global economy, enterprises can buy, sell, lease or transfer intellectual property products (IPP) or their usage rights from one country to another. Patents and licenses are an example of intangible assets that in national accounts are classified as intellectual property products. These transactions are naturally not visible in the statistics on international trade in goods because these are intangible assets.

Example 5: A Finnish enterprise licenses its intellectual property rights or their technology to a German enterprise that utilises the technology in their own product. The Finnish enterprise receives income from the licensing and the German enterprise receives the possibility to use it in its business activities.

This type of licensing is visible in statistics as follows:

Statistics	Included in the statistics
Customs' international trade in goods	–
Structural business and financial statement statistics	Included in turnover
International trade in goods and services	Included in service exports
National accounts and balance of payments	Included in service exports

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