STATISTICS DENMARK

# Documentation of statistics for Purchasing Power Parities (PPP) 2020

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## 1 Introduction

The purpose of purchasing power parities (abbreviated PPPs) is to measure relative prices in different countries. The PPPs are used for international comparisons in real values and for compiling indices of price levels. When, e.g. GDP and other national accounts components are converted with PPPs, differences in the national price levels are taken into account. This implies that comparisons in real values of the converted amounts are thus made possible. However, differences in national prices are not taken into account, if conversions are made on the basis of the currency rate.

Since the 1970s, Denmark has participated in the surveys of purchasing power parities. Price surveys are conducted under the auspices of what is known as the ECP cooperation (European Comparison Programme) comprising 37 countries (EU 27, EFTA countries and EU candidate countries). The work is coordinated by Eurostat. Globally, the work is coordinated by the OECD, IMF and World Bank under the auspices of the ICP cooperation (International Comparison Programme).

## 2 Statistical presentation

Purchasing power parities (PPPs) are indicators of price level differences across countries. PPPs tell us how many currency units a given quantity of goods and services costs in different countries. PPPs can thus be used as currency conversion rates to convert expenditures expressed in national currencies into an artificial common currency (the Purchasing Power Standard, PPS), eliminating the effect of price level differences across countries.

The main use of PPPs is to convert national accounts aggregates, like the Gross Domestic Product (GDP) of different countries, into comparable volume aggregates. Applying nominal exchange rates in this process would overestimate the GDP of countries with high price levels relative to countries with low price levels. The use of PPPs ensures that the GDP of all countries is valued at a uniform price level and thus reflects only differences in the actual volume of the economy.

PPPs are also applied in analyses of relative price levels across countries. For this purpose, the PPPs are divided by the current nominal exchange rate to obtain a price level index (PLI) which expresses the price level of a given country relative to another, or relative to a group of countries like the EU28.

The production of PPPs is a multilateral exercise involving the National Statistical Institutes of the participating countries, Eurostat and the OECD.

Indicators in Eurostat's dissemination database

The indicators published in the price domain on Eurostat's website are the following: •Purchasing power parities (PPPs) scaled to the sum of expenditures of the EU Member States expressed in euro. This means that the PPP of one particular country indicates how many units of national currency one would need in that country in order to maintain the purchasing power of one euro in the EU •Price level indices (PLIs) as defined above •Nominal expenditure in national currency, as extracted from each country's national accounts •Nominal expenditure as percentage of GDP •Nominal expenditure in euro •Nominal expenditure per inhabitant in euro •Real expenditure, defined as nominal expenditure divided by the PPP •Real expenditure per inhabitant •Volume indices of real expenditure per inhabitant •The price convergence indicator, defined as the coefficient of variation of the PLIs of household final consumption expenditure (HFCE). It provides an estimate of the price convergence within a group of countries. For example, if the price convergence indicator for EU28 decreases over time, the national price levels in the Member States are converging.

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## 2.1 Data description

The purpose of calculating purchasing power parities is to enable international comparisons in real values. The PPPs are also used in compiling comparable indices for the price level in different countries.

To enable comparisons in real values among countries, it is essential to convert the amounts into a common currency. One option is to convert the amounts on the basis of the currency rate. However, when the currency rate for converting the amounts is applied, the comparisons do not make allowance for the differences in the national price level. If conversions are conducted on the basis of the currency rate there is a tendency in countries with a relatively high price level to overestimate the gross domestic product, whereas in countries with a relatively low price level, the gross domestic product is underestimated.

However, when PPPs are applied for conversion into a common currency, differences in the price level are taken into account. The purchasing power parity reflects the relative prices among two or several countries. The conversion of, e.g. a country's GDP into another currency with PPPs, is tantamount to calculating the GDP of the country in question at the prices of another country. This implies that comparisons in real values or in terms of quantities are conducted among the two countries.

Generally speaking, differences in real production and income among rich countries (with a relatively high price level) and poor countries (with a relatively low price level) are considerably reduced, when purchasing power parities are applied in converting the amounts, instead of applying currency rates. Furthermore the currency rate is often subject to violent fluctuation and as a result of a change in the currency rate; the country may suddenly appear richer or poorer in comparisons with other countries, even though there has been no changes in real values. Consequently, international comparisons should be conducted on the basis of purchasing power parities and not currency rates. PPPs are also applied in analyses of relative price levels across countries. For this purpose, the PPPs are divided by the current nominal exchange rate to obtain a price level index (PLI) which expresses the price level of a given country relative to another, or relative to a group of countries like the EU28. The production of PPPs is a multilateral exercise involving the National Statistical Institutes of the participating countries, Eurostat and the OECD.

Indicators in Statistics Denmark Statbank:

•Purchasing power parities (PPPs) scaled to the sum of expenditures of the EU Member States expressed in euro. This means that the PPP of one particular country indicates how many units of national currency one would need in that country in order to maintain the purchasing power of one euro in the EU •Price level indices (PLIs) defined as ratio between PPPs and current nominal exchange rate •Volume indices of real expenditure per inhabitant •Real expenditure per inhabitant defined as nominal expenditure divided by the PPP •Volume indices of real expenditure per inhabitant

## 2.2 Classification system

PPPs are produced in accordance with the final expenditure classification of the European Standard of Accounts (ESA 2010).

PPPs are classified by type of final expenditure - actual individual consumption expenditure, actual collective consumption expenditure and capital expenditure - and, in the case of actual individual consumption expenditure, by purchaser - households, non-profit institutions serving households (NPISHs) and general government. The prices underlying the calculation of PPPs adhere to the definitions, concepts, classifications and accounting rules of ESA 2010.

Basic headings and analytical categories

For the purpose of the PPP calculation, the main expenditure aggregates of GDP which are: Individual consumption expenditure by households Individual consumption expenditure by NPISHs Individual consumption expenditure by government Collective consumption expenditure by government Gross fixed capital formation Changes in inventories and acquisitions less disposals of valuables Balance of exports and imports

are broken down into 276 basic headings. The basic heading is the lowest level of aggregation, at which products are sampled and product prices collected. It is the lowest level for which countries should provide numerical expenditure weights. Below the basic heading level are the individual items of the product sample. For example, rice is a basic heading and basmati rice and jasmine rice, are individual products within it.

PPPs are published at the level of 61 analytical categories which comprise aggregates of basic headings and include some of the main expenditure aggregates like GDP, actual individual consumption, household final consumption, collective consumption and gross fixed capital formation.

The classification of commodities and services for households consumption expenditure is conducted in accordance with the Classification of Individual Consumption by Purpose (COICOP). The classification of commodities and services for government consumption expenditure is conducted in accordance with Classification of the Functions of Government COFOG). Total goods, total services and gross fixed capital formation are classified in accordance with Classification of Products by Activity (CPA).

## 2.3 Sector coverage

PPPs are calculated for GDP and its various sub-aggregates on the expenditure side of national accounts.

## 2.4 Statistical concepts and definitions

Purchasing Power Parity: The purchasing power parity reflects relative prices. A purchasing power parity is simply defined as the price ratio between the national currencies for the same goods or services in different countries. If specific goods, e.g. a loaf of bread costs DKK 15 in Denmark and Euro 1.5 in Germany, the purchasing power parity for a loaf of bread between Denmark and Germany is 15/1.5 = DKK/Euro 10. If a loaf of bread in Denmark is converted on the basis of the purchasing power parity its value will be DKK 15/DKK10/Euro = Euro 1.5, corresponding to the value of a loaf of bread in Germany. If the prevailing currency rate is, e.g. DKK /Euro 7.5, and if this currency rate is applied for converting a loaf of bread in Denmark into DKK 15, it will be tantamount to a value of DKK 15/DKK 7.5/Euro = Euro 2. Subsequently, comparisons conducted using conversions on the basis of the currency give an incorrect picture of the amount in real terms. The larger the size of the differences between the purchasing power parity and the currency rate, the more misleading will be the comparisons made on the basis of conversions of the currency rate.

Price level indices: Indicates the domestic price level in relation to the EU average. For example, if the Danish price level index is 126 and the Spanish price level index is 95, it means that the price level in Denmark is 26 pct. higher than the EU average, while the price level in Spain is 5 pct. lower than the EU average.

Price: Average domestic price for a well specified good or service, which is representative of the consumption pattern in a given country. All prices are actual prices paid by consumers, i.e. including VAT and other duties.

## 2.5 Statistical unit

PPPs are calculated for each of the participant countries, for the EU as a whole, and for the euro area. There is no regional breakdown.

## 2.6 Statistical population

The price level of goods and services in Denmark, compared to other countries in Europe. The statistical population is the expenditure side of the National Accounts, as defined in ESA 2010.

## 2.7 Reference area

PPP cooperation in Europe includes the 28 EU countries, Iceland, Norway and Switzerland and the candidate countries.

## 2.8 Time coverage

PPPs are available back to 2000.

## 2.9 Base period

Not relevant for this statistics, because PPPs are primarily spatial indicators.

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### 2.10 Unit of measure

PPPs can be interpreted as the exchange rates of countries' national currencies against the PPS. They express the number of currency units per PPS.

Real expenditures are expenditures in national currency converted to PPS using PPPs. They are thus denominated in PPS.

PLIs and volume indices per capita are indices that, in Eurostat's database, use EU28, EU27 or EU15 as "base country" (EU28=100, EU27=100 or EU15=100, depending on the user's choice).

### 2.11 Reference period

The reference period is the calendar year.

### 2.12 Frequency of dissemination

The statistics are published annually.

### 2.13 Legal acts and other agreements

The common rules for the provision of basic information (input data), the calculation and dissemination of PPPs are laid down in Regulation (EC) No 1445/2007 of the European Parliament and of the Council of 11 December 2007.

There is no national legislation governing the preparation of purchasing power parities.

### 2.14 Cost and burden

The response burden is equal to zero. All data are collected by the price collectors.

### 2.15 Comment

Internatio-nal volume and price comparision. Additional information can be obtained by Statistics Denmark.

## 3 Statistical processing

Price surveys are conducted in order to provide price input data for household consumption, individual government consumption, collective consumption and gross fixed capital formation (investment goods and services). Reference (imputed) PPPs are used for NPISH consumption, inventories, and net exports.

### 3.1 Source data

Price surveys are conducted in order to provide price input data for household consumption, individual government consumption, collective consumption and gross fixed capital formation (investment goods and services). Reference (imputed) PPPs are used for NPISH consumption, inventories, and net exports.

Household consumption

For consumer (market) goods and services, special price surveys are carried out. The product sample is determined in collaboration among the participant countries, the OECD and Eurostat. The final product sample should consist of comparable goods and services and, to the largest extent possible, be equally representative of the expenditure patterns of all participant countries. Subsequently, the data collection is carried out by the National Statistical Institutes. Prices are collected from a variety of outlets (markets, corner shops, supermarkets, specialist shops, departmental stores, service establishments, etc.), usually by actually visiting the shops, but also via questionnaires, phone or electronic surveys and Internet. Food and beverages as well as articles for personal hygiene and wellness and beauty products are extensively covered by scanner data from supermarket chains. The use of scanner data / transaction data has increased in PPP in recent years. In 2021, 14 out of 37 participating countries used scanner data for Food, Beverages and Tobacco comparing to only 7 countries in 2018. Denmark has used scanner data for Food, Beverages and Tobacco, as well as for Articles for personal care since 2018. Scanner data has many advantages in comparison with the traditional price collection, as scanner data contains information about all products sold and their turnovers. In addition scanner data includes discounted prices to a much greater extent than traditional price collection. Information on turnover and quantities sold is used for weighting of prices at item level. As a result of the change in the data collection method, there are therefore changes in the price levels for the product groups covered by scanner data compared to previous years.

Prices are collected only in Copenhagen area and its surroundings. In order to obtain national average prices, spatial adjustment factors (SAF) should be provided for all basic headings.

Prices are collected over a period of three years. The product sample is divided into six separate surveys, and each year, two surveys are carried out. In the calculation of PPPs, extrapolations of the most recent survey data are used for the product groups that were not surveyed in the reference year. A temporal adjustment factor at basic heading level, based on HICP data, is used for this purpose. A similar temporal adjustment is needed in order to calculate annual average prices for the whole reference year, based on the prices collected in the survey month.

Rent survey is carried out annually. Figures on rent (housing) are extracted from the national rent survey and from the Central Register of Buildings and Dwellings

Government consumption

The services produced by general government are non-market services and as such, they have no economically significant market price. Because there are no market prices, non-market services in national accounts at input prices should be valued for collective services produced by government. The compensation of employees including social contributions for a sample of occupations in collective services provided by the government is surveyed annually. These compensation figures then enter the calculation of PPPs as price estimates for collective services.

In principle, the cost data are national annual averages for each sample occupation, which is extracted from Statistics Denmark's Salaries statistics.

For health services, PPPs are based on a mixture of (quasi-)prices collected for hospital services, outpatient medical services and medical products. This is applied since reference year 2010. The PPPs for years before 2010 are based on the input cost approach. Health survey is conducted annually by Statens Serum Institute.

Gross fixed capital formation

National purchasers' prices for investment goods and services should be reported . There are two

price surveys, one for equipment goods (once every two years), and one for construction (annual). The prices collected are mid-year prices because it is too costly to monitor prices over the whole year.

Prices for equipment goods are obtained from producers, importers, distributors or actual purchasers. The prices collected can be either purchasers' prices for actual market transactions or purchasers' prices for hypothetical market transactions - that is, what purchasers would pay if they made a purchase. This survey is outsourced to the external expert.

Prices for construction are collected using a set of standard construction projects covering different types of buildings and civil engineering works. Prices for the projects are to be at the level of prevailing tender prices - that is, the prices of tenders that have been accepted by purchasers. This survey is outsourced to the external expert.

Auxiliary data

In addition to the prices and adjustment factors enumerated above, expenditure weights at basic heading levels taken from the expenditure breakdown of national accounts are compiled and reported to Eurostat on annual basis.

## 3.2 Frequency of data collection

The data collection is a continuous process. New input data is collected as follows: Household consumption: Six price surveys are carried out over a three years period. 1/3 of the goods and services included in private consumption, are priced each year, and the remaining 2/3 the corresponding consumer prices are extrapolated for the intervening years. Annual survey for rents data. Rent survey is conducted annually. Government consumption: Annual survey of the compensation of public sector employees and annual collection of prices for hospital services. Gross fixed capital formation: Equipment goods survey is carried out every second year, while construction survey is carried out every year. Expenditure weights and auxiliary data: Reported annually.

## 3.3 Data collection

Different methods of data collection are applied for different components of GDP: Prices for the Household consumption are collected using price collectors, who visit the individual shops, as well as using price lists for major chains and from the Internet. Food and beverages as well as articles for personal hygiene and wellness and beauty products are extensively covered by scanner data from supermarket chains. Collecting prices for Construction and for Machinery and equipment is outsourced to the external experts. Data for calculation of the government expenditures is derived from Wage statistics. Figures on rent are compiled from from the data obtained from the national rent survey and the Building and Housing Register (BBR). The weights used to calculate the aggregated purchasing power parities are available from the national accounts.

## 3.4 Data validation

The validation of input data is an interactive process between Statistics Denmark and Eurostat. Statistics Denmark is responsible for the practical implementation of the surveys under the coordination of countries coordinator. Eurostat makes the final calculations and is mainly responsible for publishing of the results. Globally the work is coordinated by OECD and the IMF within framework of ICP (International Comparison Programme).

### 3.5 Data compilation

The NSs in the participating countries are responsible for data collection, while Eurostat makes the final calculations and is responsible for publishing the results. The calculation of PPPs is undertaken in three stages. The first stage is at the product level, where price relatives are calculated for individual goods and services. The second stage is at the product group (or basic heading) level, where the price relatives calculated for the products in the basic heading are averaged to obtain unweighted PPPs for that particular basic heading, and at the third stage, the basic heading PPPs are weighted and averaged to obtain weighted PPPs for each aggregation level. The weights used to aggregate the PPPs in this last stage are expenditures from each country's National Accounts.

The calculation and aggregation of PPPs requires each participating country to provide 1) a set of national annual prices for the sample of products, and 2) a detailed breakdown of final expenditure on GDP according to a common classification. The calculation of basic heading PPPs is based on binary Fisher type indices for which both a Laspeyres type index and a Paasche type index must first be calculated based on price data. Subsequently, PPPs are calculated for a basic heading using the Èltetö-Köves-Szulc (EKS) method. These PPPs for a basic heading are combined with those of other basic headings to provide weighted PPPs for each level of aggregation up to the level of GDP. The EKS method is applied at this stage as well.

Sometimes, no prices are available for a basic heading and thus no parities can be calculated. In these cases reference parities will be used, i.e. parities initially calculated for a comparable basic heading.

### 3.6 Adjustment

Not applicable.

## 4 Relevance

The EU Commission uses GDP per capita PPP converted, as basis for allocating funds from the Structural Fund to reduce the financial inequalities among and within the 28 EU Member States. Furthermore, indicators derived from PPPs are used for a wide range of analytic purposes, often providing background information for policymaking in the European institutions, in international organizations like the International Monetary Fund and the World Bank, and in national governments.

### 4.1 User Needs

The most important users of the PPPs are international organizations, e.g. the EU, OECD, World Bank, UN and ILO, ministries, research institutions, banks and other private business enterprises. The PPPs are mainly applied for international comparisons of GDP and its aggregates. The EU Commission uses GDP per capita PPP converted, as basis for allocating funds from the Structural Fund to reduce the financial inequalities among and within the 27 EU Member States. ILO applies PPPs for international comparison of labour productivity. Public and private business enterprises and institutions use the PPPs for adjusting earnings of expatriate staff members.

### 4.2 User Satisfaction

User satisfaction survey was not carried out for these statistics.

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### 4.3 Data completeness rate

All needed statistics are available and comply fully with guidelines submitted by Commission and the respective EU regulation.

## 5 Accuracy and reliability

In the price surveys, the most important source of statistical margins of sampling errors is the range of goods and services, which are not equally representative of all countries included in the international comparisons. The composition of consumption expenditure differs among countries, and this gives rise to potential conflicts between representativeness and data comparability. For some areas, e.g. health it is particularly difficult to provide comparable information. The structure of the health sector differs among countries, and there are no "pure" market prices for these services, which constitutes another statistical margin of sampling error. The margins of sampling errors are not estimated.

### 5.1 Overall accuracy

The precision of PPPs increases with the level of aggregation. This means that the PPP (and thus also the PLI, real expenditure and volume index per capita) at GDP level will be more reliable, or precise, than the PPP for final household consumption or gross capital formation. Similarly, the PPP for final household consumption will be more reliable than the PPP for "food and non-alcoholic beverages", or "clothing and footwear", the latter two being sub-aggregates of final household consumption.

The input data into the PPP compilation process comes from several sources, specifically, from special PPP price surveys and from national accounts. This makes it impossible to calculate any meaningful, numerical measure of error margins for PPPs. However, there is general agreement that PPPs, PLIs and other PPP-based indicators are not intended to establish a strict ranking of countries. The degree of uncertainty associated with the basic price and expenditure data, and the methods used for compiling PPPs, may produce errors that influence the ranking of countries, particularly when countries are clustered around a very narrow range of outcomes. PPPs and PPP-based indicators thus provide an indication of the relative order of magnitude of one country in relation to other countries in the comparison. As outlined above, this is more so at a low level of aggregation than in the case of, for instance, GDP or GDP per capita.

### 5.2 Sampling error

In the price surveys, the most important source of statistical margins of sampling errors is the range of goods and services, which are not equally representative of all countries included in the international comparisons. The composition of consumption expenditure differs among countries, and this gives rise to potential conflicts between representativeness and data comparability.

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### 5.3 Non-sampling error

In the consumer goods price surveys, measurement errors can occur due to non-compliance with the strict definition of the products in the product sample, for instance with regard to package sizes or quality parameters. While the validation process aims at eliminating these errors by carefully comparing the price material provided by each country and evaluating its plausibility, some of these errors can be hard to identify, especially those related to quality. Similar problems can occur in other surveys as well, like the annual survey on compensation of public sector employees. Here, the problem stems from the heterogeneity of data sources across countries.

While non-response from one particular statistical unit can usually be easily overcome by replacing that unit, and normally has a very limited impact at the level of the published categories anyway, a special problem does occur where no prices are available for a given product in one or more countries. In these cases, a price relative is imputed on the basis of the price relatives for other products. If a country does not report prices for any sample product in a given basic heading, the gaps are typically filled using the PPP of either a "similar", or of a hierarchical, basic heading

### 5.4 Quality management

Statistics Denmark follows the recommendations on organisation and management of quality given in the Code of Practice for European Statistics (CoP) and the implementation guidelines given in the Quality Assurance Framework of the European Statistical System (QAF). A Working Group on Quality and a central quality assurance function have been established to continuously carry through control of products and processes.

### 5.5 Quality assurance

Statistics Denmark follows the principles in the Code of Practice for European Statistics (CoP) and uses the Quality Assurance Framework of the European Statistical System (QAF) for the implementation of the principles. This involves continuous decentralized and central control of products and processes based on documentation following international standards. The central quality assurance function reports to the Working Group on Quality. Reports include suggestions for improvement that are assessed, decided and subsequently implemented.

### 5.6 Quality assessment

The data complies well with the PPP Regulation. Data are in general of good quality and the resulting PPPs are plausible.

### 5.7 Data revision - policy

Statistics Denmark revises published figures in accordance with the Revision Policy for Statistics Denmark. The common procedures and principles of the Revision Policy are for some statistics supplemented by a specific revision practice.

### 5.8 Data revision practice

There are only minor differences between provisional and final figures. Following the calculation of the final PPPs for a given reference year, PPPs are no longer revised. However, in order to maintain the highest possible degree of coherence with national accounts, the entire time series of PPPs is rescaled to the latest national accounts aggregates twice a year, in June and December, and the database updated accordingly.

## 6 Timeliness and punctuality

The statistics are usually published without any delay in relation to the scheduled date of publication.

### 6.1 Timeliness and time lag - final results

Provisional results from the surveys of purchasing power parities are published one year after the reference period, whereas the final results are published three years after the reference period. The difference in the dates of publication and the reference periods is due to time-consuming preparatory work, price collection and validation of data. Every third year, price level index for food is published one year after the reference year.

### 6.2 Punctuality

The statistics are usually published and delivered without any delay in relation to the scheduled date of publication.

## 7 Comparability

Purchasing power parities are compiled for the purpose of conducting price and volume comparisons for a specific year among countries. Consequently, they are comparable across the participating countries. Comparisons over time must be interpreted with caution, as the basket of goods and services differs from one year to another.

In the calculation of PPP, price level index and volume index, the average of EU28 has been used as a reference country (group of countries) until 2020. With the United Kingdom's withdrawal from the European Union (EU), the EU27 (excluding the UK) = 100 will be used as a reference country (group of countries) from 2020. This has only a minor impact on the comparability of PPPs, the price level index and the volume index between 2019 and 2020.

### 7.1 Comparability - geographical

Purchasing power parities are primarily spatial price level indicators and are compiled for the purpose of conducting price and volume comparisons for a specific year among countries. Consequently, they are comparable across the participating countries.

In the calculation of PPP, price level index and volume index, the average of EU28 has been used as a reference country (group of countries) until 2020. With the United Kingdom's withdrawal from the European Union (EU), the EU27 (excluding the UK) = 100 will be used as a reference country (group of countries) from 2020. This has only a minor impact on the comparability of PPPs, the price level index and the volume index between 2019 and 2020.

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## 7.2 Comparability over time

Purchasing power parities are compiled for the purpose of conducting price and volume comparisons for a specific year among countries. Consequently, comparisons over time must be interpreted with caution, as the basket of goods and services differs from one year to another.

In essence, PPPs are spatial price level indicators, and thus primarily suitable in comparisons referring to several geographical locations at a given point in time.

Unlike the item sampling and price collection that underlie consumer price indices, the sampling of items and the price collection for PPPs are not designed to capture price changes over time, but rather price differences across countries or other geographical units. If necessary, product samples will be changed between two consecutive surveys in order to maintain or improve comparability across countries. Survey methodologies may also change from one survey to the next, if this is deemed necessary to produce a spatial comparison of improved quality.

Nevertheless, PPPs and PPP-based indicators may be used in inter-temporal comparisons under certain circumstances, provided that the results are interpreted with sufficient care. For example, while it certainly makes sense to follow the temporal development of volume indices for high-level aggregates like GDP or actual individual consumption, lower-level aggregates will typically show more volatility over time, induced partly by changes in product samples or methodology.

Interpretation of time series

The interpretation of a time series that includes PPPs should be guided by the purpose of the analysis. The "perfect", multi-purpose indicator that simultaneously captures both spatial and temporal aspects adequately simply does not exist.

For example, a time series of price level indices does not provide a reliable measure of the development of prices in a given country. For that purpose, the consumer price index should be applied instead. Similarly, if we want to compare the rate of price change in two or more countries, the Harmonized Index of Consumer Prices (HICP) is readily available, at least for most European countries. Accordingly, a time series of PLIs shows, for each consecutive year, the various countries' price levels in relation to each other, and provides a rough indication of how these relative price levels have developed.

PPPs are primarily used to convert expenditures in different countries into a common currency and a common price level in order to ensure comparability. A current price time series of, for instance, GDP per capita, deflated by the current PPP of each year, ensures comparability of relative volumes across countries for each single year. However, the growth rates will not reflect real growth, since the expenditures are expressed in common, current prices. Still, when presented in index form (with, for instance, EU28=100) and per capita terms, they can be used as an analytical tool in temporal comparisons, but with caution.

### 7.3 Coherence - cross domain

PPPs and the PPP-derived indicators are accessible from two different domains in Statbank and from the Eurostat dissemination database: The prices-PPP domain and the national accounts domain.

PPPs, PLIs, volume indicators for the analytical categories can be found in the PPP domain, while PPPs for GDP, as well as expenditures and volume indicators for GDP and the main national accounts aggregates can be accessed from the national accounts domain as well.

While the PPPs at the level of GDP are identical in the two domains, there are some important differences between the two sets of volume indicators. Whereas the expenditure data in the PPP domain is updated twice a year (in June and December), the national accounts domain is updated continuously as countries provide revised NA updates. For this reason, the national accounts domain provides the most up-to-date indicators of GDP and GDP per capita in PPS.

On the other hand, the volume indicators in the price domain are based on aggregate-specific PPPs, while the national accounts domain uses the PPP for GDP to deflate not only GDP, but all sub-aggregates as well. This means that the volume indicators in the price domain are more suitable for aggregate-specific analyses than the data in the NA domain.

For these reasons, the expenditure and volume indicators in the two domains may not be entirely coherent at any given point in time, although discrepancies will normally not be very substantial.

### 7.4 Coherence - internal

Not relevant for this statistics.

## 8 Accessibility and clarity

These statistics are published annually in a Danish press release, at the same time as the tables are updated in the statbank. In the statbank, these statistics can be found under International volume and price comparision. Internationally, these statistics are available through OECD, Eurostat and Norden. For further information, go to the subject page.

### 8.1 Release calendar

The publication date appears in the release calendar. The date is confirmed in the weeks before.

### 8.2 Release calendar access

The Release Calender can be accessed on our English website: Release Calender.

### 8.3 User access

Statistics are always published at 8:00 a.m. at the day announced in the release calendar. No one outside of Statistics Denmark can access the statistics before they are published.

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### 8.4 News release

These statistics are published yearly in a Danish press release.

### 8.5 Publications

These statistics are presented in the Statistical Yearbook and in the Nordic Statistical Yearbook.

### 8.6 On-line database

The statistics are published in the StatBank under the subject International volume and price comparison in the following tables:

- PPP: Purchasing power parities and international volume and price comparison by commodity group, country, unit and time
- PPP11: Purchasing power parities and international volume and price comparison by commodity group, country, unit and time
- PPP1: Price level indices for food EU=100 by commodity group, country and time

### 8.7 Micro-data access

Micro-data are not disseminated. Results below the level of the analytical categories are generally not disseminated to the general public. However, users that wish to gain access to more detailed, confidential PPP data for the purpose of academic research can make a request to Eurostat by filling in declaration of confidentiality. A short description of the research project is also requested.

### 8.8 Other

These statistics are available through OECD, in Eurostat's database and through the database for Nordic Co-operatation.

### 8.9 Confidentiality - policy

Data Confidentiality Policy at Statistics Denmark.

### 8.10 Confidentiality - data treatment

The basic data provided to Eurostat should be treated as confidential. This regards both individual price observations and average prices. Individual price observations are also confidential due to national low ‘Low about Statistics Denmark' no. 1189 from 21. December 1992. In principle Statistics Denmark is for the free dissemination and exchange of data between participating countries. Dissemination of our data to user groups e.g. Eurostat, OECD, other Commission services and other international organizations may only happen in consultation with Statistics Denmark. Concerning the publication of other countries data, only the data which are already published by Eurostat are re-published in our publications.

### 8.11 Documentation on methodology

Eurostat-OECD Methodological Manual on Purchasing Power Parities

### 8.12 Quality documentation

Results from the quality evaluation of products and selected processes are available in detail for each statistics and in summary reports for the Working Group on Quality.

## 9 Contact

The administrative placement of this statistics is in the division of Consumption and Prices. The person responsible is Zdravka Bosanac,, tel.: +45 3917 3446, e-mail: zbo@dst.dk

### 9.1 Contact organisation

Statistics Denmark

### 9.2 Contact organisation unit

Consumption and prices.

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