

Joint Eurostat/OECD 2019 questionnaire on the methodology underlying capital stocks data in national accounts

Country: Denmark

Date: August 2019

Information regarding Gross Fixed Capital Formation (GFCF) compilation

This information sheet presents metadata provided by the country for publication by Eurostat. It informs on the methods and sources used to compile GFCF under the [European System of Accounts 2010](#) (ESA 2010). While the questionnaire has a common structure, the level of detail of replies differs from one country to another and, therefore, only available country replies are shown here.

For easier cross-country comparison, users of GFCF data are invited to consult the tabular presentation of metadata on estimation of capital stocks by asset type, industry and institutional sector:

[Capital Stock Metadata in Tabular Format](#)

N111. Dwellings

1. What is/are the main source/s to estimate GFCF in dwellings in your country, and which are the products or assets included under this asset category? Please specify if sources differ across industries and/or institutional sectors.

The main sources are statistics on Turnover in construction by industry and type of work, together with foreign trade statistics. Most importantly construction of new dwellings, capital repair and costs of ownership transfer are included in this item.

2. What is the length of the GFCF series for dwellings? If long GFCF series are available (previous to 1995), how do you estimate historical data? Please, describe additional sources and/or methods, and specify if these differ across industries and institutional sectors.

Statistics Denmark has series for GFCF for dwellings dating back to year 1966. The series are based on historic publications, subsequently adjusted (if required) when new sources, classifications and definitions are introduced.

3. Are costs of ownership transfer included in GFCF? How do you define them and treat them in the estimation of capital stocks of dwellings (e.g. treated equally to GFCF, or specific average service life/depreciation profile for these costs)?

Costs of ownership transfer are included in GFCF. These costs mostly refer to costs regarding real estate agents and lawyers as part of purchases and sales of dwellings.

4. What price indices do you use to deflate GFCF in dwellings, and how do you construct these indices? How do you account for quality improvements? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries / institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

Statistics Denmark has started the compilation of CPPI for dwellings. They comprise a significant part of GFCF for dwellings, single houses and capital repair. Statistics Denmark splits GFCF for dwellings by "products": construction of new dwellings, own-account capital repair and purchased capital repair (and costs of ownership transfer).

N1121. Buildings other than dwellings

1. Do you have specific GFCF series for detailed asset categories (e.g. office buildings, industrial buildings, public buildings, etc.)? Are your GFCF series broken down by industry and/or institutional sector? If your answer is yes to any of these questions, please describe and provide the link to available data and relevant documents.

Statistics Denmark does not have a detailed breakdown by type of buildings. However, the series have a breakdown by industry which indirectly could inform of the type of building. By institutional sector only a total for General Government is published. Link:
<https://www.statistikbanken.dk/statbank5a/default.asp?w=1280>

2. What is/are the main source/s to estimate GFCF in buildings other than dwellings in your country? Please specify if sources differ across industries and/or institutional sectors.

The main sources for compiling GFCF for buildings are the Structural Business Statistics (SBS) and the government accounts (sector S13).

3. What is the length of the GFCF series? If long GFCF series are available (previous to 1995), how do you estimate historical data? Please, describe additional sources and/or methods, and specify if these differs across assets within this asset category, industries and institutional sectors.

Statistics Denmark has series for GFCF for buildings dating back to year 1966. The series are based on historic publications, subsequently adjusted (if required) when new sources, classifications and definitions are introduced.

4. Are costs of ownership transfer of buildings other than dwellings included in this GFCF series? How do you define them and treat them in the estimation of net capital stocks of buildings other than dwellings (e.g. treated equally to GFCF, or specific average service life/depreciation profile for these costs)?

Costs of ownership transfer are included in GFCF for buildings. These costs mostly refer to costs regarding real estate agents and lawyers as part of purchases and sales of buildings.

5. What price indices do you use to deflate GFCF in buildings other than dwellings, and how do you construct these indices? How do you account for quality improvements? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries/institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

Statistics Denmark has started the compilation of CPPI for buildings. They comprise a significant part of GFCF for buildings and capital repair. Statistics Denmark split GFCF for buildings by "products": construction of new buildings, capital repair (and costs of ownership transfer).

N1122. Other structures

1. Do you have specific GFCF series for detailed asset categories (e.g. roads, railways, bridges, etc.)? Are your GFCF series broken down by industry and/or institutional sector? If your answer is yes to any of these questions, please describe and provide the link to available data and relevant documents.

Statistics Denmark does not have a detailed breakdown on the type of other structures. GFCF series have breakdown by industries. By institutional sector only a total for General Government published. Link: <https://www.statistikbanken.dk/statbank5a/default.asp?w=1280>

2. What is/are the main source/s to estimate GFCF in other structures in your country? Please specify if sources differ across industries and/or institutional sectors.

The main sources for compiling GFCF for other structures are the Structural Business Statistics and the government accounts (S13).

3. What is the length of this GFCF series? If long GFCF series are available (previous to 1995), how do you estimate historical data? Please, describe additional sources and/or methods, and specify if these differs across assets within this asset category, industries and institutional sectors.

Statistics Denmark has series for GFCF for other structures dating back to year 1966. The series are based on historic publications, subsequently adjusted (if required) when new sources, classifications and definitions are introduced.

4. Are costs of ownership transfer of other structures included in this GFCF series? How do you define them and treat them in the estimation of net capital stocks of other structures (e.g. treated equally to GFCF, or specific average service life/depreciation profile for these costs)?

Assumed insignificant.

5. What price indices do you use to deflate GFCF in other structures, and how do you construct these indices? How do you account for quality improvements? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries / institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

Statistics Denmark uses construction cost indices for civil engineering projects.

N1123. Land improvements

1. Does GFCF in other buildings and structures (N112) reported in questionnaires 0102 (GDP identity from the expenditure side), 0302 (Capital formation) and 2200 (Cross-classification of gross fixed capital formation (GFCF) by industry and by asset (transactions)) include land improvements (N1123)?

Yes.

2. What is/are the main source/s to estimate the value of GFCF in land improvements in your country? Please specify if sources differ across industries and/or institutional sectors.

The main source for compiling GFCF for land improvements is the Structural Business Statistics.

3. Are costs of ownership transfer of land included in land improvements (N1123) and hence in the aggregate asset category other buildings and structures (N112) that you report in the national accounts questionnaires 0102, 0302 and 2200?

Costs of ownership transfer for land improvements are included in costs of ownership transfer for dwellings or other buildings.

4. What price indices do you use to deflate GFCF in land improvements, and how do you construct these indices? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries / institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

GFCF for land improvements are included in GFCF for other structures. Construction cost indices are used for compiling constant prices for other structures.

N1131. Transport equipment

1. What is/are the main source/s to estimate GFCF in transport equipment in your country?

The main sources are: Structural business statistics, government accounts (S13) and foreign trade statistics.

2. Do you have specific GFCF series for detailed asset categories (e.g. motor vehicles, ships, railway locomotives, aircrafts, etc.)? Are your GFCF series broken down by industry and/or institutional sector? If your answer is yes to any of these questions, please describe and provide the link to available data and relevant documents.

Yes. For GFCF for Transport equipment, Statistics Denmark has a breakdown by approximately 65 different products.

3. What is the length of these GFCF series? If long GFCF series are available (previous to 1995), how do you estimate historical data? Please, describe additional sources and/or methods, and specify if these differ across assets within this category, industries and institutional sectors.

Statistics Denmark has series for GFCF for transport equipment dating back to year 1966. The series are based on historic publications, subsequently adjusted (if required) when new sources, classifications and definitions are introduced.

4. What price indices do you use to deflate GFCF in transport equipment, and how do you construct these indices? How do you account for quality improvements? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries/institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

General comment (all types of assets):

In the Danish national accounts for final years, GFCF is deflated in the SUT framework. The general methodology is that product specific deflators are used to deflate the domestic production, imports and exports in basic prices. Based on this calculation, an implicit deflator for domestic use is determined and used to deflate the GFCF (as well as the other types of domestic use in constant basic prices). This ensures, per definition, that supply equals use in constant basic prices. Then, wholesale- and retail margins as well as product taxes are determined in constant prices so that the changes in volume follow the corresponding changes in volume in basic prices. Finally, the product balances are subject to a rigorous balancing and quality process where changes in volumes and prices as well as external sources are considered before each product balance is approved. The deflation of products is predominantly based on 4-digit CN-nomenclature (in some cases 6- or 8-digits). Transport equipment: Predominantly PPI's (domestic production and imports/exports).

ICT equipment (N1132): computer hardware (N11321) + telecommunications equipment (N11322)

1. What is/are the main source/s to estimate GFCF in computer hardware (N11321) and telecommunications equipment (N11322) in your country? Do you have specific GFCF series for detailed assets within these categories (e.g. data processing machines, peripheral equipment, storage units, etc.) in different industries and/or institutional sectors?

Structural Business Statistics, Government accounts (13) and foreign trade statistics. Figures are available by product as part of the supply and use tables; however, these figures are not published.

2. What is the length of GFCF in computer hardware and telecommunications equipment? If long GFCF series are available (previous to 1995), how do you estimate historical data? Please, describe additional sources and/or methods, and specify if these differ across detailed assets within these asset categories, industries and/or institutional sectors.

Statistics Denmark has series for GFCF for this type of assets dating back to year 1966. The figures before the year 1995 are based on old supply and use tables and assumptions.

3. What price indices do you use to deflate GFCF in computer hardware and telecommunications equipment, and how do you construct these indices? How do you account for quality improvements? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries / institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

American export price index for computer equipment and PPI's (domestic production and imports/exports).

Other machinery and equipment and weapons systems (N110): Other machinery and equipment (N1139) + weapons systems (N114)

1. What is/are the main source/s to estimate GFCF in other machinery and equipment and weapons systems in your country? Do you have specific GFCF series for detailed assets within these categories (e.g. electrical equipment, weapons, etc.) in different industries and/or institutional sectors?

Structural business statistics, Government accounts (S13) and foreign trade statistics. Figures are calculated by products, as part of Statistics Denmark's supply and use tables; however, these figures are not published.

2. What is the length of GFCF in other machinery and equipment and weapons systems? If long GFCF series are available (previous to 1995), how do you estimate historical data? Please, describe additional sources and/or methods, and specify if these differ across assets within each asset category, industries and/or institutional sectors.

Statistics Denmark has series for GFCF for this type of asset dating back to year 1966. The series are based on historic publications, subsequently adjusted (if required) when new sources, classifications and definitions are introduced.

3. What price indices do you use to deflate GFCF in other machinery and equipment and weapons systems, and how do you construct these indices? How do you account for quality improvements? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries / institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

Predominantly PPI's (domestic production and imports/exports).

Cultivated biological resources (N115)

1. What is/are the main source/s to estimate GFCF in cultivated biological resources in your country? Do you have specific GFCF series for detailed assets within these categories (e.g. orchards, crops, dairy cattle, etc.) in different industries and/or institutional sectors?

Figures for cultivated biological resources are compiled by using information from agricultural accounts compiled within Statistics Denmark.

2. What is the length of GFCF in cultivated biological resources? If long GFCF series are available (previous to 1995), how do you estimate historical data? Please, describe additional sources and/or methods, and specify if these differ across products within this asset category, industries and/or institutional sectors.

Statistics Denmark has series for GFCF for this type of asset dating back to year 1966. The series are based on historic publications, subsequently adjusted (if required) when new sources, classifications and definitions are introduced.

3. What price indices do you use to construct volume measures of cultivated biological resources, and how do you construct these indices? How do you account for quality improvements? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries / institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

Unit price index for wood pulp growth.

Research and development (N1171)

1. Do you estimate GFCF in R&D by detailed R&D asset type? If yes, please specify the detailed R&D asset breakdown.

Statistics Denmark compiles R&D figures at the level of products. The breakdown can mostly be attributed to the type of R&D (basic research /applied research/experimental development) and institutional sector (general government/NPISH/other).

2. What is/are the main source/s to estimate GFCF in research and development (R&D)? Please describe briefly the architecture of your estimation method and specify if these differ across different R&D assets (if a breakdown is available), industries and/or institutional sectors.

Output of GFCF for R&D are based on Frascati manual figures (S11+S12+S14) and government account data (S13). Figures for NPISH are gathered separately.

3. What is the length of GFCF in R&D in your country? If long GFCF series are available (previous to 1995), how do you estimate historical data? Please, describe additional sources and/or methods, and specify if these differ across assets within this category, industries and institutional sectors.

Statistics Denmark has series for GFCF for this type of asset dating back to year 1966. The source is figures based on the Frascati Manual and back-casting.

4. What price indices do you use to deflate GFCF in R&D and how do you construct these price indices? How do you account for quality improvements? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries / institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

Input deflation based on costs.

Mineral exploration and evaluation (N1172)

1. Do you estimate GFCF in mineral exploration and evaluation by detailed asset type? If yes, please specify the detailed asset breakdown.

Statistics Denmark compiles figures for this type of assets. No breakdown is available.

2. What is/are the main source/s to estimate GFCF in mineral exploration and evaluation? Please describe briefly the architecture of your estimation method and specify if these differ across detailed assets within this asset category, industries and/or institutional sectors.

Information on expenditure on exploratory dwellings is gathered by the Danish supervisory authorities. Statistics Denmark uses this information.

3. What is the length of GFCF in mineral exploration and evaluation? If long GFCF series are available (previous to 1995), how do you estimate historical data? Please, describe additional sources and/or methods, and specify if these differ across assets within this category, industries and institutional sectors.

Statistics Denmark has series dating back to year 1966.

4. What price indices do you use to deflate GFCF in mineral exploration and evaluation and how do you construct these price indices? How do you account for quality improvements? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries/institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

A weighted deflator (earnings index), PPI and deflator for drilling platforms.

Computer software and databases (N1173)

1. What is/are the main source/s to estimate GFCF in computer software and databases? Please describe briefly the architecture of your estimation method and specify if these differ across types of software (see previous question), industries and/or institutional sectors.

ICT surveys, structural business surveys, labour force surveys that measure hours worked on development.

3. What is the length of this GFCF series? If long GFCF series are available (previous to 1995), how do you estimate historical data? Please, describe additional sources and/or methods, and specify if this differ across assets within this category, industries and institutional sectors.

Statistics Denmark has series for GFCF for this type of asset dating back to year 1966. Figures are based on wage statistics for ICT staff and ICT surveys, subsequently adjusted (if required) when new sources, classifications and definitions are introduced.

4. What price indices do you use to deflate GFCF in computer software and databases and how do you construct these price indices? How do you account for quality improvements? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries / institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

SPPI's (domestic production and imports/exports).

Entertainment, literary and artistic originals (N1174)

1. Do you estimate GFCF in entertainment, literary and artistic by detailed asset type? If yes, please specify the detailed asset breakdown.

Statistics Denmark compiles figures for this type of assets. Figures are compiled at the level of products, but only published as a total.

2. What is/are the main source/s to estimate GFCF in entertainment, literary and artistic originals? Please describe briefly the architecture of your estimation method and specify if these differ across detailed products within this asset category, industries and institutional sectors.

For most types of originals, GFCF figures are based on figures for royalty payments regarding culture originals. For film and television, the figures are based on a benchmark which has been taken forward in time by the using the development in output of products in question.

3. What is the length of GFCF in entertainment, literary and artistic originals? If long GFCF series are available (previous to 1995), how do you estimate historical data? Please, describe additional sources and/or methods, and specify if this differ across assets within this category, industries and institutional sectors.

Statistics Denmark has series for GFCF for this type of asset dating back to year 1966.

4. What price indices do you use to deflate GFCF in entertainment, literary and artistic originals and how do you construct these price indices? How do you account for quality improvements? Do you use specific price indices for detailed asset categories? Do these price indices differ across industries / institutional sectors? If they are available, please provide links to and/or relevant documents and metadata on their construction.

Index based on wages and a net price index.