

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

Country: Germany

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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

Question 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 starting point for calculating GFCF in buildings and structures is the information from companies and businesses providing construction work and allied services. This indirect calculation method is based on information from investment surveys, cost structure surveys, value added tax survey (output) and the Deutsche Bundesbank's Balance-of-Payments statistics (for the value of construction work performed by foreign enterprises, if not included in the reports on the construction surveys). The split between dwellings and other buildings and structures (all together eight different types of construction) is based on the monthly production survey in construction.

For a description of the calculation of all buildings and structures see the GNI inventory, chapter 5.10.1:

https://www.destatis.de/EN/Themes/Economy/National-Accounts-Domestic-Product/Publications/Downloads-National-Accounts-Domestic-Product/gross-domestic-product-6489030169004.pdf?_blob=publicationFile.

Question 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.

-According to the current methodology: starting from 1991.

-According to ESA 1995, but chain-linked and special information about dwellings in the former GDR integrated, on the basis of the backward calculations in 2006: 1970-1990/1991.

-Further backwards time series in constant prices chain-linked (damages in World War II already subtracted) according to former work in national wealth accounts: starting from 1799.

Question 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)?

Yes. According to the GNI inventory, para. 5.252: The cost of ownership transfer (COT) on land covers the output of estate agents, notaries public and courts of law, as well as payments of land transfer tax. There is a split of COT in dwellings and other buildings and structures. COT have a shorter service life of 30 years for dwellings.

Question 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.

The deflation of dwellings is done on the basis of price indices of seven types of construction works and allied services, see ""Methodenbeschreibung der Preis- und Volumenmessung Fachserie 18 Reihe S32"" , Kapitel 3.4.2 (in German only):

<https://www.destatis.de/DE/Themen/Wirtschaft/Volkswirtschaftliche-Gesamtrechnungen-Inlandsprodukt/Publikationen/Downloads-Inlandsprodukt/methoden-preis-volumenmessung-2189032179004.pdf? blob=publicationFile>.

N1121. Buildings other than dwellings

Question 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.

Yes, for industrial and commercial buildings (S.11+S.12+S.14), public buildings (S.13) and buildings for non-profit institutions serving households (S.15), but not all are published. See GNI-inventory para. 5.231 for all eight types of buildings and structures. For figures, see "Arbeitsunterlage Investitionen", Tabelle 5 (in German only):

<https://www.destatis.de/DE/Themen/Wirtschaft/Volkswirtschaftliche-Gesamtrechnungen-Inlandsprodukt/Publikationen/Downloads-Inlandsprodukt/investitionen-xlsx-5811108.xlsx? blob=publicationFile>

The split into the relevant industries of A*64 is done for other buildings and structures together in a second step on the basis of information from investment/structural surveys.

Question 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.

See question 1 of dwellings.

Question 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.

-According to the current methodology: starting from 1991.

-According to ESA 1995, but chain-linked including a mark-up for buildings other than dwellings in the former GDR, on the basis of the backward calculations in 2006: 1970-1990/1991

-Further backwards time series in constant prices chain-linked (damages in world war II already subtracted) according to former work in national wealth accounts: starting from 1799.

Question 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)?

Yes, see question 3 on dwellings. No special treatment for service lives because of small amounts.

Question 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.

The deflation of all buildings and structures is done on the basis of price indices for a matrix of the eight types of construction and seven types of construction works and allied services, see "Methodenbeschreibung der Preis- und Volumenmessung Fachserie 18 Reihe S32, Kapitel 3.4.2" (in German only). Link: see question 4 of dwellings.

N1122. Other structures

Question 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.

Yes, industrial and commercial structures other than buildings (S.11+S.12+S.14), public highways and roads as well as other public structures besides buildings (S.13).

For figures, see ""Arbeitsunterlage Investitionen"", Tabelle 5 (in German only):

https://www.destatis.de/DE/Themen/Wirtschaft/Volkswirtschaftliche-Gesamtrechnungen-Inlandsprodukt/Publikationen/Downloads-Inlandsprodukt/investitionen-xlsx-5811108.xlsx?__blob=publicationFile.

The split into the relevant industries of A*64 is done for other buildings and structures together in a second step on the basis of information from investment/structural surveys.

Question 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.

See question 1 on dwellings.

Question 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.

-According to the current methodology: starting in 1991.

-According to ESA 1995, but chain-linked, on the basis of the backward calculations in 2006; including special information about roads and sewage systems in the former GDR and a mark-up for the other parts: 1970-1990/1991.

-Further backwards time series in constant prices chain-linked (damages in World War II already subtracted) according to former work in national wealth accounts: starting partly from 1799, or at least from 1934 (for highways).

Question 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)?

Yes, see question 3 on dwellings. No special treatment for service lives because of small amounts.

Question 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.

See question 5 on buildings other than dwellings.

N1123. Land improvements

Question 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.

Question 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.

See question 1 on dwellings. Land improvements were never separated from structures in Germany.

Question 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?

Yes, in buildings and structures, but not in this special category because it does not exist in Germany. COT reported under dwellings and other buildings and structures are COT on land (which include COT on buildings in Germany).

Question 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.

No special price indices because of no special category.

Question N1131. Transport Equipment

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

- Survey on production (at the lowest available classification level):

Link: <https://www.destatis.de/DE/Methoden/Qualitaet/Qualitaetsberichte/Industrie-Verarbeitendes-Gewerbe/einfuehrung.html>

- Foreign trade (on lowest available classification level):

Link: https://www.destatis.de/EN/Themes/Economy/Foreign-Trade/_node.html

- Licensing figures of the Federal Motor Transport Authority (new registrations broken down by vehicle keeper groups, changes of ownership).

Question 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, see: "Arbeitsunterlage Investitionen", Tabelle 4.

link: <https://www.destatis.de/DE/Themen/Wirtschaft/Volkswirtschaftliche-Gesamtrechnungen-Inlandsprodukt/Publikationen/Downloads-Inlandsprodukt/investitionen-xlsx-5811108.xlsx>

blob=publication File, GNI-inventory, chapter 5.10.2

The split into the relevant industries of A*64 is done for machinery and equipment together in a second step on the basis of information from investment/structural surveys.

Question 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.

-According to the current methodology: starting from 1991.

-According to ESA 1995, but chain-linked and CPA-corrected, on the basis of the backward calculations in 2006: 1970-1990/1991.

-Further backwards time series in constant prices chain-linked (damages in world war II already subtracted) according to former work in national wealth accounts: starting from 1899.

Question 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.

- Producer price index for industrial products (at the lowest available GP classification level):

Link: https://www.destatis.de/EN/Themes/Economy/Prices/Producer-Price-Index-For-Industrial-Products/_node.html

- Import price indices (on lowest available GP classification level):

Link: https://www.destatis.de/EN/Themes/Economy/Prices/Import-And-Export-Price-Indices/_node.html

- Other price indices for weapons systems, ships and aircrafts (prices according to supply and use tables)

- Price data for commercial cars, calculated by Deutsche Automobil Treuhand (DAT).

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

Question 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?

- Survey on production (at the lowest available classification level):

Link: <https://www.destatis.de/DE/Methoden/Qualitaet/Qualitaetsberichte/Industrie-Verarbeitendes-Gewerbe/einfuehrung.html>

- Foreign trade (on lowest available classification level):

Link: https://www.destatis.de/EN/Themes/Economy/Foreign-Trade/_node.html

The split into the relevant industries of A*64 is done for machinery and equipment together in a second step on the basis of information from investment/structural surveys.

Question 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.

-According to the current methodology: starting from 1991.

-Chain-linked as part of the relevant CPA-corrected categories of other machinery and equipment: starting in 1960 .

Question 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.

- Producer price index for industrial products (at the lowest available GP classification level):

Link: https://www.destatis.de/EN/Themes/Economy/Prices/Producer-Price-Index-For-Industrial-Products/_node.html

- Import price indices (on lowest available GP classification level):

Link: https://www.destatis.de/EN/Themes/Economy/Prices/Import-And-Export-Price-Indices/_node.html

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

Question 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?

- Survey on production (at the lowest available classification level):

Link: <https://www.destatis.de/DE/Methoden/Qualitaet/Qualitaetsberichte/Industrie-Verarbeitendes-Gewerbe/einfuehrung.html>

- Foreign trade (at the lowest available classification level):

Link: https://www.destatis.de/EN/Themes/Economy/Foreign-Trade/_node.html

The split into the relevant industries of A*64 is done for machinery and equipment together in a second step on the basis of information from investment/structural surveys.

Question 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.

-According to the current methodology: starting from 1991.

-For machinery and equipment according to ESA 1995, but chain-linked and CPA-corrected, on the basis of the backward calculations in 2006: 1970-1990/1991.

-For machinery and equipment further backwards time series in constant prices chain-linked (damages in World War II already subtracted) according to former work in national wealth accounts: starting from 1899.

-Federal budgets as of 1956 were assessed for revision of the time series for gross fixed capital formation for military weapons systems. Allowances were also recorded for weapons systems taken over from the former GDR, and sales of used military weapons systems to foreign countries were also taken into account. See GNI-inventory, para. 4.125.

Question 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.

- Producer price index for industrial products (at the lowest available GP classification level):

Link: https://www.destatis.de/EN/Themes/Economy/Prices/Producer-Price-Index-For-Industrial-Products/_node.html

- Import price indices (at the lowest available GP classification level):

Link: https://www.destatis.de/EN/Themes/Economy/Prices/Import-And-Export-Price-Indices/_node.html

- Other price indices for weapons systems, ships and aircrafts (prices according to supply and use tables).

Cultivated biological resources (N115)

Question 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?

The Economic Accounts for Agriculture (EAA) provide GFCF series for AN.1151 and AN.1152 (no allocation to industries or institutional sectors). These calculations which are performed by the Federal Office for Agriculture and Food are based on detailed assets within the 2 categories.

Question 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.

Starting in 1991.

Question 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.

For AN.1152 the purchaser price index of means of agricultural production is used, for AN.1151 carcass weight prices.

Research and development (N1171)

Question 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.

-Starting from 1991 current methodology: GFCF in R&D are calculated on the basis of output of R&D by industry and/or sector, special information from government budget for S.13.

-R&D-survey information on GERD for the whole economy as well as for the most relevant industries (NACE-adjusted) is used to calculate backward time-series except S.13 starting from 1964.

-Government budget information is used for R&D in S.13, also starting from 1964.

Mineral exploration and evaluation (N1172)

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

No

Question 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.

There are two sources:

- turnover figures from WZ subclass 09.10.0 "Service activities incidental to oil and gas extraction, excluding surveying" and

- part of WZ subclass 43.13 ""Test drilling and boring"" for building, geophysical, geological or similar purposes,

See the GNI inventory, para. 5.327.

Question 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.

-According to the current methodology: starting from 1991.

-According to ESA 1995, but chain-linked and WZ/NACE-corrected, on the basis of the backward calculations in 2006: 1970-1990/1991

-Further backwards time series in constant prices chain-linked: starting from 1899.

Question 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 price index of industrial and commercial structures is used, see "Methodenbeschreibung der Preis- und Volumenmessung Fachserie 18 Reihe S32, Kapitel 3.4.3.3" (in German only).

Computer software and databases (N1173)

Question 1. 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.

-According to the current methodology starting from 1991:

1. Purchased Software: basic data from structural business statistics in recent years backward calculated on the basis of data for machinery and equipment, employees and turnover as indicators for the whole economy and by industry on 2-digit-level, split into sectors as for recent years

2. Own account Software: model calculation by industry and sector on the basis of micro census data of relevant professions.

-According to ESA 1995, but chain-linked for software together and WZ/NACE-corrected, on the basis of the backward calculations in 2006: 1970-1990/1991.

-Further backwards time series for software in constant prices chain-linked: starting from 1960.

Entertainment, literary and artistic originals (N1174)

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

1. Original films and original material for radio and television programmes
2. Original in the domain of texts
3. Originals in the domain of music
4. Originals in the domain of photographic originals (including other pictures).

These domains are grouped according to our German Classification of Economic Activities (WZ, according to NACE, Rev. 2) in WZ 59, WZ 60, WZ 74, WZ 90.

Question 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.

1. Original films and original material for radio and television programmes:

A simplified calculation is based on turnover returns in VAT statistics for WZ 59 Motion picture, video and television programme production, sound recording and music publishing activities and WZ 60 Programming and broadcasting activities (WZ is the abbreviation of the German industry classification), a detailed calculation was abandoned several years ago as the relatively small importance of originals did not justify an extensive calculation.

2. Original in the domain of texts:

The royalties paid to book authors are currently calculated at a royalty rate of 5.6% on the book turnover within Germany. Turnover data are drawn from the publications of the German Publishers' and Booksellers' Association (Börsenverein des deutschen Buchhandel). Additionally, the discounted royalty flows of the VG WORT and the Musical Performance and Mechanical Reproduction Rights Society (GEMA) collecting societies are considered.

3. Originals in the domain of music:

The calculation of the production costs is based on the turnover in the music industry. Since VAT statistics are not available for this specific domain, figures from the German music industry association are used. Assumptions on the share of productions costs are made on the basis of literature research and a one-time survey.

Additionally, discounted royalty flows from collecting societies – GEMA, the Society for the Administration of Neighbouring Rights (GVL – Gesellschaft zur Verwertung von Leistungsschutzrechten) and VG Musikedition - are considered.

4. Originals in the domain of photographic originals (including other pictures):

Royalties from picture agencies are based on the data of artists' social insurance (Künstlersozialkasse). Additionally, discounted Royalties from the collecting society VG Bild-Kunst (VG

picture-art) are considered. In addition, exports and imports are considered for all domains based on data of Deutsche Bundesbank.

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.

-We have data for GFCF in entertainment, literary and artistic originals starting from 1991. More or less all data sources are available from that date. Therefore, we use the same methods for the entire period.

-According to ESA 1995, but chain-linked, on the basis of the backward calculations in 2006: 1970-1990/1991.

-Further backwards time series in constant prices chain-linked: starting from 1960.

Question 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.

We use output deflators for WZ 59, WZ 60, WZ 74, WZ 90 (German Classification of Economic Activities WZ - 2-digit-level according to NACE Rev. 2).