

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

Country: Portugal

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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.

This asset category includes several products, i.e., construction (new construction and major repairs), the costs of administrative records, taxes on real estate transactions and real estate development services. Different methodologies are used for different components (products). Construction of new dwellings is mainly based on dwellings completed (measured in square meters, obtained from the Statistics on construction) multiplied by the value (per square meter) of new dwellings sale, obtained from the “municipal tax on transactions” (Imposto Municipal de Transações - IMT) database. This database is monthly updated and contains detailed information on all real estate transactions taking place in Portugal, including geographical location, type of accommodation (houses and apartments) and transaction price. Thus, the calculation is performed by region (NUTS II) and by type of accommodation. The value estimated to major repairs in dwellings comes from a specific sources/survey on NACE F. Enterprises from NACE F provide information on the amount of work performed by type of work, identifying, among others, the work performed in repairs on residential buildings. Taxes and administrative costs comes from administrative data. Margins on second hand transactions combine different sources, including margin rate from real estate enterprises, administrative data on transactions on second hand dwellings.

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.

The period of economic life for dwellings is 55 years. Thus, “long” time series of GFCF are needed to compute “stock of capital” based on PIM approach - because stock of capital is needed to compute fixed capital consumption. So, sometime in the past Statistics Portugal “extended” the stock of capital for dwellings and other construction related assets based on several indicators (as academic research, old data from National Accounts – even in ESA 79 – etc.). Unfortunately most of that basic data has been lost, despite the reference in some internal documents:

- 1940-58 “O Rendimento Nacional Português” (“Portuguese National Income”)
- 1959-69 “As Contas Nacionais Portuguesas” (“Portuguese National Accounts”)
- 1970-76 “Contas Nacionais, Estimativas de 1970 a 1976” and “Estatísticas das Finanças Públicas” (“National Accounts, Estimates for 1970 to 1976” and “Statistics of Public Finance”)
- 1977-00 “Contas Nacionais” e “Estatísticas das Finanças Públicas” (“National Accounts” and “Statistics of Public Finance”).

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)?

The costs of ownership transfer are included in GFCF. For estimation of capital stocks they are treated the same like the GFCF, with the same service life.

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 price indices used to deflate GFCF are the same as the ones computed for Supply and Use Tables (SUT) purposes. The Portuguese National accounts compile SUT at current price and previous year price, for 433 products. The price indices that feed SUT have different sources; for new dwellings, price index is mostly based in “House Price Index” for new dwellings. For margins, price index is mostly based on the “House Price Index” for existing dwellings. For repairs, price index is mostly based on “costs”. The price indices are the same for all industries and all institutional sectors.

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.

No, we have only information for buildings other than dwellings. We have GFCF by industry and by institutional sector. Data is available in the following link (base year 2016):

https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=cn_quadros&boui=391532703,

and in the following link (base year 2011):

https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=cn_quadros&boui=220642436.

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.

To compute GFCF on “buildings other than dwellings” our main approach is the output. Simplified Business Information (an administrative survey covering all active enterprises operating in PT) provides data on output. A specific annual survey covering NACE F, collects additional data on kind (and amount) of services provided. Using both, we get the first estimation of output by product (repairs, new dwellings, other buildings than dwellings, other structures). On other hand, Simplified Business Information also provides data on investment of enterprises (additions: acquisitions, splitting first-hand and others; own work; transfers, etc. Decreases/reductions: sales; transfers; write-offs; depreciation; etc.) by kind of asset. This information is compiled by industry and asset, and provides the reference amounts from the expenditure approach. All data are balanced in SUT as a whole and by product. Then, the final result by product is balanced by sector and by industry.

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.

The period of economic life for buildings other than dwellings is 55 years. For the historical data, please see answer above on the same subject.

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)?

The costs of ownership transfer are included in GFCF. For estimation of capital stocks they are treated equally to GFCF, with the same service life.

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?

Price indices are the same across industries and institutional sectors, unless specific information is obtained, which is unusual. The price indices are mostly derived from cost indices, balanced also with Commercial Property Price Index.

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, we have series for roads. We have GFCF by industry and by institutional sector.

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 previous answer for buildings other than 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.

The period of economic life for other structures is 65 years. For the historical data, please see answer above on the same subject.

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)?

Usually this kind of "products" are not "tradable" (purchased or sold) in the market. They are produced under a contract. Thus, no costs of ownership transfer are paid/due.

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?

Price indices are the same across industries and institutional sectors, unless specific information is obtained, which is unusual. The price indices combine cost indices and administrative information. There is a public body in charge of producing regular information on (change) prices for public contracts on construction (buildings, roads, other construction).

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?

For the general government sector S13, we have information for land improvements, but for other institutional sectors, they are included in other constructions.

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?

We do not consider costs of ownership transfer for land improvements. Yes, land improvements are included in other buildings and structures in all tables reported under ESA 2010.

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?

The answer is similar to the previous ones: mostly based on cost indices.

N1131. Transport Equipment

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

To compute GFCF on “Transport equipment” our main approach is the output. Simplified Business Information (an administrative and survey covering all active enterprises operating in PT) provides the most relevant data on output, which is complemented by several data, namely PRODCOM (annual Survey on Industrial Production), detailed information from the International trade on goods (database) and statistics from ACAP (Associação do Comércio Automóvel de Portugal), the Portuguese Automobile Trade Association, that includes the number of vehicles produced in factories in Portugal.

On the other hand, Simplified Business Information also provides data on investment of enterprises (additions: acquisitions, splitting first-hand and others; own work; transfers, etc. Decreases/reductions: sales; transfers; write-offs; depreciation; etc.) by kind of asset. This information is compiled by industry and asset, and provides the reference amounts from the expenditure approach. All data are balanced in SUT as a whole and by product. Then, the final result by product is balanced by sector and by industry.

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, but not all detail is publicly available.

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?

The period of economic life for transport equipment is different for some industries: Industry 03 - 14 years, Industry 49, 50 e 51 - 25 years, Industry 77 - 4 years and for other industries 8 years. For the historical data, please see related answers above.

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?

Prices are derived from different sources, depending on the specific assets/goods: detailed database for cars price, by brand, model, etc., are used for cars; unit prices from international trade in goods; production price index. Quality improvements are implicit, because the price index is computed based on exactly the same vehicle (brand, model, etc.). Prices do not differ across industries and institutional sectors.

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?

Please see the previous answers on this subject.

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.

The period of economic life for ICT equipment is 5 years. For the historical data, please see the answer above on the same subject.

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.

Please see the previous answers on this subject.

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?

To compute GFCF on “other machinery and equipment”, our main approach is the output. Simplified Business Information (an administrative survey covering all active enterprises operating in PT) provides the most relevant data on output, which is complemented by several data, namely PRODCOM (annual Survey on Industrial Production) and detailed information from the International trade on goods (database).

On the other hand, Simplified Business Information also provides several data on investment of enterprises (additions: acquisitions, splitting first-hand and others; own work; transfers, etc. Decreases/reductions: sales; transfers; write-offs; depreciation; etc.) by kind of asset. This information is compiled by industry and asset, and provides the reference amounts from the expenditure approach. All data are balanced in SUT as a whole and by product. Then, the final result by product is balanced by sector and by industry.

The investment in weapons systems is computed based on information from the general government, most of the time, in close cooperation with different military bodies. "

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.

The period of economic life for other machinery is 20 years. For weapons systems: planes and helicopters - 20 Years; vessels - 25 years; combat vehicles - 20 years; submarines - 35 years; weapons - 14 years and other machinery and equipment of weapons systems - 10 years. For the historical data, please see answer above on the same subject.

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?

Please see the previous answers on this subject.

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 main data source are Economic Account for Agriculture and Economic Accounts for Forestry. Yes, we have specific series for detailed assets.

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.

The period of economic life for cultivated biological resources is: fruit farm and stone fruit - 25 years, kiwi and semitropicals - 20 years, citrus fruit - 35 years, vines and olives - 50 years, hops - 3 years and forestry plantations - 25 years. For the historical data, please see answer related to the same subject above.

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?

Please see answer related to the same subject above.

Research and development (N1171)

Question 1. 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.

The service life for R&D is 10 years. For the backwards period (until 1995), we made estimates by institutional sector based on the data (by sector) of the R&D survey, which are available since 1982.

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.

For investment in mineral exploration the source of information used to determine GFCF was the Directorate General of Energy and Geology (Direção Geral de Energia e Geologia - DGEG), which publishes information on research and prospecting values, complemented with Annual Reports of the main entities in research and prospecting.

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?

The period of economic life for mineral exploration and evaluation is 8 years. For the historical data, please see answer related to the same subject above.

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?

Please see answer related to the same subject above.

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?

The period of economic life for computer software and databases is 6 years. For the historical data, please see answers related to the same subject above.

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?

No.

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?

The main approach is based on output. The main sources are based on fiscal and administrative data for specific NACE - it is important to mention there is a specific fiscal regime for literary, artistic and scientific revenues.

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?

The period of economic life for entertainment, literary and artistic originals is 8 years. For the historical data, please see answers related to the same subject above.

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?

Please see answers related to the same subject above.