

## Chapter 5

### Defining final uses of GDP

*Changes in the final uses of GDP, or demand, determine the growth of real GDP in the short term. Governments generally try to influence three variables in order to maintain growth at a rate that keeps inflation and employment at the desired levels: demand from households, public consumption and investment. Together, these variables are known as domestic demand. Economists look at this demand, as well as at external demand and net exports, when trying to predict future economic developments. This chapter looks at measuring and shaping demand and at what is contained in each of the components of final uses.*

**C**hanges in the **final uses** of GDP, or **demand** to use the economists' term, determine the growth of real GDP in the short term. This chapter gives the definition of the components of this demand.

The authors of the *OECD Economic Outlook for 2013*, commenting on recent economic developments in the United Kingdom (the country chosen for illustration in this chapter), wrote:

“Continuing weakness of euro area trading partners, slow real income growth and necessary public and private sector deleveraging are generating strong headwinds for the economy. Growth is expected to pick up gradually through 2013 and 2014 as gross fixed investment and exports gain momentum. Inflation expectations are above the inflation target, but inflation is projected to decelerate owing to persistent economic slack (...). The muted global recovery, especially in Europe, and the necessary adjustment of still-impaired public and private sector balance sheets continue to weigh on growth. Despite a resilient labour market, private consumption is held back by weak average real earnings, fragile confidence and household deleveraging. Private investment is restrained by weak aggregate demand and high uncertainty. Exchange rate depreciation over recent years has not led to a major boost in exports, hampered by subdued demand. Yet exports have also underperformed the growth in UK's overseas markets, pointing to supply-side impediments, notably in financial services exports and oil”. (OECD, 2013a)

There are three target variables that governments try to influence in order to maintain growth at a rate that keeps inflation and employment at the desired levels: (1) demand from households (or, in the national accounts terminology, “households' consumption expenditure”); (2) public consumption (or “general government consumption expenditure”); and (3) investment (or “gross fixed capital formation”). To influence these variables, governments use fiscal and monetary policy instruments (see section “Going further: How do monetary and fiscal policies operate?”).

The total of these three variables is known as **domestic demand**. Exports are also a major component of final demand, but in this case **external demand**. It is conventional to show external demand as being equal to exports *minus* imports, the result being known as **net exports**.

These are the variables that economists look at when trying to predict future economic developments. At first, macroeconomic forecasts are made

by estimating final uses based on their recent movements, taking into account recent and expected changes in monetary and fiscal policy. Once these forecasts have been prepared for each member country, the OECD economists then exploit their knowledge of the financial and trading links between OECD countries to see whether the forecasts for each country are consistent for the OECD area as a whole. This leads to an iterative process in which the individual country forecasts are adjusted to produce a consistent set of forecasts taking into account the probable impact of the monetary and fiscal policies of each country on all the others.

This chapter will look at what is contained in each of the components of final uses. It is essential to bear in mind throughout the chapter, even though we do not always repeat the point, that economists are mostly interested in the variation in volume of these variables, and not in their movements at current prices. Some tables in this chapter use data at current prices but the proper definition of the variable in the context of macroeconomic forecasting is the corresponding variable in volume (i.e. after deflation of the variable in current prices by the appropriate price index). Exercise 1 at the end of this chapter illustrates how a table of final uses at current prices is converted into volume terms.

## 1. Final uses in the national accounts

Table 5.1 shows the principal components of final uses and their importance in relation to GDP for the United Kingdom. An obvious feature is the importance of the item “households’ final consumption expenditure”. This accounts now for more than 60% of GDP in the United Kingdom, and the percentage is similar in other OECD countries.

### **What does “final uses” mean?**


First of all, why “uses”? Quite simply because we are dealing with the use of resources placed on the market, these resources being output, imports and withdrawals from inventories. In large part, these uses consist of *purchases* by economic agents, and this is why one speaks of *final expenditures* as well as *final uses*: these two terms mean the same thing.

And then, why “final”? In the national accounts, the uses of resources are described either as *intermediate* or *final*. Intermediate uses consist of goods and services that are consumed (one could also say used-up or transformed) in a production process within the economic territory and during the accounting period (one year); final uses comprises all other goods and services. Note that it is not the nature of the good or service that determines whether it is intermediate or final. A steak bought by household is “final”, but if a restaurant buys the same steak, it is “intermediate”. Similarly, a steel sheet will generally be

Table 5.1. **United Kingdom: Share of final uses in GDP**  
Current prices, percentage of GDP

SNA code		1980	1990	2000	2005	2012
P31S14	Final consumption expenditure of households	57.7	60.0	63.2	62.2	63.3
P31S15	Final consumption expenditure of non-profit institutions serving households	1.4	2.0	2.4	2.4	2.5
P3S13	Final consumption expenditure of general government	21.9	19.6	18.3	21.0	21.8
P51	Gross fixed capital formation	19.2	20.4	17.4	16.8	14.3
P52	Changes in inventories	-1.1	-0.3	0.5	0.4	0.3
P53	Acquisitions less disposals of valuables	0.0	0.0	0.0	0.0	0.1
P6	Exports of goods and services	27.1	24.2	27.3	26.6	31.6
P7	Imports of goods and services	-24.7	-25.9	-29.2	-29.4	-33.8
DB1_GE	Statistical discrepancy	0.0	0.0	0.0	0.0	-0.2
B1_GE	Gross domestic product (expenditure approach)	100.0	100.0	100.0	100.0	100.0

Source: OECD (2013), "Aggregate National Accounts: Gross domestic product", OECD National Accounts Statistics (database), <http://dx.doi.org/10.1787/data-00001-en>.

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an intermediate good, but it can also become final if it is stocked during the current period to be consumed in a later period, or if it is exported. "Final" therefore simply refers to all the goods and services used during the period, that are not entirely consumed (used-up or transformed) in a production process in the course of that same accounting period. It will be shown later that several conventions have had to be introduced in order to distinguish "final" from "intermediate" in practice.

In the case of households, apart from their activities as sole proprietorships and excluding the special case of dwellings, all the goods and services they buy are final, because despite the fact that they are in large part consumed during the accounting period, they are not used in a production process. It is necessary to remember the definition of output given in Chapter 4: preparing meals and washing clothes in the home are not considered as output in the national accounts. As a result, a raw steak is not considered as intermediate consumption in the production of a meal by a member of a household. The objection can be raised that certain goods purchased by households are not entirely consumed during the accounting period: wine and tinned preserves, for example, can be stocked for several years, while durable goods like cars, computers and household electronics provide services for their owners over many years. The response to these objections is that, *by convention*, all goods and services apart from dwellings are considered to have been entirely consumed once they have been acquired by households.

Another important point is that expenditure by general government and non-profit institutions is classified *by convention* as final, either as final consumption expenditure or as gross capital formation (GCF). It may be asked

whether some of these services should not be treated as intermediate. While there is little difficulty in accepting that education and healthcare are of a “final” nature, many public services – ranging from defence and policing to street lighting and road maintenance – have some of the characteristics of the “intermediate” category. They clearly contribute to production, since there would be much less output if the government failed to defend the country against a foreign invasion, to maintain law and order and to keep the road system in good condition. Indeed, the absence of such services can lead to catastrophic slumps in output, as the experience of numerous developing countries can testify.

The problem is that it is not possible to say just how much of these services provided by general government contribute to the output of firms and how much to the general well-being of the population. Both households and firms benefit from public security, the road network and the many other contributions to civilised living provided by general government. And even if it were possible to separate out that part of general government services that contributes to production, one would then be obliged to allocate the production costs in a very arbitrary fashion among the producers. These are the reasons that have led national accountants to treat all services provided by general government as “final”.

Conversely, all spending by firms on goods and services is “intermediate” apart from investment (GFCF) and changes in inventories. Purchases of investment goods are recorded as *final* and not intermediate expenditure because the consumption of these goods (referred to as *consumption of fixed capital* by the national accountants and as *depreciation* by economists) takes place over a period of more than one year. Changes in inventories also form part of final uses because the relevant goods are not used in the same accounting period.

Exports – the goods or services sold abroad – are considered as “final” (even though they may be used in a production process by the importing country) because they are final sales from the point of view of the exporting country. From the point of view of the importing country, the value of these imported goods and services is included either in final goods and services or in intermediate goods and services and has to be subtracted from the total of final goods and services to obtain Gross Domestic Product. This is why imports carry a negative sign in Table 5.1.

To sum up, the definition of “final” goods and services is based on several conventions. Purists may find this unsatisfactory since a different set of conventions would give a different set of national accounts. However, it can definitely be said of the current conventions that they result in a set of statistics that have, over many years, proved useful in describing and managing countries’ economies.

## 2. Households' final consumption expenditure

Households' final consumption expenditure is the largest component of final uses. It includes:

1. *Purchases of the goods and services used by households to meet their everyday needs:* clothing, household durables, rent, transport, personal services and so on. These purchases represent by far the largest part of household consumption expenditure. There are three points to note:
  - Some of these purchases are made on credit. In this case, the national accountant has to break the transaction down into three parts: the price of the good itself (for example, a car); the administrative expenses of the financial company making the loan; and the payment of interest. The first part is assigned to household expenditure in the "cars" category; the second to household expenditure in the "financial services" category, but the third is excluded from household consumption expenditure and counted as an interest payment<sup>1</sup> in the household primary income account (see Chapter 6 which deals with the household account). Note that the expenditure on cars is recorded in its entirety the moment the purchasers take possession of them, and not according to the timing of the loan repayments, even when the purchase is made under a financial lease or hire-purchase arrangement.
  - Purchases of dwellings are final uses but are included, not in consumption expenditure, but in gross fixed capital formation. National accountants regard the owners of dwellings as producing housing services either for themselves or for tenants. These households invest (by buying the house) and carry out intermediate expenditure, for example on the purchase of building materials or of services of plumbers and electricians needed to keep the dwelling in good condition.<sup>2</sup> Both the purchase of the dwelling (capital formation) and expenditures for repair and maintenance (intermediate consumption) are excluded from households' final consumption expenditure. The former remains a final use, while the latter is an intermediate use.
  - In the national accounts, the household sector includes sole proprietorships, also called unincorporated enterprises (see Chapter 6). Accordingly, spending by households on goods and services intended for consumption in the production process of the enterprise does not form part of households' final consumption but is considered intermediate consumption by the unincorporated enterprise.
2. *Partial payments for goods and services provided by general government.* This covers cases in which the households have to pay a part of the public services provided – for example, a ticket for entry to a public museum, the price of which covers only a small part of the services provided. If

prescription medicines and medical services are partly reimbursed by government, the part actually paid by households is included here.<sup>3</sup> The portion that is reimbursed forms part of expenditure by general government, and of households' *actual* consumption, as will be shown later.

3. *Payments to general government for various types of licences and permits (when these are made in exchange for a genuine service)*. Compulsory payments designed merely to produce income for general government are treated as taxes and therefore excluded from households' consumption expenditure. The borderline between the two categories is somewhat arbitrary: licences for owning vehicles, boats or aircraft are treated as taxes, while fees for issuing passports and driving licenses are usually regarded as payments for services. In some countries, licence fees for public service television are treated as household final consumption expenditure, but in the United Kingdom the television licence fee is recorded as a tax. (See box "Limitations of national accounts: consumption of television and of free Internet services").

Households' consumption expenditure also includes a certain number of **imputed expenditures**. These are items of expenditure that have not really taken place but for which values are assigned – or "imputed" – in order to improve comparability over time and between countries. The main imputed items of expenditure are:

- *Owner-occupiers' imputed rents*. People living in dwellings they own are considered to be selling housing services to themselves. The rents recorded in the national accounts therefore include both the actual rents paid by tenants and imputed rents in the case of owner-occupiers. In most countries, this is the largest imputed item in households' individual consumption. The amount of the imputed rent is measured by the rents paid for comparable housing in a similar part of the country.
- *Own-account consumption*. Consumption expenditure includes the value (estimated using the corresponding market prices) of the consumption of goods produced by people for themselves. The most important examples are agricultural products produced by farmers for themselves and their families. Note that imputations are made only for goods. With the exception of the housing services of owner-occupiers, no imputation is made for other services such as cooking, looking after children and cleaning when these are produced and consumed within households.
- *Income in kind*. Employees may receive goods and services either free of charge or at very low prices as part of their wages. For example, railway employees are often entitled to travel by train more or less free of charge, members of the armed forces frequently obtain free meals, etc. In the national accounts, these benefits in kind are valued at their cost to the

employer. They are then added to compensation of employees and also appear in households' consumption expenditure.

- *Financial intermediation services indirectly measured (FISIM)*. Banks commonly provide their customers with certain services free of charge or at prices that are below the cost of production. They cover their production costs by charging higher interest rates on the loans they make than on the deposits they receive. FISIM (see Chapter 4) on loans from banks is essentially measured by the difference between the interest received and a reference rate (usually somewhere in between the debit interest rate and the credit interest rate). FISIM on deposits on the other hand is calculated as the difference between the reference rate and the interest paid on deposits. Some of this FISIM is consumed by households and so must be included in household final consumption expenditure, or, in the case of mortgage loans for example, as intermediate consumption related to the production of housing services.

### **Consumption made outside the home territory**

Households' final consumption expenditure must include all consumption expenditure made by households resident in the United Kingdom (to take the country illustrated in this chapter), whether this expenditure takes place on UK territory or elsewhere.

*For the definitions of “residence” and “economic territory”, see Section 9 of this chapter.*

This means having to add to the consumption carried out on home territory the consumption by UK tourists abroad. Since the national accountants do not know what products tourists have consumed abroad, they record a total amount under “expenditures by resident households abroad”, which is recorded as an import and added to consumption on home territory (which for its part is available in great detail). Conversely, the consumption recorded on home territory must be reduced by the value of purchases by foreign tourists (non-resident households) in the United Kingdom.

### **The price system applied to final uses**

The general rule applied in national accounts is that final uses are valued at the prices agreed to by the parties to the transaction. These prices are described as *market prices* or *acquisition prices*. In the case of payments by households, they correspond to the price paid in stores. Points to note:

- The prices of final uses include non-deductible VAT and other taxes on products, such as sales taxes, specific duties on tobacco, alcoholic



beverages or motor fuels. The box entitled “Typology of taxes” explains the distinction between *taxes on products*, such as sales taxes and VAT, which are included in household consumption expenditure, and *current taxes on income and wealth*, which are excluded.

- The prices of final uses include transport and marketing costs.
- The prices of final uses are net of rebates, meaning that they can be lower than the stated prices (or the “catalogue prices”), whether the reduction was obtained by bargaining or having been spontaneously offered by the seller in order to encourage sales.
- The prices of final uses include the tips paid over and above the stated prices. The most common examples are the tips paid in restaurants, taxis and hairdressers.

#### Box 5.1. **Typology of taxes**

National accountants separate the taxes paid by households and other agents into four groups: taxes on products (D21); current taxes on income and wealth (D5); other taxes on production (D29); and capital taxes (D91). Only the first two groups, which are the largest, will be dealt with here. Taxes in the first group are often called “indirect taxes” and those in the second “direct taxes”.

In the OECD countries, taxes on products mainly consist of VAT, sales taxes and other specific taxes such as duties on petroleum products, tobacco or alcoholic beverages. To these one can add certain other minor taxes and customs duties. These taxes are collected at the time of the sale of the goods and services concerned and are therefore an integral part of the prices the buyer has to pay to acquire them. Prices “including taxes on products” are the most appropriate from the point of view of the economic analysis of consumption and are therefore the ones used by the national accounts. Sales to foreign tourists that are made free of VAT or sales taxes are recorded excluding these taxes, even if the purchaser initially pays them and is subsequently reimbursed. These taxes are said to be “deductible”. Only non-deductible taxes are included in the prices used in the national accounts.

Current taxes on income and wealth for households mainly consist of taxes on incomes from employment and the like, and on profits of unincorporated enterprises, but also include local taxes, property taxes, other wealth taxes and some less important taxes. These “direct” taxes are not included in consumption expenditure but are treated as transfers, i.e. a payment for which nothing is directly received in return. These taxes are recorded in the secondary income distribution account, as explained in Chapter 6 on the household account.

### Classification of household expenditure

The main classification used for household expenditure is described as a classification according to *purpose* and is known as COICOP – *Classification of Individual Consumption by Purpose*. In this case, the products are classified under major headings that are better suited to the analysis of consumption than the standard classification of products, which is more aligned to the analysis of production. Table 5.2 illustrates the changes in consumption expenditure in the United Kingdom on the basis of this classification by purpose. It shows the spectacular decline in just 25 years in the share of expenditure allocated to everyday purposes (food, alcoholic beverages and tobacco, clothing) in favour of leisure and services in general. This phenomenon is true for all countries where real incomes have been increasing. Economists say that “the income elasticity of the demand for basic goods tends to be lower than the income elasticity of the demand for services”. The **elasticity** of one variable in relation to another is measured by the ratio between the index of the growth rate of the first and the index of the growth rate of the second. In this case, the elasticity of the demand for services in relation to income is therefore equal to:  $(100 + \text{the growth in the demand for services}) \div (100 + \text{the growth rate in income})$ .

This table also illustrates a major problem in looking only at expenditures made directly by households. The shares of healthcare (row CP060) and education (row CP100) are very small, since what we have here is only the portions of these services that are directly paid by households. In fact, the bulk of these services are free of charge, albeit financed indirectly by taxes or social contributions. The true consumption by households of health and education services is therefore much larger, but the part provided by government is recorded as *individual consumption of general government* and not as *household consumption expenditure*. We shall return to this point in Section 5.

A final point to note in this table is that the second and third row from the bottom concern tourist expenditure. As explained earlier, it is necessary to add to consumption on home territory the consumption by UK residents abroad, and deduct the consumption of non-resident households in the United Kingdom (hence the negative sign in this line) in order to obtain the final consumption expenditure by resident households.

### 3. Final consumption expenditure by general government


This is the second largest final use after household consumption. Expenditures by general government are considered by *convention* as forming part of the final uses (final consumption or gross fixed capital formation, GFCF) of general government itself. For example, current expenditure on

**Table 5.2. United Kingdom: Share of households' expenditure in classification by purpose**

At current prices, percentage of total final consumption expenditure

	1980	1995	2012
P31CP010 Food and non-alcoholic beverages	17.8	10.7	9.1
P31CP020 Alcoholic beverages, tobacco and narcotics	5.7	4.1	3.6
P31CP030 Clothing and footwear	7.7	6.1	5.8
P31CP040 Housing, water, electricity, gas and other fuels	16.0	18.8	25.8
P31CP050 Furnishings, households equipment and routine maintenance of the house	6.9	5.9	4.9
P31CP060 Health	0.9	1.5	1.6
P31CP070 Transport	15.0	13.8	14.3
P31CP080 Communications	1.7	2.1	2.1
P31CP090 Recreation and culture	9.9	11.2	10.5
P31CP100 Education	0.9	1.3	1.5
P31CP110 Restaurants and hotels	10.7	11.0	9.8
P31CP120 Miscellaneous goods and services	7.4	13.3	10.4
P33 Final consumption expenditure of resident households abroad	2.0	3.0	2.9
P34 Final consumption expenditure of non-resident households on the territory	-2.6	-2.9	-2.4
P31NC Total final consumption expenditure of households	100.0	100.0	100.0

Source: OECD (2014), "Detailed National Accounts: Non-financial accounts by sectors, annual", OECD National Accounts Statistics (database), doi: <http://dx.doi.org/10.1787/data-00034-en>.

StatLink  <http://dx.doi.org/10.1787/888933143812>

police and education is regarded as consumption by general government. What lies behind this strange convention, given that these services benefit households and enterprises? Essentially, it is because no one knows how to attribute this expenditure precisely to the beneficiaries, since they do not buy them, even though they pay the taxes that finance them. It has therefore been agreed not to attempt to allocate these expenditures to their beneficiaries but to attribute all these expenditures to general government itself, by convention. Among other advantages, this makes it possible to remain closer to the actual monetary flows.

In accounting terms, final consumption expenditure by government is equal to its cost, defined by the following sum:

- compensation of employees of the government;
- plus purchases by government of materials and other intermediate consumption items,;
- plus consumption of government fixed capital;

- plus purchases of goods and services by the government for the benefit of households (for example, reimbursement of healthcare services, housing allowances, etc.);
- plus other taxes on production paid (a very small item for government);
- minus partial payments by households or firms for services provided by government (entry to museums, sales of government publications, etc.);
- minus own account production of gross fixed capital formation.

Although this expenditure is all recorded as final consumption by general government in the standard national accounts tables, national accountants distinguish, within general government consumption expenditure, the part that is “collective” from the part that is “individual”. *Individual consumption expenditure* is expenditure that is clearly carried out for the benefit of individual households. Table 5.3 shows that individual expenditure now represents more than 60% of total expenditure in the UK, following an appreciable rise in this percentage in the past 30-35 years. This expenditure mainly covers public education and public healthcare. It is this expenditure that was missing from Table 5.2 but which is required in order to show the true picture of the goods and services consumed by households. Individual expenditure of government also includes spending on aid for social housing, the operating expenses of museums and other government services to households.


*Collective consumption expenditure* comprises expenditure related to the activities of general government that are not attributable uniquely to individual households and also benefit enterprises. This includes expenditure on Congress, National Assemblies, Parliaments, etc., on ministries of foreign affairs, safety and order, defence, home affairs, economic affairs and the protection of the environment, as well as government R&D activities.

There is an important economic distinction between these two categories of expenditure. In the case of individual consumption expenditure, the cost to general government of supplying the services depends more or less directly on the number of households making use of the services. It will cost almost twice as much to teach 10 000 children as 5 000. The cost of collective services, on the other hand, depends much less on the number of “customers”. Defence services are available to anyone living in the country. Large countries may need to have larger armies than small countries but there is no direct link between the number of people benefiting from collective services and the cost of supplying them.

Table 5.3. **United Kingdom: Breakdown of final consumption expenditure of general government**

	1980	2000	2012
P31S13 Individual consumption expenditure of general government	47.9	57.2	63.3
P32S13 Collective consumption expenditure of general government	53.6	42.8	36.7
P3S13 Final consumption expenditure of general government	100.0	100.0	100.0

Source: OECD (2013), "Aggregate National Accounts: Gross domestic product", OECD National Accounts Statistics (database), <http://dx.doi.org/10.1787/data-00001-en>.

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#### 4. Final consumption expenditure of the NPISHs

**Non-profit institutions serving households (NPISHs)** are units formed by groups of households in order to supply services to themselves or to other households on a non-commercial basis. NPISHs include political parties, trade unions, religious organisations, sports clubs, cultural associations, charities and associations with philanthropic aims (Red Cross etc.), and certain charitable foundations. In some countries, a number of universities are also classified in this sector. It has to be noted, however, that NPISHs do not include all institutions with non-commercial aims – far from it. This is because in order to be defined as NPISHs they have to be mainly financed by households' donations or regular subscriptions. Those non-profit institutions that are not directly financed by households but are, for example, controlled or financed by enterprises (Chambers of Commerce, professional associations, mutual insurance companies, etc.) are classified as being in the enterprise sector. Those controlled or financed by general government are classified in the general government sector. In the end, the NPISHs constitute only a small sector in the national accounts.

Like general government, the NPISHs provide "non-market" services. For this reason, their treatment in the accounts is similar to that of general government. The output of services by NPISHs is valued at cost, and by convention the NPISHs "consume" the services they produce. Final consumption expenditure of the NPISHs is therefore equal to their operating costs. Note that donations to charitable organisations are not payments for services. They are regarded as transfers and are recorded in the household account in the *secondary distribution of income* account (see Chapter 6).

We saw earlier how the consumption expenditure of general government was divided between individual expenditure and collective expenditure. This distinction does not have to be made for the NPISHs, since these organisations are at the service of individual households and all their expenditure is therefore considered as individual.


## 5. Moving from consumption expenditure to actual consumption

To improve the analysis of households' consumption by incorporating the individual consumption financed by general government or the NPISHs, the national accountants have invented the concept of **actual consumption**. Households' actual consumption is equal to households' consumption expenditure plus the *individual consumption expenditure* of general government and NPISHs. This individual consumption expenditure is also known as "transfers in kind". Table 5.4 illustrates this move from the notion of "who spends" to that of "who consumes".

Table 5.4. **United Kingdom: Moving from "who spends" to "who consumes"**  
2012, billions, national currency

(P3) Final consumption expenditure (Who spends?)			(P4) Actual final consumption (Who consumes?)	
Household (S14)	Final consumption expenditure of households (P31S14)	991.0	(P4S14)	1 245.8
			Final consumption expenditure of households (P31S14)	991.0
			Final consumption expenditure of NPISH (P31S15)	38.8
			Individual consumption expenditure of general government (P31S13)	216.0
NPISH (S15)	Final consumption expenditure of NPISH (P31S15)	38.8		None (0)
General Government (S13)	Final consumption expenditure of general government (P3S13)	341.2		
	Individual consumption expenditure of general government (P31S13)	216.0	Collective consumption expenditure of general government (P32S13)	125.2
	Collective consumption expenditure of general government (P32S13)	125.2		

Source: OECD (2013), "Aggregate National Accounts: Gross domestic product", OECD National Accounts Statistics (database), <http://dx.doi.org/10.1787/data-00001-en>.

StatLink  <http://dx.doi.org/10.1787/888933143836>

Statistics of **actual consumption** have two analytical advantages. First, it is a measure that comes closer to households' welfare (see Chapter 15). To analyse the consumption of healthcare and education, it is not sufficient to use only the *direct expenditure* of households on healthcare or education and omit the expenditure for these purposes made by government for the benefit of households. The use of *actual final consumption by households* makes it possible to circumvent this omission. The second advantage is that international comparisons of households' consumption are meaningful only when they are based on *actual consumption* and not on *consumption expenditures*, as was shown in Chapter 3.

## 6. Gross fixed capital formation

Investment, or to be more precise, gross fixed capital formation (GFCF), is an essential variable for the purpose of economic analysis of demand. The GFCF of “pure” households (in other words, excluding unincorporated enterprises) consists of the purchase of dwellings. This is a good indicator of households’ confidence in the future and can be used to predict movements in consumption expenditure. The GFCF of general government consists mainly of transport infrastructure, investments in military defence systems (including weapons systems), office buildings, schools, hospitals, etc.

However, what economists are mainly interested in is the gross fixed capital formation of the business sector (non-financial and financial corporations and unincorporated enterprises). This is the largest single component of investment and its movements often trigger off the beginning and the end of economic cycles. It also determines the growth in apparent labour productivity.

Gross fixed capital formation is precisely defined in the national accounts as the **net acquisition of produced fixed assets**, i.e. assets intended for use in the production of other goods and services for a period of more than one year: machinery, vehicles, offices, industrial buildings, software, R&D, etc. Some clarification is needed regarding the wording of this definition:

*The term “fixed” was chosen in contrast to “variable” capital, which consists of inventories. These expressions probably date as far back as Karl Marx, one of the distant sources of inspiration for several of the ideas in the national accounts.*

- The word *fixed* is used to indicate that additions to inventories are not included in GFCF. It does not mean that the equipment in question cannot move.

For example, transport equipment (cars, trucks, ships, aircraft) are not “fixed” in the normal meaning of the word, but they are nevertheless included in GFCF. The same is true of livestock (notably milking cows), which are also included in GFCF.

- *Net acquisitions* signifies that GFCF records the *purchases* of fixed assets after deduction of *sales* of fixed assets on the second-hand market. It is therefore not impossible, theoretically, for GFCF to be negative. For example, car rental firms “turn over” their fleets very rapidly. They buy large numbers of cars, making a positive contribution to GFCF, but at the same time they sell them very rapidly, thus making a negative contribution. For a given period, therefore, it is quite possible that the value of their purchases is smaller

than that of their sales. However, such a situation is very unlikely to occur at the macroeconomic level, because one firm's sales of second-hand equipment are often another firm's purchases.

*This example illustrates the fact that GFCF includes used capital goods. For some developing countries, most GFCF in the form of machinery and equipment may consist of second-hand equipment imported from developed countries.*

- The term “produced assets” signifies that only those assets are included in GFCF that are the result of a production process recognised by the national accounts. The national accounts also record transactions in *non-produced* assets such as land, primary forests and oil and mineral reserves. These *non-produced* assets are also included in the balance sheet accounts but are not included in GFCF because they have been produced by nature and not by human activity. Nature is not a producer in the eyes of national accountants.

#### Box 5.2. A special case: financial leasing

Rather than buying a capital good outright, some firms prefer to use financial leasing arrangements, consisting of regular rental payments followed by a purchase at the end of the rental period. For example, many airlines acquire their aircraft through financial leases. There are financial companies specialising in this type of arrangement. These companies are the legal owners of numerous capital goods that they do not actually use but make available for others to operate. Economically speaking, it makes more sense to treat the airlines as owners of these assets even though this is not legally true. National accountants, who systematically give economic aspects precedence over legal aspects, record these assets as being on the books of the non-financial corporations that are the actual users, i.e. the airlines in this example.

### **The GFCF borderline**

Economists, national accountants and company accountants have spent considerable time discussing the definition of fixed assets, because GFCF determines the measurement of their stock of capital (see Chapter 8), which in turn determines growth. In principle, the more capital there is, the greater the growth can be.



There is general agreement concerning most kinds of capital goods. Transport equipment, machinery, offices, warehouses, factories and major civil engineering works are clearly fixed assets. But there is still disagreement regarding certain types of expenditure (software, R&D, trademarks) that are in the “grey area” between GFCF and intermediate consumption. In principle, the difference between these two factors of production is the fact that the former is not entirely consumed in the annual process of production, while the latter is. Where exactly does the borderline run?

Traditionally, only material goods (also called “physical” or “tangible” goods) were considered as fixed assets. These are the items listed at the beginning of the previous paragraph. However, more and more accountants and economists recognise that several expenditures that do not take material form are not entirely consumed in the productive process during the year. Thus, these expenditures should be “capitalised” and are known as “intangible assets” or “intellectual property products”.

Expenditure on mineral exploration is an example. Although accountants in mining firms have long regarded this expenditure as capital (GFCF) rather than current expenditure (intermediate consumption), it is not that long ago that national accountants have agreed to do the same. Their reluctance stemmed from the fact that mineral exploration is entirely an acquisition of knowledge (Is there ore in a given geographic area or not?). This change was undertaken, however, in the SNA 1993 and now all expenditure on mineral exploration is regarded as GFCF, *even when the search is unfruitful*. This last point is not as strange as it might seem, because modern exploration technology more or less guarantees a constant success rate: for a given outlay on mineral prospecting, the companies know from experience what percentage will result in exploitable discoveries.

Some other types of intangible asset are also included in GFCF in the national accounts. These are *software, databases and entertainment, literary and artistic originals*.<sup>4</sup> The purchase or creation of software is expenditure that is not consumed in the period in which it takes place, since a programme is used for a period of several years. These expenditures, whether on an “in-house” software programme (such as a reservation system for an airline) or original software designed to be reproduced (such as Windows, owned by Microsoft), or reproductions (the rights to use Windows over a longer period that firms buy from Microsoft) are all included in GFCF.

A further step forwards has been taken with the introduction of the SNA 2008, according to which also R&D expenditure is recognised as part of GFCF. Clearly, one can see substantial investments in R&D to develop new or improved products, without which future income streams from productive activities may stagnate. The pharmaceutical industry and enterprises

involved in ICT technologies and products are the obvious examples. There was some discussion on the inclusion of freely available knowledge, produced by R&D expenditures of government, but in the end it was decided to also capitalise these expenditures, as they may provide benefits for the society as a whole (similar to transport infrastructure).

The difficulty from the point of view of national accounts is less a question of principle but of practicality, given that they have now diverged from the conventions used in business accounts. In their own accounts, firms treat the purchase or creation of software or R&D only partially as capital expenditure, and the firms' accounts are a common statistical source for the national accounts. Why is this? First, because of the application of the cautionary principle by company accountants: when it is not certain that the result of R&D or a computer programme will have real value on the market, accounting standards recommend considering the expenditure as intermediate consumption and not as investment in fixed assets. For this reason, software-producing firms like Microsoft include no software among the assets on their balance sheets. Second, because firms often have an interest in treating software or R&D as a current expenditure so that it can be deducted immediately from their profits, thus reducing immediately their taxes. In the end, national accountants are left with no satisfactory statistical sources for valuing capital investment in software and are obligated to find substitute sources that are fairly approximate.

### **The GFCF classification**


In the national accounts, data on GFCF are presented in several ways. First, GFCF can be broken down by the nature of the product, using the standard product classification. However, this is not the most useful classification, since it is better suited to analysing output than investment. Second, it can be broken down according to the industry or sector making the investment. For example, in the case of the United Kingdom, GFCF is shown by investing industry in Table 5.5. As can be seen, manufacturing is far from being the largest investing industry; investment by business services, transport and storage firms, as well as by real estate activities were substantially higher in 2012. To be noted is the “dis-investment” of 31 953 millions in the activity “Public administration”. In fact, this figure does not correspond to effective dis-investments of the UK government but to overall negative transfer costs that have been classified by convention in this line by the UK national accountants.

But it is also possible to show a matrix combining two categories: by nature of product and by investing sector. Table 5.6 shows United Kingdom

Table 5.5. **United Kingdom: Gross fixed capital formation (P51) by industry**  
Millions of pound sterling, current prices, 2012

Agriculture, forestry and fishing	3 262
Mining and quarrying	17 556
Manufacturing	18 707
Electricity, gas, steam and air conditioning	16 988
Water supply, sewage, waste management and remediation activities	12 144
Construction	8 547
Wholesale and retail trade, repair of motor vehicles and motor cycles	15 150
Transportation and storage	30 646
Accommodation and food service activities	8 019
Information and communication	18 732
Financial and insurance activities	11 934
Real estate activities	72 223
Professional, scientific and technical activities	6 271
Administrative and support service activities	1 736
Public administration and defence, compulsory and social security	-31 953
Education	2 543
Human health and social work activities	2 476
Arts, entertainment and recreation	7 397
Other service activities	1 874
Total activity	224 252

Source: OECD (2014), "Detailed National Accounts: Capital formation by activity", OECD National Accounts Statistics (database), doi: <http://dx.doi.org/10.1787/data-00008-en>.

StatLink  <http://dx.doi.org/10.1787/888933143845>

GFCF broken down by institutional sector and by type of asset for the year 2012, using a classification suited to assets and distinguishing between:


- Material fixed assets:
  1. Dwellings (excluding land).
  2. Other buildings and structures.
  3. Transport equipment.
  4. Other machinery and equipment.
- Intangible fixed assets, including:<sup>5</sup>
  1. Mineral exploration – spending on the search for oil or mineral deposits.
  2. Software – standard or developed in-house, originals or copies of originals.
  3. Literary and artistic originals, such as films, novels or music. These assets earn royalties.

It is important to note that GFCF in dwellings and other buildings does not include the value of the land on which they are situated. This is because land is not a produced asset. While *non-produced* assets are excluded from

Table 5.6. **United Kingdom: Gross fixed capital formation by type of asset and institutional sector**

	Public non-financial corporations	Private non-financial corporations	Financial corporations	Central government	Local government	Households and NPISH	Total
Dwellings, excluding land	3 017	1 011	0	94	0	47 012	51 135
Other buildings and structures	335	42 795	1 065	9 606	13 984	2 156	69 942
Transport equipment	223	5 054	41	36	420	270	6 043
Other machinery and equipment	999	33 114	3 238	3 862	1 209	2 174	44 595
Intangible fixed assets	1 987	28 188	3 539	575	288	1 843	36 421
Costs associated with the transfer of ownership of non-produced assets	-378	4 365	-884	1 393	8 769	8 769	16 116
Gross fixed capital formation	6 185	114 526	6 999	15 568	18 753	62 221	224 252

Source: Office for National Statistics (2013): United Kingdom National Accounts, The Blue Book, *United Kingdom National Accounts – The Blue Book, 2013 Edition*.

StatLink  <http://dx.doi.org/10.1787/888933143854>

GFCE, the costs associated with the transfer of ownership of *non-produced* assets (transport and installation costs), as well as administrative expenses (lawyers' fees or taxes related to the purchase of these goods) are included in GFCE, as a separate category in the national accounts of the United Kingdom. In the case of *produced* assets, these expenses are included in the prices of the assets themselves.

### **The price system used**

Like all final uses, *Gross Fixed Capital Formation* is valued at acquisition prices. In most cases, this amounts to recording it excluding VAT, since VAT is generally entirely deductible in the case of firms' investments. However, the acquisition prices of capital goods include transport and installation charges, as well as all specific taxes associated with the purchase of these goods. For example, lawyers' fees are included in the value of the purchase of a dwelling (but not the value of the land on which it is built).

## **7. Changes in inventories**

The next item appearing in the final uses table is the *change in inventories*, i.e. the difference between additions to and withdrawals from inventories. In common economic parlance, one might use the terms "stock building" or "changes in stocks" for this entry, but the official name in the national accounts is "changes in inventories". In principle, only the additions to inventories should be part of final uses, and withdrawals from inventories should be classified as resources. However, in order to have accounts that are

more compact, it was decided to count withdrawals from inventories as negative contributions to inventories and to combine the two flows.

First, inventories consist of the stocks of inputs intended to be used later as intermediate consumption in a production process (in companies' accounts these are known as "material inventories"). Second, they include stocks of finished goods that have not yet been sold. Third, they include stocks of merchandise purchased for resale, these being found mainly in wholesale and retail distribution. Fourth, they also comprise the strategic stocks (food, oil, stocks for intervention on agricultural markets) managed by government authorities. Lastly, they can also be "work in progress", which consists of goods being processed but which cannot yet be delivered to the user at the end of the accounting period. The value of these goods is therefore included in inventories. An important component of work in progress are goods such as ships, oil-drilling platforms and buildings that may take several months or even years to complete.<sup>6</sup>

One might think it would be an easy matter to calculate changes in inventories by taking the value of inventories at the end of the accounting period and subtracting the value at the beginning, this information being available in companies' accounts. In practice, however, evaluating changes in inventories on the basis of companies' accounting data is difficult because inventories generate holding gains or losses as the market prices of the goods held in stock rise or fall. These gains or losses are not the result of a production process and thus cannot contribute to GDP, which is fundamentally an indicator of production.

*The fact that these holding gains and losses are eliminated from GDP does not mean that they are ignored in the national accounts. They may have an important impact on incomes when the prices of goods rise or fall. Expectations of holding gains or losses and their realization can have a substantial impact on the behaviour of producers and consumers. However, national accountants record them, not as elements of GDP, but instead in a "re-evaluation account" (see Chapter 8).*

Let us suppose that prices are rising and that the change in inventories is calculated by taking the value of inventories at the end of the period minus the value at the beginning. The value obtained in this way will include a capital gain ("stock appreciation") that has to be eliminated in order to obtain the correct valuation of the changes in inventories for the purpose of the national accounts.

*This paragraph illustrates the case of an increase in the price of inventories, but there are of course quite common cases of decreases in the price of inventories, which should be treated symmetrically. In this case, it would be more accurate to refer to “holding losses on inventories” and “stock depreciation”.*

If the inventories at the end of the period consisted only of products that were already in inventory at the beginning of the period, in other words, if no new article had been added to the inventories during the period and no article withdrawn, it would be easy to eliminate the holding gain, since it would be equal to the inflation rate times the opening value of the inventory. In reality, goods enter and are withdrawn from inventories at different moments in the accounting period, and it is quite possible that at the end of the period none of the original articles are still present.

When prices change and when products are continually being put into and withdrawn from inventory, there are three ways of evaluating the changes in inventories in the national accounts. The first is theoretically correct but impossible to apply in practice. The second is widely used, although it is in fact a very imperfect approximation. The third is easy, but very indirect and hence should be used with caution.

- The theoretically correct method consists of evaluating the goods coming into inventories at the market prices prevalent at the time of entry, and evaluating the withdrawals from inventories at the market prices ruling at the time of withdrawal. The algebraic sum of these entry and withdrawal values then gives the correct measure of the changes in inventories for the purposes of the national accounts. Unfortunately, this information is simply not available in practice.
- As a result, this theoretical method is replaced by an approximate method consisting of evaluating the value of the changes in inventories by applying to the quantities held at the beginning and at the end of the period either the average prices for the period or the mid-period prices (see Exercise 3).
- The third method is very indirect, consisting of calculating all the other items in supply-use accounts (see Chapter 10) and arriving at the changes in inventories as a residual of this accounting equation. This method is theoretically exact, but it leads to the incorporation into the “changes in inventories” item of all the errors contained in the other items.

### ***The economic analysis of changes in inventories***

Changes in inventories constitute a highly important indicator of possible changes in the growth rate. Nevertheless, the overall change in

inventories remains difficult to interpret, because it includes two different types of goods: inputs and finished products. A positive change in inventories of inputs is a good sign since it signifies that producers are expecting an increase in future production. Conversely, an increase in inventories of finished products may indicate that the producers are having difficulty in selling their output and may therefore be about to cut back production and lay off staff. The interpretation of these figures can usefully be complemented by other information, such as industrial business surveys.

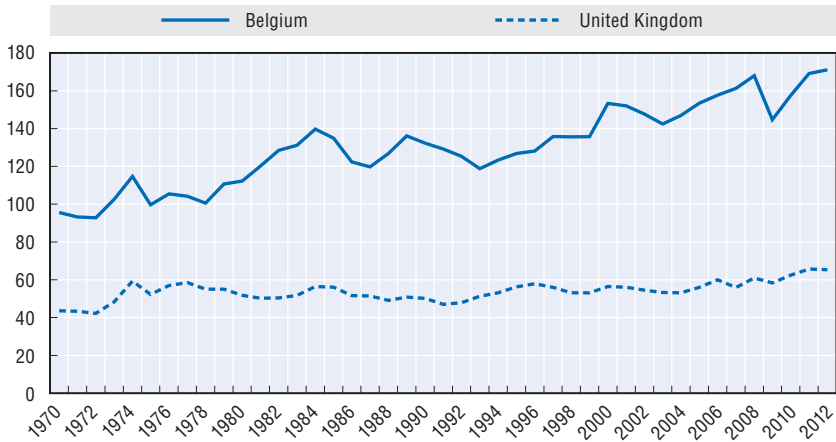
## 8. Net acquisitions of valuables

This item is very small (see Table 5.1) and is therefore no more than a curiosity for the macroeconomist. Valuables are goods that are bought not to be consumed or used in production, but in the expectation that they will increase (or at least retain) their value over time. Examples include gemstones, precious metals and paintings by old masters. In general, transactions in these objects take place between households and are therefore consolidated (in other words, cancel out) in the national accounts, except in cases where the goods cross frontiers. In certain countries – notably the United Kingdom and Hong Kong – commercial banks invest in precious metals and these are also classified as valuables. Note, though, that gold stocks held by central banks are classified as “monetary gold” and are shown as financial assets and not as valuables.


## 9. Exports and imports of goods and services

Exports and imports are key aggregates in the analysis of a country's economic situation. In today's extremely globalized world, whenever the United States (the world's largest national economy, accounting for more than 20% of world GDP) slows down or accelerates, all other economies are affected (see Chapter 16). The same relationship applies to all other countries because they are all exchanging an increasing amount of goods and services. Exchange rates play an important role here. If the pound sterling or the euro appreciates versus the dollar, exports from the United Kingdom or the euro area to the dollar countries suffer as a result. (Note however, that the price of their oil imports will decline, since oil is priced in dollars.) As can be seen in Figure 5.1, the United Kingdom's “degree of openness” is 65%, but this is still low compared with that of a smaller European country such as Belgium, which is even more open to exports and imports. The “degree of openness” is usually calculated as the following ratio:  $[(Exports + Imports)/GDP] \times 100$ . It measures the extent to which a country is dependent on trade flows with its trading partners. The evolution in the degree of openness in the case of Belgium is a clear reflection of the country's growing openness to foreign trade, especially after 1993, when the single European Market was put in place.

Figure 5.1. **Belgium and United Kingdom: Degree of openness**  
Imports plus exports as percentage of GDP



Source: OECD (2013), "Aggregate National Accounts: Gross domestic product", OECD National Accounts Statistics (database), <http://dx.doi.org/10.1787/data-00001-en>.

StatLink  <http://dx.doi.org/10.1787/888933143796>

*In the national accounts, "foreign trade" means foreign trade in goods and services. However, since figures for foreign trade in goods are available long before figures for foreign trade in services, a tradition – disputable, admittedly – has been built up of sometimes applying the term "foreign trade" solely to trade in goods. Caution is therefore needed. Customs statistics generally do not cover services and therefore foreign trade on a customs basis may only cover goods; external trade figures in the balance of payments or the national accounts include both goods and services.*

All these remarks point to the analytical importance of exports and imports for users of the national accounts (see Chapter 16 for more). These flows are traditionally broken down into four parts: foreign trade in goods; foreign trade in services; direct purchases by non-residents in the economic territory (considered as exports of services); and direct purchases by residents in the rest of the world (considered as imports of services). These two latter items in fact cover, if we continue to use United Kingdom as an illustration, spending by foreign tourists in the UK as well as by UK tourists in foreign countries, as discussed in Section 2 of this chapter. We shall not return to the calculation of exports/imports, but we do need to define three important concepts: *economic territory*, *residence* and *the rest of the world*. These concepts are necessary to a precise definition of exports and imports.



A country's **economic territory** is the geographic area corresponding to the nation state. It includes its air space, its territorial waters, its territorial enclaves in the rest of the world (UK embassies in foreign countries, to take our current example) and free zones. Conversely, it excludes foreign embassies located in the UK. The definition of economic territory is important because only output taking place within the economic territory is recorded in the national accounts. A foreign subsidiary of a UK multinational is not productive in the sense used to draw up the UK national accounts, and its output is included in the national accounts of the country in which the subsidiary is located.

There have been changes in the economic territory covered in certain national accounts. For example, it is not that long ago (in 1999) that the French national accounts have included the overseas departments in French economic territory. Previously, the economic territory in the French national accounts had been limited to metropolitan France. Because these departments were not included in the territory, the national accounts did not include the output of firms situated in these departments, and therefore recorded exports and imports to and from these overseas departments. Now that these departments are included, the French national accounts include the output of firms located in these departments; therefore, they do not record transactions between these departments and metropolitan France as exports and imports. This type of mismatch between the official definition of a country and its economic definition in the national accounts is not so infrequent; for example, the US national accounts do not include Puerto Rico. Generally, however, the quantitative impact on the accounts is negligible.

The concept of residence is associated with that of economic territory in the national accounts. A unit is said to be resident in a country when its "centre of economic interest" is situated in that country's economic territory. This is usually taken to mean that the unit has carried out economic activity there for more than one year. Only resident units are included in the institutional sectors of the national accounts. Most firms, including unincorporated enterprises that have an activity in the territory, are regarded as resident. For households, the test is where they spend their income. Only those households that live for more than one year and make most of their consumption expenditures on the territory are regarded as resident. Households whose members work in the country but live and make most of their consumption expenditures abroad are excluded. This means, for example, that seasonal workers coming from another country to work for a few months a year in the United Kingdom are not regarded as resident, and their disposable income is not included in household disposable income in the UK national accounts. Conversely, certain British workers living and consuming in the United Kingdom while working in Ireland or another

country are included as resident households. Foreign tourists who consume in the United Kingdom only for a short period (generally a few weeks) are not counted as resident.

The rest of the world is composed of all non-resident units carrying out transactions with the country under review, here the United Kingdom. The rest of the world therefore comprises all non-resident units that sell their products to UK resident units (these sales being imports, seen from the United Kingdom) and all non-resident units that buy products manufactured in the United Kingdom (these purchases being exports, seen from the United Kingdom). Exports and imports of goods and services constitute the principal transactions with the rest of the world, but there are many other categories: payment of wages and salaries to non-resident households; transfers by immigrant workers resident in the United Kingdom of part of their income to their families remaining abroad; subsidies paid to the United Kingdom by Europe; VAT paid by the United Kingdom to Europe, etc. The totality of these transactions appears in the rest of the world account included in the “integrated account” (see Chapter 10). The balance of payments statistics are the main statistical source for the rest of the world account.

It should be noted that in the most recently adopted standards for the system of national accounts (SNA 2008), exports and imports are purely recorded on the basis of change in (economic) ownership between residents and non-residents. In this respect, they deviate from the so-called “merchandise trade statistics” which typically register the exports and imports of goods on the basis of the goods crossing the national borders. The difference between the two ways of recording can be quite substantial, especially in a world with growing global production arrangements. To give two examples, “merchandising” concerns the purchase by a wholesale trader in say country A of goods in country B which are subsequently resold in country C. In the national accounts, these goods will be treated as imports (actually negative exports) and exports of country A, although they most of the time will not have crossed the borders of country A. Another example relates to “goods for processing”, in which an enterprise in country A may decide to send semi-manufactured goods to an enterprise in country B for further processing (e.g. assemblage). Subsequently, the finished products are sent back to the owner in country A. In this case, one can observe flows of goods crossing borders, without any change in ownership. In the national accounts, the fee paid by the principal to the processing enterprise will be recorded as an import of services, and no imports and exports of goods will be registered.

Although flows of services are increasing, merchandise trade data continue to constitute the core of trade relations between a country and the rest of the world. Statistics of exports and imports of goods were for a long time the best statistics available for compiling national accounts because

custom authorities needed them for the collection of duties and the monitoring of trade in goods. The quality of these statistics has deteriorated in Europe as a result of the introduction of the single market, because there is no longer any legal control by custom authorities over merchandise moving within the European Union. However, the statistical services or the custom authorities of individual European countries have introduced surveys of the major exporters and importers in order to be able to continue to monitor these movements. In the absence of these surveys, it would no longer be possible to compile the national accounts.

Customs statistics not only show the amounts of exports and imports but also give information on the quantities traded – tonnage, number of units, etc. – for a highly detailed list of products (customs classifications typically contain several thousand items). This information is used by national accountants to calculate export and import prices by dividing the values by quantities. These price indices are known as “unit value indices”. This procedure is sometimes criticised because, despite being based on quite detailed statistics, it mixes together prices of products of different qualities. In practice, the result is that unit value indices can vary considerably from one period to another, so that the national accountants must apply a smoothing process to make them intelligible. Some countries have developed special price surveys covering exporters and importers to replace these imperfect “unit value indices”.

In the national accounts, detailed figures for imports of goods are valued at “cif” prices, meaning that the prices of the goods include “cost, insurance, freight” when they enter the frontier of the United Kingdom. Exports, for their part, are valued at “fob” prices, a maritime term that stands for “free on board”, signifying that the prices of the goods include transport and insurance costs when they arrive at the exporting country’s frontier but not the transport and insurance costs further to the importing country’s frontier. This is why one frequently sees in the national accounts tables that specify “imports cif” or “exports fob”. To complicate things further, total imports in the national accounts are calculated at fob prices, in other words excluding the cost of transport to the frontier. The conversion to fob prices facilitates comparison with the balance of payments and results in an item called “cif-fob adjustment”, which is explained in Chapter 10.

Differences in the movements of import and export prices are used to calculate **terms of trade indices**. The terms of trade are defined as the ratio between the index of export prices and the index of import prices. Exercise 4 gives an example of how these indices are calculated.

The amounts involved in *foreign trade in services* are much smaller than for trade in goods. However, these flows are rising sharply as the result of the

increasing outsourcing of service activities. Until recently, exports and imports of services mainly consisted of transport services (sea, air) and insurance (reinsurance is frequently outsourced). It should also be remembered that, conventionally, expenditure by non-resident households on the domestic economic territory is classified as trade in “tourist services”. However, there is now increasing overseas outsourcing of services to businesses and individuals (processing of goods, “call centres”, trade in software, data processing). “Medical tourism” is also expanding, with people travelling abroad to receive treatment that is illegal or too expensive in their home countries.

The statistical sources for trade in services are usually of lesser quality because this trade is difficult to identify. A very long time ago, the principal source was based on declarations made by banks to their central banks, which monitored all transactions made with the rest of the world in order to keep a check on the country’s foreign-currency reserves situation. However, these declarations have been discarded in many countries and it is now necessary to carry out surveys of the principal operators dealing with the rest of the world. Monitoring external trade in services in an increasingly globalized world is a challenge that national accountants will have to face in coming decades, which is dwelt upon in more detail in Chapter 16.

## Notes

1. Here, we disregard the part of interest that is recorded as financial intermediation services indirectly measured (FISIM, see Chapter 4), which is treated as either intermediate consumption or as final consumption expenditure.
2. Here, it should be noted that major renovations to a dwelling are also considered as GFCF.
3. The portion reimbursed by mutual institutions or private insurance companies is also included in households' consumption expenditure.
4. *Entertainment originals* take material form as hard-copy novels, films, CD-ROMs or tapes. But these forms have economic value only when protected by copyright. It is this protection that gives them their value and explains their classification as intangible assets. The evaluation of these assets by the national accountants can be quite problematical in practice.
5. Please note that these data are still according to SNA 1993, and as such do not yet include R&D-investments.
6. The only exceptions to recording incomplete work as work-in-progress are for partially completed projects for which the ultimate owner is deemed to have taken responsibility, either because the production is for own final use or as evidenced by the existence of a contract of sale or purchase.

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## Key points

- Economists use the word “demand” to cover what are known as final uses in the national accounts: consumption expenditure by households and general government; investment (GFCF); changes in inventories; and net exports (exports minus imports).
- In the case of producing units, uses may be “final” or “intermediate”. Final refers to goods and services that are not entirely consumed during the period in a production process – i.e. GFCF and changes in inventories. Intermediate refers to goods and services that are entirely consumed in a production process during the period.
- By convention, all goods and services bought by households other than those directly related to dwellings are considered as final consumption, even if they are durable goods and are not entirely consumed during the period. Purchases of dwellings (including major renovations to the dwellings) by households are GFCF.
- By convention, general government is considered to consume the services it produces. Final consumption expenditure by general government is equal to the compensation of employees, *plus* intermediate consumption, *plus* consumption of fixed capital, *plus* expenditure on market goods and services by general government on the behalf of households, *plus* other taxes on productions paid, *minus* partial payments, *minus* own account production of gross fixed capital formation.
- The price applied in the case of final uses is the market (or acquisition) price, including trade and transport margins and also non-deductible VAT and taxes on products.
- Actual individual consumption is equal to households’ consumption expenditure *plus* the individual portion of the consumption expenditures of general government and NPISHs.
- Gross fixed capital formation, often known more briefly as investment, is defined as net purchases of produced fixed assets.
- Changes in inventories are equal to additions to inventories *minus* withdrawals from inventories. Evaluating these variations on the basis of the inventories at the beginning and at the end of firms’ accounting periods

is problematical because of the existence of holding gains or losses on the inventories. These have to be excluded from the change in inventories.

- A distinction is often made between the exports and imports of goods and the exports and imports of services. Detailed imports are valued “cif” and detailed exports are valued “fob”. Both, total imports and detailed exports, are valued “fob”.

## Going further

### How do monetary and fiscal policies operate?

Monetary policy consists of the central bank influencing interest rates, either directly or by affecting the money supply. Fiscal policy consists of the government modifying tax rates and increasing or reducing public expenditure.

Concerning monetary policy, a rise in interest rates will tend to reduce consumption expenditure by households because it increases the cost of consumer borrowing and makes saving more attractive. It will also tend to reduce gross fixed capital formation, first because the reduction in household spending reduces firms' incentive to invest in new plant and equipment, and second because it increases their borrowing costs. For equivalent reasons, a decline in interest rates will stimulate household spending and corporate investment.

In the past, many governments tried to encourage exports and reduce imports by means of a different instrument of monetary policy, namely manipulation of exchange rates. More recently, however, most OECD governments have tried to hold their exchange rates stable versus their trading partners, with the Euro Area countries going so far as to fix exchange rates with each other.

Fiscal policy operates through two channels: increasing or reducing revenue and increasing or reducing expenditure. Cutting income tax rates has an immediate impact on household income and indirectly on spending. The increased spending has a secondary impact on capital formation (with firms investing more to meet the higher demand). Cutting taxes on profits encourages producers to increase output either by more investment or by higher utilisation of existing capacity.

General government makes both current expenditures (mainly civil service salaries) and expenditures on capital formation (roads, railways, urban development, etc.). Raising these two types of expenditure automatically increases GDP and also produces secondary effects inasmuch as a higher government wage bill will increase household consumption expenditure, and the demand for construction materials stimulates activity in the industries supplying them.



The Euro Area countries now have much less freedom in regard to monetary and fiscal policy. They no longer have any possibility of modifying their exchange rates and have very little control over the exchange rate of the euro. Interest rates are set uniquely by the European Central Bank. While fiscal policy is somewhat less restricted, the European Stability and Growth Pact limits the possibilities in this respect by setting a ceiling of 3% of GDP on the difference between revenue and expenditure, although during the economic and financial crisis which started in 2008, these goals could not be realised. Governments can reduce taxes but are then obliged to make corresponding cuts in expenditure, hence cancelling out the global impact on the economy.

### **The limitations of the national accounts: Consumption of television or of Internet services financed by advertising**

In most countries, consumption of television services in terms of viewing hours is large – especially in households with young children. However, this is very poorly reflected in national accounts statistics on household consumption. These statistics only show the payments made by households for access to cable TV networks, and in some countries, charges levied by government to finance public broadcasting. “Consumption” of television by households in the national accounts does not reflect television services that are financed by advertising. It is true that the cost of advertising is included in the price of the goods or services advertised and thus will “appear” as part of final consumption in the national accounts but not as consumption of television, and especially not in volume terms. In the national accounts, commercial television stations are regarded solely as sellers of advertising media (some cynics would maintain that this is fairly close to reality...).

The picture is complicated as regards the fees levied by some governments to finance public television services. France regards these fees as a payment for services, and so they are included in households’ consumption expenditure. The UK, on the other hand, regards them as a direct tax and so they are excluded from households’ consumption expenditure. In countries, such as France, where governments levy charges for public television, an interesting paradox would occur if the government were to abolish the charge and either replace it by budgetary financing or privatise the public channels. Household consumption of television, and hence GDP, would be reduced despite the fact that the only thing that had changed was the source of finance. To solve the problem of this lack of recording of free television services, it would be necessary to impute a value to the “free” services and include this in household final consumption expenditure. However, national accountants have not gone as far as this, despite the fact that practical solutions have been proposed (see Box 28 of the monumental Vanoli, 2005). The bigger and bigger issue for national accounts is that this type of free

service to households, but essentially financed by advertising, is formidably expanding, notably in the form of Internet services (Google, Facebook, Wikipedia, etc...)! Some economists have estimated that there are therefore billions excluded from the measure of final consumption, and hence GDP.

### Data sources: How are the figures obtained?

As in the other chapters, the French annual accounts are used as an example of the kinds of sources and methods used to estimate final uses of the GDP. We will start with the easiest case and then go on to the more difficult areas.

The statistics for foreign trade (from the customs service) and for the balance of payments (from the Banque de France, the French Central Bank) provide information not only on exports and imports of goods but also on exports and imports of services. Through their traditional function of controlling all movements of goods at the frontier, the French Customs Service had an excellent information system that was ideal for the national accounts. However, as noted earlier, the introduction of the single European market in 1993 abolished the obligation to declare trade flows within Europe.

In its place a quasi-exhaustive survey is carried out by the customs services of exporting and importing countries. At the European level, a significant “asymmetry” has opened up in the case of trade within the region, in that total recorded exports are now roughly 2.5% higher than total recorded imports. It has been deduced from this that certain countries must be overstating their exports and/or understating their imports. Some observers have evoked the possibility of export fraud (inflation of export declarations, since exports are not subject to VAT). While the result has been to cast doubt on this source, national accountants continue to rely on it, as it is all that is available, and despite its shortcomings it remains one of the best sources for the national accounts.

Until the first decade of the 21<sup>st</sup> century, the balance of payments data published by the Banque de France included all transactions with the rest of the world made by the commercial banks and the largest industrial firms. The compulsory collection of this data made it possible to have quasi-exhaustive coverage of all monetary transactions with the rest of the world. By then sorting these transactions by type, it was possible to provide statistics on purchases and sales of services, particularly international transport and insurance. Nowadays, in many EU-countries, this system based on cash settlements has been replaced by a direct survey among residents having transactions with the rest of the world.

The Banque de France also calculates the tourist balance, i.e., spending by French tourists abroad and by foreign tourists in France. However, also in this

case, the information system has been somewhat destabilised by the ending of the compulsory declaration by banks of intra-European flows and by the introduction of the euro, which eliminated one of the sources used for the evaluation of the tourist balance – namely statistics on purchases of foreign currencies for francs (the former French national currency) and vice versa. Like the Customs Service, the Banque de France has introduced surveys making it possible to ensure the continuity of the data on which national accountants continue to rely, although they also use other sources where they are available.

This shows that it will be increasingly difficult to compile national accounts in a Europe that has become more and more unified and multinational. One day perhaps, the national accounts of each European country will become the regional accounts of the national accounts of a United Europe. But this day is a long way off. In the meantime, the present national accounts will continue to be published, most probably at the cost of a gradual deterioration in their quality, particularly in regard to transactions with the rest of the world.

Consumption expenditure by general government is measured on the basis of government accounts. These accounts are very complete and of high quality (see Chapter 9). They provide a very good picture of wages and salaries, intermediate consumption and transfers in kind. The value of the consumption of fixed capital of general government, which is an imputed component of government final consumption expenditure, is made using estimates of the stock of government capital to which depreciation rules are applied taking into account the expected lifetimes of these assets. It is obviously much more of an approximation.

The principal source for gross fixed capital formation is additions to fixed capital, minus disposals, reported by firms in their tax declarations. As we saw earlier, Insee (the French statistical office) has access to nearly all tax declarations by firms and these cover the variables required. The source is therefore a good one. However, it has its limitations in the case of intellectual property products such as software and R&D, for which firms do not follow the requirements of the national accounts.

The same source is used for changes in inventories. However, the problem of “stock appreciation” makes its use somewhat problematical.

In the case of household consumption expenditure, the source is rather indirect. For most goods the starting point is retail sales, from which are deducted, often using somewhat bold assumptions, the portion of sales that go to firms. These will be either intermediate consumption or GFCF. For other products, use is made of various corporate and government sources, such as car registrations, tax data on sales of tobacco and alcoholic beverages, sales by

the EDF-GDF partially state-owned companies for gas and electricity, and sales figures for the transport companies. Relatively little use is made of Insee's survey of households' budget. As other national statistical offices, Insee has been obliged to reduce the frequency and the sample size of this survey of household income and expenditure, which is extremely costly and not very well received by the respondent households.

These various sources of information are compared with each other in the supply and use tables which reconcile the total supply of goods and services with their final and intermediate uses. This estimation mechanism is described in Chapter 10.

## Exercises for Chapter 5

### Exercise 1. Final uses in volume (this exercise uses the knowledge gained in Chapter 2)

The following table is the French version in billion euros at current prices, of Table 5.1 in the present Chapter. The second table shows the corresponding price indices. For the analysis of growth, why must preference be given to accounts in volume rather than at current prices?

On the basis of these two tables, calculate the table of final uses in volume at 2005 prices. The sum of final uses in volume in 2005 and 2006 is equal to GDP in volume for 2005 and 2006, but why is this not precisely the case for 2007?

In the remainder of the exercise, the assumption will be made that volumes are additive. Using this assumption, calculate domestic demand and external demand. Calculate the contribution to GDP growth made by final domestic demand and final external demand in 2006 and then in 2007.

**Final uses, in billions of euros, at current prices**

	2005	2006	2007
P31S14 Final consumption expenditure of households	946.12	986.59	1 030.45
P31S15 Final consumption expenditure of non-profit institutions serving households	31.57	33.44	35.48
P3S13 Final consumption expenditure of general government	408.15	421.74	435.65
P51 Gross fixed capital formation	332.32	360.38	394.62
P52 Changes in inventories	9.81	13.73	18.74
P53 Acquisitions less disposals of valuables	0.97	1.03	1.05
P6 Exports of goods and services	452.87	485.91	506.72
P7 Imports of goods and services	463.75	504.71	535.94
B1_GE Gross domestic product (expenditure approach)	1 718.05	1 798.12	1 886.79

**Prices indices of final uses (2005 = 100)**

	2005	2006	2007
P31S14 Final consumption expenditure of households	100.00	102.02	104.13
P31S15 Final consumption expenditure of non-profit institutions serving households	100.00	103.69	105.63
P3S13 Final consumption expenditure of general government	100.00	101.92	103.72
P51 Gross fixed capital formation	100.00	104.32	107.43
P52 Changes in inventories	100.00	116.56	119.47
P53 Acquisitions less disposals of valuables	100.00	114.83	116.54
P6 Exports of goods and services	100.00	102.01	103.95
P7 Imports of goods and services	100.00	103.60	104.27
B1_GE Gross domestic product (expenditure approach)	100.00	102.14	104.78

**Exercise 2. True, false or choose from the list**

- Which of the following are included in household consumption expenditures: fees levied by government for the public television service; the purchase of apartments; interest paid on loans; parking fines; driving licence fees?
- A farmer produces 300 litres of wine each year. He sells 160 litres to his neighbours and stocks 140 litres for his own consumption. Which figure should be included in household consumption: 160 litres or 300 litres?
- Total consumption expenditure by households includes expenditure by foreign tourists in France. True or false?
- Actual household consumption is equal to household consumption expenditure plus that of general government. True or false?
- Actual consumption of general government is equal to its collective consumption expenditure. True or false?
- Which of the following items of expenditure are “collective” and which are “individual”: primary education; medical research; reimbursement of medicines; police and fire brigades; operating costs of pension funds; cost of free concerts in municipal parks; expenses of troops serving with United Nations forces.
- Fixed capital formation excludes transport equipment and live cattle. True or false?

**Exercise 3. Valuation of changes in inventories excluding stock appreciation**

The first row of the following table shows the price of an item held in inventories in each of six sub-periods. The following rows show the quantities. Fill in the shaded cells/rows, remembering that the *correct method* consists of

valuing each addition to, and withdrawal from, inventories at the price of the sub-period concerned. The *approximate method* consists of using the average price for the totality of the sub-periods and applying this to the changes in inventories expressed in quantities. The *wrong method* consists of calculating the difference between the values at the end and beginning of the whole period. Comment on the differences. Calculate the “stock appreciation”.

Sub-period	1	2	3	4	5	6
Price	4	5	5	7	6	9
<b>Quantities:</b>						
Inventory at the beginning of the sub-period	10					
Additions to inventories during the sub-period (+)	3			1	6	3
Withdrawals from inventories during the sub-period (-)		2	7		4	
Inventory at the end of the sub-period						
Value of additions (prices x quantities)						
Value of withdrawals (prices x quantities)						
Average price over the totality of the sub-periods:						
<b>Wrong method</b>						
a) Value of inventory at the beginning of the period in current prices:						
b) Value of inventory at the end of the period in current prices:						
c) Difference (b) – (a), including stock appreciation:						
<b>Correct method</b>						
a) Total value of additions:						
b) Total value of withdrawals:						
c) Correct measurement of the changes in inventories (excluding stock appreciation):						
<b>Approximate method</b>						
a) Quantity at the beginning of the period:						
b) Quantity at the end of the period:						
c) Approximate measure of the change in inventories (excluding stock appreciation)						

#### Exercise 4. The terms of trade

Using the following tables (showing French imports and exports of goods and services at current prices and in volume), you are asked to:

- Derive the export price index for the period 2005-12.
- Derive the import price index for the period 2005-12.
- From these, deduce the terms of trade for the period.

**Imports and exports at current prices**

billions of euro

	2005	2006	2007	2008	2009	2010	2011	2012
Imports	463.8	504.7	535.9	561.7	475.1	538.3	597.6	602.6
Exports	452.9	485.9	506.7	521.0	440.7	494.5	538.3	557.6

**Imports and exports in volume**

billions of euro

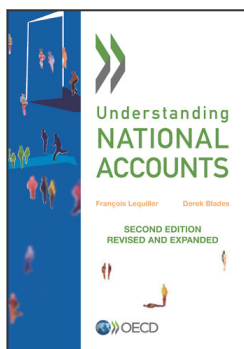
	2005	2006	2007	2008	2009	2010	2011	2012
Imports	463.8	487.2	514.0	518.7	468.7	510.5	536.7	531.0
Exports	452.9	476.3	487.5	485.9	427.1	467.6	492.8	504.6

Source: Insee Databases (2013): Statistical indices and series: Macroeconomic Database: National Accounts [www.bdm.insee.fr/bdm2/index?request\\_locale=en](http://www.bdm.insee.fr/bdm2/index?request_locale=en).

**The solutions to these exercises are available at:**

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