

## 12. Investment

Investment, or to be more precise, gross fixed capital formation is an essential variable in economic analyses, such as analyses of demand and productivity.

### Definition

Gross fixed capital formation (GFCF) is defined in the national accounts as acquisition less disposals of produced fixed assets, i.e. assets intended for use in the production of other goods and services for a period of more than a year.

Acquisition includes both purchases of assets (new or second-hand) and the construction of assets by producers for their own use.

The term *produced assets* signifies that only those assets produced as a result of a production process recognised in the national accounts are included. The national accounts also record transactions in non-produced assets such as land, oil and mineral reserves for example; which are recorded as non-produced assets in the balance sheet accounts and not as GFCF.

Acquisition prices of capital goods include transport and installation charges, as well as all specific taxes associated with purchase.

GFCF can be broken down into particular asset groups. Table 12.2 contains 6 groups: Dwellings (excluding land); Other buildings and structures (roads, bridges, airfields, dams, etc.); Transport equipment (ships, railway, aircraft, etc.); Other machinery and equipment (office machinery and hardware, etc.); Cultivated assets (managed forests, livestock raised for milk production, etc.) and intellectual property type fixed assets (mineral exploration, software and databases, and literary and artistic originals, etc.).

An additional important grouping of Information and Communication Technology (ICT) products is shown in Figure 12.2. ICT has three components: information technology equipment (computers and related hardware), communications equipment and software. It's important to note that ICT embodied in non ICT assets is not included in this concept.

GFCF can also be broken down into institutional sectors. For government this typically means investment in transport infrastructure and public buildings such as schools and hospitals.

For households, GFCF generally equates to dwellings, although investments made by unincorporated enterprises in other products do occur.

### Comparability

When the System of National Accounts was revised in 1993, the scope of GFCF was widened to include mineral exploration, computer software and entertainment, literary and artistic originals. Comparability

of these items has improved in recent years but the scope with which the various items are covered is smaller in some countries, particularly in the case of own-account production of software.

In making comparisons of GFCF by institutional sector, attention should be given to the mechanisms commonly used to “acquire” assets. For example a unit may prefer to rent an asset, which will not count as GFCF of the lessee. If however the agreement between the lessee and the lessor resembles a finance lease, the SNA treats the lessee as having acquired the asset. On a larger scale many governments are increasingly turning to private finance initiatives to create public infrastructure. Determining who the owner of these schemes is in an SNA sense is non-trivial and may cause problems for temporal and international comparability.

The scope of assets has been widened in the 2008 SNA to include Research and Experimental Development and military weapons systems (see Annex B for further information) but the figures contained here do not reflect these additions (except for Australia which follows the 2008 System of National Accounts).

Note on Table 12.2: “Dwellings” includes “Other buildings and structures” for Chile, Norway, Portugal and Turkey. Cultivated assets are not capitalised for Canada and USA. “Cultivated assets” is included in “Other machinery and equipment” for United Kingdom. “Transport equipment” is included in “Other machinery and equipment” for Chile and Turkey.

### Source

- OECD (2010), *National Accounts of OECD Countries 2010, Volume I, Main Aggregates*, OECD Publishing, [http://dx.doi.org/10.1787/na\\_vol\\_1-2010-en](http://dx.doi.org/10.1787/na_vol_1-2010-en).

### Online databases

- OECD (2010), “Aggregate National Accounts: Gross domestic product”, *OECD National Accounts Statistics* (database), <http://dx.doi.org/10.1787/data-00001-en>.
- OECD (2010), “Detailed National Accounts: Simplified non-financial accounts”, *OECD National Accounts Statistics* (database), <http://dx.doi.org/10.1787/data-00010-en>.


### Further reading

- OECD (2009), *Handbook on Deriving Capital Measures of Intellectual Property Products*, OECD Publishing, Paris.
- Lequiller, F., N. Ahmad, S. Varjonen, W. Cave and K.H. Ahn (2003), *Report of the OECD Task Force on Software Measurement in the National Accounts*, OECD Publishing, <http://dx.doi.org/10.1787/334811030426>.
- Ahmad, N. (2003), *Measuring Investment in Software*, OECD Publishing, <http://dx.doi.org/10.1787/335303788330>.

Table 12.1. **Gross fixed capital formation, volume**

Annual growth rates in percentage

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Australia	7.1	9.1	4.5	7.8	-8.4	9.5	14.0	8.0	6.5	8.8	5.4	10.2	3.9	-1.1 e
Austria	4.7	-0.0	3.6	1.0	5.5	-1.7	-4.4	4.7	0.7	1.2	1.8	3.9	4.1	-8.8
Belgium	1.6	5.9	3.3	2.6	5.1	1.0	-4.5	0.1	8.0	7.0	2.0	6.5	2.9	-5.3
Canada	4.4	15.2	2.4	7.3	4.7	4.0	1.6	6.2	7.8	9.3	7.1	3.5	1.4	-11.7
Chile	8.9	10.5	1.9	-18.2	8.9	4.3	1.5	5.7	10.0	23.9	2.3	11.2	18.6	-15.3
Czech Republic	9.9	-5.7	-0.9	-3.3	5.1	6.6	5.1	0.4	3.9	1.8	6.0	10.8	-1.5	-7.9
Denmark	5.8	10.3	8.1	-0.1	7.6	-1.4	0.1	-0.2	3.9	4.7	14.3	2.8	-4.8	-13.0
Finland	9.3	10.5	11.1	3.3	6.4	2.9	-3.7	3.0	4.9	3.6	1.9	10.7	-0.4	-14.7
France	0.7	0.4	7.1	8.3	7.2	2.4	-1.7	2.2	3.6	4.4	4.1	6.0	0.5	-7.1
Germany	-0.5	1.0	4.0	4.7	3.0	-3.6	-6.1	-0.3	-0.3	0.9	8.0	4.7	2.5	-10.1
Greece	8.4 e	6.8 e	10.6 e	11.0 e	8.0 e	4.8	9.5	11.8	0.4	-6.3	10.6	5.4	-7.6	-11.4
Hungary	2.0	4.3	9.7	4.9	6.8	4.7	10.3	2.6	7.6	6.5	-3.5	3.7	3.2	-9.2
Iceland	25.0	9.3	34.4	-4.1	11.8	-4.3	-14.0	11.1	28.1	35.7	22.4	-11.1	-20.9	-50.9
Ireland	16.5 e	16.4	14.1	13.5	6.2	0.2	2.8	6.5	9.4	14.9	4.5	2.8	-14.3	-31.1
Israel*	9.2	-0.7	-4.0	0.0	3.4	-3.5	-6.7	-4.2	0.5	3.4	13.6	14.7	3.9	-5.8
Italy	2.3	1.6	4.2	3.9	6.3	2.7	3.7	-1.2	2.3	0.8	2.9	1.7	-4.0	-12.1
Japan	4.6	-0.3	-7.2	-0.8	1.2	-0.9	-4.9	-0.5	1.4	3.1	0.5	-1.2	-2.6	-14.0 e
Korea	8.2	-1.5	-22.0	8.7	12.3	0.3	7.1	4.4	2.1	1.9	3.4	4.2	-1.9	-0.2
Luxembourg	4.9	10.4	6.1	22.0	-4.7	8.8	5.5	6.3	2.7	2.5	3.8	17.9	1.4	-19.2
Mexico	16.4 e	21.0 e	10.3 e	7.7 e	11.4 e	-5.6 e	-0.6 e	0.4 e	8.0	7.5	9.9	6.9	4.4	-10.1 e
Netherlands	8.5	8.5	6.8	8.7	0.6	0.2	-4.5	-1.5	-1.6	3.7	7.5	5.5	5.1	-12.7
New Zealand	5.1	0.2	-2.4	10.6	0.4	6.8	7.8	12.9	7.6	5.2	-2.3	4.7	-5.2 e	-12.0 e
Norway	10.2	15.8	13.6	-5.4	-3.5	-1.1	-1.1	0.2	10.2	13.3	11.7	12.5	2.0	-9.1
Poland	19.7	21.8	14.0	6.6	2.7	-9.7	-6.3	-0.1	6.4	6.5	14.9	17.6	9.6	-1.1
Portugal	5.4	14.2	11.8	6.0	3.9	0.6	-3.2	-7.1	-0.0	-0.5	-1.3	2.6	-1.8	-11.9
Slovak Republic	30.1	14.0	9.4	-15.7	-9.6	13.0	0.2	-2.7	4.8	17.5	9.3	9.1	1.8	-10.5
Slovenia	8.4	13.3	8.9	14.6	2.2	0.7	0.7	8.1	5.6	3.7	10.1	12.8	8.5	-21.6
Spain	2.6	5.0	11.3	10.4	6.6	4.8	3.4	5.9	5.1	7.0	7.2	4.5	-4.8	-16.0
Sweden	4.7	0.6	8.8	8.7	5.7	0.5	-1.3	1.6	5.7	8.1	9.2	8.9	1.7	-16.0
Switzerland	-1.7	2.1	6.4	1.5	4.2	-3.5	-0.5	-1.2	4.5	3.8	4.7	5.1	0.5	-4.9
Turkey	14.1 e	14.8 e	-3.9 e	-16.2	17.5	-30.0	14.7	14.2	28.4	17.4	13.3	3.1	-6.2	-19.2
United Kingdom	5.4	6.8	13.7	3.0	2.7	2.6	3.6	1.1	5.1	2.4	6.4	7.8	-5.0	-15.1
United States	8.5	8.8	9.9	9.1	6.9	-1.1	-3.0	2.9	6.2	5.3	2.3	-1.4	-5.1	-15.5
Euro area	1.9	2.7	6.0	6.1	4.9	0.6	-1.5	1.3	2.3	3.1	5.4	4.7	-0.8	-11.3
OECD-Total	6.0 e	5.6 e	3.9 e	5.4 e	5.3 e	-0.7 e	-1.0 e	2.2 e	4.7	4.8	4.3	2.5	-2.2	-12.2 e

StatLink  <http://dx.doi.org/10.1787/888932351892>Figure 12.1. **Gross fixed capital formation, volume**

Annual growth rates in percentage, 2009

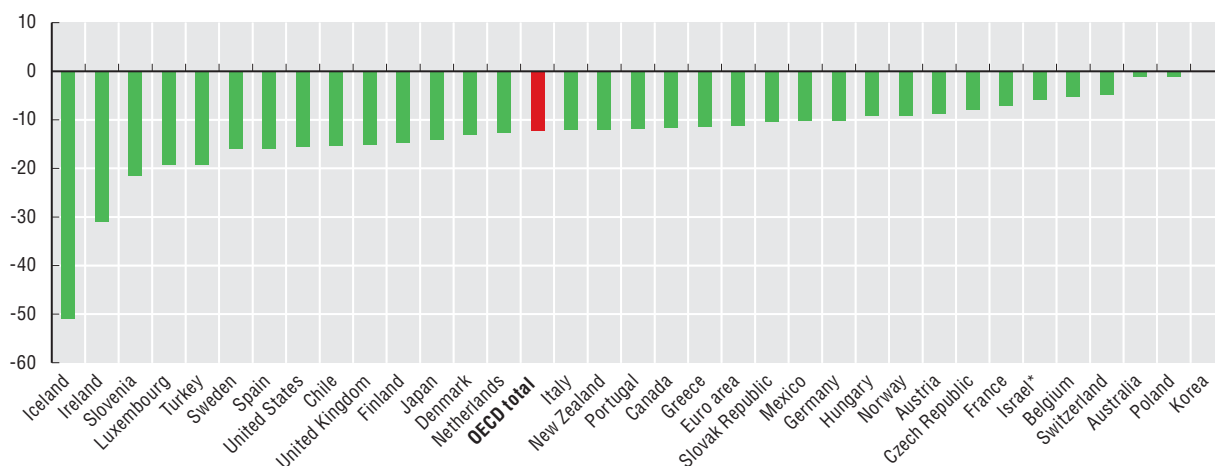


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Table 12.2. **Gross fixed capital formation by asset**

Percentage of total GFCF

	Dwellings		Other buildings and structures		Transport equipment		Other machinery and equipment		Cultivated assets		Intangible fixed assets	
	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008
Australia	22.3	19.5	28.8	35.4	10.3	9.2	22.4	20.3	1.2	0.9	10.3	10.7
Austria	25.7	19.9	29.6	31.3	10.2	10.9	28.8	30.1	0.3	0.3	5.4	7.5
Belgium	..	..	..	..	..	..	..	..	..	..	..	..
Canada	23.5	29.7	31.5	37.8	10.8	7.1	27.5	18.3	..	..	6.7	7.1
Chile	61.4	62.1	..	..	35.4	37.9	..	..	..	..	..	..
Czech Republic	12.1	14.9	39.9	36.6	7.9	15.3	36.2	27.8	0.9	0.5	3.1	5.1
Denmark	21.2	28.4	27.6	25.8	11.5	10.0	31.1	25.8	0.0	-0.0	8.5	10.0
Finland	28.2	29.8	30.0	37.8	7.6	6.5	28.0	19.3	0.2	0.2	6.0	6.5
France	29.9	31.6	27.4	31.1	7.7	8.0	26.2	20.2	0.5	0.3	8.3	8.7
Germany	34.3	28.7	24.6	22.5	9.0	12.8	27.3	30.0	-0.0	0.1	4.9	5.9
Greece	38.4	28.1	29.0	21.5	11.3	15.3	20.8	29.8	0.3	0.2	3.2	5.0
Hungary	15.5	19.9	35.5	35.7	0.6	9.3	43.7	30.0	2.0	0.8	2.9	4.4
Iceland	15.3	22.5	44.0	55.3	11.8	-0.1	26.5	21.0	0.8	0.6	1.6	0.8
Ireland	33.4	40.2	28.5	34.5	12.8	11.8	22.2	10.2	-0.0	-0.0	3.2	3.4
Israel*	30.7	26.1	26.7	20.9	7.0	9.5	29.9	33.5	0.1	0.2	5.7	9.9
Italy	21.8	24.2	25.0	27.3	10.7	9.9	37.9	34.3	0.2	0.1	4.4	4.1
Japan	16.7	14.4	39.4	36.3	6.1	8.2	34.6	34.3	..	..	3.3	6.8
Korea	18.9	15.8	49.0	45.7	5.2	7.3	22.3	25.1	..	..	4.5	6.1
Luxembourg	13.8	14.2	39.8	43.4	15.7	16.6	23.6	16.2	0.1	0.1	7.0	9.6
Mexico	..	26.8	..	38.7	..	9.9	..	24.6	..	0.0	..	..
Netherlands	26.3	31.0	24.5	27.3	9.7	8.1	28.8	23.3	0.4	0.3	10.3	9.9
New Zealand	25.1	23.5	25.8	31.8	10.8	6.9	29.9	29.1	..	..	8.5	8.7
Norway	63.1	65.6	..	..	11.7	9.1	22.7	21.1	..	..	2.4	4.2
Poland	11.0	14.3	43.0	43.5	8.7	9.9	34.4	28.7	0.4	0.1	2.6	3.4
Portugal	61.1	60.5	28.9	..	11.8	8.9	22.7	23.6	1.0	0.9	3.4	6.2
Slovak Republic	8.4	9.3	37.8	40.2	9.6	11.0	34.8	31.2	6.6	3.0	2.8	5.3
Slovenia	16.7	16.3	35.7	41.4	8.8	9.3	33.4	28.1	0.7	0.3	4.8	4.6
Spain	21.6	27.9	29.4	29.6	9.0	7.6	23.7	18.1	0.4	0.1	16.0	16.8
Sweden	9.4	18.0	27.2	25.3	7.8	9.7	40.5	32.0	0.5	0.3	14.6	14.8
Switzerland	20.0	20.9	17.4	14.9	6.4	6.9	50.0	49.2	0.2	0.2	6.0	8.0
Turkey	43.0	47.8	..	..	..	..	57.0	52.2	..	..	..	..
United Kingdom	16.2	20.9	29.7	37.8	10.3	6.1	37.8	28.2	..	..	6.1	7.0
United States	23.1	18.6	25.3	34.3	9.6	6.6	33.4	29.1	..	..	8.6	11.4
Euro area	..	..	..	..	..	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..	..	..	..	..	..

StatLink  <http://dx.doi.org/10.1787/888932351911>Figure 12.2. **Investment in information and communication technologies (ICT)**

Percentage of total gross fixed capital formation, 2001 and 2008

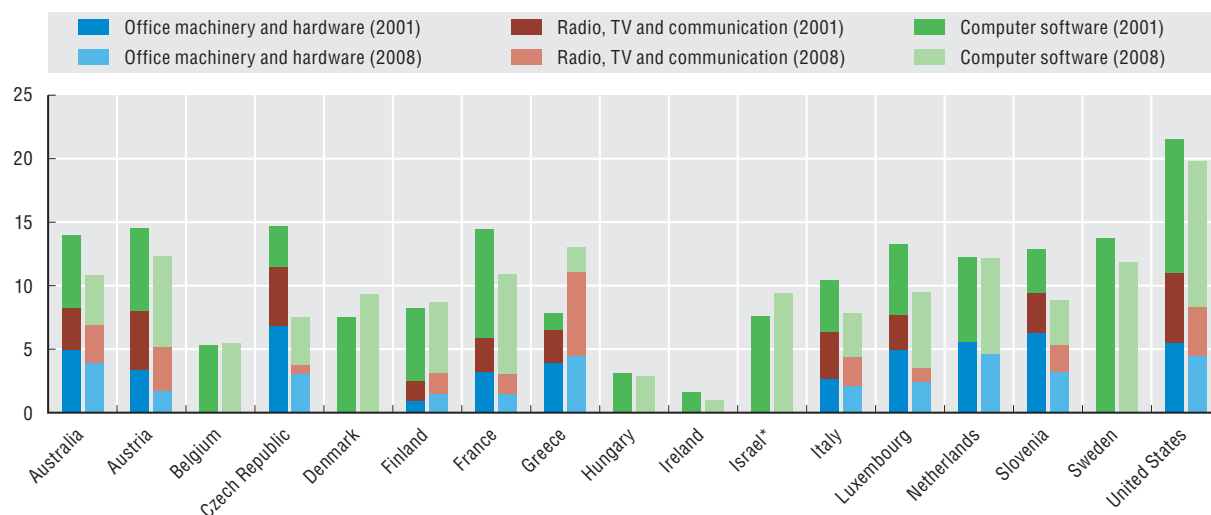


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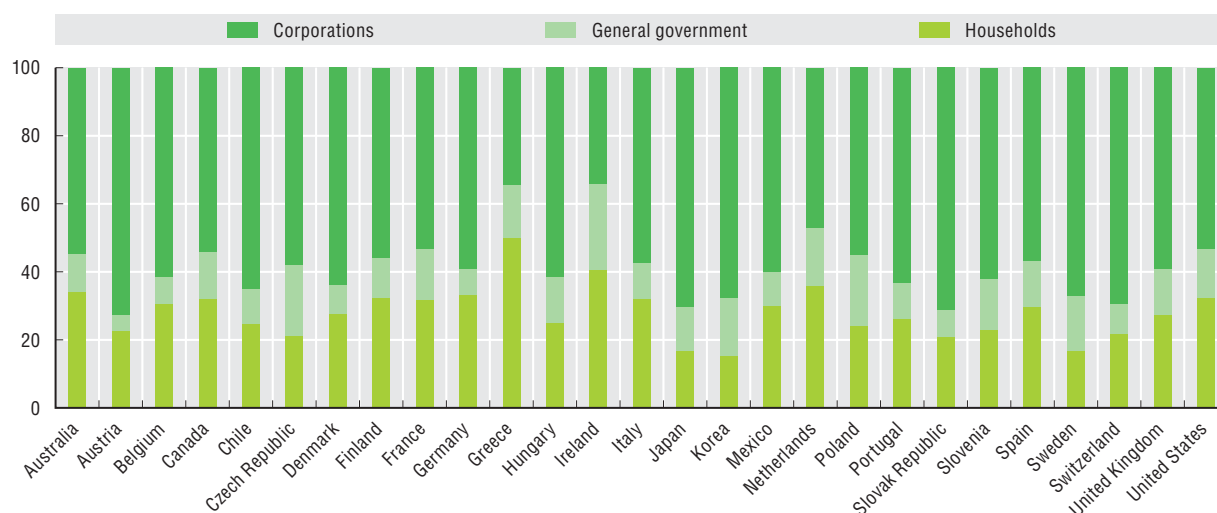
Table 12.3. **Gross fixed capital formation by institutional sector**

Percentage of total GFCF

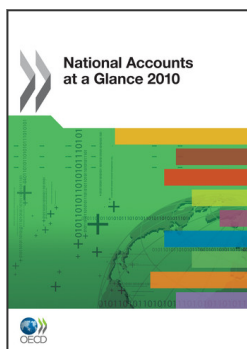
	Corporations				General government				Households			
	1996	2000	2004	2008	1996	2000	2004	2008	1996	2000	2004	2008
Australia	50.9	47.5	48.5	54.9	12.4	13.1	10.6	11.2	36.7	39.3	40.9	33.9
Austria	64.4	71.0	72.6	72.9	11.7	6.3	5.1	4.8	23.9	22.8	22.4	22.3
Belgium	59.6	62.9	63.9	61.8	8.7	9.3	8.1	7.6	31.7	27.9	27.9	30.5
Canada	55.4	60.7	53.8	54.1	13.7	11.9	12.4	14.0	30.8	27.4	33.8	31.9
Chile	59.0	63.3	62.8	65.1	10.1	12.4	11.7	10.4	31.4	24.5	25.4	24.5
Czech Republic	68.0	68.7	63.7	58.2	14.2	12.9	18.8	20.7	17.8	18.4	17.5	21.1
Denmark	66.5	64.8	65.9	63.8	10.3	8.3	9.6	8.8	23.2	26.9	24.4	27.4
Finland	57.3	54.8	49.5	56.1	15.3	12.1	14.6	11.6	27.5	33.0	35.9	32.3
France	51.3	55.3	52.8	53.3	17.7	15.8	16.1	14.9	31.0	28.9	31.1	31.7
Germany	51.4	56.7	57.6	59.1	9.7	8.3	8.2	7.8	38.9	35.0	34.2	33.1
Greece	..	33.0	34.1	34.6	..	16.8	16.6	15.5	..	50.2	49.4	49.9
Hungary	61.3	64.0	56.0	61.6	6.9	13.9	15.7	13.5	31.9	22.1	28.3	24.9
Iceland	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	..	..	36.6	34.2	..	..	14.4	25.2	..	..	49.0	40.5
Israel*	..	..	..	..	..	12.3	12.1	..	..	..	..	..
Italy	55.8	57.4	57.9	57.5	11.4	11.5	11.7	10.7	32.8	31.1	30.4	31.8
Japan	53.7	59.2	62.1	70.4	22.4	20.4	17.2	12.9	24.0	20.4	20.7	16.7
Korea	65.9	62.4	62.0	67.7	14.1	17.9	19.7	17.2	20.0	19.6	18.3	15.1
Luxembourg	..	..	..	..	24.3	18.4	19.8	15.7	..	..	..	..
Mexico	..	..	59.9	60.0	..	..	8.8	10.1	..	..	31.4	29.9
Netherlands	54.9	53.6	48.2	47.3	15.4	14.3	17.1	16.9	29.7	32.1	34.7	35.8
New Zealand	..	..	..	..	11.2	12.6	13.4	..	22.0	16.4	..	..
Norway	62.6	62.6	56.8	..	15.0	14.3	16.1	..	22.4	23.1	27.1	..
Poland	61.3	69.5	54.1	55.4	18.1	10.0	18.6	20.6	20.5	20.4	27.4	24.0
Portugal	49.1	55.6	56.7	63.5	17.5	13.2	14.0	10.4	33.4	31.3	29.3	26.1
Slovak Republic	75.9	63.5	69.4	71.2	11.8	10.9	10.0	7.9	12.3	25.6	20.6	20.9
Slovenia	58.5	64.2	63.7	62.3	13.7	12.2	13.9	14.9	27.8	23.6	22.5	22.8
Spain	..	59.4	55.5	56.8	..	12.2	12.1	13.7	..	28.4	32.4	29.5
Sweden	69.3	72.8	66.3	67.1	21.3	15.5	17.3	16.2	9.4	11.7	16.4	16.6
Switzerland	61.3	64.4	63.2	69.5	12.8	12.1	11.6	8.9	25.9	23.5	25.2	21.6
Turkey	..	..	..	..	..	..	..	..	..	..	..	..
United Kingdom	67.4	69.3	55.8	59.3	9.1	7.3	11.6	13.6	23.5	23.3	32.6	27.1
United States	53.2	54.6	45.6	53.5	13.0	12.3	13.0	14.3	33.8	33.1	41.5	32.2
Euro area	..	..	..	..	..	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..	..	..	..	..	..

StatLink  <http://dx.doi.org/10.1787/888932351930>Figure 12.3. **Gross fixed capital formation by sector**

Percentage of total gross fixed capital formation, 2008

StatLink  <http://dx.doi.org/10.1787/888932351341>

\* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.



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