

10. Investment

- In 2012, gross fixed capital formation (GFCF) in the OECD area was 1.6%, a slowdown from 3.3% growth in 2011. Chile (12.3%) and Estonia (10.9%) showed the highest growth rates. In contrast, Greece (-19.2%) and Portugal (-14.3%) experienced the highest negative growth.
- In 2012, Australia (28.2%) had the highest share of GFCF relative to GDP, followed by Korea (26.7%), Estonia (25.2%), Chile (24.1%), and the Czech Republic (23.1%).
- The United States' intangible assets share of total GFCF doubled compared to last year's publication due to the US capitalising research and development and artistic originals during its 2013 comprehensive revision.

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 separately as purchases of non-produced assets 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 10.2 contains 6 groups: dwellings (excluding land); other buildings and structures (roads, bridges, airfields,

dams, etc.); transport equipment (ships, trains, aircraft, etc.); other machinery and equipment (office machinery and hardware, etc.); cultivated assets (managed forests, livestock raised for milk production, etc.) and intangible fixed assets (intellectual property type fixed assets such as 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 10.2. ICT has three components: office machinery and hardware (computers and related hardware); radio, TV and communication (mainly communications equipment); and computer software. It is 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 also occur.

Comparability

When the *System of National Accounts* (SNA) 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.

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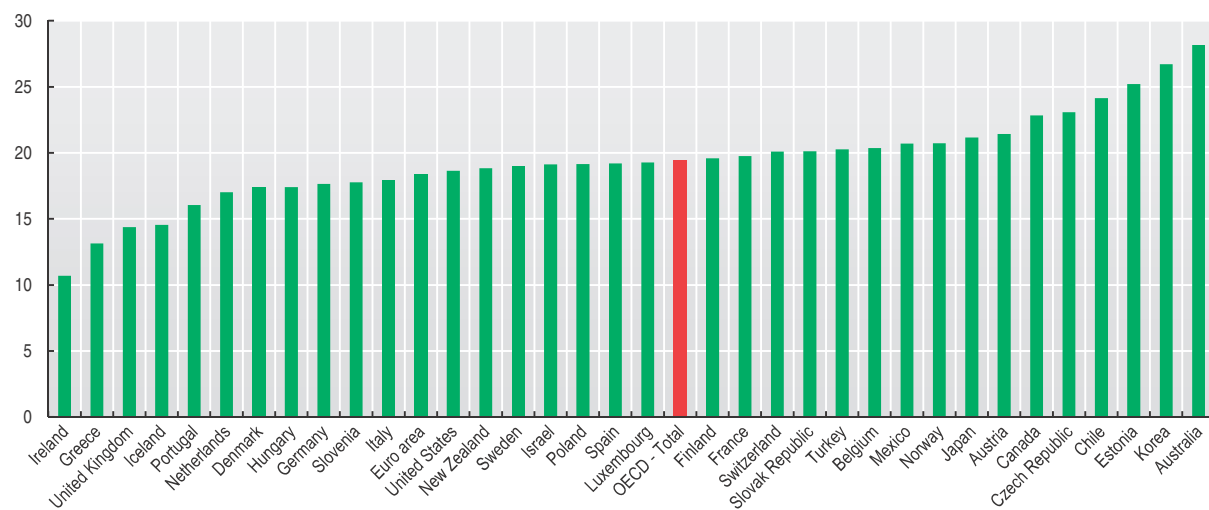
Table 10.1. **Gross fixed capital formation, volume**

Annual growth rates in percentage

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Australia	8.0	-7.9	9.0	12.5	8.5	6.3	9.3	5.1	9.5	2.1	2.1	3.7	11.2	2.0
Austria	1.2	5.2	-1.0	-4.0	4.8	0.6	0.6	0.5	3.6	0.7	-7.8	-1.4	8.5	1.6
Belgium	2.6	5.1	1.0	-4.5	0.1	7.8	6.4	2.6	6.3	2.0	-8.4	-1.1	4.1	-2.0
Canada	7.3	4.7	4.0	1.6	6.2	7.8	9.3	7.1	3.5	2.0	-13.0	10.0	4.2 e	4.3 e
Chile	-16.1	9.1	3.5	2.2	6.5	11.3	23.5	4.3	10.8	17.9	-12.1	12.2	14.7	12.3
Czech Republic	-2.1	6.5	4.5	3.8	0.6	3.0	6.0	5.8	13.2	4.1	-11.0	1.0	0.4	-4.5
Denmark	-0.1	7.6	-1.4	0.1	-0.2	3.9	4.7	14.3	0.4	-4.2	-15.9	-2.1	3.3	0.8
Estonia	-15.5	16.7	13.1	24.2	16.7	6.0	15.2	23.0	9.3	-13.3	-39.0	-7.3	37.6	10.9
Finland	3.3	6.4	2.9	-3.7	3.0	4.9	3.6	1.9	10.7	-0.6	-13.2	1.7	5.7	-1.0
France	8.5	6.8	2.2	-1.9	2.2	3.4	4.4	4.0	6.3	0.3	-10.6	1.4	2.9	-1.2
Germany	4.5	2.6	-3.3	-6.1	-1.2	-0.2	0.8	8.2	4.7	1.3	-11.7	5.7	6.9	-2.1
Greece	11.0 e	8.0 e	4.8 e	9.5 e	11.8 e	0.4 e	-6.3 e	14.9	22.8	-14.3	-13.7	-15.0	-19.6	-19.2
Hungary	7.4	6.0	1.9	7.4	1.5	7.2	4.5	-2.7	3.8	2.9	-11.1	-8.5	-5.9	-3.7
Iceland	-4.1	11.8	-4.3	-14.0	11.1	28.7	34.4	24.4	-12.2	-20.4	-51.4	-9.4	14.3	5.0
Ireland	13.4	6.2	0.2	2.5	6.5	9.7	14.8	4.8	2.5	-9.5	-27.0	-22.7	-9.1	-0.6
Israel	0.0	2.3	-3.3	-6.7	-4.5	-0.1	3.2	11.7	12.6	4.6	-3.1	12.2	16.0	4.0
Italy	4.0	6.4	2.7	3.4	-1.3	2.0	1.3	3.4	1.8	-3.7	-11.7	0.6	-2.2	-8.3
Japan	-0.6	0.7	-2.1	-4.9	0.2	0.4	0.8	1.5	0.3	-4.1	-10.6	-0.2	1.1	4.4 e
Korea	8.7	12.3	0.3	7.1	4.4	2.1	1.9	3.4	4.2	-1.9	-1.0	5.8	-1.0	-1.7
Luxembourg	22.0	-4.7	8.8	5.2	6.2	2.7	2.5	4.1	18.4	2.0	-16.2	-0.7	12.1	3.5
Mexico	7.7 e	11.4 e	-5.6 e	-0.6 e	0.4 e	8.0	7.5	9.9	6.9	5.5	-11.8	0.3	8.1	5.5 e
Netherlands	8.7	0.6	0.2	-4.5	-1.5	-1.6	3.7	7.5	5.5	4.5	-12.0	-7.4	6.1	-4.0
New Zealand	10.3	-0.1	6.9	8.0	13.1	8.5	6.5	-2.8	7.1	-8.0	-11.7	3.0	2.3	6.5 e
Norway	-5.4	-3.5	-1.1	-1.1	0.8	11.1	13.5	9.8	11.4	0.2	-7.5	-8.0	7.7	8.3
Poland	6.6	2.7	-9.7	-6.3	-0.1	6.4	6.5	14.9	17.6	9.6	-1.2	-0.4	8.5	-1.7
Portugal	6.0	3.9	0.6	-3.2	-7.1	0.0	-0.5	-1.3	2.6	-0.3	-8.6	-3.1	-10.5	-14.3
Slovak Republic	-15.7	-9.6	12.9	0.2	-2.7	4.8	17.5	9.3	9.1	1.0	-19.7	6.5	14.2	-10.5
Slovenia	14.7	2.6	1.3	0.3	7.6	5.0	3.0	10.4	13.3	7.1	-23.8	-15.3	-5.5	-8.2
Spain	10.4	6.6	4.8	3.4	5.9	5.1	7.1	7.1	4.5	-4.7	-18.0	-5.5	-5.4	-7.0
Sweden	8.7	5.7	0.5	-1.3	1.6	5.7	8.1	9.2	8.9	1.4	-15.5	7.2	8.2	3.3
Switzerland	2.3	4.7	-3.3	-1.0	-2.0	4.2	4.1	5.3	5.4	0.7	-8.0	4.8	4.5	-0.4
Turkey	-16.2	17.5	-30.0	14.7	14.2	28.4	17.4	13.3	3.1	-6.2	-19.0	30.5	18.0	-2.7
United Kingdom	1.9	2.6	-1.9	2.7	2.3	6.2	3.7	5.6	7.5	-6.9	-16.7	2.8	-2.4	0.7
United States	8.3	6.3	-0.5	-1.8	3.9	5.8	5.6	2.2	-1.2	-4.8	-13.1	1.1	3.4	5.5
Euro area	6.0	4.7	0.7	-1.5	1.1	2.2	3.2	5.6	5.2	-1.4	-12.8	-0.4	1.6	-4.0
OECD-Total	5.1 e	5.0 e	-0.9 e	-0.7 e	2.7 e	4.6 e	4.8 e	4.3	2.7	-2.5	-11.8	1.8	3.3 e	1.6 e
China	..	..	..	..	..	..	..	..	..	..	..	..	..	..
India	..	..	..	..	..	..	16.2	13.8	16.2	1.5	7.3	..	..	..
Indonesia	-18.2 e	16.7 e	6.5	4.7	0.6	14.7	10.9	2.6	9.3	11.9	3.3	8.5	..	..
Russian Federation	8.1 e	16.6 e	10.9 e	3.1 e	13.9	12.0	10.2	17.9	21.1	9.7	-14.7	6.4	10.4	6.3
South Africa	-7.6	3.9	2.8	3.5	10.2	12.9	11.0	12.1	14.0	13.0	-4.3	-2.0	4.5	5.7

StatLink  <http://dx.doi.org/10.1787/888933002110>Figure 10.1. **Gross fixed capital formation**

Percentage of GDP, 2012

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10. Investment

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

Table 10.2: “Dwellings” includes “Other buildings and structures” for Chile, Norway, Portugal and Turkey. It also includes “Cultivated assets” for Chile. “Cultivated assets” are not capitalised for Canada and the United States. “Transport equipment” is included in “Other machinery and equipment” for Australia, Chile and Turkey. “Ownership transfer costs” are included in the total assets but not in the breakdown for Australia and South Africa. The United Kingdom, has improved its valuation of artistic originals, based on the sum of costs approach. For the record, Australia includes weapons systems in “Other machinery and equipment”, the United States includes them in “Transport equipment” (missiles, tanks, etc.) and “Other machinery equipment” (electronic and other equipment).

Table 10.3: For China, data for General Government include NPISHs.

Source

OECD (2013), *National Accounts of OECD Countries*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/2221433x>.

Online databases

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

OECD (2013), “Detailed National Accounts: Simplified non-financial accounts”, *OECD National Accounts Statistics* (database), <http://dx.doi.org/10.1787/data-00010-en>.

Further reading

Lequiller, F. et al. (2003), “Report of the OECD Task Force on Software Measurement in the National Accounts”, *OECD Statistics Working Papers*, No. 2003/01, OECD Publishing, Paris, <http://dx.doi.org/10.1787/334811030426>.

OECD (2009), *Handbook on Deriving Capital Measures of Intellectual Property Products*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264079205-en>.

Information on data for Israel: <http://dx.doi.org/10.1787/888932315602>.

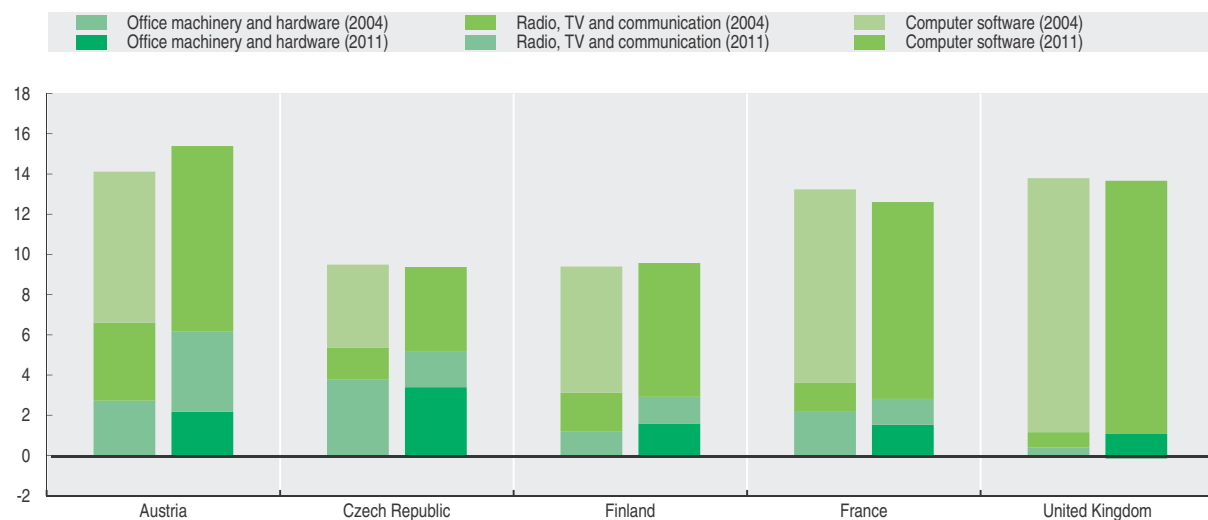
Table 10.2. **Gross fixed capital formation by asset**
Percentage of total GFCF

	Dwellings		Other buildings and structures		Transport equipment		Other machinery and equipment		Cultivated assets		Intangible fixed assets	
	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
Australia	22.9	17.6	24.5	40.9	..	..	31.7	25.1	2.0	1.2	11.5	10.8
Austria	21.1	21.4	32.6	30.6	10.3	11.4	28.2	26.8	0.2	0.2	7.5	9.6
Belgium	24.7	28.8	22.2	26.1	10.5	10.2	36.8	27.3	0.2	0.3	5.7	7.1
Canada	25.5	..	29.7	..	10.2	..	25.5	..	..	..	9.1	..
Chile	64.8	60.8	..	..	35.2	39.2	..	..	..	..	..	..
Czech Republic	11.7	16.0	33.9	34.1	13.0	11.8	35.7	32.6	0.8	0.4	5.0	5.2
Denmark	21.9	26.3	27.7	24.6	12.5	8.7	29.4	26.2	0.0	0.0	8.6	14.3
Estonia	7.8	13.4	42.5	37.1	15.4	12.3	32.4	34.0	0.6	0.6	1.3	2.7
Finland	27.6	35.1	33.6	33.1	7.1	5.9	24.6	18.1	0.2	0.1	6.9	7.7
France	27.8	30.5	29.3	31.8	8.6	7.7	22.8	19.1	0.5	0.3	11.0	10.9
Germany	31.1	31.5	23.2	24.1	9.1	11.4	31.0	26.9	0.0	0.0	5.6	6.1
Greece	40.2 e	31.2	25.0 e	21.4	11.6 e	19.2	17.3 e	21.2	0.2 e	0.3	3.2 e	6.7
Hungary	18.5	9.9	31.7	42.2	8.1	8.0	34.8	33.9	1.9	1.1	4.9	4.8
Iceland	19.1	17.4	42.1	36.9	9.5	10.5	26.1	33.1	0.7	1.0	2.5	1.1
Ireland	38.6	23.4	30.4	30.3	11.4	18.5	15.9	19.2	0.0	0.1	3.7	8.5
Israel	26.0	31.3	23.8	20.8	11.9	9.2	29.8	27.9	0.1	0.3	8.5	10.5
Italy	23.4	27.7	24.5	24.5	10.9	8.5	35.2	33.8	0.3	0.2	5.8	5.4
Japan	16.3	14.4	34.6	32.7	7.4	8.9	34.4	34.5	..	..	7.3	9.5
Korea	15.3	11.3	42.1	46.7	8.9	7.5	28.0	28.4	..	..	5.6	6.1
Luxembourg	12.2	18.8	39.7	38.0	17.6	19.9	21.9	17.1	0.0	0.0	8.7	6.2
Mexico	..	23.7	..	42.4	..	9.2	..	24.6	..	0.0	..	..
Netherlands	28.7	26.5	27.8	29.7	8.9	8.3	25.4	24.5	0.4	0.3	8.7	10.6
New Zealand	22.2	21.7	25.3	33.8	13.4	9.3	31.0	26.8	..	..	8.0	8.3
Norway	19.4	22.4	43.7	46.6	10.1	8.4	24.4	17.8	..	..	2.3	4.8
Poland	13.3	12.7	42.9	49.4	9.6	8.9	30.2	26.3	0.2	0.0	3.8	2.8
Portugal	28.9	17.5	33.4	43.9	10.1	6.3	22.9	23.4	0.9	1.0	3.9	7.8
Slovak Republic	12.2	10.1	34.6	35.1	15.1	10.5	31.0	38.3	3.7	2.0	3.4	4.0
Slovenia	13.5	15.3	38.7	34.4	8.9	9.5	32.8	33.5	0.5	0.4	5.6	6.9
Spain	36.1	29.0	30.3	33.4	9.3	8.4	19.7	21.1	0.4	0.5	4.2	7.6
Sweden	12.7	19.3	25.3	24.3	9.3	8.7	35.6	31.0	0.4	0.4	16.6	16.4
Switzerland	17.5	23.8	23.6	21.6	8.4	9.5	41.5	34.5	0.2	0.2	8.9	10.5
Turkey	50.7	41.7	..	..	..	..	49.3	58.3	..	..	..	..
United Kingdom	20.1	24.0	35.1	40.1	6.1	2.1	21.8	17.0	0.8	1.2	16.1	15.6
United States	21.6	13.7	22.1	23.5	7.8	7.8	26.1	27.1	..	..	22.4	27.8
Euro area	..	..	..	..	..	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..	..	..	..	..	..
China	..	..	..	..	..	..	..	..	..	..	..	..
India	..	..	..	..	..	..	..	..	..	..	..	..
Indonesia
Russian Federation
South Africa	9.7	7.2	24.1	41.3	13.0	9.4	50.1	40.4	0.4	0.2

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Figure 10.2. **Investment in information and communication technologies (ICT)**

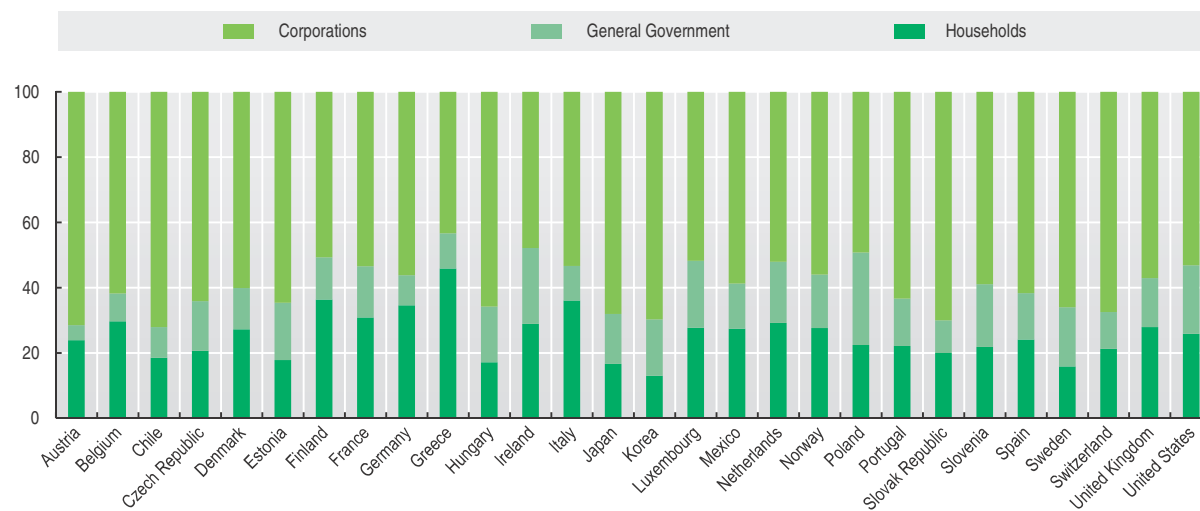
Percentage of total gross fixed capital formation, 2004 and 2011



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Figure 10.3. **Gross fixed capital formation by institutional sector**

Percentage of total GFCF, 2011




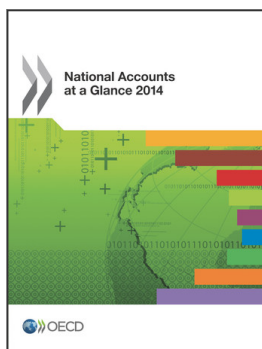
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Table 10.3. **Gross fixed capital formation by institutional sector**

Percentage of total GFCF

	Corporations				General government				Households			
	1999	2003	2007	2011	1999	2003	2007	2011	1999	2003	2007	2011
Australia	48.3	49.1	54.9	..	11.8	10.4	11.2	..	39.9	40.5	34.0	..
Austria	69.2	72.3	72.4	71.6	7.4	5.5	5.0	4.6	23.3	22.2	22.6	23.8
Belgium	60.9	62.7	61.3	61.8	9.4	8.7	7.2	8.5	29.8	28.6	31.6	29.7
Canada	60.7	54.1	54.3	..	11.8	12.6	13.1	..	27.4	33.3	32.6	..
Chile	..	..	..	72.1	..	..	..	9.4	..	..	..	18.5
Czech Republic	69.9	56.1	64.0	64.1	11.4	25.2	15.4	15.2	18.6	18.6	20.5	20.7
Denmark	64.4	66.9	61.6	60.1	8.4	8.2	8.6	12.7	27.2	24.8	29.8	27.2
Estonia	70.3	71.2	62.6	64.7	17.2	13.8	14.2	17.5	12.4	14.9	23.2	17.8
Finland	52.8	51.3	53.4	50.7	13.7	14.8	11.4	13.0	33.5	34.0	35.2	36.3
France	53.0	52.4	51.9	53.5	16.0	16.5	15.6	15.7	31.0	31.1	32.5	30.8
Germany	54.3	56.2	59.2	56.2	9.2	9.2	8.0	9.2	36.5	34.6	32.8	34.6
Greece	..	..	29.3	43.4	..	..	12.7	10.8	..	..	58.0	45.8
Hungary	68.5	56.6	60.1	65.8	12.3	15.6	16.8	17.1	19.3	27.8	23.1	17.1
Iceland	..	..	..	..	..	..	..	..	..	..	..	..
Ireland	..	36.5	34.4	47.8	..	16.2	18.3	23.3	..	47.3	47.3	28.8
Israel	..	..	..	..	..	15.2	9.5	11.2	..	..	..	..
Italy	53.6	53.2	53.3	53.3	12.1	12.0	10.8	10.7	34.3	34.8	35.8	36.0
Japan	..	61.2	69.0	68.1	..	18.9	13.8	15.3	..	20.0	17.2	16.6
Korea	59.4	61.6	66.6	69.7	18.7	19.5	17.0	17.3	21.9	18.9	16.4	12.9
Luxembourg	..	..	62.4	51.8	18.3	20.6	15.9	20.4	..	..	21.7	27.7
Mexico	..	61.4	60.1	58.8	..	7.2	9.7	13.9	..	31.4	30.2	27.4
Netherlands	55.1	47.4	46.2	52.1	13.2	18.2	16.6	18.7	31.7	34.4	37.2	29.2
New Zealand	..	..	..	..	..	..	..	..	..	..	..	..
Norway	63.8	57.1	61.4	56.0	15.5	17.4	13.9	16.4	20.7	25.4	24.7	27.6
Poland	68.0	54.4	56.7	49.3	14.3	18.3	19.3	28.3	17.7	27.3	24.0	22.4
Portugal	52.2	54.2	62.2	63.3	16.3	16.4	12.2	14.5	31.4	29.4	25.6	22.1
Slovak Republic	71.3	67.3	72.2	70.1	9.9	10.3	7.1	9.9	18.8	22.3	20.7	20.0
Slovenia	61.7	64.6	62.0	58.9	13.0	13.4	15.2	19.3	25.3	22.0	22.8	21.8
Spain	..	55.2	55.3	61.7	..	13.2	13.2	14.3	..	31.6	31.5	24.1
Sweden	71.3	67.6	67.0	66.0	17.6	17.5	15.7	18.2	11.0	14.9	17.3	15.8
Switzerland	64.7	64.2	68.5	67.5	11.5	12.0	9.2	11.3	23.8	23.8	22.3	21.3
Turkey	..	..	..	..	..	..	..	..	..	..	..	..
United Kingdom	66.0	59.4	53.4	57.1	7.5	9.7	10.7	15.0	26.5	30.9	35.9	27.9
United States	52.9	45.8	49.5	53.1	15.8	17.7	17.3	21.1	31.3	36.5	33.2	25.8
Euro area	..	..	..	..	..	..	..	..	..	..	..	..
OECD-Total	..	..	..	..	..	..	..	..	..	..	..	..
China	..	63.6	67.4	64.2	..	11.7	11.1	10.9	..	24.7	21.4	25.0
India	..	..	..	..	..	..	..	..	..	..	..	..
Indonesia	..	..	..	..	..	..	..	..	..	..	..	..
Russian Federation	..	67.6	53.6	67.8	..	14.9	21.4	10.5	..	17.5	25.1	21.7
South Africa	72.3	70.8	69.2	73.9	16.0	16.2	16.4	15.7	11.7	12.9	14.5	10.4

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From:
National Accounts at a Glance 2014

Access the complete publication at:
https://doi.org/10.1787/na_glance-2014-en

Please cite this chapter as:

OECD (2014), "Investment", in *National Accounts at a Glance 2014*, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/na_glance-2014-13-en

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