

Statistical bulletin

Capital stocks and fixed capital consumption: 2018

Annual estimates of the value and types of non-financial assets used in the production of goods or services within the UK economy and their loss in value over time.



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Release date:
21 August 2018

Next release:
November 2019

Table of contents

1. [Main points](#)
2. [Things you need to know about this release](#)
3. [Capital stocks and consumption of fixed capital in detail](#)
4. [Growth in net capital stock of dwellings remains weak compared with pre-economic downturn](#)
5. [Services accounts for 86% of net capital stock growth in 2017](#)
6. [What's changed in this release](#)
7. [Future work plan](#)
8. [Quality and methodology](#)

1 . Main points

- The UK's net capital stock was estimated at £4.6 trillion at the end of 2017, increasing by 1.1% compared with 2016.
- Prior to the economic downturn, net capital stock increased on average by 2.0% per year, slowing to an average of 1.3% per year since 2010.
- Growth in the net capital stock of dwellings has still not recovered to the average growth rate prior to the economic downturn.
- The net capital stock for services was estimated at £3.5 trillion at the end of 2017 and accounted for 86% of the increase in net capital stock growth in 2017.
- In 2017 consumption of fixed capital for the UK was estimated at £244 billion, an increase of 1.5% compared with 2016.

2 . Things you need to know about this release

This release includes estimates of gross capital stocks, net capital stocks and consumption of fixed capital. The estimates are available by institutional sector, asset and industry. Information on these classifications and more detailed information about the measurement of capital stocks can be found in our [Quality and methodology report](#).

Capital stock is a measurement of physical capital within an economy at a point in time. Physical capital includes any non-financial assets that are used in the production of goods and services with a lifespan of greater than a year (for example, buildings, machinery). Capital stocks produce a flow of capital services into the production process, therefore net capital stocks are closely related to the amount of goods and services that an economy can produce.

Changes in net capital stock from one period to another consist of increases in capital stock from investment and the reduction in capital stock from retirement, depreciation and scrappage.

All data referred to in this bulletin are annual estimates of chained volume measures (CVM) unless otherwise specified. Data in CVM within this bulletin have had the effect of price changes removed (in other words, the data are deflated) and are referenced to 2016. Components of capital stock and consumption of fixed capital may not always add to totals due to rounding or because CVM data cannot be added together before the reference year.

3 . Capital stocks and consumption of fixed capital in detail

Gross capital stocks tell us how much the economy's assets would cost to buy again as new. Net capital stocks account for the depreciation in assets and measure the market value of fixed assets, so both the level and the rate of increase in the net capital stock will be lower compared with gross capital stock.

Growth in net capital stocks are estimated to have slowed to 1.1%

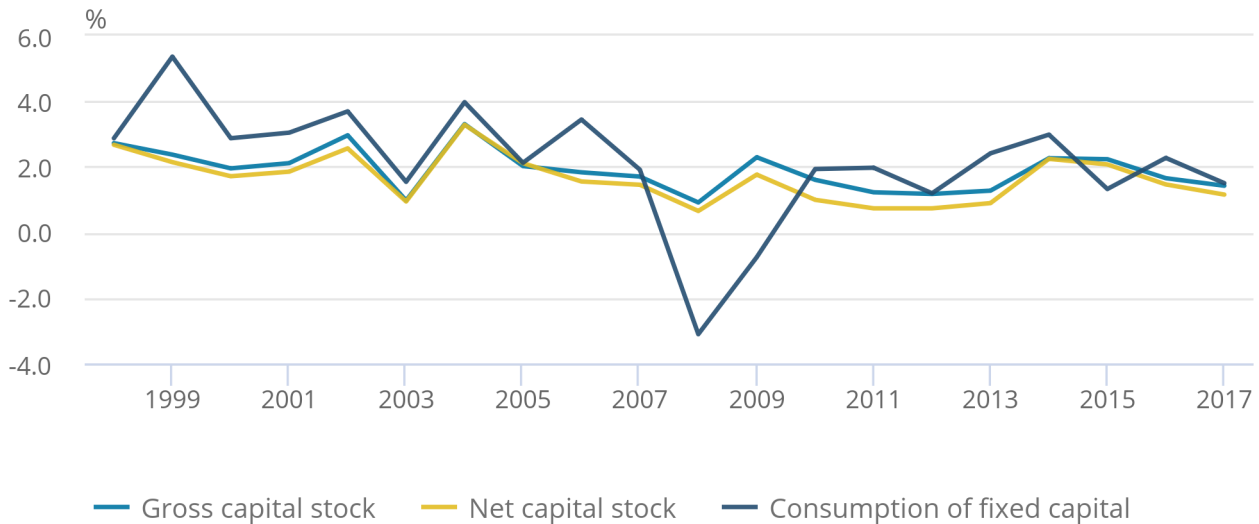
Net capital stocks grew by 1.1% reaching £4.6 trillion at the end of 2017. This is the lowest rate of growth in capital stock since 2013 and is below the average rate of growth in net capital stock of 1.3% from 2010 to 2017. The slowing of growth in net capital stocks of dwellings has contributed to the reduction in the growth rate of net capital stocks.

Figure 1: Growth rate for gross capital stock, net capital stock and capital consumption, 1998 to 2017

Reference year: 2016, UK

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Source: Office for National Statistics

Table 1: Average annual growth in capital stocks and consumption of fixed capital

Chained volume measures (%)	Reference year: 2016, UK				
	1998 to 2007	2008 to 2009	2010 to 2017	1998 to 2017	2017
Gross capital stock	2.2	1.6	1.6	1.9	1.4
Net capital stock	2.0	1.2	1.3	1.6	1.1
Consumption of fixed capital	3.1	-1.9	1.9	2.1	1.5

Source: Office for National Statistics

Growth in consumption of fixed capital slows to 1.5%

The consumption of fixed capital is the decline in the value, or depreciation, of fixed assets in the economy over time.

In 2017, the consumption of fixed capital was estimated at £244 billion, an increase of 48% since 1998. Growth between 2016 and 2017 was 1.5%, lower than the average growth of 2.1% since 1998. This was mainly due to a slowing of growth in transfer costs (costs associated with the buying and selling of property) between 2016 and 2017 at 5.1%; between 2010 and 2017, transfer costs had an average annual growth rate of 8.4%.

Transfer costs fell sharply during the economic downturn, from £23 billion in 2007 to £10 billion in 2009 and remain below the pre-crisis peak at £19 billion. The fall in transfer costs during the economic downturn resulted in falls in capital consumption.

4 . Growth in net capital stock of dwellings remains weak compared with pre-economic downturn

Net capital stocks estimates are used for analysing capital stocks by asset and industry, as they are a measure of the market value of fixed assets (what these assets are worth at the time).

The proportion of net capital stocks in other buildings and structures has increased from 36% of assets in 1998 to 39% of assets in 2017. Dwellings remains the asset with the largest net capital stock, despite falling from 44% in 1998, to 39% at the end of 2017. Over the same period ICT and machinery has increased from 13% to 16%.

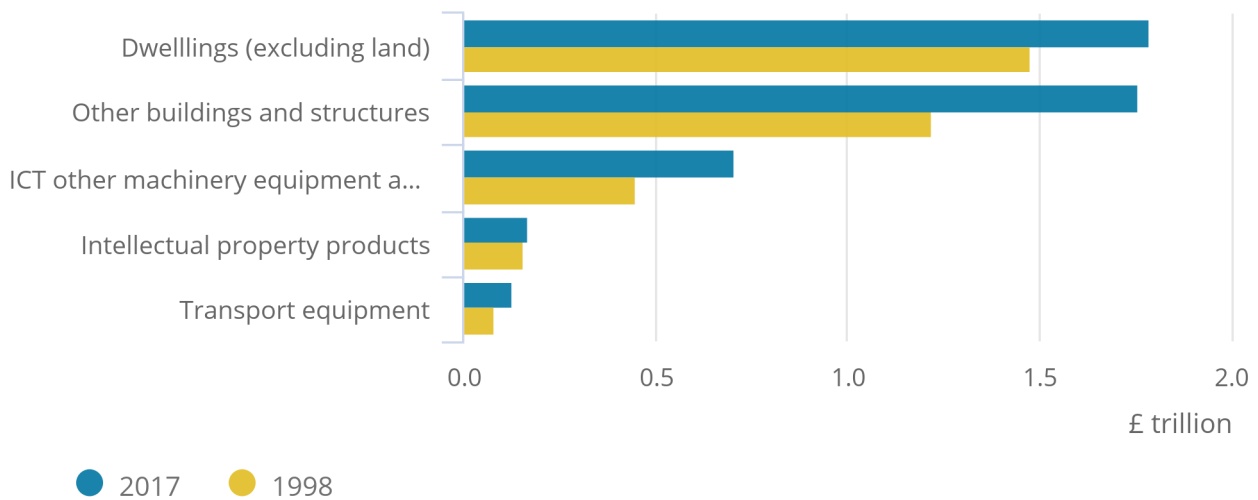
Intellectual property products have increased by only 11% from 1998 to 2017, with a 70% fall in the net capital stock of mineral exploration and evaluation contributing to a lack of growth. There has been an increase in the net capital stock for computer software and databases of 36% and of 26% for research and development.

Figure 2: Net capital stocks estimates by asset, 1998 and 2017

Reference year: 2016, UK

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Reference year: 2016, UK



Source: Office for National Statistics

The reduction in the annual growth rate of the net capital stock of dwellings from 1.5% before the economic downturn to 0.7% from 2010, has contributed to slower growth in total net capital stock. The growth of net capital stock for dwellings did increase by 1.3% for 2015 and 2016, but has fallen to 0.4% in 2017.

Just over half of the growth in net capital stocks in 2017 was in other buildings and structures. Growth in net capital stocks of other buildings and structures reached a peak of 2.9% in 2014, but has subsequently slowed to 1.6% in both 2016 and 2017.

The only assets with a larger growth in net capital stock after the economic downturn are transport equipment and cultivated biological resources. Transport equipment, which accounts for 2.9% of net capital stock, has grown strongly since 2013, reaching a peak of 15.4% in 2016 that has slowed to 8.1% in 2017.

Table 2: Average annual growth in net capital stocks by asset

Reference year: 2016, UK

Chained volume measures (%)	1998 to 2007	2008 to 2009	2010 to 2017	1998 to 2017	2017
Dwellings (excluding land)	1.5	0.0	0.7	1.0	0.4
Other buildings and structures	2.2	3.0	1.6	2.0	1.6
ICT, other machinery, equipment and weapons systems	3.5	0.6	1.6	2.4	1.2
Intellectual property products	1.2	0.0	0.2	0.7	-0.6
Transport equipment	0.6	-1.3	6.4	2.7	8.1
Cultivated biological resources	-0.7	4.6	1.5	0.7	-1.3
Total net capital stock	2.0	1.2	1.3	1.6	1.1

Source: Office for National Statistics

Figure 3: Contributions to annual net capital stock growth by asset, 1998 to 2017

Reference year: 2016, UK

Figure 3: Contributions to annual net capital stock growth by asset, 1998 to 2017

Reference year: 2016, UK



Source: Office for National Statistics

Notes:

1. The components of net capital stock growth do not always add to the total due to rounding or because chained volume measures data are not additive until the reference year.

5 . Services accounts for 86% of net capital stock growth in 2017

Estimates of capital stocks and the consumption of fixed capital can be analysed by industry using the [UK Standard Industrial Classification 2007](#).

The share of the net capital stock held by the four broad industry groupings (other production; manufacturing; construction and services) reflects the relative shares of these industries in gross value added (GVA) terms. Total net capital stocks grew by 35% between 1998 and 2017 and this was reflected in all industries except manufacturing, which fell by 6% over the same period.

Table 3: Volume and percentage of net capital stocks held by broad industry groups, 1998 to 2017

Reference year: 2016, UK

		1998		2017		Change between 1998 and 2017	
		Net capital stocks (£ billion)	Share of assets held (%)	Net capital stocks (£ billion)	Share of assets held (%)	Net capital stocks (£ billion)	Share of assets held (% points)
Chained volume measures ¹							
ABDE	Other production	283	8.4	393	8.6	110	0.2
C	Manufacturing	295	8.7	278	6.1	-17	-2.6
F	Construction	315	9.3	431	9.4	116	0.1
G to T	Services	2,483	73.3	3,467	75.9	984	2.6
A to T	Total	3,386	100	4,569	100	1,183	N/A

Source: Office for National Statistics

Notes:

1. The components of net capital stock do not always add to the total due to rounding or because chained volume measures data are not additive until the reference year.

The types of fixed assets held varies across the industries of the economy. The construction industry holds 95% of its assets (current prices) in buildings and structures, with production industries mainly holding other buildings and structures, and ICT, other machinery and equipment. Services contains 76% of the economy's net capital stock and this covers a range of assets (including dwellings, which are predominantly owned by households).

Table 4: Net capital stocks as a percentage of fixed assets held by asset and broad industry groups, 2017

	UK				
	ABDE	C	F	G to T	A to T
Current prices (%) ^{1,2}	Other production	Manufacturing	Construction	Services	Total
Dwellings (excluding land)	z	z	21	49	39
Other buildings and structures	71	37	74	31	39
ICT, other machinery, equipment and weapons systems	23	51	3	13	16
Intellectual property products	2	12	0	4	4
Transport equipment	2	1	2	3	3
Cultivated biological resources	2	z	z	z	0
Total fixed assets	100	100	100	100	100

Source: Office for National Statistics

Notes:

1. Totals may not sum due to rounding.
2. z denotes where data is not collected, not present or unavailable for an industry or asset.

The differences between the percentage of fixed assets held by industry groupings and the percentage of consumption of fixed capital are due to the different life lengths of assets. Assets with long lives such as dwellings depreciate slowly and only represent 28% of capital consumption in services, despite accounting for 49% of capital stocks. By contrast, intellectual property products have relatively short asset lives and account for 22% of capital consumption in services, while representing just 4% of the net capital stock.

Table 5: Consumption of fixed capital as a percentage of fixed assets by asset and broad industry groups, 2017

	UK				
	ABDE	C	F	G to T	A to T
Current prices (%) ^{1,2}	Other production	Manufacturing	Construction	Services	Total
Dwellings (excluding land)	z	z	21	28	22
Other buildings and structures	49	15	62	13	19
ICT, other machinery, equipment and weapons systems	38	46	8	20	24
Intellectual property products	9	37	3	22	21
Transport equipment	4	1	6	7	6
Cultivated biological resources	0	z	z	z	0
Total fixed assets	100	100	100	100	100

Source: Office for National Statistics

Notes:

1. Totals may not sum due to rounding.
2. z denotes where data is not collected, not present or unavailable for an industry or asset.

The contribution to the growth in net capital stocks from non-service industries has steadily declined since 2014. Growth in the net capital stock of non-manufacturing production peaked at 4.7% in 2013, driven by electricity, gas, steam and air conditioning supply. Growth has steadily declined to 1.0% in 2017, which remains above the average rate of growth before the economic downturn.

The growth in the net capital stock of the construction industry reached 6.9% in 2014, but has subsequently slowed to 0.5% in 2017. Net capital stock in manufacturing grew by 0.4% in 2017, which is the fourth consecutive year of growth in capital stock, following eight years of reductions in net capital stock.

Growth in the service industries net capital stocks peaked at 2.1% in 2015, but has slowed to 1.3% in 2017, which is the average rate of growth since the economic downturn. Due to slower growth in other industries, services accounts for 86% of net capital stock growth in 2017, the largest percentage contribution to net stock growth since 2013.

Table 6: Average annual growth in net capital stocks by broad industry groups

Reference year: 2016, UK

Chained volume measures (%)		1998 to 2007	2008 to 2009	2010 to 2017	1998 to 2017	2017
ABDE	Other production	0.4	2.7	3.1	1.7	1.0
C	Manufacturing	0.6	-2.1	-0.6	-0.1	0.4
F	Construction	1.8	2.9	1.1	1.6	0.5
G to T	Services	2.4	1.2	1.3	1.8	1.3
A to T	Total net capital stock	2.0	1.2	1.3	1.6	1.1

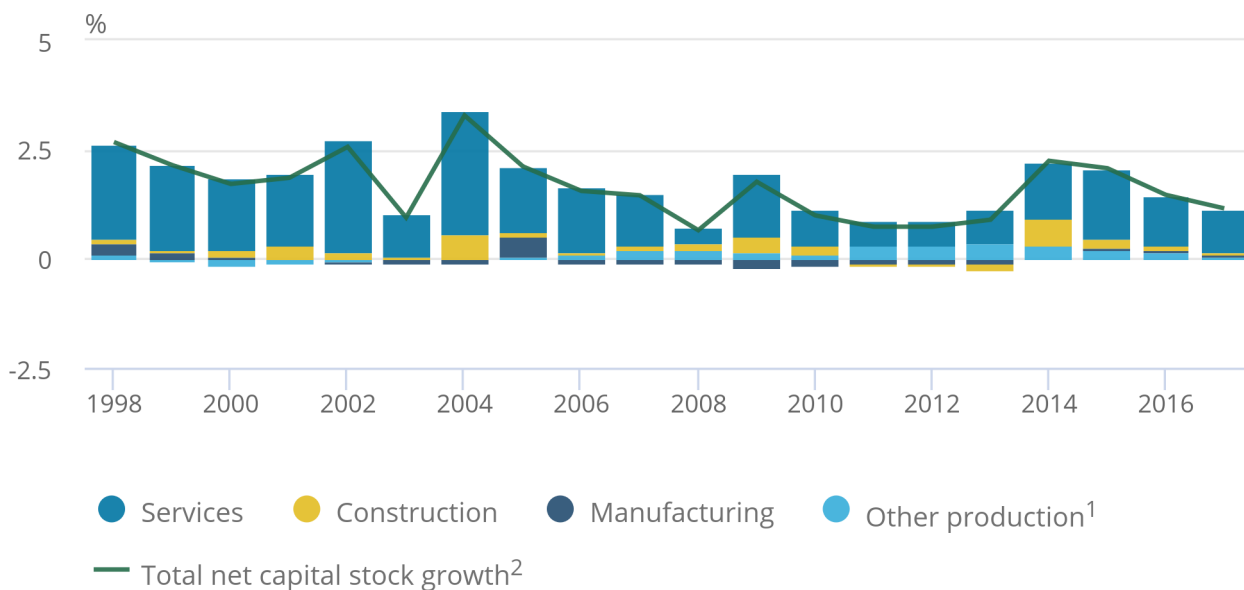
Source: Office for National Statistics

Figure 4: Contributions to annual net capital stock growth by industry, 1998 to 2017

Reference year: 2016, UK

Figure 4: Contributions to annual net capital stock growth by industry, 1998 to 2017

Reference year: 2016, UK



Source: Office for National Statistics

Notes:

1. Other production includes agriculture, forestry and fishing, mining and quarrying, utilities, and water supply and sewage.
2. The components of net capital stock growth do not always add to the total due to rounding or because chained volume measures data are not additive until the reference year.

6 . What's changed in this release

The main changes in this release are due to improvements in the estimation of ICT, other machinery and equipment and sectoral reclassifications.

Overall changes

Table 7 shows the combined impact of the changes since the previous publication. Changes in chained volume measures reflect the impact of updating the reference year to 2016, in addition to revisions in gross fixed capital formation.

Table 7: Range of annual changes to capital stock outputs since previous publication, 1997 to 2016

	UK			
	Current prices (CP)		Chained volume measures ¹ (CVM)	
	£ billion	%	£ billion	%
Gross capital stock	-12 and +10	-0.2 and +0.1	-38 and +208	-0.7 and +2.8
Net capital stock	-11 and +21	-0.5 and +0.5	-32 and +134	-0.9 and +3.1
Consumption of fixed capital	0.1 and 3	0 and 2.2	-1.4 and +4	-0.9 and +2.0

Source: Office for National Statistics

Notes:

1. CVMs are referenced to 2016.

Gross fixed capital formation (GFCF)

As part of the annual Blue Book update, improvements were made to the estimation of gross fixed capital formation from methodological changes and standard updates to data sources. There are changes across assets and sectors, most notably a methodological improvement in estimating ICT, other machinery and equipment.

In compiling estimates of GFCF, the Annual Business Survey (ABS) is used to create annual benchmark figures for investment by industry. The Blue Book 2018-consistent GFCF dataset includes 2016 benchmarks for the first time, as well as revisions to benchmarks previously used for 2014 and 2015.

Estimates of general government investment have also been updated from 2015 as more data have become available. Other data sources have been updated, including sources of dwellings and construction data.

Further information about these changes can be found in Section 14 of [Business investment in the UK: January to March 2018 revised results](#).

Housing associations

Housing associations in England were reclassified in Blue Book 2017 from private non-financial corporations to public corporations. This was reversed with effect from Quarter 4 (Oct to Dec) 2017, as regulatory changes led to housing associations being [reclassified to private non-financial corporations](#). This can be seen in the data as an upward revision to public corporations dwellings and a downward revision to private non-financial corporations dwellings since Quarter 3 (July to Sept) 2008 and a reversal of this in Quarter 4 2017. This change does not affect the total level of dwellings.

Housing associations for Wales, Scotland and Northern Ireland were reclassified from private non-financial corporations to public corporations. This can be seen in the data as an upward revision to public corporations' dwellings and a downward revision to private dwellings since Quarter 3 2008. This change should not affect the total level of dwellings.

Rail for London

In Blue Book 2018, the reclassification of Rail for London from the local government sector to the public corporations sector has been implemented. This change is effective from Quarter 2 (Apr to June) 2011. From 2013 onwards, the change between sectors is equal and offsetting.

Update to reference year

As happens in every Blue Book update, the reference year used in the calculation of chained volume measures (CVM) has been moved on, from 2015 and 2016.

7 . Future work plan

Redevelopment of the capital stocks system

The capital stocks system is in the process of being redeveloped to improve the flexibility and efficiency of the system. The Perpetual Inventory Model (PIM), which is used to derive capital stocks estimates from gross fixed capital formation (GFCF) will be reviewed in line with the [OECD Measuring Capital Manual \(PDF, 2.11MB\)](#). As part of the redevelopment the length of asset lives will be examined, following on from an academic [review of asset lives](#) that we commissioned.

Housing associations

The changes we have made for housing associations in England will be replicated for Wales, Scotland and Northern Ireland. This involves reversing the reclassification from private non-financial corporations to public corporations that took place in Blue Book 2018. This change will not affect the total level of dwellings.

8 . Quality and methodology

The [Capital Stocks Quality and Methodology Information report](#) contains important information on:

- the strengths and limitations of the data and how it compares with related data
- users and uses of the data
- how the output was created
- the quality of the output including the accuracy of the data