

Article

Unit labour costs, UK: April to June 2019

Revisions to unit labour costs and indicative estimates following Blue Book methods changes.



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1 . Introduction

In October 2019, the Office for National Statistics (ONS) announced it would delay the publication of the quarterly [Unit labour costs \(ULC\) bulletin](#) to allow more time to quality assure the impact of improvements introduced into the national accounts in Blue Book 2019. Further improvements to national accounts are published alongside this article, which will be included in the Quarterly national accounts bulletin on 20 December 2019.

This article presents the impact of both changes on unit labour costs (ULCs) estimates. The aim is to provide users with indicative information on the revisions to be included in the next publication of the ULCs bulletin, on 8 January 2020. The article will:

- provide an overview of what ULCs are and their common uses
- explain how ULCs estimates are compiled, and the components used to calculate the series
- present indicative growth rates in ULCs for the latest period, Quarter 2 (Apr to June) 2019, compared with the same period a year ago, and how they are impacted by methods changes to the estimate of mixed income (these mixed income improvements will be incorporated into the quarterly national accounts in December 2019)
- provide indicative revisions to ULCs and the main national accounts components which contributed to these revisions

2 . What are unit labour costs and how are they used?

Unit labour costs (ULCs) are an important indicator of domestically generated inflation, as they capture how labour costs grow relative to productivity; they reflect the relationship between the cost of labour and the value of corresponding outputs. ULCs reveal how wages and other labour costs companies face are growing relative to productivity. As they reflect full labour costs, they also include social security and pension contributions paid by employers, which are incurred in the production of a unit of output.

They are usually expressed as the ratio of the total labour compensation per hour worked, to the output per hour worked. The latter is also known as a measure of labour productivity. ULCs are usually measured in [percentage changes over time and as indices](#). They are also considered a [broad measure of international price competitiveness](#), as lower ULCs growth will generally reflect relatively stronger labour productivity growth and/or moderate wage increases.

We produce two additional indicators – unit wage costs (UWC) and unit wage costs for manufacturing (UWCm). The former are a narrower measure of ULCs as they exclude non-wage labour costs and are expressed as the ratio of wages and salaries per worker to output per worker. UWCm divide average weekly earnings for manufacturing by output per job. ULCs, UWC and UWCm are part of our suite of productivity National Statistics.

These statistics are used by a wide range of users for analytical purposes, and in some instances to determine financial stage payments in long-term corporate contracts. For example, the Bank of England uses the data for analysing the extent of spare capacity in the labour market, and can thereby provide a more comprehensive indicator of the inflationary pressures in the supply side of the economy. Some private manufacturing and mining companies can use the data to set financial stage payments in long term contractual agreements.

In addition to ULCs, we also produce a series of Experimental Statistics for sectional unit labour costs (SULCs) for 13 industry groups below the whole economy level. They include estimates of mixed income and its labour share, values of total labour costs in the SULCs calculations and revisions to SULCs.

Historically the ULCs, UWCs and UWCm series were incorporated in the quarterly UK productivity release. However, following a [user consultation](#) in July 2019, we introduced the stand-alone quarterly bulletin [Unit labour costs, UK](#), presenting ULCs for the whole economy and SULCs for a range of industries.

How are unit labour costs compiled?

Unit labour costs (ULCs) represent the full labour costs, including social security and pension contributions paid by employers which are incurred when producing a unit of output. For the whole economy, the units of output produced are measured as gross value added (GVA).

The share of GVA that accrues to labour, as opposed to that which accrues to capital, is known as the labour share and is an important component in estimating ULCs. In the generation of income account, GVA is distributed to compensation of employees, gross operating surplus (GOS) for the corporations and mixed income for the self-employed. For more information on compensation of employees, gross operating surplus and mixed income, see [Chapters 4 and 8 of the European System of Accounts \(ESA 2010, PDF 6.4MB\)](#) and [Estimating the impact of the self-employed in the labour share](#).

The calculation of ULCs can be shown in the following formulae:

$$\text{ULC} = \frac{\text{total labour costs per hour worked}}{\text{Output per hour worked}}$$

This simplifies to :
$$\frac{\text{total labour costs}}{\text{GVA}}$$

Expanding the formula for labour costs =

$$\frac{\text{compensation of employees} + \alpha(\text{mixed income}) - \text{employment subsidies}}{\text{GVA}}$$

$$\alpha = \frac{\text{compensation of employees}}{\text{compensation of employees} + \text{gross operating surplus}}$$

Table 1: Published data series used in the compilation of unit labour costs

CDID	Variable	Description
DTWM	Compensation of employees	UK (S.1): Compensation of employees (D.1), Uses: Current price: £m: SA
ROYH	Mixed income	HH & NPISH (S.14_S.15): Mixed Income, gross (B.3g): Resources: Current price: £m: SA
CGBZ	Gross operating surplus	Income based: Gross operating surplus of corporations: Total: CP SA £m
N/A	Employment subsidies ¹	

Source: Office for National Statistics

Notes

1. Employment subsidies are not a published series. [Back to table](#)

The formula for calculating ULCs from the data input series is:

$$\frac{DTWM + \left(\frac{DTWM}{DTWM+CGBZ} \right) ROYH - \text{employment subsidies}}{GVA}$$

3 . Indicative growth in unit labour costs for Quarter 2 (April to June) 2019

Given the availability of improved data and using the methods laid out in the parallel paper, we present indicative estimates of unit labour costs (ULCs). We propose to implement these changes into the regular Unit labour costs bulletin in January 2020. Indicative estimates are calculated using the mixed income proposed methods changes published alongside this article, which will be incorporated into the quarterly national accounts in December 2019 for Quarter 2 2019.

In Quarter 2 2019, ULCs increased by 3.6%, compared with the same period a year ago, making it the 13th consecutive quarter of growth in ULCs. This is the largest growth since Quarter 1 (Jan to Mar) 2018 when ULCs grew by 3.8%. Figure 1 shows indicative ULCs quarter-on-year log growth since 1997. Holding other factors constant, increasing output per hour reduces ULCs and the other way around. As a result, output per hour growth has its sign reversed in Figure 1. In this presentation, positive output per hour growth has a negative effect on ULCs growth, while negative output per hour growth has a positive effect on ULCs growth.

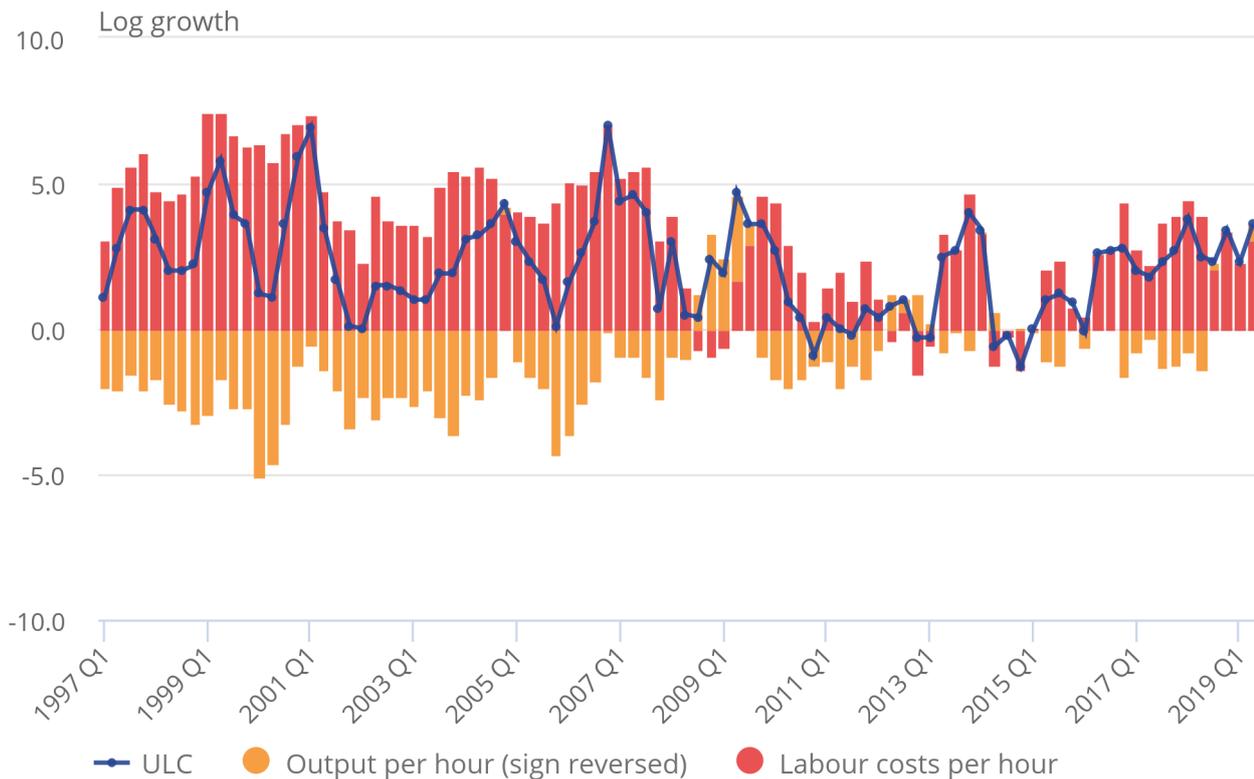
The higher than usual growth in ULCs in Quarter 2 2019 was driven by labour costs growing faster than gross value added (GVA) for both employees and the self-employed. Figure 2 breaks down the indicative Quarter 2 2019 log growth to ULCs by its components: compensation of employees, mixed income and the labour share of mixed income and GVA. Strong growth in the quarter in compensation of employees and mixed income, of 4.8% and 5.7% respectively, outpaced the 1.3% growth in GVA compared with the same period a year ago.

Figure 1: Whole economy unit labour costs continue to increase between 2% and 4% compared with the same quarter a year ago

Whole economy unit labour costs, indicative quarter on year growth rates, seasonally adjusted, UK, Quarter 1 (Jan to Mar) 1997 to Quarter 2 (Apr to June) 2019

Figure 1: Whole economy unit labour costs continue to increase between 2% and 4% compared with the same quarter a year ago

Whole economy unit labour costs, indicative quarter on year growth rates, seasonally adjusted, UK, Quarter 1 (Jan to Mar) 1997 to Quarter 2 (Apr to June) 2019



Source: Office for National Statistics

Notes:

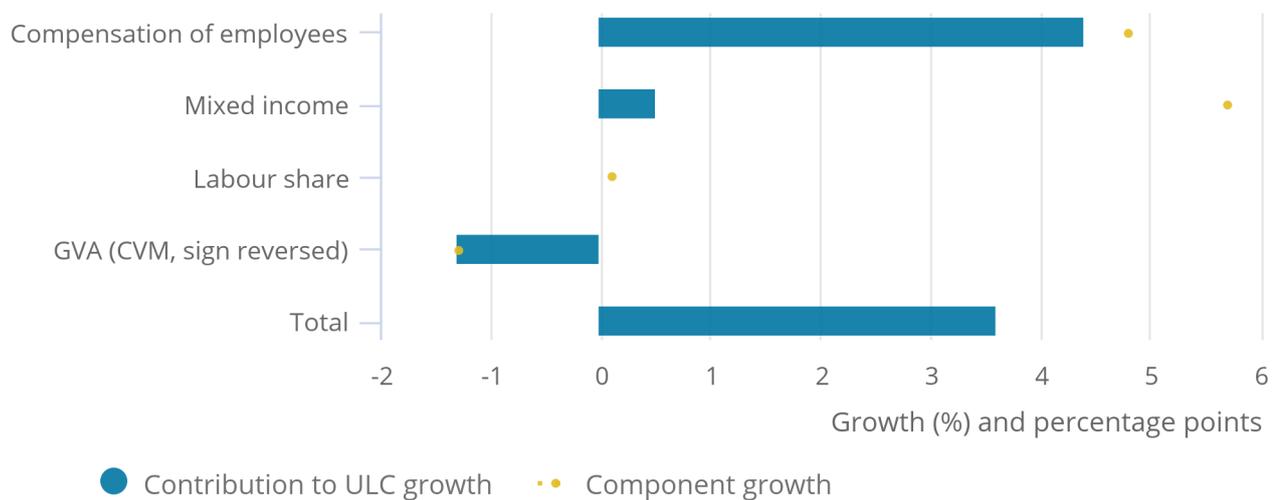
1. Growth is measured as percentage log changes.
2. Labour costs per hour estimates will differ from those in our Index of Labour Costs per Hour bulletin, due to differences in methodology.
3. Estimates of output per hour have had their sign reversed to reflect how they affect unit labour costs. An increase in output per hour will contribute negatively to ULCs, while a decrease in output per hour will contribute positively to unit labour costs.

Figure 2: Growth in unit labour costs was driven primarily by compensation of employees

Whole economy unit labour costs and components, indicative quarter on year growth rates, seasonally adjusted, UK, Quarter 2 (Apr to June) 2019

Figure 2: Growth in unit labour costs was driven primarily by compensation of employees

Whole economy unit labour costs and components, indicative quarter on year growth rates, seasonally adjusted, UK, Quarter 2 (Apr to June) 2019



Source: Office for National Statistics

Notes:

1. Estimates of GVA have had their sign reversed to reflect how they affect unit labour costs. An increase in GVA will contribute negatively to unit labour costs, while a decrease in GVA will contribute positively to unit labour costs.
2. Growth is measured as percentage log changes.

4 . Revisions to unit labour costs and unit wage costs

The Blue Book 2019 introduced a range of methodological improvements to the components of unit labour costs (ULCs) and unit wage costs (UWCs). These components are gross value added, compensation of employees, mixed income. Consequently the alpha share was also revised. Quarterly national accounts to be published on 20 December 2019 will include further improvements. Information on the revisions to these series can be found in this [article about Blue Book 2019](#).

Unit wage costs of manufacturing (UWCm) are affected only indirectly, via output per job estimates. Output per job estimates consistent with Blue Book 2019 were published in the [Labour productivity bulletin](#) released in October 2019 published on 5 July 2019.

Between 1997 and 2018, the combined effect of these revised series resulted in a minimal average revision to growth in annual ULCs, though revisions to individual years have fluctuated, with the largest absolute revision of 1.9 percentage points. From 2016 onwards, the path of ULCs growth has been revised upwards for three consecutive years. Substantial revisions are also seen during the period 1997 to 2001 and in the years 2009 and 2012.

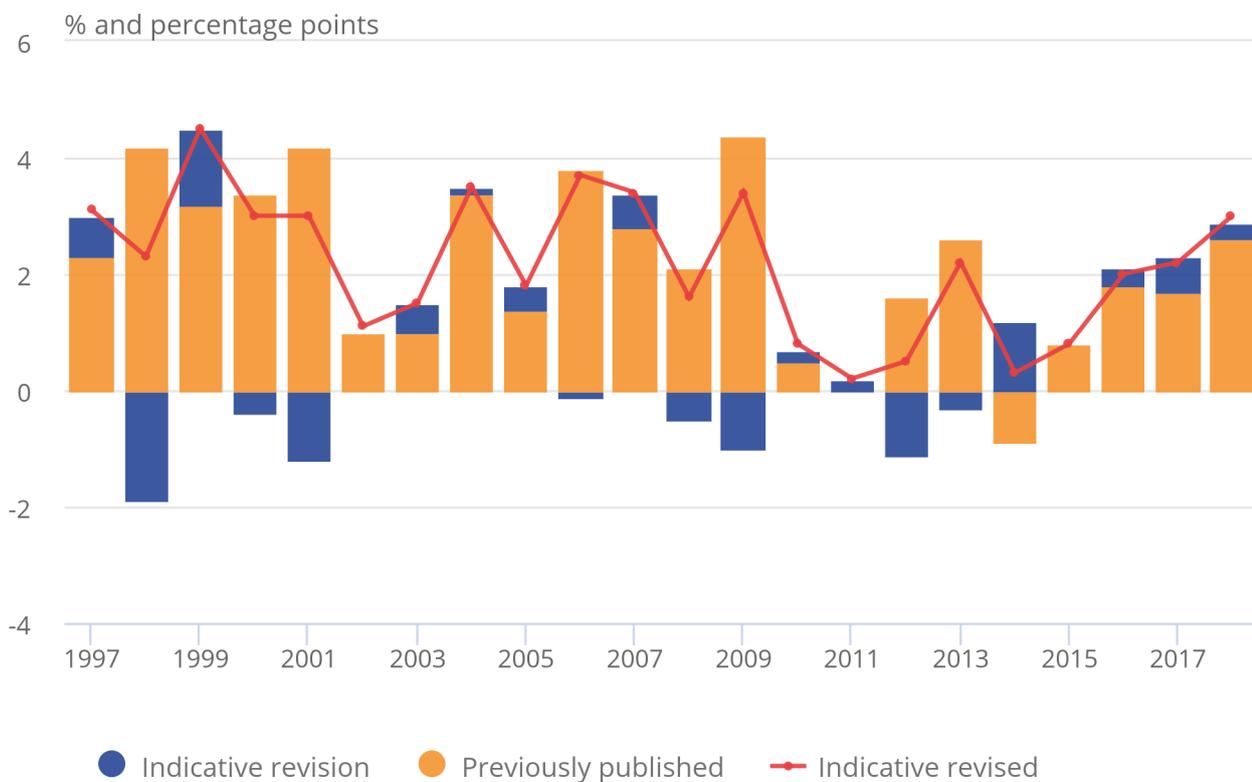
Figure 3 shows indicative revisions to annual growth rates of unit labour costs published on 5 July 2019.

Figure 3: Indicative revised annual growth rate in unit labour costs

Whole economy unit labour costs, previously published and indicative revised annual growth rates, UK, 1997 to 2018

Figure 3: Indicative revised annual growth rate in unit labour costs

Whole economy unit labour costs, previously published and indicative revised annual growth rates, UK, 1997 to 2018



Source: Office for National Statistics

Notes:

1. Growth is measured as percentage log changes.
2. Figures may not sum due to rounding.

Over half the GVA generated in the production process is distributed to compensation of employees. This makes it by far the largest component of labour costs and therefore the main driver behind most revisions, particularly when it is revised disproportionately or in the opposite direction to GVA. For example, in 1998, growth in ULCs was revised down by 1.9 percentage points from 4.2 to 2.3 per cent with compensation of employees contributing to 2.2 percentage points of this revision. The downward revision in GVA only accounted for 0.2 percentage points of this revision.

In 1999, ULCs growth was revised upwards by 1.3 percentage points, from 3.2 to 4.5 per cent. This was because of upward revisions in labour costs of both employees and the self-employed, mainly dominated by an upward revision in growth of compensation of employees which contributed 1.1 percentage points. Upward revisions to GVA only accounted for negative 0.1 percentage points.

In 2012, growth in ULCs was also revised down by 1.1 percentage points, as a result of both labour costs, for employees and the self-employed, being revised down by a greater proportion than GVA.

Notably, there have also been certain periods when mixed income, which accounts for around 7% of GVA and captures labour costs of self-employed persons, has driven revisions of ULCs growth, for example 2007 to 2008, 2010, 2017 and 2018.

Figure 4 breaks down the indicative annual revisions to ULCs log growth by its components; compensation of employees, mixed income, the labour share of mixed income and GVA. In 2007, ULCs growth was revised upwards by 0.6 percentage points and half of that revision was driven by mixed income.

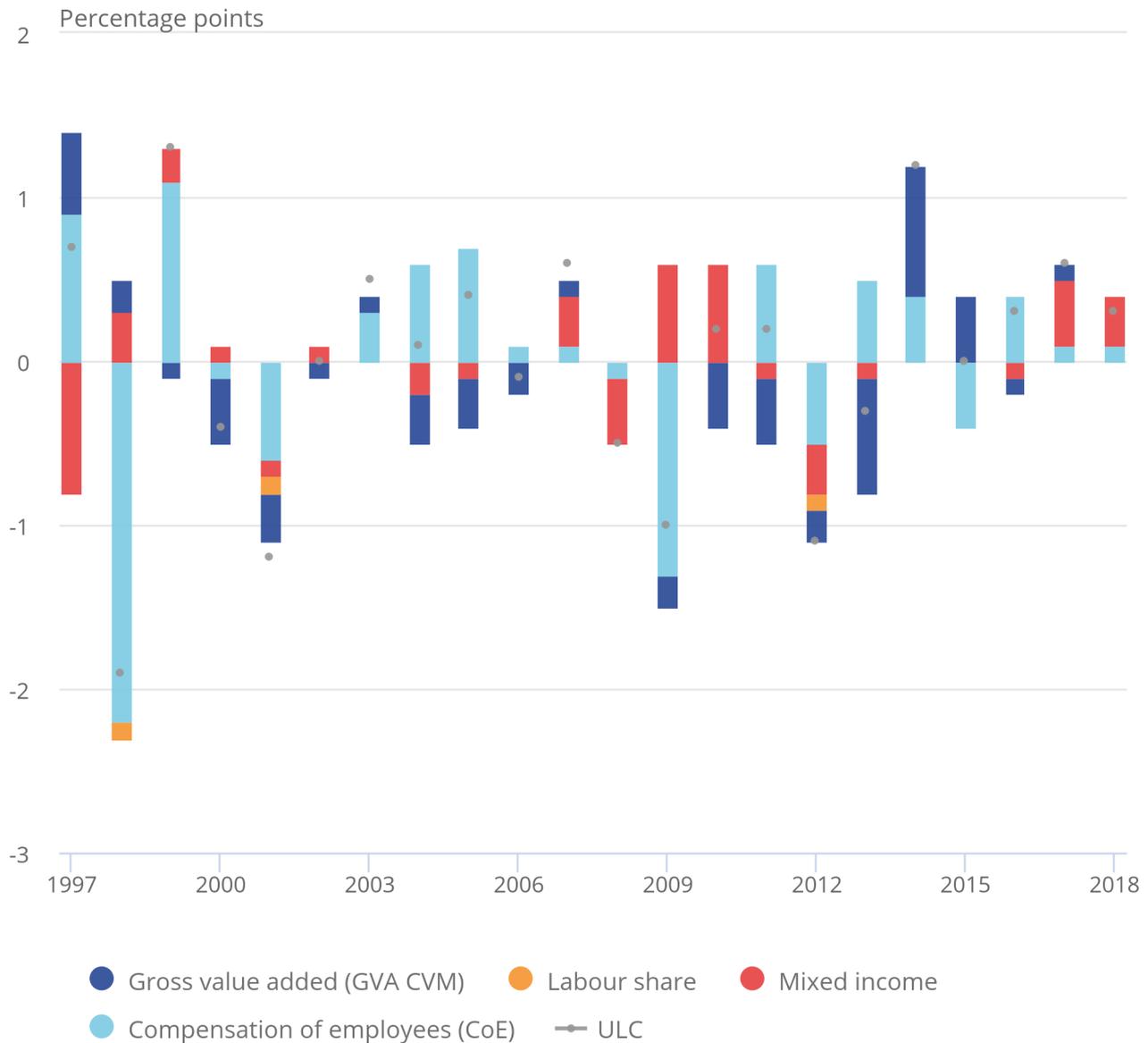
Similarly, in 2008, ULCs growth was revised down by 0.5 percentage points and mixed income contributed to four-fifths of this revision while compensation of employees contributed to the remaining one-fifth of this as GVA was unrevised. During 2017, ULCs growth was revised upwards by 0.6 percentage points, with mixed income contributing to two-thirds of this revision.

Figure 4: Revisions to growth in unit labour costs incorporated revisions to all components

Revisions to whole economy unit labour costs, annual growth rates, UK, 1997 to 2018

Figure 4: Revisions to growth in unit labour costs incorporated revisions to all components

Revisions to whole economy unit labour costs, annual growth rates, UK, 1997 to 2018



Source: Office for National Statistics

Notes:

1. Estimates of GVA have had their sign reversed to reflect how they affect unit labour costs. An increase in GVA will contribute negatively to unit labour costs; while a decrease in GVA will contribute positively to unit labour costs.
2. Percent log growth used here will differ slightly from percent growth values in published datasets.

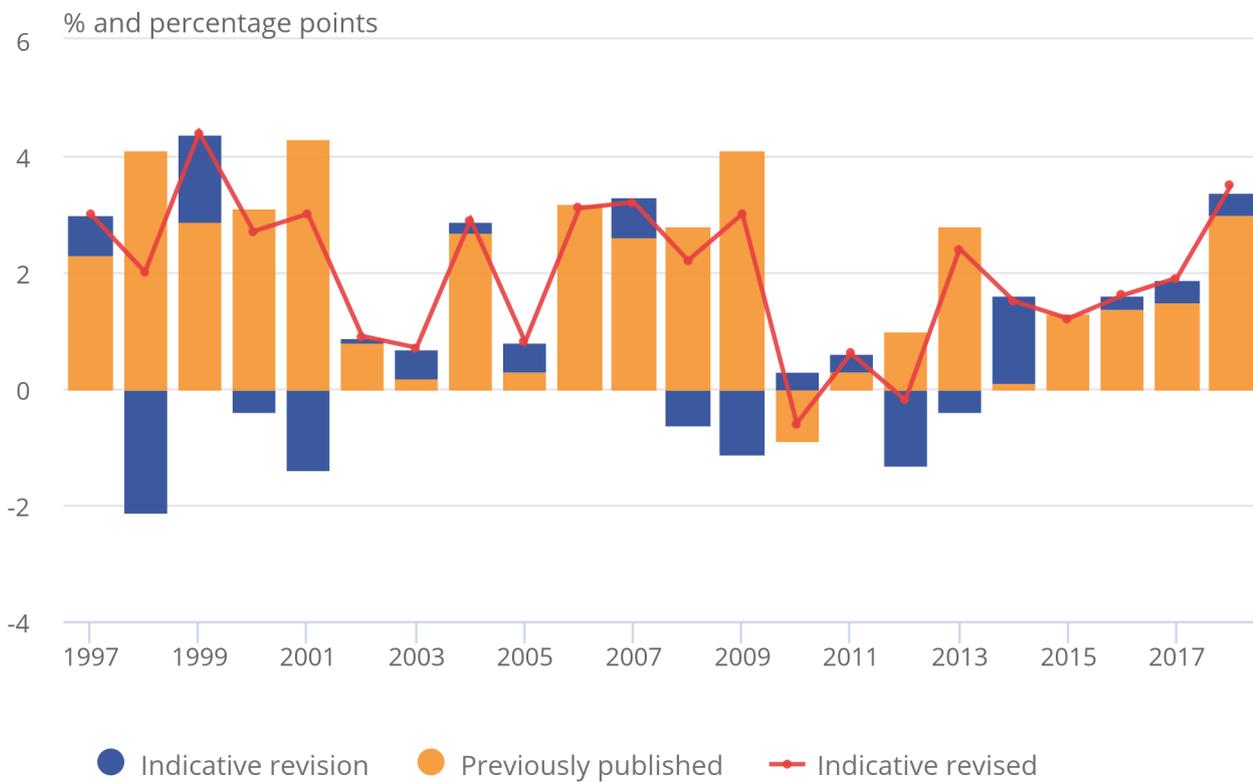
As wages and salaries account for over 80% of the value of component of compensation of employees, unit wage costs (UWC) show broadly similar revisions to ULCs growth, with the largest revisions seen in 1998, 1999 and 2014. This is mainly driven by revisions to wages and salaries, outweighing revisions to GVA. Revisions to mixed income are also driving UWC growth in 2007, 2008, 2010, 2017, and 2018. Figure 6 breaks down the indicative annual revisions to UWCs log growth by its components, compensation of employees, mixed income, the labour share of mixed income and GVA.

Figure 5: Indicative revised annual growth rate in unit wage costs

Whole economy unit wage costs, previously published and indicative revised annual growth rates, UK, 1997 to 2018

Figure 5: Indicative revised annual growth rate in unit wage costs

Whole economy unit wage costs, previously published and indicative revised annual growth rates, UK, 1997 to 2018



Source: Office for National Statistics

Notes:

1. Growth is measured as percentage log changes.
2. Figures may not sum due to rounding.

Figure 6: Revisions to growth in unit wage costs incorporated revisions to all components

Revisions to whole economy unit wage costs, annual growth rates, UK, 1997 to 2018

Figure 6: Revisions to growth in unit wage costs incorporated revisions to all components

Revisions to whole economy unit wage costs, annual growth rates, UK, 1997 to 2018



Source: Office for National Statistics

Notes:

1. Estimates of GVA have had their sign reversed to reflect how they affect unit wage costs. An increase in GVA will contribute negatively to unit wage costs; while a decrease in GVA will contribute positively to unit wage costs.
2. Percent log growth used here will differ slightly from percent growth values in published datasets.

Revisions to annual growth will also impact quarterly growth rates, which can be more volatile. Indicative estimates from Quarter 1 (Jan to Mar) 1997 to Quarter 1 2019 show an average absolute revision comparing quarter on year growth of 0.8 percentage points for ULCs and 0.9 percentage points for UWCs. The largest absolute quarter on year revision for ULCs and UWCs was 2.8 and 3.2 percentage points respectively.

Changes introduced in Blue Book 2019 and upcoming improvements to the quarterly national accounts have affected all periods from 1997 onwards, and in turn will also affect the components of ULCs , UWC and to a lesser extent UWCm for the same periods. ULCs estimates for earlier years, that is before 1997, will not include the changes introduced in Blue Book 2019. Further information on Blue Book 2019 revisions can be found in this [article about Blue Book 2019](#) and this article about upcoming changes in Quarterly National Accounts.

The unit labour costs bulletin that will be released in January 2020, will be consistent with the national accounts [revisions policy](#).