

Statistical bulletin

# Trends in UK business dynamism and productivity: 2024

Statistics on firm-level productivity, business dynamism and business markup estimates, showing how the economy has changed from 1997 to 2023. These are official statistics in development.

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Release date: 3 December 2024

Next release: To be announced

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# 1. Main points

- In 2022, 70.9% of workers in the UK worked in firms with labour productivity below the mean.
- Workers in firms at the 90th percentile of firm-level labour productivity produced 3.59 times as much output compared with workers in firms at the median of the distribution in 2022; this is unchanged from 2021.
- The net job creation rate in 2023 was 1.6%, with underlying gross job creation of 11.1% and gross job destruction of 9.5%.
- The size-age groups of "large old" and "micro new" firms had the largest shares of overall job creation and destruction.
- The mean markup on intermediate consumption was 1.27 in 2022, which is unchanged from 2021 and the joint-highest since the series began in 1997.

# 2. Firm-level labour productivity

This bulletin presents firm-level estimates of labour productivity. This is measured as approximate Gross Value Added (aGVA) per worker. An advantage of using firm-level data is that we can see the contribution of different types of firms to overall labour productivity growth.

Figure 1 shows the average annual UK productivity growth for grouped periods since 1998. It also shows the contribution of "frontier" firms, "middle" firms, and "laggard" firms to total productivity growth. Frontier firms are those with labour productivity in the top 10% of the labour productivity distribution, weighted by the number of people they employ. Middle firms are between the 50th and 90th percentile of the employment-weighted labour productivity distribution. Laggard firms are in the bottom half of the employment-weighted labour productivity distribution.

This decomposition shows that frontier firms contributed 1.2 percentage points to the 3.1% average annual growth in labour productivity between 2020 and 2022, or 38.0% of the growth. Middle firms contributed 53.0% of the growth between 2020 and 2022, and laggard firms contributed 9.0% of the growth. Frontier firms contributed relatively more to total productivity from 2011 to 2019. Laggard firms contributed a similar level from 2011 to 2019 as they did in more recent years.

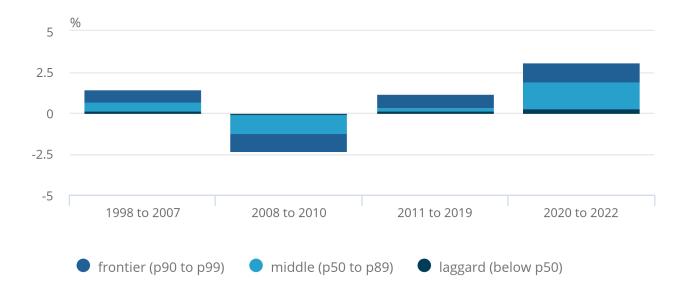
The period from 2020 to 2022 includes the coronavirus (COVID-19) pandemic, which resulted in large annual changes to measured firm-level labour productivity. The 3.1% average labour productivity growth over this period reflects a 10.6% decrease in 2020, a 12.9% increase in 2021, and a 7.0% increase in 2022.

Figure 1: Aggregate labour productivity growth continues to be disproportionately reliant on frontier firms

Firm-level percentiles contribution to total growth in mean annual approximate Gross Value Added (aGVA) per worker, grouped time periods between 1998 and 2022, non-financial business sector, 2022 constant prices, UK

# Figure 1: Aggregate labour productivity growth continues to be disproportionately reliant on frontier firms

Firm-level percentiles contribution to total growth in mean annual approximate Gross Value Added (aGVA) per worker, grouped time periods between 1998 and 2022, non-financial business sector, 2022 constant prices, UK



Source: Annual Business Survey from the Office for National Statistics, and Northern Ireland Annual Business Inquiry from the Northern Ireland Statistics and Research Agency

#### Notes:

- 1. Time period growth rates represent the average of the annual growth rates across the period.
- 2. Firms are weighted by the number of people they employ. See <u>Section 6: Data sources and quality for further details</u>.

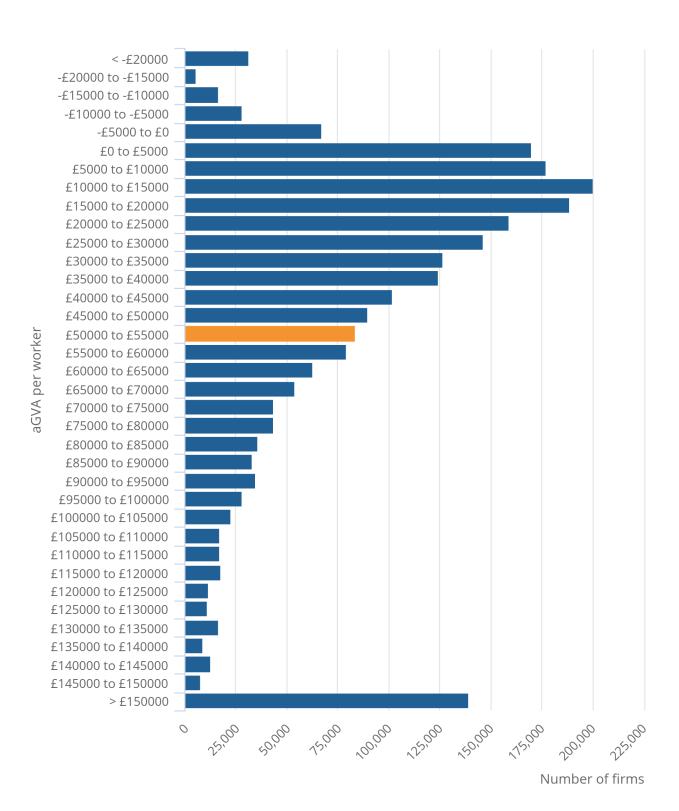
Labour productivity is not distributed evenly across workers and firms. Figure 2 shows how many firms were in each firm-level labour productivity band, which is a firm-weighted distribution, in 2022. In 2022, 67.7% of firms in the UK had labour productivity below the mean. This proportion has remained unchanged from 2021.

Figure 2: Most firms are around the median productivity, but there are also many firms that are highly productive.

Number of firms by approximate Gross Value Added (aGVA) per worker, 2022, non-financial business sector, 2022 prices, UK

# Figure 2: Most firms are around the median productivity, but worker: £ there are also many firms that are highly productive.

Number of firms by approximate Gross Value Added (aGVA) per worker, 2022, non-financial business sector, 2022 prices, UK



Source: Annual Business Survey from the Office for National Statistics, and Northern Ireland Annual Business Inquiry from the Northern Ireland Statistics and Research Agency

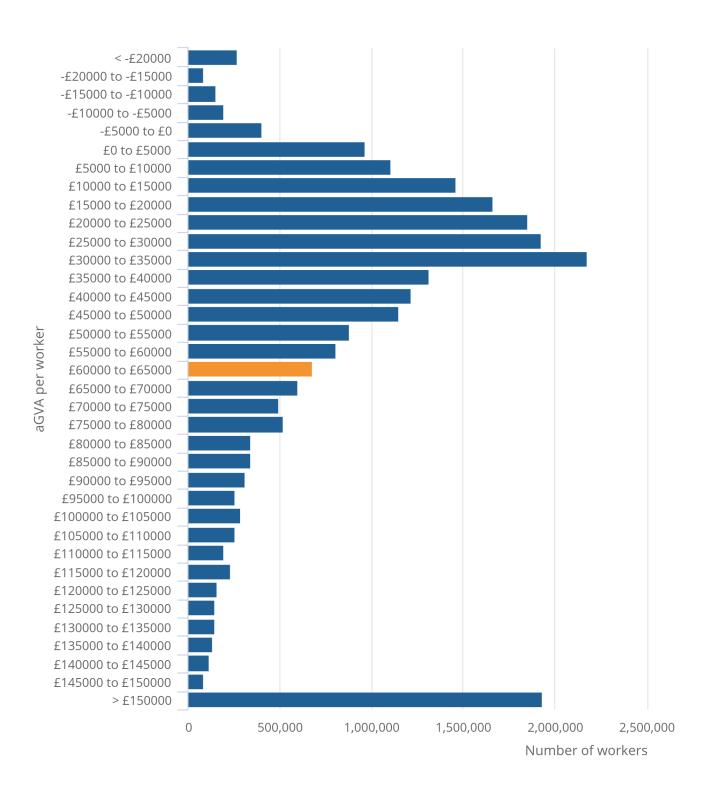
Figure 3 shows the total number of workers that were employed in each firm-level labour productivity band, which is an employment-weighted distribution, in 2022. In 2022, 70.9% of workers in the UK worked in firms with labour productivity below the mean, compared with 70.6% in 2021. The employment-weighted mean labour productivity is £61,000. This is £8,000 higher than the firm-weighted mean labour productivity.

Figure 3: Most firms are around the median productivity, but there are also many firms that are highly productive

Distribution of labour productivity, non-financial business sector, 2022 constant prices, UK, 1997 to 2022

# Figure 3: Most firms are around the median productive there are also many firms that are highly productive

Distribution of labour productivity, non-financial business sector, 2022 constant prices, UK, 1997 to 2022



Source: Annual Business Survey from the Office for National Statistics, and Northern Ireland Annual Business Inquiry from the Northern Ireland Statistics and Research Agency

Figure 4 shows how the distribution of firm-level productivity has evolved over time. Labour productivity growth has been slowest at the median, with the lowest productivity firms closing the gap on the median firms and the highest productivity firms pulling further ahead. The mean aGVA per worker increased at a compound annual growth rate of 1.0% between 1997 and 2022. This compares with 0.9% for those firms at the 90th percentile, 0.4% for firms at the median, and 1.4% for firms at the 10th percentile.

Figure 4: Firm-level labour productivity increased across the distribution in 2022

Distribution of labour productivity, non-financial business sector, 2022 constant prices, UK, 1997 to 2022

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Distribution of labour productivity, non-financial business sector, 2022 constant prices, UK, 1997 to 2022



Source: Annual Business Survey from the Office for National Statistics, and Northern Ireland Annual Business Inquiry from the Northern Ireland Statistics and Research Agency

#### Notes:

1. Firms are weighted by the number of people they employ.

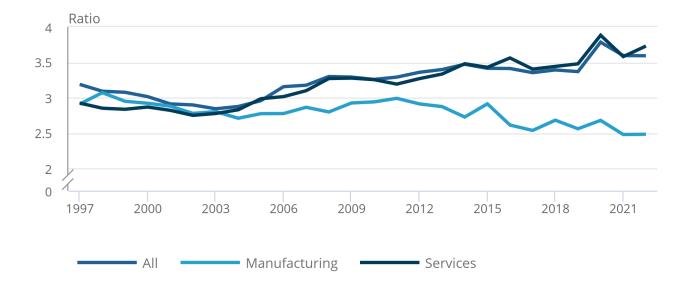
Figure 5 shows the dispersion of firm-level productivity, which is measured by the ratio between the 90th percentile and the 50th percentile of the employment-weighted labour productivity distribution. The ratio for all firms was 3.59 in 2022, which is unchanged from 2021. However, there were differences between the services and manufacturing sectors. The 90/50 ratio was 3.73 in non-financial market services in 2022, up from 3.58 in 2021. The 90/50 ratio was 2.48 in manufacturing in 2022, which is unchanged from 2021.

# Figure 5: The dispersion of firm-level productivity has increased for service firms since 1997, but has fallen for manufacturing

Ratio of approximate Gross Value Added (aGVA) per worker in the 90th percentile of firms to the 50th percentile of firms, non-financial business sector, 2022 constant prices, UK, 1997 to 2022

# Figure 5: The dispersion of firm-level productivity has increased for service firms since 1997, but has fallen for manufacturing

Ratio of approximate Gross Value Added (aGVA) per worker in the 90th percentile of firms to the 50th percentile of firms, non-financial business sector, 2022 constant prices, UK, 1997 to 2022



Source: Annual Business Survey from the Office for National Statistics, and Northern Ireland Annual Business Inquiry from the Northern Ireland Statistics and Research Agency

#### Notes:

Firms are weighted by the number of people they employ.

# 3. Business dynamism

Business dynamism can be measured as the rate at which jobs are created and destroyed. Jobs are created by existing businesses ("incumbents") growing and by new businesses opening. Jobs are destroyed by existing businesses shrinking or closing. Business dynamism can support productivity growth if new and growing businesses have higher productivity than shrinking and closing businesses.

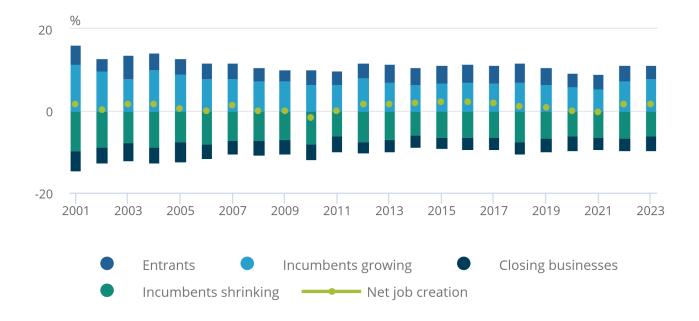
Figure 6 shows how many jobs were created and destroyed as a share of total jobs over the period 2001 to 2023. The net job creation rate in 2023 was 1.6%, with an underlying gross job creation rate of 11.1%, and a gross job destruction rate of 9.5%. These levels of gross and net job creation are similar to rates before the coronavirus (COVID-19) pandemic in 2020 and 2021. However, they are still lower than the gross job creation and destruction rates in most years before the 2008 economic downturn.

Figure 6: Job creation and destruction rates have been lower since the 2008 economic downturn

Net job creation rate and gross job creation and destruction rates by business dynamics, whole economy, UK, 2001 to 2023

# Figure 6: Job creation and destruction rates have been lower since the 2008 economic downturn

Net job creation rate and gross job creation and destruction rates by business dynamics, whole economy, UK, 2001 to 2023



Source: Longitudinal Business Database from the Office for National Statistics

#### Notes:

1. The job creation and job destruction rate is calculated as the ratio of jobs created or destroyed in period T over total employment in period T minus one.

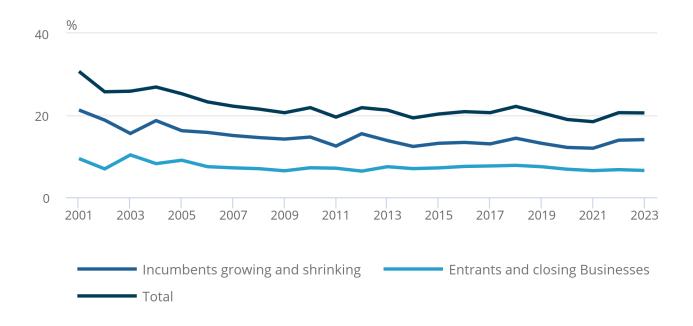
The growing and shrinking incumbents contribute more to overall job creation and destruction rates than entrants and closing businesses across all years. Most of the decline in dynamism since 2001 to 2008 has been because of a lower contribution of job reallocation from incumbents (Figure 7).

Figure 7: Most job creation and destruction occurs in incumbent firms, and fewer jobs are created or destroyed by new and closing businesses

Annual reallocation rates, whole economy, UK, 2001 to 2023

# Figure 7: Most job creation and destruction occurs in incumbent firms, and fewer jobs are created or destroyed by new and closing businesses

Annual reallocation rates, whole economy, UK, 2001 to 2023



Source: Longitudinal Business Database from the Office for National Statistics

#### Notes:

The sum of absolute job creation and destruction is the reallocation rate or "churn".

We have broken down job creation and destruction statistics by firm size and age for the first time. This gives new insights into the types of firms that are contributing to changes in business dynamism over time. There were 3.1 million active firms in our Longitudinal Business Database, the source data for these dynamism statistics, in the UK in 2023. Between 2022 and 2023, 3.7 million jobs were created, and 3.2 million jobs were destroyed.

Table 1 shows that 89.6% of firms have between zero and nine employees, so micro firms dominate the UK economy in terms of number. The age distribution is more even. Approximately one-third of firms are "new" (aged between zero and two years), one-third are "young" or "mature" (aged between 3 and 10 years), and one-third are "old" (aged 11 years and over).

Table 2 provides more information on how much employment there is in these types of firms. Micro firms only make up 18.4% of employment, despite reflecting 89.6% of firms. Large firms account for a relatively higher share of employment (52.4%). Large old firms dominate with 46.6% of total employment.

Table 1: Most micro firms are new and most large firms are old Distribution of firms by size and age, UK, 2023

	New (0 to 2 years)	Young (3 to 5 years)	Mature (6 to 10 years)	Old (11 and over years)	Total
Micro (0 to 9 employees)	31.6	16.0	16.3	25.8	89.6
Small (10 to 49 employees)	1.1	1.1	1.5	4.8	8.4
Medium (50 to 249 employees)	0.1	0.1	0.2	1.1	1.6
Large (250 and over employees)	0.02	0.02	0.04	0.3	0.4
Total	32.8	17.2	18.0	31.9	100

Source: Longitudinal Business Database from the Office for National Statistics

#### Notes

1. Percentage of total firms: cells sum to 100%.

Table 2: Almost half of employment is in large, old firms Distribution of employment by firm by size and age, UK, 2023

	New (0 to 2 years)	Young (3 to 5 years)	Mature (6 to 10 years)	Old (11 and over years)	Total
Micro (0 to 9 employees)	5.1	3.1	3.4	6.8	18.4
Small (10 to 49 employees)	1.8	1.8	2.6	9.1	15.3
Medium (50 to 249 employees)	1.0	1.1	2.0	9.9	14.0
Large (250 and over employees)	1.5	1.6	2.7	46.6	52.4
Total	9.4	7.6	10.7	72.4	100

Source: Longitudinal Business Database from the Office for National Statistics

#### Notes

1. Percentage of total firms: cells sum to 100%.

Tables 3 and 4 show the distribution of job creation and destruction across these firm size and age groups for 2023. Large firms accounted for the largest proportion of job creation (40.3%), while the lowest job destruction came from medium firms (10.9%). Micro firms accounted for 50.9% of job destruction, which is nearly twice their share of job creation (25.7%). New and old firms dominated job creation, with each contributing around two-fifths of the total job creation. Old firms also dominated job destruction, accounting for 45.3% of the total number of jobs destroyed in 2023.

Table 3: Large old and micro new firms are the top contributors to job creation Distribution of job creation by firm size and age, UK, 2023

	New (0 to 2 years)	Young (3 to 5 years)	Mature (6 to 10 years)	Old (11 and over years)	Total
Micro (0 to 9 employees)	19.1	2.5	2.0	2.0	25.7
Small (10 to 49 employees)	8.1	2.6	2.6	3.9	17.5
Medium (50 to 249 employees)	5.0	2.1	2.6	6.9	16.5
Large (250 and over employees)	7.0	2.3	3.6	27.4	40.3
Total	39.2	9.9	10.8	40.2	100

Source: Longitudinal Business Database from the Office for National Statistics

#### Notes

1. Percentage of total firms: cells sum to 100%.

Table 4: Large old and micro new firms are the top contributors to job destruction Distribution of job destruction by firm size and age, UK, 2023

	New (0 to 2 years)	Young (3 to 5 years)	Mature (6 to 10 years)	Old (11 and over years)	Total
Micro (0 to 9 employees)	17.2	9.9	9.0	14.8	50.9
Small (10 to 49 employees)	3.1	2.4	2.7	6.4	14.6
Medium (50 to 249 employees)	1.7	1.3	1.5	6.3	10.9
Large (250 and over employees)	2.4	1.7	1.7	17.8	23.6
Total	24.5	15.3	14.9	45.3	100

Source: Longitudinal Business Database from the Office for National Statistics

#### Notes

1. Percentage of total firms: cells sum to 100%.

Large old firms contributed 27.4% and 17.8% share of job creation and destruction, respectively. Micro new firms contributed 19.1% and 17.2% share of job creation and destruction, respectively.

Figure 8a shows that micro new firms created more jobs than large old firms between 2019 and 2022. However, large old firms contributed 3 percentage points to the overall job creation rate of 11.1% in 2023. This is an increase from 2022 and is more than micro new firms' contribution of 2 percentage points in 2023.

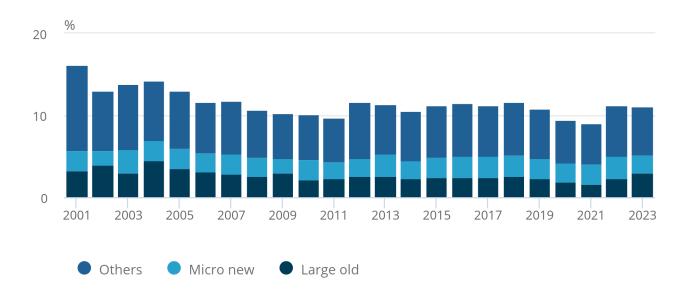
Figure 8b shows how the job destruction rates for the two groups diverged between 2019 and 2022. Large old firms' job destruction rate rose between 2020 and 2022, while job destruction from micro new firms fell. This pattern was reversed in 2023, with the job destruction rates for both groups reaching almost the same level.

Figure 8a: Large old firms and micro new firms contributed nearly half of total job creation

Annual job creation rates of large old, micro new and other firms, UK, 2001 to 2023

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Annual job creation rates of large old, micro new and other firms, UK, 2001 to 2023



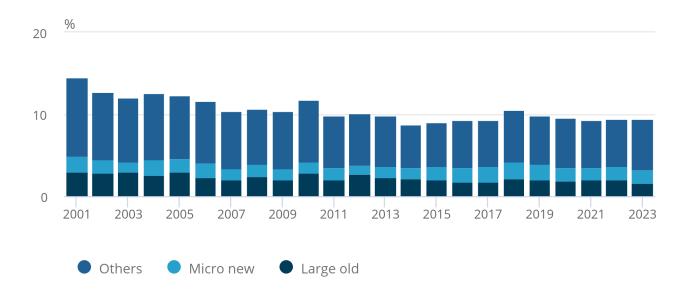
Source: Longitudinal Business Database from the Office for National Statistics

Figure 8b: Large old firms and micro new firms contributed over a third of total job destruction

Annual job destruction rates of large old, micro new and other firms, UK, 2001 to 2023

# Figure 8b: Large old firms and micro new firms contributed over a third of total job destruction

Annual job destruction rates of large old, micro new and other firms, UK, 2001 to 2023



Source: Longitudinal Business Database from the Office for National Statistics

#### Notes:

- 1. The job creation (or destruction) rate is calculated as the ratio of jobs created (or destroyed) by the size and age group in period T over total employment in period T minus 1. Summing the rates across all size-age categories equals the total job creation (or destruction) rate.
- 2. "Others" includes the other 14 age/size groupings.

### 4. Market power

Market power refers to the ability of businesses to set prices in excess of costs. When businesses have high market power, they can restrict output to maximise profits by setting prices in excess of costs.

Market power can be measured by estimating profit margins or markups. Profit margin is taken directly from reported data as profit divided by gross output. Markup is estimated as the ratio between the final selling price and the estimated cost of production. The markups estimation is a useful additional measure to profit margin because many companies use profits to pay for capital in the production process and the markup considers production costs as a whole.

Markups are measured here on intermediate consumption costs, which are goods and services used up during production. We use a version of the method set out in <u>De Loecker and Warzynski's Markups and firm-level export status working paper (PDF, 424KB)</u>. These markups represent where a business could afford to purchase more intermediate inputs, to produce more output at a reduced profit but not at a loss. Markups above one are evidence of market power.

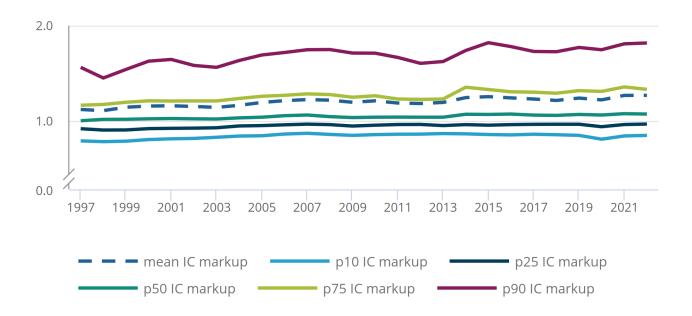
Figure 9 shows that the mean intermediate consumption markup in the non-financial business sector increased from 1.12 in 1997 to a high of 1.27 in 2022. Markup growth over this period was concentrated at the top of the markup distribution. The ratio between the 90th percentile and the 50th percentile intermediate consumption markup rose from 1.56 in 1997 to 1.70 in 2022.

Figure 9: The mean estimated markup was at a record high in 2022

Distribution of markups on intermediate consumption, non-financial business sector, UK, 1997 to 2022

Figure 9: The mean estimated markup was at a record high in 2022

Distribution of markups on intermediate consumption, non-financial business sector, UK, 1997 to 2022



Source: Annual Business Survey from the Office for National Statistics, and Northern Ireland Annual Business Inquiry from the Northern Ireland Statistics and Research Agency

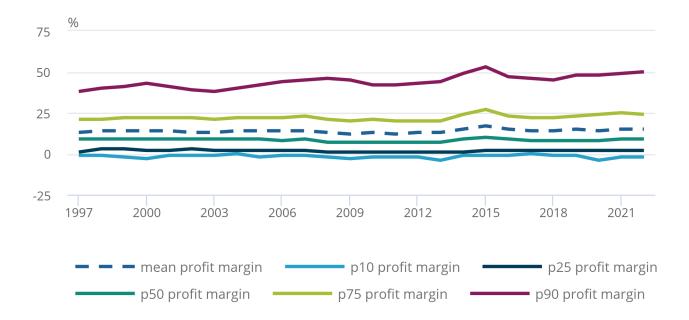
Figure 10 shows the mean profit margin in the non-financial business sector increased from 13.0% in 1997 to 15.1% in 2022. The ratio between the 90th percentile and the 50th percentile profit margin rose from 4.22 in 1997 to 5.84 in 2022. There was a small increase in mean profit margin from 14.9% in 2021 to 15.1% in 2022. This occurred despite falls in profit margins across most of the distribution, except at the 90th percentile, which increased from 48.8% in 2021 to 50.2% in 2022.

Figure 10: Profit margins rose at the 90th percentile in 2022

Distribution of profit margins, non-financial business sector, UK, 1997 to 2022

# Figure 10: Profit margins rose at the 90th percentile in 2022

Distribution of profit margins, non-financial business sector, UK, 1997 to 2022



Source: Annual Business Survey from the Office for National Statistics, and Northern Ireland Annual Business Inquiry from the Northern Ireland Statistics and Research Agency

# 5. Data on trends in UK business dynamism and productivity

Firm-level profit margins, intermediate consumption markups and labour markups from the Annual Business Survey: summary statistics, UK

Dataset | Released 3 December 2024

Profitability, markups and market power of businesses. Official statistics in development.

Firm-level labour productivity from the Annual Business Survey: summary statistics, UK

Dataset | Released 3 December 2024

Summary statistics of labour productivity as measured by the Annual Business Survey by different breakdowns of firm characteristics, UK.

Firm-level business dynamism from the Longitudinal Business Database: summary statistics, UK

Dataset | Released 3 December 2024

Summary statistics of business dynamism taken from the Longitudinal Business Database (LBD), UK.

# 6. Glossary

### Approximate gross value added (aGVA)

The <u>Annual Business Survey</u> (ABS) provides information on turnover and intermediate purchases, which can be used to estimate businesses' approximate gross value added (aGVA). aGVA is a measure of the income generated by those surveyed, less their intermediate consumption of goods and services used up in order to produce their output.

### **Business dynamism**

Business dynamism refers to a collection of statistical concepts to measure how quickly an economy reallocates resources from less productive to more productive firms. Business dynamism can, for instance, be measured as the entry and exit rates of new firms or establishments, or as the contribution to job creation and destruction from the entry and exit of firms. In this bulletin, we focus on the contribution to job creation and destruction.

#### Job creation, destruction and reallocation

Job creation refers to the employment created when firms enter the market, re-enter after a period of inactivity lasting at least a year, or when existing firms expand. Job destruction refers to the employment destroyed when existing firms contract, exit the market, or become inactive for a period of at least a year.

The sum of job creation and destruction is the reallocation rate, or "churn". This turnover measure gives an indication of the labour reallocation that is occurring at a point in time.

### Labour productivity

Labour productivity is calculated by dividing output by labour input. For this bulletin, we measure output by aGVA and labour input by number of workers in the firm.

#### **Marginal** cost

The cost a firm must pay to produce one more unit of its output. In a perfectly competitive industry, a profit-maximising firm will choose an output so that the marginal cost is exactly equal to the price its product commands in the market.

#### Markup

The difference between price and the marginal cost, often expressed as a proportion of price or marginal cost. Markups can provide a measure of the market power of a firm. A markup above one is evidence of market power.

However, markups can also be the result of up-front investments (firms may need to charge mark-ups to cover fixed costs) or input market frictions. So, markups need to be evaluated together with other measures to establish changes in market power.

#### Non-financial business sector

A subset of the whole economy that excludes large parts of agriculture, all public administration and defence, publicly provided healthcare and education, and the financial sector.

#### Non-financial market services

Businesses in the retail, administrative support and services, transport and storage, accommodation and food, information and communication, real estate and professional, scientific, and technical sectors.

#### **Output per worker**

Employment figures for output per worker are sourced from the ABS and administrative sources. It is unaffected by ongoing challenges with the Labour Force Survey (LFS).

The employment measure we use for aGVA per worker was unaffected by furlough during the coronavirus (COVID-19) pandemic. Furloughed workers were still classified as employed in this measure. However, aGVA was affected by factors such as reduced sales during lockdowns and furlough payments. This affects the level and growth rate of our labour productivity measure during and after the pandemic, including year-on-year growth rates in 2022.

### **Profit margin**

The profit margin is an accounting measure of the profitability of a firm. It is computed by dividing a firm's pre- or post-tax profit by its revenue. In this bulletin, we use pre-tax figures when we describe profit margins.

# 7. Data sources and quality

Estimates for firm-level labour productivity and market power are derived from the Annual Business Survey (ABS). The ABS combines data from the Annual Business Inquiry (1997 to 2008), the Annual Business Survey (2008 to 2022), and the Northern Ireland Annual Business Inquiry (1997 to 2022). This represents our largest business survey, in terms of the number of respondents and variables it covers. The ABS covers the non-financial business sector only, which excludes businesses from the following industries:

- farms in section A (agriculture)
- all of section K (finance and insurance)
- section O (public administration and defence)
- the government components of section P (education) and Q (health)

Business dynamism results are derived from the Longitudinal Business Database (LBD), which is an experimental data spine constructed using the Inter-departmental Business Register (IDBR). The LBD provides longitudinal business microdata at a quarterly frequency. The business dynamism results presented in this bulletin are based on the annual LBD. The annual LBD is derived from the quarterly LBD by selecting Quarter 3 (July to Sept) IDBR data for most years, apart from 2002, which uses Quarter 4 (Oct to Dec). This is done to capture the annual updates in firm employment.

Firm age is a strict measure of the time in which the business is substantively active to an extent to qualify for inclusion as an active enterprise on the IDBR. If a firm becomes inactive for more than a year and then reactivates, the age counter is reset to zero. Firms that reactivate after a year may have two different age measures at two different points in time. In 1999, the first year of the LBD, the age of firms with existing birthdates are calculated as the difference between their birthdates and 1999. For enterprises without birthdates, the age counter starts at zero.

More information about the ABS can be found in our ABS Quality and Methodology Information (QMI).

More information about the LBD can be found in the Economic Statistics Centre of Excellence's The <u>UK</u>
<u>Longitudinal Business Database technical report</u>.

The measures presented in this bulletin have previously been published as analytical articles. These articles provide more detail on the background and methodology for these measures. See <u>Section 8</u>: <u>Related links</u>.

#### Strengths and limitations

#### Firm-level labour productivity

Estimates are weighted to be representative of workers in the non-financial business sector. First, the sample is weighted to be representative of the whole population of UK businesses, using survey design weights based on the IDBR. Then each business is additionally weighted by its workforce size, for example a factory with 1,000 workers has 200 times more weight than a small workshop with 5 workers. In our dataset in 2022, approximately half of workers were in firms with 250 workers or more, even though there were only 8,950 firms of this size out of approximate 2.5 million businesses in total.

Results are also presented on a constant price basis, with a base year of 2022. Following the implementation of double deflation, we use implicit price deflators calculated from the gross domestic product (GDP) output accounts, as described in our <a href="Double deflation and the supply and use framework in the UK National Accounts article">Double deflation and the supply and use framework in the UK National Accounts article</a>. The price deflators were calculated at the lowest level of industry aggregation used in the National Accounts, which is mostly the two-digit SIC level.

#### **Business dynamism**

The annual LBD, derived from the quarterly LBD, uses two consecutive annual snapshots to establish true longitudinality. Like the quarterly LBD, the annual version uses unit-specific filters to build a clearer picture of the active business population for all units of the business structure.

The UK Business Register and Employment Survey (BRES) is the primary source of employment in the IDBR. Though BRES captures the annual employment dynamics, its use introduces a one-year lag, as the updated employment is reflected in the following year in the IDBR. The BRES also does not survey all firms every year. For firms that are not surveyed on an annual basis, the employment is not updated every year.

Since the present version of the LBD only takes the IDBR as its input, very small businesses that are not VAT registered or have no employees are not included. Businesses are not required to register if their annual turnover falls below the VAT threshold, which is £85,000 in 2023. Because of this, many self-employed workers are excluded. Nonetheless, businesses on the IDBR represent roughly 97% of turnover and 88% of employment. For information, see the Department for Business, Energy and Industrial Strategy's <u>Business population estimates</u> 2022 release.

When adding new quarters to the LBD, a small number of enterprises previously classified as active are classified as inactive in the updated LBD. This affects employment from 2006 onwards, though the scale of the issue is negligible. On average, this causes employment to drop by 0.0001%.

### Market power

Capital stocks are not available at the firm level. They are constructed through the Perpetual Inventory Method. This is based on deflated capital expenditure values in the Annual Business Survey (ABS) and starting capital stocks from the National Accounts, which are apportioned to the firm based on employment. Missing investment values are imputed based on a firm's own average investment. Where this is not possible, this is based on investment values of similar firms.

We apply GDP implicit price deflators so we can compare quantities across years in real terms. These deflators are calculated at the lowest level of industry aggregation in the National Accounts. Typically, this is the two-digit SIC level. As a result, estimates in this bulletin are given in constant price terms, with 2022 as the base year.

We apply the frequency weights that are computed as part of the construction of the ABS and Annual Business Inquiry. This ensures that the sample is representative of the business population at large. Additionally, we weigh firm-level markups by employment, which gives the markup at the representative employee.

#### Official statistics in development

These statistics are labelled as "official statistics in development". Until September 2023, these were called "experimental statistics". Read more about the change in the guide to official statistics in development.

#### 8. Related links

Firm-level labour productivity measures from the Annual Business Survey, UK: 1998 to 2019

Article | Released 7 March 2022

Labour productivity firm-level experimental statistics using the Annual Business Survey. Covering non-financial business economy for the UK, 1998 to 2019.

Estimates of markups, market power and business dynamism from the Annual Business Survey, Great Britain: 1997 to 2019

Article | Released 26 August 2022

Experimental statistics on profitability, business markup estimates, market power and business dynamism based on firm-level business survey data, showing how the economy has changed over the period 1997 to 2019.

Business dynamism in the UK economy: Quarter 1 (Jan to Mar) 1999 to Quarter 4 (Oct to Dec) 2019 Bulletin | Released 15 October 2020

Experimental Statistics on business dynamism at a firm level using the Inter-Departmental Business Register (IDBR). The analysis includes changes in quarterly job creation and destruction rates by different firm characteristics since 1999 to 2019 for the UK.

### 9. Cite this statistical bulletin

Office for National Statistics (ONS), released 03 December 2024, ONS website, statistical bulletin, <u>Trends in UK business dynamism and productivity: 2024</u>