

Article

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

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.

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1 . Main points

- Average markups have increased by 9.14% in Great Britain between 1997 and 2019.
- This rise in average markups has been driven by a broad-based rise in services markups, while markups in manufacturing have tempered the overall rise.
- Rising markups occur especially at the very top of the markup distribution, while for the median firm in most industries markups have remained essentially flat between 1997 and 2019.
- The responsiveness of firm-level growth to productivity has fallen since the global financial crisis, leading to overall lower productivity growth as relatively more productive businesses expand more slowly.
- While there is some evidence that markups impede business growth, the relationship is complicated: high productivity businesses are both likely to expand and to charge markups, but they are expanding slower in the 2010s.
- There is no evidence that beyond a firm's own markup wider industry markups on average impede employment or value-added growth of firms in that industry.

2 . Markup trends in Great Britain

Market power distorts the decisions firms make in input, labour and output markets. If market power is pervasive throughout the economy, these distortions might significantly lower output and productivity. We measure market power by calculating markups using a simplified version of the methodology in De Loecker and Warzynski's [Markups and firm-level export status, July 2009 \(PDF, 424 KB\)](#) paper. A markup is the difference between the price at which a unit is sold, and the cost of producing it. If a market is perfectly competitive, and there are no fixed costs, economic theory predicts that the output price is exactly equal to the marginal cost of producing the last unit: that is, markups are zero. If a firm has a positive markup, it could increase its input use slightly to produce more output, at the cost of a smaller margin on its existing output. Markups are always defined relative to a specific input cost.

In this article, we consider intermediate consumption costs and labour costs. For instance, a manufacturing firm with a high intermediate consumption markup could afford to buy more intermediate inputs to produce more products, at reduced profit but not at a loss. Similarly, a construction company with a positive labour markup could afford to employ more workers, but does not, and instead retains its higher profit margin. There are potentially other reasons to observe positive markups as well: first, it is possible that there are frictions or shortages in input markets blocking the firm from expanding. Secondly, a firm may be competitive but needs to cover a fixed cost. The method still identifies these cases as a markup because the firm keeps its elevated profits.

Table 1 shows the average change in the markups for intermediate consumption and labour, for the periods before and after the global financial crisis. Intermediate consumption markups have increased 0.84% per year between 1999 and 2007, and a further 0.12% per year between 2011 and 2019. Labour markups grew by 0.81% per year between 1999 and 2007, and a further 0.52% per year between 2011 and 2019.

Markup growth over the period differed markedly by sector. Intermediate consumption markups in services grew by 0.81% and 0.35% respectively, while manufacturing markups grew by 1.11% and 0%. Construction markups grew by 0.18% between 1999 and 2007 but fell by 0.26% between 2011 and 2019. Markups in non-manufacturing production fell first by 0.24% and then by 1.3% per year.

Table 1: Overall markups in Great Britain have increased in the last 20 years

Average annual change in markups by input, 1997 to 2007 and 2011 to 2019 constant prices, business economy excluding agriculture and finance, Great Britain

Average change in markups	Intermediate consumption			Labour		
	1998-2019	1999-2007	2011-2019	1998-2019	1999-2007	2011-2019
All	0.46%	0.84%	0.12%	0.07%	0.81%	0.52%
Non-Manufacturing Production	-0.71%	-0.24%	-1.30%	-0.78%	5.38%	0.19%
Manufacturing	0.64%	1.11%	0.00%	0.99%	0.87%	0.37%
Construction	-0.07%	0.18%	-0.26%	1.90%	2.46%	1.98%
Non-Financial Services	0.53%	0.81%	0.35%	-0.10%	-0.39%	0.56%

Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

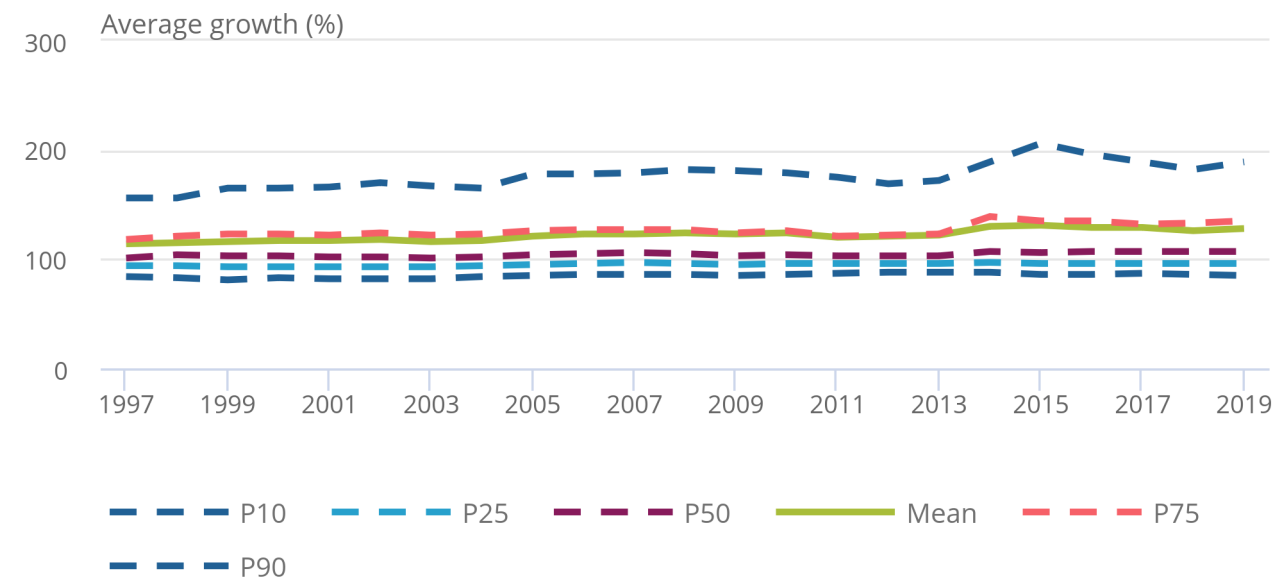
Figure 1 shows that across sectors, markup growth has been concentrated at the top of the distribution. Markup changes are stronger at the 90th percentile than at the median for services, manufacturing, construction, and non-manufacturing production. The ratio between the 90th percentile markup and the 50th percentile markup was 1.6 for intermediate consumption and 2.7 for labour, on average between 1998 and 2007. It increased slightly to 1.7 for intermediate consumption and increased to 3.1 for labour between 2011 and 2019. This is mainly driven by services, where the 90 to 50 ratio changed from 1.6 to 1.8 for intermediate consumption and from 2.6 to 3.1 for labour, while the ratio in manufacturing fell from 1.4 to 1.3 for intermediate consumption and rose from 2.1 to 2.5 for labour.

Figure 1a: Average markup changes are driven by changes at the top

Intermediate consumption markup mean and percentiles, non-financial services, 1997 to 2019

Figure 1a: Average markup changes are driven by changes at the top
the top

Intermediate consumption markup mean and percentiles, non-financial services, 1997 to 2019



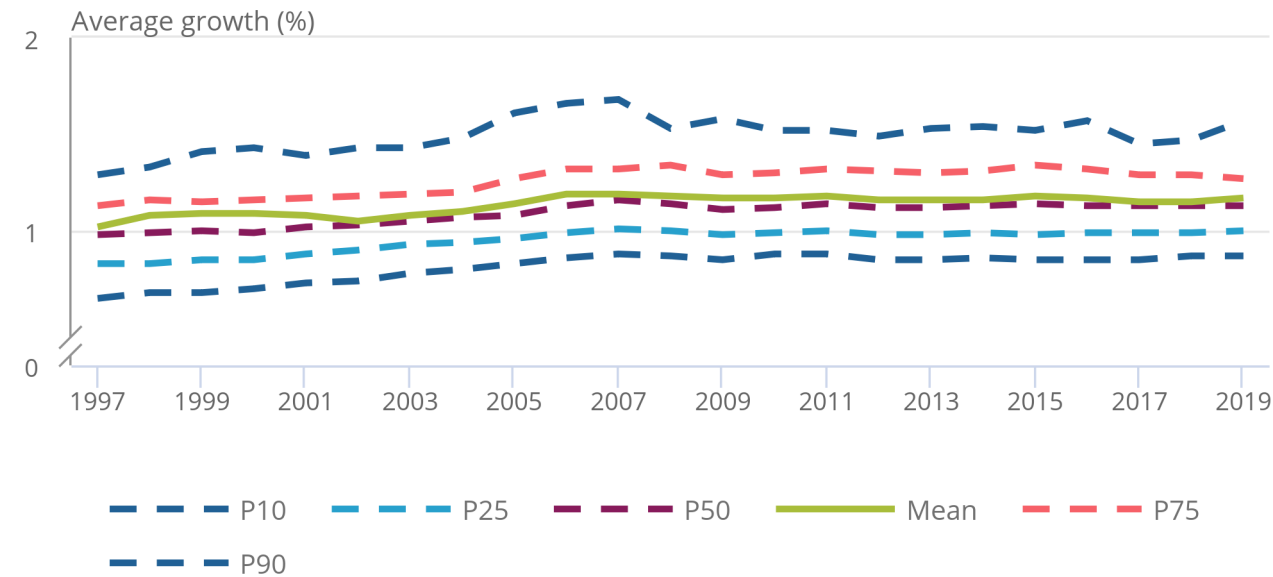
Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

Figure 1b: Average markup changes are driven by changes at the top

Intermediate consumption markup mean and percentiles, manufacturing, 1997 to 2019

Figure 1b: Average markup changes are driven by changes at the top
the top

Intermediate consumption markup mean and percentiles, manufacturing, 1997 to 2019



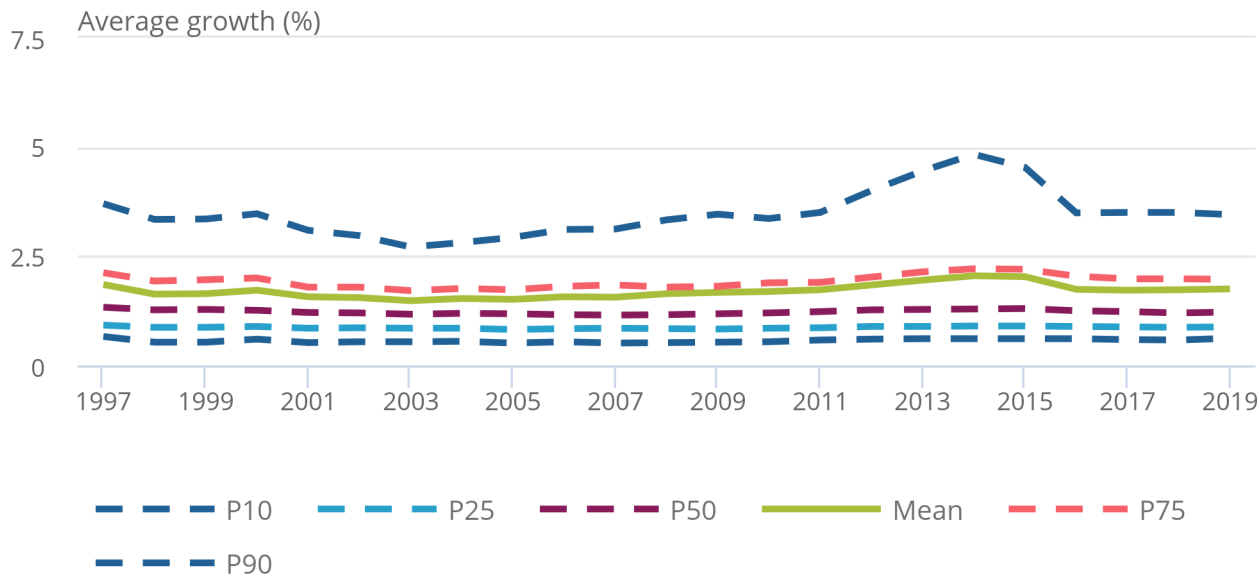
Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

Figure 1c: Average markup changes are driven by changes at the top

Labour markup mean and percentiles, non-financial services, 1997 to 2019

Figure 1c: Average markup changes are driven by changes at the top

Labour markup mean and percentiles, non-financial services, 1997 to 2019



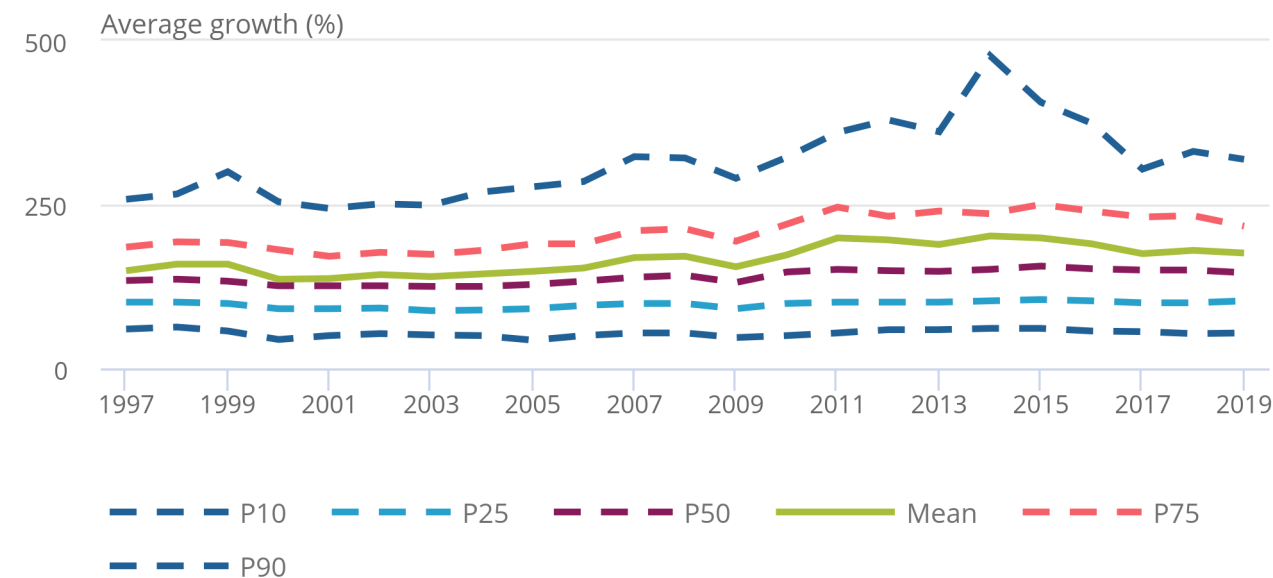
Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

Figure 1d: Average markup changes are driven by changes at the top

Labour markup mean and percentiles, manufacturing, 1997 to 2019

Figure 1d: Average markup changes are driven by changes at the top
the top

Labour markup mean and percentiles, manufacturing, 1997 to 2019



Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

3 . Industry contributions to average markup growth

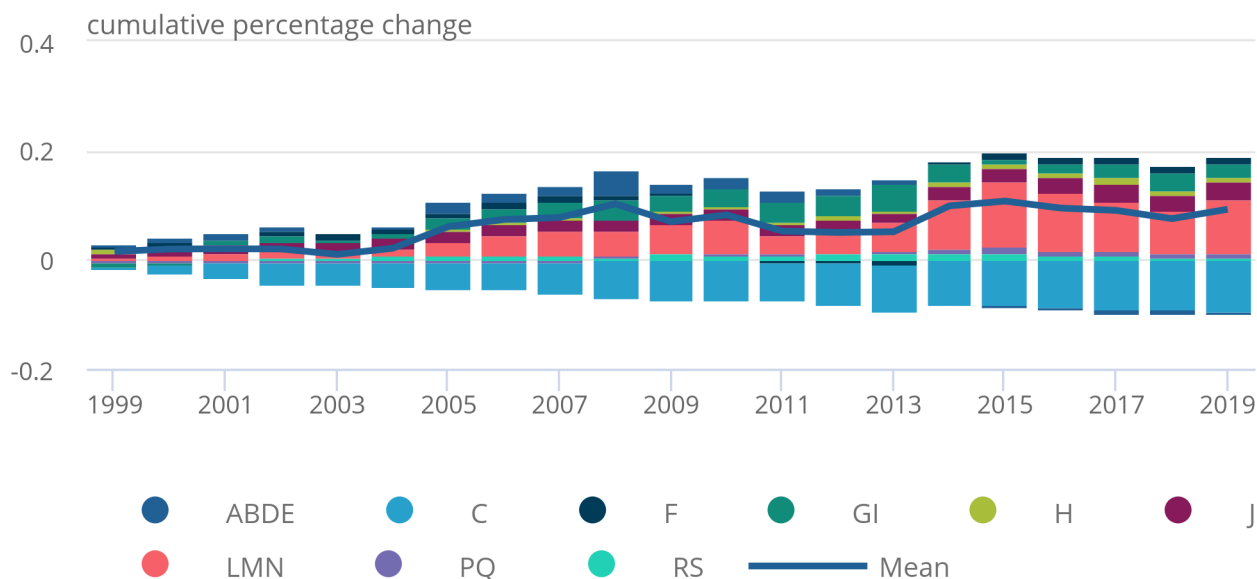
Figure 2 shows the industry contributions to average intermediate consumption markups between 1998 and 2019. The increase in markups is driven by services, and within services is broad-based. Manufacturing, and oil and gas extraction contribute negatively to average markup growth over the period. The mean markup in manufacturing is still growing, but slower, and from a lower level relative to services, so that manufacturing lowers the markup across all firms.

Figure 2: The increase in average intermediate consumption markups is driven by services

Cumulative industry contributions to average intermediate consumption markups, 1997 to 2019

Figure 2: The increase in average intermediate consumption markups is driven by services

Cumulative industry contributions to average intermediate consumption markups, 1997 to 2019



Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

Figure 3 repeats this exercise but using labour markups instead of intermediate consumption markups. The pattern is broadly similar, although manufacturing exerts less of a pull downwards on the labour markup. As a result, labour markups have risen by more over the period.

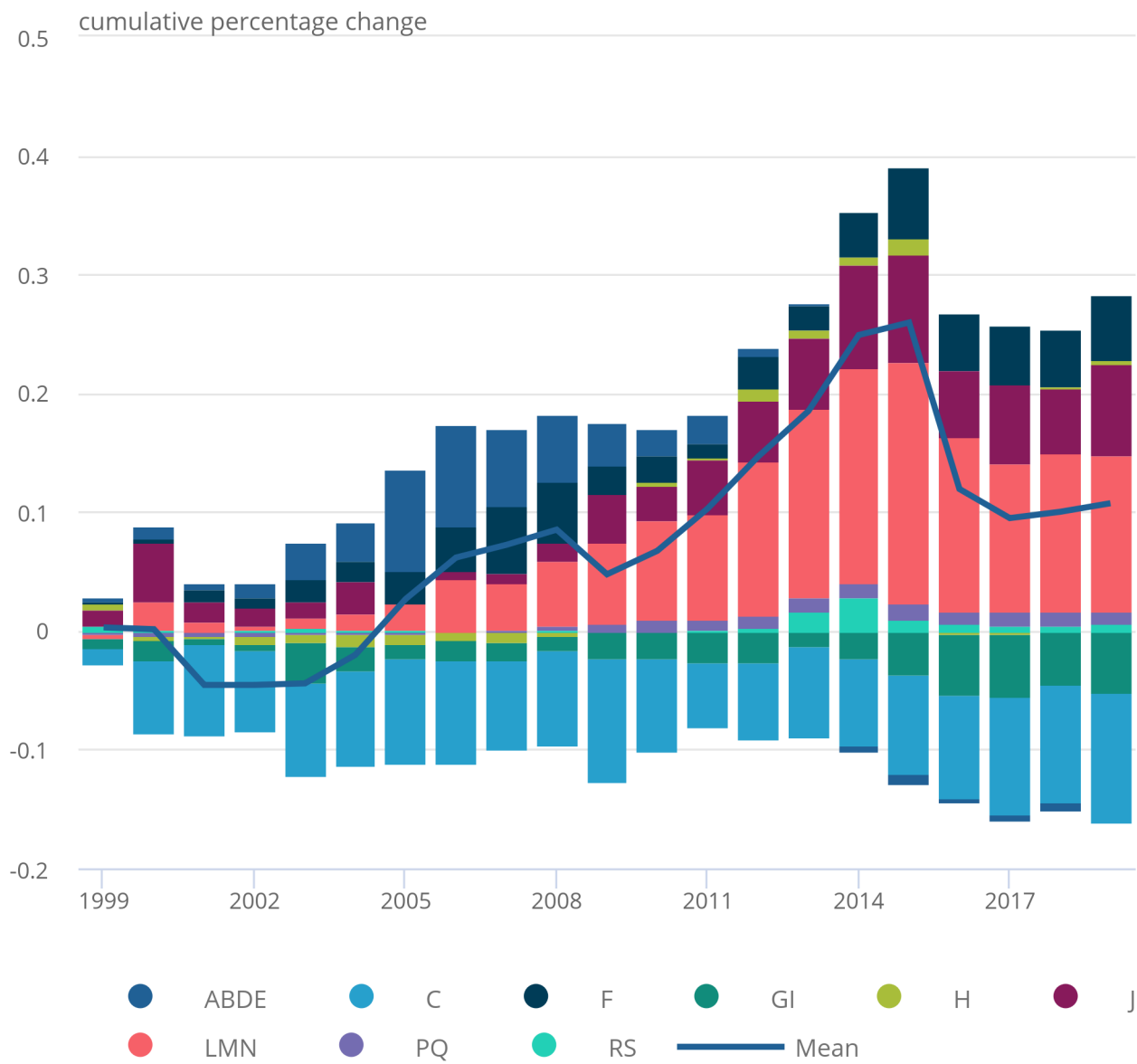
Construction contributes more strongly to the growth in the labour markup – the construction sector's higher profits manifest as a higher markup for labour. By fitting production function estimates to data on companies in construction, increasing intermediate consumption further does relatively little to increase output, but increasing the workforce does. The markups method does not indicate why construction companies are not increasing their workforce further. The other industries driving the increase in the markup with respect to labour are professional and technical services, and motion pictures and broadcasting within information and communication.

Figure 3: The growth in the labour markup is also driven by service markup growth

Cumulative industry contributions to average labour markup growth, 1997 to 2019

Figure 3: The growth in the labour markup is also driven by service markup growth

Cumulative industry contributions to average labour markup growth, 1997 to 2019



Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

4 . Comparisons to existing studies

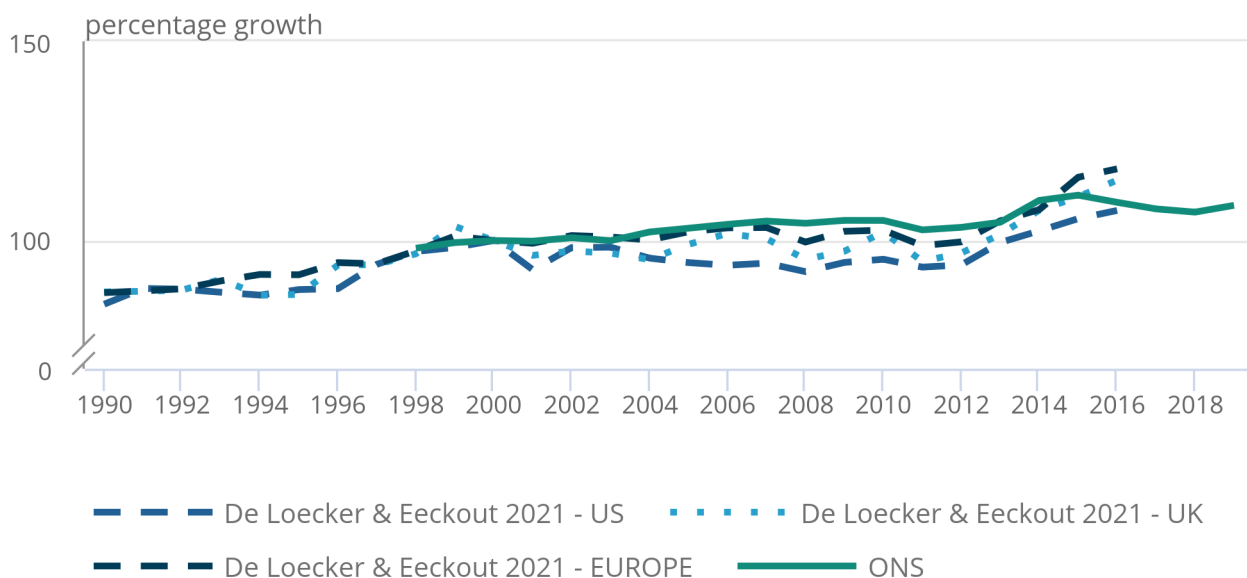
Markups, market power and business dynamism are a very active area of academic research, as discussed in the [De Loecker and Eeckhout's The rise of market power and the macroeconomic implications, August 2017 \(PDF, 1089 KB\)](#). Figure 4 plots markup trends for this study and comparable figures for listed firms in the US, UK and Europe from De Loecker and Eeckhout's [Global market power, June 2018 \(PDF, 858 KB\)](#) paper. The growth in the average markup in the Office for National Statistics' (ONS') survey data is quite comparable with the figures in this paper, although the series diverge after 2014.

Figure 4: Markup trends in the UK roughly in line with other countries

Intermediate consumption markups for UK, US and Europe, 1990 to 2019

Figure 4: Markup trends in the UK roughly in line with other countries

Intermediate consumption markups for UK, US and Europe, 1990 to 2019



Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

Notes:

1. Markups from De Loecker and Eeckout (2021) 2000 = 100.

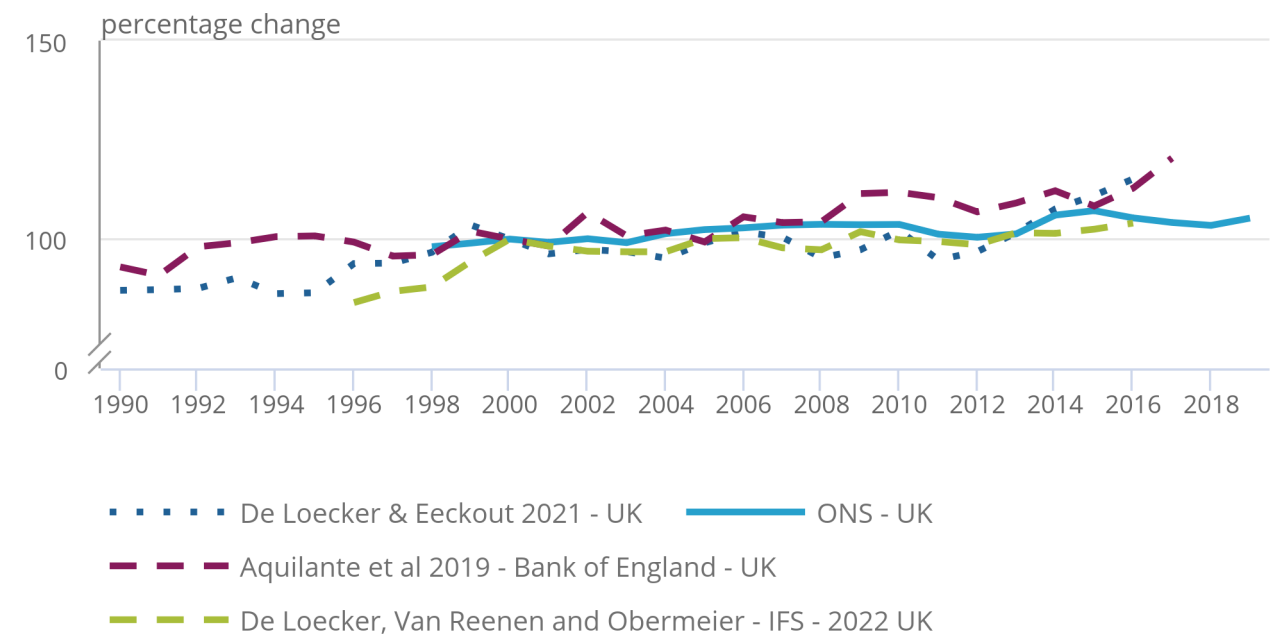
Figure 5 compares the figures in this article with the [Bank of England's Market power and monetary power, May 2019 \(PDF, 1530 KB\)](#) study, [The Institute for Fiscal Studies' Market power and labour market inequality \(PDF, 447 KB\)](#) working paper, and the previously cited De Loecker and Eeckhout paper which all use commercial datasets for listed UK companies. Again, trends are similar across datasets, despite differences in coverage.

Figure 5: Other studies generally find similar trends for the UK 1997 to 2014

Intermediate consumption markups for the UK, 1990 to 2019

Figure 5: Other studies generally find similar trends for the UK 1997 to 2014

Intermediate consumption markups for the UK, 1990 to 2019



Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

5 . Other measures of market power

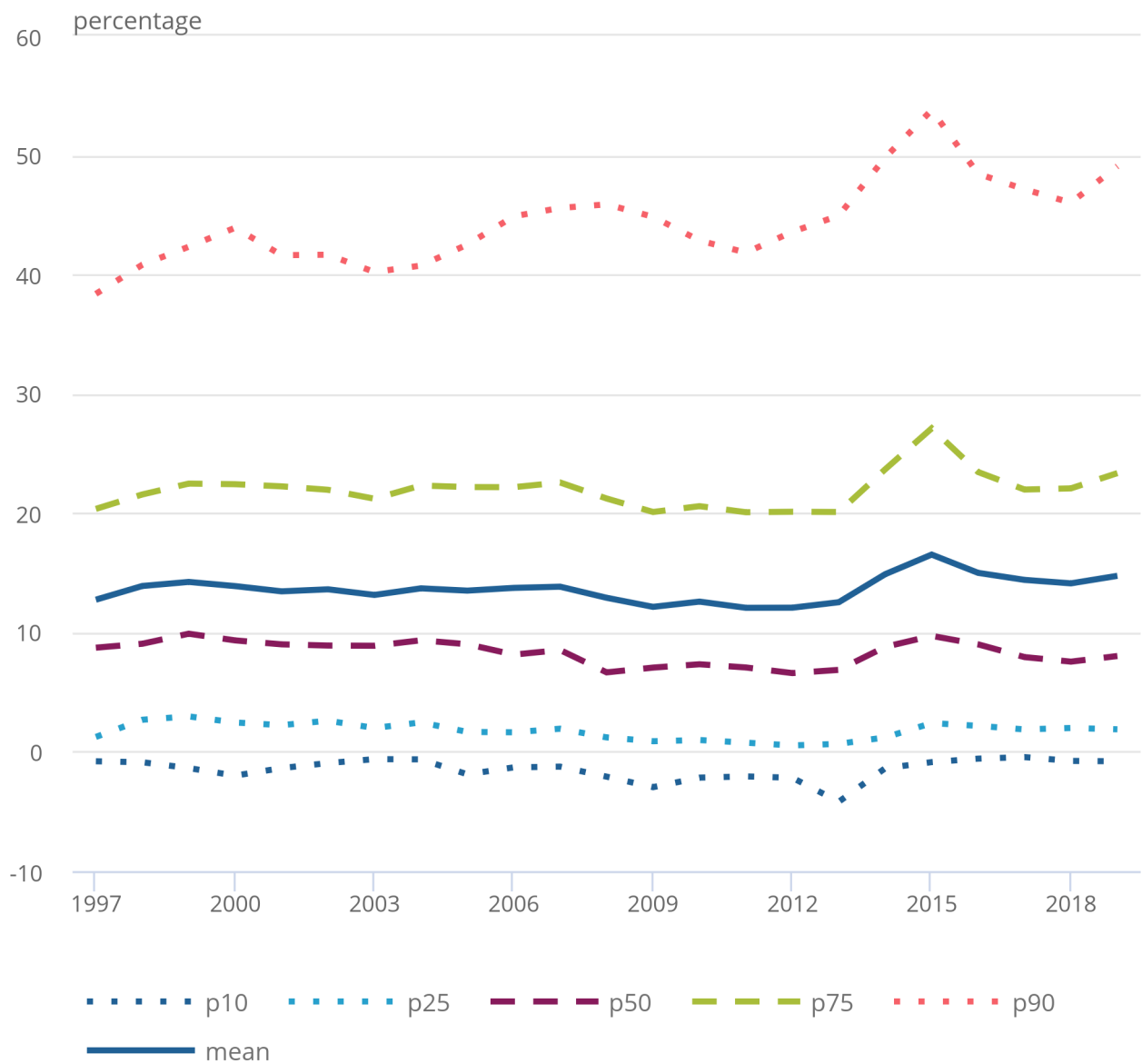
Other measures of market power show a broadly similar picture. As shown in Figure 6, mean profit shares (measured as profits divided by gross output) in Great Britain increased by 15.7% from 1997 to 2019, compared with 9.1% for intermediate consumption markups between 1998 and 2019. The increase skews heavily towards the top end of the distribution. The median profit margin did not change over the same time period, whereas the profit margins at the 90th percentile increased from just under 40% to 49%.

Figure 6: The mean profit share has risen slightly, mostly because of changes at the top

Mean and percentiles of the approximate profit share, 1997 to 2019

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Mean and percentiles of the approximate profit share, 1997 to 2019



Across sectors, profit margin trends also mirror markup trends. The overall increase by 15.7% masks strong growth in construction (47%), services (28%) and falling profit margins in non-manufacturing production (minus 30%). Profit margins in manufacturing meanwhile grew by 2.3%.

The dispersion in profit margins has increased in a similar way to markups, with a very small increase for manufacturing, and a larger increase in dispersion for services. Construction has mainly falling dispersion, even though the means are increasing for the profit margin and the labour markup. Table 2 compares the dispersion and levels between the measures.

Table 2: Average dispersion in markups and average level of markups, compared with profit margins
2019 constant prices, business economy excluding agriculture and finance, Great Britain

p90/p50 ratio		1997-2019	1998-2007	2011-2019
Profit margin	Non-financial services	6.17	5.19	7.05
	Manufacturing	3.43	3.25	3.56
	Construction	4.67	4.52	4.39
IC markup	Non-financial services	1.69	1.64	1.75
	Manufacturing	1.38	1.41	1.34
	Construction	1.55	1.47	1.63
Labour markup	Non-financial services	2.83	2.56	3.12
	Manufacturing	2.24	2.09	2.45
	Construction	3.60	3.59	3.46
Mean		1997-2019	1998-2007	2011-2019
Profit margin	Non-financial services	12%	12%	13%
	Manufacturing	13%	13%	14%
	Construction	19%	18%	21%
IC markup	Non-financial services	1.22	1.18	1.26
	Manufacturing	1.14	1.11	1.16
	Construction	1.22	1.21	1.23
Labour markup	Non-financial services	1.70	1.58	1.84
	Manufacturing	1.67	1.49	1.90
	Construction	2.50	2.26	2.81

Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey.

Notes

1. Profit margin and intermediate consumption are weighed by sales, labour markup is weighted by value added.

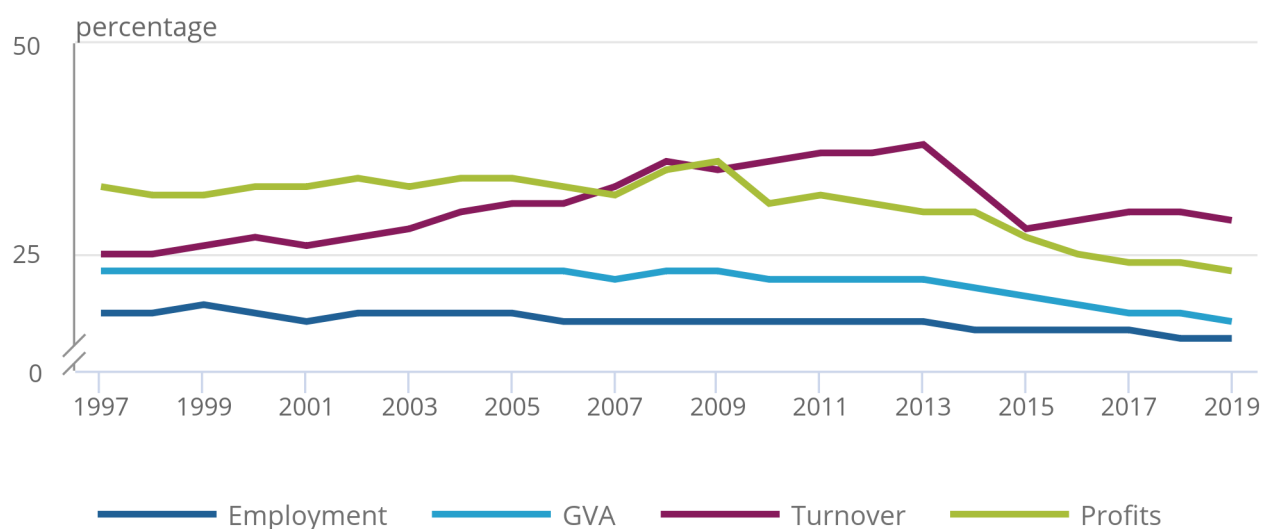
Figure 7 plots changes in another measure of market power, the concentration ratio. Between 1997 and 2019, the concentration ratio for sales has increased slightly, but other concentration ratios (for profits, labour and value added) have stayed constant or fallen. Overall, they suggest a more stable picture than markups, in line with the UK labour share, which has also stayed roughly constant since 1999. For more information, see our [Labour costs and labour income, UK: 2022 bulletin](#). While concentration ratios provide useful additional detail, they are however not usually a good measure of market power in their own right, as discussed in the [Berry, Gaynor and Scott Morton's Do Increasing Markups Matter? Lessons from Empirical Industrial Organisation, summer 2019 \(PDF, 705 KB\) paper](#). While more enterprise groups are responsible for profits in 2019 than in 1997, this did not lead to a decline in the weighted average profit margin.

Figure 7: The concentration ratio has risen for turnover, but fallen for other measures

Share of the top 100 enterprise groups for employment, GVA, turnover and profits in the non-financial business sector, 1997 to 2019

Figure 7: The concentration ratio has risen for turnover, but fallen for other measures

Share of the top 100 enterprise groups for employment, GVA, turnover and profits in the non-financial business sector, 1997 to 2019



Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

6 . The relationship between business dynamism, productivity and market power

Business dynamism has slowed in the UK since the global financial crisis. Rates of job creation and job destruction were lower. For more information, see our [Business dynamism in the UK economy: Quarter 1 \(Jan to Mar\) 1999 to Quarter 4 \(Oct to Dec\) 2019 bulletin](#).

In our companion article [Estimates of total factor productivity from the Annual Business Survey, Great Britain: 1998 to 2019](#), we show that business dynamism was an important driver of productivity growth before 2007 but not in the 2010s. Overall productivity grew because high productivity companies expanded their workforce at the expense of low productivity companies. Even if the productivity of all companies was frozen, productivity in aggregate grew because of the reallocation of workers.

We run pooled Ordinary Least Squares (OLS) regression models with year and industry fixed effects to investigate the relationship between markups, business dynamism, productivity and economic growth. This is shown in Table 3 for growth in the number of workers and Table 4 for growth in gross value added (GVA). The dependent variable in both tables is measured as the change in employment and GVA, respectively, over the following three years.

Higher productivity businesses grow their workforces faster. The effect of markups on growth is mixed. Controlling for productivity, businesses with high labour markups grow their workforces slower. However, labour markups also interact significantly with productivity and are positively correlated with subsequent workforce growth. The more productive a business, the more it will use the profits from markups to expand.

The effect of intermediate consumption markups is less clear. Controlling for labour productivity, there is a positive correlation between business growth and intermediate consumption markups.

While markups increased prior to 2007, Tables 3 and 4 show this did not necessarily correlate with lower productivity growth at the firm level. Higher productivity firms profited from higher labour markups and subsequently expanded their workforce. Columns 3 and 4 in Tables 3 and 4 show that this dynamic still holds post 2010.

However, these correlations are generally weaker since the global financial crisis. High productivity businesses expand at half the rate. Employment growth is less related to productivity. The growth-increasing effect of high markups for high productivity firms is weaker, even as the pure effect of markups has only reduced in size slightly. High productivity firms are less likely to use their profits from markups to expand their workforce. Aggregate productivity growth is heavily dependent on relatively more productive businesses growing faster than their less productive competitors, so the fall in this correlation is detrimental to overall productivity growth. A similar fall in the responsiveness of growth to productivity has been found by researchers for the US in [Akçigit and Ates' Slowing Business Dynamism and Productivity Growth in the United States \(PDF, 2.232 KB\)](#) working paper.

There is little evidence for industry-wide effects. For both outcome measures, the partial correlation of industry-wide markups, holding a firm's own markups constant, is small and generally not statistically significant.

Table 3: Correlates of growth in employment

Ordinary Least Squares (OLS) regressions of three-year employment changes on firm observables 2019 constant prices, business economy excluding agriculture and finance, Great Britain

Dependent variable: ln (change in employment over next three years)						
	1999-2005			2011-2016		
	(1)	(2)	(3)	(5)	(6)	(7)
Industry IC markup	0.01		-0.00	-0.08		-0.09
Industry labour markup		0.04*	0.03		-0.02	-0.01
ln(OPW)	0.19***	0.27***	0.26***	0.11***	0.15***	0.15***
ln(IC markup)	-0.02		0.03	0.04		0.08*
ln(labour markup)		-0.21***	-0.21***		-0.12***	-0.13***
ln(OPW)*ln(IC markup)	0.01		-0.01	-0.01		-0.02*
ln(OPW)*ln (labour markup)		0.02***	0.02***		0.01***	0.02***
ln(capital stock)	-0.02***	-0.03***	-0.03***	-0.00**	-0.01***	-0.01***
EU-owned	-0.06***	-0.07***	-0.08***	-0.03*	-0.05***	-0.05**
Non-EU-owned	-0.04*	-0.05*	-0.05*	-0.07***	-0.08***	-0.07***
Singly or predominantly North East	0.02	0.01	0.02	-0.02	-0.02	-0.02
... North West	-0.01	-0.01	-0.01	-0.04*	-0.04*	-0.04*
... Yorkshire & Humber	-0.01	-0.01	-0.01	0.01	0.01	0.01
... West Midlands	-0.01	-0.01	-0.00	-0.02	-0.02	-0.02
... East England	-0.03***	-0.03***	-0.03***	-0.00	-0.00	-0.00
... London	-0.10***	-0.13***	-0.12***	-0.04***	-0.05***	-0.04***
... South East	-0.04***	-0.05***	-0.04***	-0.03**	-0.04***	-0.03***
... South West	-0.01	-0.00	-0.00	-0.01	-0.00	-0.01
... Wales	-0.00	-0.01	-0.01	0.01	0.01	0.01
... Scotland	0.01	0.00	0.00	-0.02	-0.03**	-0.03*
Cross-UK	0.02	0.04**	0.04**	-0.03*	-0.02	-0.02
Year	Yes	Yes	Yes	Yes	Yes	Yes
2-digit industry	Yes	Yes	Yes	Yes	Yes	Yes

N	275,422	256,803	246,878	193,675	190,321	173,813
R-sq	0.092	0.128	0.12	0.043	0.054	0.052

Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

Notes

1. Significance levels: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.
2. OPW is constant prices output per worker, IC is intermediate consumption.
3. All specifications contain controls for year and industry at the two-digit level.
4. All specifications are weighted to be representative of the workforce of the non-financial business economy, so for example firms with more workers have more influence in the regression.
5. Standard errors for all specifications are clustered at the firm (reporting unit) level.
6. We assign a firm to be cross-UK if more than 40% of its workforce are outside of its largest region.

Table 4: Correlates of growth in approximate gross value added
Ordinary Least Squares (OLS) regressions of three-year gross value added (GVA) changes on firm observables
2019 constant prices, business economy excluding agriculture and finance, Great Britain

Dependent variable: ln(change in GVA over next three years)						
	1999-2005			2011-2016		
	(1)	(2)	(3)	(4)	(5)	(6)
Industry IC markup	-0.15		-0.18*	-0.06		-0.07
Industry labour markup		0.02	0.03		-0.12*	-0.11
ln(OPW)	-0.19***	-0.12***	-0.09***	-0.27***	-0.18***	-0.17***
ln(IC markup)	-0.42***		-0.20	-0.61***		-0.44***
ln(labour markup)		-0.28***	-0.27***		-0.32***	-0.26***
ln(OPW)*ln(IC markup)	0.10***		0.04	0.14***		0.09***
ln(OPW)*ln (labour markup)		0.03**	0.04**		0.04***	0.03**
ln(capital stock)	-0.01	-0.01	-0.02	-0.02	-0.03	-0.03
EU-owned	0.04	0.03	0.02	-0.00	0.00	-0.01
Non-EU-owned	-0.02	-0.02	-0.02	0.05	0.07*	0.06
Singly or predominantly North East	-0.01	-0.01	-0.01	0.02	0.03	0.02
... North West	-0.03	-0.02	-0.02	0.02	0.03	0.02
... Yorkshire & Humber	-0.05	-0.04	-0.04	0.04	0.04	0.04
... West Midlands	0.00	0.00	-0.00	0.03	0.04	0.03
... East England	0.08**	0.04	0.04	0.11***	0.08**	0.07*
... London	0.01	0.01	0.00	0.02	0.01	0.01
... South East	0.02	0.04	0.04	0.03	0.03	0.03
... South West	-0.06*	-0.05	-0.05	0.03	0.04	0.03
... Wales	-0.00	-0.00	-0.01	-0.06*	-0.06*	-0.08*
... Scotland	-0.01	-0.03	-0.02	-0.06	-0.07*	-0.06*
Cross-UK	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01*
Year	Yes	Yes	Yes	Yes	Yes	Yes
2-digit industry	Yes	Yes	Yes	Yes	Yes	Yes

N	68,696	69,231	67,990	51,151	52,048	50,512
R-sq	0.102	0.102	0.1	0.175	0.17	0.176

Source: Office for National Statistics – Annual Business Inquiry and Annual Business Survey

Notes

1. Significance levels: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$.
2. OPW is constant prices output per worker, IC is intermediate consumption.
3. All specifications contain controls for year and industry at the two-digit level.
4. All specifications are weighted to be representative of the workforce of the non-financial business economy, so for example firms with more workers have more influence in the regression.
5. Standard errors for all specifications are clustered at the firm (reporting unit) level.
6. •We assign a firm to be cross-UK if more than 40% of its workforce are outside of its largest region.

7 . Estimates of markups, market power, productivity growth and business dynamism from the Annual Business Survey data

[Estimates of markups, market power, productivity growth and business dynamism from the Annual Business Survey, Great Britain: 1997 to 2019, summary statistics](#)

Dataset | Released 26 August 2022

Summary statistics and regression tables for measures of markups, market power, productivity growth and business dynamism, 1997 to 2019, Great Britain.

8 . Glossary

Business dynamism

Business dynamism refers to a collection of statistical concepts to measure how quickly an economy reallocates resources from unproductive to 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 article, we use the latter concept.

Concentration ratio

The concentration ratio measures the share of the industry total of a variable that is captured by the top firms. For instance, the revenue CR5 consists of the revenue share of an industry accounted for by the five largest firms. Concentration ratios have long been used to measure market power but have well-known shortcomings when it comes to capturing competition in an industry.

Labour share

The labour share is the fraction of the surplus generated by an industry that is paid out to the owners of labour inputs rather than the owners of capital inputs. Historically, the labour share in industrialised countries has hovered around two-thirds.

Marginal cost

The marginal cost is 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 such that the marginal cost is exactly equal to the price its product commands in the market.

Markup

A markup is defined as 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. In a perfectly competitive market, markups are zero, while monopolists and oligopolists will charge positive markups.

However, since 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, markups need to be evaluated together with other measures to establish changes in market power.

Perpetual Inventory Method

The Perpetual Inventory Method (PIM) is a very common way of estimating capital stocks. It assumes that the stock of assets at any given point in time is the cumulative sum of all investment flows, minus any losses arising from depreciation.

Production function

The production function is an equation that represents how a firm, industry or economy transforms inputs (usually capital and labour) into output. The exact shape of the production function depends on the available technology and organisational arrangements employed in the production of a particular good or goods.

Profit margin

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

9 . Data sources and quality

Data sources

We use the Annual Business Inquiry (ABI) for 1998 to 2008 and the Annual Business Survey (ABS) from 2008 to 2019. The ABI and ABS are the UK's main structural business survey and samples roughly 50,000 businesses each year, covering approximately two-thirds of the UK's economy. The survey is structured as a census of large businesses and a stratified sample of small and medium businesses.

The ABI and ABS collect information on turnover, intermediate consumption, capital expenditure and other variables designed to contribute to Gross Domestic Product (GDP) calculations. We supplement the ABI and ABS responses with variables from the Inter-Departmental Business Register (IDBR) and the Monthly Wages and Salaries Survey (MWSS).

Sampling frame

The ABI and ABS are sampled from the IDBR. The IDBR is updated from a range of administrative, survey and commercial data and provides basic information (such as employment, industry, age and foreign ownership) for all firms eligible for either Value Added Tax (VAT) or Pay As You Earn (PAYE) schemes.

Coverage

The results in this article are not comparable with the National Accounts that present a comprehensive picture of the UK economy. In addition to the limitations imposed on the data from IDBR-based sampling, the results in this article exclude businesses from the following industries:

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

Non-profit institutions in sections P (education), in particular universities, Q (health) and R (arts, entertainment and recreation) are included in the dataset, these:

- are sampled in the Annual Business Survey
- make up proportions of the total economy
- do often act under competitive circumstances as part of their activities even when the legal structure of the institution is as a non-profit, for example exports of education services as part of UK total exports

For these reasons we keep them in the dataset.

The current results are also not available for Northern Ireland.

Methodology

To enable consistent comparisons over time, Standard Industrial Classifications (SIC) codes before the introduction of the current SIC 2007 have been converted using modal mapping at five-digit SIC level.

Missing responses are imputed where possible based on historical values of the same business, and otherwise using ratio imputation within industry and size band. For more information, see our [Annual Business Survey technical report: August 2018](#). Capital stocks are not available at the firm level. They are therefore constructed through the Perpetual Inventory Method based on deflated capital expenditure values in the ABI and ABS, and starting capital stocks from the National Accounts, apportioned to the firm based on employment. Missing investment values are imputed based on a firm's own average investment, and where this is not possible based on that of similar firms.

To be able to compare quantities across years in real terms, we apply GDP implicit price deflators. 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 paper are given in constant price terms, with 2019 as the base year.

Statistical estimates and regression coefficients can be sensitive to outliers, especially when the underlying distribution is heavily skewed. To ensure that the results in this article are not driven by outliers, we remove the top and bottom 1% of observations ordered by size of the markup – the mean is a truncated mean.

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

We estimate production functions at the two-digit or three-digit SIC level, depending on data availability, through Ordinary Least Squares (OLS) regressions using translog functional forms. The main results of our paper estimate gross output margins with respect to intermediate inputs. Labour markups on the other hand are estimated for value added.

10 . Future developments

We plan to release a technical working paper with additional results and more details on the methodology used to derive the findings over the next months. Future work may also look at within-firm changes in markups (for large firms that appear in the data year after year) and the role of international trade in reducing markups for tradeable goods.

11 . 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.

[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.

[Annual Business Survey technical report: August 2018](#)

Methodology | Released 24 August 2018

The technical report for the Annual Business Survey, providing detailed quality and methodology information.

[Estimates of total factor productivity from the Annual Business Survey, Great Britain: 1998 to 2019](#)

Article | Released 26 August 2022

Experimental statistics on firm-level capital stocks, total factor productivity and aggregate productivity decompositions, based on the Annual Business Survey.

12 . Cite this article

Office for National Statistics (ONS), published 26 August 2022, ONS website, article, [Estimates of markups, market power and business dynamism from the Annual Business Survey, Great Britain: 1997 to 2019](#)