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# **Productivity Puzzles, Long Tails and Productivity Heroes: developing a new focus for small business policy in the UK**

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**Productivity Puzzles, Long Tails and Productivity  
Heroes: developing a new focus for small business  
policy in the UK**

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## **Productivity Puzzles, Long Tails and Productivity Heroes: developing a new focus for small business policy in the UK**

**Previous research by the ERC showed that there was a very poor correlation between jobs growth, increases in revenues and productivity gains in the UK business population. Most firms struggled to significantly increase turnover, jobs and productivity simultaneously, and crucially the analysis showed that the only ‘space’ where the growth in turnover, jobs and productivity are all positive is sparsely populated, accounting for less than one in ten of the surviving panel of firms. This has led to the identification of a small group of firms in the UK that we have termed ‘Productivity Heroes’ which we define as firms growing both their revenues and headcount but their revenues at a faster rate – hence also increasing their productivity. These 36,298 businesses (8% of all firms increasing their productivity) collectively contributed more than £268 billion to the UK economy in 2022 - a contribution that grew by more than £177 billion in the period 2021-22.**

### **INTRODUCTION**

Anyadike-Danes and Hart (2017) demonstrated that there was a very poor correlation between jobs growth, increases in revenues and productivity. Hart and Roper (2016) argued that raising productivity is difficult and that applies to scale-ups or High-Growth Firms as defined by the OECD. The study was of a panel of 250,000 non-financial employer enterprises of all sizes that were alive in 2008 and survived to 2015. Aggregate productivity was found to have increased by 30% over the period, but average productivity at the level of the firm fell by 0.3% (Anyadike-Danes and Hart, 2017a; 2017b; 2018). In fact, taken as a whole, only 5% of the firms studied managed to significantly increase turnover, jobs and productivity at the same time – some 10,000 firms.

The same study found that a turnover target approach rather than employment growth is a more effective way to improve productivity. The relationship between the growth of turnover and productivity was strong and positive, with 3 out of 4 firms that grew turnover also raising productivity. Yet the link between the growth of jobs and productivity was tenuous: a mere 1 in 5 of firms that increased employment simultaneously improved productivity. The weakness highlights the fundamental tension between employment and productivity – for example, productivity can suffer when firms hire additional staff rather than invest in

machinery and equipment or innovations to their business models. The study showed that the only 'space' where the growth in turnover, jobs and productivity are all positive is sparsely populated, accounting for only 9% of the surviving panel of firms. While it's hard to raise all 3 simultaneously, higher turnover growth can generally improve productivity if it's accompanied by lower rates of growth or unchanged employment.

The findings show the fundamental tension between jobs growth on the one hand – often considered the main objective of industrial strategy and business support programmes – and increases in productivity. In particular, the focus in small business policy circles on High-Growth Firms (HGFs) prompted by the initial NESTA report in 2009 – also referred to as 'scale ups' – could actually be detrimental to productivity gains (Anyadike-Danes et al., 2009; NESTA, 2009; Hart et. al., 2021). There are currently approximately 11,500 such firms in the UK [defined by the OECD as firms with 10+ employees growing employment by 20%<sup>1</sup> per year over three years] and our research has found that **only 575 of these HGFs had positive productivity growth.**

Given the decade long debate on the UK's Productivity Puzzle and the identification of a long tail of unproductive businesses – mostly SMEs – we set out to investigate those firms that are registering productivity gains (i.e., turnover per employee) and are doing so while still creating jobs. These small businesses we call 'Productivity Heroes' are defined as SMEs aged 3 years and over that are growing both their revenues and headcount but their revenues at a faster rate. We set out below our initial analysis of this groups of firms using the ONS Business Structure Database (BSD) which contains the population of all private sector firms in the UK registered for VAT and/or PAYE by the HMRC.

## HOW MANY PRODUCTIVITY HEROES?

The base population used to identify the number of Productivity Heroes is all surviving private sector SME employer enterprises (1-249 emps) in the UK in 2021-22 which are at least 3 years of age - i.e., not start-ups - who increased their productivity (defined as turnover per employee) by increasing both turnover and employment but revenue at a faster rate than employment.

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<sup>1</sup> There is, of course, another OECD HGF definition which is based on 10% growth per year.

Table 1 shows that there are just over 1.22 million firms that meet are initial filtering criteria and the next step is to calculate how many increased their productivity in 2021-22. Just over a third (37%) of firms were observed to have increased their productivity between 2021 and 2022 - 453,231 firms. Of course, productivity growth can occur through a variety of ways, as we set out in Table 2, but we are only interested in those that increased their turnover faster than they increased their employment - Cat 1 – our Productivity Heroes.

**Table 1: Productivity Outcomes 2021-22 (SMEs 1-249 emp & age3+)**

		No. of Firms	%
<b>Productivity Growth</b>	Prod22>Prod21	453,231	37.0
<b>Productivity Decline</b>	Prod22<Prod21	688,832	56.3
<b>No Change</b>	Prod22=Prod21	82,323	6.7
<b>Total</b>		<b>1,224,386</b>	<b>100</b>

Source: ONS BSD (2021-22)

So, out of a total of 453,231 firms that had increased their productivity we can see that there is a small group of SMEs (8% or 36,298 firms) aged 3 years and over within this total that are creating jobs by an average of 29% growth but growing revenue even more rapidly by an average of 196% (Table 3). Expressing this as a share of the total number of firms fitting our initial filtering criteria, we can now state that only 3 per cent of the 1.22 million firms can be categorised as Productivity Heroes.

**Table 2: Number of Firms Increasing Productivity 2021-22**

Category	Type of Productivity Growth	No. of Firms	%
<b>Cat1</b>	<b>Turnover growth (&gt;0) &gt; emp growth (&gt;0)</b>	<b>36,298</b>	<b>8.0</b>
<b>Cat2</b>	Turnover growth (>0) > emp growth (=0)	323,753	71.4
<b>Cat3</b>	Turnover growth (>0) > emp growth (<0)	33,856	7.5
<b>Cat4</b>	Turnover growth (=0) > emp growth (<0)	8,989	2.0
<b>Cat5</b>	Turnover growth (<0) > emp growth (<0)	50,335	11.1
<b>Total</b>		<b>453,231</b>	<b>100.0</b>

Source: ONS BSD (2021-22)

These 36,298 firms collectively contribute more than £268 billion to the UK economy - a contribution that grew by more than £177 billion combined from 2021 to 2022 – an average uplift of £4.9m in revenue (Table 3). Overall, these firms employed 607,106 persons in 2022 having increased their employment by 135,661 in the previous 12 months – an average of an additional 4 jobs. Of importance to the UK’s productivity debate, they registered an increase in productivity from £192k per employee to £442k per employee in this period.

**Table 3: Productivity Heroes Contribution to UK Economy**

	2021	2022	Growth	% Growth
<b>Employment</b>	470,555	607,106	136,551	29.0
<b>Turnover</b>	£90.8bn	£268.5bn	£177.8bn	195.9
<b>Productivity</b>	£192,896	£442,337	£249,441	129.3
<b>Average Employment</b>	13.0	16.7	3.76	29.0
<b>Average Turnover</b>	£2,500,643	£7,398,353	£4,897,710	195.9
<b>N</b>	<b>36,298</b>	<b>36,298</b>		

Source: ONS BSD (2021-22)

## PRODUCTIVITY HEROES - TRENDS

We chose the most recent year available to undertake an initial analysis of Productivity Heroes, but the obvious question is the extent to which the size of this small group of firms has remained constant over time. Table 4 shows analysis that since the year 2000, the number and proportion of Productivity Heroes in the UK private sector has fluctuated, with an increase in their number being seriously affected by the Great Financial Crisis (GFC). Since 2010 there has been a slow recovery in their number but the conclusion remains constant – they are a very small proportion of the overall private sector business population.

**Table 4: Number of Productivity Heroes, 2000-2022**

Year	No. of SMEs (3 years and over)	No. and % of businesses achieving productivity growth	No. and % of Productivity Heroes <sup>1</sup>
<b>2000-01</b>	676k	347k - 51.3%	4.5% (15,622)
<b>2007-08</b>	825k	449k - 54.4%	8.8% (39,245)
<b>2010-11</b>	882k	358k - 40.7%	6.6% (23,740)
<b>2018-19</b>	1.13m	557k - 49.2%	6.7% (37,125)
<b>2021-22</b>	1.22m	453k - 37.0%	8.0% (36,298)

Source: ONS BSD (2001-22)

Notes: 1. Expressed as a proportion of firms increasing their productivity

## PRODUCTIVITY HEROES – SECTOR AND LOCATION

Table 5 shows that while Productivity Heroes can be found in all sectors of the economy they do tend to be concentrated in Business and Professional Services (39.5%) as well as Wholesale and Retail (24.3%). Construction (10.4) and Manufacturing (7.9%) also contain significant numbers of Productivity Heroes.

**Table 5: Productivity Heroes by Sector, 2021-22**

Sector (2-digit SIC)	No. of Firms	%
<b>Manufacturing (15-37)</b>	2,856	7.9
<b>Elec, Gas &amp; Water (40-41)</b>	120	0.3
<b>Construction (45)</b>	3,764	10.4
<b>Wholesale &amp; Retail (50-52)</b>	8,820	24.3
<b>Hotels &amp; Restaurants (55)</b>	1,978	5.4
<b>Transport, Storage &amp; Comms (60-64)</b>	1,435	4.0
<b>Financial Intermediation (65-67)</b>	380	1.0
<b>Real Estate, Renting &amp; Bus Services (70-74)</b>	14,324	39.5
<b>Other Service Activities (90-93)</b>	2,621	7.2
<b>Total</b>	<b>36,298</b>	<b>100.0</b>

Source: ONS BSD (2021-22)

Notes: 1. SIC92/03 is used here to enable comparability back to 2000-01 so the numbers are consistent although the descriptions are not. So, in 2021-22 SIC70-74 (section K) is Business and Professional Services

Just over a third of Productivity Heroes in 2021-22 are located in London and the South East (37%) but only one in ten are to be found in all three of the UK's home nations with Northern Ireland having the fewest number (Table 6). Although variable year to year, the share of Productivity Heroes by sector and region are broadly in line with the distribution of the wider SME business population.

**Table 6: Productivity Heroes by Nation and English Region, 2021-22**

Nations and Regions	No. of Firms	%
<b>North East</b>	1,025	2.8
<b>North West</b>	3,747	10.3
<b>Yorkshire and The Humber</b>	2,681	7.4
<b>East Midlands</b>	2,339	6.4
<b>West Midlands</b>	2,793	7.7
<b>East of England</b>	3,529	9.7
<b>London</b>	8,212	22.6
<b>South East</b>	5,219	14.4
<b>South West</b>	2,996	8.3
<b>Wales</b>	1,181	3.3
<b>Scotland</b>	2,129	5.9
<b>Northern Ireland</b>	447	1.2
<b>Total</b>	<b>36,298</b>	<b>100</b>

Source: ONS BSD (2021-22)



## SUMMARY

Many policymakers have been very enthusiastic about the scope for targeted business support interventions which the large canon of High-Growth Firm (HGF) research sought to uncover. As Hart et al., (2020) have argued this has led to a misdirection of small business policy in almost all developed economies as the OECD definition of a HGF renders invisible the majority of growth in the small business sector. We do not want to make the same mistake with regard to this latest small group of influential 'Productivity Heroes'. Whilst that hope continues, we should perhaps take more seriously the rather more sanguine view expressed by the 'father' of HGF studies,

*"We know that smaller, volatile firms are the major replacers of lost jobs, but we have no experience in identifying and assisting them in large numbers. Because they are small, we must reach many of them to have a measurable effect. Because they are volatile, we must monitor each individual firm's performance carefully if we are to gain maximum benefit from our invested dollars (on the high side) and avoid scandal (on the low side). From this researcher's viewpoint it seems like a very difficult problem to solve administratively. A massive bureaucracy would be required to monitor individual small businesses on the scale required ..."* Birch [1979, p. 4]

A more productive approach to research on Productivity Heroes might be to not regard their identification as an end itself, but rather, as Anyadike-Danes and Hart (2019) argued, as a means of making some progress on the broader question of understanding the drivers and context for individual firm productivity gains. Nevertheless, we argue that enterprise policy should place a central focus on this newly identified small group of firms to provide some evidence on how to address the UK's long-standing productivity problem and with it the long tail of unproductive mainly small firms. This argument has also been embraced and amplified by Goldman Sachs in their manifesto for small business policy for all political parties to adopt at the start of election year. (Goldman Sachs 10KSB, 2024). To that end the next stage of our research into this small group of influential firms is to track their performance over time to investigate the persistence of their productivity gains over time and indeed, looking back, identify in what year the 2021-22 cohort of Productivity Heroes first met the criteria.

## REFERENCES

- Anyadike-Danes, M; Bonner, K; Hart, M and Mason, c, (2009) Measuring Business Growth: High-growth firms and their contribution to employment in the UK.' London: NESTA.  
<https://www.nesta.org.uk/report/measuring-business-growth/>
- Anyadike-Danes, M and Hart, M (2017a) "Getting in under the hood: firm and job dynamics in the UK before, during and after the 'Great Recession'", chapter 4 in volume on the OECD Dynemp Project, April 2017.
- Anyadike-Danes, M and Hart, M (2017b) "The UK's high growth firms and their resilience over the Great Recession", ERC Research Paper 62, September 2017.  
<https://www.enterpriseresearch.ac.uk/publications/uks-high-growth-firms-resilience-great-recession-research-paper-no-62/>
- Anyadike-Danes, M and Hart, M (2018) "All grown up? The fate after 15 years of a quarter of a million UK firms born in 1998" Journal of Evolutionary Economics, vol. 28(1), pages 45-76 special issue entitled "Firm Age and Performance", 2018.  
<https://doi.org/10.1007/s00191-017-0549-x>
- Goldman Sachs 10KSB (2024) Generation Growth: The Small Business Manifesto – Unlocking the economic potential of UK small businesses.  
<https://www.goldmansachs.com/citizenship/10000-small-businesses/UK/news-and-programme-information/pages/generation-growth-the-small-business-manifesto.html>
- Hart, M; Prashar, N and Ri, Anastasia (2020) "From the Cabinet of Curiosities: The misdirection of research and policy debates on small firm growth", International Small Business Journal.  
<https://journals.sagepub.com/doi/10.1177/0266242620951718>
- NESTA (2009) The Vital 6% - how high-growth innovative businesses generate prosperity and jobs, NESTA, October 2009 <https://www.nesta.org.uk/report/the-vital-6/>
- Roper, S and Hart, M (2016) "Is our obsession with fast growth and job creation stifling productivity?" ERC Blog, 12 December 2016.  
<https://www.enterpriseresearch.ac.uk/obsession-fast-growth-job-creation-stifling-productivity/>

**Notes:**

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