



GLASGOW
CITY REGION

Intelligence Hub

Exploring the Factors Driving
Glasgow City Region's Productivity
Gap with the West of England

January 2025

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Executive Summary

Over the last five years, the Glasgow City Region Intelligence Hub has been building a comprehensive evidence base around key productivity challenges for the Region. For society, boosting productivity enhances the performance of regions, improves infrastructure, and elevates the quality of local services, among other benefits. Glasgow City Region (GCR) aims to become the UK's most productive city region by 2030. However, several challenges must be addressed to realise this vision.

This paper examines the productivity differences between Glasgow City Region (GCR) and the West of England (WoE), the top performing Core City Region in the UK in terms of productivity. It finds that the productivity gap is primarily attributed to weak productivity performance within some sectors and differences in economic structure. The West of England's higher concentration of industries in tradeable sectors and employment in knowledge-intensive occupations contributes to greater labour productivity.

Key contributing factors include innovation activity, investment, and skills. WoE leads in innovation, demonstrated by higher R&D investment and a greater number of patents per capita. GCR's lag in these areas highlights a gap in translating innovation into productivity gains. Data limitations complicate cross-regional comparisons, but the trend shows that GCR's innovation outputs are consistently lower.

Investment levels in GCR, as indicated by gross investment rate, align with those in WoE and surpass those in Greater Manchester, indicating that GCR's business environment is comparably attractive to investors. However, GCR's investment returns and type may not fully align with high-productivity needs. For instance, the lack of quality lab space limits investment potential in high-value life sciences, contrasting with WoE's ability to support diverse business needs through specialised infrastructure.

Skills levels in GCR are among the highest across UK Core City Regions. However, the data suggests that the labour supply in GCR is constrained by skills shortages in key sectors and poor health, which acts as a drag on productivity.

Policy recommendations emphasise a balanced approach to enhancing productivity in both tradeable and non-tradeable sectors. For GCR, attracting high-performing firms in tradeable sectors is critical as well as improving the performance of the existing business base. This takes time and requires a long-term economic policy with targeted investment in skills and infrastructure.

Additionally, increasing productivity in non-tradeable sectors, or the Foundational Economy, is vital to achieving inclusive economic growth. Here, policies should focus on modernising sectors such as retail and social care through digital tools and innovative practices. Contrary to traditional views, recent studies suggest that productivity gains in Foundational Sectors can boost GVA and improve living standards for lower-income households, creating a more equitable economy.

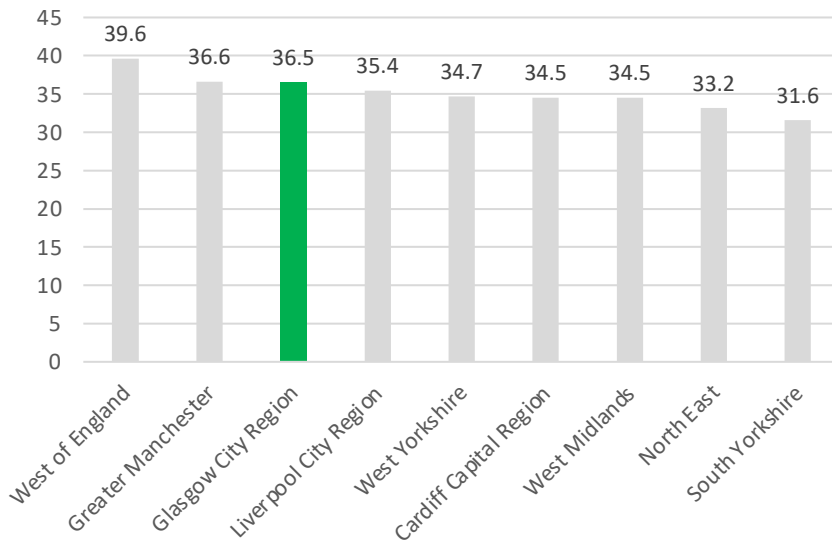
Addressing these productivity gaps will require targeted investment as well as tailored support for tradeable and non-tradeable sectors. However, policymakers must also consider potential challenges, such as the risk of escalating housing costs and gentrification pressures, as a more productive GCR workforce could drive demand for housing beyond current levels.

1. Introduction

Glasgow City Region (GCR) has been one of the UK's fastest growing regions. Over the last five years, GCR's total Gross Value Added (GVA)¹ has grown by 19.1%, higher than the UK average (14.5%).

However, GCR's labour productivity levels, proxied by GVA per hour worked (£36.5), are behind West of England's (£39.6) and the UK average (£39.7).

Chart 1: Gross Value Added per hour Worked (£), 2022

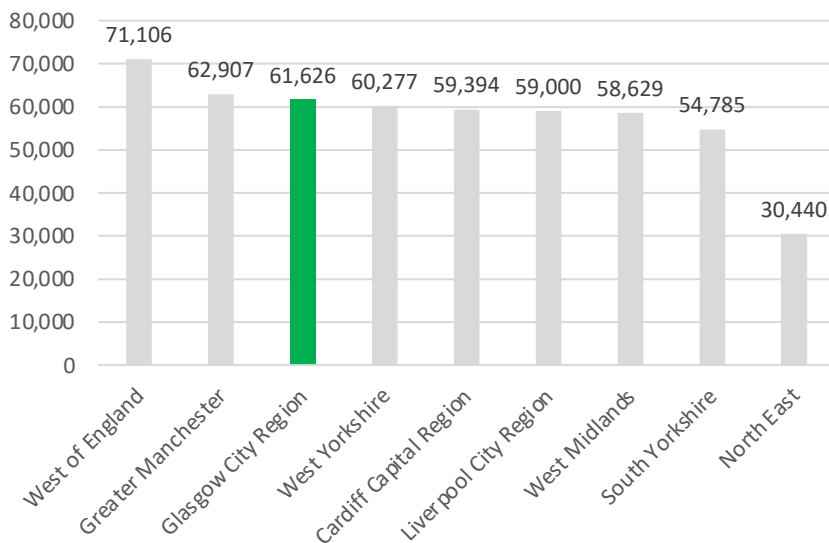


Source: ONS, Subregional Productivity statistics

1. Total value generated by any unit engaged in the production of goods and services

The ONS's preferred measure of labour productivity is GVA per hour worked. This is more useful than alternative productivity measures such as GVA per job as it takes account of different employment structures such as variations in rates of part-time working or in average hours per job. However, in this paper we are using GVA per worker, as a proxy for labour productivity.² This indicator shows how much economic value is created, on average, by each worker. This measure allows us to analyse sectoral and firm level labour productivity across city regions. As chart 2 shows, GVA per worker is consistent with the GVA per hour worked trend.

Chart 2: GVA / Worker (£), 2022



Source: ONS, Subregional Productivity statistics and BRES

This paper looks at factors that can explain the gap in productivity between GCR and the West of England (WoE) as well as what economic policies could lift GCR to higher productivity levels. Our recent [blog](#) explains in more detail why productivity is important for our economy.

2. Methodological note: This paper uses GVA per worker as a proxy for labour productivity, as calculated by the Intelligence Hub. ONS's GVA per job filled is considered to be a more accurate measure of labour productivity at an aggregate level but we're using GVA/worker throughout the paper to ensure consistency of analysis and outputs. It is calculated by dividing total GVA by the number of workers.

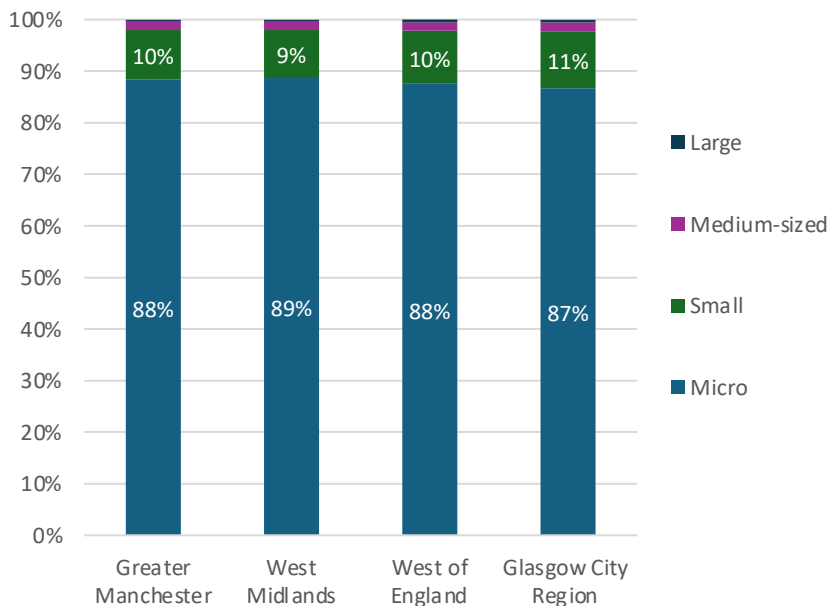
2. Nature of Firms

Variation in the nature of firms (i.e. size and business dynamism) has been hypothesised by key stakeholders in the Region as a potential driver of the observed productivity differences. However, our analysis indicates that this is unlikely to be the case for WoE and GCR.

2.1. Size of Firms

As shown in chart 3, GCR shares a similar distribution of firms with the WoE and several other UK Core City Regions. This pattern extends across various sectors as well. This suggests that firm size alone does not account for much of the productivity differences between the two city regions.³

Chart 3: Proportion of Firms by Size, selected UK City Regions, 2023



Source: UK Business Count, 2023

2.2. Business Dynamism

Differences in business dynamism, proxied here by average birth and death rates, could also be a driver of productivity differences between regions. A high and steady rate of business dynamism is necessary for an economy to grow in the long-term because it encourages businesses to be more innovative and creative.⁴ A lack of business dynamism could lead to stagnation in productivity growth.

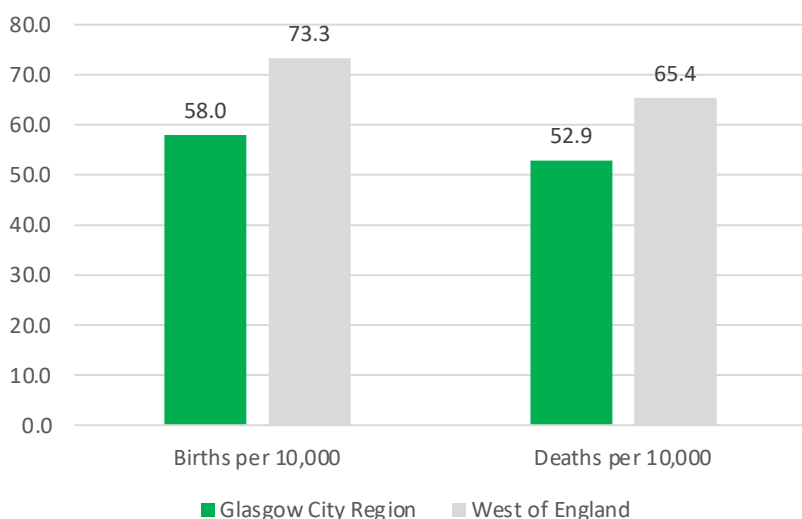
3. Note: Micro firms have 9 or fewer employees, small firms are defined as having 10 to 49 employees, medium firms have between 50 to 249 employees and large firms have 250 or more employees.

4. Business Dynamism in the UK Economy, [ONS](#), October 2020

2.2. Business Dynamism (cont.)

The data suggests that although GCR has lower business creation rates than the WoE, business churn rates (i.e. the sum of business creation and destruction)⁵ between the two city regions are broadly similar at 47.7 and 47.2 for GCR and WoE, respectively (as illustrated in chart 4). This suggests that a variation in firm creation and firm closures does not explain productivity differences.

Chart 4: Business Birth & Death Rates (2018 – 2022)



Source: ONS Business Demography

3. Economic Structure

3.1. Business Base and Job Composition

The literature suggests that cities with a higher share of businesses in tradeable sectors (i.e. goods and services that can be consumed outside of the region in which they are produced) are more productive and have a stronger business base.⁶ This is because they can get access to larger markets, achieve economies of scale, encourage innovation, and attract skilled labour. These advantages collectively strengthen the business base, foster growth, and lead to sustained higher levels of productivity.

5. The formula used is the following $\text{Business Churn Rate} = \frac{\text{Business Death Rate}}{\text{Business Birth Rate} + \text{Business Death Rate}} \times 100$

6. [Productivity and Jobs in a Globalised World](#), OECD, a tale-of-two-cities (part 1), Resolution Foundation, Cities, small businesses and 'new work', 2015, Centre for Cities

3.1. Business Base and Job Composition (contd.)

WoE has the highest share of firms in tradeable sectors (28.6%) of all UK Core City Regions while GCR has the fourth lowest (22.6%). Moreover, the growth of jobs in knowledge-intensive business services (KIBS) in GCR has not kept pace with the WoE.⁷ Over the period 2015-2022, the share of employment in KIBS in GCR has been approximately 17% compared to 24% in the WoE.

The data suggests that the disparity in the economic structure⁸ between the two city regions may explain some of the variation in labour productivity. WoE places greater emphasis on high-tech and knowledge-intensive tradeable sectors, while GCR has a stronger focus on the Foundational Economy, such as hospitality and retail. The Foundational Economy accounts for 60% of employment in Glasgow City Region and 44% of its business base. Chart 5 illustrates the composition of Foundational Economy businesses as a share of total business base in both city regions.⁹ Our [research paper](#) on the Foundational Economy explains in more detail its importance for GCR.

Chart 5: % FE Business of Total Business Base, 2024



Source: UK Business Count, 2023

7. Note: utilising [ONS definition of KIBS](#)

8. Note: Economic structure in this context means a combination of sectoral productivity and employment structure

9. Providential Economy refers to welfare related services such as Social Care and Education. Overlooked Economy includes culturally important goods and services such as hospitality and non-food retail. Material Economy refers to essential everyday infrastructure such as transport, utilities and food retail.

3.1. Business Base and Job Composition (cont.)

Chart 6 shows that if the economic structure (i.e. the job composition) in GCR matched that of WoE, this would boost GVA per worker by £12,539, exceeding WoE's current productivity levels. This means that GCR would need to expand economic activities in high-productivity tradeable sectors.

Chart 6: GVA per Worker (£), excl. Primary Industries, Real Estate and Activities of Households, GCR and WoE, 2022



Source: Intelligence Hub Analysis of ONS, Regional Productivity Statistics and BRES

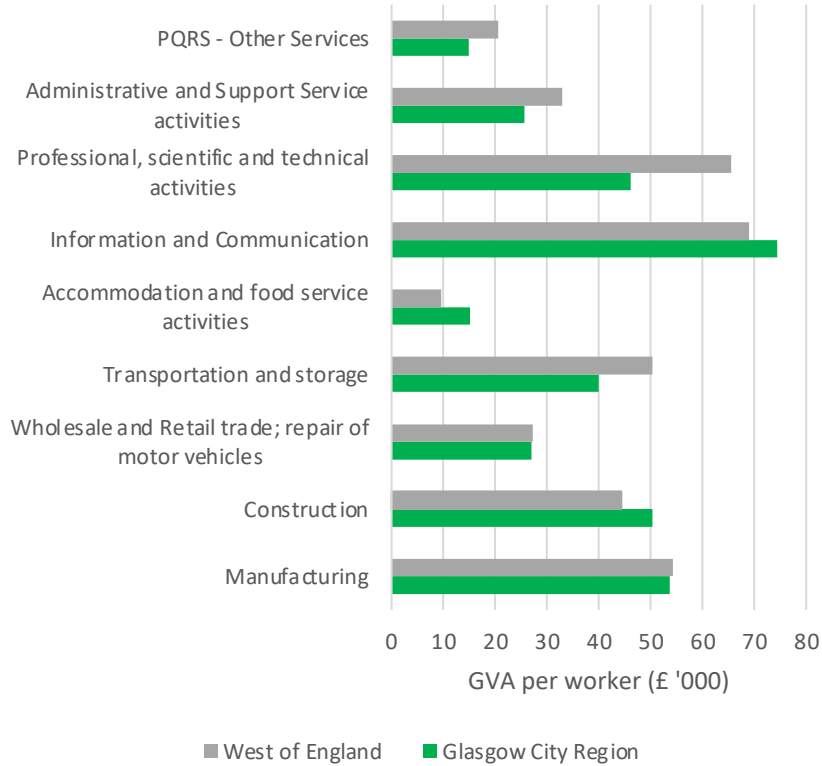
3.2. Sectoral Productivity Gaps

An important element in understanding aggregate labour productivity differences between regions is to look at industry productivity differences. This means that firm productivity in one area can differ from those in the same industry in other areas.¹⁰ The data presented here contains experimental statistics for the non-financial business economy, calculated using aGVA (approximate Gross Value Added) from the Annual Business Survey and employment data from the Inter-Departmental Business Register (IDBR).

Looking at the composition of GVA per worker by sector in GCR and WoE in chart 7 suggests that productivity differences are driven by differences in average labour productivity of service-related sectors, namely Professional, Scientific and Technical Activities, Administration and Business Support Services, Transport, and Other Services.

10. [Understanding Spatial Labour Productivity in the UK](#), ONS

Chart 7: Average Labour Productivity by Sector, 2021 (excl. Primary Industries, Financial Services and Real Estate)



Source: Firm-level productivity distributions for Selected City Regions from the Annual Business Survey, ONS

3.3. Distribution of firm-level productivity

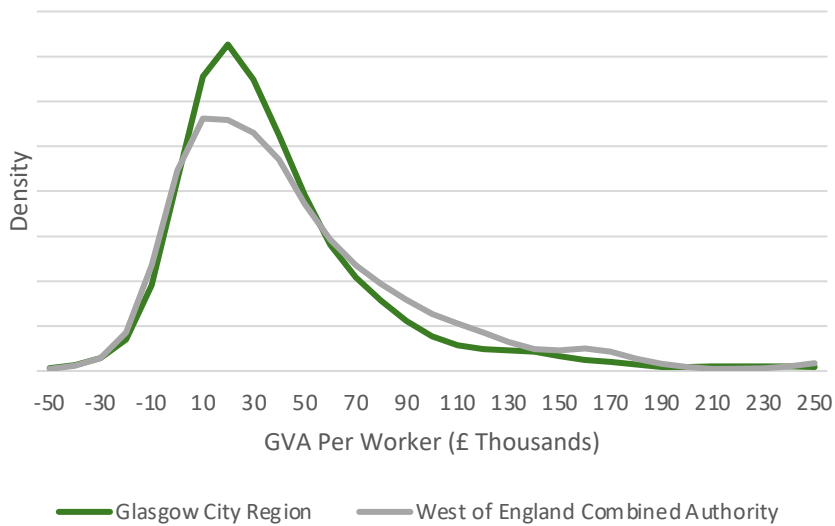
Recent economic literature on the UK's productivity challenges highlights that as UK regions converge towards a service-based economy, within-sector differences is a bigger contributor to productivity gaps than sectoral composition.¹¹ Chart 8 looks at the distribution of firm-level productivity across industries within GCR and WoE. The horizontal axis shows firm-level GVA per worker in thousands of pounds. Negative values indicate that a business spends more than it earns. The vertical axis represents the percentage of employees (density¹²) that falls within each GVA per worker bracket.¹³ The skewed distributions illustrate that there is a higher concentration of employees in GCR with productivity clustered at lower levels and fewer with productivity clustered at higher levels. It is important to note that no single city region has a large cluster of high (or low) productivity firms.

11. Balls et al (2023) Tackling the UK's regional economic inequality: Binding constraints and avenues for policy intervention. [Source](#)

12. In this paper, kernel densities plot the distribution of average worker productivity in individual businesses. The large skew to the left of the chart shows a concentration of lower productivity businesses.

13. A curve which peaks to the right has more productive employees

Chart 8: Firm-level GVA per worker, All Industries, 2021

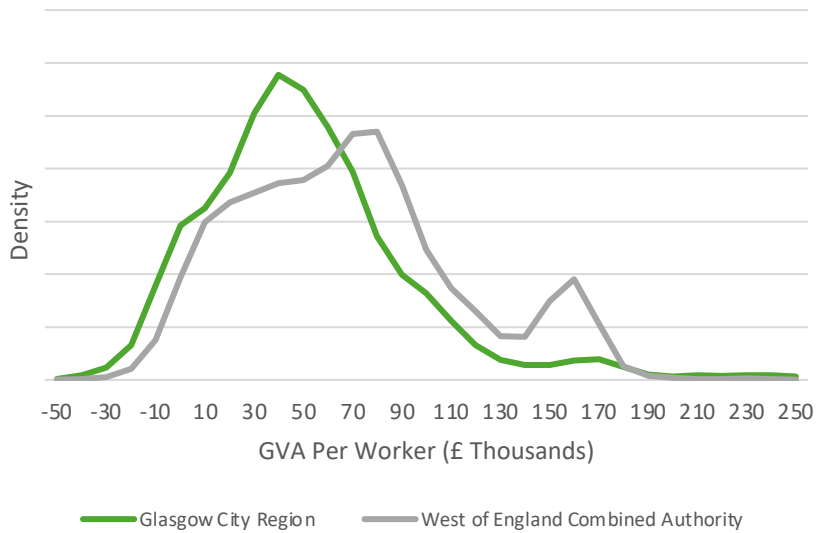


Source: Experimental statistics for the non-financial business economy, ABS and IDBR

Productivity distribution patterns vary across industries, with the most pronounced disparities observed in the Professional, Scientific, and Technical Activities sector. This sector represents 6% of the GCR economy and 10% in the WoE. As illustrated in Chart 9, a large portion of GCR's workforce produces a GVA per worker of up to approximately £40,000, indicating a significant concentration of lower productivity levels. In contrast, the WoE demonstrates a more evenly distributed productivity range, suggesting a sector that is both more diverse and more productive overall.

Median productivity levels further highlight this gap: the median GVA per worker in GCR stands at £46,000, compared to £65,000 in the WoE. At the top end, the disparity is even more stark, with the most productive 10% of firms reaching £105,000 per worker in GCR, versus £159,000 in WoE. This disparity results in a 'long tail' of lower-productivity firms in GCR, which brings down the sector's overall average.

Chart 9: Professional, Scientific and Technical Activities, 2021



Source: Experimental statistics for the non-financial business economy, ABS and IDBR

3.4. Summary

Differences in aggregate labour productivity between GCR and the WoE can be attributed to variations in economic structure and poor performance within some sectors such as Professional, Scientific and Technical Activities. The WoE’s higher concentration of industries in tradeable sectors and employment in knowledge-intensive occupations contributes to greater labour productivity. In contrast, GCR has a different economic composition, with a larger share of employment in non-tradeable sectors. The next section looks at potential factors contributing to variations in labour productivity.

4. Factors Contributing to Lower Labour Productivity

4.1. Innovation

Innovation input (e.g. R&D investment) and output measures (e.g. patents, products innovation, process innovation) matter for productivity growth. At the firm level, R&D stimulates innovation by enabling the development of new products, processes, or technologies, which improve efficiency, reduce costs, and enhance the quality of outputs, directly increasing the firm's productivity by allowing it to produce more or higher-value goods and services with the same or fewer resources. At the economy level, the relationship is more complex as it depends on levels of innovation absorption and diffusion more broadly.¹⁴

Across all innovation measures, GCR lags behind the WoE. In 2021/22, WoE had the largest share of UK Innovate investment (5.8%), measured as percentage of total awards funded (£), while GCR had only (2.4%). This pattern is consistent across a four-year period. GCR has also consistently had the lowest number of patents per 10,000 population (8).¹⁵ To reach WoE levels, GCR would need to increase patents by 36%.

It is worth noting that there is a lack of defined indicators for innovation and a lot of the available indicators are not easy to compare across city regions due to data availability and comparability.

4.2. Investment

Attracting investment is crucial for productivity because it brings in capital that enables businesses to adopt advanced technologies, improve infrastructure, and upskill the workforce, all of which enhance the efficiency and output of workers. Investment also helps develop high-value industries, creating higher-paying jobs, and driving productivity growth by enabling workers to produce more or better-quality goods and services. The level of investment in GCR, measured as average gross investment rate,¹⁶ is similar to the WoE and significantly higher than Greater Manchester, suggesting that the Region's business ecosystem is as effective in attracting investment as the WoE's.

14. From ideas to growth: understanding the drivers of innovation and productivity across firms, regions and industries in the UK. [NIESR](#), 2021

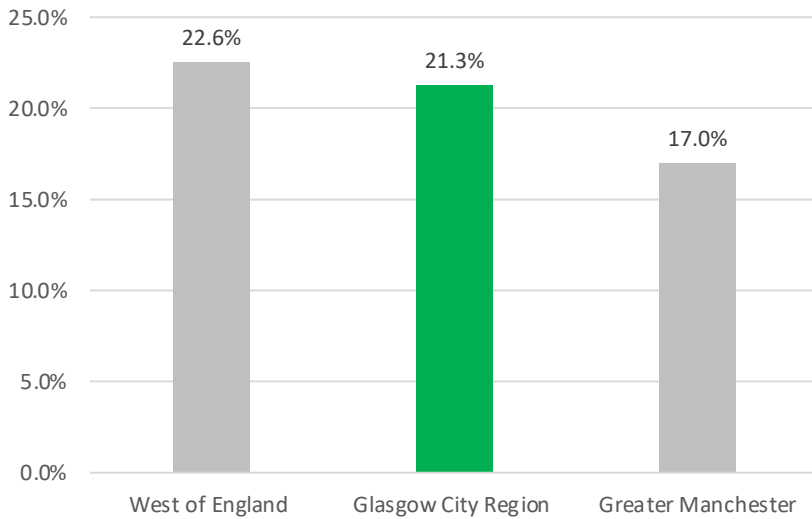
15. Note: this data is only available at [Primary Urban Area](#) for Glasgow and Bristol.

16. Note: Gross investment rate is Gross Fixed Capital Formation as a proportion of gross value added

4.2 Investment (cont.)

However, this begs the question of if the capital invested has high returns and/or if GCR attracts the right kind of investment.¹⁷ For example, the needs of a Life Sciences firm will look very different from the needs of a consultancy firm. While the former needs quality lab space (ideally centrally located close to universities), the latter requires office space and access to skilled labour. The overall findings of the Ryden report of the lab space market in GCR has shown that lack of lab space acts as a brake on investment in Life Sciences in the Region.¹⁸

Chart 10: Average Gross Investment Rate (2010 – 2020)



Source: Intelligence Hub analysis of ONS experimental gross fixed capital formation (GFCF) estimates by asset type, all industries.

17. Purpose built student accommodation accounts for significant amount of capital invested into Glasgow City and planning applications ([source](#))
18. Glasgow City Region Laboratories: A Market Investigation, Ryden, January 2024

4.3. Skills

The relationship between skills and GVA per worker is closely linked because a more skilled workforce tends to be more productive, leading to higher GVA per worker. This happens for a number of reasons including:

- **Use of Advanced Technologies:** Workers with higher skill levels are better equipped to use sophisticated tools, technologies, and processes, which enhances productivity and adds more value to the goods and services produced.
- **Innovation Capacity:** Skilled employees are often more capable of contributing to innovation, problem-solving, and process improvements.
- **Complex Tasks and Specialisation:** Skilled workers can handle more complex, high-value tasks, leading to the production of goods and services with greater economic value.

Compared to other UK Core City Regions, GCR has the highest share of its working age population with degree level qualifications. As of 2023, 53.9% of GCR's working age population had a degree level qualification, whereas in WoE, 53.3% had a degree level qualification.¹⁹

Chart 11 shows that there is a positive correlation between labour productivity and skills. UK Core City Regions with higher rates of qualifications typically enjoy a higher GVA per worker. But despite GCR having a higher level of qualifications, businesses in emerging sectors such as Advanced Manufacturing, Life Sciences, and FinTech report high levels of skills shortages and mismatches. This suggests that Regional skills provision does not meet local business needs.²⁰

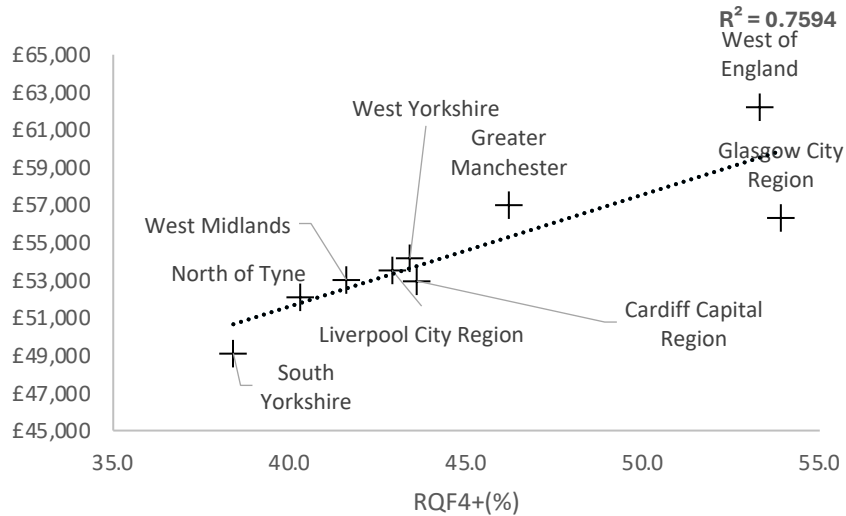
Another key constraint in GCR's labour market, compared to WoE, is the disproportionately high rate of economic inactivity due to ill health. GCR has the fourth-highest rate of health-related economic inactivity among UK Core City Regions at 31.1%, whereas WoE ranks much lower, with the second lowest rate at 26.6%. This represents a significant loss of productivity for GCR.²¹

19. Technically RQF4+ is equivalent to at least the first year of university (HNC)

20. Based on anecdotal evidence, roundtable discussions with GCoSI and engagement with cluster support organisations

21. The below chart uses GVA per Job Filled for accuracy, rather than calculated GVA per Worker

Chart 11: Share of Working Age with RQF4+ (%) against GVA per Job Filled



Source: Intelligence Hub analysis of Annual Population Survey

5. Policy Implications

The research suggests that improving productivity while addressing existing inequalities requires a balanced and targeted approach, along with considerations of potential trade-offs. The distinct economic histories and geographies of the two city regions present unique challenges and opportunities. While the WoE provides valuable insights, its model may not be directly replicable.

For GCR, policy efforts should focus on attracting and nurturing high-performing firms in tradeable sectors to drive growth and competitiveness. Tradeable businesses are not tied to a particular market (unlike non-tradeable sectors which provide local services) and therefore, have greater freedom for where they locate. Attracting more productive businesses and knowledge-intensive jobs to GCR will depend on the benefits it offers to investors, such as skilled labour, an effective innovation ecosystem and suitable infrastructure (i.e. dense city centre, good connectivity, commercial space). For instance, Morgan Stanley conducts investment banking in London but bases its back-office operations in Glasgow, reflecting the distinct roles cities play in the global economy.

This differentiation has key policy implications, underscoring the importance of addressing weaknesses that make GCR less attractive to this type of businesses. Research from Centre for Cities and the Resolution Foundation suggests that skills development and infrastructure should be at the core of this policy.²² However, a potential downside is increased pressure on affordable housing, raising the question of whether housing supply can keep pace with a growing workforce, over and above current trends. Additionally, the impact of increases in land values which results in gentrification and displacement should also be taken into consideration.²³

In addition to driving productivity in the tradeable sectors, there is a critical need to boost productivity in the GCR Foundational Economy (non-tradeable sectors), where improvements look different. For example, in Retail, this might involve using digital tools to streamline logistics and operations. Supporting innovation in these sectors requires bold policy experimentation and a shift in focus in the business support ecosystem. Contrary to the belief that the Foundational Economy lacks innovation capacity or that support leads to displacement, recent research shows that boosting productivity in low-wage sectors could increase GVA and improve outcomes for the poorest households, creating a more inclusive economy.²⁴

Moreover, policy efforts to boost productivity should integrate population health considerations. Poor and unequal health outcomes impose a significant drag on productivity, particularly in city regions like GCR. Addressing these challenges would enhance workforce participation and resilience, supporting a more inclusive and competitive economy in the long term.

22. The Wrong Tail, Centre for Cities, 2019 A Tale of Two Cities (part 2), The Economy 2030 Inquiry, Resolution Foundation, 2023
23. Wilhelmson.,M et al. Gentrification effects on housing prices in neighbouring areas, International Journal of Housing Markets and Analysis, 2021
24. How could productivity deliver inclusive growth in Scotland? IPPR Scotland, 2019

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