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CREATIVE DESTRUCTION AT WORK: PRODUCTIVITY FRONTIERS, INNOVATION, AND CONCENTRATION ACROSS GEORGIAN INDUSTRIES

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INTRODUCTION

Innovation-driven growth has long been understood as a restless, uneven process. In the Schumpeterian tradition – captured formally by Aghion and Howitt's model of creative destruction – economies progress when new, higher-quality technologies displace older ones, pushing the productivity frontier outward. This dynamic vision of growth, which underpins modern endogenous growth theory and its Nobel-recognized contributions, emphasizes that long-run prosperity depends less on accumulating more inputs and more on the continual renewal of ideas, products, and organizational practices. Competition sits at the core of this mechanism. Rivalry pushes firms to innovate in order to "escape competition," yet the same innovative breakthroughs can give temporary market power that incumbents may later use to shield themselves from future challengers. Whether an economy remains innovative and adaptive – or becomes sclerotic and entrenched – depends on how these forces balance over time.

Against this conceptual backdrop, Georgia's industrial landscape offers a rich setting. Over the past decade, some sectors have moved rapidly up the productivity frontier, others have fallen behind, and in many cases the distance between leaders and followers has widened. Innovation activity has shifted from broad and energetic in the mid-2010s to sharply constrained during the pandemic, with only partial recovery afterward. Meanwhile, market concentration has tightened in some industries and fragmented in others. Putting these patterns together is essential for understanding which parts of the economy are experiencing Schumpeterian renewal and which risk stagnation.

To trace these dynamics, the research note adopts descriptive approach based on firm-level microdata at the NACE Rev. 2 three-digit level. For each sector–year, the productivity frontier is defined as the 90th percentile of labor productivity, the median anchors the core of the distribution, and the average log distance to the frontier summarizes how far the typical firm sits below sectoral leaders. Innovation activity is captured across four dimensions – product, process, organizational, and marketing changes – using survey-weighted shares of firms, alongside an "any innovation" indicator that summarizes the breadth of experimentation. Market structure is proxied by the Herfindahl–Hirschman Index (HHI) computed from

turnover shares, and where useful, sectoral labor productivity is represented as bubble size to signal economic weight in cross-sectional figures.

The objective is not to estimate causal effects, but to assemble stylized facts about how productivity, innovation, and competition interact across Georgian industries. Through an Aghion – Howitt lens, movements in the frontier highlight genuine technological or organizational upgrading; shifts in the median and distance-to-frontier measures reveal whether diffusion and catch-up occur; innovation incidence reflects the scope and depth of firms' experimentation; and concentration helps distinguish dynamic rivalry from the entrenchment of incumbents.

MAPPING PRODUCTIVITY DYNAMICS ACROSS GEORGIAN INDUSTRIES

SECTOR-LEVEL EVOLUTION OF PRODUCTIVITY

The first place where Schumpeterian dynamics become visible is in the evolution of labour productivity across Georgia's industries. Over the past decade, the economy has lifted its overall productivity substantially, yet the gains have not been uniform. Some sectors have surged ahead, pulling the national frontier outward; others have followed more slowly; and a few continue to operate far from the leaders despite meaningful improvements of their own. This uneven pattern – frontier expansion at the top, steady but incomplete catch-up in the middle, and persistent gaps at the bottom – provides an initial map of where technological upgrading, scale, and organizational improvements have taken root and where diffusion has been more limited.

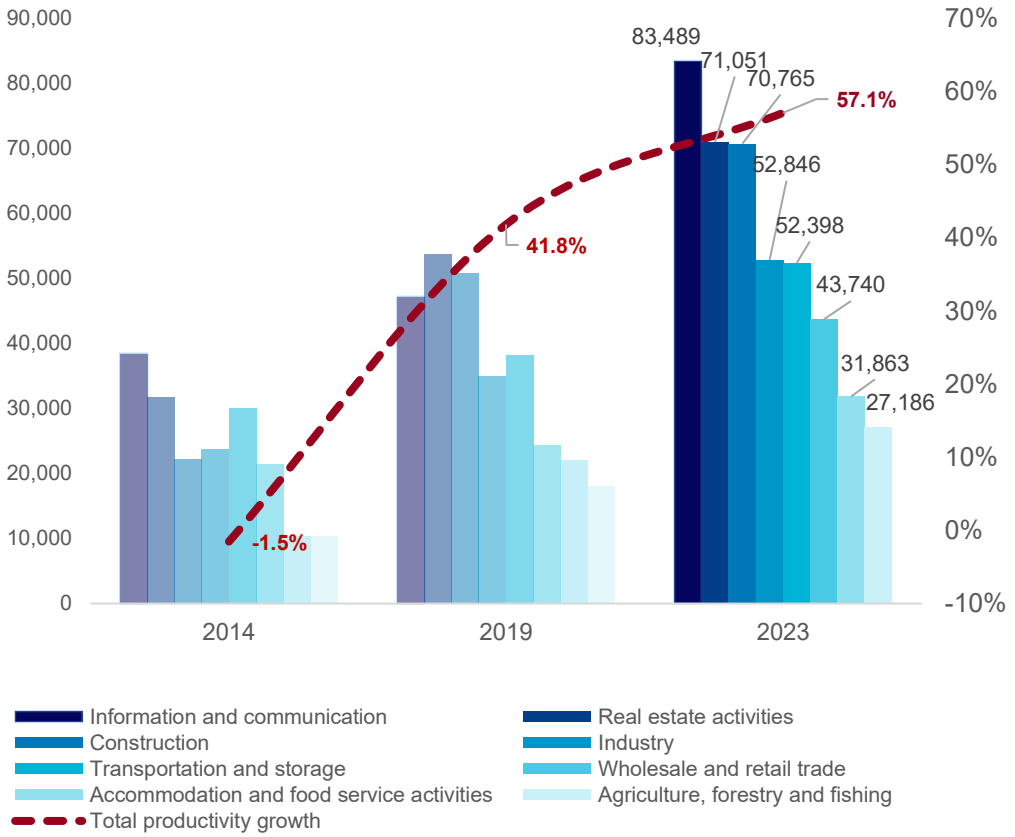
Economy-wide labour productivity in 2023 stands about 57% above its 2014 level, with close to two-fifths of that increase already achieved before 2019. Although the rise is broad-based, the relative positions of sectors – and the gaps between them – have become more sharply defined. Digital and asset-intensive activities occupy the leading edge; contact-intensive and primary sectors continue to lag behind; and a substantial middle group has progressed steadily but without closing the distance to the frontier.

Information and communication remains the most productive activity, reaching roughly 83,000 GEL per employed person in 2023. Real estate and construction follow at around 71,000 GEL each. These sectors were already among the higher performers in 2014, yet each has posted significant cumulative gains since then. Construction, in particular, has made one of the most rapid transitions from a relatively low starting point to a near-frontier position.

A broad mid-tier – industry, transportation and storage, and wholesale and retail trade – now falls between roughly 44,000 and 53,000 GEL per worker. Productivity in these sectors has about doubled compared to 2014, reflecting the gradual spread of better production processes, more efficient organization, and increased capital intensity, rather than abrupt technological shifts.

At the lower end of the distribution, accommodation and food services and agriculture show solid, though insufficient, progress. Productivity in accommodation and food reached about 32,000 GEL per worker in 2023, while agriculture rose to around 27,000 GEL – both a substantial improvement from roughly 10,000 GEL a decade earlier. Even so, the gap between ICT and agriculture is now close to threefold, highlighting persistent structural differences in technology adoption, capital intensity, and market power.

Figure 1. Labour Productivity by Economic Activity, 2014–2023



Source: Geostat, Author's calculations

FIRM-LEVEL PRODUCTIVITY PATTERNS: FRONTIER FIRMS AND LAGGARDS

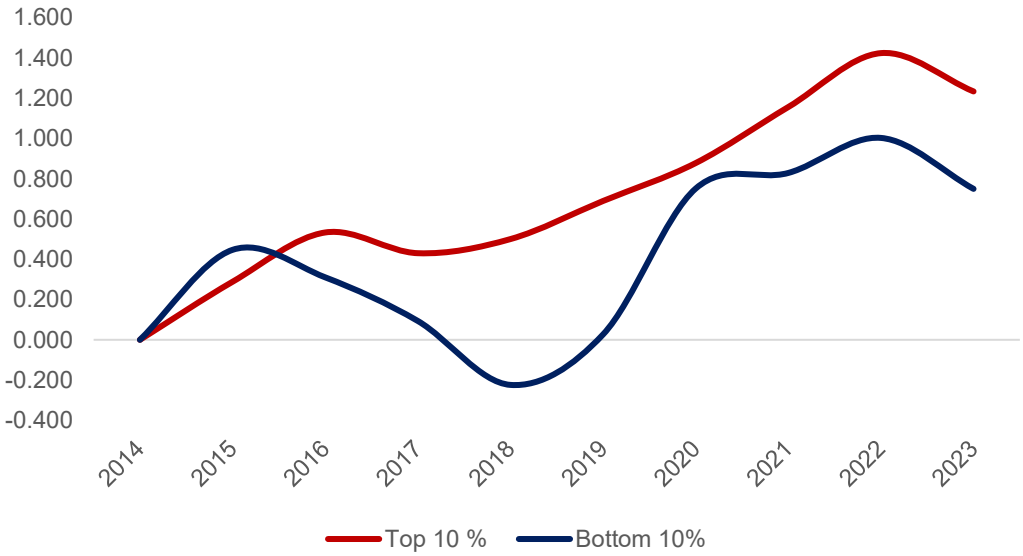
With the sector-level landscape in view, the analysis turns to the distribution of productivity within each NACE-3 sector, where much of the meaningful variation occurs. Sector averages often conceal wide gaps between frontier firms and

laggards, making it essential to benchmark firms directly against their peers using a consistent measure of labour productivity – turnover per employee. For each sector–year, the frontier (90th percentile), the median, and the average distance to the frontier are reported. This perspective makes it possible to see whether productivity gains reflect the progress of a small group of leaders or whether improvements are diffusing more broadly across firms. It also aligns naturally with the innovation indicators that follow, helping to identify where innovative activity is concentrated and how it relates to movements toward or away from the frontier. In this way, the firm-level results complement the sectoral charts by revealing the internal structure and granularity of performance within each industry, rather than adding another layer of aggregation.

Productivity at the top of the firm distribution increased steadily throughout the decade, while performance at the bottom followed a more uneven path – declining initially, then rebounding sharply, and more recently giving back part of those gains (Figure 2). By 2023, the average frontier firm (top 10%) is about 143% above its 2014 level, equivalent to roughly a 3.43× increase, whereas the average laggard (bottom 10%) stands about 112% above 2014. The resulting vertical distance between the two series – the productivity gap – amounts to 0.484 in log terms in 2023, implying that frontier firms have accumulated around 62% more growth than firms in the tail since the starting point in 2014.

The early years reveal a brief phase of catch-up, followed by a clear period of divergence. In 2015, productivity increased for both frontier firms and laggards, but the gains were slightly larger at the bottom of the distribution, leading to a modest narrowing of the gap. Between 2016 and 2018, however, the two paths separate decisively: frontier firms rise to roughly +65% relative to 2014, while the bottom decile declines to about −20%. By 2018, the implied ratio of top to bottom growth stands near 2.06 – meaning the frontier has expanded to more than twice the pace of laggards since the base year. Economically, this pattern is consistent with investments, reorganization, and capability improvements being concentrated among leading firms, while weaker firms contended with thin margins, tighter financing conditions, or labour hoarding that kept value added per worker subdued.

Figure 2. Frontier vs Laggard Firms – Labor Productivity (Log Index, 2014 = 0)



Source: Geostat, Author's calculations

The pattern reverses in 2019–2020 as lagging firms stage a sharp rebound. Over these two years, productivity among laggards rises by roughly 165% relative to 2014, while the frontier continues to improve but at a more moderate pace. As a result, the productivity gap compresses markedly – from 0.724 to 0.127 in log terms – and the top-to-bottom ratio falls from about 2.06 to 1.14. Most of this narrowing occurs in 2020. Two mechanisms align well with these movements. The first is selection and reallocation: COVID 19 pandemic was strong shock for the economy, and the weakest firms either shrink or exit, raising the average productivity of those remaining at the lower tail. The second is the rapid diffusion of simple, easy-to-implement practices – basic digital tools, tighter staffing, and more disciplined inventory or energy management. Because the metric here is labour productivity (output divided by labour), part of the surge at the bottom likely reflects a denominator effect as employment adjusted more quickly than output.

After 2020, the frontier begins to pull ahead once more, and the productivity gap widens again. Frontier firms reach a peak of about +315% relative to 2014 in 2022 before settling at +243% in 2023. Laggards also peak in 2022, at around +172%, but then fall back to roughly +112% in 2023. Correspondingly, the log gap expands from 0.127 at its 2020 trough to 0.484 by 2023 – meaning that roughly three-

fifths of the earlier narrowing has been reversed. This renewed divergence aligns with economic intuition: leading firms are typically better positioned to preserve margins through scale advantages, more resilient product mixes, or faster cost pass-through, while smaller and weaker firms tend to absorb cost shocks more directly and face tighter financing constraints. If part of the strong 2019–2021 catch-up reflected one-off selection effects rather than deeper capability improvements, some unwinding of those gains as conditions normalized is precisely the pattern one would expect.

INNOVATION AND MARKET CONCENTRATION

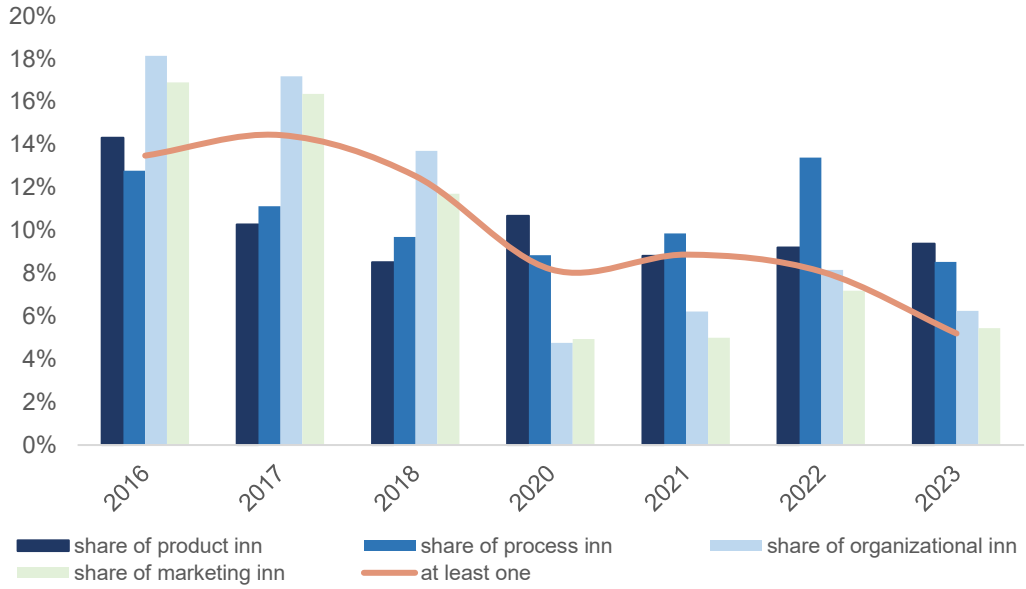
Innovation activity offers another window into the dynamics of Georgia's industrial landscape. Four types of innovation are tracked – product, process, organizational, and marketing – and measured as survey-weighted shares of firms within each NACE-3 sector (Figure 3). Because firms may adopt multiple types of innovation in the same year, category shares naturally overlap; an "any innovation" indicator summarizes the overall breadth of activity[1]. Market concentration, proxied by the Herfindahl–Hirschman Index (HHI) based on firms' turnover shares, provides the structural backdrop for interpreting these patterns. In selected figures, sectoral labour productivity is reflected in bubble size to signal a sector's economic weight (Figure 4).

In 2016–2018, innovation was broad-based: organizational and marketing changes were reported most frequently, while product and process innovation trailed only slightly. In practical terms, this looks like a phase when firms were trying both to refine what they sold and to professionalize how they operated – new packaging or product variants paired with reorganized workflows and stronger sales functions. A sharp contraction followed in 2020, with the steepest declines in organizational and marketing innovation. That pattern is consistent with a "survival mode" response: managers prioritized keeping lines running and preserving liquidity, while discretionary projects in organization and branding were postponed. A partial rebound was recorded in 2022 – driven mainly by process changes – before easing again in 2023. The "any innovation" rate moved

[1] This indicator shows if firm introduced at least one out of four (product, process, organizational, and marketing) innovations.

from roughly 13–14%[2] before 2019 to about 5% by 2023, indicating that by the end of the period far fewer firms undertook *any* form of innovation. Put simply, the innovation base narrowed and then did not fully recover.

Figure 3. Shares of Firms Reporting Product, Process, Organizational and Marketing Innovation, 2016–2023



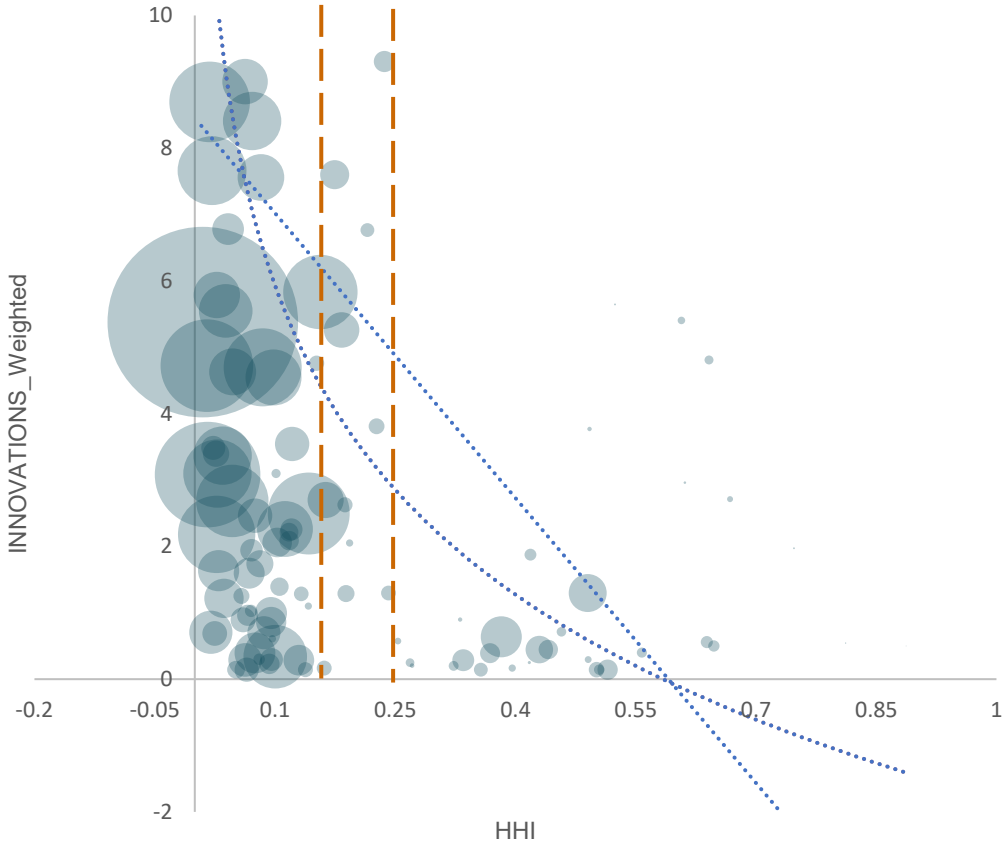
Source: Geostat, Author's calculations

The bubble scatter adds a third dimension that clarifies the pattern (Figure 4). Most of the large bubbles sit on the left of the plot, where HHI is low and innovation scope is higher. That co-location points to a complementary trio: stronger rivalry, broader innovation activity, and higher productivity tend to appear together. Moving rightward, toward more concentrated markets, the bubbles thin out and shrink; innovation is usually narrower there and productivity more modest, which is consistent with incumbents being able to hold margins without a broad programme of upgrading or diffusion to followers. The few bubbles that remain at mid-to-high HHI with limited innovation resemble entrenchment cases; where large bubbles do appear in that zone, they look more like efficient-scaling exceptions in which leaders first built high productivity and then captured share[3].

[2] The percentage of firms introducing at least one innovation.
[3] Negative correlation between market concentration and innovations is also confirmed by regression analysis.

Read together with the productivity indicators, these relationships become diagnostic. Where concentration is low and the frontier rises while the average distance to the frontier narrows, competitive pressure and diffusion are likely working in tandem: leaders push out the frontier and followers learn and adopt. Where concentration is high and innovation activity is thin, any frontier gains are more likely to be confined to a small group of incumbents with limited spillovers. In practical terms, the data suggests that innovation works best as a package: process changes are easier to monetize when paired with organizational tweaks and basic marketing upgrades; in contested markets, firms are nudged into doing all three at once, and productivity benefits are more visible. In concentrated markets, the same complementarities are present, but the incentive to assemble the full package is weaker, so diffusion stalls and average productivity lags.

Figure 4. Relationship Between Market Concentration (HHI) and Innovation Scope (2026-2023 Average)



Source: Geostat, Author's calculations

CONCLUSION

Georgia's firm-level data reveal an economy where both creative destruction and structural inertia coexist. By jointly examining the productivity frontier, the median, the distance-to-frontier, innovation patterns, and market concentration, the note provides a disciplined set of stylized facts about how industries advance – or fail to advance – along the technological and organizational frontier.

Three broad findings emerge. First, innovation activity has been highly cyclical. A wide base of experimentation in 2016–2018 collapsed in 2020 as firms shifted into defensive mode, followed by an incomplete rebound that left the innovation rate in 2023 far below pre-pandemic levels. This matters because innovation breadth and depth strongly co-move with firms' ability to push the frontier outward.

Second, productivity developments display a clear structural pattern. Frontier firms have advanced steadily over the decade, but diffusion has been uneven. In many sectors, the median has not kept pace with the frontier, and the distance between leaders and typical firms has widened again after a temporary narrowing in 2019–2020. This signals that capability gaps – skills, management practices, digital readiness, and access to finance – continue to shape how quickly firms can absorb new ideas and technologies.

Third, market structure is a strong organizing variable. Low-concentration sectors tend to exhibit broader innovation bundles and higher productivity, reflecting competitive pressure and faster diffusion. Conversely, highly concentrated sectors often display narrower innovation patterns and weaker median performance, suggesting forms of entrenchment where incumbents improve margins without substantial technological or organizational renewal. A few high-productivity, high-HHI outliers appear to be cases where early innovators scaled efficiently rather than markets becoming stagnant.

Taken together, these findings imply that Georgia's growth model is operating through dual channels. In some industries, competitive rivalry and broad experimentation drive frontier expansion and genuine catch-up – consistent with the classic Aghion–Howitt mechanism. In others, productivity improvements are confined to incumbents, and dispersion persists even as individual leaders

advance. Distinguishing between these two regimes is essential for policy design: productivity growth can no longer be viewed as a uniform process across sectors.

In practical terms, the integrated diagnostic – combining frontier movement, median dynamics, distance-to-frontier, innovation patterns, and market structure – provides a coherent baseline for identifying where the economy is gaining momentum and where it is losing it. The evidence suggests that strengthening the mechanisms that help firms absorb, adapt, and implement new ideas – such as improved managerial practices, wider digital uptake, access to long-term financing, and more transparent market rules – would have the greatest impact in sectors where gaps remain persistent and innovation is thin. At the same time, a more competitive environment, clearer regulatory processes, and lower entry barriers appear particularly important in activities where a small number of firms dominate and incentives for experimentation seem limited.

REFERENCES

Aghion, P., & Howitt, P. (1992). *A model of growth through creative destruction*. **Econometrica, 60**(2), 323–351.

Akcigit, U., & Ates, S. T. (2019, April; revised May 2019). *What happened to U.S. business dynamism?* (NBER Working Paper No. 25756). National Bureau of Economic Research.

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