Public Disclosure Authorized

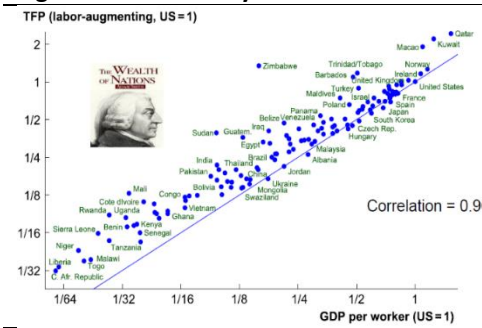
Public Disclosure Authorized

Drivers of Firms' Productivity and Jobs Creation

Key Messages

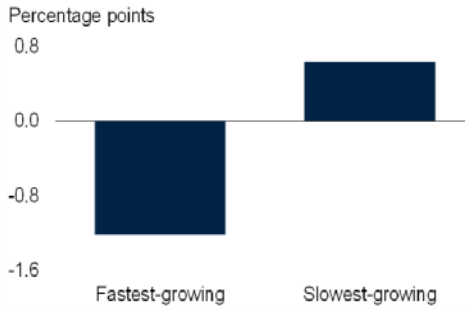
1. **Productivity matters: in fact, in the long run, it is the most important determinant of growth and economic wellbeing**. Productivity is the efficiency with which firms combine inputs to produce goods and services. Firms and economies globally struggle with the increasing scarcity of production inputs. Therefore, improving the production efficiency – producing both more and better goods and services with the same amount of resources – contributes to sustained prosperity. In fact, over the longer term, productivity is the most important determinant of income and living standards in a country (Figure 1, Figure 2). A well-known and often used quote says that "Productivity isn't everything, but, in the long run, it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker." (Krugman, 1990). Much earlier than Krugman, a medieval Arab thinker, Ibn Khaldun argued that "civilization and its well-being, as well as business prosperity, depend on productivity" (Muqaddimah, 1377).

Figure 1. Productivity and income levels



Source: World Bank.

Figure 2. Productivity and poverty reduction



Source: World Bank, 2020.
Note: The Y-axis shows the annual change in poverty rates between 1981 and 2015.

2. **Productivity growth in a relatively large sample of Georgian firms during the 2007-2019 period was somewhat disappointing, although significant heterogeneity exists across sectors**.[1] Especially concerning, given the number of workers employed, was the negative productivity growth in trade and hospitality services. In general, while construction showed strong positive productivity growth, Georgia's manufacturing and services firms did not become more productive. In addition, only the construction sector appears to allocate resources towards more productive firms. In manufacturing and services sectors, the correlation between market shares and levels of productivity is typically negative, indicating imperfectly functioning markets. The contribution of entrants and exiters has been small, and not always in productivity enhancing manner.

3. **Large firms dominate employment growth in Georgia and, to a lesser extent, productivity growth; startups are dynamic but fail to expand after their initial growth spur**. Large firms have significantly higher employment growth rates and a higher TFP level, though not necessarily TFP growth. At the same time, young firms are characterized by high growth rates, both in terms of employment and in terms of TFP; however, starting from year three, this growth path quickly stabilizes. These two findings appear to summarize Georgia's low contribution of allocative efficiency to TFP growth: large firms with declining TFP are expanding, while small firms with improving TFP are not growing.[2] In terms of employment, results differ from documented findings and show that young firms contribute disproportionately to job creation (Criscuolo & Gal, 2014; Haltiwanger J. J., 2013; Haltiwanger J. e., 2017;

[1] The sample was drawn from firms participating in Geostat's Business statistics survey for which TFP could be calculated. The survey covered firms in manufacturing, construction, sales and repair of vehicles, wholesale and retail trade, accommodation and restaurants, and transport and support activities.
[2] To the degree that these results hold for firms for which we cannot estimate the TFP (which tend to be relatively smaller), the actual TFP dynamics could be better than estimated and reported earlier.

Eslava, 2012). In Georgia's enterprise sector, labor is moving across sectors in a manner that works against productivity, as commerce sectors (characterized by low productivity) show positive net job creation, while higher tech sectors, characterized by higher levels of productivity, report negative net job creation.

4. **The weak firm-level productivity results suggest that, despite the good business environment, Georgian product markets are functioning somewhat inefficiently and there is limited progress in upgrading of firm capabilities**. Limited reallocation of market shares from less to more productive firms, as well as exit of more productive firms appear to be the main factors behind the disappointing productivity performance, suggesting the importance of deepening of reforms that promote better market functioning and allow more productive firms to scale up and gain a larger share of the market. This chapter focuses on: i) improving access to finance, as it is the second biggest obstacle reported by businesses; ii) promoting formalization, as it is likely to explain the fragmentation of the enterprise sector and firms' inability to scale up (opportunities for scaling up through exporting are analyzed in Chapter 4); and iii) strengthening competition, given evidence that shows that competitive pressures, while improving, may be weaker in certain sectors. Further, according to Cusolito & Maloney (2018), the "within" productivity component captures the quality of firms' internal capabilities, managerial and workforce skills, innovation capacity and technology adoption. Hence, to understand the low "within" productivity component contribution, this chapter looks at firm-level innovation and managerial practices in Georgian firms.

5. **Access to finance is improving, but largely from banks and for basic products**. While banks have done a reasonably good job in providing credit to the private sector, their product offering remains basic. Alternative sources of finance beyond banks are largely absent. Consequently, firms still see it as a major obstacle to their operations. Better functioning land and product markets, a more formal, digital and transparent private sector and an enabling legal framework for non-bank financial activities can help.

6. **Informality could also be hampering opportunities to scale up Georgian companies**. Various measures provide different results for the size of Georgia's informal sector. While output informality models put the size of the non-observed economy significantly above peers, labor informality estimates appear to be similar to peers. In terms of perceived informality, Georgia actually performs better than most peers. Still, all measures consistently point to its decline. But, where informality is more present, it is also a bigger obstacle. Tax policy and administration reforms can remove distortions that incentivize informality, while greater financial inclusion can also help through help through capturing and digitizing transactions.

7. **Firm-level data point to increased competitive pressures in product markets, but also some sectors where competition is weaker**. Average markups show a downward trend in recent years, while regression analyses show that TFP drives markups rather than market size. However, heterogeneity in markups between firms is large. In addition, the trend in markups in services is driven by a small number of firms with high markups and not by the median firm. Finally, sectors characterized by higher markups dispersion tend to also have higher levels of markups, indicative of imperfect market functioning. Promoting competition can improve consumers' welfare (through lower markups), as well as boost productivity and promote employment growth. This would require better enforcement (merger control, market monitoring) of the improved regulatory framework, adopting a competition lens in policy-making (including in regulated sectors), stronger cooperation between regulators with competition mandates, as well as advancing SOEs reform.

8. **Beyond economy-wide constraints, growing research is shedding light on the importance of firm capabilities for productivity growth**. (Cirera & Maloney, 2017) define firm capabilities as the core managerial competencies, production systems, and higher-end capabilities for technological absorption and innovation that enable a firm to recognize an opportunity and mobilize itself to take advantage of it. While these are critical for productivity growth, the performance of Georgia's companies on managerial abilities, the use of information and communication technologies (ICT), and investments in research and development (R&D) has been relatively weak.

9. **Innovation is an important driver for productivity growth; however, few Georgian firms innovate and the innovation ecosystem is nascent**. Firms can innovate in many ways: improving or introducing new products or services, implementing improvements in the productive process, adopting new organisational methods or implementing new marketing concepts or strategies. To innovate, firms

need to invest significant resources and devote time to improve processes. Hence, promoting innovation also requires a diversified range of instruments that mirror the type of innovation and the stage of development of firms. With traditional financial institutions often being risk-averse towards the early stages of innovative firms, technical assistance/training, network support, grants and equity-financing instruments are usually found to be more suitable to support these firms. Georgia's business support programs can be oriented towards a greater focus on innovation by firms. In addition, evidence shows that Georgia's larger firms and exporters are more likely to innovate, which suggests export promotion and policies to lower informality can also encourage firm innovation. Finally, innovation also requires complementarities, including human capital (Chapter 5 on Labor market and Skills) as well as a supportive innovation ecosystem. Policies should be put in place to improve coordination between research and development institutions (RDIs) and the private sector and to ensure a sufficient supply of the human capital that is needed for innovation (engineers and scientists). Evidence of spillover effects of innovative activities strengthen the case for support.

10. **Management practices are key to improving firm performance, but many Georgian companies are poorly managed**. Adopting better management practices is positively associated with employment, sales and labor productivity. However, management practices in Georgian firms lag considerable peers. In addition, the quality of management practices widely differs across companies. Active policy responses on managerial capabilities, such as facilitating access to consulting services and providing training on core business skills, could have a huge impact on business performance.

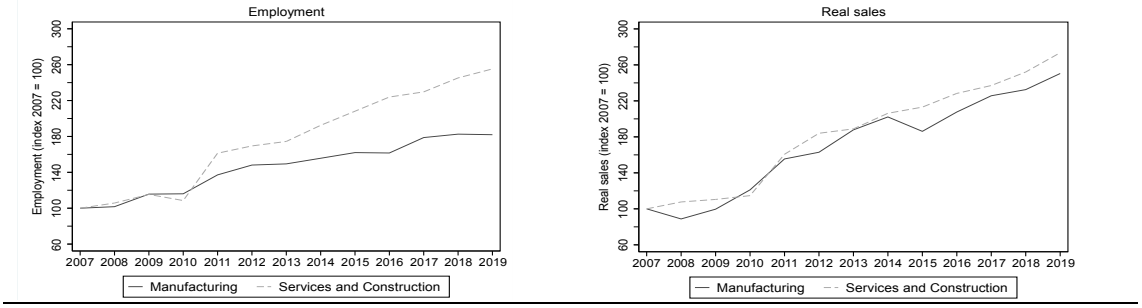
Firms' Performance

Growing employment and sales, but without overall productivity gains

11. **Employment and sales in Georgian enterprises grew steadily throughout 2007-2019 (Figure 3)**.[3] Employment in the manufacturing firms in our sample rose by 82 percent over the 13-year period, although this may also partly be due to the expansion in the sample coverage over time.[4] Although more volatile, real sales in manufacturing grew by 150 percent, almost double the employment growth, over the same period, displaying a mild decrease in 2008 and 2015, when Georgia's economy faced external shocks. Within service and construction sectors, total employment increased even faster than in manufacturing. Service sectors were especially dynamic: employment grew by 217 percent in the same period, four times faster compared to construction employment growth (54 percent). Real sales growth in service and construction companies also outpaced manufacturing firms. Sales in construction rose by 262 percent and by 162 percent in services. Sales and employment growth in services and construction slowed only in 2010, probably due the greater reliance on domestic demand in these sectors, thus their smaller exposure to external shocks.

[3] Sample and data characteristics and descriptive statistics are provided in the Appendix.
[4] As of 2019, employment in manufacturing based on business statistics is around half of the employment reported by Geostat's LFS. Similarly, the LFS reports a lower increase in manufacturing employment during this period.

Figure 3. Sales and employment in manufacturing, construction, and services
2007-2019, index 2007 = 100



Source: World Bank staff calculations based on Geostat.
Note: only firms with estimated TFP (restricted sample). Manufacturing, construction and services are grouped at the two-digit level of NACE Rev. 1 (Manufacturing: divisions 15 to 36; Construction: 45; Services: 50 to 63).

12. **The link between sales and employment appears to be closer in services and construction than in manufacturing**. Larger liquidation costs and higher initial sunk investment requirements for manufacturing activities restricts firms' ability to increase/decrease production volume instantaneously. Employment may be concomitantly less responsive to temporary fluctuations in demand, which could explain the weaker relationship between sales and employment in manufacturing.

13. **In contrast to growing employment and sales, various measures of aggregate productivity (Box 1) of the Georgian firms in our sample provide mixed results**.[5] Among non-agriculture firms, based on firm-level data[6], total factor productivity (TFP) declined by 6.7 percent between 2007-2019 (Figure 4). In contrast, estimates show that labor productivity (revenue per worker) grew by 84 percent in the same time period, in line with GDP per capita growth (64 percent). The divergent trend between TFP and labor productivity is likely due to the increase in the use of capital-intensive technologies in production over time. The revenue per worker may rise as a direct result of using capital more intensely in production, but the TFP levels are not necessarily affected by changes in factor intensity in the firm production function. Indeed, capital stock per worker grew at a faster pace than revenue per worker, suggesting that the difference between TFP and revenues per worker is driven by capital deepening. If this capital deepening is more knowledge-intensive, it could lead to an increase in TFP; however, if it is just replacement of existing capital stock, it may not have an impact on TFP.

Box 1: Productivity Estimation

We calculated three alternative measures of productivity. First, ***Total Factor Productivity (TFP)*** is estimated using a structural production function estimation approach that is implemented separately for each industry group in order to flexibly allow different industries could have different factor elasticities. The analysis of total factor productivity is based on an estimation of a Cobb-Douglas type production function in the following from.

$$y_{it} = \beta_{0,it} + \beta_m m_{it} + \beta_l l_{it} + \beta_k k_{it} + e_{it}$$

In the above equation, y, m, l and k represent the output, intermediate inputs, labor and capital of firm *i* in time *t,* respectively. $\boldsymbol{\beta}$'s are the coefficients of interest where $\boldsymbol{\beta_{0,it}}$ is the vector of dummies that includes the intercept and time dummies. e_{it} is the error term.

Production functions are estimated for each two-digit manufacturing and services industries separately using Ackerberg et al. (2015). The estimation sample covers the period from 2007 to 2019. Estimation results for the industry-level production functions are given in the Appendix.

An alternative measure of productivity is ***labor productivity***. This is computed as the log of the ratio of value-added to the number of employees. The value-added is computed as the difference between

[5] In the rest of the chapter, our analysis mainly focuses on TFP because of the shortcomings of other productivity measures (see Box 1), but the results presented are normally robust to alternative measures of productivity.
[6] The analysis includes firms in manufacturing (activities from 15 to 35 of NACE Rev. 1), construction (45) and sale and repair of vehicles (50), wholesale and retail trade (51 and 52), accommodation and restaurants (55), and transport and auxiliary activities (60 to 63).

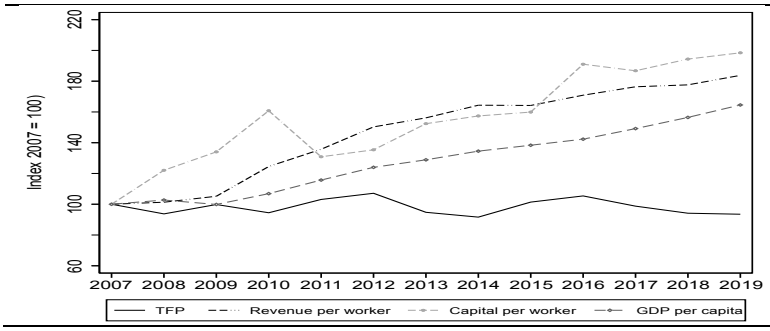
deflated sales and intermediate input expenditures. However, taking this difference causes negative value-added for a fraction of firms, resulting in missing values in the log labor productivity index that correspond to firms with negative value-added. Labor productivity is a very intuitive measure; however, it is affected by an important weakness, i.e., it is influenced by capital. Two firms which have the same productivity (understood as TFP) may appear as having different levels of labor productivity just because they employ different levels of capital in their production.

As an alternative measure of labor productivity, we use ***revenues per worker***. This is calculated as the log ratio of deflated sales to number of employees. This measure has the advantage that it can be calculated for firms with negative value-added. However, it has one further limitation, which is that it is affected by differences in use of intermediate inputs and materials, i.e., firms which have the same productivity (understood as TFP and labor productivity) may also appear as having different levels of labor productivity (revenues per worker) just because they employ different levels of intermediates.

Due to data limitations, results derived from productivity analysis are subject to a number of caveats. First, productivity measures are computed for firms that report all necessary variables (i.e., sales, inputs, capital stock and labor) to estimate the TFP. As larger firms are more likely to report this information, sample coverage is higher for larger firms, limiting the scope of conclusions to firms that are, on average, larger than the typical Georgian firm. Furthermore, the analysis looks at specific sectors of the Georgian economy. Firm-level data includes only businesses in manufacturing (activities 15 to 35 of NACE Rev. 1), construction (45), sale and repair of vehicles (50), wholesale and retail trade (51 to 52), accommodation and restaurants (55), and transport and auxiliary activities (60 to 63). Other relevant sectors such as real estate, agriculture, financial services and other service sectors could not be included. Thus, the scope of the analysis is limited to certain industries and type of firms.

Figure 4. TFP and labor productivity

index 2007 = 100

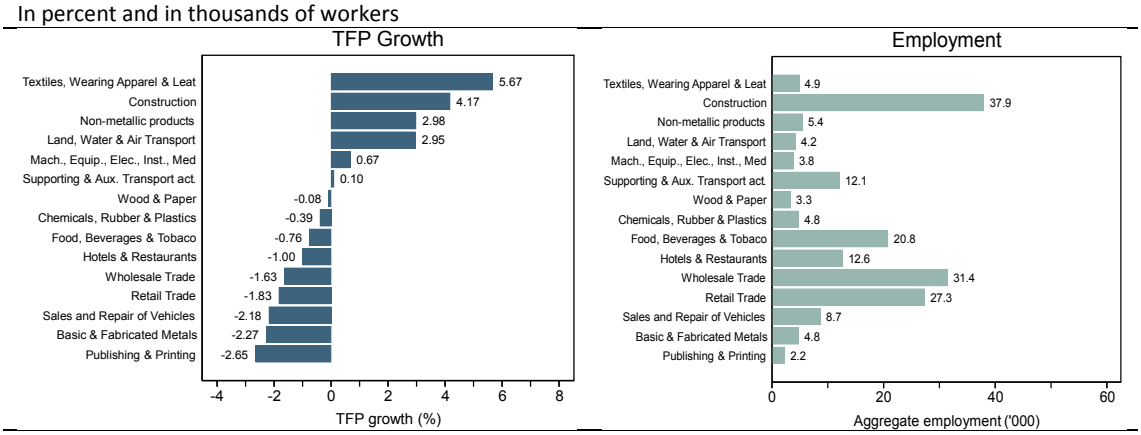


Source: World Bank staff calculations based on Geostat.
Note: TFP and labor productivity measures calculated at the aggregate level.

14. **Aggregate trends mask considerable differences in productivity performance across sectors (Figure 5).** On average, from 2007-2019, TFP increased by 4.2 percent in construction, decreased in manufacturing (by 1.4 percent), and plummeted in services. Within manufacturing, some sectors (such as textile and apparels, non-metallic products, as well as machinery, equipment and electric apparatus) displayed positive annual TFP growth, while others (such as fabricated metals, food beverages and tobacco, and chemicals, rubber and plastics) experienced a productivity decline. Similar heterogeneity is observed in the remaining activities in our sample: construction and transport services displayed positive TFP growth during the period, while trade (both wholesale and retail) and hospitality experienced a productivity decline. With trade and hospitality accounting for a large share of employment, their TFP trends are important in driving aggregate productivity performance of the Georgian economy.

15. **In efficient markets, firms with higher productivity should see their market shares grow.** In a process of creative destruction, entrants tend to be more productive than exiting firms, and the latter tend to be less productive than surviving ones. At the same time, high-productivity incumbents expand their market shares, and aggregate productivity increases. In other words, new and more efficient establishments replace inefficient firms, leading to an improvement of the productive process and adding more value-added per unit of input.

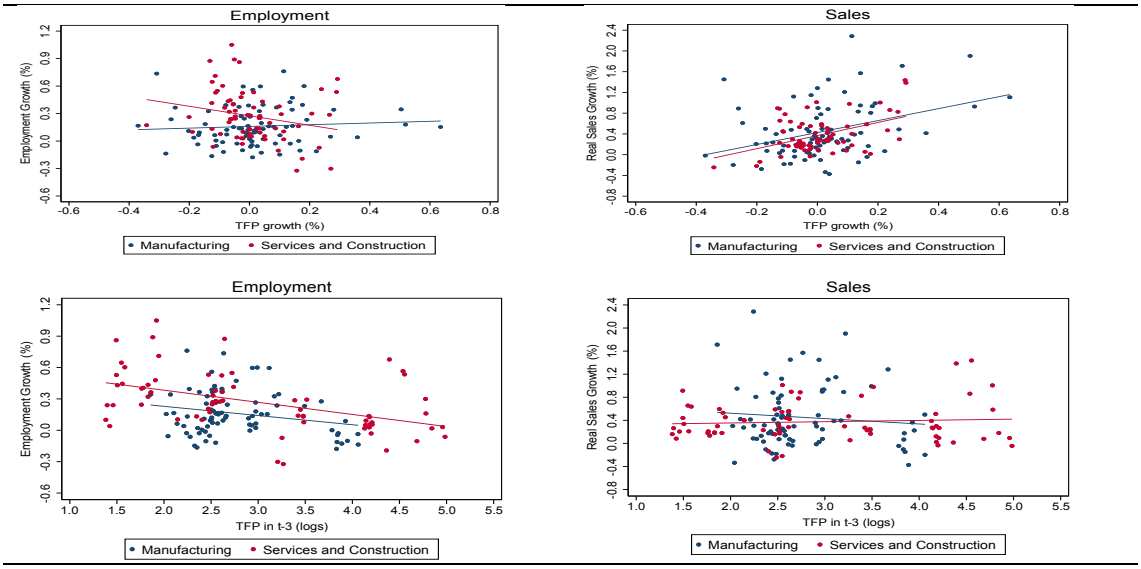
Figure 5. TFP annual growth and aggregate employment, by industry
In percent and in thousands of workers



Note: Average TFP annual growth calculated at the two-digit level of NACE Rev. 3. Annual averages are arithmetic averages. Aggregate employment is the average over 2007-2019.
Source: World Bank's own calculations based on Geostat.

16. **This appears to only partially be taking place in Georgia.** Real sales growth and TFP growth are positively correlated (Figure 6, top-right panel), suggesting that industries where TFP is increasing are also growing in their revenues-based size and that microeconomic restructuring is taking place in a productivity-enhancing way. However, the bottom-right graph shows no association between sales growth and TFP levels in construction and services, and a slightly negative relationship in manufacturing. Taken at face value, this would indicate that sales are not growing more in high-productivity industries. Additionally, employment growth is positively correlated with neither TFP growth (Figure 6, top-left panel), nor TFP level (Figure 6, bottom-left panel). This may point to misallocation of resources or productivity-decreasing structural transformation (McMillan, Rodrik, & Verduzco-Gallo, 2014), as activities with higher TFP levels are shrinking their employment or increasing it at a slower pace, whereas those with lower TFP levels are expanding the number of jobs faster. Alternative plausible explanations also exist. For instance, sectors with higher TFP growth may be becoming more capital-intensive. Alternatively, companies in some sectors might be substituting low- for high-skilled workers according to sectoral trends and factor endowments.

Figure 6. Growth in real sales, employment and TFP performance
2010-2019



Source: World Bank's calculations based on Geostat.
Note: Employment, sales and productivity growth are calculated at the firm level between t and t-3. TFP level is the aggregate industry TFP in t-3. Every point on the top-left panel depicts the aggregate annual TFP and employment growth rates at the industry level between t and t-3. The top-right panel depicts the same relationship between annual TFP and real sales. Bottom-left and bottom-right panels follow the same criteria using TFP levels

on the horizontal axis. Dot color distinguishes manufacturing from services and construction activities, and the two straight lines are the fitted regression lines.

Decomposing productivity growth

17. **Overall firm productivity performance is driven by three main channels (Box 2)**. The "within" component measures the gains from surviving firms' own productivity performance, while the "covariance" (also called the "between" component) is the gains due to the change in the efficiency of resource allocation. The "entry" and "exit" components (sometimes presented jointly as "selection" component) measure productivity gains due to entering and exiting firms.

Box 2: Decomposing productivity growth

Aggregate productivity performance is driven by three main channels or components. In the simplest term, the productivity of an economy is equal to the sum of the individual firms' productivity. As described by Cusolito and Maloney (2018), the growth of this overall sum of firms' productivities can be decomposed into three components. This decomposition can be applied to any economy based on firm-level panel data (Figure 7).

i) The "within" component driver or improved firm performance. This is driven by increases in productivity within existing firms due to innovation, technology adoption, or improved organization and management in firms; appropriate finance (external equity) can help increase risk-taking capabilities of firms.

ii) The "between" component driver or improved allocation of factors across firms. This is driven by reallocation of resources (production factors such as capital and labor) from low-productivity firms to high-productivity ones. Unfortunately, often distortions such as poor (or distortive) regulations, political patronage, inefficient financial markets, lack of appropriate urban planning, etc. impede the reallocation of factors of productions toward more productive firms; and

iii) The "selection" component driver or improved entry and exit of firms. This is driven by the entry of high-productivity firms and exit of low-productivity ones and typically corresponds to incentives or disincentives for entry and entrepreneurship related to business climate, NPL recognition and workouts, bankruptcy and insolvency systems, or social norms. Startup financing through banks is typically limited, implying the importance of the role played by private equity markets and their development.

Figure 7. Sources of productivity growth

In line with the above, it is possible to distinguish the different sources of aggregate productivity growth by implementing the productivity decomposition originally proposed by Melitz and Polanec (2015). Also known as the dynamic Olley-Pakes decomposition, it decomposes an industry's productivity growth into four components. In the below formulation, θ_{it} is firm *i*'s productivity in time *t*, s_{it} is the firm's share in the market and n_t is the number of firms.

$$\theta_t - \theta_k = \Delta\theta_t = \underbrace{\Delta\bar{\theta}_{St}}_{within} + \underbrace{\Delta cov(\theta, s)_{S,it}}_{covariance} + \underbrace{s_{E,t}(\theta_{E,t} - \theta_{S,t})}_{entry} + \underbrace{s_{X,t-k}(\theta_{x,t-k} - \theta_{S,t-k})}_{exit}$$

where $cov(\theta, s)_{S,it} = \sum_i(\theta_{S,it} - \bar{\theta}_{S,t})(s_{S,it} - 1/n_{S,t})$, $\theta_{S,t} = \sum_i(s_{S,it}\theta_{S,it})$ and $\bar{\theta}_t = \sum_i(\theta_{S,it}/n_{S,t})$.

Capturing the contributions of firm entry and exit robustly, however, depends heavily on data quality, in particular on the reliability of the panel structure. In the Melitz-Polanec decomposition, the entry

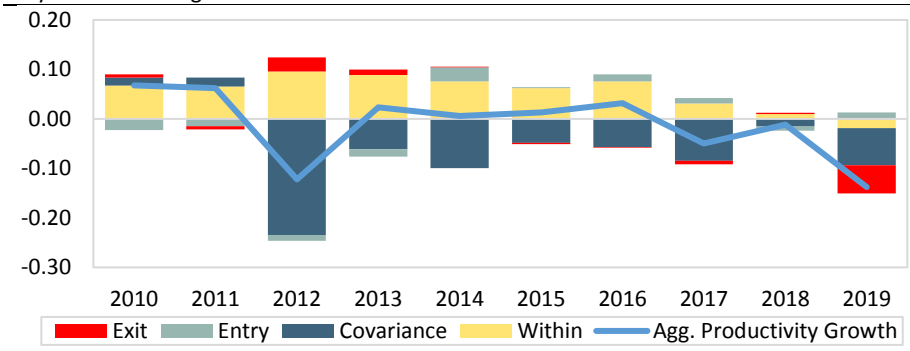
and exit components must be computed based on the absence or presence of data rather than the actual information on firm entry and exit.

Entrant firms need a certain period of time to exploit their productivity advantage, thus, a wider time window is required to evaluate their entry performance. This is because even if they are equipped with the latest technology and skills, entrant firms generally need a start-up period, for instance, to learn the market demand, advertise their product, and exploit their productivity advantage. This start-up period is generally longer than one year, so that decomposing annual growth may not capture the real contribution of entrants that may occur in the longer term. Therefore, in this chapter, the Melitz-Polanec decomposition is applied on 3-yearly productivity growth rates to be able to capture entrants' productivity contribution beyond their first year in the market.

18. **The main contributor of productivity growth among manufacturing firms in Georgia was the "within" component (Figure 8)**. This is consistent with cross-country productivity growth analysis in emerging and developed economies (Bertelsman, Haltiwanger, & Scarpetta, 2009). The "covariance" term, which measures the extent to which market shares are reallocated towards more productive firms, exhibits a negative contribution for all years except 2010 and 2011. The contribution of allocative efficiency started to improve gradually after 2012, while that of the "within" productivity growth moderated at the same time. However, between 2017 and 2019, the decelerating productivity growth of incumbents and the size of the covariance term explained the fall of the estimated TFP in the manufacturing sector. There is no significant contribution to aggregate productivity growth in manufacturing from entry and exit. Entry and exit terms tend to be stable over time and small and similar in magnitude, offsetting each other. The positive contribution of exiters and the negative contribution of entrants until 2013 shows that both firms entering and exiting the market were less productive than incumbents. From 2014 to 2019, entrants displayed a positive and exiters a negative contribution, although the net productivity growth due to entry and exit dynamics was negligible. These results suggest that entrants are not significantly more productive than incumbents and, more concerningly, that exiting firms are not significantly less productive than surviving firms.[7]

Figure 8. Productivity growth decomposition in manufacturing

3-year differencing

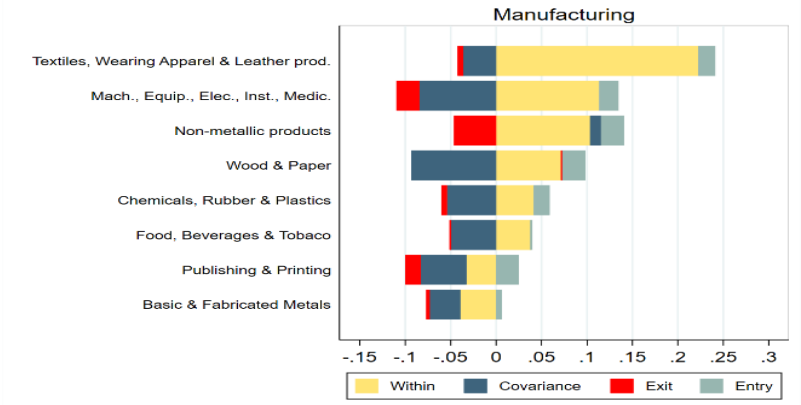


Source: Staff calculation based on Geostat.

19. **A more in-depth analysis within the manufacturing sectors shows that firms are becoming more productive in most sectors, but less productive firms account for a growing share of resources**. Manufacturing of textiles, apparel and leather exhibited the fastest TFP growth in Georgia, largely driven by the "within" component that reflects firms' own performance improvements. This can be due to innovation adoption, better management practices, or adaptation of new technologies. Overall, in six out of eight sectors (Figure 9), the "within" component is positive, although it varies across activities. Nevertheless, productivity gains from allocative efficiency are, on average, negative in manufacturing industries (and particularly low in machinery, equipment and electronics). Entry and exit terms vary across activities too, but they tend to be small. The entry component, for instance, is positive but relatively small for all sectors, while the exit component displays an inverted but similar pattern and is also small in most industries.

[7] However, these results should be taken with caution given the limitations of how entry and exit is recorded.

Figure 9. Productivity growth decomposition in manufacturing, by sectors
2010-2019 average, 3-year differencing



Source: World Bank's calculation based on Geostat.

20. **The negative contribution of the allocative efficiency component and the lower-than-expected contribution of the exit component suggest the need for policy interventions that facilitate reallocation from less productive to more productive firms**. (Bertelsman, Haltiwanger, & Scarpetta, 2009) find that although the reallocation component varies significantly across countries, it is generally small for a wide set of emerging and developed economies.[8] However, it is not common to see that this component is actually negative (Maloney and Cusolito (2018)), making Georgia somewhat of an outlier. This suggests that improved functioning of markets may help improve resource allocation towards more efficient business units. Similarly, greater export orientation can allow for growth of productive firms.

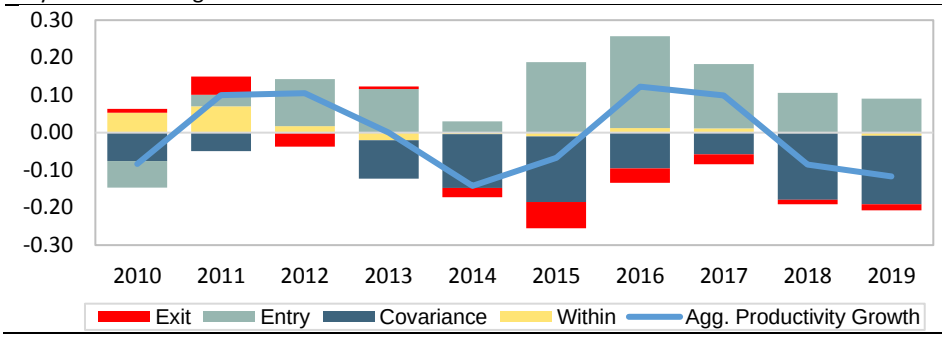
21. **At the sectoral level, productivity growth seems to be important to underpin an expansion both in terms of employment and revenues in manufacturing.** Sectors characterized by faster productivity growth (textiles, wearing apparel and leather products) outpace those with lower productivity growth both in terms of employment and revenue.

22. **The services sectors covered in the sample and construction appear to be somewhat different.** Throughout the period, the aggregate 3-yearly productivity growth combines years of positive (2011-2012; 2016-2017) and negative (2013-2015; 2018-2019) TFP growth. In the whole period, the reallocation component had a negative and significant contribution, highlighting the need for interventions that improve market functioning. Unlike manufacturing, the "within" component in construction and services does not contribute significantly to TFP growth from 2011 onwards, indicating that within-firm productivity has not been improving among incumbents in the last decade. Hence, interventions encouraging firms to adopt modern technologies, professionalize management practices, invest in innovation and go digital may contribute to boosting within-firm productivity growth. Similar to the manufacturing sectors, the exit component in construction and services does not contribute positively to overall productivity growth (Figure 10); it was negligible in most years except 2011 and 2014-2016, when productive companies actually left the market. Somewhat encouragingly, and in contrast to the manufacturing sector, the entry component in construction and services is typically higher and positive, indicating that entrants are productive companies with potential to grow over their life cycle. However, this pattern is mainly associated with the construction, transport and retail sectors.

[8] The sample includes South American, Asian, and Eastern and Western European countries.

Figure 10. Productivity growth decomposition in construction and services

3-year differencing

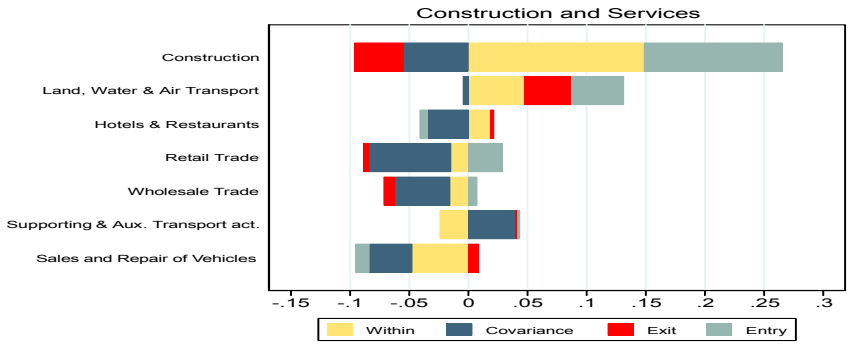


Source: Staff calculations based on Geostat.

23. **Construction exhibited high productivity growth; however, the performance of the services sector firms included in our sample is heterogenous (Figure 11).**[9] The strong performance of construction was driven by the "within" component and entry of more productive firms. Land, water and air transportation exhibited a positive and relatively large improvement in TFP. Nevertheless, more than half of this TFP growth is explained by firm selection (entry and exit), with the transport firms exiting the market being less productive than incumbents. Among service sectors, wholesale trade and retail trade—two of the largest in terms of employment—display negative TFP growth, mainly due to allocation inefficiencies, but also due to non-improving productivity of incumbent firms ("within" term). A similar pattern is observed among other services sectors (hospitality, sales and repair of vehicles), with the allocation term driving negative TFP growth.

Figure 11. Productivity growth decomposition in construction and services, by sectors

2010-2019 average, 3-year differencing



Source: Staff calculations based on GeoStat.

24. **To better understand the weak contribution of allocative efficiency to productivity growth, we group firms into four groups based on their market share growth and TFP growth (upper table), as well as TFP level (lower table)**. Firms with TFP and market share growth above the sector average and firms that have TFP and market share growth below the sector average positively contribute to productivity growth (i.e., are characterized by a positive covariance between their productivity and market shares). In contrast, firms that have TFP growth/level above the sector average but reduce their market shares, or firms that display a TFP growth/level below sector average but expand their market shares negatively contribute to overall productivity growth (i.e., are characterized by a negative covariance between their productivity and market shares). The poor performance of reallocation is driven, on one hand, by large firms that have reasonably high, but declining, productivity and that have grown (Table 1, upper-right quadrant of the upper table). On the other hand, further allocative inefficiency stems from relatively small, but capital-intensive firms where TFP is improving but they are not growing (Table 1, lower left quadrant of the upper table). In terms of TFP levels, growth of larger, labor-intensive and unproductive firms (Table 1, top-right quadrant of the lower table) acted as a drag on allocative efficiency, as did the declining share of smaller, capital-intensive and relatively productive firms (Table 1, bottom-left quadrant of the lower table).

[9] It is difficult to assess whether these dynamics are replicated in sectors that are not included in the analysis (e.g., information and communication, real estate, professional and administrative activities, among others).

Table 1. TFP level, growth and market shares

		Performance indicator	Market share growth	
			Below average	Above average
TFP growth	Below average	Observations	6,372	3,687
		Real sales ('000)	8,740	19,035
		Employment	59.9	102.1
		Capital per worker ('000)	29.8	32.5
		TFP level	2.49	2.63
	Above average	Observations	6,372	3,687
		Real sales ('000)	8,080	14,356
		Employment	48.6	67.3
		Capital per worker ('000)	41.6	28.4
		TFP level	2.50	2.77

		Performance indicator	Market share growth	
			Below average	Above average
TFP level	Below average	Observations	6,596	5,137
		Real sales ('000)	8,273	15,461
		Employment	66.1	101.5
		Capital per worker ('000)	28.2	25.0
		TFP	2.31	2.43
	Above average	Observations	4,334	4,750
		Real sales ('000)	8,702	16,848
		Employment	38.1	57.8
		Capital per worker ('000)	44.4	35.5
		TFP	2.78	3.03

Firm-level drivers of productivity and job growth

25. **Large firms are the engine of employment growth in Georgia; start-ups are also important drivers of both employment and productivity growth, but they fail to grow.** Firms with more than 250 employees have significantly higher employment growth rates (Figure 12); these results are consistent across all broad sectors.[10] Firms younger than three years are characterized by significantly higher growth rates than other firms, both in terms of employment and in terms of productivity. After entering the market, new businesses appear to quickly scale up; however, starting from year three, this growth path quickly stabilizes and young firms' growth rates appear to approach those of more established firms.

Box 3: Georgia's enterprises structure

Micro and small firms account for 90 percent of firms in Georgia but less than 30 percent of aggregate employment.[11] Micro and small firms numerically tend to dominate the business landscape in Georgia, while medium and large firms represent 10 percent of Georgian firms. However, medium and large firms' importance in terms of employment is significant, as they employ nearly 71 percent of the total employment (Table 2). Due to data availability, we are able to look at firm and productivity dynamics for only a small subset of firms. Hence, figures differ from those reported in the National Statistics Office of Georgia, which reported nearly 168,000 active business entities in 2019.

Table 2. Number of firms and employment

Entire sample, 2019

Size class	Firms	Size	Employment	% Firms	% Employment
A. Manufacturing					
Micro (0-9)	1,427	3.3	4,724	61.2	6.9

[10] The estimation equations control for 2-digit industry, year and region fixed effects. In this setup, controlling for industry fixed effects is particularly important, due to the unobserved differences in exogenous industry-level conditions (e.g. Cohen and Klepper, 1996).

[11] Based on Geostat Business Statistics –numbers do not necessarily coincide with official national-level statistics.

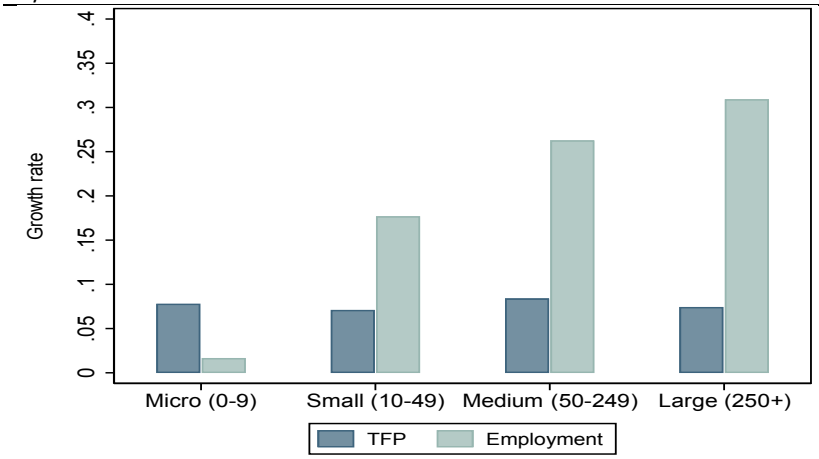
Small (10-49)	622	22.5	14,002	26.7	20.4
Medium (50-249)	231	98.6	22,768	9.9	33.2
Large (250+)	53	511.0	27,082	2.3	39.5
Total	**2,333**	**29.4**	**68,576**	**100.0**	**100.0**
B. Construction and Services					
Micro (0-9)	5,301	3.0	15,671	62.6	7.0
Small (10-49)	2,335	21.9	51,020	27.6	22.8
Medium (50-249)	715	97.5	69,712	8.4	31.1
Large (250+)	123	713.2	87,720	1.5	39.1
Total	**8,474**	**26.4**	**224,123**	**100.0**	**100.0**

Source: World Bank's calculations based on Geostat.
Note: based on unrestricted sample (i.e., firms for which TFP cannot be estimated are included as well).

26. **Foreign-owned companies appear to contribute narrowly to productivity and jobs creation, though this could reflect their limited representation in the sample of firms**. Foreign-owned companies[12] do not show a significantly more positive performance relative to domestic companies in terms of productivity growth. Further, foreign-owned firms contribute less to net employment creation than domestic firms. We also find no evidence that foreign-owned companies are substituting employment for capital. In fact, the difference between foreign- and domestic-owned companies, in terms of their capital per worker growth, is not statistically significant. On the other hand, according to the 2019 Georgia World Bank Enterprise Survey (WBES), companies with 10 percent or more foreign ownership tend to report higher capacity utilization, sales and employment growth and purchasing of fixed assets. Also, according to Geostat data, foreign-owned entities have higher value-added per employee and pay higher wages.

Figure 12. TFP and employment growth

By size of entities



Source*: World Bank's calculations based on Geostat*.
Note: average growth TFP and employment rates calculated at firm level, after controlling for age class, industry, region and year effects, using the following formula: $g_{it} = 2 * (x_{i,t} - x_{i,t-1})/(x_{i,t} + x_{i,t-1})$.

Box 4: Decomposing net job creation

In addition to boosting productivity, policy makers are often interested in promoting job creation. For this reason, we assess patterns of job creation and destruction at the firm-level following the approach of Davis et al. (1996). In the below formulation, l_{it} and L_t being the firm- and industry-level employment, $g_{it} = 2(l_{it} - l_{it-1})/(l_{it} + l_{it-1})$ represents job growth rate and $s_{it} = (l_{it} + l_{it-1})/(L_t + L_{t-1})$ is firms' employment share in the sector. The job creation (JCR) and destruction rates (JDR) are computed as follows:

$$JCR_t = \sum_i s_{it} max\{0, g_{it}\}$$

$$\mathrm{JDR_t} = \sum_i s_{it} |min\{0, g_{it}\}|$$

For this application to Georgia, the calculation of sector-specific JCR and JDR deviates from the original approach in the way how firm entry and exits are treated. The original approach takes the employment

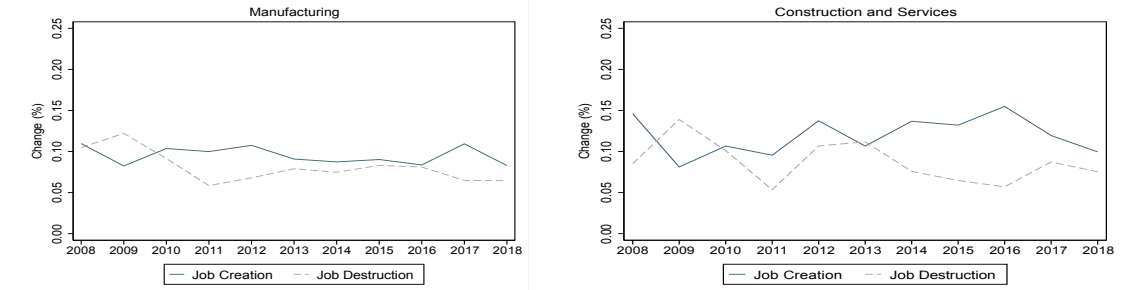
[12] It should be noted that we only observe 40 foreign companies in the firm-level dataset.

level of a new entrant as job creation and exiting firms' employment as job destructions. In Georgian firm-level data, however, there is no entry and exit indicator. The entry and exit rates computed based on the absence of panel observations are excessively large and far from being realistic. Thus, the current analysis only considers the change in incumbents' employment levels while computing the JCR and JDR.

27. **Net job creation was typically positive, with job creation trending downwards in manufacturing and increasing in services and construction.** The job creation rate was higher than the job destruction rate in all years except 2009. The negative shock of the global crisis on jobs vanished one year after, with the job destruction rates declining sharply after 2009 (Figure 13). The job destruction rates in manufacturing follow similar trends with those in other sectors, but the long-run trend of job creation in manufacturing is slowing, while it is constant or increasing in services and construction.[13] This provides further evidence on the direction of the structural transformation in Georgian economy, in which economic activities are more dynamic in services and construction rather than manufacturing.

Figure 13. Job creation and destruction rates, over time

By sector, in percent, 2008-2018



Source: World Bank's calculations based on GeoStat.

28. **More detailed analysis provides further insight into these dynamics (Figure 14).** Retail and wholesale trade are characterized by the highest job creation rates and by a negative productivity growth. Construction, which displayed positive productivity growth, shows high churn rates, with a high rate of job creation and even a higher rate of job destruction, implying a negative net job growth rate among incumbents.[14] High-tech manufacturing industries (i.e., machinery and equipment, computers, electronics and medical, precision and optical instruments) display relatively large and negative net job creation.[15] This cluster of industries is the only group whose employment shrank, on average, throughout the sample period, suggesting an employment shift from high-tech manufacturing to services, in particular, towards the trade sector.

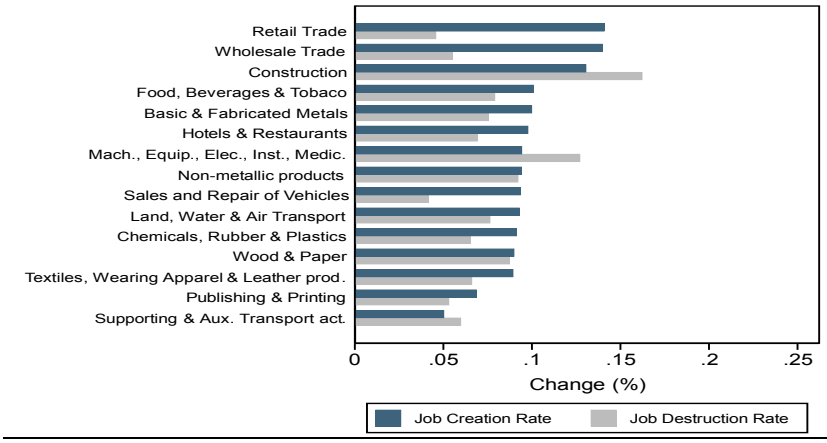
[13] These patterns do not include entry.

[14] In construction, however, the degree of firm churn is high, and the contribution of entrants is larger than that in other sectors. Job creation by the new establishments in the construction sector are omitted in this analysis because of data quality issues, possibly causing the underestimation of job creation rates for this sector.

[15] Hatzichronoglou (1997) provides a classification of industries in terms of their technology intensity.

Figure 14. Job creation and destruction rates, by sectors

By sector, annual averages, 2007-2019



Source: World Bank's calculations based on Geostat.

29. **Large firms contribute disproportionately to net job creation, but firm size is not the only determinant (Table 3).** The contribution of firms with more than 250 employees to net job creation is more than four times that of small and micro firms. Job destruction is higher in larger firms, but job creation more than compensates for this effect, leading to a positive contribution to net job growth. Like large firms, start-ups also contribute significantly more to net job creation than older firms. By contrast, firms that will exit in the near future tend to be on a declining path, thus unsurprisingly, typically contribute more to job destruction and less to job creation in the years before closing down, which translates into a negative contribution to net job creation.

30. **More productive firms contribute less to net job creation than those that are less productive**. Somewhat surprisingly, more productive firms, which have higher value added per worker, contribute less to net job creation, as they create less jobs, even if they also destroy less. The magnitude of this effect is small but points towards the existence of market imperfections that impede more productive firms from growing.

Table 3. Determinants of job creation and destruction

	Net Job Creation	Job Creation	Job Destruction
Micro (0-9)	0.000135***	0.000138***	0.000003
	(0.000)	(0.000)	(0.000)
Small (10-49)	0.000147***	0.000157***	0.000011**
	(0.000)	(0.000)	(0.000)
Medium (50-249)	0.000196***	0.000227***	0.000032***
	(0.000)	(0.000)	(0.000)
Large (250+)	0.000587***	0.000684***	0.000098***
	(0.000)	(0.000)	(0.000)
Young (3-5)	-0.000030***	-0.000029***	0.000001
	(0.000)	(0.000)	(0.000)
Mature (6-10)	-0.000041***	-0.000040***	0.000001
	(0.000)	(0.000)	(0.000)
Well-established 1 (11-19)	-0.000053***	-0.000053***	-0.000000
	(0.000)	(0.000)	(0.000)
Well-established 2 (20+)	-0.000066***	-0.000067***	-0.000001
	(0.000)	(0.000)	(0.000)
Foreign-owned company	-0.000074***	-0.000064***	0.000010
	(0.000)	(0.000)	(0.000)
Exiter	-0.000017***	-0.000011***	0.000006***
	(0.000)	(0.000)	(0.000)
Value-added per worker	-0.000004***	-0.000004***	-0.000001*
	(0.000)	(0.000)	(0.000)
Capital per worker (log)	-0.000004***	-0.000003**	0.000002***

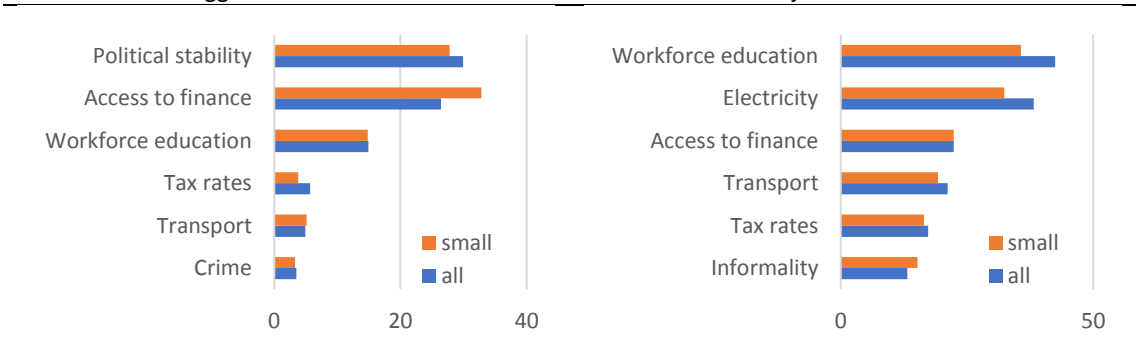
	(0.000)	(0.000)	(0.000)
Industry FE (two-digit)	Yes	Yes	Yes
Geographic FE (region)	Yes	Yes	Yes
Year effects	Yes	Yes	Yes
R-squared	0.089	0.154	0.146
Observations	33,056	33,056	33,056

Note: Robust standard errors in parentheses. (*), (**) and (***) indicates significance level at (10), (5) and (1) per cent level, respectively. Regressions include industry (two-digit), region and year fixed effects. Job Creation and Destruction calculated as: $JCR_{i,t} = 2 * s_{it} * \left(l_{i,t} - l_{i,t-1}\right)/(l_{i,t} + l_{i,t-1})\right)$, $JDR_{i,t} = 2 * s_{it} * \left|l_{i,t} - l_{i,t-1}\right|/(l_{i,t} + l_{i,t-1})$ and $NJC = JCR - JDR$. Finally, s_{it}, the share of employment is defined as: $s_{it} = l_{it}/\sum_i l_{it}$. Firm age is calculated as the difference of the year of reference and firm registration date (start-up (0-2 years) is baseline category).

Addressing Economy-Wide Barriers to Firm Growth

31. **Georgia has a good business environment, a finding that was repeatedly confirmed in interviews with firms during the preparation of this CEM**. Market entry is relatively easy, regulatory requirements are not excessive and procedures are increasingly being digitalized, taxes are few and tax rates not high, and corruption is low. Nevertheless, the earlier analysis shows that more productive firms do not grow and start-ups plateau after a few years, while Chapter 4 finds that only a few companies are able to exploit opportunities in external markets. The following sections address some economy-wide constraints that may be offsetting the impact of the favourable investment climate and preventing efficient market functioning. At the start it looks at access to finance. This is because when asked about the biggest / major obstacles they face in doing business, Georgian firms (especially the small ones) consistently identified access to finance and education of the workforce (Chapter 5) (Figure 15). It next looks at the unobserved economy, given that informality is a major (though not the biggest) constraint to doing business (again affecting more the smaller firms), but also because it prevents the scale up of firms. Another opportunity for firms' growth comes from exporting, which is picked up in Chapter 4. Finally, businesses considered markets to be concentrated, which may have implications for competitive pressures, and when markets are not fully competitive, productivity tends to suffer, including through allowing non-productive firms to grow.

Figure 15. Constraints to doing business



Source: Enterprise Survey, 2019

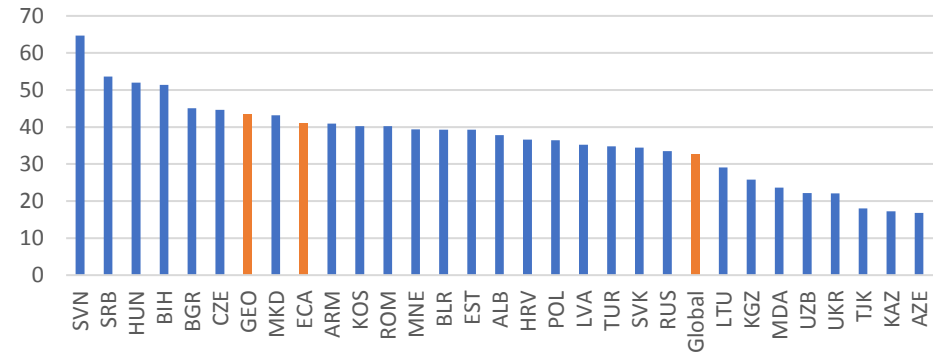
Firms have decent access to bank financing, but more innovative forms of financing are largely absent [16]

32. **Access to bank credit has improved; still, firms continue to consider it a major challenge to their growth**. The share of firms reporting a bank loan/credit line rose from 37.9 percent to 43.3 percent

[16] This section also draws on the recent Georgia Financial Sector Assessment, available at: https://documents.worldbank.org/en/publication/documents-reports/documentlist?keyword_select=allwords&srt=score&order=desc&qterm=P175014&lang_exact=

between the 2013 and the 2019 rounds of the WBES, compared to the ECA regional average of 40 percent (Figure 16). Despite this, it is the second most cited obstacle to doing business in Georgia and appears to be a bigger concern for firms in manufacturing, small companies and those outside of Tbilisi. The differences in perceptions seem well-founded; while Tbilisi generates just above half of GDP, it receives almost three quarters of all bank loans.

Figure 16. Firms with access to a bank loan/credit line
In percent of all firms

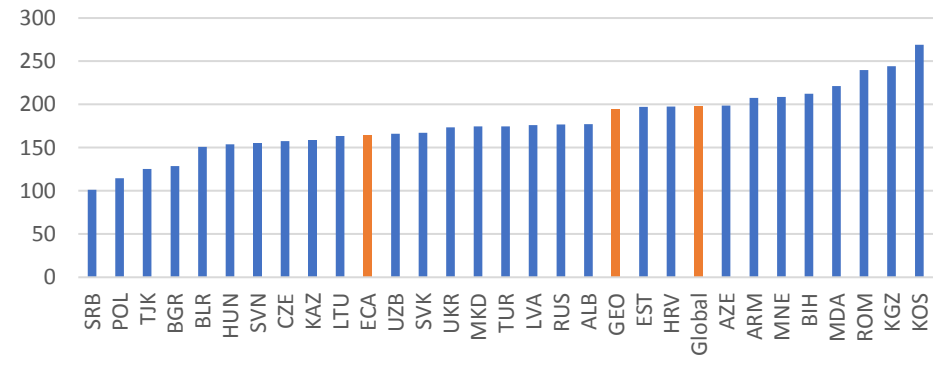


Source: Enterprise Surveys

33. **Credit from banks to the private sector is above regional averages, though mostly in traditional instruments**. Bank credit reached 68 percent of GDP in 2019, above almost all structural and aspirational peers. Loans to the corporate sector are also growing fast and, at around 37 percent of GDP in Georgia in 2020, was above rates seen in peers. However, the offering is basic. Typical products available are accounts with overdraft facilities, working capital loans, with only a few long-term investment products.

34. **High collateral requirements (mostly land and real estate) and rejection rates suggest room for improvement**. Around 80 percent of loans required collateral, above the ECA average (73 percent), and the value of collateral required was 194.2 percent, higher than the ECA average of 177.5 percent (Figure 17). Land and real estate are the predominant collateral type, while movable collateral (machinery, equipment, receivables, or intellectual property) is rarely accepted. This means that most of the assets SMEs own cannot be used to back-up their borrowings.[17] Also, in 2019, 12.7 percent of firms had a recent loan application rejected, against 8.8 percent in the ECA region. Reasons cited by banks for rejection centered around lack of eligible collateral, lack of credit history, unmeasurable risks, and poor business plans.[18]

Figure 17. Value of collateral needed for a loan
In percent of loan amount



Source: Enterprise Surveys

35. **Improved land and product markets can lower the collateral requirements**. High collateral is typically attributed to the difficulty in realization of the collateral (especially in rural and remote areas)

[17] SMEs in developing countries typically hold most of their capital stock in movable assets rather than buildings or land. In fact, across developing countries, movable assets represent 78 percent of the capital stock of enterprises, relative to 22 percent held in immovable assets such as land and buildings (World Bank, 2011). On average, firms hold 34 percent of capital stock in accounts receivable and 44 percent in vehicles, machinery, or other equipment.
[18] EIB, "Financing in Georgia: Small and medium enterprises and the private sector," 2018.

due to lack of functioning and liquid markets. Improved land markets will allow banks to be more present in areas outside of Tbilisi. In product markets, functioning secondary markets tend to be limited to vehicles. Expanding these to other moveable assets (for example, machinery and equipment), as well as expanding the resale markets for repossessed collateral through cross-border or regional platforms can be explored. Beyond markets, the appeal of movable assets is diminished by perceptions of lengthy and costly enforcement, suggesting a need to improve the efficiency of the judiciary (see Box 8).

36. **A stronger secured transactions framework can also help reduce the overreliance on land and real estate collateral and enable movable asset-based lending**. Georgia has a relatively recently established secured lending regime and collateral registry; however, amendments to the legal framework are needed to provide clear rules on creation, registration, perfection and priority, and enforcement. Bringing the registry up to best practices will require new software, links to other registries, and development of regulations for maintenance and implementation.

37. **Formalization, digitization, and more reliable financial reporting will allow lenders to overcome information asymmetries, translating into lower costs and collateral requirements**. While informality may be less of a problem for firms, financial institutions continue to raise it as an impediment to providing services. Informality in Georgia is less about unregistered businesses than about lack of reliable information on formal businesses. Digitizing transactions can build "reputational collateral" and strengthen firms' creditworthiness (Box 5). Georgia is well placed to minimize use of cash payments (card issuance is high); however, many businesses continue to prefer cash due to high fees (at least partly as a result of no direct connectivity between the two domestic card switches). On the reporting side, Georgia has been progressively introducing international standards and established the Service for Accounting, Reporting and Auditing Supervision (SARAS), which receives and publishes firms' financial and non-financial statements. However, coverage is limited, especially for smaller companies (slightly above 6,000 companies reported their 2019 statements, far short of the 180,000 active entities). It will be important to ensure all legal entities actively report and explore ways to expand coverage to individual entrepreneurs. To respond to banks' concerns about the quality of financial statements, access to affordable and quality accounting services (online, cloud-based) could enable SMEs to keep improved financial records.

Box 5. Digital payments, fintech and informality

Digital financial services and tools can make it easier for informal firms to engage in the formal economy and increase a firm's creditworthiness. Digital sales establish a track record of cashflow history, while digital payments facilitate business operations and tax payments. Establishing electronic payroll can even help formalize labor arrangements. The data trail that results from digitized business operations like these can be used to develop credit assessment tools, both for firms and individual borrowers. Non-traditional data can even include social media data, which studies have shown can improve the quality of credit scoring for SMEs. When undertaken holistically, such data can help build "reputational collateral" for potential borrowers based on an established track record of financial behavior (such as bill payment, payroll history, and other such transactional history).

Source: Based on Pazarbasioglu et al (2020).

38. **Improvements to the credit reporting system (CRS) can also help**. Georgia's CRS is quite advanced; however, while 100 percent of adults are covered by the operating credit bureau, the coverage of legal persons and use of alternative data to develop credit scores for MSMEs that have been outside the formal credit market are more limited. As a result, financial institutions do not typically avail the credit bureau for data on MSMEs. NBG should proceed with plans to increase the threshold for tracked loans by the credit bureau (from up to GEL3 million to GEL10 million). A legal framework that enables collection of alternative data (e.g., utility services, payments data, public databases, etc.) for individuals and SMEs should be established, while costs of access to public databases should be reviewed.

39. **Credit from the rest of the financial sector is very low, due in part to an undeveloped regulatory framework**. Only a few alternative credit products are available. Though numerous, non-bank lenders are small, mostly focus on individuals and face funding challenges. Access to debt/equity financing from capital markets is available only for the largest firms. The country could benefit from a wider range of services and instruments to expand access to long-term export and trade finance. Factoring is yet to be legally defined; hence, no factoring company is registered in the market, while banks deploy only limited

factoring services. Trading platforms to facilitate the sale of receivables have not been developed, and supply chain finance (reverse factoring), as well as agricultural warehouse receipts financing, are missing from the market. The Government can leverage its digitized transactions to support the development of reverse factoring by allowing accounts payables to SMEs (for example, under public procurement) to be posted for sale on a web-based invoice discounting platform (Box 6). Furthermore, e-invoices (for example, VAT invoices) issued by firms can create an opportunity for finance providers to offer invoice discounting products against tax compliant invoices.

40. **Business angel and seed-stage investment activities that could fuel innovative growth are not yet mature**. Early stage investing communities thrive when deals are shared and investors syndicate risk. However, a dearth of local investors is further compounded in Georgia by scepticism and mistrust towards and between local investors. Transparent communication as well as a dedicated legal framework are important to establishing confidence. In addition, policymakers might consider incentivizing high-net worth individuals to invest in early stage, high-risk asset class investments through: i) operational or performance-based grant funding to subsidize setup costs, manager/staff time, and initial transaction costs; and ii) de-risking schemes, such as co-investment funding or first-loss facilities, to lower capital risk exposure for early adopter investors.

41. **Increasing familiarity with standard funding structures and investment documents will make Georgian firms more attractive to international investors.** Technical assistance to firms and investors in the early stages of development would increase the efficiency and attractiveness of the start-up marketplace. Similarly, a one-stop shop for investor information for international investors would also attract more funding for innovation in follow-on investment rounds.

42. **Georgia has a wide range of programs to support MSMEs, with room to improve their targeting and eligibility criteria and ensure a stronger alignment with more specific country goals.** The MSME segment is supported by the Georgia's Innovation and Technology Agency (GITA), Enterprise Georgia, and the Agricultural and Rural Development Agency (ARDA). These agencies provide financial support (grants, co-financing mechanisms, guarantees) and a broader range of technical, infrastructure, network, and training services. The country would benefit from a coordinated review of programs (design, eligibility criteria, implementation modalities) to: i) promote synergies across different support mechanisms; ii) ensure they are directly aligned to priority segments (based on size, economic sector, stage of development) and specific agendas (productivity, innovation, jobs, digital, green, etc.); and iii) introduce stronger monitoring of results. Based on the results for the productivity analysis above, support should be targeted towards start-ups and growing firms.

43. **Fintech has the potential to bridge the SME finance gap and deliver services to underbanked clients by disrupting traditional models and widening access to a diverse range of financial services**. However, fintechs in Georgia rarely provide consumer-facing products and do not offer products targeting SMEs. Rather, many fintechs act as service providers to leading financial institutions, including on alternative credit modelling, chatbots and AI, wearables, and digital wallets. Unexploited opportunities exist to encourage digitization and leverage digital means (payments processors, e-commerce platforms) to reduce information asymmetries related to SMEs. NBG has established a Fintech directorate to monitor market developments, track potential risks, and initiate several fintech-related initiatives. The authorities should articulate a transparent, pro-innovation fintech vision that encourages competition and prioritizes financial inclusion. Ensuring a level playing field and encouraging positive disruption in the context of dominance by incumbent banks is critical to avoiding further replication – or even the expansion – of dominant market positions.

Box 6. Reverse factoring and invoice discounting platforms

SME suppliers should have practical financing options to help bridge needs for cash injections (in addition to being supported by a culture of prompt payment in private and public sector). This can be achieved by deploying financial instruments leveraging a SME's relationship with its large private and public sector customers. Factoring, invoice discounting, and reverse factoring (also known as supply chain finance) are options to do so.

Virtual platforms can be set up to host reverse factoring or invoice discounting. If a platform can attract substantial numbers of large buyers, it can potentially spur competition between available financiers and thereby lower the cost of working capital finance for SMEs. Under this model, only receivables

from select, lower-risk customers (large corporations and public sector actors, such as central governments, local governments, specialized agencies, and state-owned enterprises) are purchased from SMEs. Because the financier takes a risk position against a large buyer, and not the SME supplier directly, a financier's risk exposure is increased to that particular customer, but this is lower relative to the cost of acquiring information and undertaking a credit risk assessment, since high-quality receivables are the main focus. Since these accredited firms are considered more creditworthy than the SME suppliers in question, working capital becomes more available and at more favorable rates to SMEs than it otherwise would be. Financiers could also benefit from more favorable sales terms from SMEs. Developing online platforms interconnecting buyers, financiers, and SME suppliers is a way to render this product accessible and efficient. Platforms can either be developed by public or private sector actors. Examples include:

- Argentina : Banco de Inversion y Comercio Exterior (BICE), e-Factoring
- Bulgaria: Bulgarian Development Bank, factoring municipal PPP contractor payables
- China: Credit Reference Center of the People's Bank of China (PBOC-CRC), Receivables Finances Service Platform
- Hong Kong: Hong Kong Monetary Authority (HKMA), eTradeConnect
- India: Reserve Bank of India (RBI), Trade Receivables Discounting System (TReDs)
- Mexico : Nacional Financiera (NAFIN), Cadenas Productivas

In addition to these, platforms and programs have also been developed by IFIs, such as Asian Development Bank (ADB)'s Supply Chain Finance (SCF) Program, European Bank for Reconstruction and Development (EBRD)'s Trade Facilitation Program, and International Finance Corporation (IFC)'s Supply Chain Finance Advisory, Financing and Investment. Private platforms for invoice discounting are also emergent, selling receivables to interested investors (whether institutional or peer-to-peer) on online marketplaces, further enabling suppliers to obtain working capital through receivables exchanges.

Source: World Bank Group

Informality may hamper economies of scale

44. **Scale is important for productivity in Georgia.** Large firms are typically more productive, and while startups are productive at an early stage in their growth cycle, they lose their momentum beyond that phase. This could be due to the relatively small domestic market, in which case firms that want to grow need to start exporting early in their lifecycle, something that few companies in Georgia appear to have been successful at. The trade chapter contains a longer discussion on this. However, another reason why firms remain small is informality.

45. **Informality is widespread in emerging markets and developing economies (EMDEs) where it accounts for about one-third of official GDP and 70 percent of total employment (World Bank 2019)**. Although the informal sector offers the advantage of flexibility and employment in some economies (Maloney 2004), a large informal sector is associated with a range of adverse economic issues, including low productivity, poorly paid low-skilled employment, and reduced tax revenues (La Porta and Shleifer 2014; Docquier, Muller, and Navel 2017; World Bank 2019). During the recent pandemic, participants in the informal sector are likely to have suffered larger income losses (World Bank 2020).

46. **Informality is often identified as a prominent problem in Georgia; however, it is one that is difficult to measure**, with the available metrics giving sometimes conflicting views (

47. **Figure 18: Informality and development: Is Georgia an outlier?**

48. and Box 7).[19]

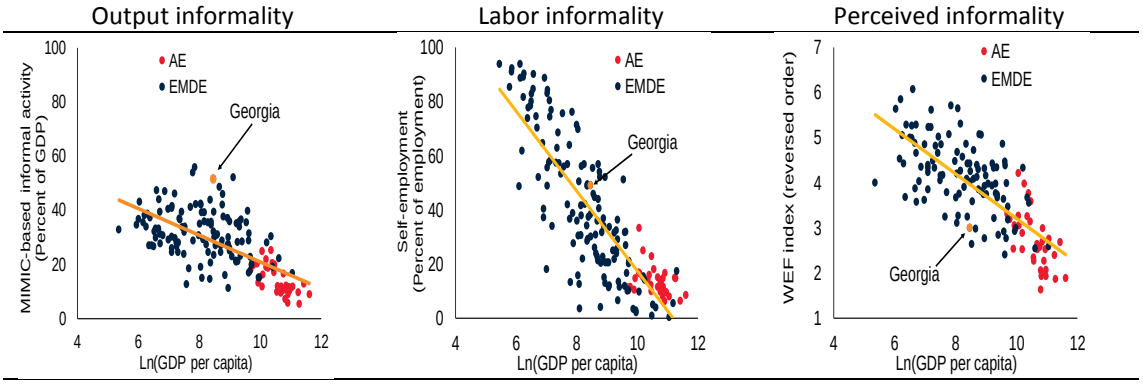
a. Estimates based on output informality (DGE- and MIMC-based; Wu and Schneider 2019), put the informal economy in Georgia in the range of 50-60 percent of GDP, exceeding the level in an average ECA EMDE by around 20 pp of GDP. On the other hand, according to Geostat, the non-observed economy accounted for 14 percent of GDP in 2019.

b. Estimates of labor informality do not suggest that Georgia is an outlier. Self-employment, often used as a proxy for informal employment (Loayza and Rigolini 2011; La Porta and Shleifer 2014), accounted for about 50 percent of employment in Georgia in 2018. This places Georgia at par with an average EMDE, though still exceeding the level of an average ECA country, where about a quarter of employment was in the form of self-employment.[20] By Geostat's measure of informal employment, almost 40 percent of total employment was informal,[21] below the level in an average EMDEs, but above most ECA countries.

c. Finally, on measures of perceived informality, Georgia overperforms for its income level. At the 2018 WEF survey of business executives the perceived level of informality was lower in Georgia than in an average EMDE. Furthermore, in the 2019 Enterprise Survey, the percentage of firms competing against unregistered informal firms was lower compared to peers and the average ECA country, and less firms identified the practices of competitors in the informal sector as a major constraint. Still, in a recent taxpayers' survey, 82 percent of firms and 76 percent of tax accountants identify informality as an important concern, an opinion also echoed by banks.

[19] The estimation methods can be categorized into two groups based on their estimation techniques. The first group encompasses indirect model-based estimates that mainly focus on the size of the informal sector (i.e., informal output in percent of official GDP). The second group encompasses direct measures gathered from surveys, such as labor force, household, firm, or opinion surveys. Overall, these measures can capture three dimensions of informality: output informality, labor informality and perceived informality.
[20] This measure is based on the old methodology. According to the new methodology, the share of self-employed is around 30 percent of total employment and closer to the average ECA country.
[21] Geostat also reports informal employment in non-agriculture employment. By this metric, 32 percent of employment in 2020 was informal.

Figure 18: Informality and development: Is Georgia an outlier?



Source: (Yu, 2020)
Note: AE: Advanced Economies; EMDE: Emerging markets and developing economies

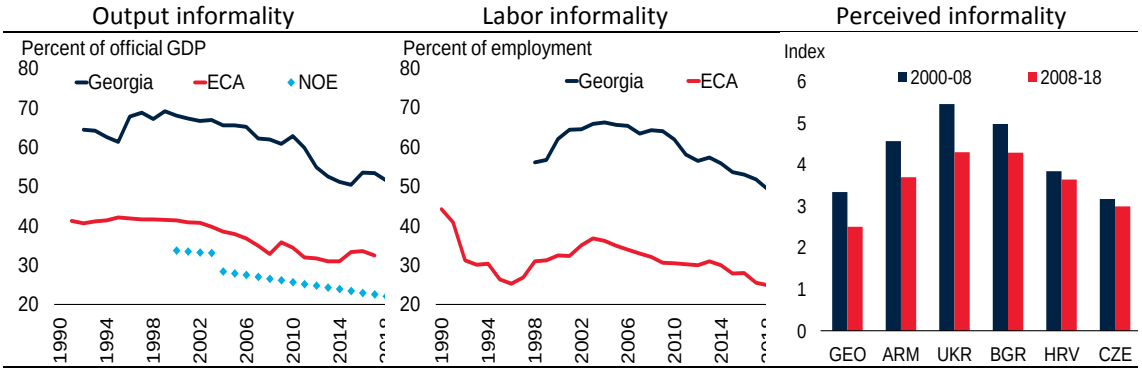
Box 7. Reconciling the different measures of informality

The wide dispersion in the estimates reflects both the difficulty of measuring output in the informal sector, but also differences in what is considered informal. For example, while self-employment is typically considered informal, in Georgia, a considerable part of the self-employed are registered. In fact, self-employment is the predominant form of business establishment. Of the estimated 202,000 business entities that were active in April 2021, 114,361 (56.6 percent) were registered individual entrepreneurs. (Yu, 2020) runs a range of diagnostic tests on the various measures and suggest that existing informal output measures could be over-estimating the extent of informality in Georgia. The potential causes for such over-estimation could be "double-counting", unreliable base-year estimates, and model specifications that did not take into account the structural break in the economy (Medina and Schneider, 2019). In addition, labor productivity in the informal sector in Georgia, at around 60 percent of the labor productivity in the economy, is at par with other countries and Georgia's level of development. With the estimates of labor informality noted above, such differences in labor productivity are unlikely to result in such large shares of output informality as suggested by the models. Finally, the prevalence of cash use, where most of transactions in the informal economy are typically settled, is not excessive in Georgia; in fact, currency outside depository corporations accounted for 13 percent of broad money in 2019 in Georgia, compared to an average of 19.9 percent in ECA.

49. **While there may be no clear consensus from the various measures on the size of the informal sector, there is consensus that it has declined substantially over the last two decades (Figure 19)**. The remarkable decline has been captured using output-based models as well as labor statistics. Perceptions of informality also declined between 2008 and 2012 and subsequently stabilized somewhat, with Georgia's overall decline in perceived informality larger than most of its structural and aspirational peers. The declining share of currency outside depository corporations in broad money over the last decade (from 20.3 percent in 2011 to 13.2 percent in 2019) also suggests growing formalization of economic transactions.

50. **The improvement coincided with strong progress on governance, regulatory quality and economic growth, correlates which have been identified in the literature as influencing informality**. The decline was accompanied by growth averaging 6 percent per year. A revised tax code was passed in 2004 which simplified the tax system, reduced tax rates, and eliminated a series of minor local taxes (Akitoby, 2018; Akitoby et al., 2018), leading to a broader tax base, better compliance, and stricter enforcement. A series of business environment reforms made it easier to do business in Georgia, with the use of modern technologies both improving efficiency and reducing opportunities for corruption that may have been contributing to informality in Georgia.

Figure 19: Trends in informality



Source: (Yu, 2020)
Note: NOE – non-observed economy

51. **Georgia's informality is less about unregistered businesses, but where informality is more prevalent, it is also bigger problem**. Most of the businesses are registered as soon as they start operations, unsurprising in an economy that is a global leader on the ease of starting a business. In 2019, 22 percent of firms in Georgia cited that they were competing against unregistered or informal firms, compared to 33 percent in ECA and a global average of 50 percent. However, this ratio increased to 25 percent in retail trade and 26.5 percent in non-food manufacturing sectors. At the same time, 13 percent of firms identified competition from business practices in the informal sector as a major concern, but in the two sectors where informality was more prevalent (retail trade and non-food manufacturing), this ratio increased to 20 percent. Small firms are more likely to compete against informal firms and report it is an obstacle.

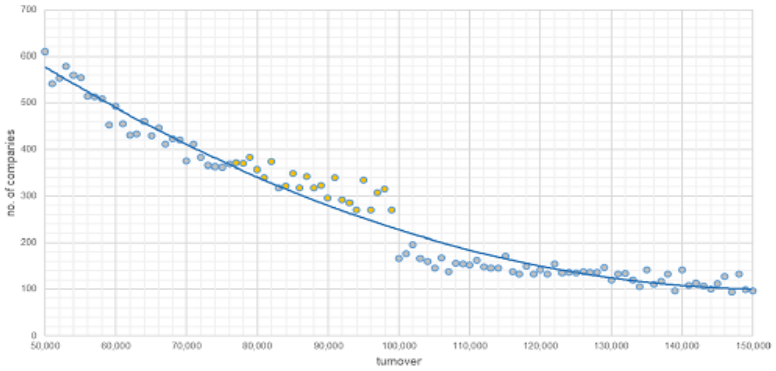
52. **However, while most businesses may be registered, their operations may not be fully formalized**. Despite a relatively moderate tax burden and business-friendly tax administration, a recent assessment (World Bank, 2021) estimated that around a fifth of medium-size firms in Georgia are not fully compliant with their VAT liabilities – in the trade sector, the ratio increases to 30 percent and in construction to 27 percent of firms. In addition, bunching of firms just below the VAT registration threshold may suggest that firms aim to appear small by underreporting their income and locating just below the VAT cut-off (Figure 20). Further analysis is needed to identify if the bunching is due to firms splitting activities (given the ease of establishing a business in Georgia), underreporting or they just stop growing. Still, interviews with the private sector confirm that the practice of some businesses re-registering as different entities is frequent. This creates incentives to stay small and not grow and spurs perceptions of inequitable competition. Finally, the Revenue Service (RS) has limited ability to reduce underreporting, as access to taxpayers' financial data from third-party sources is possible only by going through the courts to gain consent from the taxpayer (thus increasing the case load in the court system).

53. **Tax policy and administration reforms can remove existing distortions that incentivize firm informality**. This could include legal amendments to provide RS access to taxpayers' financial data. Other reforms could also better equip RS to deal with artificial separation of economic activity, thus limiting the ability of firms to register multiple small companies with similar business activities. In general, a review of the various tax regimes could be undertaken to strike a better balance between preserving a moderate tax burden and incentivizing formalization of economic activities.

54. **Greater financial inclusion can also help further lower informality**. A still sizeable part of the population does not have access to transaction accounts in Georgia, hence lack access to digital payment instruments and services. As a result, they must rely on cash, which could create vacuum for informality. The transposition of the EU Payment Account Directive (PAD) in the country (which is underway) could make it easier for this group to open transaction accounts, given that it allows for simplified procedures and lower costs. From a business perspective, many businesses prefer cash payments because the cost of payment card acceptance could be relatively high, especially if these are cleared outside of Georgia. There are different pricing schemes in the card market of Georgia, leading to different interchange fees and different merchant discount rates. This could potentially be addressed by establishing interoperability between the two card switches in the country, thereby creating consistent pricing and experience for end users. Additionally, in the context of fees, NBG could collect and expand data publication on fees and

charges that banks and non-bank payment services providers charge their clients, along with individual and merchant charges for basic account and payment services, on the NBG website.

Figure 20: Firms turnover frequency



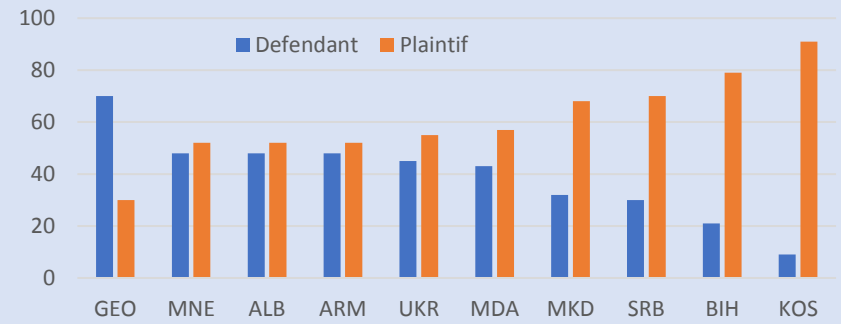
Source: (World Bank, 2021)
Notes: The graph shows the number of companies, including individual entrepreneurs, in GEL 1,000 intervals and fitted order-two multinomial trend.

55. **Furthermore, the absence of an e-money eco-system has limited its potential as a catalyst for financial inclusion.** The small number of e-money transactions can be explained by the lack of interoperability among e-money issuers, inability to access the payment infrastructure, lack of acceptance of e-money by the government, and prohibition of reuse of e-money by the merchants. In many countries, e-money is an excellent alternative solution to cards and other digital payment instruments for many segments of the market, particularly the financially unserved and underserved segments. Enabling equal footing of all digital payment instruments and their issuers will generate customized use cases by different providers and give the customer a choice among providers, payment instruments, and channels.

Box 8. More efficient courts can help businesses

An efficient and functioning legal system is a critical enabler for growth and investment, but Georgia's performance is mixed. Poorly performing courts delay business activity, undermine predictability, increase risks, and constrain private sector growth. In addition, weak justice systems disproportionately hamper micro, small and medium-sized enterprises (MSMEs) because they have less buffers to absorb these problems. According to the 2019 Enterprise Survey, almost no businesses consider courts as the biggest obstacle to doing business; less than 5 percent consider courts a major constraint – still way below averages in ECA. This is in stark contrast to anecdotal evidence and feedback from businesses[22] and banks, which suggest that commercial cases are frequently protracted, with disputes taking years – sometimes up to five years — to work their way through the court system. Also, the Georgian business sector is, by and large, summoned to the court as a defendant, which contrasts with the experiences of the business sector in other countries (see Figure 21). Given that most of the cases are administrative procedures, this implies that the state, and state agencies, are suing companies before the courts.

Figure 21: Businesses' status in proceedings



Source: WB survey on perceptions and experiences of justice in Georgia, 2021.

General perceptions are critical, but experience with courts is more favourable. One-third of surveyed

[22] Almost half of businesses interviewed as part of the Business Association of Georgia Q3.2021 Business Climate Survey identified legal and administrative barriers as main factors hindering their activity. Within these, the judicial system was identified in around a quarter of interviewed businesses.

business sector representatives believe that the justice system is not treating all parties equally, with company size and ownership status (public vs. private) being some of the reasons for discrimination (World Bank, 2021). However, experience with the courts significantly increases the positive evaluation of fairness—75 percent of businesses who had experience with the courts provided a positive assessment. Actual experience also has a similar impact on perceptions of other aspects of courts functioning, including efficiency and incidence of corruption.

Administrative data suggest that Georgia's judiciary is starting to struggle with the fivefold increase in incoming cases, from 0.43 to 1.94 cases per 100 inhabitants, over the last decade. Georgia's backlog, at 1.5 pending cases per 100 inhabitants at the end of 2018, is not significantly higher than the European median (1.2 pending cases per 100 inhabitants). The number of pending administrative cases has been growing, but at 0.16 per 100 inhabitants, its trend is similar to the European median (0.18). However, with a clearance rate of 91.1 percent (European Judicial System CEPEJ), the backlog is accumulating.

While business representatives generally positively assess the efficiency of the courts, there are steps that could contribute to faster clearance. Almost two-thirds of businesses consider the courts to be efficient (Figure 22); however, they also reported that almost 30 percent of hearings are cancelled or did not contribute to the case resolution (Figure 23). Obstruction of parties in the proceedings and poor management of the proceeding by judges contribute to inefficient hearings and lengthier court proceedings. Tighter rules on proceedings could be introduced to make them more efficient. In addition, technology can be leveraged, for example, for case weighting and business process re-engineering, which would allow monitoring (and reporting) of the timelines set for the proceeding.

Completing the specialization of commercial justice in Georgia could also help. In response to concerns raised by business, Georgian authorities initiated the establishment of specialized commercial chambers in the courts of general jurisdiction. While the reforms were initiated in early 2017, there has been limited progress (activities advanced a bit faster in the Tbilisi City Court, where a narrow specialization of commercial disputes was created). Specialized commercial justice has been found to contribute to greater efficiency of court proceedings and an increase in trust in the justice system by the business sector. In addition, specialized commercial justice significantly reduces the number of cases pending before the first-instance courts, shortens resolution times, ensures consistency in the application of the law, and increases the quality of dispute resolution.

Figure 22: Perceptions of court efficiency

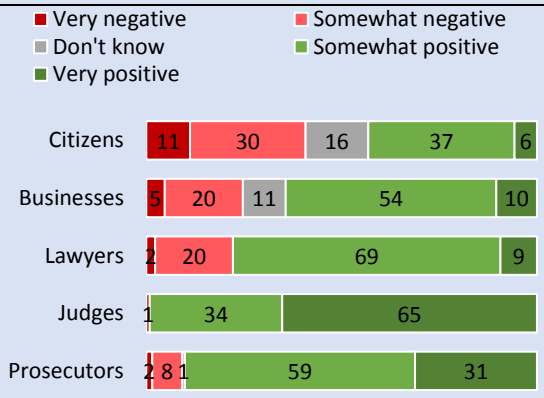
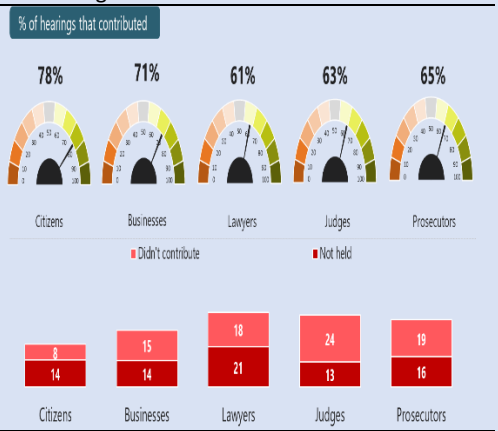


Figure 23: Efficiency index

% of hearings that contributed to case resolution



Source: WB survey on perceptions and experiences of justice in Georgia, 2021.

Small claims procedures can be further streamlined. Improvements in handling small claims can increase trust in the judiciary by the business sector (Svircev, Runyararo Gladys, & Petkova, 2020). This can be done through small claims courts, and simplified procedures for small claims, use of informal hearings, simplified rules of evidence, and more streamlined rules of civil procedure, including the possibility for the parties to represent themselves, which increases access to justice for the business sector, particularly SMEs. Small claims courts also play an important role in reducing backlogs and caseloads in higher courts and provide for faster and less costly dispute settlement.

More competitive markets can help generate jobs and improve welfare

56. **Competitive markets are crucial for welfare and growth with evidence from global research increasing market power adversely affects growth and productivity**. In competitive markets, business competition and new entrants put pressure on incumbent firms to lower prices and innovate, benefiting consumers who face lower market prices and better product offerings. However, if market power increases and output concentrates in fewer companies, firms can charge higher prices (well above costs) and invest less in innovation, which leads to reduction in social welfare. Furthermore, as De Loecker, Eeckhout and Unger (2020) highlights, economic concentration reduces the demand for labor and undermines investment.

57. **Competitive pressures on Georgian product markets appear to have intensified in recent years (Figure 24).** Over 2007 and 2019, weighted markups fluctuated. In all sectors, average markups increased until 2009 and decreased over the next few years. From 2011, markups in manufacturing activities displayed a positive trend until 2016 and subsequently declined, while in the construction and service sectors, average markups displayed a negative trend. Unweighted markups in construction and services show a very similar pattern, whereas in the manufacturing sector they show a more defined negative trend. The declining trend in markups in recent years may be suggesting higher competitive pressures.

Box 9: Measuring markups

While measuring firms' price-cost markups, this analysis relies on the methodology developed by Hall (1988) at industry-level and extended by De Loecker and Warzynski (2012) at firm-level. It uses the formula below, which can be derived by solving firms' per period cost minimization or profit maximization problem. The formula can be derived for any perfectly variable production factor, so that the objective function can be defined as per period profits, but this study uses the intermediate inputs.

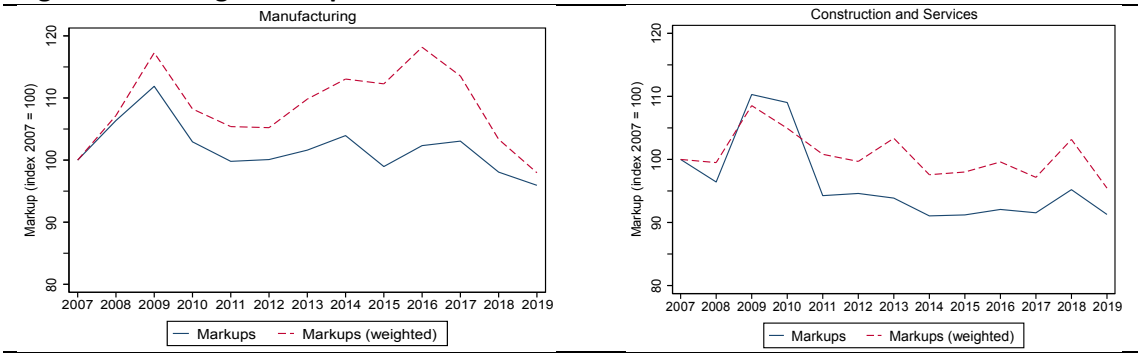
$$\mu_{it} = \alpha_m \frac{R_{it}}{M_{it}}$$

In the above formulation, μ_{it} represents firm-level markups, α_m is the factor elasticity of the intermediate inputs, which was obtained from the production function estimations. R_{it} and M_{it} are the real revenues and intermediate input expenditures at the firm-level.[23]

Once markups are estimated at the firm-level, the economy-wide markup level is obtained by aggregating these firm-level markups using weights to calculate a weighted average. Specifically, we weight the markups by sales to reflect the fact that impact on the economy of the markup of a specific firm will depend on its market share or sales.

[23] Production function elasticities and revenue-based TFP (TFPR) are estimated assuming a Cobb-Douglas production function. Further, markups are estimated using real revenues instead of physical output, as price information at the firm-level is not available. However, the use of revenues is consistent with De Loecker, Eeckhout & Unger (2020), who show that markups can be derived from the revenue share of the variable input, $\frac{R_{it}}{M_{it}}$, and the output elasticity of the variable input, α_m. We acknowledge that the use of revenue data may lead to potential measurement errors in markups estimates. However, in cases of measurement errors, estimates would be downwardly biased (towards zero), and estimated markups would be smaller.

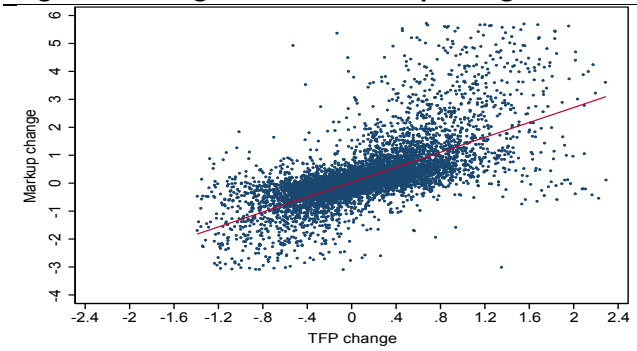
Figure 24. Average markups



Source: World Bank's calculations based on Geostat.

58. **Further, there is limited evidence of exercise of market power, as productivity appears to be a key driver of markups rather than market share.** Firm-level descriptive analysis shows a positive relation between TFP and markup changes (Figure 25). As the graph depicts, higher TFP growth is associated with higher markup growth, suggesting that high-growth TFP firms are able to increase markups relatively more than low-growth TFP firms. This is further confirmed by regression results (….) which show that, after controlling for firm market share (a proxy of market power), TFP is still positively correlated to markups.

Figure 25. TFP growth and markup change



Source: World Bank's calculations based on GeoStat
Note: Markup and TFP changes are computed at the following as $\Delta y_{it} = y_{it} - y_{it-1}$. Conclusions are robust to the use of weights (e.g., sales)

59. **In monopolistic competition, the role of innovation and firm efficiency could be key for driving markups, a situation that is consistent with our evidence based on firm-level data in Georgia**. In this regard, the reduction of marginal costs or the increase of product attractiveness by innovating and enhancing product quality may allow firms to charge higher prices and, also, increase prices relatively more compared to companies that do not improve efficiency or innovate. This result is consistent with recent findings at the global level from Demirguc-Kunt et al (2019), which suggest that increases in markups could be driven by improvement in quality and innovation, or by investment in intangibles that generate some firm-specific competitive advantages and allow firms to increase their markups. Nonetheless, it is important to consider that our productivity measure (TFPR) may also contain market power information and that the market share measure as a proxy of market power is subject to some caveats.[24]

[24] Although it is the best measure we can compute, there are some caveats related to this variable. Our main assumption is that the national market is the relevant market for firms. This is likely to be the case for non-tradable sectors (services and construction), but not necessarily so for tradable sectors (manufacturing). Second, misreporting in business counts and sales may introduce errors in our measure. Third, we should note that our TFP measure is based on revenues and not quantity; this means that prices influence the TFP measure, as well as markups, and part of the correlation could be driven by this mechanical correlation.

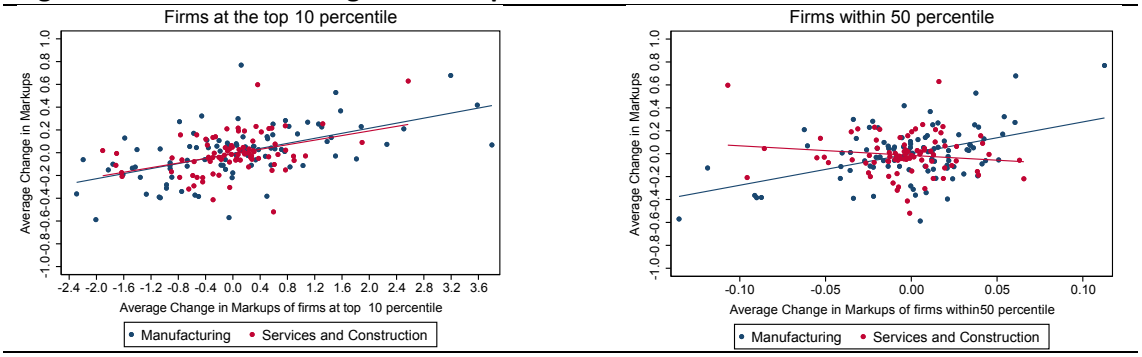
Table 4. Markups, firm efficiency, and market power

	Markup			
	OLS (1)	**OLS (2)**	**FE (3)**	**FE (4)**
TFP (log)	0.422***	1.874***	2.380***	2.614***
	(0.009)	(0.032)	(0.050)	(0.047)
Market Share	-0.020***	-0.029***	-0.035***	-0.040***
	(0.001)	(0.002)	(0.005)	(0.006)
Linear trend	-0.021***	-0.025***	0.007***	-0.001
	(0.002)	(0.004)	(0.002)	(0.005)
Constant	0.495***	-2.956***	-4.699***	-5.096***
	(0.022)	(0.079)	(0.130)	(0.238)
Industry FE	No	Yes	No	Yes
Firm FE	No	No	Yes	Yes
Industry-specific trend	No	Yes	No	Yes
Weights	No	No	No	No
R-squared	0.11	0.34	0.48	0.52
Observations	60,096	60,096	60,096	60,096

Note: Robust standard errors in parentheses. (*), (**) and (***) indicates significance level at (10), (5) and (1) percent level, respectively. The left-hand side variable of the regression is firm markup and the right-hand side includes estimated TFPR, market shares (calculated as the share of firm sales in total industry sales at the two-digit level), and a time trend. Also, industry fixed effects (FE) are at the two-digit level. Columns (3) and (4) also control for time-invariant firm effects. Industry-specific time trends are included as additional controls. Finally, the specification does not include firm weights (i.e., sales), but conclusions are robust to the use of weights.

60. **Averages hide significant heterogeneity.** For most services and construction sub-sectors, for instance, we find that the median markups did not change over the period (Figure 26, right panel). Instead, when markups increased, this was driven by firms with already high-markups (top 10th percentile), suggesting that while markets remained contestable for the typical (median) firm, a small group of firms experienced an increase in their market power. Sectors where markups of high-markup firms (top 10 percent) increased are also those where average markups increase, and vice-versa, sectors where markups of high-markup firms decreased are those where average markups also decreased (Figure 26, left panel).

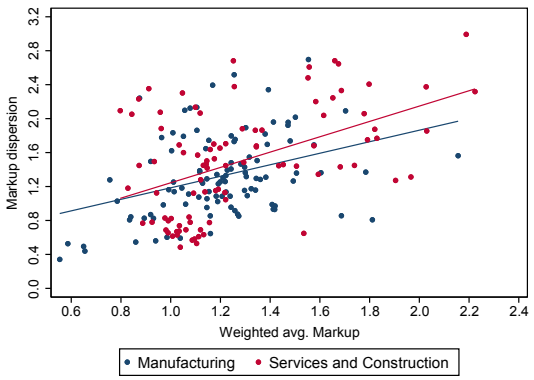
Figure 26. Who drives change in markups?



Source: World Bank's calculations based on Geostat.

61. **Sectors characterized by higher markups dispersion tend to also have higher levels of average markups (Figure 27)**. This is the case of sectors such as textiles, wearing apparel and leather, wood and paper, construction and transportation. Imperfectly functioning markets and limited competition can explain both a high markups dispersion, wherein low-markup firms coexist next to high-markup ones without being forced to improve or exit, and relatively high (average) markups. This result is consistent with evidence that misallocation in specific sectors, due to imperfectly functioning markets, is associated with higher markups and consequent losses of consumers' welfare.

Figure 27. Average markups and dispersion across sectors



Source: World Bank's calculations based on GeoStat.*Note*: Dots represent sector at the two-digit level.

62. **Promoting competition in Georgia could be good for not only consumer welfare, but also employment growth.** Another important welfare consequence of firms' markup decisions is the impact of setting high markups on labor demand and overall employment. Firms with market power may be able to not only charge higher markups but also exert their market power with respect to labor by keeping labor demand lower than optimal and depressing wages.[25] Data suggests that firms with higher markups are associated with lower employment growth, measured in relative terms, after accounting for TFP growth, firm capital intensity, age and size (Table 5).

Table 5. Level of employment growth and the level of markups

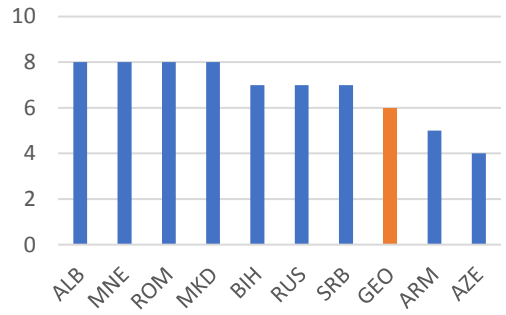
	Employment Absolute Change (1)	Employment Relative Change (2)
Markup in t-1	**-0.159**	**-0.007*** **
	(0.127)	(0.002)
Capital per worker in t-1	**0.741*** **	**0.020*** **
	(0.145)	(0.001)
TFP growth	**-1.100**	**-0.030**
	(0.827)	(0.023)
Young (5-10)	**-3.317*** **	**-0.090*** **
	(0.566)	(0.006)
Established (11+)	**-4.854*** **	**-0.124*** **
	(0.745)	(0.006)
Small (10-49)	**0.790*** **	**0.143*** **
	(0.229)	(0.006)
Medium (50-249)	**6.289*** **	**0.216*** **
	(0.585)	(0.007)
Large (250+)	**59.536*** **	**0.243*** **
	(5.611)	(0.010)
Constant	**-5.394*** **	**-0.209*** **
	(1.602)	(0.017)
Industry FE (two-digit)	Yes	Yes
Geographic FE (region)	Yes	Yes
Year effects	Yes	Yes
R-squared	0.062	0.074
Observations	34,789	34,789

Note: Robust standard errors in parentheses. (*), (**) and (***) indicates significance level at (10), (5) and (1) percent level, respectively. Size and age class controls are included, using micro (0-9 employees) and start-up (0-2 years) firms as baseline categories. Employment growth at the firm-level is calculated as follows: $g_{it} = 2 * \left(x_{i,t} - x_{i,t-1}\right)/(x_{i,t} + x_{i,t-1})$. Absolute employment change is calculated as: $e_{it} = x_{i,t} - x_{i,t-1}$. Bottom and top 1% markup observations are winsorized to minimize the effects of outliers.

[25] High markups may also be associated with lower than (socially) optimal production markups, which could lead to lower input and labor demand (e.g. Edmond et al., 2015).

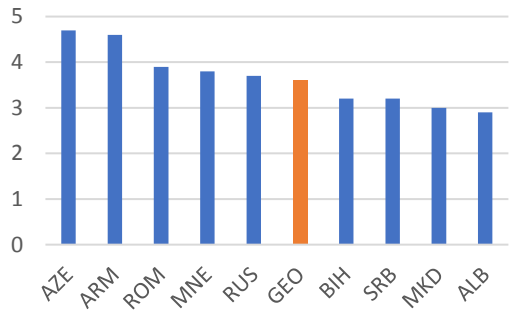
63. **While the firm-level analysis points to some improvement in recent years, competition conditions in Georgian markets are still perceived as relatively weak**. In 2014**,** Georgia adopted a competition law and set up the Georgian National Competition Agency (GNCA) to ensure its implementation. Yet, perceptions of the quality of the competition policy are low (Figure 28), while perceived degree of market dominance is higher than in other countries in the region (Figure 29). When a few players dominate many sectors of a relatively small economy, cartels can be expected to be a pervasive problem. This comes at a high cost to consumers, who could be paying higher prices for goods and services, as well as to taxpayers, as cartels often target public procurement (including concessions).[26]

Figure 28. Competition policy perceptions
Scale 0-10, higher is better.



Source: Bertelsmann Stiftung 2020.

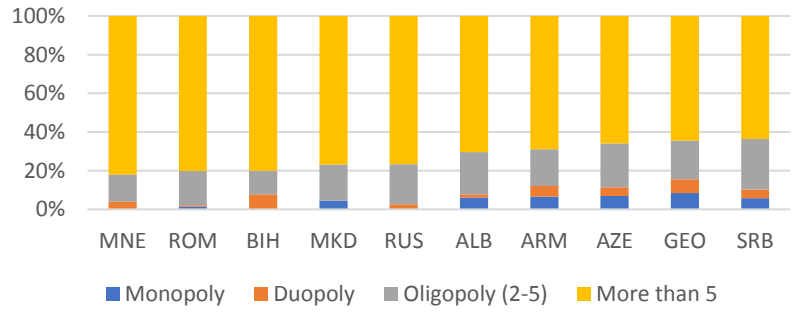
Figure 29. Market dominance perceptions
Scale of 1-7, higher is better



Source: WEF-GCI database 2019.

64. **Some of the perceptions are justifiable, as more firms in Georgia operate in markets with fewer competitors compared to the ECA region (Figure 30)**. Eight percent of interviewed firms indicated that they have no competitors, effectively operating as monopolies, while an additional seven percent had one or two competitors for their product. In fact, 35 percent of companies operated in markets with less than 5 competitors. Only Azerbaijan and Serbia had similar percentages. While market concentration might organically result from market characteristics and dynamics, it might also be related to limitations to firm entry and competition. It would be important, then, that the competition authority and sector regulators monitor markets to identify potential cases of abuse of dominant positions.

Figure 30. Manufacturing sectors' market structures



Source: Authors' analysis based on data from the World Bank's Enterprise Survey.

65. **Despite important reforms, gaps in the competition regulatory framework could be hindering effective enforcement.** The competition law of Georgia covers key elements to build an effective competition policy framework, and recent reforms have further aligned this framework to international standards, including enhancing independence for the GNCA, incentivizing compliance with the merger control and clarifying overlapping mandates of GNCA and sector regulators, especially in the context of investigations on anticompetitive conducts. However, the relatively low fines may hinder compliance/deterrence, while burdensome presumptions of illegality for mergers carried by dominant undertakings could disincentivize efficiency-enhancing investments.

66. **The presence of digital platforms present additional challenges from a competition perspective and the implementation of merger control.** The digital economy comprises markets characterized by

[26] OECD SME Policy Index: Eastern Partner Countries 2020.

economies of scale and scope and by the presence of multi-sided platforms with strong network externalities, where data plays a key role. The structure of these markets tends to be highly concentrated, and market power is often in the hands of a few dominant firms. These features create considerable high barriers to entry. The "winner" in these markets has an important competitive advantage over new entrants due to the scale of their operations and access to (or ability to build) data. On the demand side, single-homing, wherein users stay with one platform, may be influenced by fear of loss of personal data, price-parity and exclusivity clauses, technical barriers, lack of open standards and interoperability, tying, or even inertia. All these pose challenges for merger control. First, these operations might not be caught by notification thresholds triggering competition merger review (many digital platforms do not generate significant turnover), which could create an enforcement gap. And even if caught, competition authorities around the world struggle to anticipate the potential effects of such transactions, given dynamic changes in digital markets. Analytical challenges include finding metrics for non-price effects, assessing the counterfactual in dynamic and innovative markets, taking due account of network effects, understanding the role of data, predicting long-term dynamic effects, and even defining markets, among others. To this end, reviewing and further developing merger guidelines would be key to tackle some of these concerns.

67. **The new role of sector regulators as competition watchdogs calls for enhanced interinstitutional cooperation and the development of competition regulatory frameworks adapted to sector-specific concerns.** In this context, the regulators (e.g., National Bank of Georgia) have been developing secondary legislation to operationalize and implement their competition mandates. Furthermore, GNCA and the other regulators with a competition mandate signed a Memorandum of Understanding to start developing a framework for information exchange through an annual conference on competition.[27] Further cooperation could be explored through regular information sharing and the development of common procedures and protocols for action that would allow in-time cooperation in competition cases covering different regulated sectors, e.g., banking and telecommunications.

68. **In addition, even though SOEs are generally subject to the same regulations and taxes as private operators, certain key aspects of competitive neutrality could unbalance the playing field among public and private operators.** Competition neutrality is the principle that all enterprises, public or private, domestic or foreign, should face the same set of rules, and that government's contact, ownership or involvement in the marketplace should not confer undue advantage to market participants.[28] While the SOE sector is not excessive in Georgia, some State-Owned Enterprises (SOEs) do participate in several commercial markets (for example, construction and accommodation services). On the one hand, SOEs deliver public service obligations (PSOs), which are not always clearly established in the law and budgeted for. On the other, SOEs are not obliged to achieve a commercial rate of return, and many rely on regular financial assistance from the government, such as subsidies, capital transfers, and equity injections. While the competition law has established a basic framework to minimize the distortions of state support measures, it could be further developed, for example by enhancing collaboration with public authorities to ensure compliance with state aid reporting obligations and by developing a registry of state aid. This will also support Georgia's EU accession process, as EU rules governing state aid are quite extensive.

69. ***In the telecommunications sector,* relatively concentrated market structures confirm the need for procompetitive regulation.[29]** In this context, access to essential facilities still represents an important barrier to entry and to ensuring that significant market power is not abused. The Thematic spotlight 1 of Chapter 1 contains more specific policy recommendations for encouraging more competition within the domestic internet market.

70. **In the *financial sector*, market concentration in the banking system, while not a problem per se, remains high compared to peers and has increased in the past few years.[30]** The two largest banks in

[27] The parties of the MoU were the following: the GNCA, the National Bank of Georgia, the Georgian National Energy and Water Supply Regulatory Commission, the Insurance Supervision Service and the Communications Commission.
[28] See: OECD Roundtable on Competition Neutrality, Issues paper by the Secretariat, 2015, p. 4.
[29] In the mobile telecommunications market, the three mobile network operators ("MNOs") –Magticom, Silknet and Veon Georgia— hold 41, 33 and 26 percent of the market, respectively. In the fixed broadband market, the two main operators, Magticom and Silknet, together hold 81.4 percent of the market shares (46.6 and 34.8 percent, respectively). Market shares are calculated in terms of subscribers.
[30] The section on the financial sector is an extract from the Competition Section of *Georgia - Financial Sector Assessment* (English). Washington, D.C. : World Bank Group.
http://documents.worldbank.org/curated/en/224301643135539486/Georgia-Financial-Sector-Assessment

Georgia have a market share of more than 70 percent of all major banking products, and quantitative measures for concentration indicate very high concentration across market segments and regions. Levels of concentration have increased over the past five years, driven in part by a major merger, and the top two banks enjoy a prominent and growing market share, while the remaining thirteen banks compete for the remainder of the market and in niche segments. New market entrants are scarce, as the banking market shows signs of saturation, and the FinTech segment remains small.

71. **The largest banks are part of wider conglomerate economic groups that are further shaping market dynamics.** In some cases, these conglomerates include insurance companies, as well as key parts of the financial infrastructure. Over the past few years, the conglomerates have also strategically expanded into emerging non-financial areas (e.g., online e-commerce platforms) and enveloped their products through digital ecosystems. The intertwined nature of banks, financial infrastructure and non-financial operators within the same economic group raises concerns about potential exclusionary practices, such as tying of banking and insurance products, exclusive dealings, or preferential access to data.

72. **This calls for strong competition safeguards to ensure fair access of competitors/new entrants.** The NBG is developing new licensing regimes for 'digital banks' and for 'micro-banks' to enable entry of new types of operators, which could potentially promote contestability. It has also developed ex-ante regulation to prevent tying/bundling of banking and insurance products, as well as principles for financial ecosystems to prevent access to digital platform information from benefiting certain banks. While the NBG has taken critical regulatory steps to promote access to data, from regulating the Credit Bureau to developing an innovative framework for Open Banking, some concerns remain regarding:

a. Access to credit information. Vertical integration between the Credit Bureau and the largest banks requires close monitoring to ensure that access/pricing conditions do not unduly favor large incumbents. To this end, ensuring that access criteria established in the regulation are applied fairly and non-discriminatorily to non-regulated operators in practice would be key to support the development of innovative business models.

b. Access to data through open banking. In this context, it would be important to clarify key aspects of the open banking framework, including the definition of Third Party Providers, especially fintechs, and to ensure inclusive standard setting, as well as a rollout schedule that takes into consideration the implementation capacity/costs of smaller banks.

73. **Moreover, a systematic assessment of regulations from a competition perspective may help to level the playing field for small players**. Regulation geared to tackle certain issues in the financial sector might have unintended consequences from the point of view of competition. While the NBG has focused on interventions from a prudential point of view, embracing a competition lens will enable it to minimize, where possible, potential restrictions to competition. A systematic regulatory assessment of impact on competition would be critical to identify potential concerns in rules, guidelines or broader prudential interventions and, when possible, to design less distortive alternatives that still preserve the prudential policy objective.

Upgrading Firm Capabilities

74. **Firm-level capabilities are also key drivers of productivity**. While the previous section focused on factors external to the firm, firms also need to have the adequate internal capacities (managers, organization, skills, etc.) to operate efficiently and increase productivity. As Syverson (2011) explains, we can think of productivity drivers as a set of factors or "levers," which are capable of boosting firm-level performance and which have the characteristic of being determined by firm-level decisions. Among these drivers, we focus on innovation, management practices or managerial talent, and ICT. Over the last ten years, as studies suggested that reallocation may not play such an important role relative to within-plant improvements in explaining overall productivity growth (Collard-Wexler & De Loecker, 2015; Restuccia, 2016; Sividasan, 2009; Bollard, Klenow, & Sharma, 2013 for evidence on India), the focus of the debate has shifted from misallocation of resources towards within-firm drivers (i.e., firm capabilities). In fact, Cusolito and Maloney (2019) and Cirera and Maloney (2017) find that "within-firm" drivers of productivity growth typically explains more than half of the total productivity growth for most developing countries.

Management and firm's organization are key to productivity, but most Georgian firms have weak practices

75. **A growing body of literature suggests that management and organization are key drivers of productivity.** Bloom et al. (2016a) propose that management practices are like "technology", where management is perceived as an intangible capital. Furthermore, Bloom and Van Reenen (2010) find that differences in productivity across firms in Asia, Europe, and North and South America can be attributed to the heterogeneity in management practices across firms in these regions. Specifically, Bloom et al. (2016a) suggest that management practices account for nearly 30 percent of the differences in TFP across countries, but also explain a large share (20 percent) of within country heterogeneity in firm performance as well, thereby suggesting that firm- and sector-specific factors were at least as important as the general business environment in shaping managerial performance.

Box 10: Measuring management

To measure management, we rely on the 2019 World Bank Enterprise Survey (WBES) which includes a set of questions to measure management practices in various areas such as production, monitoring and human resources (HR) (i.e., responses to production problems, performance monitoring, production targets, bonus rewards to managers and non-managers promotion systems). Specifically, we select the following eight questions for comparability purposes:

1. What best describes what happened at this establishment when a problem in the production process arose?
2. How many performance indicators were monitored at this establishment?
3. What best describes the time frame of production targets at this establishment?
4. How easy or difficult was it for this establishment to achieve its production targets overall?
5. Who was aware of the production targets at this establishment?
6. Did this establishment have performance bonuses for managers?
7. What was the primary way non-managers were promoted at this establishment?
8. When was an under-performing non-manager reassigned or dismissed?

Following Bloom et al (2019), the answers to these questions are standardized and aggregated into a management standardized index normalized to a scale between 0 and 1, with 0 meaning that the firm does not implement any of the structured managerial practices, while 1 indicates that the firm implements 100 percent of those practices.

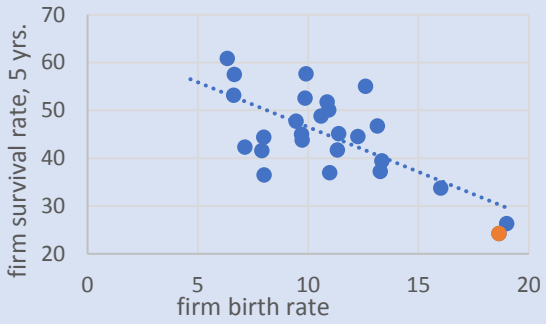
76. **Management and organization among Georgian companies is heterogenous (Figure 32)**. These differences echo the differences in productivity highlighted in the previous section. The average Georgian firm is a family-managed company; family members occupy more than two-thirds of key managerial positions. A comparison between better managed firms (top 10^{th} percentile) with less-well-managed firms (bottom 10^{th} percentile) finds differences in the management scores that are greater than two standard deviations apart. In addition, many entrepreneurs are "pushed" into economic activity because of the lack of other employment opportunities, rather than being "pulled" by profits, independence, autonomy, etc. It is very likely that entrepreneurs that are pushed into self-employment do not necessarily have the needed entrepreneurial skills, resulting in one of the lowest rates of firm survival in Europe (Box 11).

Box 11: Understanding Georgia's high firm churn rate

Official data suggest a lot of entrepreneurial activity in Georgia, but this does not translate into productivity, job creation and innovation. Economists have long tried to understand the determinants of business creation. Pull factors such as profit opportunities, the desire to be independent, the need for autonomy in the workplace, an aspiration to fully exploit previous job experience and acquired ability, and the desire to be socially useful and to acquire social status are important. But sometimes people are pushed into starting a business and self-employment, either because there are no jobs or the existing wages are considered too low (Lederman, Messina, Pienknagura, & Rigolini, 2014). In Georgia, like in most ECA countries, many businesses are started because people had a great idea or because they wanted independence. However, a recurring theme coming from interviews appears to be that while Georgians are creative, have ideas and are risk-takers, they rarely plan for the longer-

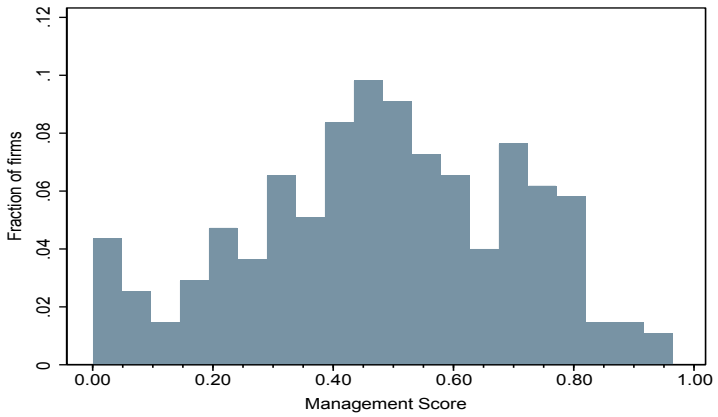
term. Results from a recent global survey suggests that there might be some truth to this. Georgians are not excessive risk-takers (close to the average for 76 countries), but have little patience (third lowest in the sample) and trust only a few (Falk, et al., 2018). In addition, more people were pushed (couldn't find a job or were afraid of losing a job) into starting a business in Georgia compared to neighbors and the ECA average (Kuriakose, 2013). This is likely triggered by the limited firm growth, which does not generate enough high-quality jobs. At the same time, it is also very likely that entrepreneurs that are pushed into self-employment may not necessarily have the needed entrepreneurial skills. The combined effect of lack of longer-term planning (a key managerial capability) and strong push factors leads to a lot of firm entry, but also a lot of exit, as probably a significant number of the businesses were not built on sound and profitable business ideas. In fact, while Georgia has one of the highest firm birth rates in Europe, it also had one of the smallest firm survival rates (Figure 31). Combining firm establishment with training on core firm management skills can help.

Figure 31. Firm creation and survival
2018, in percent



Source: Geostat for Georgia, Eurostat for all other countries.

Figure 32. Management practices score
Percent of firms



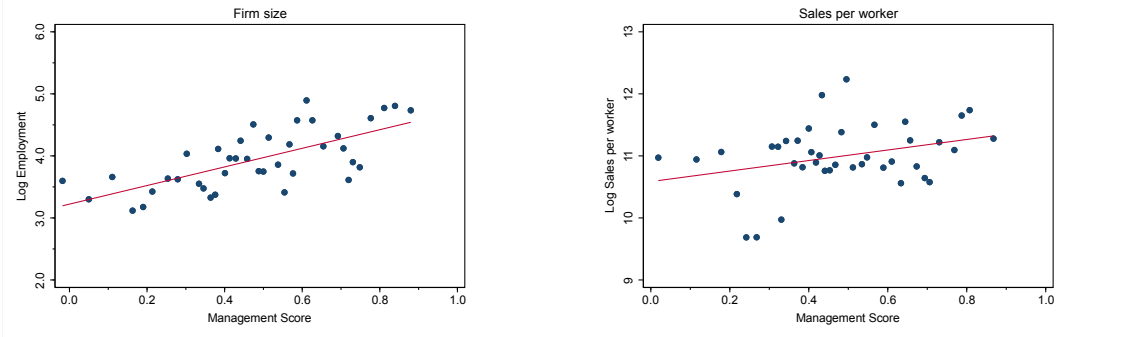
Source: Staff calculations based on Enterprise Survey (2019).
Note: Management score is the unweighted average of the score for each of the 8 questions in the Enterprise Survey, where each question is normalized to a 0-1 scale, following the spirit of Bloom et al (2019). The sample (275) contains all observations in 2019 with at least 4 non-missing responses to the 8 questions of Management Practices and have positive employment and sales.

77. **Larger and more productive firms tend to be better managed**. Management practices are positively associated with the firm size (measured as the number of full-time permanent employees) and the labor productivity of establishments (Figure 33). Even when controlling for a large number of firm attributes, as well as sectoral and geographic characteristics, we find that management quality is positively correlated with employment, sales and sales per worker. In fact, increasing the management score by 10 percentage points is associated with a 1.9 percent higher revenue per worker.[31] Additionally, a rise in the management score from the level of firms in the bottom 10th percentile (0.19) to the level of

[31] Compared internationally, this is relatively low. Looking at a similar specification, Bloom et al. (2019) find that the same increase in the management score is associated with a 2.3 higher output per worker in US firms.

those in the top 10th percentile (0.75) in Georgia is associated with an increase of 7.6 percent in employment, 20.4 percent in sales and 11.4 percent in sales per worker.

Figure 33. Firm performance and management practices



Source: World Bank's calculations based on World Bank Enterprise Survey (2019).
Note: Scatter bin with 50 bins. Management score is the unweighted average of the score for each of the 8 questions in the World Bank's Enterprise Survey (WBES), where each question is normalized to a 0-1 scale, following the spirit of Bloom et al (2019). The sample contains all WEBS observations in 2019 with at least 4 non-missing responses to the set of 8 questions of Management Practices questions and have positive employment and sales values. Sample size is 275 establishments. Dependent variable is Management score (in levels).

78. **There are large opportunities for improving management among firms in Georgia**. In addition to significant heterogeneity in firm management within the same sector, on average firms in Georgia have large gaps relative to peers in Eastern Europe countries such as Bulgaria, Romania, Poland and Serbia (Table 6). Differences in management between firms in Georgia and firms peer countries are typically on the order of one standard deviation for responses to production problems and performance monitoring. These are big gaps, but they represent a significant opportunity to improve management and organizational capabilities among firms in Georgia and could have significant payoffs in terms of productivity, employment and sales. In terms of time of production targets and promotion criteria, Georgian firms tend to perform similarly to comparator countries. Nonetheless, there is still room for improvement. For example, McKenzie (2020) revisits evidence on whether business training programs work, finding that training raises sales and profits by between 5 to 10 percent, on average. In the same vein, Bloom et al. (2013) find short-term positive impacts of providing free consultancy on management practices on productivity. Furthermore, evidence suggests the adoption of management practices lasts: firms that introduce management practices keep on implementing them in the long-term (Bloom, Mahajan, McKenzie & Roberts, 2020).

Table 6. Management score in Georgian and comparator country firms
(50-5,000 employees)

Questions	GEO	BGR	POL	ROM	SRB
What happens when a problem arises?	0.663	0.879	0.904	0.873	0.894
# of key performance indicators (KPI)	0.293	0.556	0.590	0.523	0.572
Time frame of operational targets	0.617	0.592	0.677	0.607	0.607
Criteria for non-managers' promotion	0.821	0.820	0.829	0.840	0.915

Source: World Bank's calculations based on World Bank Enterprise Survey (2019).

79. **Significant market failures justify the importance of public intervention to improve management and organization at the firm level** (Cirera and Maloney, 2017). First, there is robust evidence about information failures leading to firms not being fully aware of their level of management, and often over-estimating it, which curbs incentives to invest in improvements. Second, uncertainty about returns from investment in improving organization and managerial practices may also lead firms to under-invest. Third, asymmetric information between firms, especially SMEs, and consulting firms is such that firms are often unable to differentiate between good- and bad-quality providers and could also be concerned about principal-agent problems when contracting consulting service providers. All these problems point to the fact that the market for consulting knowledge functions very imperfectly, and this is likely to lead to under-investment in improvements that could have significant positive impact on firms' performance and productivity. As discussed by Cirera and Maloney (2017), many governments around the world have addressed this problem by subsidizing and incentivizing in various forms access to consulting

services (Box 12). Enterprise Georgia is currently exploring the feasibility of establishing and eventually scaling managerial capabilities and digitization programs, as well as creating a local market for consulting firms, all of which are promising initiatives. The agency should consider combining different modalities for providing training and technical assistance to firms, in close coordination with industry participants.

Box 12: How to improve management and increase firm productivity?

A growing number of policy interventions, pilots and studies have been implemented during the last 10 years, with the aim of improving management, firms' profitability and overall performance. We discuss here three types of interventions: i) training; ii) consulting, and iii) insourcing and market creation.

Training interventions

Most of these programs typically focus on micro enterprises and are teacher-led, classroom-based training, although some of them also incorporate active learning. On average, these programs cost about US$200, but they can be very heterogenous, with costs per participants ranging between US$50 to US$1,000. These costs differences reflect differences in whether trainers are local or international, whether the training venues need to be hired or can be used without charge, transport costs for getting instructors to remote areas, intensity of the training, among other factors. The traditional program tends to cover multiple areas of business skills (pricing, costing, HR, marketing, legal issues, etc.) and focuses mostly on "hard" business skills. The overall effectiveness of these generic business-skills-centered programs tends to be not very high (for a review, see Mckenzie and Woodruff 2013). Building on this, programs have moved towards trainings that emphasize "depth" over "breath" of the curriculum (Anderson et al 2018) or programs that focus more on rule-of-thumb and heuristic methods that are directly applicable to businesses' day-to-day operations (Drexler et al 2014). Another genre of pilots has moved towards introducing training that focuses more on "soft skills" (i.e., personal initiative) rather than traditional "hard" business skills, in order to encourage behaviors such as proactiveness, resiliency and forward-looking. This latter approach has proven to be much more effective in improving management practices, as well as raising profitability (Campos et al 2017; Iacovone et al, 2021).

Consulting interventions

For medium and larger enterprises, business consulting offers a more customized and intensive approach to improve management. Typical interventions involve an initial diagnostic that evaluates management and organization across a range of areas (e.g., production, logistics, finance, HR, marketing, energy efficiency, etc.) and identifies potential scope and priorities for improvement. The cost for these interventions vary significantly depending on the type of provider (local vs. international), the intensity of the program (which could vary between 80 and 800 hours), the delivery approach (individual delivery vs. group delivery), and the size and complexity of beneficiary firms, with programs for larger and more complex firms typically being more expensive. Given these differences, consulting program costs can vary between US$4,000 (the cost of a low-intensity program in Nigeria delivered by local consultants to small firms) and US$250,000 (the cost of a high-intensity program in India delivered by an international consulting firm, i.e., Accenture, to large firms with more than 200 employees). While these seem like large costs, the evidence suggests that these programs can be highly impactful and improve not only management, but also increase productivity and raise profitability to the point that the cost of the program could be repaid in less than a year given the extra profits (Bloom et al, 2013; Iacovone et al, 2021; Anderson and Mckenzie, 2021; Bruhn et al. 2018).

Insourcing vs outsourcing intervention

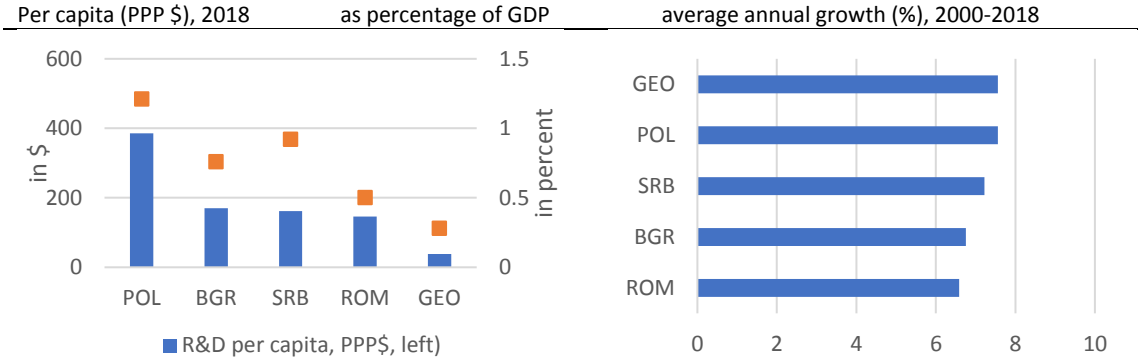
A more recent approach has focused instead on hiring external consultants (or trainers) to support entrepreneurs and on trying to develop a market for specific services that help firms to improve their organization (e.g. marketing, finance, etc.). Anderson and McKenzie (2021) assessed the effect of providing firms with a subsidy to hire those managerial skills by insourcing workers or outsourcing tasks to professionals. They found that these firms were subsequently more likely to go back to the market and spend their own money to hire more services, and more importantly, they found that both insourcing and outsourcing increase sales, profits and employment, and the extra profits would allow to cover the cost of the full program in less than two years (and the cost of the subsidies provided in less than a year).

Drivers of innovation

80. **Understanding drivers of innovation can help policy makers identify policies to promote it.** Very few Georgian companies are innovating, with only 7 percent of enterprises introducing new or significantly improved goods or services.[32] Relying on an innovation survey implemented by Geostat, we assess characteristics that are correlated with four different types of innovations: product and service innovation, marketing innovation, organizational innovation and process innovation.[33]

81. **Aggregate research and development (R&D) expenditure in Georgia falls behind aspirational peers, and despite one of the largest growth rates over the last decades, the R&D gap is still large.** Georgia invested 0.3 percent of GDP in 2018 in R&D investment, equivalent to $38 per capita (PPP, in current prices). International comparison shows that the gap in R&D investment between Georgia and aspirational peers is huge. R&D per capita in Georgia is only a quarter of R&D per capita investment in Bulgaria, Serbia and Romania, and a tenth of Poland's (Figure 34, left panel). Furthermore, aspirational peers invest between 0.5 to 1.2 of the GDP in R&D, at least the double that of Georgia (Figure 34, left panel). This, despite Georgia displaying the largest R&D investment growth among comparator countries between 2000 and 2018 (at constant prices) (Figure 34, right panel).

Figure 34. Research and Development (R&D) expenditure and growth



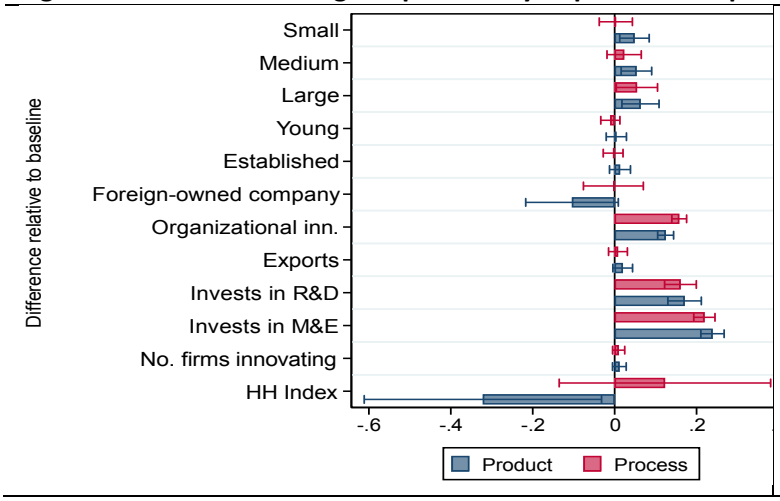
Source: World Bank based on United Nations Educational, Scientific and Cultural Organization (UNESCO).

82. **Larger firms and exporters are more likely to invest and innovate**. Not all firms in Georgia innovate in the same manner (Figure 35 and Table 7). In line with existing literature (Scherer, 1980; Cohen and Klepper, 1992; 1996), Georgia's larger firms and exporters are significantly more likely to innovate. This result points to the fact that firms tend to be more innovative when they have access to larger markets. As innovation requires taking risks, firms are more likely to do so when enticed by the rewards of larger sales offered by larger markets. Innovation is also the result of firm-level dedication and investments in R&D as well as in machinery, equipment and software.

[32] Geostat, Innovation Activities of Enterprises (2016-2020)

[33] The innovation survey overlaps only with a sub-set of the firms included in Geostat's enterprise survey. It covers a 5-year period from 2015 to 2019 and contains 10,640 observations, but there are 8,401 observations left after merging with the enterprise survey. The estimation sample size is further reduced after cleaning missing or unusable observations and taking the lags of the relevant variables.

Figure 35. Factors affecting the probability of product and process innovation



Source:

83. **The Georgian innovation ecosystem is nascent and has yet to evolve in a way that encourages regular interaction between private firms and research and development institutions (RDIs)**. RDIs are not incentivized to orient research towards commercialization, and they do not always take stock of foreign benchmarks and developments, leading to duplication or even obsolescence. Anecdotal evidence suggests that, as a result, research contracts between RDIs and private firms are rare, and upstream innovation is underdeveloped. Financial incentives that would stimulate collaboration between firms (or group of firms) and RDIs to solve a common problem could go some way to addressing this issue. Similarly, public funding for research (e.g., Rustaveli Foundation) could be better oriented towards economy-wide innovation and firm competitiveness. A national technology transfer office that could efficiently detect research projects with commercialization potential and initiate deals would also catalyse innovation.

Table 7. Innovation and ICT adoption by size class

In percent of firms

Innovation & ICT	Micro (0-9)	Small (10-49)	Medium (50-249)	Large (250+)
Panel A. Innovation				
Product and Service	0.06	0.14	0.17	0.23
Process	0.07	0.11	0.17	0.25
Organizational	0.11	0.18	0.26	0.31
Marketing	0.09	0.19	0.25	0.32
Average Expenditure ('000 USD)	4.11	30.40	163.63	866.80
Panel B. ICT				
Computers	0.93	1.00	1.00	1.00
Internet	0.96	0.99	1.00	1.00
Website	0.16	0.41	0.58	0.75
Social Media	0.28	0.43	0.59	0.75
E-Commerce (local orders)	0.02	0.06	0.08	0.11
E-Commerce (international orders)	0.01	0.03	0.04	0.05
Electronic invoicing	0.32	0.33	0.37	0.40
Software	0.11	0.14	0.27	0.50

Note: This table reports the fraction of firms that adopt or engage with each ICT technology and that adopt any type of innovation.

84. **Improving the quality of and clarifying ownership and incentive structures for scientists working in RDIs could also fuel firm-level innovation.** Larger firms do actively seek innovative and disruptive solutions as part of a strategy to remain competitive. This appears to be most visible among pharmaceutical industries and those with a larger digital component. However, connections between local RDIs and such firms are limited. Lack of clarity in RDIs regarding who owns the research (scientist or RDI) means that informal partnerships are also commonplace. These create stumbling blocks to technology commercialization. A program to support RDIs to clarify ownership of research and options for (potential) profit-sharing arrangements with private investors ex-ante will make Georgian research more viable for partnerships.

85. **Promoting innovation also requires a diversified range of financing instruments that mirror the type of innovation and the stage of development of firms.** Traditional financial institutions are often risk-averse towards early stages of innovative firms (seed, start-up, early-growth) due to the lack of credit and operating history, lack of collateral, high risk of failure, as well as the period needed for initial cash generation and the uncertainty around new products and markets. Technical assistance/training, network support, grants and equity financing instruments are usually more suitable mechanisms to support these firms. However, as mentioned previously, equity financing through business angels, seed funds, and venture capital is still in the early stages of development. Innovation by more established firms can be incentivized by business support and investment readiness programs and grants, as well as by the provision of credit guarantees and other risk mitigation mechanisms. Efforts to raise awareness about the existing public credit guarantee scheme offered by Enterprise Georgia and to simplify its procedures should be pursued.

86. **Another fundamental factor for innovation is related to human capital, particularly in the education quality dimension.** According to business executives, the stock of engineers and scientists — the type of human capital that is likely to produce innovation – is not high in Georgia and has declined since the 2000's. This happened despite a relatively stable enrolment in engineering and science programs, which could be indicative of outward migration of these skills. In addition, future innovators are in Georgian schools at the moment and may not be learning as much as they could (see Chapter 5).

87. **Importantly, there are also significant spill-over effects from innovation**. Firms are more likely to innovate when other firms in their same sector and location also innovate. The evidence of horizontal spill-overs is important — it implies that firms are likely to under-invest in innovation because they do not internalize the benefits that their innovation has on other "neighboring" firms. This suggests that supporting and subsidizing innovation can help increase the innovative effort of firms from the level that is optimal privately to the level that is socially optimal. This suggests that providing incentives for firms to invest in internal capabilities, through R&D, machinery, equipment or software, can have significant payoffs in terms of innovating activities.

Recommendations

Chapter 3 Unlocking firm-level productivity through …

… improving access to finance …

- Improve functioning of land markets (see Chapter 2 for more)
- Introduce tighter rules on judicial proceedings, advance specialization of commercial justice and further streamline small claims procedures
- Align secured transactions framework to good practices (amend law; invest in infrastructure)
- Digitize transactions through reviewing fees, providing basic accounts, expanding payment options and ensuring interoperability and non-discriminatory access
- Increase the coverage of entities reporting to SARAS, aiming for full coverage
- Explore options (online, cloud) to provide affordable and quality accounting services
- Improve credit information through the collection of alternative data, reviewing pricing and non-discriminatory access to databases
- Promote asset-based financing by adopting the legal framework and establishing a platform for factoring and reverse factoring

… Increasing formalization …

- Review thresholds and eligibility for simplified regime taxation
- Better understand bunching of firms around VAT threshold and amend legal framework to avoid artificial separation of activity
- Improve financial inclusion and digitize transactions
- Continue improving governance and regulatory quality

… promoting competition …

- Ensure competitive markets by introducing a state aid framework in line with EU rules and enforcing the improved competition framework
- Strengthen competition advocacy in key enabling sectors through Competition RIA
- Foster competitive neutrality in SOE operations (require commercial rate of return on commercial services, adequate compensation for public service obligations).
- Adopt and implement the Law on Sharing of Physical Infrastructure Used for Telecommunications Infrastructure and Telecommunication Purposes

… as well as building managerial capacities and promoting firm-level innovation

- Review business support programs (design, eligibility criteria, implementation) to promote synergies, ensure alignment with priorities (managerial capacities, productivity, innovation, jobs, digital, green) and monitor results.
- Support development of markets for services that help firms to improve their organization (e.g. marketing, finance, etc.)
- Strengthen awareness about the need for improved corporate governance and implementation of Corporate Governance Code
- Combine business start-up with training on core business management skills
- Adopt policies on ownership of innovations between RDIs and scientists and on profit-sharing agreements with private investors
- Ensure sufficient enrolment of scientists and engineers, who are important for innovation
- Establish a Technology Transfer Office function and increase public R&D spending
- Promote non-traditional financing for innovation (network support, grants, TA)

Appendix: Descriptive statistics of firm sample

Unrestricted sample, 2019 (includes firms for which TFP cannot be estimated)

Size class	Firms	Size	Employment	% Firms	% Employment
A. Manufacturing					
Micro (0-9)	1,427	3.3	4,724	61.2	6.9
Small (10-49)	622	22.5	14,002	26.7	20.4
Medium (50-249)	231	98.6	22,768	9.9	33.2
Large (250+)	53	511.0	27,082	2.3	39.5
Total	**2,333**	**29.4**	**68,576**	**100.0**	**100.0**
B. Construction and Services					
Micro (0-9)	5,301	3.0	15,671	62.6	7.0
Small (10-49)	2,335	21.9	51,020	27.6	22.8
Medium (50-249)	715	97.5	69,712	8.4	31.1
Large (250+)	123	713.2	87,720	1.5	39.1
Total	**8,474**	**26.4**	**224,123**	**100.0**	**100.0**

Restricted sample (firms for which TFP could be calculated)

Size class	2007	2008	2009	2010	2011	2012	2013
Micro (0-9)	1,950	2,191	2,213	1,818	1,968	2,030	2,192
Small (10-49)	1,145	1,095	1,386	1,250	1,880	1,960	2,069
Medium (50-249)	453	441	485	458	648	692	700
Large (250+)	55	68	80	78	109	110	110
Total	**3,603**	**3,795**	**4,164**	**3,604**	**4,605**	**4,792**	**5,071**

Size class	2014	2015	2016	2017	2018	2019
Micro (0-9)	2,458	1,904	2,074	1,744	1,792	1,823
Small (10-49)	2,346	2,501	2,302	2,293	2,458	2,283
Medium (50-249)	732	757	791	814	859	860
Large (250+)	123	134	143	165	163	169
Total	**5,659**	**5,296**	**5,310**	**5,016**	**5,272**	**5,135**

Bibliography

Ackerberg, D., Caves, K., & Frazer, G. (2015). *Identification properties of recent Production Function Estimators*. Econometrica, 83(6), 2411–2451.

Anderson, S., Chandy, R. and Zia, B. (2018). *Pathways to profits: the impact of marketing vs. finance skills on business performance*. Management Science, 64(12), 5559–5583.

Anderson, S. and McKenzie, D. (2021*). Improving Business Practices and the Boundary of the Entrepreneur: A Randomized Experiment Comparing Training, Consulting, Insourcing and Outsourcing*. Journal of Political Economy.

Ayyagari, M., Demirguc-Kunt, A. & Maksimovic, V. (2019). *The Rise of Star Firms: Intangible Capital and Competition*. Policy Research Working Paper No. 8832. World Bank, Washington.

Bartelsman, E., Haltiwanger, J., and Scarpetta, S. (2009). *Measuring and Analyzing Cross-country Differences in Firm Dynamics*. Producer Dynamics: New Evidence from Micro Data, University of Chicago Press, 15-76.

Bloom, N., Eifert, B., Mahajan, A., McKenzie, D. and Roberts, J. (2013). *Does Management Matter? Evidence from India*. The Quarterly Journal of Economics, 128(1), 1-51.

Bloom, N., Sadun, R., and Van Reenen, J. (2012). *Americans Do IT Better: US Multinationals and the Productivity Miracle*. American Economic Review, 102(1), 167-201.

Bloom, N., Mahajan, A., McKenzie, D. and Roberts, J. (2020). *Do Management Interventions Last? Evidence from India*. American Economic Journal: Applied Economics, 12(2), 198-219.

Bruhn, M., Karlan, D. and Schoar, A. (2018). *The Impact of Consulting Services on Small and Medium Enterprises: Evidence from a Randomized Trial in Mexico*. Journal of Political Economy, 126(2), 635-687.

Campos, F. et al. (2017). *Teaching personal initiative beats traditional training in boosting small business in West Africa*. Science, 357(6357), 1287-1290.

Cirera, X. and Maloney, W. (2017). *The Innovation Paradox: Developing-Country Capabilities and the Unrealized Promise of Technological Catch-Up*. The World Bank, Washington D.C.

Cohen, W. and Klepper, S. (1996). *Firm Size and the Nature of Innovation within Industries: The Case of Process and Product R&D*. The Review of Economics and Statistics, 78(2), 232–243.

Criscuolo, C., Gal, P. and Menon, C. (2014). *The Dynamics of Employment Growth: New Evidence from 18 Countries*. OECD Science, Technology and Industry Policy Papers, No. 14, OECD Publishing, Paris.

Cusolito, A. and Maloney, W F. (2018). *Productivity Revisited : Shifting Paradigms in Analysis and Policy*. Washington, DC: World Bank.

Decker, R., Haltiwanger, J., Jarmin, R., and Miranda, J. (2017). *Declining Dynamism, Allocative Efficiency, and the Productivity Slowdown*. American Economic Review 107(5), 322-326.

De Loecker, J., Eeckhout, J. and Unger, G. (2020). *The Rise of Market Power and the Macroeconomic Implications*. The Quarterly Journal of Economics, 135(2), 561-644.

Docquier, F., Müller, T. and Naval, J. (2017). *Informality and Long-Run Growth*. The Scandinavian Journal of Economics 119 (4), 1040-1085.

Drexler, A., Fischer, G. and Schoar, A. (2014). *Keeping It Simple: Financial Literacy and Rules of Thumb*. American Economic Journal: Applied Economics, 6(2), 1-31.

Eslava, M. and Haltiwanger, J. (2012). *Young businesses, entrepreneurship, and the dynamics of employment and output in Colombia's manufacturing industry.* CAF Working Paper 2012/08, Caracas.

Haltiwanger, J., Jarmin, R., and Miranda, J. (2013). *Who Creates Jobs? Small versus Large versus Young*. The Review of Economics and Statistics, 95(2), 347-361.

Hatzichronoglou, T. (1997), *Revision of the High-Technology Sector and Product Classification*, OECD Science, Technology and Industry Working Papers, No. 1997/02, OECD Publishing, Paris.

Iacovone, L., Maloney, W., McKenzie, D. (2021). *Improving Management with Individual and Group-Based Consulting: Results from a Randomized Experiment in Colombia*. The Review of Economic Studies, 0, 1-26.

La Porta, R. and Shleifer, A. (2014). *Informality and Development*. Journal of Economic Perspectives, 28(3), 109-26.

Loayza, N. and Rigolini, J. (2011). *Informal Employment: Safety Net or Growth Engine?*. World Development, 39 (9), 1503-1515.

Maloney, W. (2004). *Informality Revisited*. World Development, 32(7), 1159-1178.

McKenzie, D. (2020). *Small Business Training to Improve Management Practices in Developing Countries: Reassessing the Evidence for 'Training Doesn't Work'*. Policy Research Working Paper No. 9408. World Bank, Washington, DC.

McKenzie, D and C Woodruff (2013). *What are we learning from business training and entrepreneurship evaluations around the developing world?*. The World Bank Research Observer, 29(1), 48–82.

McMillan, M, Rodrik, D. and Verduzco-Gallo, I. (2014). *Globalization, Structural Change, and Productivity Growth with an Update on Africa*. World Development, 63, 11-32.

Medina, L. and Schneider, F. (2019). *Shedding Light on the Shadow Economy: A Global Database and the Interaction with the Official One*. CESifo Working Paper No. 7981.

Melitz, M. and Polanec, S. (2015). *Dynamic Olley-Pakes Productivity Decomposition with Entry and Exit*. RAND Journal of Economics, 46(2), 362-375.

OECD (2021). *The Digital Transformation of SMEs*. OECD Studies on SMEs and Entrepreneurship, OECD Publishing, Paris.

Pazarbasioglu et al (2020). *Digital Financial Services*. The World Bank, Washington D.C.

World Bank (2019). *Global Economic Prospects. Darkening Skies*. Washington, DC: World Bank.

Frank Wu, D. and Schneider, F. (2019). *Nonlinearity between the Shadow Economy and Level of Development*. IMF Working Paper No. 19/48.