

Impact of Digitalization on Labor Market & Employment – Firm Perspective

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World Bank

2019

The publication of this study has been made possible through a grant from the Jobs Umbrella Trust Fund, which is supported by the Department for International Development/UK AID, and the Governments of Norway, Germany, Austria, the Austrian Development Agency, and the Swedish International Development Cooperation Agency.

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Policy Note 2¹

Impact of digitalization on labour market & employment: firm perspective

*Target audience: Ministry of Economy & Sustainable Development of Georgia
Ministry of Finances of Georgia
Ministry of Infrastructure and Regional Development*

1. Summary of recent study findings

The impact of digitalization on firm performance has become an important area of policy inquiry over the past decades. A recent study by the World Bank on the “Empirical evidence for broadband as a skills-biased technology”² gives valuable insights regarding this topic in Georgian context. The study assessed impact of ICT on firms using various indicators like turnover, profits, productivity, wages etc.

Two competing hypotheses are tested within the study: according to the first one ICT adoption could allow smaller firms to break into new markets, thus leveling the playing field between the large and small companies. According to the second - ICT adoption is skewed in favor of well-endowed, larger firms; thus it exacerbates existing differences between the small and large companies. The findings suggest that availability of broadband Internet in Georgia benefits firms that are larger and in the top half of wage distribution. This finding is mirrored by the other World Bank study³ on “Broadband for Development Impact Evaluation” which concludes that while small firms⁴ have access to basic Internet services, they do not engage in e-commerce activities such as owning a web page or selling online. It also found that the main determinant of ICT use among firms is its size, legal status (individual entrepreneur or limited liability) and the level of education of employees.

The studies also indicate that firms in the bottom half of the wage distribution caught up to firms in the top half during the study period (from 2010-2014). These findings suggest that while ICT generally tends to benefit large and well-endowed firms (because they can pay for the fixed cost of investments and they also have access to analog complements such as large networks and skilled labor) it can be a great support to small firms as well, especially if they have at least one employee with university degree onboard. Last but not least, the studies clearly show that irrespective of the firm size technological change is skills-biased – it benefits highly skilled workers more as they get paid more due to increased productivity. Low-skilled workers mostly tend to lose from technological development as they become susceptible to substitution by highly skilled workers.

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² Link to publication forthcoming

³ Link to publication forthcoming

⁴ Majority of companies surveyed in this study are small.

2. Implications for Labour market & Employment

The findings discussed above have implications on the firm level, as well as for the general economy of Georgia. Both of these issues are critical to understand in order to inform policies, which make digitalization serve the purpose of economic development.

At the firm level the findings indicate that small companies⁵ will need extra support to benefit from availability of broadband Internet and technological development. We can think of broadband as a merit good because, as evidenced by the studies discussed above, they are under-consumed by the small firms, primarily because they are not aware about the full benefits of its consumption. Acknowledging the existence of such an information failure is critical for Georgia where 70% of total registered firms are small and individual companies⁶. Their contribution to employment is modest (they accounted for only 11% of total employment in 2015). In addition to this they usually fail to grow to medium-sized companies and the failure rate among them is high⁷. Thus, there is a clear segmentation of very small number of large and strong firms and the mass of fragile small and medium enterprises in Georgia. If the benefits of broadband Internet accrue to the large companies only this will widen the gap and negatively affect the economy at large.

Thus, small firms will need more support from the state to reap the benefits of broadband availability. As we know from the baseline survey of Georgian companies major determinants of the ICT use among companies is their size, legal status and availability of highly educated staff. Since the first two characteristics are given, the main focus has to be on either training existing company staff or ensuring the policies that will provide enough highly skilled workers to small firms (or both of these). Numbers of studies in Georgia indicate that small and medium enterprises cannot afford to invest in staff training and they depend on availability of highly qualified workers in the labour market⁸. However, larger companies offering higher pay rates usually poach the latter. Thus, the major focus has to be on building the capacity of companies (and their staff) so as they can grow and attract more highly skilled workers, which in itself will help them grow further.

At the national economy level situation is bit more complex and we don't have enough information to tackle this issue. Usually, the studies conducted at the firm level show what happens to the groups of firms analyzed but they say very little about the whole economy. In other words: we know that individually firms can benefit⁹ from this process. But in order to understand the effect on the whole economy we need to know how many such (innovative) firms are emerging in the economy, to what extent can existing ones grow and what are the barriers hindering their development? Quantity of the firms matters, because if the number of companies stays the same and each of them

⁵ According to the National Statistics Office of Georgia small business is classified as a business with less than 49 employees and annual turnover below 12mln. GEL

⁶ World Bank: Georgia at Work – Assessing Jobs Landscape, 2018

⁷ World Bank: Georgia at Work– Assessing Jobs Landscape, 2018

⁸ Ministry of Economy & Sustainable Development of Georgia

<http://www.lmis.gov.ge/Lmis/Lmis.Portal.Web/Pages/User/Surveys.aspx?ID=7a09257c-ac3c-4860-a7b0-b8fb3922405f>

⁹ Especially the large ones

reduces number of employees (by substituting low-skilled workers with fewer highly-skilled ones) the overall effect on the employment will be negative.

Most of the empirical studies in this field show that product and process innovation have opposite employment effects: while product innovation has positive effects, process innovation, often adopted to increase productivity and reducing labour costs, leads to job losses. Number of authors¹⁰ however, argue that there are certain compensation mechanisms that can offset the negative impact of process innovation and their effect is stronger in economies where investment in new economic activities & innovations are high.

In short, one can argue that increased availability of broadband should be accompanied by conducive macro-economic conditions for establishment of more innovative companies, which make “smart” use of broadband availability by generating more and “better” jobs.

3. Policy Responses

Policy responses to the issues identified above can fall into three broad categories: supporting companies with human capital and training; prioritizing investments in innovation and monitoring the barriers hindering innovation growth.

Supporting companies with human capital & training

- Small & micro enterprises should get access to training & consultation regarding the use of Internet & Technology. This could be organized through state programs, donor support or business associations. A good example of a donor supported program is Georgia National Innovation Ecosystem (GENIE) project supported by the WBG, which is complementing the broadband infrastructure expansion with a tailored e-commerce training aimed at encouraging firms to take-up broadband internet, make better use of existing digital tools, establish a presence in e-commerce platforms and engage in online retail¹¹.
- “Enterprise Georgia” and other entrepreneurship support programs funded by the state should consider streamlining ICT training & consultation component into the program design accessible to all applicants.
- Policies aimed at increasing the general supply of highly skilled workers are crucial so as they become available for small firms (see policy note 1).

Prioritizing Investment in Innovation

- “Entrepreneurship support” programs by the Government of Georgia should consider prioritizing the business ideas that generate “good jobs” (i.e. innovative ideas) as opposed to funding conventional small businesses (like bakeries), which generate demand for low-productivity service sector jobs that are already abundant in the economy.
- Increased funding in R&D is critical to generate more knowledge & innovative ideas, around which new businesses can appear.

Monitoring the barriers hindering innovation growth

- Respective agencies should regularly carry out studies/analysis to estimate the effect of digitalization on entire economy, rather than on specific groups of

¹⁰ Vivarelli 1995, Simonetti et. al (2000)

¹¹ <https://projects.worldbank.org/en/projects-operations/project-detail/P152441?lang=en>

companies. The studies should also tackle the questions like: what the barriers for companies are to grow and how these barriers can be overcome.