KKI

Policy Brief

E-2020/07.

Instant Digital Economy? – Hungary Going Digital

Instant digitális gazdaság? –

Magyarország a digitalizálódás útján

OLIVÉR KOVÁCS

INSTITUTE FOR FOREIGN AFFAIRS AND TRADE

KKI Policy Brief
Series of the Institute for Foreign Affairs and Trade

Publisher:
Institute for Foreign Affairs and Trade

Reviewer:
Péter Goreczky

Typesetting:
Tamás Lévárt

Editorial office:
H-1016 Budapest, Bérc utca 13-15.
Tel.: + 36 1 279-5700
E-mail: info@ifat.hu
http://kki.hu

This paper was supported by the János Bolyai Research Scholarship of the Hungarian Academy of Sciences.

ISSN 2416-0148

Abstract: The aim of this paper is threefold. First, it addresses the question whether optimism about the instant productivity-boosting character of Industry 4.0 and digital transformation is justified. Second, by keeping in mind the potential pitfalls of such a production revolution, it looks at Hungary to see how it is progressing in terms of Industry 4.0 development and asks whether there are any the potential pitfalls to watch out for. Third, we outline the basic policy principles needed by the economic governance to support the sustainable emergence of Industry 4.0 and digital transformation. Our conclusion is that economic governance should take pro-active care of the evolving Industry 4.0 and digital economy in order to avoid increasing uncertainty.

Összefoglaló: *Jelen írás első kérdése, hogy vajon kellően megalapozottak-e azok az optimista várakozások, miszerint a jelenleg is zajló negyedik ipari forradalom (Ipar 4.0) és a digitális transzformáció a termelékenységi ütem látványos és gyors (instant) javulását eredményezi. Vizsgálódásunk során olyan bizonytalansággal terhes folyamatokat fejtünk fel, amelyek különös óvatosságra intenek a termelékenységi hatást illetően. Második kérdésünk az, hogy miképp is halad Magyarország az Ipar 4.0 és a digitális transzformáció útján, illetve, hogy tükröződnek-e esetében is bizonyos bizonytalansági tényezők. Végezetül az előadottak alapján megállapítjuk, hogy a gazdasági kormányzásnak proaktív módon és az általunk fölvázolt alapelvek mentén érdemes felügyelnie az Ipar 4.0 és a digitális gazdaság kibontakozását.*

Introduction

In the era of hyper-globalisation, stimulating foreign trade and investment always aims to trigger productivity growth, hence contributing to sustained and inclusive economic development. However, since the mid-1970s the world economy has been pervaded by complex challenges, resulting in rather withering productivity growth[1] in the developed world (e.g. both in the United States and the European Union).

Under the domain of demographic challenge, beyond an ageing population and chronically increasing income and wealth inequalities, a shrinking middle class also signals a deteriorating entrepreneurial milieu in developed countries (e.g. the OECD). Meanwhile, it seems that the financial sector is getting less and less able to act as an efficient intermediator for the economy and resembles a financial casino, preferring greater return in a shorter

1 For the so-called secular stagnation, see Gordon and Sayed (2019). The EU KLEMS database suggests that today's productivity growth rates of are half of the value of two decades ago, and they are only a third of the growth rates experienced in the 1970s and 1980s.

time (e.g. the rising rate of share buybacks, excessive credit consumerism coupled with real wage stagnation, preferring larger and frontier companies at the expense of smaller laggards, declining labour shares of income while growing the capital share of income). *The nature of emerging markets* has also been changing. For instance, China is increasingly relying on services and internal consumption, accompanied by a conspicuous slowdown in economic growth. This has a significant impact on the rest of the world. Thus, Central and Eastern Europe should not remain Western Europe's workbench any longer - i.e. the importance of labour costs is becoming obsolete due to the digitalisation of production, and reshoring (bringing back production and service provision that have been outsorced up until now) via Industry 4.0 technologies and digitalised production has been gaining stronger momentum than ever. *The sovereign debt crisis of 2008* has resulted in a persistent fall in private investment, stifling growth outlooks, which have been overshadowed by the 'global trade war'. What is more, Europe is also losing the technology battle (there are no European companies among the top 10 largest companies in the world).

This complex interplay of challenges calls for a governance capable of unleashing *productivity growth* to spur and strengthen trust in governance (i.e. sparking innovation dynamism by stimulating short as well as longer-term sustainable investments over savings, lowering excessive risk aversion). And since more than two-thirds of productivity growth has always come from technological changes, the experts considering Industry 4.0 and the Digital Economy[2] the boosterjet engine of productivity seem to be justified.

However, the purpose of this article is to highlight the falsity of this productivity-enhancing narrative. In doing so, Section 2 addresses the question whether optimism about the instant productivity-boosting character of Industry 4.0 and digital transformation is justified. To this end, it uncovers the major potential pitfalls of this productivity-boosting 'instant' digital economy. Then *Section 3 asks how Hungary is progressing* through digitalisation and identifies some of the potential pitfalls of the spectacular productivity effect. Finally, by building on these insights, Section 4 outlines the basic principles of supporting the sustainable emergence of Industry 4.0 and the Digital Economy.

2 Industry 4.0 refers to the creation of self-optimising cyber-physical systems based on various technologies (sensors, robotics, additive production, internet-based continuous communication and interaction (Internet of Things), simulation and virtual modelling, cloud-based services, augmented reality, data mining, artificial intelligence, and machine learning).

Instant Digital Economy – Not Without its Pitfalls

In contrast with the canon of mainstream economics[3] about the impressive productivity-boosting character of Industry 4.0, we argue that the uncertainties looming around Industry 4.0 should tame our expectations concerning its impressive and instant productivity-boosting effect.

- *Security as part of the impossible trinity:* Now it seems that safeguarding the trinity of security, privacy, and transparency is impossible (e.g. various cyber-attacks via open-source malwares attacking public services, ransomwares like WannaCry and Petya in 2017). Regarding IoT, there is a crucial need for secure and standardized connections, even in the case of 3D printers. Privacy is also a key issue, especially in the case of millions of Europeans whose data are in the hands of big US companies (e.g. Amazon). And once there is *a broad feeling of a higher potential of interruptions*, an insufficient demand pull arises; that is to say, the pace of the diffusion of Industry 4.0-related technologies suffers in spite of governmental measures tailored towards encouraging productivity-enhancing investments in manufacturing. Notably, the lack of international regulation on investment in digitalisation can engender significant digital fragmentation across the board by limiting the productivity-boosting character of any kind of Industry 4.0 adoption (e.g. France, Germany, and Italy are to reach out additional protection from foreign investments in areas relevant to Industry 4.0).
- *Paradoxical behaviours leading to uncertain policy results:* On the one hand, states are increasingly forced to change course (i.e. overcoming dampening tax revenues from employment due to automation and robotization while maintaining the welfare state) and support productivity improvement through direct or indirect measures focusing on adaptation to Industry 4.0 and far-reaching digitalisation. At the same time, these support programmes can cause perceptible distortions by launching rent-seeking and becoming ineffective (e.g. although in Shenzhen, China, only 200 companies were specialised in robotics in 2014, by now this number is more than 2,000; in Nanking, 65% of the net profits of these companies came from state subsidies, without producing any competitive robots).
- *Excessively liberating and stressing human resources:* Of course, technology has always aimed at replacing human labour in one field, to be absorbed in another. However, this time seems to be different, since the scale of job replacement by automation/robotics is larger than ever before (e.g. 47 per cent of job tasks can be replaced by automation in the US, 54% in the EU,

3 See, for instance, the papers of Graetz and Michaels (2018), Aichholzer et al. (2015), BCG (2015), etc.

and 77% in China). What is more, the picture is polarised: regions dominated by less-educated workers will be affected more by increasing automation, and regions characterised by a large tradable sector are more likely to be exposed to automation, since this is the way to bring new momentum to productivity growth.[4] All in all, since jobless growth did not went into the oblivion in Europe and still a central issue, , Industry 4.0 will presumably aggravate the trend, unless sectors are able to absorb the workers elsewhere. In addition, technologies related to Industry 4.0 (automation, additive manufacturing) are very likely to lower the relative importance of input, hence diminishing goods trade, which in turn will affect employability. These forces are to be reckoned with in the case of investment-promotion measures. Furthermore, upskilling is ever-more difficult for workers who want to acquire better and higher positions in the current technological revolution, potentially leading to increasing unemployment, and thereby feeding into an increasing portion of corporate and household sectors with escalating debt. As for the effect of stress, the *'Art of Living with ICT'* literature describes the mental aspect of the broadly applied ICT-based technologies (i.e. 24/7 availability creates a culture of anxiety via real-time data-based monitoring methods; people have to compete not only with people but also with machines, etc.).[5]

- *Institutional headwinds:* Labour market institutions influence the performance of the innovation ecosystem (e.g. attracting multinationals to get a critical mass of foreign companies driving the diffusion of modern management techniques and offering a channel for smaller domestic companies to internationalise their operations on the back of the multinationals, etc.). The conventional wisdom in economics is that a more flexible labour market is better for innovation in any case, i.e. hiring creative and risk-taking new staff is cheaper under more flexible regulation, hence innovation speeds up. This results in higher productivity, potentially coupled with wage increases. However, the United States, with one of the most flexible labour markets, has been facing a rather sluggish wage growth for decades. In fact, fully adopting a US-like low-level employment protection to Europe would significantly lower the share of high-skilled and better educated workers within the total employment, at the expense of the low-skilled workers. Moreover, they are the ones with more sophisticated tasks, of which automation and robotization promise more savings for employers. Consequently, the principle of inclusive growth is violated, while

4 The most innovative firms seem to attract more workers and create jobs with innovative up-to date capital.?

5 Robots are becoming more skilful than humans by causing mental stress. ? Due to its demographic features (i.e. one in four Japanese people is over 65 years old), Japanese economic policy was decided to prioritise machine-human communication and work over machine-machine when supporting SME transformation. In addition, obtaining a higher level of social skills and emotional intelligence in the case of managers/leaders is a must in mastering the challenges of AI becoming ubiquitous ?.

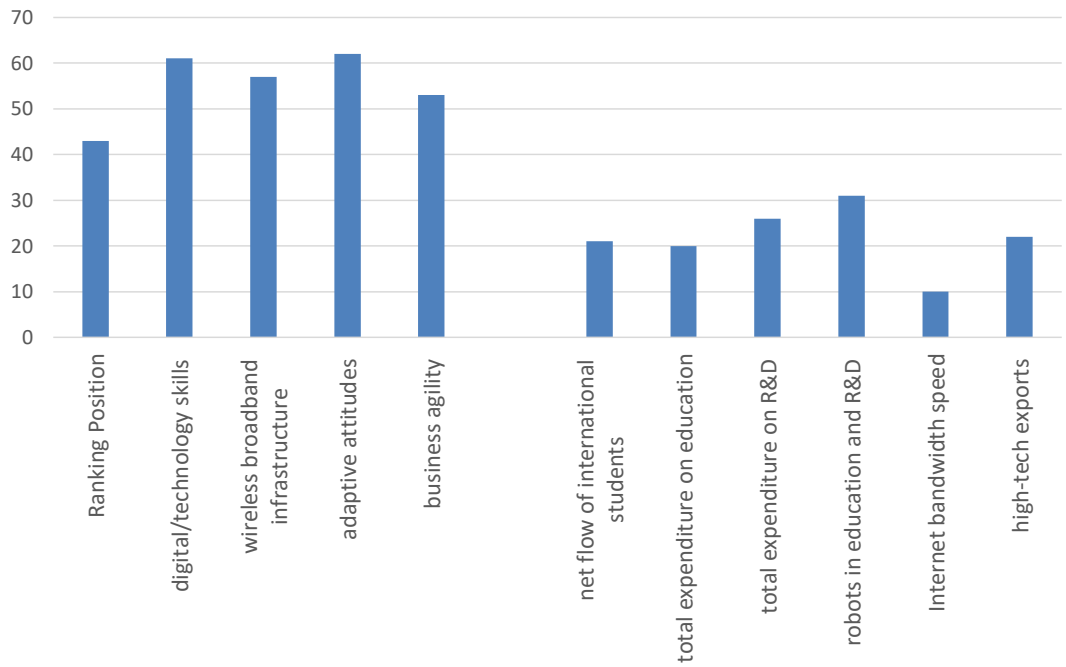
the shrinking tax revenues from employment calls for European welfare states to redefine their functions. All in all, expecting high productivity improvement from the deregulation of the EU labour markets in a one-size-fits-all manner is wishful thinking.

A Bird's Eye View of the Hungarian Perspective

Pitfalls of Digital Transformation

Hungary's digital transformation, including its readiness for Industry 4.0, of course, does not seem to show great progress yet (e.g. Hungary has been well below the EU average in terms of the Digital Economy and Society Index; out of 63 countries ranked by their digital competitiveness, Hungary was 46th in the 2018 ranking, although it improved by three places in the 2019 ranking (see its strengths and weaknesses in *Figure 1*).

Figure 1.
Ranking in the IMD Digital Competitiveness Yearbook 2019
(out of 63 countries)



Source: IMD Digital Competitiveness Yearbook 2019.

Since the quality of human capital is of key importance for enhancing productivity and thereby competitiveness (e.g. digital start-ups reach the phase of equity or venture financing sooner if they are equipped with people with higher technical and managerial education), the complex task of attracting, breeding, and retaining talent is *de rigueur* in contributing to the sustainable expansion of Hungarian companies and fertilising a productivity-enhancing investment milieu (e.g. Hungary's productivity growth, in terms of GDP per hour worked, has been one of the most moderate ones among the Visegrád countries since 2010; Romania has exceeded the Hungarian performance since 2011).[6] Promoting the foreign market entry of Hungarian firms (joining the international value chain and catching up with the frontrunners in terms of digital transformation and Industry 4.0) is an absolute necessity (e.g. domestic firms have typically no capacity to invest in and import sector-specific machinery from abroad, but larger and mostly foreign-owned companies do).[7]

By reflecting on the above dimensions, which warn against high hopes concerning Industry 4.0 as the boosterjet engine of productivity, the following can be concluded for Hungary.

- *Security-related uncertainty:* The highly disruptive nature of modern digital technologies (platforms) triggers tensions, as demonstrated in 2015, when Hungarian taxi drivers rebelled against Uber. In addition, in early 2017, the Hungarian Hotel and Restaurant Association expressed concern over the ever-increasing use of Airbnb and provided a potential roadmap towards the 'whitening' of Airbnb-based businesses with the help of the government and the National Tax and Customs Administration. In addition, and despite the rising awareness of the crucial importance of cybersecurity (the new national cybersecurity strategy was accepted in January 2019), Hungary has not been able to avoid serious cyberattacks against public institutions (e.g. against hospitals during 2016 via ransomwares such as Locky and CryptoWall 4), whipping up concern over the vulnerability of Hungarian public services. CEE countries are still far behind their Western European peers, and Hungary is one of the jurisdictions with the highest number of cyber-attack incidents. It is hardly a coincidence that according to the survey of the Industry 4.0 National

6 The fact that Hungary has only improved by three places in the ranking of the IMD World Competitiveness Yearbook in the period 2013-2019, whereas Slovenia, Bulgaria, and Romania have shown skyrocketing increases, suggests that Hungary's international competitiveness has structural weaknesses, yet to be addressed, such as breeding, mobilising, and utilising talent in a more vigorous way, which would feed into the foreign expansion of companies as well as attracting FDI to spark value-added productivity improvements (see IMD World Talent Ranking 2018 and 2019 by implying a character of net exporter of talents).

7 Beside the fact that foreign trade companies are significantly more productive than countries operating only within the Hungarian borders, and merely 5% of companies account for more than 80% of all exports and imports, foreign trade status plays a more important role in differentiating among companies than ownership structure. The Hungarian business sector is to a large extent divided between more efficient foreign companies and domestic companies with mostly anaemic performance.

Technology Platform, only few companies have an Industry 4.0 strategy (13.3% of micro, 31.3% of small, 14.3% of medium-size, and 14.3% of large companies have a strategy), and 50% of the companies that responded had also not innovated in the previous five years in the area of digital transformation and Industry 4.0 development.

- *Labour market and freeing up workforce:* Although the strictness of Hungarian employment protection has been well below the OECD average, as discussed above, productivity and innovation performance have not improved as one would have previously thought. Still, the newest amendment of the Labour Act by the Hungarian Parliament in December 2018 became effective as of 1 January 2019, introducing the so-called Overtime Act, with the possibility to raise overtime hours from 250hrs/year to 400hrs/year on a voluntary basis. This has made the Hungarian labour market regulation seemingly more flexible. As discussed earlier, seeking a more flexible labour market is not an elixir per se, and it potentially injects additional uncertainties into the socio-economic innovation ecosystem. Bearing in mind the constellation of an (I) intensifying shortage of (skilled) labour via brain drain (a status of net exporter of talent), coupled with (II) the increasing dependency of households on remittances from expatriate workers[8], accompanied by (III) ever-heightening inequalities and impoverishment[9], the recent changes in labour market legislation might unwittingly support a low-productivity growth environment.[10] Although these forces act against an inclusive Industry 4.0, the positive impetus of such an orientation on productivity is doubtful (e.g. supporting companies to purchase Industry 4.0 technologies would be nothing more than giving them expensive toys without professional knowledge).

Shining lights in digital transformation

Many analysts emphasize that an Industry 4.0-based economic structure pervaded by an advanced level of digitalisation (replacing half of the workforce activities via automation) will add a minimum of half a percentage point to the GDP growth on a yearly basis up until the mid-2020s. Still, the Hungarian Industry 4.0 landscape is by no means without its potential pitfalls.

8 Personal remittances received (in % of GDP) have been by far the greatest in Hungary among the Visegrád countries. They accounted for 2% of the GDP in 2010 and increased to 3.3% by 2017, due to a significant number of people emigrating from the country. According to the Hungarian Central Statistical Office, almost 175,000 people have left Hungary since 2010.

9 In 2016, among the Visegrád group only the Hungarian rate of risk of poverty or social exclusion exceeded the European Union average. Moreover, now it takes 7 generations for a child born in a poor family to get into the middle class.

10 Since 2010, labour productivity has been by far the worst in Hungary compared to the other Visegrád countries.

Summarising the major insights of recent surveys on the progress of Industry 4.0 in Hungary:

- Hungary seems to have great potential for Industry 4.0 development, with the electronics and automotive industries digitalised the most so far (with a salient automation trend here to stay);
- the application of Industry 4.0 related technologies has positive impact mainly in the case of larger and medium-sized companies in terms of increasing added value;
- to date, 60% of responding manufacturing companies in Hungary do not apply any smart manufacturing systems or solutions (the number of companies without a website is still substantial);
- these companies are in great need of information and knowledge transfer, as well as concrete solutions regarding Industry 4.0 development (44% of respondents pinpointed both a lack of information and knowledge and the high costs of implementation as primary hurdles to progress);[11]
- 90% of responding firms operate only with a small R&D expenditure base, within the range of 0.1–3%;
- while Hungarian respondents reported one of the highest levels of supply production information integration and customer production information integration compared to those in the other regions analysed (Upper Austria, Lower Bavaria, Veneto, Emilia Romagna, and Lower Silesia), this perception has not really been mirrored in terms of outcomes (i.e. Hungary is an average performer in production and process innovations, except for the mainly foreign-owned export sector; the domestic SME sector has low growth, productivity, and propensity to innovate);
- most Hungarian manufacturing firms are predominantly expecting benefits from adopting Industry 4.0 solutions in terms of significant cost reductions, as well as time savings in reaching out to markets. Thus, neither productivity improvement nor large-scale job creation is considered an unambiguous goal. Keeping in mind the potential pitfalls, it is not surprising that a lack of skilled labour and adequate training, as well as widespread digital illiteracy was repeatedly reported as a major obstacle to establish Industry 4.0 development in Hungary.[12] Consequently, the current state of affairs of manufacturing firms calls for more complex development and training programmes.

11 Furthermore, a recent survey was commissioned by the Industry 4.0 National Technology Platform, with the aim of assessing the readiness as well as awareness by domestic manufacturing companies of Industry 4.0. The survey revealed that both large companies and Hungarian SMEs lack a systemic strategy for Industry 4.0 (66% of large companies surveyed do not have a strategy at all, with 36% in the case of SMEs).

12 Hungary belongs to the bottom third in terms of maturity among European countries, while Slovakia and the Czech Republic have outdone Hungary. In terms of digital competitiveness, Hungary seems to have been deteriorating (while it ranked 36th out of 63 countries in 2014, it fell to the 46th place by 2018).

Although the potential pitfalls related to Industry 4.0 and digitalisation are disquieting, Hungarian policy has started to zero in on both the necessary approach and some of the inhibiting factors.

First, the Hungarian policy for foreign affairs and trade recognises that the promotion of the digital transformation and the diffusion of Industry 4.0 requires a more holistic approach. Supporting the necessary infrastructural investments is by no means a straightforward and sufficient approach, and its complexity must be addressed. The Hungarian foreign trade policy, mirrored in the National Export Strategy for 2019-2030, therefore addresses the digital transformation and the sustainable emergence of Industry 4.0 via a multifaceted policy approach: (I) by appreciating the presence of transnational companies bearing the torch of a transformation that requires higher frontload investment, and offering fertile grounds for local firms to learn and to join the process (the Strategy emphasises, the opportunities for setting up joint ventures with local partners based on technology and knowledge transfer); (II) promoting the integration of SMEs as suppliers into the value chains given by the attracted and retained multinationals; (III) embracing the export activity of local firms with the aim of supporting their internationalisation in key fields such as health, food, construction, creative industries, and digitalisation.

Second, programmes have been initiated to foster transformation on many grounds, while prioritising SMEs' capacity building.

- *Fostering learning: the so-called Industry 4.0 Template Factory* flagship project offers a free program that provides key, hands-on experience and knowledge to micro, small, and medium-sized manufacturing businesses to become familiar with Industry 4.0 technologies and their applicability, with the aim of increasing their competitiveness by contributing to the transformation process.
- *SMEs are a focal point*: Larger companies are encouraged through the so-called *Supplier Development Programme* to build new networks or develop their existing network with local suppliers in pursuing value-added products, adopting various technologies of Industry 4.0, and in enhancing their human capital. The Modern Business Programme puts more emphasis on the Digital Economy by targeting the digitalisation of entrepreneurship and the development of higher-level digital skills in the case of SMEs. In this way, the demand-pull force can be strengthened for the diffusion of Industry 4.0.
- *Candidates of high-growth enterprises to be supported:* another equally important and promising programme is the HGC Academy, concentrating exclusively on manufacturing firms showing high-growth potential (HGCs as high-growth companies in terms of job creation and productivity).[13] The HGC Academy offers a range of services (seeking international best practices, organising workshops across Hungary for firms motivated and competent

13 The criteria for involving manufacturing companies are: a minimum of EUR 300,000 annual turnover; employment of over 10 persons; operation in convergence regions; domestic ownership; constant growth either in terms of employment or profit.

enough to take part in the project[14], mentoring, practical trainings, and education for the 40 selected companies), and its uniqueness also comes from the fact that it considers a so-called Prototyping Innovation Centre for selected firms. The Centre will be equipped with all the necessary Industry 4.0-related technologies and nontechnological solutions to be used for prototyping. Thus, it differs from other well-known concepts (e.g. technology transfer offices, innovation (and business) incubators, clusters, innovation/technology parks, and various innovation agencies), since it seeks to help manufacturing firms in real development at the technological level. It will not merely serve as a model factory but as a place where prospective Industry 4.0-based production and economic processes can be modelled and tested, and where innovative products can be incorporated into the production processes.

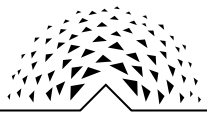
Conclusion

In response to our first question, *whether optimism about the instant productivity-boosting character of Industry 4.0 and digital transformation is justified,* we can conclude that optimism is unfounded, since there are headwinds in front of digitalisation and Industry 4.0 when it comes to its productivity effect (uncertainty over security, policies with a perverse effect, anti-inclusive features, institutional headwind). And once the headwinds are left unaddressed by economic governance, uncertainty over the sustainable evolvement of Industry 4.0 and digital transformation is on the rise. Our second question referred to how Hungary is progressing in terms of digitalisation and Industry 4.0, as well as whether there are any potential pitfalls. We can conclude that even though there are pitfalls, digital transformation and the unfolding Industry 4.0 cannot be reversed, and governance has made certain progress. In addition, by building both on the documented complexity of Industry 4.0 and the case of Hungary, the following basic principles might be conducive to economic governance acting as an effective *'analogue-to-digital-converter'*.

Cautiousness Comes First

Beyond the big questionmark over the expected spectacular productivity-boosting character of Industry 4.0, the ongoing digital transformation and the evolvement of Industry 4.0 challenges the trust infrastructure of a country (i.e. cyber-security concerns coupled with the increasing difficulty of maintaining employment levels erode state revenues, which endanger the sustainability of the

14 Based on 153 companies employing more than 10,000 workers in Hungary. 60% of those is with less than 20% export in their operation, 9% have exports above 80%. Only 8% of these companies are familiar with digitalisation, and only 2% have experience in Big Data analytics.



public finances of the welfare state). If one also considers that for a long time, economics has believed that growing inequality is the price of growth, now we better understand that there is no sustainable growth without a better-balanced society. As a corollary, cautiousness is in order in cherishing a trust-enhancing inclusive and export-driven development path (i.e. complex trainings about state-of-the-art cyber-security, supporting non-formal education for retraining, and acquiring non-cognitive skills in the case of displaced workers, initiating specific regulation for prioritising mainly machine-to-human development via support programmes for domestic companies, and providing incentives for foreign firms preferring this direction).

Pioneering Game-changing Investment Promotion

Unfortunately, there are no perceivable and convincing efforts from the side of international organisations or national policymakers to pursue changing patterns in investment activity or investment promotion in light of a transformative Industry 4.0 and pervasive digitalisation; however, there are at least three profound implications. First, during this transformation, the importance of labour costs, a central issue in the case of international investment activity, has been declining and call for a renewal of policy tools in attracting investments, especially in countries facing labour shortages. To this end, policymakers should focus more on cultivating intangible investment (computer-related, innovative properties, company competencies)[15]. Hence, the pattern of industry concentration can be changed in coping with digital transformation. Second, an incentive regime (e.g. grants, tax incentives, etc.) geared towards attracting and retaining foreign direct investors should be refined in supporting digital transformation in general (i.e. better harnessing multinationals' contribution to the digital transformation in Hungary by focusing on FDI upgrading). Third, since 3D printing affects trade negatively and shortens supply chains, Hungary has the opportunity to pioneer attracting investments that make the economy green (i.e. investment promotion in sizeable and heavy products closer to the final consumers, thus avoiding high transport costs and emission).

Cultivating Medium-sized, Digitally Active, Export-ready Firms

There are at least three, partly interlinked, reasons behind the importance of supporting this process. (I) Old and/or smaller firms are less likely to have a digitally active operation. (II) There is a growing inequality among companies based on their size, due to the decoupling between the financial sector

15 If intangible investment is a good predictor of changing industry concentration, that concentration can be influenced by governmental measures promoting various intangible investments.

and the real economy. Namely the financial sector has become a self-propelling financial parasite of the real economy, mainly preferring low risktakers with a high net value, whereby larger companies dominate and cannot easily be contested (i.e. the share of young, high-growth companies has been decreasing). Curbing this phenomenon requires more intense competition, policies should therefore target companies with high-growth potential. (III) Empirics suggest that only a limited number of high-growth firms act as an inclusiveness-enhancing mechanism, i.e. creating most of the new jobs. Hungarian companies need to be supported to become larger through up-scaling, to be ready to go further with the help of multinationals. In other words, multinationals cannot be ignored simply because their critical mass guarantees a pull mechanism for smaller domestic companies, which can then contribute to upscaling Industry 4.0 technologies. In doing so, policy must concentrate more on firms that are not hiring, despite having high profits, while offering a range of services for firms pursuing export activity (e.g. identifying and arranging distributors, counselling, facilitating participation at trade fairs, etc.). In this way, the local absorptive capacity of Hungary can be facilitated to upgrade FDI structure as well.

Beside economic governance, economics shall also keep abreast of the challenges of our time. Economics must become a more interdisciplinary, complexity-oriented subject, in order to draw a more realistic picture for policymakers about what is really going on in the socio-economic innovation ecosystem. Till then, the wider public must be aware of the limitations of any kind of economic policy in achieving multiple and complex objectives (stimulating, for instance, investments in Industry 4.0 and/or digital transformation, as well as the internationalisation of domestic companies). Still, this is the way toward enhancing the quality of governance, which can definitely be an important constituent of any kind of boosterjet engine of productivity.