



Competitiveness and productivity: research and policy challenges

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Celebrating Hungary's 20 years of membership in the OECD a policy workshop dedicated to competitiveness and productivity was organised by the Ministry for National Economy and the OECD National Council of Hungary. The workshop focused on the international exchange of different views between government and academic experts, and representatives of the corporate sector.

1. Introductory plenary session

In his opening speech, **László BALOGH** (Ministry for National Economy) recalled that among the post-socialist countries, Hungary was the second to join the OECD as a full member, which act was an acknowledgement that the country adopted market economy principles, political pluralism and have been enforcing human rights. On the OECD's agenda, productivity has always ranked high and the 1990-2000 period saw the birth of a cross-sectoral approach, focusing on investments, R&D, labour etc., which is more or less prevalent today in terms of productivity analysis.

Zoltán CSÉFALVAY (ambassador, permanent representative of Hungary to the OECD) emphasised that today there is a focused research attention on productivity and inclusive growth and policy analysis should find more in depth the relationship between productivity and quality. We are experiencing a digital and a 4th industrial revolution, fast technological development and fragmenting value chains. There is clearly a measurement challenge ("beyond every figure there is a theory") and an education challenge, which have to be tackled when thinking about enhancing productivity.

Acknowledging that multi-factor productivity (or total factor productivity) is the driver of future growth and prosperity, **László TURÓCZY** (Ministry for National Economy) pointed to recent trends, such as the differing decelerating labour productivity trends in Central and Eastern Europe. In Hungary for instance, there seems to be a trade-off between employment and productivity growth, and, with the exception of Slovakia, the productivity difference between large and small firms is sizeable. Improvement in knowledge-based capital could be a policy response, however, R&D and human resources in S&T trends also differ and there seems to be no single policy recipes.

2. Macroeconomic aspects of competitiveness and productivity: Beyond the real effective exchange rate (REER) and total-factor productivity (TFP)

Jean-Luc SCHNEIDER (OECD) started his presentation with the crises of 1973, 1981, 2000 and 2008: recovery is the slowest in 2008 and in Europe the trends are worse than in other regions of the world economy. The slowdown occurred later in Central and Eastern Europe, but the trough was deeper and the total factor productivity (TFP) has experienced a sharp fall in these countries. Additionally, there has been a global slowdown of investments. Productivity growth of the globally most productive firms ("frontier firms") remained robust (markedly higher in the services sector), despite the slowdown in aggregate productivity. If our goal is to maintain global productivity we have two possibilities, either we push the productivity at the frontier further or we enhance the diffusion between the frontier and non-frontier level. The key challenge seems to be this technology and knowledge diffusion to all firms from the frontier (and the advanced) firms to the laggards – and this challenge is more pronounced in the

case of service sector companies. There are three factors shaping TFP-growth: (1) Global connectedness (which provide for competition pressures for innovation and helps the diffusion of knowledge), (2) knowledge-based capital (which contributes to moving the innovation and technology frontier and also helps the adoption of new production processes), and (3) resource allocation (to channel resources to the productive firms, and to reduce skill mismatches). Policies that affect productivity include the reduction of administrative burden on start-ups, improving relationships between universities and the private sector, reduction of administrative burdens to entry and to exit, reduction of the costs of bankruptcy, flexible labour market, improving the skill composition of the population. OECD experts recommend that Hungary should reduce the administrative and financial burdens for company start-up and exit (liquidation), provide for a more flexible labour market, and improve the level of skills and the skill composition of the population.

István KÓNYA (Hungarian Academy of Sciences) first noted that there is some empirical evidence for a slowdown of the convergence process of the so-called transition economies, when a country reaches the 25-35% development level compared to the US. In 2014 Hungary stayed at 45%, China at 24% of that level. In the catching-up process productivity is key. The real effective exchange rate plays some role only in the early stages, later education, technology adoption and business services become important. Nevertheless, finding robust solutions for tackling the problem of catching up has substantial methodological difficulties as total factor productivity and capital stocks are fully, labour inputs and labour utilisation are partly unobserved. In a growth and development accounting approach, for instance, capital might be adjusted by PPPs (investment is relatively cheaper in the developed countries), labour by education and hours, utilisation by various proxies (e.g. energy). Results show that in Western Europe there has been little or no TFP growth since 1998, Hungarian and Czech productivity stagnates since the financial crisis, the Visegrád countries converged until 2007, in the Visegrád countries there are more hours worked than in Western Europe, compared to German levels, and Hungary is the least productive out of the Visegrád countries. Aggregate productivity is a combination of within firm dynamics, resource allocation within and across sectors, and the performance of the public sector. Credit markets, labour market flexibility, technology adoption, managerial capabilities and institutions improvement would be needed. However, the researcher is stressed that it is easier to become a middle-income country being a low-income country, than taking the next step and evolving to a high-income country. Increasing the employment level is a social policy issue that will not drive growth.

The roundtable and discussion session provided further insights to the macroeconomic aspects of productivity. The panel was composed of **László BALOGH** (Ministry for National Economy, chair), **Petr MALECEK** (Ministry of Finance, Czech Republic), **Kamran KAZEMZADEH** (Federal Ministry of Finance, Austria), **Barnabás VIRÁG** (Central Bank of Hungary), **Jean-Luc SCHNEIDER** (OECD), **István KÓNYA** (Hungarian Academy of Sciences). The panel noted that measuring TFP has methodological caveats because in the models generally used, constant returns to scale are assumed, whereas recent developments reinforce that returns to scale are increasing. There are models (e.g. at the firm level), which can take on board the increasing returns to scale. The return to scale in the production function may not necessarily be constant, however, it remains unexplored if it is due to technology or competition rules. The case of Austria may illustrate the difficulties of catching up. The development between 1953 and 1991 can be described as a gradual opening to the world, and comparison was made foremost with countries that had similar capital intensities. The attraction of foreign capital, the

pegging of the foreign exchange to the deutschmark and the ability to control wages contributed to export-led growth. Infant industries were protected. The Hungarian case shows that beside the supply side, the demand side should also be looked at. The demand environment is still weak and the economy of 10 European countries is still at the 2007 levels. The provision of credit to SMEs is a factor that has to be addressed. As regards the exchange rates, the fully flexible exchange rate mechanism contributes to exports and the GDP. From a more general standpoint, there are question marks as regards IPR, which contributes to the creation of natural monopolies. Institutional stability, which is especially important for SMEs, remains an important key to productivity. Generally, as the panellists and discussants noted, we also have to get used to the idea that global productivity is slower.

3. Micro analysis: Investments, value chains and competitiveness of the firms

The second session was opened by **Michael GESTRIN** (OECD), whose presentation focused on trade, FDI, spillovers. 8 years after the financial crisis, FDI flow still struggles, the ratio of global FDI to trade in goods and the share of FDI in GDP are in decline. Market distortions have been an important driver of FDI in the past: they were somewhat forced investments, because of the existence of prohibitive tariffs, weak IPR and contract enforcement as well as weak quality controls. Such FDI became engaged in intra-firm trade. Removing the market distortions reduces the need for certain types of FDI: the core business remains and former intra-firm trade may transform into arm's length trade. In emerging markets, domestic M&A investment is outpacing cross-border M&A, whereas cross-border divestments in emerging markets are on the rise. The share of cross-border M&A outside of core business is declining. International investment policy can support productivity in various ways, including open and unconstrained capital accounts, removing investment and trade restrictions, and long-term investments in basic research and addressing the skills gap.

László HALPERN (Hungarian Academy of Sciences) started his presentation by underlining that in the case of innovating firms, the increase in ULC does not hurt exports, an increase in ULC does not lead to loss of TFP necessarily. Hungarian companies differ by their internationalisation status: there are non-trader, indirect exporter, direct exporter, and FDI maker companies in the economy. FDI-firms lead the size and TFP rankings followed by firms exporting both directly and indirectly. Indirect exporters and non-exporters are at the bottom of the rankings. In a structural model, the results of an econometric analysis show that in Hungary a relatively low direct return to R&D can be detected, however, innovative firms are 30% more productive; there is a weaker relationship between R&D and innovation for foreign firms; innovation is strongly related to different export margins; state subsidy has effects on innovation and R&D. The analysis of foreign trade can also contribute to our understanding of productivity patterns. One-half of firms do not import at all; firms which are larger or have been foreign owned are more likely to import. Import spending is concentrated on a few core products; firms spend little on their remaining imports. The extensive margin plays a large role in explaining both the aggregate trend and the firm-level fluctuations in import growth. Firms engaged in imports have substantial gains, which contributes to increased levels of productivity. One fifth of the TFP increase between 1993 and 2002 can be attributed to the use of imported intermediate inputs.

The micro-level analyses presented were supplemented and commented by the roundtable and discussion session that followed. The panel was composed of **László TURÓCZY** (Ministry for National Economy, chair), **Syed Akhtar MAHMOOD** (The World Bank Group), **Maciej ALBINOWSKI** (Ministry of Finance, Poland), **Andrea SZALAVETZ** (Hungarian Academy of Sciences), **Michael GESTRIN** (OECD),

László HALPERN (Hungarian Academy of Sciences). The panel emphasised that to increase productivity and knowledge diffusion, appropriate policies are needed. Policy shall steer an interface to design regulatory reforms and – through delivery – implement the policy measures. There can be a trade-off between stability and the need for change, therefore, predictability should be emphasised. Investors and businesses have more interest in predictability, for which consultations on policy are required. In early stages of catching up, FDI was needed to join in global networks, today FDI to upgrade the activities is needed. The question is, however, if spillover is substantial and the value captured in value chains actually increases in the home economy. There is some evidence that development trajectories do not change and lead firms still manage to capture large portions of the value added. The issue at stake may not be simplified to FDI and domestic capital, the currently evolving pattern of productivity involves more complex phenomena. Increased linkages between global and national frontier firms through global relationship are perhaps the first step. Today the FDI pattern is less about greenfield investment and more about that the MNE consumes the SME. The question of how firms cooperate and compete is an important one. The contribution of FDI to technology diffusion (thereby improving the aggregate productivity) may better be fostered by mergers and acquisitions by foreign firms than by greenfield investments. As a country-case, Poland has had a policy mix of attracting FDI, predictability, favourable labour costs and enhanced supplier networks. There is empirical evidence of positive spillovers as, for example, FDI in services had beneficial impact on productivity in manufacturing. The gap between Poland and developed economies has largely closed in the past 10 years.

4. Lifelong learning, skills and individual productivity

Muge Adalet MCGOWAN (OECD) started the third session with her presentation on skills mismatch, labour productivity and public policy. She claimed that differences in GDP per capita mostly reflect labour productivity gaps, but firms are heterogeneous. In a well-functioning economy, global frontier firms innovate and their technologies diffuse to other firms whereas the growth of productive firms is supported also by the downsizing and exit of less productive firms. If the reallocation of resources (including human resources) is efficient, returns to innovation and technology adoption may grow. However, policy weaknesses can hinder the efficient reallocation mechanisms. Education policy changes take long time, framework policies shorter time to realize, however, the stock of skills need to be increased and the allocation of the existing stock of skills need to be better. Meanwhile, a slowdown in the rate of human capital accumulation is projected and the returns to better allocating skills are expected to rise. Nevertheless, cross-country differences in skill mismatch are significant and over-skilling is more prevalent than under-skilling. Over-skilling might be good from the viewpoint of a single firm, but entails aggregate costs if it constrains the growth of more productive firms. Policies that affect the mobility of resources across firms seems to be beneficial beside the needed education policy steps: skills mismatch may account for a substantial portion of the productivity gap. Reducing skill mismatch requires a broader range of policies related to the entry and exit of firms, labour mobility and education.

In his presentation, **János KÖLLŐ** (Hungarian Academy of Sciences) first pointed to the important links between productivity and skills: (i) enhanced skills are needed to accomplish more difficult and complex tasks, (ii) skills are complementary to capital as human capital accumulation promotes investments in physical capital and R&D, (iii) better and more educated workers pass on their knowledge to other workers, (iv) new technologies stimulate/enforce post-school skills accumulation. The sources of

knowledge include family and early childhood intervention/support, school-based education, vocational training, higher education, informal learning, knowledge spillovers between firms. In terms of school education, Hungary used to perform well, however, a decline can be seen since 1999. In the PISA tests, there had been some improvement until 2009, but results are poor in 2012. There is a strong correlation between parental background and performance, adverse peer effects and adversely selected teachers can be detected especially in bad schools. Students enter vocational training schools after insufficient prior general education and vocational training develops basic competencies less than other forms of secondary education. VTS- based qualifications lose their market value during the life cycle and the insufficient basic competencies hinder adaptation to new technologies. Higher education data do not support the hypothesis of 'over-education'. The fraction of graduates is below the OECD average and graduates' contribution to aggregate employment growth is outstanding. The bulk of cognitive and (especially) non-cognitive skills are accumulated in informal ways. This is particularly important for people, who leave the educational system early. 24 activities (such as school or community group, trial and error, the collection of items, hobby, recreation and sports etc.) raise non-cognitive skills and those involved in more have better perspectives on the labour market, too. There are positive impacts on employees interfering with MNE environments.

The skills and learning related aspects of productivity were further fine-tuned in the roundtable and discussion. Panellists included **László ODRÓBINA** (Ministry for National Economy, chair), **Marc SURCHAT** (Chair, Working Party No. 1 on Macroeconomic and Structural Issues at the OECD), **Muge ADALET MCGOWAN** (OECD), János KÖLLŐ (Hungarian Academy of Sciences), **Gábor HALÁSZ** (Hungarian Institute for Educational Research and Development), **Dániel HORN** (Hungarian Academy of Sciences), **Márton CSILLAG** (Budapest Institute). The panel agreed that efficient closing of the skills gap is highly country-specific. The most important factors include managerial qualities, efficiency of the legal system, IPR protection and university-industry linkages. The OECD's skill strategy emphasises four interlinked policy directions, namely (i) skills formation, (ii) skills activation, (iii) skills utilisation, (iv) governance of the skills system. For the economy, there are within-firms solutions among the HR techniques, which enhance adaptation. To help the reallocation of skills, acknowledging their quality is essential. Here platforms and private institutions can help. In order to develop the skills and reduce the skills mismatch, transferable skills (and basic qualifications, but also English-language skills) are needed along with non-cognitive and entrepreneurial skills. It is possible to manage productivity enhancement and social objectives at the same time. Family policies and active employment policies can also help a lot and the business and policy environment for young firms does matter, too, so that they shall grow easily. As regards foreign firms, labour cost matters when the foreign investor has already deployed capacities in the country – beforehand other, soft factors are more important. Also in this regard, the four C skills – cooperation, critical thinking, creativity, communication – are among the crucial ones. As an example for policy renewal, the Polish case was mentioned: the country decided to raise the number of years at lower education levels and also allowed for substantial autonomy of the schools. As a result, the basic skills are improving and expected to further improve, which could have substantial beneficial effects on productivity. In the case of Hungary there is no evidence yet if dual education is effective – some follow-up measures would be important.