BUDAPEST, 26-27 June 2017

2017 CONFERENCE OF THE GLOBAL FORUM ON PRODUCTIVITY

OPENNESS, GLOBAL VALUE CHAINS, AND PRODUCTIVITY-ENHANCING POLICIES

HOSTED BY HUNGARY

SUMMARY REPORT

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26-27 JUNE 2017 BUDAPEST

GLOBAL FORUM ON PRODUCTIVITY

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The Global Forum on Productivity (GFP) was launched by the OECD in 2015 to foster international co-operation between public bodies with responsibility for promoting productivity-enhancing policies. The GFP is a platform where participants convene to exchange information and data, discuss best practices and frontier-research findings, and undertake joint productivity analysis. The work programme of the GFP is guided by a Steering Committee of countries and supported by the work of the OECD Secretariat.

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SUMMARY OF THE 2017 CONFERENCE OF THE GLOBAL FORUM ON PRODUCTIVITY BUDAPEST, 26-27 JUNE 2017

The OECD's Global Forum on Productivity (GFP) held its 2017 annual conference in Budapest, Hungary. Over 180 participants from 36 countries were represented. This included all of the 19 GFP Steering Group members, 30 of the 35 OECD member countries, one accession country (Costa Rica), Brazil and the Russian Federation among non-OECD G20 countries and Barbados, Romania and United Arab Emirates. The GFP website with key conference background papers can be found here: http://oe.cd/GFP2017.

Day 1: Welcome remarks

The 2016 conference opened with a speech from, **Ágnes Hornung (Minister of State for Financial Affairs, Ministry for National Economy, Hungary)** who highlighted the timeliness of the discussions in the international research and policy agenda, but also the pertinence of hosting the conference in Hungary. Hungary, being the tenth most globalized economy in the world and number one in the Central Eastern European region, particularly enjoyed the benefits from economic openness for many years, although globalisation also brought about new challenges. For instance, excessive export concentration and the split of the economy between multinationals and SMEs now constitute structural challenges and economic risks. This development is also related to the widening productivity gap between companies, as few multinational companies have benefitted the most from the cyclical upturn. At the same time, the rise of digital technologies and the increasing share of services within the economy have transformed the original nature of global value chains. To address the challenges posed by the productivity slowdown and to strengthen Hungary's competitiveness, several steps have already been taken, including through the adjustment of minimum wages, the decrease of corporate income tax (CIT) rate, and the setting-up of a Competitiveness Council.

OECD Secretary-General, Angel Gurría, emphasised the relevance of the overarching theme and its ubiquity in the work done across the OECD culminating in the 2017 Ministerial Council Meeting with a special focus on globalisation. As for the productivity aspect of globalisation, several initiatives at the OECD, e.g. the OECD Trade in Value Added Initiative (TiVA), the Services Trade Restrictiveness Index (STRI), as well as research conducted under the heading of the GFP, have already contributed to deepening our understanding of the interlinkages between the two, but more needs to be done, especially with a view to firm-level analysis. Mr. Gurría further called for new approaches to design productivity-enhancing policies while taking into account their distributional aspects. This would help preventing political backlashes, which can result in mistaken and harmful policies, including protectionism. However, ensuring the inclusive sharing of benefits offered by the cross-border movements of goods, services, capital, people and ideas, requires governments to go beyond the traditional functions of the welfare state and engage in greater international co-operation. This holds especially true for areas where more effective rules would help ensure a more level playing field, such as corporate governance, responsible business conduct and combatting corruption. Vigorous competition also requires minimising the obstacles to the growth of small and medium-sized enterprises. In that context, the OECD is developing a joint SME strategy with the Hungarian government. Mr. Gurría concluded by affirming the GFP's ability to inform policy, among others through the findings of last year's conference, which are summarised in a special issue of the International Productivity Monitor.

Keynote discussion: The links between trade, GVCs and productivity

The dialogue between **Karolina Ekholm (Swedish Ministry of Finance)** and **Catherine L. Mann (OECD)** started by exploring the link between GVCs and productivity. Karolina Ekholm noted that there are good reasons to believe that GVC participation has positive repercussions on productivity because, beyond the usual country-level comparative advantages, GVCs allow cost reduction and specialization at a fine level of detail in tasks or activities at the sectoral and even firm levels across countries. However these effects are difficult to capture in the aggregate because there are a number of confounding factors. Firm-level research is therefore essential.

At firm level, GVCs allow access to a cheaper and larger variety of inputs and this has both direct and indirect effects on aggregate productivity. Other channels activated by GVCs are knowledge transfers, spillovers and economies of scale. Also, GVCs allow to combine the technological know how of firms in advanced economies with the cheap labour of emerging economies. However, Karolina Ekholm also stressed that while there is wide evidence of technology transfer related to GVCs, the transfer of knowledge is less clear.

Catherine L. Mann then wondered whether the importance of firm size and economies of scale in GVCs would be an obstacle for the ability of domestic SMEs to participate in them. Karolina Ekholm replied that nowadays GVCs are not only spread out among small open economies, where large MNEs dominate markets, but also in large and relatively closed economies, where a large network of SMEs can participate in value chains.

Catherine L. Mann noted that from a regional angle this generated important concerns, as some regions were declining and others booming partly due to exposure to GVCs. She also wondered to what extent in this context GVCs were benefitting workers. Karolina Ekholm replied that trade flows induced by GVCs increase purchasing power by allowing for cheaper consumer goods. She also noted however that this is not sufficient because income gains are lacking. Offshoring of manufacturing jobs is a fact, even though the decline in manufacturing jobs is also due to other forces, such as labour saving technological progress and the demand shift towards services. Another fact is the hollowing out of the workforce, with the loss of middle skilled jobs. These were jobs characterized by decent pay even in the absence of good education and located even outside the big cities. It is not clear how these jobs can be replaced today, even though in big cities it is easier because they can be absorbed in booming services. Nonetheless this is a typical phenomenon of structural adjustment that has already been experienced in the past by advanced economies. And the solution is to protect workers not jobs, which requires social insurance and good labour market policies as well as targeted regional policies.

Catherine L. Mann wondered if there is a way to anticipate these changes and better prepare for them. She remarked that, much in the same way as for financial market crises, it would be better to take the necessary measures ex ante rather than to clean up the mess ex post. How to ensure individual and regional resilience to these shocks? What package of policies is needed? Karolina Eckholm stressed that the changes induced by GVC propagation often happened too suddenly to be foreseen. Even though big cities are often more able to absorb these shocks, policy-wise it is impossible to leave the rest of the country lagging behind. One can try to prepare, for instance by climbing up the value added ladder thanks to technological advances. What is needed is a combination of openness, protection of workers, education (especially the appropriate basic level of education), active labour market policies and social insurance, implemented in a way that prevents moral hazard and keeps people in the labour force. Also one way the central government could help is by relocating government agencies to declining regions, with the corresponding highly specialized skills.

Next, both Catherine L. Mann and Karolina Ekholm highlighted that -- in spite of increasing openness, GVC development and ongoing technical progress -- aggregate productivity was slowing down, which raises a real puzzle for policy makers. Karolina Ekholm noted that one important factor behind the slowdown is weak demand and the ensuing weak investment, which she thought might be reversed in the future. But there is also an important trade issue. Past developments, with the irruption of China and eastern EU in the world economy, have been events that changed the global equilibrium, but they may not be replicable in the future. They have led to global adjustments in the matching of suppliers and customers notably boosting trade in intermediate inputs. However, it would seem that we are currently in a pause maybe due to the need to "digest" these disruptive changes to the global economy.

Catherine L. Mann objected that we are also observing a pause in the drive for multilateral trade agreements (MTA) and that the opening up of services markets has been more limited and is currently stalling as well. At the same time there is also evidence (e.g. in the OECD-GFP background paper to the conference) that the concentration of GVC networks has remained strong and relatively stable in manufacturing, while GVCs have been diffusing more widely in some services. In the light of this, Catherine L. Mann wondered whether these GVC developments were reflecting only the intrinsic characteristics of services or also the distorting effects of service sector policies and regulations.

On the MTA issue, Karolina Ekholm acknowledged that there was a disturbing danger that the United States may lose interest in such agreements, rolling back their commitment to them, and that developing countries may become more interested in unilateral liberalization of trade and FDI. Catherine L. Mann stressed that a collection of unilateral liberalisations is not equivalent to a MTA, because of trade diversion and lack of necessary coordination in many areas. Karolina Ekholm noted that, in such a situation the EU has an increasingly important role to play, stepping up efforts to open up world trade, for instance looking for other partners as well, such as India, who may realize that such partnership is currently in their own interest.

On the services trade issue, Karolina Ekholm noted that there are natural barriers to the fragmentation of production processes in services, even though the next phase of GVC development could very well be the disembodiment of services delivery from people, as technology advances. But both Karolina Ekholm and Catherine L. Mann also reminded that policy-makers have a large role to play in this domain as too many regulatory and policy barriers to trade in services still exist in the world economy.

High-level policy panel: Benefits from openness and GVCs for all – what are the different regional challenges and what is the scope for policy action?

In his introductory remarks, **Mihály Varga (Minister for National Economy, Hungary**) said that global changes compel all countries to adjust their policies. Hungary has introduced reforms for several years to boost investment, reduce taxes, and facilitate job creation. With the Industry 4.0 National Technological platforms, SMEs and entrepreneurs can collaborate with GVCs. Hungary has lowered the corporate income tax rate to 9%, the lowest in the EU, and it also reduced social security contributions. The Minister said that these tax cuts help firms improve their competitiveness. He concluded by saying that every step to improve productivity is good for citizens.

Opening up the discussion, **Manuel Caldeira Cabral (Minister of Economy, Portugal)** said that countries implementing structural reforms have not always seen results in terms of productivity. Recessions have been deeper and longer than expected, with consequences such as slow entry of young people in the labour market, thus depriving firms from workers mastering modern technologies. In order to integrate the youth, macroeconomic conditions must be improved, said the Minister. He pointed to Portugal's Industry 4.0, which focuses on digitalization and quality. He also pointed to nearshoring opportunities, with new technologies allowing SMEs to customize products and deliver them rapidly.

Peter Kazimír (Minister of Finance, Slovak Republic) said that participation in GVCs allows the combination of foreign technologies with domestic labour. Slovakia has become a global hub of automakers and participation in GVC has helped the country become more resilient in the face of external shocks. Thanks to this industry, Slovakia has rebounded after the crisis. The country is now one of Germany's largest European trade partners, which is beneficial for economic growth.

Philipp Steinberg (Director General, Ministry of Economy, Germany) agreed that Germany is doing well, but nonetheless pointed to the problem of low productivity growth, as elsewhere in the EU. He agreed that GVC participation enhances productivity, but it also leads to greater propagation of shocks. Participation in GVCs poses challenges in terms of innovation and skills, which calls for policies to upgrade SMEs and to help people who are left behind. Finally, he warned against tax competition, which could lead to race to the bottom.

Lamia Kamal-Chaoui (OECD) said that SMEs can improve their export capacity by connecting to MNEs. In Germany, many SMEs are very dynamic and well connected, others are less connected, but they play an important social role. SMEs of small size tend to be less productive, so it is important to remove obstacles to their growth. Bad framework conditions are more costly for SMEs because it is difficult for them to comply with regulations and rules.

Bernard Hoekman (European University Institution in Florence) made a similar argument that trade costs are more prohibitive for SMEs, and that governments should work to reduce the cost of business services, such as logistics. For this purpose, governments should revive the WTO agreement on trade facilitation. In addition, barriers to trade in services, such as measured by the OECD STRI indicator should be removed, preferably in an international framework, such as WTO. Finally, he pointed to large potential gains from boosting productivity in services.

Lúcio Vinhas De Souza (European Commission) distinguished between global and regional value chains. He pointed to the high levels of value-added from trade between EU members due to regional GVCs, which has not declined since the financial crisis, as opposed to what happened in other regions that suffered more directly from the shock of China's integration into world trade flows. Core countries play a key role in Europe's regional GVC, such as Germany, and some countries have sharply increased their participation, helping to share the gains more widely. However, the UK, France and Italy have seen declines in their GVC participation, which creates some heterogeneity in the distribution of gains. Manufacturing GVCs may have plateaued, but more needs to be done to develop trade networks in services, which will require tacking some barriers, though these are partly structural.

The discussion focused on the usefulness of targeted policies to help SMEs participate in GVCs, given the obstacles that they face. Speakers agreed about the need to reduce administrative barriers faced by SMEs and also about the need to improve framework conditions. There was less agreement, however, about the usefulness of broad-based policies to help SMEs; one speaker pointed that many SMEs will never participate in GVCs, hence policies favouring all SMEs would be ineffective. The discussion pointed also to the difficulties faced by SMEs to access finance, especially when they need to scale up in Europe, where capital-market funding for them is limited. Participants discussed about the risks of tax competition, as seen in Canada and other countries. Finally speakers stressed the importance of education and training to help firms confront the challenges of digitalization and keep up with global competition.

Parallel session A1: How do we realise upgrading potential and knowledge spillovers from MNEs?

Gains from FDI and trade spillovers in Costa Rica.

Francisco Monge (Ministry of Foreign Trade, Costa Rica). Costa Rica hosts many FDI firms, which have helped to increase the diversification of the economy and the sophistication of exports. Nonetheless, productivity has stagnated, and even declined relative to the United States. There is a lot of heterogeneity among firms, with manufacturing firms operating in Free Trade Zones exhibiting high productivity levels, but not other firms. The paper uses a firm-level dataset over 2008-15 in the formal sector built from administrative records and comprising about 180,000 firms. It uses two models drawn from Ruan and Ugur (2005) for manufacturing firms and Haller (2005) for services to assess how domestic firms are sensitive to the presence of foreign firms, controlling for their export status, import competition, and concentration in the sector. The paper finds little spillover effets for firms in manufacturing, while in services foreign presence has a statistically significant effect at the 2-digit level. The results are preliminary and the authors plan further improvement.

The formation of supplier-buyer linkages – Survey from Hungary, Slovakia, and Romania.

Balázs Muraközy (Centre for Economic and Regional Studies, Hungarian Academy of Sciences). The author collected data from 1400 firms on their supplier-buyer linkages. The survey identifies the partners, length of relationship, how important are relations, what kind of innovation and cooperation has happened. The paper finds an average of 25-30 buyers for each firms, and 10-20 suppliers. Relationships last on average 10 years. Most partners are from the same country; other partners follow gravity. A lot of linkages are initiated by buyers or within the same group. A significant part of the relationship starts with an innovation – product and process innovations are complementary. There is a productivity premia from having many suppliers and having buyers from the same business groups. The survey provides useful evidence about important patterns in formation and operation of supply-buyer networks.

Import switching and productivity.

Elvira Prades (Bank of Spain). An internal devaluation has helped Spanish firms become more competitive within their own market. The paper uses firm-level data to capture firm heterogeneity and address the following issues: how did firms make their import choices during the crisis? Do we observe any import switching from foreign inputs towards domestically produced inputs? Can it be related to the internal devaluation process? How does import switching impact firm productivity? The author uses several datasets from the central bank's balance sheet office data (9,000 companies) and from CBB Registros Mercantiles (600,000 companies) as well as micro-data used by Bank of Spain to construct the balance of payments. The author finds tentative evidence that a proportion of firms are now producing with a higher share of domestically produced imports since 2012. This is taking place simultaneously with an internal devaluation process. The paper also finds that the usage of domestic inputs has to outweigh the well-known advantages of importing so as not to impact negatively on productivity. A policy implication is that reform in framework conditions are needed to boost further productivity and competitiveness gains.

Parallel session A2: How does the changing structure of GVCs impact productivity?

The Changing Structure of GVCs: Are Central Hubs Key for Productivity?

Jonathan Timmis (OECD) presented a background paper for the GFP conference, which uses "centrality" metrics to reflect the position within Global Value Chains (GVCs), identifying central hubs and peripheral countries and sectors, and their relationship with firm productivity growth. Applying these metrics to OECD ICIO data, revealed that there have been large changes in the structure of GVCs; with large shifts in some manufacturing value chains away from traditional centres of production, but also the rising importance of some types of services almost universally. There is the potential for policy to influence the position within GVCs, with the timing of EU accession of E. Europe correlated with their increasing centrality within Factory Europe. Using cross-country firm-level from ORBIS, the paper finds that the changing structure of GVCs can play a role in the catch up of firms, but the effects are heterogeneous across firms and countries. Firstly, becoming more central as a customer is associated with faster productivity growth of smaller or non-frontier firms, or firms in smaller or post-2004 EU member countries. But these correlations weaken with firm size or proximity to the frontier, such that there is no correlation over all firms in the data. Secondly, the average productivity (centrality weighted) of buyers matters for the productivity firms in our data overall, however this is particularly true for economies that are large or for non-frontier or smaller firms. Framework conditions (such as flexible labour market policy) appear to be important in translating the changing structure of GVCs into faster productivity growth of these non-frontier firms. However, there is no one-size-fits all policy, policies that support GVC integration are important for smaller / EU accession economies, but for firms overall in larger/higher income economies, what matters is the formation of highly productive foreign buyer/supplier networks.

Quantifying the Productivity Effects of Global Sourcing.

Filippo Vergara Caffarelli (Bank of Italy) analysed how changes in GVC sourcing (based on importing intermediates) and the structure of GVCs relate to the long-term productivity of country-sectors, using productivity data for 19 sectors and 34 countries over the 1990s and 2000s. The presentation began by noting that there has been limited evidence to quantify the productivity effects of GVCs at an aggregate level, and even less evidence on how the structure of GVCs matter for these productivity effects. The paper considers how these correlations differ by the structure of GVCs; distinguishing between those that are long, sequential production chains ("snakes") and wide, simultaneous production ("spiders") which was computed using input linkages reflected in US IO tables. Those country-sectors that increase GVC sourcing the most, also have the fastest TFP and labour productivity growth, and this is true across both snake and spider-type production networks. When TFP is decomposed into a technology parameter and a reallocation factor (building on Levchenko and Zhang's (2014) model), the author finds that sourcing in snake-type GVCs are correlated with changes in the technology parameter, whereas the reallocation factor is correlated with spider-type GVCs, so the structure of GVCs may matter for the channels through which TFP is impacted.

Trade and Growth in the Age of Global Value Chains

Carlo Altomonte (Università Bocconi) presented a paper re-examining the causal effect of trade on growth using a novel exogenous predictor of trade growth in the era of GVCs. He noted that although there is a positive relationship between trade and growth, measuring the causal effect is more difficult. Earlier research has tried to address this problem using historical events to predict exogenous changes in trade, but these events date before the surge of GVCs, and also do not consider value-added trade (only gross exports). His paper addresses the causal effect of trade and growth using a recent transport technology shock as an exogenous predictor of trade – in particular, whether countries have deep water ports, needed because of the arrival of new larger types of container ships. Using data for 40 countries and 34 sectors over 1995-2007, the paper finds that the presence of deep water ports is a strong predictor of trade growth. Using this instrument, the paper confirms the positive effect of trade on per capita income growth, and finds that the effect is channelled through both productivity and capital deepening. However, these effects are stronger for countries that also increase their GVC participation and upgrade their position from assembly to more sophisticated GVC activities, suggesting that positioning within GVCs matters for the trade-growth nexus.

Parallel session A3: How is the organisation of firm activities evolving, what are the productivity implications?

The productivity and management practices of manufacturing firms in the UK.

Richard Heys (Office for National Statistics, United Kingdom) began by documenting the United Kingdom's disappointing productivity performance over the past decade. The scale of the problem is vast, with the accumulated loss of productivity since 2008 equivalent to 18% of GDP, which could have raised enough taxes to pay for the NHS over the same period. Searching for answers to this aggregate problem, Heys turned to the firm level, with a particular focus on the role of managerial quality. To do so, a sub-sample of questions from the American Management Survey (particularly with respect to performance management) were issued to a sample of British manufacturing firms in 2015. The analysis uncovered a higher prevalence of structured management practices among larger firms, multinationals and family-owned but not family-managed firms. Management practice scores are strongly positively associated with both firm size (in terms of employment) and labour productivity (controlling for firm size, firm age and ownership type). Family-owned and managed firms – which account for around two-thirds of UK firms – have lower management scores, and in turn are around 20% less productive than other firms. Future research at the ONS will centre on: i) expanding the number of questions to cover more aspects of managerial capacity; ii) extend coverage of the management survey to the services sector; and iii) release new productivity estimates in terms of industry-region data, quarterly MFP and capital productivity.

Recruiting for small business growth: micro-level evidence.

Magnus Lodefalk (Örebro University) analysed the connection between the recruitment of leading personnel (managers and professionals) and the productivity growth of SMEs, using linked employee-employer (LEED) data for Swedish SMEs over 2001-2010. The baseline results suggested that hiring an additional leading personnel was associated with a non-trivial increase in TFP growth in the following year, consistent with the idea that the transfer of knowledge – particularly if it is tacit – is achieved via personal interactions. The size of this spillover, however, was larger for firms that had higher absorptive capacity, which was an increasing function of the share of high skilled workers, R&D status and provision of knowledge intensive services. Lodefalk also argued that technological laggard firms only benefited from the recruitment of leading personnel if they had sufficient absorptive capacity. While the study had the advantage of comprehensive coverage of firms owing to the use of Register data, the managerial indicator was derived from occupational codes, which made it difficult to distinguish between high and low level managers. Policy implications to emerge from the research included the relaxation of firing restrictions for SMEs and the provision of employee stock options to make it easier for SMEs to attract leading personnel.

Foreign acquisition and internal organisation.

Natalia P. Monteiro (University of Minho) exploited linked employee-employer (LEED) data for Portugal between 1991-2009 to identify a causal impact of foreign takeovers on the internal organisation and pay structure of firms. Foreign acquisition leads to: i) an expansion in the scale of operations (i.e. sales and labour productivity); ii) an increase in the number of hierarchical layers; iii) higher within-firm wage inequality, due to stronger positive effects on wages of top layer than lower layers, which can partly be explained by individual attributes (e.g. tenure); and iv) increased use of the intranet. These persistent effects on the internal organisation and within-firm pay structure do not apply to non-foreign acquisitions suggesting that it is the type of acquisition – i.e. foreign acquisition – rather than acquisition per se that matters. These findings accord with a theory of knowledge-based hierarchies in which foreign takeovers lead to improved productivity, higher demand or reduced communication costs within the acquired firms.

Key points from the parallel sessions

Ana Gouveia (Co-chair of the Steering Group of the Global Forum on Productivity) summarised the key points to emerge from the session on realising the upgrading potential and knowledge spillovers from multi-national enterprises (MNEs). Evidence from Costa Rica (presented by **Francisco Monge**) showed important productivity spillovers from FDI and trade in the services, while these benefits were largely absent in the manufacturing sector. A key question to emerge was whether there was scope for policy to create a more conducive environment for productivity spillovers from FDI and trade. In turn, cross-country survey data for three Eastern European countries (presented by **Balász Muraközy**) showed that SMEs were not particularly active in grasping the benefits of supplier-buyer linkages. Important linkages with innovation also emerged while there was evidence that the diversification of suppliers was associated with productivity gains. Finally, a study of Spanish firms (delivered by **Elvira Prades**) showed that internal devaluation triggered significant import-switching, while access to diversified products delivered significant productivity gains.

Stefan Profit (Co-chair of the Steering Group of the Global Forum on Productivity) noted that the three papers presented in the session on the productivity impacts of the changing structure of GVCs produced compatible results, despite their different methodologies. The papers also reaffirmed the empirical research of a positive effect of trade on growth and that the changing structure of GVCs can shape this relationship via reallocation effects (i.e. sourcing of cheaper inputs) or innovation effects (i.e. technology spillovers). A paper on GVC hubs and centrality (presented by Jonathan Timmis) showed that while some hubs were stable over time (i.e. US, Germany), China and Central and Eastern European countries have becoming increasingly important. Another paper (delivered by **Filippo Vergara Caffarelli**) showed that GVCs come in two shapes. “Snake-type” GVCs are sequential (or long and narrow) chains and a characterised by strong technology spillovers, while “spider-type” GVCs where one hubs sources inputs from different places are characterised by stronger reallocation effects.
The final paper (presented by **Carlo Altomonte**) used new empirical techniques – specifically, the availability of deep-water ports (relevant due to the arrival of new types of larger container ships) as an exogenous variable to predict trade – to reaffirm the empirical relationship between trade and growth. The position within GVCs shaped this relationship, however, with the largest benefits accruing to countries that upgrade their position from assembly activities.

Chiara Criscuolo (OECD) noted the complementary nature of the three papers presented in the session on firm organisation and productivity. Evidence for manufacturing firms in the United Kingdom (presented by **Richard Heys**) revealed significant differences across firms in the use of structured management practices, although the similarity in the use of such practices by MNEs and family-owned but not family managed firms was particularly noteworthy. The research also showed that larger firms used structured management practices more, while the use of such practices was also positively correlated with labour productivity. In turn, analysis based on high-quality linked employee-employer (LEED) data for Sweden (delivered by **Magnus Lodefalk**) showed that the recruitment of leading personnel – i.e. managers and professionals – delivered productivity gains for SMEs, with the addition of professionals driving the results. Absorptive capacity, however, shaped the productivity benefits of hiring leading personnel, suggesting that laggard firms can benefit most provided they have sufficient absorptive capacity. Finally, evidence from Portuguese LEED data (presented by **Natalia P. Monteiro**) showed that foreign acquisition leads to: i) an expansion in the scale of operations; ii) an increase in the number of hierarchical layers; iii) higher within-firm wage inequality. Foreign-acquired firms also use digital technologies (i.e. the intranet) better, which lowers internal communications costs within the firm.

László Balogh (Deputy State Secretary for Financial Policy, Ministry for National Economy) noted the rich research and debate highlighted in the three sessions as well as the six emerging common features. First, trade and openness matters for productivity. Second, more granular data improves our chances of understanding the underlying growth process and in turn frame policy implications. Third, the countries which joined the European Union in 2004 have clearly contributed to the development of GVCs. Fourth, MNEs are a key source of knowledge transfer and thus FDI and openness is central to supporting knowledge transfer and productivity growth. Fifth, managerial quality can have profound impacts on productivity. Finally, product and labour market regulations are likely to shape the productivity benefits of internalisation.

Day 2: Keynote address

Openness, Global Value Chains and Productivity

Paola Conconi (Université Libre de Bruxelles) began by discussing the emergence of GVCs, where the advances of ICT combined with lower trade barrier (tariffs, transport costs etc.) have facilitated the fragmentation of production processes across firms and countries. For example, Honda cars comprise around 20-30 thousand parts produced by hundreds of firms across various countries. Trade models of goods and firms have traditionally been defined within national boundaries. However, the fragmentation of production has called for new models to be taken to the data. The address focused on two such applications.

The first application reflects which parts of the value chain to control within affiliates, and which parts to outsource to other firms (Alfaro, Antras, Chor and Conconi, 2015). In the model there is a trade-off, with outsourcing leading to greater quality provision by external suppliers, but affiliate production gives the firm greater control (and hence bargaining power). The model suggests that demand elasticity of the final product determines whether input stages are sequential complements or substitutes (i.e. whether upstream quality inputs incentivises the provision of quality inputs downstream or not) and hence whether upstream or downstream parts of the production are outsourced or through affiliates. These choices are further influenced by the ability to write contracts for inputs (i.e. with other firms). Using firm-level Worldbase data (which is similar to ORBIS) and US IO tables, she finds evidence consistent with these predictions.

The second application considers to what extent the proliferation of regional trade agreements (including the EU) leads to increased regional sourcing of inputs (Conconi, Garcia-Santana, Puccio and Venturini, 2016). Input sourcing decisions could be affected through lower tariffs within the free trade area (FTA), but also because of rules of origin requirements. These requirements are intended to ensure that goods being exported at preferential rates from one FTA partner to another truly originate from the area, however they can incentivise switching from input suppliers outside the FTA to those inside the region. The paper focuses on NAFTA and creates a new dataset detailing rules of origin restrictions for each detailed input (e.g. cotton / yarn) used in each product (e.g. men's / boys' trousers). The analysis focuses on Mexico given these rules were inherited from an existing agreement between Canada and the

US. Matching this to detailed data on Mexican trade in intermediates finds that imports of these restricted goods from 3rd countries outside of NAFTA fell by between 5% and 52% (of their actual import growth). Thus rules of origin requirements seem to shift protection to inputs, and this protection is much higher than just suggested by input tariffs.

The final part of the address briefly highlighted some preliminary work. The first paper examines the political economy of trade policy, bringing in the dimension of firm lobbying with the US on free trade agreements since 1995. In particular, large vs small and also multinational firms are likely to have very different preferences over FTAs. The second paper uses rich Belgian data on domestic supplier networks to examine the implications of joining a MNE as an affiliate, and how this impacts global/domestic sourcing, product range and production.

Parallel session B1: How to connect domestic to global production networks?

Local organization of the production network and firms' productivity.

Emmanuel Dhyne (Belgian National Bank) opened the session with a paper on « Local sourcing and production efficiency ». Dhyne's analysis was based on an exhaustive dataset of the Belgian National Bank including several millions of local transactions among Belgian firms. Firms outsource tasks rather than intermediate goods, each focusing on the subset of tasks in which it has a comparative production or managerial advantage. The author analyses the characteristics of both firms that outsource and their suppliers mainly from an efficiency angle. Consistent with theoretical models of value chains, outsourcing turns out to involve fixed costs, which are the more affordable the more the firm is efficient. Accordingly, Dhynes finds that, on average, firms that outsource the most (i.e. have the largest number of suppliers) are also the most productive and they are linked to the most productive suppliers. Proximity and size helps being a supplier, so that value chains follow a predictable pecking order, but the importance of these factors is reduced by stronger efficiency. In conclusion, high productivity is a key condition for both generating and joining value chains.

Global networks, co-operation and value production in the German Mittelstand.

Michael Holz (Institut for Mittelstandsforschung) reported on the results of a survey conducted on a small number of firms and several business associations that include SME suppliers along global value chains. The survey highlighted that several factors concur in the implementation of supplier-producer relationships along value chains and that these relationships are extremely complex. Among the most important factors, respondents included different market conditions and ownership structures of leading companies, with different cultures and business strategies deriving from being listed or not and from being family-owned and SMEs vs large public companies. As to complexity, major factors appeared to be the exercise of economic power by leading firms during transactions, entailing pressures on suppliers to reduce cost, innovate and internationalise, to which SMEs have differing abilities to respond proactively. Another oft-cited factor was the establishment of a dependency relationship, from which SMEs can escape only by diversifying their links, intensifying their innovation efforts and bundling resources with other suppliers. Aside from these difficulties, respondents saw clear advantages from integrating value chains, such as reinforcing growth opportunities, making the most of specialization and of innovation incentives, acquiring business security from long-term partnerships and benefiting from technology and knowledge transfers from leading companies. From a policy point of view, the emphasis was put on encouraging openness, harmonise international standards and streamline domestic certification procedures, ensure the necessary (especially IT) infrastructure, reviewing and consolidating the legal framework for inter-firm cooperation along value chains, including via the establishment of efficient dispute settlement mechanisms.

Services Trade Restrictions.

Hildegunn Kyvik Nordas (OECD) summarized the main findings of an extensive study conducted under her supervision focusing on barriers to trade in services and their implications for trade and international investment, especially by SMEs. Based on the indicator of service trade restrictions (STRI) computed by the OECD for 44 countries and 22 sectors since 2014, she showed that these barriers remain high in a number of sectors and countries. These barriers have repercussions not only on economic outcomes (imports, exports and efficiency) in the restricted service sectors but also more widely in the economy given the large and increasing share of value added produced in other sectors (including prominently manufacturing) using the restricted service sectors as inputs. Nordas highlighted two important channels, unveiled by both sectoral and firm-level analysis, through which service trade restrictions hold back the ability of SMEs to join the global economy and enjoy the associated productivity gains. First, the burden of trade service restrictions that curb manufacturing exports is heterogeneous across firms, falling disproportionately on firms that have a lower turnover. Second, this burden (in terms of tariff equivalent) tends to be higher for less productive firms. All in all, service trade restrictions can affect aggregate trade and productivity outcomes by making difficult for firms that are small and far from the productivity frontier to grow, internationalise and catch up to best practice. Policies that lift these restrictions (e.g. related to licensing, standards, qualifications and lack of competition) can therefore have a significant impact on trade costs and aggregate performance.

Learning to import from your peers.

Miklós Koren (Central European University) concluded the session with a paper that identified significant knowledge spillovers from being proximate to firms that have experience in importing. He argued that benefiting from these peer effects is an important channel through which firms can join the global economy, with implications for policy. His findings were based on panel data covering the universe of Hungarian firms over a decade, which allowed matching of firm characteristics with their trade performance at the product level. He used two alternative empirical strategies to identify the causal effect of proximity to an importer (either spatially or via managerial networks) on the propensity of another firm to become an importer as well. His findings suggests that knowledge spillovers are effective when a firm is located near an importer, has a manager that used to work in an importing firm or is owned by a group in which importing firms operate. These effects are larger the larger and more efficient is the firm; the larger, more efficient and more internationalized is the importing peer; and the more similar are the products produced by the two firms. Based on these results, Koren infers that policies facilitating access to imports can have multiplier effects via knowledge spillovers on peers and suggests that some targeting of policies aimed at maximizing these peer effects could be desirable.

Parallel session B2: How can the productivity gains from participation in global networks be shared and inclusive?

Economic Upgrading through GVC participation.

Daria Taglioni (World Bank). While GVCs have brought many benefits globally, the paper has new evidence that not all countries have gained from participating in global value chains. The author stressed that social upgrading is often forgotten: social upgrading refers to measurable aspects of worker well-being (employment, wages, etc.) and enabling rights (right to bargain, freedom of association, etc.). The paper finds evidence that social upgrading brings even more growth in value added. The author's regression analysis shows that lower labour standards are negatively correlated with value added gains from GVC participation as a seller. The paper also finds that a better social system (such as unemployment benefits and pension) is positively correlated with economic upgrading through GVC participation. Lower environmental standards have the same effect. The author makes a taxonomy for GVC integration and upgrading, which consists of "best practice" experiences for a representative sample of countries from each world region. Four types of participation were presented (agricultural sellers, commodity sellers, other sellers, and buyers). FDI attraction is more important for resource-intensive sellers, while education quality is more important for manufacturing sellers. SMEs engage in GVCs at the initial stage or the final stage, not in the middle.

Do Multinationals Transfer Culture – Impact on gender inequality in China.

Heiwai Tang (Johns Hopkins University) noted that gender inequality is widespread around the world and that eliminating gender inequality would increase global GDP by USD 15 trillion by 2025. Nonetheless eliminating gender biases has been difficult, due to prejudices against groups in society linked to culture and historical roots. The paper studies how MNEs can channel their home culture through transfer to affiliates and spillover to domestic firms. It uses a multisector model with firm heterogeneity in productivity and biases against women and learning between firms. The paper uses the misallocation model of Hsieh and Klenow (2009) to quantify effects of gender discrimination on aggregate TFP and cultural effect of FDI. It finds that MNE's foreign affiliates tend to hire more women and appoint female managers, especially in countries with more gender-equal countries. This reflects standard corporate policies (Coca Cola, Walmart have explicit policies to hire a fraction of female workers). In terms of spillovers, the paper finds that domestic firms in cities with a large share of foreign firms tend to hire more women.

The effects of import competition on employment in Canada: Evidence from the 'China Shock'.

Andrew Sharpe (Center for the Study of Living Standards, Canada). The paper analyses whether the rise of China has affected employment in Canada. It exploits differences in the exposure to China competition across sectors to make estimates of the impact on employment. It looks at three effects: direct effect, input-output linkages, and effect on local labour market. It finds large direct effects in manufacturing industries (105,000 job losses over 2001-11, or 20.7% total decline), but not much evidence of important spillover effects through input-output linkages. Accounting for reallocation and aggregate demand effects within local labour markets, it finds 150,000 to 170,000 job losses over 2001-11, in particular large losses in exposed sectors (manufacturing) industries, partially offset by gains in non-exposed non-tradeable industries. The author stressed that this is not a comprehensive assessment of the welfare impact of trade within China, but the effects on the "losers" should not be ignored.

Increasing the productivity gains from participation in global networks for SMEs and places: what role for public policy?

Rudiger Ahrend (OECD) showed that productivity differs widely across regions, with cross-country differences. Bigger cities are more productive: this reflects in part the more highly educated population, but productivity is higher even controlling for sorting effect; productivity increases by 2-5% when size of population doubles. Administrative fragmentation is also correlated with lower city productivity. Productivity gaps between frontier and lagging regions have increased. Hence, aggregate labour productivity growth at the national level depends on the performance of regions: the catch-up of backward regions can play an important role for national productivity growth. The author also pointed to huge differences in rural areas: those close to cities are doing quite well, while remote rural areas are not doing well at all. The paper concluded with strategies to develop laggard regions, such as further specialisation in natural resources, integration in GVCs, and development of territorially-differentiated products and services through mobilisation of local assets – preference for local products – while avoiding subsidies or protection. Regions can be productive and inclusive at the same time.

Parallel session B3: How can pro-productivity institutions help to address national and global policy challenges?

László Turóczy (Deputy State Secretary for Economic Planning and Competitiveness, Ministry for National Economy) noted that many of the institutions covered in the GFP/IPM paper by Sean Dougherty and Andrea Renda were represented on the panel. **Donald Drummond** led off, asking the main motivation of setting up institutions as: 1) "Do we have a productivity problem?" and 2) "What can we do about it?". He pointed out that traditional OECD productivity prescriptions have included good framework policies, smart regulation, and similar recommendations. However, these policies have often not been enough, such as in the case of Canada and New Zealand, where productivity has lagged. Increasingly, there is a greater focus on the firm level, such as in work of the GFP, with the *Future of Productivity*. Productivity institutions can give greater weight to use of this type of data and link it to the policy process. Important for these bodies to work well is to have sufficient functional independence and enough connection to people who can deliver it politically, and potentially push governments "close to cliff" of reform possibility, but not "over the cliff". One key element is to have fluid movement between government and commission – for instance, to "second" or "deputize" core staff to it. Communication is crucial to reach out to stakeholders, with non-technical communication especially important. Talking to the stakeholders is also important, e.g. ask firms why policies did not work. Productivity commissions need time to do things in the right way, and should not be assessed on success or failure too quickly!

Murray Sherwin (Chair, NZ Productivity Commission) described New Zealand's experience with a weak productivity record, motivating the setting up of a Commission in 2011 under a formal legal act, which ensured durability. Their main approach is to carry out inquiries, to take small "bites", make recommendations and implement. Requests come in from ministers, which gives them "skin in the game". They can do two inquiries at a time, with a limited research budget. Lessons include importance of: *i*) a continued flow of inquiry topics; *ii*) commitment to high engagement and consultation; *iii*) commitment to transparency and publishing; iv) independence and removal from the political process – which helps to re-shape the public debate. While the government is not obliged to respond, they have a tradition of responding in writing, but it takes about a year. As there are few journalists who can handle the material, direct communication via social media is also required. Looking forward, there is a need to increasingly tie recommendations to the own research implemented by the commission.

In the ensuing discussion, some of the other institutions covered in the Secretariat's background paper discussed their institutional settings. **Erik Storm** (Deputy Director-General, Ministry of Finance, Norway), worried about low productivity growth trends. The Norwegian commission was set up temporarily for 2 years. Four to five members were professors, with also a joint member with Denmark's commission; the Secretariat was from the government. It did not include social partners directly, but included them in the process. It came up with 180 recommendations, from narrow-focused to broader ones. The government has responded to the report; but it is still difficult to say how well they "followed-up" and how thorough was the implementation, as a full assessment has not yet been done. The commission intends to do more work on microdata and public sector productivity.

Vincente García-Moreno (Director General, Productivity Unit, Ministry of Finance, Mexico) – touched upon three areas: 1) the productivity of the economy; 2) the need to bring together private sector and unions in dialogue; and 3) the implementation and follow-up on recommendations. The commission tried to link as much as 300 government programs to productivity, using specific indicators. In this context, regional work is taking on a growing role, with SEZs focused on the south of the country, especially aimed at design policies to increase inclusiveness. The Productivity Committee is led by the Ministry of Finance and also plays a role in co-ordinating research with non-governmental partners (such as MIT, Harvard University, World Bank, etc.) to improve the productivity diagnostics, and to carry out experimental evaluations.

Alfie Ulloa (Executive Secretary, Productivity Commission, Chile) – thanked the OECD for organizing this session on productivity institutions. Many things have happened in this area since Lisbon and this discussion is therefore welcome. The main policy objectives in Chile are to close the development gap and improve the distribution of income. This is a complex challenge that involved for instance doing research on the mining industry, – where the commission had to subcontract some work to an intermediary. The results suggest that once account is taken of more degradation, the decline in productivity amount to only 16%, instead of the reported 70% decline. In any event, there are huge gaps in mining productivity, both domestically and internationally. There was a feel that the final report was too long. (450 pages). New inquiries have been launched in other areas: a) vocational training (mandated); b) disruptive technologies (self-initiated); c) female participation (stocktaking). Looking ahead, the main challenges are perceived to be: i) data access; ii) engagement of government agencies; iii) lack of resources (14 staff is too limited); and iv) the limited duration of the commission, which has a sunsetting clause at July 2018. However, the current visibility and positioning of the commission is satisfactory, for instance it was cited in the presidential report.

Mary Veronica Tovsak Pleterski (Director, DG-ECFIN) expressed interest at hearing about what has been done by the various institutions. The EU faces slowing regional productivity growth: given the lack of exchange rate flexibility, there is a need to address country-specific shocks and productivity differences. The strategic reflection that followed the report by the Five Presidents, proposed the creation of National Productivity Boards to improve resilience. Their aim would be to implement multi-phased policies on productivity, based on high-quality and independent analysis. The recommendation was adopted by the European Council for the Eurozone, and was encouraged for non-Euro countries as well. So far, seven countries have designated these Boards, with four from the Eurozone; and Hungary among the non-Eurozone countries. A survey implemented by the Commission found that five members states are planning to set up a new body, while the others will appoint or adapt existing institutions. It is hoped that these bodies will reinforce policy dialogue and evaluation across countries and within the EU – with more *ex-ante* and *ex-post* policy evaluations. Oft cited issues are budget constraints, and legal status. The Commission is trying to make Productivity Boards a success, and there is a high expectation that this can play an important and useful function in Europe. In his comments the session chair confirmed that Hungary is setting up an independent board composed of staff from the Economic Ministry and academics.

Tadashi Yokoyama (Director, Cabinet Office, Japan) remarked that Japan has multiple institutions, but not a designated one. Existing institutions, which include some independent commissions, play many of the roles embedded in Productivity Commissions,, while the Cabinet Office plays a role in co-ordination. The Prime Minister also recently started a movement to advance productivity with a special focus on private sector's performance.

There were questions from floor about the trade-off between independence vs. long-term thinking. **Donald Drummond** argued that the bodies do not necessarily need to focus on the long-term. Commissions can also focus on immediate needs, to the extent that they raise challenging issues that require the need to "think big". **Murray Sherwin** noted that the commission needs to test the feasibility of recommended policies in order to gain credibility with government agencies. But, as the government can easily bury issues, stakeholder engagement is key to build a constituency for reform. To this end, the commission needs to make views known, and engage with opposition parties, in order to maintain independence. **Alfie Ulloa** said Chile's board is very broad; they had to fight for independence, while acting within a short-term window. **Vicente Garcia-Moreno** said that the existence of important tradeoffs must be a stimulus for implementing reforms. **Erik Storm** noted that small steps are important, too; and helping to stimulate debate in the country is a key role, with independence ensuring that difficult issues are addressed. **Mary Veronica Tovsak Pleterski** noted that building credibility is really important. Functional autonomy is key, while the government can still fund the Commission's activities. **Tadashi Yokoyama** noted that long-term thinking is key to their Cabinet office. Another question from the floor asked about the EC's role with respect to Productivity Boards, would they do more than facilitating their establishment? **Mary Veronica Tovsak Pleterski** said they would help facilitate productivity-enhancing structural reforms and their implementation, but countries needed good analysis and discussion on what can be done to reform. A final question arose mentioning the OECD's *Going for Growth* exercise, and asking if agencies take into consideration goals beyond growth, like inequality. **Alfie Ulloa** said that the real goal is helping to design policies that increase *welfare*. **Murray Sherwin** said their mandate is to improve productivity to attain better well-being, with broad objectives.

Key points from the parallel sessions and overall take-home messages

Giuseppe Nicoletti (OECD) summarized Session B1, which contained four papers, all using microdata. Some key messages included: 1) The most efficient firms outsource; 2) High productivity is essential, and can counteract some of the structural factors (e.g. size or distance) that prevent participation in GVCs; 3) based on Hungarian data, there appear to be peer effects among proximate firms, suggesting some role for targeted policies; 4) based on German data, bargaining power emerged as a source of concern in relationships between producers and suppliers in global value chains, especially for SMEs; 5) inappropriate policies (such as unnecessary regulatory stringency) are particularly problematic for firms that are small and far from the productivity frontier, preventing them to grow, internationalise and catch-up to best practice.

Alvaro Pereira (OECD) summarized Session B2, a wide-ranging micro-data intensive session, looking at what happens to GVCs in light of market forces. Empirical analysis shows that the "China-shock" caused some job loss, but limited. There was a bigger relative loss of employment in Canada than in the USA – and it was experienced mostly in manufacturing. Cities within regions also have important productivity effects – creating even bigger productivity shocks, with rural areas getting hit harder. Participants in GVCs are highly diverse. Policymakers need to look at the role of business ecosystems as a whole, and facilitate a good business environment. Another question the papers looked at was whether multinationals would transfer their culture to local firms. For instance, it was shown that foreign affiliates tend to hire more women, which helps to moderate gender discrimination, With positive effects on productivity.

László Turóczy (Deputy State Secretary for Economic Planning and Competitiveness, Ministry for National Economy) summarized Session B3 and shared experiences from seven panellists representing productivity institutions, framed by an OECD background paper. The degree of independence, budget, legal setup matter. They need to do research, and facilitate communication, include engagement with social partners. It is hard to find a good balance – governments need to be pushed to the edge of the cliff in order to promote reform, but not over the cliff. Independence is the most important factor to establish the credibility of these institutions. However, it does not necessarily need to be legal or financial: they mostly need freedom to think, and do research. Unbiased work is really critical. Also, institutions should not be evaluated too early, as it takes time to implement reforms. To make a difference the institutions need to "think big", rather than just do incremental.

Andy Wyckoff (OECD) expressed gratitude to the Hungarian hosts. He pointed out that GVCs have been shifting dramatically, and there has been an increasing share of value added in Eastern Europe, actually with a "pivot" around Germany. These ecosystems are very dynamic, and they promote productivity. As illustrated in the OECD-GFP background paper, centrality is key, but there is a shocking lack of integration in Latin America. MNEs are particularly important in Eastern Europe, with SMEs actually benefiting the most. A key to integration into GVCs is having the appropriate skills, with flexibility in labour markets playing an essential role. There is a strong correlation between skills and upgrading, requiring educational investments. In addition, ICT services are central everywhere, underlining the wide diffusion of digital technologies. Also, digitalisation of manufacturing could result in more near-shoring in the future, with disruptive technologies coming into the picture. To throw light on these issues, the GFP Workshop on Digitalisation in Berlin this September promises to be particularly useful.


Family picture – Global Forum on Productivity – 26 June 2017 – Vigado, Budapest.

http://oe.cd/GFP2017