CompNet The Competitiveness Research Network

13th CompNet annual conference:

Innovation, firm size, productivity and imbalances in the age of de-globalization

June 29-30 2017
European Commission, Brussels

Summary

Executive summary

The two-day conference held in Brussels in the European Commission premises provided a great opportunity for presenting the latest achievements of the Competitiveness Research Network and discussing research at the frontier.

Filippo di Mauro, CompNet Chairman, opened the conference by examining the last developments of the Network and showing the outcome of its recent expansion. After a transitionary period, now CompNet is an independent hub for research and policy-oriented analysis. It includes as partners the ECB, the European Commission, the EBRD and the EIB, as well as two prominent research centres such as the Halle Institute for Economic Research and the Tinbergen Institute. A number of national central banks and statistical offices are also associated and participate to the firm level based data collection.

During the two days, all policymakers attending the conference reiterated the relevance of the topics related to competitiveness and productivity, highlighting the importance of having such a research network active in the field. More specifically, Marco Buti, the Director General of DG Economic and Financial Affairs at the European Commission, and Lowri Evans, the Director General of the DG Internal Market, Industry, Entrepreneurship and SMEs, confirmed the still untapped room for collaboration between CompNet and the European Commission, and called for further research and policy advice. Moreover, chief economists from the EIB, the EBRD and the World Bank expressed strong interest in CompNet activities and committed to further tighten their collaboration. Benoit Cœuré, member of the ECB Executive Board, underlined that CompNet results can be very useful for the assessment of the transmission mechanism of the single monetary policy.

During the Conference a number of projects and initiatives connected to the work of CompNet were presented, including the EIB Group Survey on Investment and Investment Finance (EIBIS), the EBRD’s Business Environment and Enterprise Performance Survey (BEEPS) and the MultiProd project of the OECD.

On the academic side, critical contributions were provided by the three keynote speakers attending the conference: Marc Melitz (Harvard University), Chad Syverson (Chicago Booth) and Ufuk Ackigit (University of Chicago). Such contributions brought the discussion at the frontier of research on trade, innovation and resource allocation.

More specifically, professor Melitz presented his novel work on the relation between access to export markets, competition and innovation. Using a new theoretical model and very granular data, he showed that access to export markets generates both a market size effect and a competition effect. Professor Syverson underlined that the Hsieh and Klenow model – by now a standard for the assessment of resource reallocation – is based on rather strong assumptions. In his talk, he provided insights on the extent to which such assumptions can bias the overall assessment on reallocation, which calls for a careful approach in the use of that analytical framework. Professor Ackigit presented a new open model that allows analysing the link between trade policy and innovation. He showed that a protectionist policy would have very negative effect on long-run economic growth, and may lead to positive welfare gains in the short run only in the absence of retaliation.

Prominent scholars and policymakers attended the conference and presented their latest works, bringing the debate to the frontier of research. Each session was devoted to discuss the link between productivity and one of the following four topics: trade, financial markets, labour markets and global value chains.

For a detailed description of all these works and the major comments, we refer the reader to the rest of the summary.

Thursday, 29 June 2017

Introductory remarks

Filippo di Mauro, Chairman of CompNet

CompNet 13th conference was opened by the introductory remarks of Filippo di Mauro, CompNet Chairman. Firstly, he described the structure of the Network, its members and governance structure. He moved on to outline the recent achievements of CompNet, among which the consolidation of its new structure, improvement of codes and preparation for new database collection. The Chairman then illustrated the research output produced in the last year (10 working papers) and CompNet quotes in the press and official reports. Filippo Di Mauro finally expressed his wish for deeper interaction within existing members and increased cooperation with other institutions, in order to contribute to a deeper use of firm-level data for policy making.

Welcome address

Marco Buti, European Commission Director-General for Economic and Financial Affairs

With a real life example (his delay to the meeting caused by the traffic and the adjustment process that it took to arrive to the conference in time for the speech), Mr. Buti described what is done daily by policymakers: to consider the nature of the shock and the adjustment process that is optimal to react to it. This same kind of evaluation, on a more complex level, is what is being done daily at the Commission: processing information in order to find the best response to shocks, taking into account as many factors as possible.

CompNet will become more and more a vital part of the information gathering process, especially as far as ECFIN is concerned, and in particular it will be used to try and assess the developments of the supply side in euro area countries. Indeed, the euro area has been sluggish in its recovery from the Great Recession, and one of the primary objectives of ECFIN is to understand the possible drivers, particularly the drivers behind the slow TFP growth.

In the future, Marco Buti added, the Commission expects shocks to happen more and more at the sectoral level, rather than being symmetric. In order to properly address them, it will be vital to have detailed information at the sectoral level. But this is not the only way in which the CompNet dataset can be relevant for the Commission: with its potential to analyse labour market dynamics and wages, it can be helpful to understand the mechanics of price stability. The presence of carefully designed market power indicators allows for a better forecasting of the consequences of counter-cyclical policies, given that previous research has shown that the latter are only effective in presence of low market power.

Keynote speech

Marc Melitz, Harvard University

The theme of the keynote is the relationship between competition and innovation. Competition fosters innovation, but at the same time too much competition may hamper it, as firms would not make enough profit to finance it; hence, competition can be good and bad at the same time. The key to solving this paradox is that competition does not symmetrically affect all firm.

In the model presented by Melitz there are two key variables: the marginal utility of the consumer, which proxies competition, and the marginal cost of the firm, which represents firm efficiency. In the model, an increase in market size, driven by an increase in the number of consumers in the destination country, increased the profits of all firms, since the isoprofits simply make a parallel upward shift. However, a change in the degree of competition provokes a more complicated effect: since mark-ups are endogenous, isoprofits do not simply shift downwards but become steeper with the decrease of marginal cost of the firms. This means that an increase in competition causes an increase in profits for the efficient firms and also that, since the isoprofit is now steeper in the plane competition-efficiency, returns to further cost reductions (i.e.: innovation) get higher. In this setting, innovation is represented as an increase in productivity (i.e.: a cost reduction). Therefore, the effect on innovation of changes in the market environment will depend on the level of competition and on the baseline productivity of the firms: the more productive firms are, the more they will innovate in response to an increase in competition.

Empirical data seem to support the predictions of the model: the distribution of patents is very skewed, that is, innovative firms are concentrated, particularly among the exporters. Also, there are big differences in terms of wages, productivity, size, turnover, and some other key firm characteristics between innovative exporters and non-innovative exporters. These differences are much larger than the ones found between innovative non-exporters and non-innovative non-exporters.

Session 1

Trade and Productivity

Chair: Alessandro Turrini, DG ECFIN, European Commission

External Imbalances, Exchange Rate Regime and Firm Dynamics

Masashige Hamano, Waseda University and Francesco Pappadá*, Banque de France

The current account imbalances have been steadily increasing since the beginning of 2000s all around the world, especially because of the persistent negative deficit of the US and the consistently positive Asian surplus. The Great Recession had a cleansing effect, but still nowadays we observe a strong persistence of the imbalance phenomenon.

This paper addresses two issues: Can monetary policy play a role in these dynamics? What is its effect of firm performance distribution?

The paper finds that volatile exchange rates and low dispersion of firm size tend to reduce the persistence of the current account evolution. On the one hand, a higher exchange rate volatility tends to counterbalance current account dynamics. On the other hand, firm homogeneity implies that new exporters are similar to those who are already exporting. This means that the need for price adjustments is lower since the real supply side of the economy is able to react quicker to changes in foreign demand.

Referring to a model in which there is room for monetary policy (that influences the price level) and where there are both domestic and foreign produced goods, the authors find that with a fully reactive monetary policy there is no change in the productivity cut-off or in the firm size distribution. In fact, monetary policy completely offsets the effect of demand shocks. When monetary policy is static, instead, the exchange rates fully absorb the demand shocks. The size of the required exchange rate adjustment will depend in turn on the dispersion of firms' productivity. The reasons is that when firms are more homogeneous, the extensive margin of trade is larger, thus lower movements in the exchange rates are required for given external adjustment and the elasticity of exports to exchange rate movements is larger.

Discussion: The discussant, Gianmarco Ottaviano, suggested to include the intensive margin in the analysis as well in order to see its effect on the current account.

In addition, Marc Melitz further asked what would be the relation between monetary policy and firm heterogeneity given that the characteristics of the supply side could not be exogenous to monetary policy choices.

Margins of Trade: CEE Firms Before, During and After the Turmoil

Kamil Galuščák*, Czech National Bank; Jan Hagemejer (NBP); Tibor Lalinský (NBS); Ivan Sutóris (ČNB)

This is an empirical analysis on a novel firm-level, export focused, dataset for Czech Republic, Slovakia and Poland. In the Central and Eastern European countries exports and trade in general increased dramatically since the 1990s, together with their integration in the Global Value Chains. The aim of the paper is to track the evolution of the margins of trade (intensive and extensive) in CZ, SK and PL before, during and after the Great Recession. First, the authors estimate a weighted regression in a panel setup with firm and time fixed effects where the dependent variable is ?. Then, they regress growth rates (of what?) on dummies for destinations, product groups, firm size and import intensity. Each dummy is interacted with a period dummy (during the crisis, after the crisis). Results show that the 2008 crisis strongly, negatively affected what variable??? in CZ and SK, while had a much more limited impact on PL. The channel for this correlation is the extensive margin, which in 2008 provides a negative contribution to growth of exports. The shift share decomposition performed shows how the export composition evolved as a consequence of the crisis: for example, the intermediate goods are now an important component of exports and one of the drivers of the exports recovery after the global financial crisis, while their importance pre-2008 was far more limited. Also, after the crisis larger firms concentrate a higher share of exports than before 2008. Overall, however, the predictive effect of the single decomposition is much lower after 2008: this may be due to compositional effects, but further research is needed in this respect.

Discussion: The discussant, Gianmarco Ottaviano, restated that the extensive margin adjustment has a high explanatory power on export, especially before 2008. But why is that the case? It would be interesting to explore this issue further. It may be the case that entry and exit costs are higher in the period pre-2008. It would also be appropriate to leverage more on the fact that the analysis is based on data for 3 countries, as few remarks underlying the differences among them are made in the paper (which is still preliminary, however).

Import Competition and Productivity of Multi-Product Firms

Richard Bräuer, Halle Institute for Economic Research; Matthias Mertens, Halle Institute for Economic Research and Viktor Slavtchev*, Halle Institute for Economic Research

Using a dataset that covers around 15.000 German firms and contains information on prices and quantities of products sold over the period 2001-2014, the authors explore the causal nexus between import competition and productivity.

The TFP estimation relies on the Cobb-Douglas functional form and is made in real terms, using firm-specific deflators. Import competition is measured combining the weighted sum of import penetration ratio, by product line, for each firm. Finally, in order to address reverse causality issues, the estimation of the price impact is made via an instrumental variable approach, using the import penetration in other countries as IV for the import penetration in Germany.

The results are as follows: firstly, import competition does increase TFP, although to a larger extent if it is from rich/developed countries; Secondly, the impact of import competition on TFP growth depend on the export status and firm size. A similar narrative holds true for the distance to frontier, measured as the number of patents.

Discussion: The discussant, Gianmarco Ottaviano, observed that poor countries do not generate strong TFP gains with an increase in import competition. Single product firms are also not very much affected by import competition. What seems to have the largest effect on TFP gains is a shock to the core product of the firm. One possible reason is that the transmission channel is sales. Moreover, Marc Melitz stressed another important issue: the critical choice of productivity measurements. Using TFPQ instead of TFPR may be useful if we want to get rid of the mark-up and market power effect. However in the context of this using TFPR might be more useful.

Besides, there may be one more channel through which import competition affects TFP: the scale effect. In fact, market share may matter in determining the technology choice adopted, causing technological spillovers.

Keynote speech

Chad Syverson, University of Chicago, Booth School of Business

The second keynote speech of the day was held by Professor Syverson, from the Chicago Booth, who focused on misallocation measures. He considered the most used misallocation index, which comes from the model laid out in Hsieh-Klenow (2009), and discussed whether its strong assumptions are confirmed by the data. If they are not, they could introduce a bias in the misallocation indicators.

Being a model-based empirical method, Hsieh-Klenow`s outcomes depend on the ability of the model to explain data. The key implication of the HK setup is that, in absence of misallocation, the TFPR (revenue per unit input) is the same for all firms operating in the same sector. Actually, this implies that the elasticity of price with respect to the TFPQ (output per input in physical quantities) needs to be -1, which is a strong assumption often violated.

Focusing in a small database, although with detailed information on quantities and prices, Syverson's study shows that the assumptions of the model do not hold in a systematic way, which could critically affect the outcome. Furthermore, he found a low correlation between TFPQ estimated with the HK method and the one directly measured using the produced quantities. Moreover, the latter one has a strong negative correlation with prices, against the assumption and the outcome of HK. He also showed evidence of the correlation between producer-specific demand and TFPR, which again contradicts the assumptions of the model.

The speech concluded mentioning a way (work in progress) to quantify the departures, based on the estimation of the log-variance of the TFPR without distortion, which is equal to zero under the assumptions of Hsieh-Klenow.

Session 2

Financial Frictions and Productivity
Chair: Sergei Guriev, EBRD

Credit Constraints and Firm Productivity: New Evidence from Matched Bank-Firm Data
Francesco Manaresi*, Bank of Italy and Nicola Perri, Stanford University

Session 2 was opened by Francesco Manaresi, who presented his empirical paper on the impact of credit constraints on TFP in Italy, co-author with Nicola Perri. Starting from the Olley-Pakes decomposition, the study investigates if a contraction in credit supply affects not just the allocation term, but also the "within-firm" productivity levels.
After having identified the credit supply shock, they propose a decomposition of TFP which includes a credit component, in order to measure its impact on productivity. The main result is that idiosyncratic bank shock affects productivity. They also find that the effect on the growth rate lasts less than two years, while the effect on the levels is permanent. In particular, a drop in credit growth of around 12 p.p. (2006-2008) can explain 25% of the aggregate reduction in TFP over the same period.
Finally, they explore the possible channels and find a strong role played by the firm's decisions on exporting and innovating.

Discussion: The discussant, Fadi Hassan, questioned the use of TFPR, that also includes the effects of mark-ups and aggregate demand variations. Moreover, he pointed out a discrepancy between what the body of the paper shows (about credit supply shock) and what the titles mentions (credit constraints). According to him, it would not be clear if the analysis is capturing an increase in credit resulting from a bank shock or the effect of firm credit constraints. Hence, the question is whether the frictions are at the bank or at the firm side.

Financial Frictions and the Great Productivity Slowdown
Romain Duval, IMF; Gee Hee Hong*, IMF and Yannic Timmer, Trinity College

Gee H. Hong, from the IMF, presented the second paper of the session. As in the previous one, focus was on the "within-firm" component of productivity growth.
The authors investigate if some pre-crisis financial vulnerabilities, which are measurable from the balance-sheet data, can be a relevant determinant of the post-crisis within-firm TFP growth slowdown. The identification method relies on a Diff-in-Diff approach, comparing the more and the less vulnerable firms in a given sector, before and after the Crisis. They find a role of these vulnerabilities, in particular in terms of debt overhang and rollover risk, just in the post-Crisis context.
After that, the focus switched to the potential country heterogeneity. They included an interaction between vulnerabilities and changes in CDS spread of each country, in order to check if the more exposed banking systems tightened credit, amplifying the effect of financial frictions on TFP growth. Even including several controls, the relation remains significant. Lastly, the authors showed that the (lower) investment in intangible assets is the main channel leading to the productivity slowdown of vulnerable firms. The intuition behind the result is that, in the (post) crisis context, the most leveraged firms have to cut the investment which cannot be used as collateral, e.g. investment in intangible assets, which in turn impact productivity.

Discussion: The discussant, Carlo Altomonte, emphasized the interest and the novelty of the intangible investments channel and questioned the exogeneity of the pre-crisis firm`s debt structure, potentially linked with other unobserved characteristics. Moreover, he pointed out the low representativeness of the Orbis sample, which includes more observations from Italy and Spain than from US or Germany. This could bias the outcomes, in particular regarding the CDS interaction.
Turning to the intangible assets channel, Altomonte combined the result of the paper with some general findings of the literatureon an export-innovation trade-off for vulnerable firms. He showed that, on the one hand, even firms which invest in exporting could face some obstacles in doing it, driven by their lowering levels of innovation and so of productivity. On the other, the cash flow generated by successful export can be used to finance R&D.

Chief Economist Panel

Chair: Ettore Dorrucci, European Central Bank

Marc-Olivier Strauss-Kahn, Banque de France

Mr Strauss-Kahn focused his speech on the evolution and role of imbalances and rebalancing within EU. He showed their recent growing path over the period 2003-2010, with peaks (and persistence) right after the Great Recession. He later concentrated on price competitiveness, focusing on the Spanish case. While German and French current accounts did not change significantly during the crisis, Spain went from deficit to surplus. This was due to a much larger decrease in imports than in exports. Hence, he stressed that focusing on RER-elasticities might be useful, but cannot completely solve the problem.
Then, he focused on non-price competitiveness, identifying quality, financial frictions, innovation and demand as the main causes of EU imbalances. He also stressed the need for a regional approach. European policymakers must take into account national and subnational dimension in shaping policies. For instance, European enterprises would be better financed by equity rather than debt (compared to US). EU needs capital markets and banking union in order to achieve the most efficient outcomes. Moreover, EU needs a better coordination of national policies (fiscal and structural).

Reint Gropp, Halle Institute for Economic Research

Mr Gropp started his remarks stressing the fact that he is a macroeconomist but, still, he could see and benefit greatly from the granular information provided by the CompNet Network. Gropp continued by saying that talking about financial frictions and productivity was challenging given that there are neither perfect productivity indicators nor financial friction measures. In the past the consensus was that the larger the financial market the better for the whole economy. However, recent evidence shows that oversized markets are inefficient. This means that shocks to the financial markets might have ambiguous effects both on productivity levels and on GDP depending on markets' optimal size.
The role of government intervention is in this context crucial. In the long run, it is very important that consumers and investors expect banks to be saved, as well as that there is an efficient interaction between financial and labour markets. In the short-run, however, credit shocks would lead to negative outcomes in terms of supply and demand indicators. Recent research shows that credit shocks have a persistent effect on firms' investment as well as on their catch-up. Indeed, after the shock is vanished, firms do not recover initial levels. Turning to the recent financial crisis, Gropp stated that it had a cleansing effect. The worsening of financial conditions forced inefficient firm out of the markets. Finally, he remarked that we should focus on the following questions: what happen to firm productivity

in the long run? Do they go back to normal (following the financial crisis)? How does financial disruption affect long-run productivity growth? Does the type of government intervention matter?

Debora Revoltella (European Investment Bank)

Ms. Revoltella introduced a new survey on investment strategy, financing and quality conducted by the EIB on European firms. The survey provides crucial insights on investment dynamics in all 28 EU countries and can be linked to the ORBIS database in order to exploit more firm level information. Results show, first, that there are some signs of recovery in firms' investment. Non-financial corporations' investments are almost at the pre-crisis levels. However, the main issue is related to households' and governments' investments. Indeed, both of them did not recover at all. The problem appears to be more cyclical than structural.
More specifically, the reduction in governments' investments is the results of the fiscal tightening occurred during the crisis. While current expenditure increased, investments (especially in infrastructure) were shrinking. Further research should then focus on understanding the barriers to investment, identifying the best incentives to the adoption of new technologies and to shaping efficient credit markets.
Finally, she announced that the EIB aims to become a hub for research on investment.

William Maloney, World Bank

Mr Maloney introduced a different perspective with his remarks. Starting from the idea that innovation is positive for economy growth, he rose the question of why only developed countries are investing in it.
Drawing from a novel research of the World Bank, he focused the attention on management quality. The motivation is that there is high correlation between managerial practices and GDP per capita. He showed that US firms have the most efficient managers (this is strongly driven by best firms). However, also managerial practises are very heterogeneous across countries. For instance, China is the best country in achieving short-term targets. However, it does not perform very well with respect to medium- long-term objectives. This creates automatically barriers to innovation because if you are not sophisticated enough, you cannot evaluate correctly risks and long-term benefits of innovation plans. Evidence shows that management quality is more important than investments in R&D in explaining innovation. The main explanation for the persistence of "bad" managers is the family-owned nature of enterprises. Moreover, managers are not able to carry on correct self-evaluation and this can result in negative loops.

Sergei Guriev, European Bank for Reconstruction and Development

Mr Guriev started by showing that the level of productivity is decreasing in advanced economies which has implications for middle-income countries, as the former are the main source of exports of the later. This ought to be one of the drivers of the growth slowdown occurred in Eastern Europe (EE). Before the financial crisis, EE countries were trying to converge to the level of productivity of the most advanced economies, by efficiently improving the allocation of production factors. This was the main advantage with respect to other developing countries regarding economic convergence.
By conducting the BEEPS survey, the EBRD focuses the attention on the firm dimension, which enables them to research and evaluate the impact of projects aimed at creating a sustainable market economy.

Friday, 30 June 2017

Welcome address
Lowri Evans, European Commission Director-General for Internal Market, Industry, Entrepreneurship and SMEs

Ms Evans reiterated that DG GROW is very interested in CompNet activities and research. The European Commission strongly relies on external research, as they are looking for innovative thinking above and beyond their own. Given the common scope and research venues, there is plenty of interest and room for further cooperation with CompNet.
DG GROW aims at understanding productivity determinants and drivers. During the last years, the different growth path of frontier and laggard firms was one of the main policy messages. It further helped in re-shaping the way institutions think about enterprises. More specifically, policies aimed at promoting SMEs could benefit enormously from it and can no longer be designed without taking into account a very disaggregated approach.
Innovation, internationalization, cost reduction, digitalization, access to finance and geographic location are all very hot topics for the EC. The EC would like external researchers to deepen our understanding of these factors – together with their determinants – in order to improve policy intervention. Moreover, she said that policymakers should aim at identifying the *ex ante* distributive impact of policies, in addition to the *ex post* one.
Moreover, DG GROW is currently focusing on designing effective policies to foster country and firm competitiveness. Now that we are witnessing signs of economy recovery, it is time to effectively take into account firm heterogeneity to give the best policy advices and to restore confidence on the market. Confidence is, actually, the strongest and cheapest incentive for market efficiency and growth.
Moreover, she stressed that there are still several open issues, such as the long-term productivity growth slowdown, inefficient income distribution, lack of new technologies adoption. Finally, she reiterated that the future of the European Union depends on economic but also on social progresses.

Keynote speech
Ufuk Akcigit, University of Chicago

Professor Akcigit, following on Ms Evans' remarks, presented some new evidence on innovation and trade policies. Drawing from the economic history of the 70s', when the US adopted a strongly protectionist approach in order to promote domestic firms' productivity in the medium- long-term, he presented an open economy DGE with endogenous innovation and trade frictions. This model in turn, together with firm strategic interaction and transitional dynamics, is well suited to understand and quantify welfare gains from protectionism and R&D subsidies. The main mechanism underlying the model is the link between the countries' technology gap, in a given sector, and firms' innovation efforts (i.e. a non-linear relation). In this setting, trade costs and frictions generate a large "no trade" area. Beyond it, countries import when the technology gap is negative for them and export when it is strongly positive. In this framework, a protectionist policy would only reduce incentives to innovate, leading to a decrease of long-run economic growth. However, domestic firms would benefit in the short-run from keeping profits in the country. Differently, R&D subsidies lead to notable welfare gains in the long-term.
He concluded that gains from globalization with innovation policies could generate welfare gains much larger than with protectionism.

Session 3

Labour Market and Productivity

Chair: Eric Mamer, DG GROW, European Commission

Wage bargaining regimes and firms' adjustments to the Great Recession

Filippo di Mauro, National University of Singapore and Maddalena Ronchi*, Queen's College London

Maddalena Ronchi presented a paper investigating to what extent wage negotiation set-ups have shaped firms' responses to the Great Recession. This micro-aggregated cross-country analysis was made possible by the creation of an *ad hoc* database resulting from merging data on wage bargaining institutions from the Wage Dynamic Network to firm productivity and other relevant firm characteristics from CompNet. Hence, this analysis contributed to the literature by providing a more granular analysis of the interplay between labour market institutions and employment growth. The authors study how firms reacted to the Great Recession in terms of variation in profits, wages, and employment depending on the particular wage setting institutions, which varied at the country-industry-firm size level. They show that, in line with theoretical predictions, centralized bargaining systems – as opposed to decentralized ones – resulted in stronger downward wage rigidity, as well as in a greater reduction in employment and profits.

Discussion: The discussant, Chad Syverson stressed that the paper was interesting and investigated an extremely relevant matter, providing very clear and robust results. His main suggestion was to try to enlarge the time span of the analysis to measure the impact of wage setting to the employment rebound after the crisis as well.

Comparative Advantage in Routine Production

L. Archanskaia, KU Leuven; Jo Van Bisebroeck*, KU Leuven and G. Willmann, Universität Bielefeld

Jo Van Bisebroeck presented an analysis of the drivers of country specialization in the production of different type of goods. Moreover, the attention was laid on countries with similar endowments, in order to identify and disentangle their adjustment to globalization and technological shocks in terms of labour force allocation to the different goods. More specifically, they aimed at testing and quantifying the comparative advantage hypothesis of Hecksher-Ohlin and its implication for labour reallocation. They adopted a two-tiered production function with abstract tasks produced by abstract labour and routine goods produced by capital and labour with sector-specific routine specification. Then, they performed an ANOVA analysis on EU KLEMS data, a sector-aggregated database based on firm-level data. Finally, including inputs dynamic in the framework, they predicted that countries with low capital deepening specialize in routine goods due to cross-border labour adjustments. In this scenario, the role of institution becomes crucial as they can generate comparative advantage by facilitating labour mobility. Moreover, a flexible labour market would allow to better benefit from globalization.

Discussion: The discussant, Chad Syverson, appreciated the paper and the attempt to shed light on a very timely and interesting matter. He suggested to produce some results in order to consolidate the paper's position within this strand of the literature and confront them with other prominent research, i.e. Autor et al. Moreover, he suggested to shift the dimension of analysis to a more granular level in order to catch insight on the sector dynamics.

The Great Divergence(s)

Giuseppe Berlingeri*, OECD; Patrick Blanchenay, University of Toronto and Chiara Criscuolo, OECD

> Based on recent work of the OECD, the authors show increasing divergence in earnings and productivity across and within sectors in a set of 16 OECD countries using the MultiProd database built with a micro-distributed approach similar to the one in CompNet.
> The paper finds that most of the wage variance comes from within sectors, rather than across sectors. Such divergence is much more pronounced for the bottom half of the wage distribution than for the upper half. This is different from the increasing dispersion in productivity, which takes place mostly at the top of the distribution. As a preliminary result, the authors show a positive conditional correlation between wage and productivity dispersion within sectors. They provide additionally some evidence on the impact of structural factors on within-sector wage dispersion. In particular, they focus on globalization (exports tend to increase dispersion in wage), ICT adoption (affects both productivity and wages) and workers' skills (no significant impact). Finally, they show the positive effects of some policies on wage equality, such as minimum wage, employees' protection legislation, trade unions and (centralized) wage setting. The bottom line is that these policies tend to reduce the wage divergence.

Discussion: The discussant, Ufuk Akcigit, highlighted the importance and relevance of the stylized facts analysed by the paper. He suggested that further splitting the p50/p10 and p90/p50 ratios to account for the extreme tails might unravel some unexpected dynamics. In this sense, it could be misleading dropping the first/last decile of observation in such exercise. He further recommended to study the role of more factors as drivers for wage dispersion, such as worker characteristics, managers' quality and earnings, innovation, entry and exit dynamics, firm size. He also suggested to complement the analysis with some robustness check (reduced group of countries) and in-depth analysis (based on a single-country firm-level data). Notwithstanding, this paper shows the importance of micro-aggregated information such as the one compiled by CompNet.

Keynote Address

Benoît Cœuré, Executive Board, European Central Bank

Session 4 was opened by the keynote address of Benoît Cœuré. He illustrated that the marked drop in cross-country dispersion in a number of economic indicators is a courageous development. It underlines that our monetary policy measures are working and that the positive impact of the non-standard measures is spreading more evenly across the euro area. Although growth rates have converged recently, he observed that there are still large differences in living standards across Euro area Member States. By some standards, they have even increased in recent years. To a large extent, these differences are a reflection of the quality of national institutions pre-dating the launch of the euro. Hence, reforms that aim at improving the quality of institutions can provide the basis of a renewed process of real economic convergence. To understand better the channels connecting institutions and sustainable convergence, the keynote speaker emphasized the need for a more widespread availability of granular data. The CompNet project is already delivering useful insights in this respect. Finally, the speaker concluded by asserting that improving and harmonising the quality of our institutions also increases countries' ability to cope with adverse shocks, thereby easing the conduct of monetary policy. Indeed, by boosting overall potential growth, many economies can reduce their current debt overhang and provide space for fiscal policy to become counter-cyclical, reducing the overall burden on monetary policy.

Session 4

Global Value Chains and Productivity

Chair: Reint Gropp, IWH

The post-crisis TFP growth slowdown in CEE countries: Exploring the role of Global Value chain

Francesco Chiacchio, ECB; Elisa Gamberoni, ECB; Katerina Gradeva, ECB and Paloma Lopez-Garcia*, ECB

The authors opened their presentation by observing that, although the slowdown of productivity growth is a global phenomenon, it has been particularly acute in Central and Eastern Europe (CEE). More specifically, they argued that CEE countries were exposed to two different developments highly correlated with their TFP performance: the TFP growth slowdown in non-CEE EU frontier firms - that are linked to the most productive firms in CEE countries via GVCs - and the "shortening of GVCs". GVC participation indeed facilitates technology transfer from parent companies (which, in the CEE case, are mostly based in the non-CEE EU) to other firms involved in GVCs.
Using micro-aggregated firm information for nine CEE countries from CompNet and data from input-output tables, the paper shows that, according to the two-stage diffusion process put forward by Bartelsman et al. (2013) among others, the most productive firms in the host economy participate directly in, and benefit from, GVCs. Non-frontier firms in the host economy also benefit from technology spillovers via domestic production networks. The main channel of technology diffusion is found to be the technology embedded in imported inputs, rather than the upgrade of quality standards required to export intermediate inputs. Lastly, the authors find that the absorptive capacity of host firms participating in GVCs dropped in the post-crisis period due, at least partially, to a decrease in their investment in intangibles. This drop in the absorptive capacity of host firms contributed further to their TFP growth slowdown.

Discussion: The discussant, Stela Rubinova, remarked the correlation between the pace of TFP growth in CEE frontier and EU frontier in the same value chain, resulting in shock propagation along the supply chain. She also pointed out that import linkages show stronger correlation than export linkages, questioning whether comparing technology embodied in inputs and technology transfer would ensure input compatibility. Finally, the discussant noted that the correlation is driven by R&D intensive industries and suggested interacting R&D spending with the spillover variables.

Intangible Assets and the Organization of Global Supply Chains

Stefano Bolatto*, University of Bologna; Alireza Naghavi, University of Bologna, Gianmarco Ottaviano, London School of Economics and Katja Zajc, University of Ljubljana

This paper introduces the concept of intangible assets in sequential supply chains and the importance of their choice in the organizational decision of firms. Evidence over the impact of contracting institutions on production integration or outsourcing is not conclusive (property right theory vs transaction cost theory). This paper builds on Antràs & Chor (2013), a property-right model of the supply chain with sequential production, and focuses on the quality of intellectual property rights (IPR) institutions. These institutions are important because on top of the hold-up problem between a supplier and the final producer in production chains, there could be an additional risk of imitation, as technology may lead to competing producers in the market. The risk of imitation depends on the level of IPR protection enforced in the location of production, while the firm's decision to integrate or to outsource at a given stage in production depends on the relative position of that stage within the production line, the degree of sequential substitutability/complementarity of supplier investments along the value chain and the possibility of imitation by competitors.

Theoretical predictions are tested on firm-level data, using trade, FDI, and financial data on firms and firms' subsidiaries between 2002 and 2009. In particular, the dataset is composed by comprehensive data on Slovenian firms provided by NSIs of Slovenia (Slovenia has a high participation in GVC), on firm characteristics by national agencies and on origin and destination of FDIs by the Bank of Slovenia.

Findings show that introducing intangible assets in sequential supply chain may have the opposite effect of contractibility on outsourcing decision, where only tangible property rights are considered. The Authors argue that the risk of imitation is a relevant feature that needs to be taken into consideration in the incomplete contract literature.

Discussion: The discussant, Stela Rubinova, suggested using triple interaction and country fixed effects, in order to rule out alternative of IPR protection affecting relative appeal of vertical integration directly. Moreover, the discussant suggested alternative factors which could deliver similar results likefailure of the GVC at any stage..

The Cost of Non-Europe Revisited

Thierry Mayer, Sciences Po; Vincent Vicard*, Banque de France and Soledad Zignago, Banque de France

This paper aims to quantify the "Cost of Non-Europe", i.e., the trade-related welfare losses that would occur under different scenarios of a collapse of the European Union.

The authors use modern versions of the gravity model estimates of the trade increased which followed the creation of the EU (nearly 30 years after the Cecchini report), to conduct several counterfactual exercises, where, for instance, the EU reverts to different trade rules.

Firstly, the authors estimate the impact on trade in goods and services of the EU differentiating the various components of European integration (customs union, single market, Schengen area, Euro area) separately. Then, the authors conduct counterfactual exercises based on structural gravity models in the case of the 2004/07 enlargements. More concretely, the counterfactual trade flows are computed in two scenarios: (i) a regular RTA replaces the EU; and (ii) a return to the WTO option under which MFN tariffs replace the EU. Finally, the welfare gains from EU for all members are computed.

The trade costs of Non-Europe (weighted by country size) are estimated to vary between 1.3 and 5.0% depending on the counterfactual ("normal" RTA vs return to WTO rules notably).

Discussion: The discussant, Stela Rubinova, suggested that the use of and industry-level dimension, which better characterise trade elasticities, would allow richer input-output linkages and also tackle the small sample bias.