



CompNet-ECB Workshop, Madrid March 26-27 2015

Main conclusions and follow-Up

Dear CompNet Members,

Below you will find a summary and some follow-ups of the meeting, including the main conclusions from the discussion on the final report. The final program and presentations are available on our website (http://www.ecb.europa.eu/home/html/researcher_compnet.en.html). Please be aware that presentations given during the workstream sessions, based in general on very preliminary work, will not be uploaded in the web for the moment.

Final Report

During the workshop, we devoted two plenary sessions to discuss the structure and initial content of CompNet's final report, which will be completed in July, after the final conference of CompNet has taken place. The presentation with the detailed outline and research questions is attached to the email. The structure we agreed on is provided in short below:

Introduction and Motivation

Trade and competitiveness (*Coordinators: Benkovskis, Bugamelli, Amador*)

- 1.1 Determinants and non-price factors of competitiveness
- 1.2 Trade and productivity
- 1.3 Mapping GVC: GVC characteristics and indicators
- 1.4 External imbalances

Shock transmission in a global context (*Coordinators: Berthou, Dhyne, Skudelny*)

- 2.1 Trade elasticities
 - 2.1 a Sectorial approach micro data application
 - 2.1 b GVCs implications for elasticities
- 2.2. GVCs impact on the transmission channels in economic shocks

Productivity and reallocation (*Coordinators: Lopez-Garcia, Altomonte, Bartelsman*)

- 3.1 Product market
- 3.2 Labour market
- 3.3 Financial frictions

We have also agreed on the following features and characteristics:

- The goal of the Report is to “sell” CompNet overall message going beyond WS structure (macro, micro, cross-border).



- The draft Final Report will be presented during the CompNet Final Conference in June, but finalized in July, in order to include most relevant conference results/discussions
- It will stress the two main value-added CompNet: (1) Producing results that are comparable across-countries, focusing on common denominators and benchmarking; (2) Moving to a multidimensional approach of competitiveness
- The general characteristics of the content will be the following:
 - The report will be short (not exceeding 40 pages)
 - It will go beyond the WSs structure including in all chapters elements from the three dimensions
 - A set of policy questions will be addressed right upfront each chapter/subsection to be supported by solid research
 - Each chapter will highlight the value added of CompNet in the context of the existing economic literature and as an input for policy makers
 - Highlight at the end of each chapter the way forward in economic research

CompNet micro-based database methodology papers

Regarding the papers documenting the new micro-based CompNet dataset, the updated news are as follows: (1) the horizontal methodology paper has recently been published as an ECB WP (number 1764); regarding the different modules, the trade paper has already been submitted for publication to the WP series and the financial one is currently being revised by the country teams. The mark-up and labour module papers are currently being finalised and will be distributed soon (within the month of April) to the country teams for their revision.

The workshop

The workshop was structured as follows. We had two keynote speeches, one by Luis Garicano, from the London School of Economics, entitled “Can slow IT adoption explain productivity slowdown? Firm size and organizational change” exploring why some countries are not benefiting as much in terms of productivity gains from the ICT revolution. The second keynote speech was given by Gilbert Cette, from the Banque de France on long-term productivity growth in Europe. Besides, we had three plenary sessions and two workstream sessions.



1. Plenary sessions

Keynote Speech: Luis Garicano (London School of Economics), “Can slow IT adoption explain productivity slowdown? Firm size and organizational change”

In his presentation, Garicano explores whether lags in the adoption of ICT technologies can explain the observed productivity slowdown. His main conclusions are that i) since small firms are characterized by slower ITC adoption, every regulation which distort firm size contributes to lower aggregate productivity; ii) ITC per se does not increase productivity. Only when ITC is coupled with suitable organizational change, one can find significant correlation with aggregate productivity. The result is obtained by using crime data in conjunction with information on the organization of police departments covering 1987-2003.

Comments were made on the possibility of spurious correlation between size and ITC adoption, for example being due to dynastic management and characteristics of family business.

Keynote Speech: Gilbert Clette (Banque de France), “Productivity trends from 1890 to 2012 in advanced countries”

Gilberte Clette discussed his work about productivity trends, trend breaks and levels for 13 advanced countries over 1890-2012, in order to examine innovation diffusion and convergence processes. He highlighted two productivity waves, a big one following the second industrial revolution and a small one following the ICT revolution. The first big wave was staggered across countries, hitting the US first in the Interwar years and the rest of the world after World War II. It came long after the actual innovation could be implemented, emphasizing a long diffusion process. The productivity leader changed during the period under study, the Australian and UK leadership becoming a US one during the first part of the XXth century and, for very particular reasons, also a Norwegian, Dutch and French one at least for some years at the end of the XXth century. The convergence process has been erratic, halted by inappropriate institutions, technology shocks, financial crises but above all by wars, which led to major productivity level leaps, downwards for countries experiencing war on their soil, upwards for other countries. Productivity trend breaks are detected following wars, global financial crises, global supply shocks (such as the oil price shocks) and major policy changes (such as structural reforms in Canada or Sweden). The upward trend break for the US in the mid-1990s is confirmed, as well as the downward trend break for the Euro Area in the same period. The downward trend break observed as early as the mid-2000s for the US leads one to question the future contribution of the ICT revolution to productivity enhancement.

Plenary session I: “Foreign Direct Investment”

“Who owns Europe’s firms? Globalization and foreign investment in Europe”, Kalemli-Ozcan, Korsun, Sorensen, Villegas-Sanchez

This paper analyses firms’ foreign ownership in 24 European countries for the period 1999-2012 using firm level data from AMADEUS-ORBIS database. The aim is to provide a clear picture of the ownership pattern in Europe distinguishing firms owned directly or indirectly, through a subsidiary or



a financial intermediary (ultimate owner), and to evaluate whether structural and regulatory policies have any influence in shaping bilateral investment patterns. The understanding of these patterns permits a better knowledge of the state of integration of the European firms as well as risk-sharing and contagion implications that stem from it. As a main finding they showed that direct ownership clearly underestimates the true bilateral linkages, based on ultimate ownership held to a large extent by USA or Asia. They also found that foreign ownership among country pairs is larger the more dissimilar the product market regulations are, and the more financially integrated the countries are. In the discussion that followed after the presentation, the problem with the coverage of small firms and the need to expand the analysis to other sectors different from manufacturing were highlighted. In this sense, authors remarked that this is one of the ways forward for their paper. Finally, they indicated that their analysis ignores the intermediate flows of foreign direct investment.

“How does multinational production and competitiveness affect the measurement of competitiveness”, S. Federico

This paper assembled a bilateral dataset on foreign affiliates in the manufacturing sector of 44 countries in order to compute value added based on the location of production of firms as well as on their nationality or that of factors of production. The aim is to analyse how multinational production affects the measurement of competitiveness. The paper finds that foreign affiliates account for a relatively large share of world value added in the manufacturing sector and that there are significant differences between geography-based and ownership-based measures of competitiveness, being the nationality-based value added about 20% larger than the traditional one. As a conclusion, they point out the need to use jointly the ownership-based and geography-based indicators in the economic analysis for purposes ranging from taxation to trade negotiation. An issue discussed after the presentation was the need to include a sector breakdown, with the associated problems that can emerge due to the imputation techniques required for doing it.

Plenary session II: “Use of firm-level data for policy analysis”

“Growing like Spain 1995-2007”, Garcia-Santana, Moral-Benito, Pijoan-Mas and Ramos

The paper starts by showing that TFP growth was negative over the booming period (1995-2007) in Spain and explores the role of resource misallocation as a possible determinant of this trend. Using the Spanish sample of the CompNet dataset (drawn from firm registries and the Bank of Spain Balance Sheet Office), they follow the model of Hsieh and Klenow to measure misallocation of labour on the basis of TFPR dispersion. The idea is that in the absence of distortions, TFPR should be equal across firms within the same sector. Using this proxy of misallocation, but also correlated ones like the OP gap, the paper shows that misallocation increased over the booming years in Spain. They also construct a “potential TFP” measuring the counterfactual TFP growth if distortions would be zero finding that TFP growth could have been up to 0,8% per year. The paper explores as well the possible causes of misallocation and finds that sectors where the public sector influence is larger feature larger misallocation.



“Exploring non-linearities using the microaggregated CompNet database: The investment-leverage relationship”, Felt, Chen and Ferrando

Annalisa Ferrando (ECB) presented the preliminary results of the research that she is conducting with Heng Chen (Bank of Canada) and Marie H  l  n Felt (Bank of Canada). The aim of their work is to explore non-linearities that might emerge from the analysis of the CompNet data. Its contribution to the literature is twofold: first it provides a new methodological framework to be used with sector aggregated data, like the one in CompNet, and secondly, it applies the new methodology to shed new light on the determinants of investment. As to the methodology, the authors point that working with aggregated micro data might introduce a bias, since some moments of the distribution of the variables are missing. When setting up a regression analysis, bounds are calculated instead of point estimates, and with a multistep strategy they are intersected along different dimensions to obtain estimates of the coefficients. As to the empirical evidence, the financial data shows a non-linear effect of leverage on investment: these results are coming from a more traditional GMM approach and will be better investigated with the proposed methodology.

Plenary session III: “Trade”

“Determinants of outward internationalisation mode choices of enterprises”, Siedschlag and Murphy

This research provides empirical evidence on the engagement of firms in international production and innovation networks. Specifically, it uses firm-level data from the EFIGE data set and an unified econometric framework to analyse the engagement of firms in a broad range of outward internationalisation choices (exporting, FDI, international outsourcing, and combinations of these three choices) in four European Union countries (France, Germany, Italy and Spain). Three key policy relevant empirical findings emerge from this analysis: (i) exporting represents the first stage of enterprises’ internationalisation strategies. The next stages appear to be FDI and international outsourcing; (ii) SMEs engaged in internationalisation strategies are foreign-owned, larger, more productive, and product innovators; (iii) relative to SMEs, large enterprises engage to a larger extent in international activities and their internationalisation strategies differ from those of SMEs.

Discussant’s comments: The results appear to be counterintuitive (in particular with regards to the role of size and productivity) and more attention should be devoted to the empirical specifications of the model. In addition, he suggested using a more standard definition of the empirical strategy.

“Crisis severity and international trade network”, Endresz and Skudelny

The paper aims to analyse the role of trade interlinkages in the length and depth of the recent 2008/2009 financial crisis: network measures, proxies for trade linkages, are computed from Input Output tables (WIOD) and then expressed in value added terms; this allows to account for the trade in intermediate goods that is supposed to better capture the potential role of trade channel. The empirical methodology consists in using a bayesian model averaging, as the number of observation is limited and the potential control variables quite numerous: the pre-crisis macroeconomic fundamentals. It emerges that the most relevant macroeconomic variables for explaining the crisis are growth rates of credit, of the real effective exchange rate and of consumer prices, all three from 2004 to 2007.

Discussant’s objections: some robustness analysis should be implemented focusing on threshold effects of trade integration as well as excluding US, as this is the country where the crisis originated.



In addition, it was pointed out the importance of explaining the advantages of using trade measures in value added terms instead of gross terms.

“Asymmetric shocks and asymmetric distributions”, Demian and di Mauro

Using CompNet firm-level data (from Workstream 2) for 22 sectors in 11 European countries over 11 years, the authors investigate how bilateral exports to every possible destination are influenced by exchange rate movements and the sector’s own productivity distribution. In particular, the elasticity of exports to exchange rates fluctuations is lower in sectors with a higher dispersion of productivity. Moreover, the elasticity is insignificant in cases of depreciation and substantially large during episodes of appreciation. Finally, the results seem to suggest that exporters react more to large changes in exchange rates than to small ones.

Discussant’s objections: the main remarks related to this work pointed out that the results are quite cumbersome and not easy to be interpreted, there is a risk of multicollinearity among the selected explanatory variables and the discussant proposes to use either a gravity model for the estimation either a first difference estimation; the combination of the two might be rather confusing.

2. Discussions within the individual work-streams:

Work-stream 1

DAY 1

Workstream 1 team discussed the final issues related to the Compendium and to the dissemination of the data. The rest of the time was devoted to the following presentations

“Measuring quality and selling capacity at a country-product level”, Francesco di Comite

This presentation showed how a set of indicators can be developed to identify different components of external competitiveness at a country-product level. A theory-based methodology is proposed, based on a parsimonious set of trade and macroeconomic data, resulting in the identification of two independent components of demand for a particular variety (country-product combination): markups-shifting quality and sales-boosting selling capacity. These indicators of competitiveness can be used next to existing ones to foster our understanding of the determinants of a country’s external position and provide useful information to policy makers. Examples of the use if these indicators are illustrated focusing on two EU countries following diverging trajectories in terms of external competitiveness in recent years, Latvia and Finland.

“Measuring the effectiveness of price cost competitiveness”, Styliani Christodouloupoulou

This study examines the marginal effects of traditional determinants of exports and imports with a focus on the role of price competitiveness in restoring external balances. It is a first attempt to compare marginal effects of various harmonised competitiveness indicators (HCIs) on both exports and imports of both goods and services across individual euro area countries.



We find evidence that HCIs based on broader cost and price measures have a larger marginal effect (with some exceptions) on exports of goods. Exports of services are sensitive to HCIs in big euro area countries and Slovakia, where exports of services are also found more sensitive to competitiveness indicators based on broader price measures. Imports of goods and imports of services are quite insensitive to changes in relative prices. Finally, in some cases measures of fit indicate that a large unexplained residual part is present, implying that other non-price related factors might play an important role in driving foreign trade.

“Current account and GDP a VAR approach”, Robert Vermeulen

The authors used a VAR approach to analyse the causal relationship between current account, GDP growth and credit to households. They found some seminal results where appears a casual relation between

“Empirical Link between Firm-Level Indicators and Target Variables of Competitiveness: Bayesian Model Averaging Approach”, Benjamin Bluhm

The key contribution of this paper is to investigate the empirical link between a set of firm-level indicators, developed in the ESCB Competitiveness Research Network (CompNet), and target variables of competitiveness, namely real GDP/capita, TFP and export market shares. We exploit information from a panel dataset for nine EU countries over the period 2004 to 2012 and our results are based on a fixed-effects regression within a Bayesian Model Averaging framework, which allows us to investigate a large number of candidate drivers of competitiveness. While our findings suggest a strong role for traditional cost and price factors of competitiveness, we also present robust statistical evidence for the relevance of firm-level information (share of credit constrained firms, skewness of the labour productivity distribution) after controlling for a large set of candidate drivers.

“Domestic demand and export performance in the euro area countries: Does export concentration matter?”, Paulo Soares Esteves

During economic downturns, weak domestic demand developments seem to be an additional driver to boost exports, as firms increase their efforts to serve markets abroad to compensate the fall in domestic sales. This may constitute an additional mechanism adjustment in a context of fixed exchange rate and low inflation environment. However, this substitution effect between domestic and foreign sales could impact differently Euro Area members. This paper investigates what is the role of the export structure using a novel indicator on product concentration, in both goods and services, in explaining these differences using panel data techniques. The results suggest that in countries with a lower concentration index (that is, more diversified) domestic demand developments are more relevant to explain exports. In spite of being a general result across euro area countries, this effect could contribute to explain the different behavior of some economies recently under adjustment.

DAY 2

Day 2 was devoted to discuss the final report and how the WS1 member can contribute to it

Work-stream 2

During both days, the workstream 2 sessions were split in two parts. The first part included three presentations of preliminary work using, mostly, WS2 data. The second part was devoted to bilateral discussions concerning on-going research projects in the WS2 pipeline.



Presentations day 1

“Matching CompNet with WDN’s data”, Maddalena Ronchi

This paper investigates what are the factors shaping the ways in which the Euro Area labour markets adjust to aggregate shocks. In particular, the author looks at whether differences in wage setting mechanism can explain differences between adjustments over wage vs employment margins. The main result of the paper is that wage bargaining institutions significantly shape firms response to the crisis, and that the way in which a negative shock is distributed by the firm across wages and employment reductions depend on the extent of wage flexibility entailed in the bargaining regime. Firms subject to the so-called “two-tier bargaining” end up adjusting more on the employment margin, and less on the wage one.

A major concern expressed during the presentation was that Germany was missing from the sample. Given the peculiarity of the German bargaining system, commentators noticed that it would have been useful to include such information for the robustness of the identification.

“Assessing the cleansing effect of the Great Recession across European countries”, Bartelsman, Lopez-Garcia and Presidente

The paper discusses whether recessions are cleansing, in the sense of facilitating the exit and downsizing of low productive firms and the entry and expansion of high productive firms. By using a newly assembled micro-based CompNet dataset, the authors assess, first, whether the Great Recession has been cleansing across a large set of European countries. Second, they explore whether distortions in the financial, labour or product markets have played any role in explaining observed cross-country differences. The main finding is that cleansing increased during the Great Recession, both in the shrinking and the expansion margin. In addition, they find that sectors characterized by higher-than-average markups feature less cleansing because productive firms expand less than in other less sheltered sectors.

Some commentator noticed that the findings are compatible with the Shimer puzzle, namely that the destruction margin is the most volatile one over the cycle. In addition, a participant suggested emphasizing on the differences between tradable and not-tradable sectors.

“Financial frictions, misallocation and gains from trade”, Berthou, Manova and Sandoz

The paper looks at the extent to which trade liberalization produce improvements in resource allocation across firms, and therefore contributes to aggregate productivity growth. By using firm based CompNet data, the authors look at the impact of export demand, import and import competition. They find strong evidence that all channels significantly increase aggregate productivity. Specifically, export demand is found to improve between-firm allocation, while import penetration enhances within-firm productivity upgrading. Therefore, the paper provides some direct evidence on the gains from trade.

A discussant observed how endogeneity issues might result in biased coefficients. However, in future work the authors intend to address such a problem by at sources of exogenous variation, such as the adoption of trade agreements.



Presentations day 2

“Spanish exporting firms. Stylised facts and recent trends”, González and Martín.

Cesar Martin presented his joint work with María Jesús González exploring to what extent the behaviour of the exporting base in Spain during the last years was structural or transitory, in light of the recovery after the trade collapse and the crisis of the Spanish economy. The paper focused on exporting SMEs, since in recent years they have experienced a significant internationalization process. The data confirm, among other features, that the export growth was based on the intensive margin and also the increase of international trade participation of SMEs. Also, data show an enlargement of the stable exporters’ base, which may imply further rises in intensive margin in the next years. In addition, Spanish exporting firms are involved in an ongoing process of geographical diversification towards non-EU markets, which may also support exports growth potential.

“The cyclical behaviour of mark-ups: composition and changes in pricing strategies”, Lacuesta, Fernández, Montero and Urtasun.

This paper analyses the role of changes in the composition of firms and in their pricing strategies to explain the heterogeneity of mark-ups, considering firms operating within a given sector, as well as the mark-ups dynamics over the Great Recession in Spain. For doing that, a sample of Spanish non-financial corporations for the period 1995-2012 is used. In order to account for this heterogeneity, the authors include three main sources of cost efficiency of firms: (1) productivity, as measured by TFP, (2) better access to credit markets, and (3) better access to labour market inputs (equal across firms in a given sector). The main conclusions are that the assumption of perfect competition in Spanish product markets is rejected and that the heterogeneity in mark-ups within sector is related to both TFP and financial pressure: firms with higher TFP and lower debt pressure present higher mark-ups. Also they found that during the period of crisis (2008-2012), half of the sectors analysed increased mark-ups (about 10 pp) which seems to be the result of a change in pricing strategy rather than a pure composition effect. One of the issues raised during the presentation was the change in accounting rules in 2008, which affected the measure of mark-ups.

“Exchange rate movements, firm-level exports and heterogeneity”, Berthou, Demian and Dhyne.

This paper explores how exporters react to exchange rate movements. The authors use a panel of 11 countries for the period 2001-2008 using the CompNet trade module including firms with more than 20 employees. The key hypothesis to be tested is that small and large exporters react differently to exchange rate movements. Large firms can absorb shocks on exchange rate through changes in their mark-ups, which act as a buffer. Therefore they feature an incomplete pass-through. The results of the analysis confirm the hypotheses given that the estimated coefficient for small exporters is about 4 times larger than for large firms. Given that aggregate exports are driven by few very large exporters, this finding can help understanding the traditionally very low trade/exchange rate elasticities estimated using aggregate data.



Work-stream 3

Presentations day 1

During this workstream session, three different papers were discussed. We present here a brief summary.

FDI Impact on the productivity and employment of Spanish manufacturing firms – Patrocinio Tello (Bank of Spain) and Antonio Rodrigues (Bank of Spain)

The aim of the paper is to analyse the impact of study proposes a firm-level analysis of Foreign Direct Investment impact on total factor productivity and employment of Spanish manufacturing firms using firm-level data covering a recent period (2001-2010). This paper contributed to fill a gap in the literature focused on aggregate or sectoral data to assess whether the findings are in line with the results emerging from aggregate data.

Firm level data come from the Balance of Payments, the Central Balance Sheet Data and Annual Accounts in Mercantile Registry and the context of analysis is Spain. By defining as affiliates only the firms that receive net positive inflows of FDI in a specific year during the analysed period, propensity score matching techniques combined with and using a difference-in-differences estimation approach is used to treat the potential selection bias in the FDI decision and the observable and unobservable but persistence firm-level characteristics. The results seem to be in line with the ones obtained in the most recent empirical paper, both for Spain and other countries: from aggregate data: inward FDI has a positive and significant impact on TFP of affiliates. This impact seems to reach its maximum value two years after receiving the first net positive FDI flow. after a maximum of two years from the first net positive FDI flow. Moreover, the second result suggests that the impact on unemployment is low and insignificant, and this is again in line with previous literature.

FDI flows to advanced economies: to what extent do the structural factor matter? - Selin Özyurt (ECB) and Guillaume Compeyron (ECB)

As already suggested from the previous paper, FDI is likely to enhance growth through several different channels, but empirical evidence seems to be rather mixed because of a number of technical shortcomings (e.g. data limitations). As a consequence, this study is aimed to identify the main drivers of FDI, dividing them between economic and structural factors. Among economic factors, the results report evidence in favour of job creation, capital accumulation and productivity spillovers. In addition, data from Ernest & Young 2014 European Attractiveness Survey suggest that structural factors such as stability and transparency of political, legal and regulatory environment or the country or region's domestic market matter to attract FDI. Then, there is a significant scope for improving attractiveness to FDI through targeted policies such as product and labour market reforms, tax competition, innovation and R&D.

Has the crisis changed the DNA of Belgian economy? – Emmanuel Dhyne (National Bank of Belgium) and Cédric Duprez (National Bank of Belgium).

This study is still in a “draft” status, but it appears as the first attempt to compute global value chains indicators at the firm level for Belgium. The main research question is whether a higher level of fragmentation of the supply chain is good for the economy. The authors observe positive effects on value added growth, employment growth and TFP, but the effects differ according to the position in the production chains. A second part focuses on how the crisis influences the level of fragmentation of



the supply chain: it emerges that, after 2008, positive impact of fragmentation on growth has been lower, especially for employment.

Day 2

There are two main points discussed during this session:

1. E-book initiative from F. Di Mauro and R. Baldwin: the deadline is the 15th of June but a draft version should be circulated to the contributors by the 15th of April. In addition, the target has been defined to be a public of economists not specialised in international trade.
Finally, it has been decided that each section should not be longer than 10-15 pages.
2. Final Report: some discussion among the members took place in order to contribute to the decisions presented in the final plenary session and wrap-up of the workshop.

Thank you again for your participation and your hard work!

We are looking forward to meeting you all in Frankfurt next June.

Wish you and your families all the best for the forthcoming festivities

Filippo and the ECB CompNet team