CompNet-ECB Workshop,
Frankfurt June 30 and July 1 2014

Main conclusions and follow-Up

Dear CompNet Members,

Below you will find a summary of the meeting. 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 based on firm-level data, still preliminary, will not be uploaded in the web.

Much of the discussion during the plenary sessions and also workstream meetings was focused on the need to validate the data. Apart from the work in this respect undertaken by the different workstreams, DG-Statistics will take the lead in implementing systematic ex-post checks on the aggregate data. A short summary of the steps to be taken on the matter will be shortly sent by Filippo to the Heads of Research.

One issue where we need the input of all CompNet participants is in the updating of the research pipeline
(http://www.ecb.europa.eu/home/pdf/research/compnet/CompNet_ongoing_research_pipeline.pd f??993a98b789ba648a026d46f9a64b8fba). Please be in contact with your respective head of workstream to update the info on works already ongoing as well as on future work to be undertaken with the new data.

The workshop was structured on two full sessions plus an introductory presentation devoted to the first results of the firm-level exercise (WS2), one session devoted to the Compendium, featuring an overall overview of the compendium and two external presentations on the database TiVA and intra-industry trade and, finally, one session on financial flows. The keynote speech was given by Susanto Basu, from Boston College. Additionally there were workstream sessions during both days of the workshop. This follow-up starts with a summary of the plenary sessions and then moves to the discussions undertaken within each of the workstream sessions.

Plenary sessions

1. Susanto Basu: "TFP: Consumption and Investment technical change"

Susanto presented his work on the different macro implications of sector-specific technology shocks in the presence of price rigidities. Using industry data and input-output tables Susanto computed a long time-series for the technology (TFP) of final consumption goods and investment. He then showed that a positive shock on those two technologies can have opposite effects on GDP. A positive shock on the consumption technology increases GDP whereas a positive shock on the investment technology decreases it. The reason is that prices on durables are slow to adjust. After the positive shock people expect prices to decrease so they withhold their demand for durable goods, which decreases in the short-term GDP. Hence, knowing the specific nature of a technology shock is crucial for a central bank to conduct the appropriate monetary policy.

2. The CompNet Compendium:

- K. Benkovski and P. Karadeloglou: *The CompNet compendium*." The presentation pointed out that after two years of work and a lot of important results, it was felt the necessity to create a general framework to deal with the main challenge lying ahead, i.e. connecting the output of the researchers to the policy analysis. In order to accomplish this task a team of researchers is creating the Competitiveness Diagnostic Toolkit, namely a user-friendly database and a related Compendium describing the motivation, interpretation and added value of the novel indicators. In particular, the Compendium is structured in a way that it will be immediately clear how the indicator was constructed and which are the implications of its use, in order to spread as much as possible the use of the database.

- N. Yamano: *"Current developments and future expansions of the TiVA."* Given the fragmentation of production, the conventional measures of international trade do not reflect the competitiveness of a country. The joint OECD – WTO Trade in Value-Added (TiVA) initiative addresses this issue by considering the value added by each industry and country in the production of goods and services that are consumed worldwide. Core of the TiVA database is an economic model based on an Inter-country Input-Output table (ICIO). These ICIO models allow us to analyse: the intermediate trade flows of goods and services, the harmonised bilateral trade balances, sectoral GDP and output at global level, the value-added contents by source country and industry of additional unit demand and finally the consumption and investment activity by type of goods and services. TiVA indicators are designed to better inform policy makers by providing new insights into the commercial relations between nations.

- E. Dautovic, L. Orszaghova, W. Schudel: *"Intra-industry trade between CESEE countries and the EU15."* This paper describes and analyses different factors behind developments in IIT between CESEE countries and the EU15 from 1998 to 2010 using a panel data framework. In doing so, it uses the most disaggregated level of bilateral trade data available, namely a 6-digit level of disaggregation provided by the BACI database from CEPII. Applying various statistical modelling techniques, this paper finds that CESEE countries which have a better management of monetary policy, a lower average corporate tax rate, a more flexible exchange rate regime and better political institutions tend to be more engaged in IIT with the EU15. Furthermore, the paper highlights important differences between the forces driving vertical versus horizontal intra-industry trade. These results, while broadly in line with the literature, have potentially important policy implications for future European integration

Discussion: Stephan Zeugner (European Commission). The discussion raised the following interesting points: the issue of nowcasting for the TiVA database, the low explanatory power of the ULC of the engagement in IIT, and the importance of making the novel CompNet-indicators publicly available.

3. Financial Flows:

- A. Hobza and S. Zeugner: *"Current accounts and financial lows in the euro area."* This paper documents a new dataset of bilateral financial stocks and flows built to better understand the role of financial flows within and out of the Euro area (EA). The new database is then used to show a set of preliminary results: i) the periphery debt was financed from surplus countries and France, ii) gross financial flows show clearly the flight to safety which took place during the euro crisis iii) geography of financial flows differs from trade flow patterns (with implications for modelling spillovers). The dataset is still suitable for further research.

- C. Fons-Rosen, S. Kalemli-Ozcan, B. Sorensen, C. Villegas-Sanchez and V. Volosovyc: *"Foreign ownership, selection and productivity."* None of the authors of the paper could come to Frankfurt to present this paper so it had to be cancelled. We hope it will be presented in future workshops.

    Discussion: Vincent Vicard (Banque de France). The discussant highlighted the different approaches of the first contribution (based on micro data as FDI and portfolios) and the second one (based on macro data as financial debt). They both rely on an impressive data work but further research is needed on the mechanism underlying the evidences.

4. Paloma Lopez-Garcia: "The new CompNet micro-based database"

The last time the micro-based CompNet database was presented before the plenary was in September 2013. Since then there has been lots of progress and changes in WS2. The purpose of this presentation was to inform the rest of CompNet participants about these changes. First of all, the presentation reviewed the main messages coming from the first exercise of data collection. Then it went on to explain how the database has been improved (in terms of quality, country coverage and, above all, comparability thanks to the introduction of population weights) and expanded, including new indicators grouped now into what we call "modules". They are four: the trade, financial, mark-up and labour modules. So far 12 countries have sent their initial results so sample description, coverage and validation vis-à-vis Eurostat was shown for these countries. Lastly, the presentation showed some new results related to the productivity and TFP distributions as well as to the wage and productivity dynamics.

5. The new CompNet micro-based database I

- J. Amador and A.C. Soares: *"The mark-up module: Cross-country analysis."* The presentation started off with several research questions: how different are the competitive set-ups across countries in Europe? Are there differences across sectors? Across markets? What is the impact of the crisis? Then Joao introduced the methodology used to estimate both mark-ups and bargaining power simultaneously as well as important data issues, such as the need to remove firms with negative "accounting" price-cost margin or the choice of depreciation rate. The next step was to show some basic numbers coming from the do file: contribution

of manufacturing and services to aggregate mark-ups and collective bargaining, differences of mark-ups (and collective bargaining) across sectors and countries (mark-ups seem to be higher in the same set of sectors across all countries) and correlation between collective bargaining and mark-ups, at the market level (positive).

- C. Fernandez, R. Serafini and P. Lopez-Garcia: *"The labour module: Cross-country analysis."* The presentation started with the basic research questions of the labour module of CompNet, all related to the determinants of firm growth, understood in a broad sense and encompassing growth in terms of employment, productivity, TFP and ULC. Cristina showed how the data collected by the module is organised and then proceeded to show some evidence related to the employment growth/declined over the crisis of firms in different sizes and sectors. From that preliminary analysis we learn that resilience to the crisis increases with firm size, and that the construction sector behaved quite differently from the manufacturing and service sectors. Finally, the very different characteristics of firms that manage to grow, vis-à-vis those that downsize, in a given sector and size class, were displayed.

Discussion: Eric Bartelsman (Free University of Amsterdam). Eric started by highlighting the need to have in mind a theory on product and labour market competition (related to the mark-up module) and of firm dynamics (related to the labour module) before analysing the new data. On sample comparability, he stated that although CompNet samples are still not fully comparable, they are much more comparable than those used in different meta-analysis of mark-ups or firm growth. Additionally, CompNet has the great advantage of being able to use variables constructed by specialists in other modules (for example, financial indicators from the financial modules as determinants of firm growth). He suggested using the OECD empdyn as validation source for the employment transition matrices computed in the labour module and show the contribution to total employment of the change in employment in different types of firms (size and sector).

6. The new CompNet micro-based database II

- A. Berthou and E. Dhyne: *"The trade module: Cross-country analysis."* During the presentation Antoine highlighted the main research questions the trade module hopes to shed some light on: what differentiates exporters from non-exporters, what drives aggregate export dynamics and what are the transmission mechanisms. He gave a quick overview of the trade module code, then provided some comparisons of CompNet numbers with those of Eurostat, at the 2-digit industry level, and highlighted some caveats in the data as it is now. Next, Antoine showed preliminary descriptive statistics, such as the contribution of top exporters, the distribution of exporters, new entrants and firms who exit export markets by size class and the growth rate of exports by country. Some basic facts emerging from the data relate to the concentration of export activity in few firms, the characteristics of exporters vis-à-vis non-exporters (larger, higher wages and productivity) and the relative higher growth rates of switchers with respect to permanent exporters, even when their overall contribution is much smaller.

- P. Lamarche, N. Benatti and K. Bankowska: *"Firms' financing constraints, a multivariate approach."* This paper uses the ECB's SAFE survey matched with balance sheets from Amadeus to estimate the relative importance of different financial indicators (from the balance-sheet, in particular cash holdings, cash flow over total assets and leverage) in determining whether a is self-reported as financially constrained in SAFE.

- A. Ferrando: *"The financial module: Cross-country analysis."* The research questions of the financial module relate to the link between the financial position of firms and their productivity, the misallocation of credit or the role of financing constraints in hampering exports or investment. Annalisa showed a comparison between CompNet data and the data used for the Structural Issues Report 2013 (SIR), which come mainly from a sub-sample of Amadeus (BvD). She highlighted how difficult is to compare indicators constructed from different samples, regarding their trimming procedures and selection of firms. The 3 indicators of credit constrained computed in CompNet were then explained and their evolution across countries and over time shown. The presentation concluded by showing the potential of joint distributions of financial variables with other modules' variables, for example to analyse the efficiency of credit allocation.

  Discussion: Carlo Altomonte (Bocconi University). In the discussion, Carlo proposed to devote more attention to country-specific sample attrition in the computation of some indicators and suggested to use a difference-in-difference approach when performing cross-country analysis. He proposed as well some validation exercises, namely comparing data with that from other sources and listed a set of research questions that could be addressed with the CompNet data. Regarding the trade module, the list includes: Investigating the distribution of exporters and basic statistics on exporters/non-exporters; analysing the productivity thresholds to export across countries and over time; looking at the productivity distributions for different types of exporters or at the productivity/size relation conditional on the exporting status. Regarding the financial module, the list of suggested research questions includes: analysing the financial position of different types of firms (low/high productivity etc.); looking at the productivity/financial position or productivity/size relation conditional on the presence of credit constraints; evolution of the financial structure of firms over time; share of credit constrained firms by type of firm, sector and year.

Discussions within the individual work-streams:

Work-stream 1

The discussion of the Compendium mainly focused on two aspects: The validation process of novel WS1-indicators and the suggestion to include fiches in the Compendium also for traditional indicators. This validation process is considered essential to ensure the reliability and credibility of WS1-indicators. A 2-stage procedure was suggested: in the first stage, all authors validate their novel indicators (if possible, expand the set of countries) by double-checking the numbers in the Toolkit database, double-checking consistency with fiches/boxes, and double-checking the economic consistency of the results. The ECB team validates traditional indicators by double-checking the

source, units, transformations etc. In the 2nd stage, the dataset and Compendium will be sent to WS1 members in order to receive comments on suspicious numbers, inconsistency with other indicators, counterintuitive results etc. (focusing on one/some countries or indicators). Also, the dataset and Compendium will be sent to ECB country desks to receive comments for the country of interest.

It was suggested to have at least some "short" fiche for traditional indicators. Given the large number of traditional indicators (>150), this task appears to be too ambitious and also puts the focus away from CompNet. Therefore, it was concluded to keep focus on novel indicators for the Compendium paper. Nevertheless, for the set of less common traditional indicators a short description will be provided in the Appendix of the Compendium.

WS1 members had several suggestions regarding the additional boxes in Compendium paper. One suggestion was about highlighting the difference between gross export market share and value-added export market shares that will enhance the understanding of the GVC importance. It was also suggested to add a country study that will provide a nice example for country desks experts and show the linkages between various novel indicators.

During the WS1 sessions, there were 4 short presentations:

B. Bluhm: "*Infrastructure of the Toolkit.*" The focus of the presentation was on two aspects. First, it was elaborated in more detail on the Compendium database in terms of country/indicator coverage, data sources, and the information set provided for each variable. In addition, the output of the R-code, transforming the database and integrating it to Tableau, was presented. The second part of the presentation was concerned with the harmonization of Matlab-routines for the novel CompNet-indicators and the related updating procedure. It was agreed that the technical details relating to the harmonization and updating procedure (of the UN Comtrade-indicators in particular) should be defined until the next workshop. Moreover, the need to validate all data (novel and traditional indicators) was stressed once more.

K. Lommatzsch: "*Trade weighted ULC indicator.*" The research project provides new evidence on the role of unit labour costs and prices for export performance by estimating aggregate export equations with sector-specific trade weighted REER, where the sector-specific developments are weighted by their share in value-added external trade. A fixed-effects model is estimated for 38 countries over the period 1996-2008. The results indicate that trade-weighted unit labour costs (TWULC) and trade-weighted deflators have not always developed more moderately than the average unit labour costs. The real exchange rates based on the TWULC is generally found to be statistically significant. The TWULC model fits best for the high-income countries whereas for the euro area (excluding NMS), only half of the variation is captured by this model.

A. Rua: "*Exports and domestic demand pressure: a dynamic panel data model for the euro area countries.*" The paper is focused on the recent evidence concerning a negative relationship between exports evolution and domestic demand pressure. From a policy perspective, the substitution between domestic and external markets along with the reallocation of resources towards the tradable sector is being pointed as an additional adjustment channel of the external disequilibria recorded by the European countries under stress during the most recent economic and financial crisis. The analysis considers 11 euro area countries (members of the euro area as of 1999). The results reinforce the existence of an asymmetric and negative effect of domestic demand on exports

behaviour, which depends on the slack of capacity production in the economy. In the discussion of the results, it was suggested to point out more clearly that the evidence should not be interpreted in favour of policies promoting lower domestic demand.

J. Hinz: *"Dissemination of CompNet-indicators with Tableau."* The focus of this presentation was on Tableau as a tool for dissemination of CompNet-indicators. It was emphasized that Tableau can be a very useful tool for incorporation of CompNet-indicators into policy analysis of competitiveness issues and illustration of stylized facts. Moreover, it was agreed that the dissemination of CompNet-indicators can be further enhanced via interactive Tableau-Dashboards on the CompNet-webpage. It was outlined that currently there are two parallel procedures in place towards the establishment of a full Tableau license within the ECB. First, testing of the software and building of CompNet-related dashboards is performed on private notebooks by a few Economists. Second, a business case for the official acquisition of Tableau has been sent to procurement for formal approval.

Work-stream 2

The first day of WS2 discussions and part of the second day, was devoted to modules' specific meetings. We also had a general discussion on next steps. It was decided that presentations with firm-level data will be distributed to the teams so they can check their own results. Few changes are required in the code to correct mistakes or include some variables. Once we collect all suggestions we will send a reduced set of codes to be re-run by the countries. We will try to keep it at a minimum. There was also some discussion on the inclusion, or not, of sophisticated firm-level regressions in the code. What follows is a short summary of each of the modules' specific meetings.

Mark-up group discussion

The mark-up group focused its discussions on several issues:

- Inclusion of the weighted price-cost margin in the collapse.
- Some strange results obtained may derive from different calculations for key variables (e.g. some countries may be using wage bill instead of labour costs, not using net capital of depreciations for tangibles). Re-checking definitions used by countries (or signal their explicit definition) would increase the quality of the exercise. Maybe a table with the definitions could be useful, also as a first step for the validation process.
- The calculation of the implicit rate is presently coming from the financial module and is defined as the flow of interest over the average of current and lagged debt, which reduces the size of the sample. Maybe, for the effect of the mark-up module, we could use a version with just debt in moment t in the denominator. We have signalled this point to Annalisa.
- Energy sectors have been removed for the exercise. Although these sectors may have a low number of observations for each country, they should not be excluded ex-ante. Potential significant results have important policy use.

Trade group discussion

A large part of the discussion was focused on sample comparability across countries: namely the fact that small Spanish firms seem to have been trimmed (to be checked) so the representativeness of exporters is quite low. Another issue of discussion was the case of the Italy, which has an abnormally high share of exporters. The issue was due to the balanced sample nature of the Italian data.

Validation of statistics from the trade module was also discussed. Antoine went through some of the general statistics (mostly what was shown in the presentation, see above).

The discussion also focused on two technical aspects: 1) the threshold for reporting data from the Customs offices and how it should be applied and 2) What changes need to be implemented in the trade module. Concerning 2), the changes are minor, and should not affect the usability of the data available already: adding an outlier treatment for the export variable (still to be decided how: an e-mail will be circulated about this) and adding one or two extra descriptive statistics. About 1) a detailed note on how the threshold should be applied will be written and distributed with the next set of codes.

Lastly, work for the descriptive paper to accompany the trade module was distributed across trade module participants.

Financial group discussion

The meeting started with the coordinator of the module, Annalisa Ferrando, showing the new results of the financial module to the participants, which were NCBs' representatives (Belgium, France, Germany, Slovenia and Spain) and EIB's representative on the first day. Part of the results presented was not convincing for some participants and a discussion started on methodological, organizational and confidentiality issues. More concretely:

- NCBs' representatives were concerned about confidentiality: data should not be disseminated neither presented outside the Compnet network; fully agreement from all the participants. They were also worried about validating this data but financial module coordinator underlined the crucial role of the countries themselves in providing the highest quality data. It was agreed that, before the next workshop, the presentations would be sent to the countries in order to check the results. Finally, participants asked to improve communication and coordination of the network, providing a more detailed description of the dofile.
- On the methodological side, the main points of the discussion have been: (1)The definition of financially constrained firms: NCBs' representatives did not agree on the methodology used to select those firms; the main concern was about the unique threshold of 16% which is used across all countries and years. The coordinator of the module agreed in revising the methodology in order to improve the reliability of the analysis. Moreover, selection of financially constrained firms before 2008 was not considered very sound by NCBs' representatives; (2) Leverage: the concern was whether to drop firms with negative leverage or keep them in the dataset. A discussion should be opened inside the module to take a decision. Another point discussed was the need to check further with the countries which variables are available to define leverage. One proposal would be to introduce two different variables for leverage following the two definitions already in the do. File. This implies however to double the indicators that include the leverage function, so needs further discussion; (3) Investment: it should be included among the main financial variables and better cleaned from outliers given that the general trimming of p10 and p90 seems not to be enough.

In summary, the code needs to be reviewed and the new decisions should be implemented in it; a new version of it will be sent in order to collect new results and address the suggestions raised.

Labour group discussion

- Discussions on the first day were focused on the presentation (see above for a summary). The second day was devoted, firstly, to the validation exercise. The idea is to compare employment by sector and size class with the micro-LFS and the transition matrices with OECD dynemp. Cristina Fernández and her assistant, Roberta García, will take the lead in this respect.

- There was some discussion about the point raised by Emmanuel Dhyne about the impossibility to run on large datasets very sophisticated regression exercises. The strategy in this respect is twofold: first, the regressions will be revised in order to simplify them. If this is not possible, the entire firm-level part of the code will be dropped and researchers across different central banks (in countries with an acute employment problem) will be bilaterally contacted to launch a common research project exploiting firm-level information.

- Some data issues have to be revised, like the missing data of Germany in some sectors.

- With respect to possible additions to the labour code, it was proposed to add a split of firms according to their relative growth, that is, we would compute the share of firms that grew between t and t+3 by X% and their characteristics, as well as including a split according to the age of firms in countries where age is available.

- With respect to the descriptive paper, a detailed outline will be circulated soon and the work divided among the different labour module participants.

Work-stream 3

During the first day of WS3 discussions, two research projects were presented: F. Trottner presented the project entitled ': Getting into the flow – Global Value Chains and Current Account Imbalances' co-authored by G. Georgiadis and J. Gräb where they use a framework similar to the IMF model used for the external balance assessment and augment this model by a term describing the participation in global value chains. A. Nagengast presented a project on which he is working with R. Stehrer entitled 'The dog that did bark? Changes in global value chains during the great trade collapse' explaining in how far global value chain linkages changed during the recession.

During the second day of workstream sessions, the discussion focused on two items:

- The possibility to use micro data to write a paper about Global Value Chains, as it was done for Portugal in one of Joao Amador's papers. In this respect, it was proposed to use the EFIGE dataset to make a comparison among countries (i.e. Italy-Germany, as in Giunta and Accetturo (2013) "Global Value Chains and the Great Recession: Evidence from Italian and German Firms").

- The second idea is to create an indirect indicator of Global Value Chains focusing on the identification of the suppliers: That is, to build the chain, analyse its shape (snake/spider) and choose the right benchmark for the production function. As far as this last point is concerned, the current benchmark is the US production function but some objections emerged and one proposal was to use the UK one (ONS dataset) as it seems to be detailed

enough (120 sectors), even if the UK is not really a manufacturing country. It was pointed out also that it would be interesting to observe the evolution of the chains along time.

Thank you again for your participation!

We are looking forward to meeting all of you in Lisbon in September.

Filippo and the ECB CompNet team