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Executive Summary

Greater than the sum of its parts? Does Austria profit from a widening network of EU free trade agreements?

Authors: Julia Grübler, Oliver Reiter

Political debates and economic analyses often focus on single free trade agreements and their potential economic effects on participating trading partners. This study contributes to the literature by shedding light on the significance of trade agreements in the context of countries' positions in worldwide trade agreement networks, by combining network theory with gravity trade modelling. We illustrate, both numerically and graphically, the evolution of the global web of trade agreements in general, and the network of the European Union specifically, accounting for the geographical and temporal change in the depth of agreements implemented. Gravity estimations for the period 1995-2017 distinguish the direct bilateral effects of trade agreements from indirect effects attributable to the scope of trade networks and countries' positions therein.

Keywords: free trade agreements, network effects, trade policy, structural gravity model.
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With more than 40 free trade agreements (FTAs) in place, the European Union has one of the most extensive trade agreement networks in the world. There are reasons to assume that the impact of an FTA network goes beyond the positive trade effects expected from the conclusion of a single agreement. Most of the recently established FTAs do aim at a reduction in tariffs; but increasingly, they also focus on standards – not only with respect to product quality, but also in areas such as labour, safety, climate and consumer protection. The more countries agree to adhere to international standards and rules, the greater should be the economic potential for companies whose domestic regulations are already aligned with these internationally agreed standards. Furthermore, as free trade agreements reduce trade costs between participating countries, they affect the productivity and competitiveness of firms that spread different stages of production across various countries. As such, the effect of an FTA also depends on the network of agreements surrounding it, and on whether a country is a first mover in terms of fostering its standards in international fora.

The global network of free trade agreements has expanded extensively and has become more interconnected over time. In Figures 1 and 2 we offer a visual representation of the network of free trade agreements at two different points in time.¹ In 1977, the EU members (depicted as a single node) formed the core of the global FTA network. Many connections were rooted in former colonial ties. Some separate FTA networks existed in Latin America, Asia and Oceania. However, they were not connected to each other.

Figure 2 / FTA Network 2017

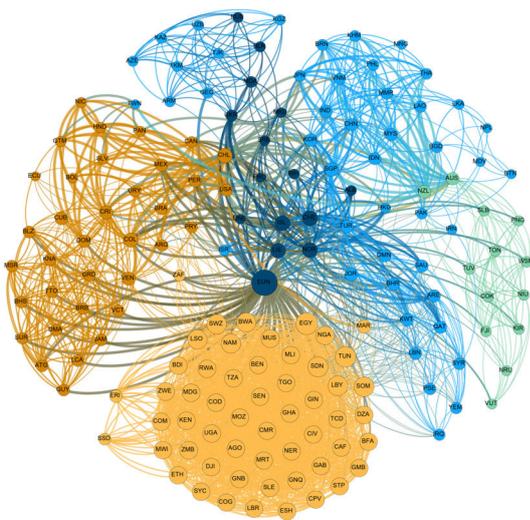
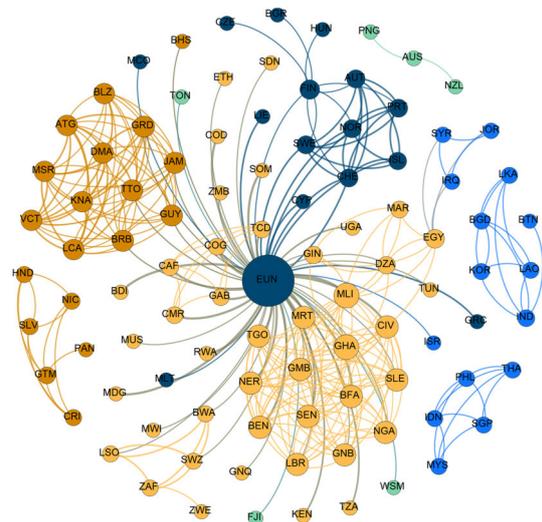


Figure 1 / FTA Network 1977

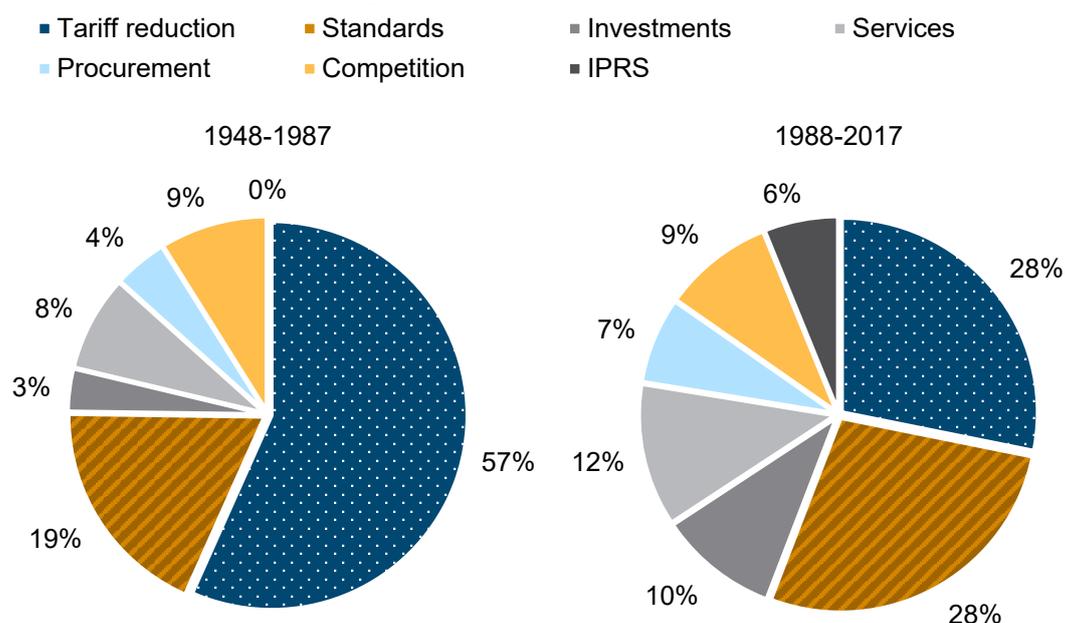


By 2017, the network had grown increasingly interconnected. Although the EU is still a major player, its relative position as a hub in the global network is visibly decreasing.

¹ The full report provides additional network graphs for the years 1987, 1997 and 2007, with descriptions of the evolution of regional FTA networks.

The effectiveness of an FTA also depends on its scope and depth. Agreements vary considerably in the topics they cover. Figure 3 shows how the composition of provisions in FTAs has changed over time. In addition to tariff reductions on goods, other dimensions – such as standards, investments, trade in services, public procurement, competition, and intellectual property rights (IPRs) – have become more prominent in recent years.

Figure 3 / Composition of provisions in FTAs



Note: Year of entry into force. wiiw aggregation and visualisation.

Data source: Dür, A., L. Baccini and M. Elsig (2014), 'The design of international trade agreements: Introducing a new dataset', *Review of International Organizations*, Vol. 9, No. 3, pp. 353-375. DESTA update 2019.

Using information on the evolution of FTAs in terms of their geography and content, we quantify the centrality of countries within the global FTA network. Four different measures of centrality used in network theory are applied to our trade policy analysis. They numerically summarise the relative position of countries, as hubs or spokes in the FTA network. With many agreements in place, connecting multiple regions, the EU attains high values on all the measures, whereas the US and China often fall far behind. Furthermore, we define an indirect FTA measure that captures the connectedness of two countries, apart from the direct link between them (e.g. connections between Austria and Canada when ignoring the Comprehensive Economic and Trade Agreement, CETA). This allows us to disentangle the *direct* effect of the FTA from the *indirect* effect that comes from the surrounding web of trade agreements. The centralities calculated and the indirect FTA measure are subsequently used in gravity estimations to analyse how they influence the trade flows between trading partners.

The regression results confirm that FTAs on average increase trade. Since we also control for import tariffs (which exhibit an expected negative effect on trade), the positive effect associated with an FTA is attributable to all trade effects beyond current tariff reductions, including the channels of, for instance, regulatory convergence, mutual recognition or harmonisation of standards.

Our results persistently suggest that overlapping FTAs (as represented by the indirect FTA variable) have a positive effect on bilateral trade flows. Thus, both direct and indirect links between two countries matter for trade. Centrality, too, shows mostly positive effects: an FTA appears to have a bigger positive effect if the exporting country has a more central position in the network of free trade agreements. The conclusions for the importer are more ambiguous.

Counterfactual experiments allow us to investigate the potential effects of FTAs on wealth. Estimating a structural gravity model allows us to translate the estimated effects of tariffs and measures of FTAs and centralities into changes in macroeconomic indicators, such as GDP or employment, for specified counterfactual scenarios. The two scenarios we consider are the EU-Japan Economic Partnership Agreement (EPA) and the EU-Mercosur Trade Agreement. The former entered into force in February 2019. For the latter, a political agreement with Argentina, Brazil, Paraguay and Uruguay was reached in June 2019.

The EU's new agreements substantially improve the centrality of its trading partners. This is due to the high geographical complementarity of their FTAs with EU FTAs. Other trading powers, such as the US or China, experience a decrease in their centrality, in particular in the case of the EU-Japan EPA.

Our results suggest an increase in Austrian exports of 1.9% and a rise in real GDP of 0.06% over the period of the implementation of the EU-Japan EPA. The estimated trade effects for Japan are higher (7%), accompanied by an increase in real GDP of 0.06%. We find positive, yet economically insignificant, changes in employment for the trading partners.

The estimated economic effects of the EU-Mercosur agreement are substantially larger. Austria is expected to experience an increase in exports of 3.4% and a rise in real GDP of 0.13%. The trade effects for the Mercosur economies are five times greater (Paraguay 15.8%, Argentina 16.5%, Uruguay 17.6% and Brazil 19.0%). Likewise, the potential effects on real GDP are significantly more pronounced for Mercosur economies than for their European peers (Brazil 0.16%, Argentina 0.17%, Paraguay 0.29% and Uruguay 0.30%). Changes in employment are again found to be positive, but small.

Graphical, numerical and econometric analyses of the evolution of the EU's free trade network all suggest that its first-mover position as the central hub in the global FTA network has resulted in positive effects, over and above the positive effects resulting from the conclusion of bilateral and plurilateral FTAs. Given the ever-denser global FTA network, the commitment on international standards will become crucial in maintaining the positive effect of additional FTAs and overlapping FTA networks.