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EIIW Working Paper 212, *15.2.2016*: **Andre Jungmittag/Paul Welfens, Beyond EU-US Trade Dynamics: TTIP Effects Related to Foreign Direct Investment and Innovation**

The international economic debate on the Transatlantic Trade and Investment Partnership (TTIP) has focused mainly on trade induced real income gains while the FDI related and innovation induced benefits have been largely neglected, although the EU and the US are both leading FDI host countries and FDI source countries. Moreover, from a theoretical perspective a knowledge production function has to be considered in order to analyze FDI and innovation dynamics – and this can then be linked to output and economic growth, respectively. The panel data estimation of knowledge production functions for 20 EU countries between 2002-2012 shows clear empirical evidence that a rise of the FDI stock-GDP ratio will raise patent applications. Additionally, a higher per capita income – that could reflect trade related real income gains in the context of TTIP – also contributes to more patent applications. Time series data analysis for Germany further indicates that FDI induced higher innovation dynamics will raise output. Combining trade benefits, FDI/innovation related real income gains and transatlantic macroeconomic interdependency effects, a real income gain of 2 percent to 2.5 percent should be expected for both Germany and the EU as a whole: considerably higher than what the official TTIP report for the European Commission has suggested. The new approach developed has broad implications for deep regional integration projects.

There are five elements of real income gains in the context of TTIP assuming that tariffs are largely eliminated, non-tariff barriers reduced by about a half (meaning also more common transatlantic industrial norms) and transatlantic barriers to capital flows reduced:

- (1) trade creation, (2) a rise of foreign direct investment and the associated rise of innovation dynamics, (3) a rise of patent applications in the context of higher research and development efforts of firms, (4) an increasing use of common transatlantic industrial norms, (5) transatlantic economic spillovers from the US to the EU (there is also a reverse channel from the EU to the US). The CEPR study of 2013 covers only the trade creation effects and (in chapter six) some aspects of enhanced transatlantic FDI flows that were estimated to raise employment of US subsidiaries in the EU by 11% and that of EU subsidiaries' in the US by 10%. The EIIW study by Jungmittag/Welfens of 2016 highlights the effects (2)-(5) and comes up with additional economic insights and higher real income gains: about 2 percent for the EU and Germany, respectively; this is higher than the Commission has suggested on the basis of the CEPR study. The methodology developed in the Jungmittag/Welfens approach lends itself easily to also analyze the US TTIP benefits - using regional US data – in a consistent way.
- As regards deep integration projects such as TTIP or the Trans-Pacific Partnership, it is obvious that looking only at trade effects means to understate the relevant economic benefits.