

# List of Projects

## Oliver Reiter

### **A multi-country agent-based model for CESEE countries**

*Anniversary Fund of the Oesterreichische Nationalbank*

*October 2024 - September 2027*

The project develops a multi-country agent-based stock-flow consistent model designed to analyse various macroeconomic scenarios in the region of the Central, East and Southeast European (CESEE) economies. Initially, we will concentrate on the EU membership countries of the CESEE region. In subsequent steps, we aim to expand the model by including other, non-EU, CESEE countries. Our goal is to create a comprehensive and flexible tool that can be applied to the majority of CESEE countries covered by wiiw, taking account of the need for country-specific adjustments, and eventually to provide quarterly forecasts for the region. Funded by the Anniversary Fund of the Oesterreichische Nationalbank (Project No. 18988).

### **Public finances and climate change**

*Anniversary Fund of the Oesterreichische Nationalbank*

*October 2025 - September 2027*

Against the background of predictions by climate scientists that temperatures and related extreme weather events will continue to increase in the coming decades, the interest of academics and policy makers in understanding the complex economic effects of climate change has grown. Events such as the flooding in mid-September 2024 after the heaviest rain in decades in Central and Eastern Europe emphasise the threat posed by extreme weather events. However, research on the complex nexus between climate change and public finances remains relatively underdeveloped, with comparatively little research on the consequences for different dimensions of public finances, including debt sustainability and sovereign risk. This project aims to close existing gaps in the literature by providing new theoretical and empirical contributions that allow for a better understanding of the nexus between climate change and public finances in Europe and beyond.

Funded by the [Anniversary Fund of the Oesterreichische Nationalbank](#) (Project No. 19057).

### **Capacity Building for Central, Eastern and South Eastern Europe: Development, organisation, implementation and evaluation of seminars at the Joint Vienna Institute**

*Oesterreichische Nationalbank/Austrian Ministry of Finance*

*January 2026 - December 2026*

On behalf of the Austrian authorities - the Federal Ministry of Finance and the Oesterreichische Nationalbank - wiiw develops and delivers specialized training programs within the framework of the Joint Vienna Institute. These courses are designed for public sector decision-makers and policymakers from transition economies in Central, Eastern, and Southeastern Europe, the Caucasus, and Central Asia. The 2026 program will focus on key economic and policy challenges, including competitiveness, growth and crises; public governance and structural reforms; public policies for the green and digital transition; foreign direct investment policies; and crisis management and resilience. In addition, the Applied Economic Policy Course will include a dedicated module on Austrian political and economic issues.

### **Genetic innovation, intermediate goods and energy prices in an agent-based model (wiiw Team Leader)**

*Anniversary Fund of the Oesterreichische Nationalbank*

*March 2023 - August 2026*

Agent-based models have been receiving ever more attention in recent years. Especially since the crisis of 2008, there have been calls for new research tools. Agent-based models are an interesting option: they allow study of the behaviour of heterogeneous agents and the effects of such heterogeneity on the total economy. We propose introducing three novel extensions to a state-of-the-art agent-based model: First, we allow for rich interactions between industries by incorporating intermediate goods into the production process. Secondly, the model is extended to enable a new way to model technological change (“genetic optimisation”). Thirdly, we propose to account for the biophysical dimension by including energy usage as a factor of production.

Funded by the [Anniversary Fund of the Oesterreichische Nationalbank](#) (Project No. 18830).

### **EU-Asia relations: technological competition and trade policies in an era of regionalisation**

*Anniversary Fund of the Oesterreichische Nationalbank*

*June 2023 - May 2026*

This project analyses various aspects of EU-Asia relationships with a focus on East and Southeast Asia. It addresses two main aspects which characterise current global economic developments: a tendency towards competing regional integration (‘regionalisation’) and fiercer technological competition. In a first module it analyses intra- and interregional research collaborations of firms, the positioning of EU and East and Southeast Asian countries in terms of the functional specialisation of global value chains, and technology spillovers from multinationals from emerging East and Southeast Asian economies and multinationals from advanced economies to domestic EU firms. The second module focuses on the roles of competing trade policy arrangements and technological complementarity in regional vs. inter-regional integration processes, the impact of different trade policy designs on trade structures in the context of industry-specific technology catching-up and leap-frogging, and global and regional competition with respect to regulatory standards. The policy relevant conclusions with respect to innovation and trade derived from the results will be summarised in a Policy Note.

Funded by the [Anniversary Fund of the Oesterreichische Nationalbank](#) (Project No. 18833).

### **Capacity Building for Central, Eastern and South Eastern Europe: Development, organisation, implementation and evaluation of seminars at the Joint Vienna Institute**

*Oesterreichische Nationalbank/Austrian Ministry of Finance*

*January 2025 - December 2025*

On behalf of the Austrian authorities - the Federal Ministry of Finance and the Oesterreichische Nationalbank - wiiw develops and organizes specialized training programs within the framework of the Joint Vienna Institute (JVI). These courses are designed for public sector decision-makers and policymakers from transition economies in Central, Eastern, and Southeastern Europe, the Caucasus, and Central Asia. The 2025 program will offer courses on key economic and policy challenges, including Competitiveness, Growth, and Crisis; Public Governance and Structural Reforms; Public Policies for the Green and Digital Transition; Foreign Direct Investment Policies; and Crisis and Resilience. Additionally, a dedicated segment on Austrian political and economic issues will be integrated into the Applied Economic Policy Course.

### **Study on value-added exposure estimates to assess spillovers and competitiveness**

*European Commission, DG Economic and Financial Affairs*

*August 2024 - November 2025*

Current models based on input-output tables are prone to various weaknesses and challenges. First, input-output tables are released with a considerable time lag (publication lag), which might lead to inaccurate estimates in the times of fast-changing economic conditions. Second, input-output tables are typically available in nominal terms only, as opposed to real terms (or more exactly, chain-linked volumes) as is the case with National Accounts data. The aim of this study is to advance DG ECFIN’s input-output modelling framework in several respects. Specifically, this project will produce a tool enabling researchers to update and forecast input-output data to the extent possible. This will allow DG ECFIN to undertake spillover assessments (both for demand and price shocks) in a forward-looking manner within the economic surveillance framework.

### **Towards a world integrated and Socio-economically balanced European economic development scenario (TWIN SEEDS)**

*European Commission, Horizon Europe*

*October 2022 - September 2025*

The objective of the TWIN SEEDS project is to investigate changes in international trade and production patterns, specifically in global value chains (GVCs), both those of a longer-term nature (driven by the "twin seeds": technological developments and geo-political changes) and those that are taking place in the wake of the Covid-19 pandemic. The project will examine the impacts of these changes on employment, job quality, social and regional cohesion, on patterns of growth and competitiveness, as well as their environmental implications. The analysis will provide the basis to map out forward-looking policy scenarios (including trade and investment, industrial, regional, education/training and social policies) that allow Europe to secure decent work and working conditions, rapid progress towards resource-efficiency and decarbonisation, security of supply for strategic goods and sustainable, inclusive and competitive growth in the years to come. The research will be based on a thorough multi-level (global, national, regional, sectoral, firm level) research framework, relying on a mix of quantitative and qualitative methods, on multidisciplinary knowledge (international economists and trade policy experts, regional economists, international business and organisational experts, political scientists) and on an extensive stakeholder engagement.

### **Neue Wege für die EU-Türkei-Wirtschaftsbeziehungen - Zollunion im Wandel?**

*Austrian Federal Ministry of Economy, Energy and Tourism*

*October 2024 - September 2025*

Die Studie wird verschiedene wirtschaftliche und politische Annäherungsstrategien in Bezug auf die Zollunion zwischen der EU und der Türkei evaluieren. Dazu gehört unter anderem die Modernisierung des bestehenden Zollunionsabkommens sowie die Kontinuität des aktuellen Abkommens und die Möglichkeit der Aufhebung der Zollunion. Dabei werden die ökonomischen und politischen Auswirkungen dieser Ansätze auf die Türkei und die EU, einschließlich Österreich und ausgewählten Mitgliedstaaten, analysiert und politische Vorschläge erarbeitet.

### **Export diversification strategy for Venezuela**

*United Nations Conference on Trade and Development (UNCTAD)*

*October 2023 - December 2024*

This project aimed to design a sustainable diversification strategy for Venezuela and industrial policies to support the identified products and processes. In the framework of this project, wiiw analysed the export structure of Venezuela using the product space methodology and identified new export opportunities through a thorough analysis that involved the product space metrics and additional indicators on linkages, employment, export markets, and foreign exchange.

### **Labour market effects of Austrian foreign trade**

*Austrian Federal Ministry of Labour and Economy*

*November 2023 - September 2024*

Around a third of Austria's GDP can be attributed to export activities in value added terms and accordingly, around a quarter of employment is directly and indirectly linked to exports. Export markets might undergo a profound change over the next years. Further the labour market will be affected by major changes in the coming years due to demographic developments. This study is therefore dedicated to the interaction between the Austrian export economy and the labour market, whereby two central topics are addressed and linked: Firstly, the expected effects of structural change in foreign trade on the demand for labour in Austria are analysed and quantified. Secondly, the development of the labour supply is discussed and compared with the analyses of the development of labour demand. The aim is to quantitatively analyse the development of employment given the demographic developments on the one hand and the expected structural developments and effects on employment stemming from Austrian foreign trade on the other.

### **Spend, transfer, or repay. What to do with all the money from the EU carbon border tax?**

*Anniversary Fund of the Oesterreichische Nationalbank*

*October 2022 - September 2024*

The project addresses the impact of the European carbon border adjustment (CBA) mechanism. The research project estimates the effects of a carbon border tax on trade, GDP, and welfare for alternative spending scenarios for the carbon border tax revenues. This is explored with two different carbon border adjustment designs. The research will strive to contribute to the policy debate on the design of the CBA, and on the future of the EU budget in the context of new own resources.

Funded by the [Anniversary Fund of the Oesterreichische Nationalbank](#) (Project No. 18815).

## **Green Transition**

*Kontext Institut*

*April 2024 - May 2024*

Green technologies hold great potential for the European economy. Faced with the active use of green industrial policies in China and the US, Europe cannot sit back and observe the unfolding of this 'green race'. A deeper EU involvement in the production of green technologies could create new business opportunities and ignite a new wave of innovations and investment. Similarly, in the face of escalating environmental degradation and the imperative of mitigating climate change, nations grapple with the intricate interplay between economic growth and environmental sustainability. In such context, understanding the vulnerabilities and resilience of industries emerges as a pivotal consideration. This project analysed the impact on GDP and employment of reshoring to the EU the production of five major green technologies (photovoltaics, wind turbines, batteries, electric motors and electric vehicles) and the resilience of low carbon intensity (LCI) versus high carbon intensity (HCI) industries of the Austrian economy, examining the impact of energy price shocks on real gross value added (GVA) and employment within both LCI and HCI industries.

## **Assessing inflation through input-output analysis Spillovers**

*European Commission, DG Economic and Financial Affairs*

*September 2023 - March 2024*

The strongly rising and rather persistent inflation rates over the last two years pose an important challenge to policy makers. To design appropriate policies to combat inflation requires a thorough understanding of the sources of inflation. The massive energy price shock which hit all Member States of the European Union to a different degree has led to unprecedented levels of inflation combined with or followed by an increase in value-added inflation in most EU Member States. Input-output tables and techniques allow to disentangle the direct impact of the shock from the impact of other factors, such as value-added inflation, on inflation.

## **Entwicklung, Organisation, Durchführung und Evaluierung von Seminaren am Joint Vienna Institut (JVI)**

*Oesterreichische Nationalbank/Austrian Ministry of Finance*

*January 2023 - December 2023*

Das wiiw hat im Rahmen des Joint Vienna Institute (JVI) mehrere Kurse konzipiert und durchgeführt. Diese Kurse richten sich an Entscheidungsträger des öffentlichen Sektors aus den Transformationsländern Südosteuropas und der GUS und haben zum Ziel, aktuelle wirtschaftspolitische Themen zu vermitteln.

## **Jobs, mental health and social policy in times of COVID-19**

*FWF - Austrian Science Fund*

*November 2021 - October 2023*

In this project, a research team at wiiw is investigating important structural and distributional social impacts of the COVID-19 pandemic. In addition to the impact of the crisis on different economic sectors and on their organisation, the topics of employment and re-employment as well as the perspectives of different social groups are taken into account. For this purpose, a model is developed that captures the main features of the social and structural impacts in the medium and long term ('agent-based stock-flow consistent model'). Besides factors of labour market economics, it also includes changes in technology, productivity and work organisation as well as economic policy decisions. Four empirical studies shed light on important components of the theoretical model. These include structural developments of economic activities, different employment models, homeworking and effects on mental health, analysis of government measures.

## **EU interconnectivity with its neighbouring regions**

*Bertelsmann Stiftung*

*November 2021 - February 2023*

Russia's invasion of Ukraine has marked the start of a new geo-economic era for the EU. Against this background, this study aims to gain a better understanding of the geo-economic challenges that the EU faces in its neighbourhood. It set out to measure the interconnectivity between the EU and its neighbouring countries and to compare these interconnections with those of the EU's peers and rivals: the US, China and Russia. The authors seek to identify and measure the extent of these interconnections in five key areas (trade, finance, technology and know-how, infrastructure and labour mobility), to draw out the key geo-economic implications for the EU, and to propose a set of policy recommendations for the EU's future engagement with its neighbourhood. The study was undertaken

jointly by wiiw and Bertelsmann Stiftung.

### **Study: Design and prototype for the input-output based suite underpinning spillover under the MIP**

*European Commission, DG Economic and Financial Affairs*

*November 2022 - February 2023*

This study helped ECFIN B1 to prepare the ground for updating and improving the analytical framework for MIP spillover assessment required by Regulation (EU) 1176/2011 Art 5(2). Ecfin sought to develop and implement a "future spillover tool" in 2023, a novel input-output tool capable of nowcasting value-added exposures in sync with Ecfin forecasts and allowing extensions to answer policy-driven research questions. Ecfin-B1 aimed to acquire the elements for such a tool through a competitive process.

### **Sectoral employment forecast 2022**

*European Trade Union Institute (ETUI)*

*June 2022 - December 2022*

The project provided forecasts of changes in sectoral (NACE rev.2, level 1) employment in Europe in the short- and medium-term up to 5 years onwards, produced under scenarios combining the possible evolution of structural changes and policies. These forecasts should provided likely development scenarios to support, reinforce and stimulate the European labour market policies.

### **Export bonus: Significance and performance of Austrian exporters**

*Austrian Ministry for Digital and Economic Affairs*

*October 2021 - April 2022*

In view of the importance of the export economy for Austria, in 2009 the Ministry of Economics commissioned that examined the characteristics (e.g. size distributions, productivity) of export enterprises. Due to the already long time horizon since the study has been undertaken - the data used in the study goes back to 2006 - the results are now outdated and it is no longer possible to use them without a certain degree of caution. However, the present study project will not only update these results, it is also intended to provide scope for expanding the factors considered (e.g. including R&D performance, ownership dimension). In addition, the methods used should also be brought up to date and additional data will be included.

### **Austria's Import Relations: Dependency Analysis**

*Austrian Ministry for Digital and Economic Affairs*

*December 2021 - February 2022*

Austria's dependencies on imports were analysed at the detailed product level based on UN Comtrade and EU COMEXT data. The analysis of imports is carried out according to the number of partner countries, the respective shares of partner countries in the imports of individual products as well as according to turnover frequency. Products with high import dependency were identified.

### **Growth and productivity accounts - Capital productivity and multi-factor productivity**

*Eurostat*

*July 2019 - December 2021*

Eurostat planned to publish for the first time capital productivity indicators (CAPI) and Multi-Factor Productivity to better meet the European policy needs. wiiw supported these activities with feasibility analyses, methodological developments, quality assessment of indicators and by raising awareness regarding capital productivity.

### **The production side of 'digitalisation' and its impacts**

*Anniversary Fund of the Oesterreichische Nationalbank*

*September 2019 - October 2021*

The project comprised four main tasks linking the production and use side of the digital sector. In the first task the production and supply side of the ICT goods and services sectors was studied. An overview of the ICT industry across countries was provided based on various data sources at the industry and firm level. Determinants of ICT industries' performance and drivers of investment by ICT superstars across the European Union and the globe were analysed. The second task then focused on the patterns of trade of ICT goods and services linking the supply side of the digital sector to its demand. Furthermore, the impact of technical regulations and standards embedded within

Technical Barriers to Trade (TBT) on patterns of trade flows of ICT goods were analysed. Task three focused on the investment in ICT capital assets and building up of an ICT capital stock across countries and industries. Gross capital formation and capital stocks in different asset types and their contribution to employment and value added growth were studied. The fourth task was devoted to the role of patenting in productivity and market share of firms active in the global ICT sectors. Finally, in the last part of task we studied whether and how ICT driven technical change impacts on structure of labour demand by various groupings.

Funded by the [Anniversary Fund of the Oesterreichische Nationalbank](#) (Project No. 18128).

### **Towards a risk-adjusted trade policy** (*wiiw Team Leader*)

*Austrian Ministry for Digital and Economic Affairs*

*November 2020 - July 2021*

This research project tackled the question of how vulnerable our economies are to demand and supply shocks - both apply in the case of the COVID-19 health crisis from within and outside the EU - and what role GVCs play in the transmission of these shocks. The analysis focused on the vulnerabilities from an Austrian perspective and identified the sectors that are more prone to shocks due to dependence of imported products, low substitutability of imported products, high concentration on single supplying countries/firms and complex value chains.

### **Connectivity and interactions between global value chains and foreign direct investment networks**

*Anniversary Fund of the Oesterreichische Nationalbank*

*May 2020 - July 2021*

The research project used a mix of panel data econometric modelling and innovative complex network analysis techniques to study the topological properties, dynamics and interactions between the global value chain and the global foreign direct investment networks at aggregate and sectoral levels. The project analysed the mutual impacts between FDI and GVC participation, analysed the relative importance of countries and sectors from the perspective of multilateral connectivity and relatedness between sectors in general, as well as zoomed in on the digital cluster and economic integration and connectivity dynamics involving the EU and the CESEE countries in policy-oriented case studies. Inter alia the project expanded the country and time coverage of the world input-output database.

### **Analysis of value chains in the Western Balkans economies - Enriching potential for regional cooperation in priority areas**

*Joint Research Centre (JRC)*

*January 2021 - May 2021*

The overall objective of this project was to provide guidance, methodological support and capacity building in smart specialisation processes in the Western Balkans economies. One goal of the support to smart specialisation in the region was to identify promising industrial areas (domains) for the Western Balkan economies with higher value-added as well as to analyse and identify possibilities for wider cooperation in the South-East Europe in these identified areas. The analysis of value chains in the Western Balkans (WB) was expected to deliver an advanced contextual overview of the competitive position of the present and potential smart specialisation priority domains, and to identify opportunities for upgrading the position of the whole region and individual economies in European and global value chains; finding new market niches and areas of economic cooperation.

### **Quality of goods imports: Which role for non-tariff measures?**

*Anniversary Fund of the Oesterreichische Nationalbank*

*January 2019 - December 2020*

One major feature of non-tariff measures (NTMs) is their opacity and complexity of their effects. Regulative standards embedded within NTMs might cause significant trade frictions, while some could stimulate trade due to positive externalities. When NTMs become very trade restrictive and discriminatory, trade disputes may arise. Specifically, when technical NTMs are not improving the quality of the imported product but mostly act as an unnecessary obstacle to trade, the implications of those NTMs might be regarded as protectionism. The study will provide information for trade policy makers to have a better understanding of the current stocks of technical barriers to trade (TBT) and Sanitary and Phytosanitary (SPS) measures and their effects with a focus on quality. In fact, by knowing how these trade policy measures affect quality differently from price and quantity of trade, the study will provide insights on motives behind their implementation.

### **Innovative modeling of non-tariff measures in trade**

*Anniversary Fund of the Oesterreichische Nationalbank*

*September 2018 - June 2020*

Starting in the 1960s, non-tariff measures (NTM) have been continuously replacing tariffs as the core element of trade negotiations. The number of types of non-tariff measures and the number of countries making use of these instruments increases continuously. Therefore, many different approaches have developed recently for the evaluation of NTM and free trade agreements (FTA). Starting from models using simple dummy variables for the indication of NTM or FTA, today there is a wide range of databases available varying in content (i.e. capturing different aspects of NTM and FTA) and in applied methodologies (e.g. extracting information from legal texts, survey data, notifications to the WTO). Our contribution to the existing literature was at least threefold: First, it aimed at modelling non-tariff measures in a Structural Gravity framework. Second, it assessed the value added of different data on the structure of FTA and NTM by means of evaluating their ability to predict the trade effects of the EU-South Korea Free Trade Agreement. The third contribution laid in the estimation of effects of the EU-Japan Economic Partnership Agreement.

### **ArBeEi International - Grundlagen- und angewandte Arbeitsmarktanalysen**

*Federal Ministry of Labour, Social Affairs and Consumer Protection (BMASGK)*

*July 2017 - June 2020*

Der Prozess der Globalisierung sowie die zunehmende Integration Europas stellen den Arbeitsmarkt in Österreich vor große Herausforderungen. Zunehmende wirtschaftliche Verflechtungen (v.a. über Handel, Direktinvestitionen, Offshoring, Migration) haben erhebliche Auswirkungen auf die Bedingungen am Arbeitsmarkt, auf Lohn- und Einkommensentwicklungen und Beschäftigungsstrukturen. Evidenzbasierte Handlungsempfehlungen für die Wirtschaftspolitik im Allgemeinen und die Arbeitsmarktpolitik im Besonderen erfordern daher eine Analyse mit einer internationalen und vergleichenden Perspektive. Für Österreich bedeutet das, die arbeitsmarktrelevanten Entwicklungen seiner Nachbarländer, v.a. der mittel- und osteuropäischen Nachbarn, der Beitrittskandidaten und der EU Nachbarregionen genau zu analysieren, und natürlich auch eine globale Perspektive zu entwickeln. Dieses vom österreichischen Sozialministerium beauftragte Forschungsprojekt beschäftigt sich mit diesen Themen. Es ist auf drei Jahre angelegt und in vier Teilbereiche gegliedert: (1) Technologie, Globalisierung und Konvergenz in der EU, (2) Mobilität von Arbeitskräften und Migrationstrends, (3) Konjunktur, Beschäftigung und Arbeitslosigkeit und (4) institutionelle Rahmenbedingungen und deren Effekte auf Wachstum, Beschäftigung und Ungleichheit.

### **How EU funds tackle economic divide in the European Union**

*European Parliament*

*January 2020 - April 2020*

This analytical study aims to provide data and related analysis on the topic of operating budgetary balance, its failures and limitations and to deliver evidence of the positive outcomes that Member States' experience from belonging to the EU, notwithstanding the status of their operating budget balance. wiiw is collaborating in this study with WIFO and Blomeyer&Sanz.

### **Greater than the sum of its parts? How does Austria profit from a widening EU network of Free Trade Agreements**

*Austrian Ministry for Digital and Economic Affairs*

*November 2019 - April 2020*

The aim of this project was to assess the effects EU Free Trade Agreements had on Austria so far and how these inter-act with each other. The project was structured along three chapters. The first task was to compute, display, and describe the evolution of the FTA network of the European Union over time, and Austria's position within this network. The second task used the derived network measures of FTAs (centrality measures and indirect channels of FTAs) in a structural gravity framework using a global dataset of bilateral trade. The final task evaluated the direct and indirect effects of FTAs on GDP and employment in Austria in a general equilibrium setting. The gained insights are discussed in a policy note.

### **Das EU-MERCOSUR-Assoziierungsabkommen und seine Bedeutung für Österreich**

*Austrian Ministry for Digital and Economic Affairs*

*December 2019 - February 2020*

Mit dieser Studie sollen belastbare wissenschaftliche Evidenzen geschaffen werden, um rechtzeitig und proaktiv auf

auftretende Bedenken und Widerstände reagieren zu können. Im Fokus der Studie sollen daher die Bereiche Landwirtschaft, Umweltgüter sowie die Auswirkungen des Abkommens auf umwelt- und klimaschädliche Emissionen sein. Damit sollen die erwartbaren Vorteile und möglichen Nachteile des Abkommens aufgezeigt werden. Nur auf Basis wissenschaftlicher Untersuchungen ist ein sachlicher Diskurs zum EU-MERCOSUR-Abkommen möglich. Das wiiw erstellt diese Studie zusammen mit dem WIFO.

### **Industry level growth and productivity data with special focus on intangible assets (EUKLEMS update)**

*European Commission, DG Economic and Financial Affairs*

*July 2018 - October 2019*

Within this project, wiiw created a comprehensive set of reliable data for productivity measures and growth accounting. The work went in various aspects beyond the data that were officially available at this time, notably regarding the length of time series, the consistent application of industry and asset breakdowns, the quality adjustment of labour input measures and the respective attribution of wage shares, estimations of investments, consumption of fixed capital and capital stock. The strong need for such a database has long been recognised and underlies the development of the EU KLEMS project, which was successfully concluded in 2009 as an FP6-funded research project. Within this service contract, wiiw updated the existing EU KLEMS database, extended it by an additional set of information on intangible assets, explored ways to integrate these measures into the growth accounting framework and provided results of such an exercise, distinguishing a statistical from an analytical module. Moreover, wiiw provided an analytical paper identifying the most important recent trends of the productivity dynamics in Europe and its determinants, with a particular focus on the role of intangible assets. The dataset has been published on a dedicated website ([www.euklems.eu](http://www.euklems.eu)) in October 2019.

<https://www.euklems.eu>

### **Of Smile Curves and Global Value Chains: The Role of Functional Specialisation for Economic Growth**

*Anniversary Fund of the Oesterreichische Nationalbank*

*January 2018 - June 2019*

The central insight of the smile curve is that different functions (or 'tasks') that need to be performed along a firm's value chain have different potentials for generating value added, with the production stage often being the least promising one. Project-level data on greenfield crossborder investments with information on both the industry and the function they serve are used to identify countries' functional specialisation. A metric labelled 'relative functional specialisation in global value chains' and a related measure, the 'relative production specialisation index', are developed. The descriptive part of the project will use these indicators to create 'portraits' of functional specialisation of EU Member States, NAFTA and the South East Asian region. In a second step, the implication of the smile curve, i.e. that countries specialised in the pre-production and post-production tasks of the value chain should capture higher value added, is tested econometrically. To this end the relative function specialisation measure and the relative production specialisation index are embedded into an empirical endogenous growth model.

### **Background paper contribution for the Industrial Development Report 2020 'The Future of Industrialization'**

*UNIDO*

*November 2018 - March 2019*

There is a general expectation that the global economy is currently facing a new wave of technological change - Industry 4.0 - that is based on digitalisation and information and communication technologies (ICT) such as artificial intelligence, additive manufacturing and blockchain. As a background paper to UNIDO Industrial Development Report 2020, this project initially analyses the impact of total factor productivity (TFP) growth (i.e. a measure on technological progress) on employment, labour share, and value added growth of industries in emerging and transition countries. The analysis will take in to account the direct industry-own effects in addition to indirect impact across both national and international backward and forward linkages. Furthermore, wiiw analyses the corresponding impacts on employment, the labour share, and value added that arise from introduction of industrial robots, a prominent phenomenon in Industry 4.0.

### **The relevance of the EU-Japan FTA for the Austrian economy**

*Federal Ministry of Science, Research and Economy*

*December 2017 - June 2018*

Since the beginning of 2017, a paradigm change in international trade policy is observed. While the protectionist rhetoric of the administration of the US - the largest economy in the world - is threatening international trade,

trade and investment initiatives of China - the world's second largest economy - are gaining in significance and attracting global attention. The EU and Japan are aware of these developments and look for ways of cooperation. The aim of the study is to estimate the effect of the envisaged EU-Japan FTA for Austria based on qualitative and quantitative analysis and to derive recommendations for Austrian foreign economic policy.

### **Competitiveness drivers and obstacles, intra-EU linkages and European value chains in GVCs**

*European Commission, DG Grow*

*January 2017 - January 2018*

The emergence of international value chains (VCs) and the implied cross-border production sharing between countries has dramatically altered the international trading system. In view of the joint cross-border production processes numerous products would deserve the designation of origin 'Made in the World', as suggested by the WTO initiative of the same name - although in general there is the perception that international value chains are predominantly regional in scope. Since the Great Recession, however, there are concerns that the trend towards geographically-dispersed production has come to a halt with, among other factors, re-shoring initiatives and protectionist tendencies. Against this background this report analyses some of the key issues related to international VCs with data from the World Input-Output Database (Release 2016) which covers the period 2010-2014. Based to a large extent on a measure of international value chain (VC) trade termed re-exported domestic value added, which comprises exports of intermediates that cross international borders at least twice, the question whether the world has reached 'peak value chain trade' and to what extent VCs have contributed to the decline in the income elasticity of trade is addressed. The research also re-examines whether value chains are predominantly global or regional in scope both worldwide and at the EU level. Furthermore, the extent of regional VC integration across the major regional trading blocs is compared. Finally, some of the implications of value chain trade for structural change and competitiveness are investigated.

### **Productivity, Non-Tariff Measures and Openness (PRONTO)**

*European Commission, 7th Framework Programme*

*February 2014 - January 2018*

Over the past fifty years, there has been significant progress in lowering tariff barriers to international trade. With the rising importance of global sourcing, multinational enterprises and increased tradability of non-tangible products, Non-Tariff Measures (NTMs) have attracted growing attention from policy makers and academic scholars alike. Against this background, PRONTO aims to compile new data, develop better methodologies and increase our understanding of the impact of NTMs on international investment and trade. The proposed research project is divided into seven Work Packages (WPs). The first three provide the foundation for work in the project by consolidating existing and developing new NTM measures. The fourth WP acts as a bridge by establishing a methodological framework for using these measures in estimations and policy analysis. The fifth and sixth WPs use this framework and the new NTM indicators to consider the effect of NTMs on a variety of social and economic outcomes, providing both useful estimations for policy and a framework for future academic exploration of NTMs. The final WP focuses on dissemination of the data, methodologies, and results of the other six WPs. The project was funded by European Commission, 7th Framework Programme and received additional funding by the Austrian Federal Ministry of Education, Science and Research within the research programm TOP.EU.

<http://prontonetwork.org/>

### **Production linkages, value added trade and employment in the wider Europe**

*Anniversary Fund of the Oesterreichische Nationalbank*

*January 2015 - December 2016*

The establishment of supply and production links has been a major driving force of the integration of the new EU Member States. Countries strongly integrated in production networks benefited in terms of productivity, value added and export growth. An important question on the further widening of Europe therefore is the integration of today's accession countries and possibly the EU neighbourhood countries in that respect. For a detailed study of actual patterns of production integration, a European multi-country input-output table is constructed allowing for an analysis of patterns of integration and value added trade in the wider European context. The potential impacts are further investigated by using a gravity modelling approach accounting for the importance of trade in intermediates and value added trade. Finally, various scenarios will be calculated providing evidence of potential impacts of further integration or disintegration on income and employment.

### **Provision of updated input-output and supply-use tables of the World Input-Output Database (WIOD)**

*European Commission, DG Economic and Financial Affairs  
January 2016 - June 2016*

The EU/Seventh Framework project WIOD (as well as other ongoing initiatives such as OECD-WTO TiVA, EORA, EXIOPOL) produced comprehensive sets of internationally linked supply and use and/or input-output tables which have been widely used by academic researchers and policy-makers. Given the urgent requirement for having such data for recent years and the fact that the WIOD tables (as other efforts) are becoming outdated quickly, the need for an update of the WIOD arose. wiiw provided a revision and update of these data which - to the extent possible - are consistent with the existing data.

<http://www.wiod.org>