List of Projects

David Zenz

Green technologies: How are they created and regulated? What impact do they have?
Anniversary Fund of the Oesterreichische Nationalbank
January 2024 - June 2026

Climate change is a major concern in academia and policy arena. Whereas governments adopt various market regulations to reduce the GHGs and increase consumer awareness, businesses define new objectives aiming at reduction of pollution. Doing so, they innovate in green technologies to gain market shares by introducing new climate neutral products also impacting on their productivity, efficiency, and energy efficiency. The proposed research will comprehensively study determinants of such eco-innovations in Austria and the EU, and what impact they have on firm performance. The proposed research will first study how eco-innovations are undertaken at the firm-level by focusing on the role of firm-level characteristics such as productivity and quality of highly educated and skilled labour as well as financing and credits. Moreover, it will study how such eco-innovations and green technologies allow firms to become more energy efficient and more productive. Second, it will study how firms adjust their production with green regulations to supply and export products with better quality. Third, it will analyse how such novel green technologies are spurred in European regions by focusing on the role of Framework Programmes (FP) and public policies directed at the EU level. The role of joint research collaboration among inventors in different regions of the European Union, financing, funding, credits, and environmental regulations in the EU and abroad will be the key factors under these investigations.

Funded by the Anniversary Fund of the Oesterreichische Nationalbank (Project No. 18939).

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.

Monitoring and Assessing Labor Markets in the Western Balkans
The World Bank
June 2022 - November 2024

Western Balkan economies have persistently performed poorer than their peers from Central, Eastern and South-East Europe. One area where they have been particularly weak is the labor market. In 2021, none of them had an unemployment rate below 10%. In addition, the countries face a pronounced gender gap, high informality, low

salaries, with very high rates of poverty among the employed. A massive emigration causes a continuous shrinking of the labor force. On top of these challenges, reliable, consistent, detailed and comparable labor market indicators are missing. For that reason, the World Bank initiated a joint project with the Vienna Institute for International Economic Studies (wiiw) which aimed to develop a unique and freely available labour market database. It was also the basis for a joint annual Western Balkans Labor Market Trends Reports that analysed and highlighting key labour market developments in the region. The project was entitled SEE Jobs Gateway and lasted from 2016 to 2020. The key project outcomes are still accessible via the wiiw website. The current project aims to produce annual updates of the labour market database as well as its extension into several new directions. Annual Labour Market Briefs will feature specific topics, such as employment in new foreign direct investment projects, employment by occupations, labour taxation or migration. The complementary activities aim to encourage the wider academic and political community to target their analysis and measures and to engage in an informed debate within the region, the international academic and donor communities.

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 expenditure side of the European carbon border adjustment (CBA) mechanism. Currently, there are intensive discussions concerning the design of the CBA mechanism. The use of revenue is a sensitive issue that can have far-reaching implications on the effectiveness and legality of the CBA. While different expenditure options have been proposed, there is a lack of research contrasting the economic effects of the said revenue options. Therefore, the priority of the research project is to explore the economic implications of different spending options for the revenues generated by the CBA. It 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).

Beschäftigungs- und Lohnstrukturen, Verwendung von IKT in Haushalten und Erwerbsverläufe – Analysen basierend auf neuen österreichischen Mikrodaten
AK - Wien
March 2023 - June 2024

Verwendung von IKT und Beschäftigungs- und Lohnstrukturen: Analysen basierend auf neuen österreichischen Mikrodaten Ziel der Studie ist es, wichtige Fragestellungen auf Basis von Mikrodaten für Österreich zu analysieren. Die Studie konzentriert sich auf zwei Themenbereiche: IKT-Nutzung und Beschäftigungsentwicklung in österreichischen Unternehmen und IKT-Nutzung und Lohngleichheit in österreichischen Unternehmen

Untangling the impacts of technological transformations, globalisation and demographic change to foster shared prosperity in Europe (UNTANGLED)
European Commission, Horizon 2020
February 2021 - January 2024

Technological transformations, globalisation and demographic changes are the three key mega-trends posing socio-economic challenges and opportunities for the EU. UNTANGLED aims to fill knowledge gaps about these trends by pursuing three main goals: (1) to provide detailed analyses at the macro-, regional-, sectoral-, and micro-level concerning the effects of these trends on labour market outcomes and inequality, and their winners and losers; (2) to develop comprehensive, model-based scenarios of the impacts of these trends in the next decades, overall and for various subpopulations, sectors and regions; (3) to develop policy recommendations fostering shared prosperity. The project is commissioned to a consortium coordinated by the Catholic University of Leuven. wiiw is one of 14 partners and leads a workpackage on meso-level analysis.

Political economy of public debt, growth and interest rates in the context of the Corona crisis
Anniversary Fund of the Oesterreichische Nationalbank
October 2021 - September 2023

The macroeconomic consequences of the Corona crisis have triggered an increase in public debt in the EU's Member States. This research project makes two contributions to a better understanding of the implications for economic policy. First, we develop the first quantitative analysis of the literature concerning the effect of public

debt on economic growth. Using the statistical and econometric toolbox of meta-analysis and meta-regression analysis, we investigate whether there is evidence for a threshold effect of the public-debt-to-GDP ratio, whereby economic growth could decline significantly if such a threshold is exceeded. Second, the project develops an analysis of government debt against the background of changes in the interest rate environment. Specifically, we analyse the role of the difference between long-term interest rates on government bonds and GDP growth rates for the dynamics of government debt and fiscal policy.

Funded by the Anniversary Fund of the Oesterreichische Nationalbank (Project No. 18699).

Online database for the Danube Region Monitor – People and Skills *(wiiw Team Leader)*
Austrian Agency for Education and Internationalisation (OeAD) and L&R Sozialforschung
March 2022 - May 2023

This project consists of developing a user-friendly online database with statistics and indicators on education systems and labour markets in the 14 countries participating in the European Union Strategy for the Danube Region (EUSDR). The online database is primarily designed for experts in ministries and (international) organisations who deal with the EUSDR and the fields of education and labour markets in a transnational context.
https://peopleandskills.danube-region.eu/danube-region-monitor/

Capacity building for Central, East and Southeast Europe: Joint Vienna Institute
Oesterreichische Nationalbank/Austrian Ministry of Finance
January 2014 - December 2022

For more than two decades, wiiw has been organising courses within the framework of the Joint Vienna Institute (JVI). These courses are aimed at decision-makers in the public sector and policy-makers from transition countries in Southeastern Europe and the CIS. wiiw organised six courses in 2022 and was responsible for the entire conception and implementation of these seminars as well as for the selection of the participants.

Functional division of labour in EU value chains
Hans Böckler Stiftung
January 2022 - December 2022

The emergence of global value chains has radically changed the organisation of production in the EU economy. In particular, the increasingly fine-grained international division of labour has made it possible for countries to specialise in individual business functions of the value chain and thereby generate higher value added. This project examined the causes and effects of these "functional specialisation patterns" on the labour market, particularly on wage developments and working conditions. The project combined two existing methods for the analysis of functional specialisations in order to ensure the reliability of results. The determinants and implications of functional specialisation on the labour markets in European countries and regions have been analysed using, inter alia, cluster analyses, panel regression methods and binary choice models. Ultimately, the questions to be answered by this study were: Why do some countries become locations for corporate headquarters and research laboratories, while others end up as "extended workbenches" within the European division of labour? What are the effects of these "functional specialisations" for labour markets in Europe?

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).

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.

Wirtschaftsbeziehungen Österreich - China: Künftige Kooperationspotenziale
Federal Ministry of Labour, Social Affairs and Consumer Protection (BMASGK)
August 2020 - January 2021

Wirtschaftsbeziehungen Österreich - China: Künftige Kooperationspotenziale Am 28. Mai 1971 wurden die diplomatischen Beziehungen zwischen der Republik Österreich und der Volksrepublik China aufgenommen. Dieser Schritt der bilateralen Annäherung jährt sich somit im Jahr 2021 zum 50. Mal. Mit dieser Studie sollte eine Bestandsaufnahme der bilateralen wirtschaftlichen und wirtschaftspolitischen Beziehungen und ein Ausblick über künftige Chancen für den internationalen Handel und Kooperationsmöglichkeiten, insbesondere auch für die Schwerpunkte Forschung, Technologie und Innovation, erhoben werden. Darauf aufbauend wurden Empfehlungen als Input für die nationale und interministeriell abzustimmende China-Strategie aufgezeigt.

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.

Studie 'Vom Nutzen in einer gut organisierten Stadt zu wohnen'
Büro für Daseinsvorsorge und Kommunalwirtschaft der Stadt Wien und Österreichischer Städtebund
April 2020 - July 2020

Der Megatrend Urbanisierung hält ungehalten weiter an. Folgende Forschungsschwerpunkte wurden in dieser Studie erarbeitet: a) Zuspitzung des Gewinns des Einzelnen im gut organisierten urbanen Raum (im Vergleich zu anderen Räumen) zu leben auf eine Nutzenkennzahl im Europavergleich. b) Ausbildungs-, Gesundheitsausgaben, sowie Ausgaben für Wohnen. c) Europavergleich der städtischen Lebensqualität: u.a. Zufriedenheit mit dem öffentlichen Verkehr und anderen öffentlichen Dienstleistungen. Aus gegebenen Anlass wurde die Qualität der städtischen Gesundheitsinfrastruktur anhand der jüngsten Geschehnisse in Zusammenhang mit der Coronavirus-Krise evaluiert.

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.

Effects, opportunity costs and spillovers of EU Cohesion Policy
Anniversary Fund of the Oesterreichische Nationalbank
September 2018 - June 2020

This project aimed at contributing to the discussion on the future, post-2020 EU Cohesion Policy (CP). In the past, CP has been the main tool to promote growth and convergence across the EU, thus having positive direct effects on the net recipient countries and also indirect ones on the net payer countries. Still, there is a never-ending debate on the rationale of CP, partly in favour of it, partly doubting its usefulness. The 2021-2027 EU budget funds to be expected will likely become scarcer, not only because of the Brexit but also because of the emergence of new priorities such as migration and security. In respect of these forthcoming challenges the debate on the effects, opportunity costs and spillovers of CP becomes fundamental. A quantitative estimation permits a more balanced assessment of the costs and benefits of CP for net paying Member States (MS) and a broader view of CP support to EU growth in general. Against this background the project aimed to: a) estimate the effects of CP on regional GDP growth; b) analyse the opportunity costs of CP investments (by investment priorities and geographical distribution); c) analyse the macroeconomic spillovers of CP investments in one country on the development in other EU MS; and d) analyse these spillovers at the regional level.

Linkages between Vienna and other European cities *(wiiw Team Leader)*
City of Vienna
January 2020 - May 2020

In this study, we introduce a measure of linkage for the relationship between cities/regions, based on time series features of search engine queries. The used features are backed by time series decomposition using STL, i.e. seasonal and trend decomposition using Loess, precisely the strength of the trend and the linearity of a time series. The combination of these two features for both sides of search interest, e.g. the search interest for a certain topic in the city of Berlin based on search queries posed in Vienna, allows for the analysis of the development of this computed measure of linkage for the period 2004-2020 in various search engine categories provided by Google Trends between cities/regions in Europe. We then present examples based on the city of Vienna as a point-of-interest for selected topics and propose a dashboard for policy decisions.

Capital dynamics, global value chains and competitiveness (CaDoVaC)
Joint Research Centre (JRC)
October 2018 - April 2020

The research project analyses the interaction between capital accumulation and FDI on the one hand, and global value chains, trade and productivity patterns – on the other. The analysis is carried out at the international level comparing the EU with the US, China and Japan, as well as at the national and industry levels focusing on the developments within the EU. The project aims to cast light on important dimensions of EU competitiveness concerning the implications of capital formation and allocation as a driver of global value chains, the role of capital composition in productivity dynamics, as well as obstacles for efficient capital allocation.

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.

Macroeconomic Forecast
Sberbank
October 2019 - March 2020

Countries - Macro-Economic Forecast: The wiiw statistics and country monitoring team provided on macro-economic indicators as well as forecasts for seven countries in Central, East and Southeast Europe to Sberbank Europe AG.

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. Wihin 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 it's determinants, with a particular focus on the role of intangible assets. The dataset has been published on a dedicated website (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.

Supply-use based econometric Input-Output multipliers of output, income, employment and CO2 emissions (SUBE)
Joint Research Centre (JRC)
December 2017 - October 2018

The CEIL Unit of the JRC is currently expanding its capacity to conduct studies in the domain of Input-Output analysis (data and modelling) in support of policies focusing on industrial competitiveness, growth and jobs, internal market, trade and globalisation (e.g. global supply chains) and EU environment and sustainability policies. Furthermore, Input- Output data enable more precise and comprehensive empirical applications on global supply chains, labour productivity and value added decomposition of gross exports by the use of additional socio- economic layers. The objective of this contract is threefold: (1) Provide the JRC with econometric estimations of output, value added, employment and CO2 emission impact effects per one-unit change (multipliers) in final demand of products; (2) Provide the JRC with econometric estimations of output, value added, employment and CO2 emission impact effects per one-percent change (elasticities) in final demand of products; and (3) Analyse the inter-temporal stability of the multipliers and elasticities calculated above as well as their potential use in input-output analysis and input-output modelling.

Eurasian Economic Integration: Impact Evaluation and Review of Prospects
Anniversary Fund of the Oesterreichische Nationalbank
January 2017 - June 2018

In the proposed research project we will examine the economic impact of Eurasian integration by focusing on trade creation and trade diversion effects at aggregate and industry levels vis-à-vis the members of the Eurasian Economic Union and non-bloc trading partners using the gravity model of trade and the synthetic counterfactual methods. In the light of the empirical results the project will also revisit the trade potential, challenges and possible routes of economic integration on the wider 'pan-European-Eurasian economic space' in the contexts of the EU and the EU Neighbourhood policy, the Eurasian Economic Union, and the New Silk Road initiatives.

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.

Durchführung einer Analyse zu volkswirtschaftlichen Aspekten von Infrastrukturinvestitionen
Ministry for Transport, Innovation and Technology (BMVIT)
February 2017 - September 2017

The aim of the project is on the one hand to calculate a possible lack of investment for Austria and other EU member states in the area of strategic important infrastructure like for example street, rail or broadband internet connection. And on the other hand to develop a concrete suggestion for a "golden rule" for infrastructure investment on EU level. The project is based on actual research, is broadening it and puts a focus on the macroeconomic approach of infrastructure investments, whereas structural, cyclical and regional aspects of the topic will be treated.