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Book of Abstracts



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Quantiles and Pareto Tails: Estimating the Firm Size Distribution from Micro-Distributed Data

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Firm size distributions typically exhibit heavy tails, but there is some debate about which parametric distributions (e.g. Pareto or another) describe them best. At the same time, availability of firm-level microdata is sometimes restricted by confidentiality concerns. This paper describes a way to estimate Pareto distribution tail coefficients from empirical quantiles of firm sizes, as well as an associated goodness of fit test. This approach can be used with existing or future micro-distributed datasets to analyze distributions of microeconomic variables without access to confidential individual data. The paper presents a Monte Carlo simulation of the proposed estimator and an application to distribution of firm sales in a panel of European countries. The estimated coefficients are between 1 and 1.5 and relatively stable in most countries and periods, but Pareto distribution assumption is rejected in some cases.

Determinants of knowledge production of universities in Europe - a regional approach

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The regional production of innovations has long been a reflection of the interest of researchers. There is a consensus that innovations are a crucial component of long-term economic growth of regions. The regional knowledge production function became one of the main methods to study regional innovation. Innovation is typically measured by a total number of patent applications in a given region. It mainly depends on two local inputs: the high-tech industry's own R&D and local university research. In addition, structural indicators such as technological proximity, research cooperation, human capital and regional industrial structure also drive commercial patenting. One of the shortcomings of current research in Europe is that it was not possible to separate the production of firm patents and production of university patents as the identification of university patents was problematic. This paper uses data on university patents in Europe as identified by Špurek (2022) to analyse and compare determinants of patents production of firms and universities in European regions. First, we estimated the general regional knowledge production function with a simple OLS regression model, which we further decompose into the knowledge production function of firms and universities. Our preliminary results show that higher volumes of firm patents is associated with higher level of firm expenditures on research and development and negatively associated with technological proximity of patent structure between firms and universities in a region. On the other hand, a higher level of university patenting is associated with higher level of expenditures of both firms and universities, level of local cooperation between firms and universities and higher share of employment in high tech industries.

Digitalization of public sector and its effects on domestic IT sectors: sector level evidence from the EU

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This study examines the effects of demand shocks linked to digitalization of public sector on the development of software sectors in the EU, measured in terms of sector revenues and employment. The demand from public sector for software and IT services is measured based on Tender Electronics Daily (TED). The study uses two-way fixed

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effects. The results suggest that, on average, digitalization of public sector leads to 2% increases in revenues and 1.7% increases in employment of software sectors in the EU. We show that these results are driven by countries that lag behind in terms of digitalization of the public and private sectors where demand from public sector has a larger contribution to the demand for software. In these countries, the estimated impacts are of 6% on revenues and 5% on employment. The results highlight the importance of demand-side constraints for the growth of high-tech sectors and show that public procurement can be an effective policy instrument for supporting their development.

Balancing merger gains and competitive pressure in benchmarking based regulation

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This paper contributes to the literature on mergers and benchmarking based regulation. Benchmarking based revenue cap schemes can give strong incentives to reduce costs. This happens in particular when there is a large set of low-cost peers. Mergers may also lead to cost gains by exploiting economies of scale and scope. However, mergers may also reduce the set of interesting peers and, hereby, the competitive pressure created by the benchmarking based regulation. The regulator must, therefore trade-off the gains from individual mergers against the reduction of the competition when fewer peers are available. We analyse which mergers a regulator should allow and which to avoid. We show how the position in input-output space of the merged firms relative to the other firms is crucial. We derive a series of simple statistics that can guide regulatory merger decisions, namely “number of outsiders”, “superefficiency”, and “peer’s relative importance”. We also illustrate our approach using data from the Danish electricity distribution sector.

Parallel Sessions I., Stream B: International economics

Determinants of financial inclusion in Euro Area countries

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We use the World Bank Global Findex database for 2021 to analyse financial inclusion in Euro Area countries. To analyse financial inclusion, we use the indicator of digital payments. We found that higher income, better education, being a woman, and being younger are associated with higher levels of realised digital payment. In the case of age, we can see the nonlinear relationship, where the level of digital payments increases with age. Still, after a specific threshold of around 30 years, the level of payments started to decrease. We have found that a higher level of digital payments relates to respondents who also used other payment methods before the coronavirus pandemic. We can also see an increase in the use of digital payments in the case of respondents who used only cash before the coronavirus pandemic, but this increase was not marked as significant. Also, higher use of digital payments is associated with countries with higher Digital Access Index (DAI), which measure the level of digitalisation in the country, and with countries which are among the founding members of the Euro Area.

Croatia, Welcome!

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In the context of the current enlargement of the European Monetary Union, this article aims to examine economic synchronization of Croatia with the Euro Area in the time-period domain. To this end, we calculate wavelet coherences and construct several wavelet indicators for real and nominal economic variables as well as variables related to economic sentiments. Comparing the results for Croatia with the benchmark

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economies, we find a relatively high level of synchronization of the real production and the producer prices in the lowest period band. Unemployment and the economic sentiment indicator both show a less intensive level of synchronization. Regarding unemployment, this may be due to structural factors outside the scope of the monetary policy. As for the economic sentiment indicator, there is evidence that it might get more synchronized after the introduction of the common currency. Therefore, this should not preclude Croatia from entering the European Monetary Union.

Determinants of Financial Inclusion in Africa and OECD Countries

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Using a dynamic panel data analysis, we explore the factors influencing financial inclusion in Sub-Saharan Africa (SSA) and countries belonging to the Organization for Economic Co-operation and Development (OECD). We employ the System Generalized Method of Moments (GMM) estimator and assess 31 SSA and 38 OECD countries from 2000-2021. We found that the differences in trade openness, banks' efficiency, income, and remittances are some macro-level factors that explain the variation in financial inclusion levels. We highlight the importance of quality literacy policies, trade improvement with restrictions on cross-border capital flows, and a more efficient financial system to promote financial inclusion

Capital flight and government debt sustainability in Africa: The interest rate channel

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This paper investigates the drivers of sovereign bond spreads in Africa by focusing on the role of capital flight. According to our knowledge, this is the first study to explicitly examine this relationship in the context of African countries. We use data on 30 African countries from 1992 to 2020. Based on the Pooled Mean Group (PMG) estimator, we discuss the implications of the capital flight phenomena within the debt sustainability framework through the interest rate channel. The empirically estimated strength of the link between the capital flight and government bond spreads is then subsequently used to construct the counterfactual simulation of the government debt behavior in the absence of capital flight.

Parallel Sessions I., Stream C: Inflation

Readiness for energy inflation and its short term impacts

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The impact of Russian-Ukrainian war on energy prices contributed significantly to the European price increases in 2022. The study aims to find linkage between the preparedness/vulnerability/exposure and the performance of 24 EU countries during the energy inflation crisis. The verified hypotheses reflect on the role of initial conditions of countries entered the wartime and one-year impact of energy inflation on their economic performance. The two-step analysis, first, creates six clusters of countries based on their energy, trade, financial and political vulnerability and preparedness indicators considering their dependency on Russian trade and energy, financial and inflationary risk, and flexibility based on renewable energy and political structure. The second step is to explore the shifts of clusters in macroeconomic indicators expectations. Specific patterns of country groups are explored in the value and evolution of wartime indicators of inflation, GDP growth, consumer and business confidence, as well as FX volatility. The exploration concludes that the entry indicators of clustering

are relevant, and the first hypothesis was right, that EU countries can be segmented by dependency, energy, financial and political aspects. This way it is possible to verify the distance in risk and exposure among EU economies. The impact indicators demonstrated that the extent of the effect depended on the initial conditions in case of the energy inflation. Moreover, it was possible to confirm that the inflationary impact modified the homogeneity of clusters regarding the performance during the wartime. In addition, the research identified protective factors against energy inflation originated in a trade and war conflict.

The Effect of Covid-19 on Macro Variables - A Bayesian Approach

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The paper uses a Bayesian approach (BVAR) to model macroeconomic variables in light of the pandemic in Austria. Impulse responses are analyzed via subsets as well as in response to an exogenous shock in the number of infections. Solutions are proposed to deal with such extreme situations, such as lockdowns. Indeed, t distributed errors accommodate the abnormalities in the data. The research highlights the necessity to deal with the macroeconomic challenges imposed by recessions.

Drivers of the Housing Market in Slovakia: The Effects of Rising Borrowing Costs and Inflation

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This paper assesses how rising inflation and borrowing costs may impact the housing market in Slovakia. The results of our analysis, in combination with the expected future path of inflation and interest rates, strongly suggest a downward trend in house prices going forward. More specifically, this policy brief shows that rising mortgage interest rates, rising inflation, and increasing government bond yields, historically had a downward impact on real property prices in Slovakia. The tightening of bank credit conditions, expressed through rising mortgage lending rates, has a sizeable and immediate adverse effect on the housing market. Rising inflation reduces disposable income and slows the economy. This also reduces real house prices, although with a lag. Rising government bond yields due to monetary policy tightening, finally, have a long-lasting negative impact on the housing market and the economy.

Fear of the Dark: Inflation Experiences and Subjective Happiness

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In this paper, we estimate the impact of past inflation (à la Botsch and Malmendier, 2021; Malmendier, 2021b) on people's current level of utility as revealed by their subjective happiness. Combining detailed EU-level Household Finance and Consumption Survey microdata and past experienced inflation during one's formative years, we find that individual households who have experienced higher inflation report significantly lower current happiness scores, even after controlling for a large set of socio economic characteristics and household wealth and income levels. For the old EU-10 countries, however, it appears that individual households even enjoy inflation up to the level of around 3%.

The optimal tax structure from GDP-growth perspective

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The tax multiplier in macroeconomics assumes a negative relationship between the volume of tax revenue in a country and its GDP. However, it may also be relevant to GDP growth whether the same volume of tax burden is levied in a different structure. Can the state be a more efficient redistributor of income with an optimal tax structure? The following study analyses the relationship between GDP growth rate and the structure of government revenues. A database contains data from 25 EU economies in the period from 1996 to 2018, and composed from the Eurostat classification about tax revenues. GMM, Fixed and Random Effect Panel tests were applied. Conclusions were then drawn about the growth impact of tax types.

TATRASK: the microsimulation model for Slovakia based on administrative data

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TATRASK is a new microsimulation tax-benefit tool currently being developed in the Office of the Council for Budget Responsibility.¹ The model works with administrative datasets collected by the government administrations that contain most of required information to set up a reliable model simulating personal income tax, social and health insurance contributions and social transfers. We face the main common challenges of using admin data including stringent access to the data, data generation process and computational difficulties arising from using large datasets. We also deal with issues like defining the relevant population for the simulation model or setting up households and family units in the model. In addition, we decided to provide the simulations on monthly basis. Although still work in progress, preliminary simulation results of certain policies (e.g. social insurance contributions, contributory social benefits or state social support for families) indicate an improved fit of certain simulations compared to simulation results using survey data.

Public debt sustainability and fiscal rules in Central and Eastern Europe

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We study the role of public debt (un)sustainability in the implementation of national fiscal rules in 11 Central and Eastern European (CEE) countries. We ask whether episodes of unsustainable increases in public debt, i.e., “fiscal bubbles”, result in a modification in fiscal frameworks in CEE economies, while accounting for other potential macroeconomic and political determinants of fiscal rule stringency. We first model how the costs and benefits of fiscal rules explains why politicians select different levels of fiscal stringency and, more importantly, how fiscal bubbles bolster politicians’ willingness to tighten fiscal rules via the perception and social pressure channels. On the empirical side, employing a bubble detection algorithm based on recursive unit-root testing, we identify the episodes when public debt reveals explosive (“bubble-like”) behaviour between 2000 and 2021. Then, using the panel fractional logit models, we find that (i) the occurrence of fiscal bubbles increases the propensity of a government to increase the stringency of the fiscal rules, (ii) CEE economies use a tightening of fiscal rules as a means for fiscal adjustment required when risks of

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public debt unsustainability become excessive, (iii) beneficial effects of fiscal bubbles are decreasing in government effectiveness, which signals that the perception channel is likely to dominate the social pressure channel. Several sensitivity checks, through the generalized estimating equation estimation, corroborate our findings.

The Pass-Through of a VAT Cut to Prices. Evidence From Slovak Scanner Data

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We use scanner data from supermarket transactions to estimate the pass-through of a VAT cut to retail prices. Granularity of the data and the selective character of a recent Slovak VAT reform allow us to estimate pass-through rates for relatively narrow product categories. Apart from a division by product groups we look at pass-through rates for private brands of the supermarket compared to other brands, and foreign-made versus domestic products. We find that the pass-through of a VAT cut from 20

Parallel Sessions II., Stream A: History of economic thought

Time-series Text Data in Economics: Methods and Applications

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Text data is often recorded as a time series with significant variability over time. Some examples of time-series text data include Twitter tweets, research article meta-data, product reviews, and newspaper headlines. In economics, text data collected as repeated observations over time improve the accuracy of standard time-series models and allow for studying a wide range of socio-economic problems. In this paper, we propose a library in Python programming language that focuses explicitly on time-series text data analysis and present its use in research article meta-data description. The empirical example uses journal meta-data from the top 5 journals in economics over 1990-2020. We show how sentiment and n-gram analyses help describe the key topics, trends, and overall sentiment in economics research.

It took three to Tango: Intellectual Development of János Kornai

Tomáš Křištofóry

I add a third layer to the intellectual development of János Kornai: a local Hungarian version of the Austrian school of Economics. There, I highlight a role of Wolfgang Heller (1878-1955).

Between the East and the West: The Life and Work of Alfred Zauberman

Andrej Svorenčík*University of Pennsylvania***Jesús**

Alfred Zauberman (1903-1984) was an LSE economist nearly forgotten today. Yet, from 1967 until 1980, he published five books on Soviet planning and mathematical economics, displaying highly technical and close knowledge of the latest economic

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developments behind the Iron Curtain. We situate his work in the context of the cold war development of economics. We argue that Zauberman acted as an intermediary between western Sovietology, Economic Systems Research, and mathematical economics on the one side and Soviet mathematical economics and planning on the other. However, to understand his research and its context, we must reconstruct the various stations of his fascinating life. Zauberman was born in Lodz, Poland, into a Jewish family in 1903. He received a Ph.D. in Law and Economics from the University of Cracow in 1928 under the supervision of Adam Krzyżanowski, the founder of the Cracow School of Economics. Although his thesis dealt with the issue of Russian monetary policy in the years 1914-1924 and his classmates went on to become successful economists —most notably Oskar Lange— he pursued a successful career as a commercial lawyer in the interwar period. Following the Russian and German occupation of Poland in 1939, he escaped via Lithuania and Shanghai and finally found a safe harbor in the UK in 1941. He spent the war serving in the Polish government in exile. After WWII, with all but one relative having perished during the holocaust, he remained in London, married a British woman, and resumed his interest in East European and Soviet economic affairs. Besides being a freelance economic journalist for a London-based Polish daily, in 1949, he started working as a part-time and, from 1956, full-time scriptwriter in the Central European Service of the BBC. In the academic year 1958-59, he joined the LSE as a part-time Lecturer in Soviet Economics, switching to full-time in 1964 when he was already 61 years old. He was promoted to Reader in Economics in 1967 before retiring in 1970. He continued to lecture, holding the post of visiting professor or senior fellow at several American (Berkeley, Columbia, Harvard, NYU, Santa Barbara), Canadian (Toronto), and West German universities (Konstanz), and the Vienna Institute for Comparative Economic Studies. He died in 1984.

Parallel Sessions II., Stream B: Empirical banking

Financial advisors and risky mortgage behavior: novel evidence from loan-level register data

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Motivation: About two-thirds of mortgage loans in Slovakia have been granted by banks through financial advisors in recent years. While advisors can help their clients to achieve better credit conditions, they can also push to more risky parameters such as the overall volume of loan or the value of the loan relative to the value of collateral. This may happen because advisors usually get their provisions based on the volume of the loan advised and hence they can be biased and can have conflicting goals imperfectly aligned with, or outright orthogonal to the customers' interests. In this paper, we analyse the difference between a number of mortgage loan characteristics of loans granted via financial advisors compared to loans directly granted by the banks. To do this, we use a unique, novel loan-level register database covering the entire universe of retail mortgage loans granted by Slovak banks, with more than half a million records.

Preliminary results: Our preliminary results show that loans granted via financial advisors are significantly larger in terms of volume, even after controlling for a large set of loan- and borrower-level characteristics. The same holds true for the loan to collateral value ratio, where this ratio is significantly higher in the case of loans granted via financial advisors. The difference between the volume of loans granted with and without financial advisors widened significantly when the National Bank of Slovakia announced an 80ratio. While this can be beneficial to customers in normal times, as they receive more funds to finance their properties, during a cycle downturn or deterioration in credit conditions, banks may be exposed to greater credit risk, as the loss given default on these loans will be higher. Another result shows that clients who consulted financial advisors were more likely to defer their mortgage debt payments during the COVID-19 crisis debt moratoria and were also more likely to default on their loans shortly after being granted, even after accounting for all the relevant loan- and borrower-level characteristics. This points to possible risky debt behaviour by individuals, most likely fueled by distorted financial advice. Our findings suggest a call for tighter regulation of the financial advisor market and also a possible rethink

of the model of financial advisor remuneration, which would be more in line with the aim of the financial advice to help clients in achieving the most optimal loan and the central bank's goal of financial stability.

Banking taxes and banking costs in Hungary

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The introduction of banking tax in Hungary levied additional cost on banks. The puzzle is whether the banks levied this burden on customers via the interest rates of retail banking. The following study analyse the causality from Hungarian banking tax to Hungarian deposit and loan rates. The applied methodology is Granger causality test. The results confirms the assumption in some cases. The causality can be detected with time lags which uncover the lagging adjustment in rates.

Do Not Expect Cheaper Loan Before Elections: European Evidence

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We investigate whether European banks change the price and the granted amount of new loans in the months ahead of major national elections. To this end, we use a unique dataset of 339 banks from 19 Eurozone countries built from two confidential ECB sources of data providing monthly information on the amounts and interest rates of new loans for different types of loans. We find that banks increase loan pricing for corporate loans and housing loans before elections thus supporting the view that political uncertainty exerts an influence on loan pricing of European banks. We also obtain limited evidence that elections affect the credit supply of banks. We further document differences across banks: the impact of elections is more pronounced for smaller banks. Our findings thus suggest that that the occurrence of elections is affecting the behavior of European banks.

Parallel Sessions II., Stream C: Behavioral and experimental economics I. (APVV 19-0573, VEGA 1/0167)

Tax compliance in the lab: the effect of nudges and economic incentives

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Recently, governments around the world attempted to raise the tax compliance using psychological nudges. Although some studies report higher compliance, the interventions did not always meet with success. In addition, the effects of nudges are often short-lived. We conjecture that nudges can be successful only if they are aligned with economic incentives of a taxpayer. We further conjecture that sustainable compliance can also be achieved, by implementing the intervention periodically. However, if a taxpayer is nudged towards a decision which is not compatible with his economic incentives, the nudge will not be successful and can even backfire. We test the effectiveness of nudges in a controlled laboratory experiment, in which we manipulate (1) whether it is profitable for a taxpayer to comply or not and (2) the frequency of the intervention. We find support for all of our hypotheses.

Transaction costs and willingness to donate

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In economic decision-making, transaction costs could have a substantial impact on final decisions. As documented in previous research, they could be a factor that

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significantly reduces the willingness to donate or the amount of donation. We run a laboratory experiment shed the light on the effect of transaction costs on willingness to donate. We use real effort task, where subjects proofread academic text for ten minutes and for each error corrected they could earn a monetary reward. Depending on the amount of money subjects earned, they could decide whether not to donate or to donate a share of it to Slovak charity Červený nos. To differentiate the effect of transaction costs and opportunity costs, we use 2 x 2 design when manipulating transaction and opportunity costs in four treatments. We simulate different levels of transactions costs of donation by the extend of data needed to donate and different opportunity costs by addressing donors during or after real effort task. In the first treatment, subjects were asked to donate during the real effort task simply by hitting the DONATE button. In the second treatment, subjects could also donate during the real effort task, but in this treatment, they had to register to donate, which meant that they had to fill in information into a registration form. In the third treatment, subjects have the option to donate after the completion of the real effort task by simply by hitting the DONATE button. In the fourth treatment, subjects have the option to donate after the real effort task, but they have to register to do so. In the pilot experiment, we studied behaviour of 80 subjects, of which 19% decide to donate. The willingness to donate varies between treatments. Our preliminary results follow the intuition and show that introducing transaction costs substantially reduce the willingness to donate. In the case of the opportunity cost, an increase in opportunity costs reduces the willingness to donate to charity.

Parallel Sessions II., Stream D: Environmental and agricultural economics

Animal-based foods and proteins worldwide: Dietary EKC

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A rapid increase in global population and wealth has led to an increased demand for foods of animal origin. Getting enough protein might be one of the reasons people consume animal products but its increased consumption could also negatively impact our health and environment. Plant-based diets, compared to diets rich in animal products, are considered to be more sustainable because they use fewer natural resources and come with a lower environmental burden, resulting in lower greenhouse gas emissions. The aim of this paper is to examine economic and socio-demographic factors that influence animal food supply and animal-based protein intake in the worldwide diet. An econometric analysis of country-level panel data allows us to investigate the Environmental Kuznets Curve hypothesis in this context. Our findings suggest that the relationship between GDP per capita and the share of animal proteins resembles an N-shaped—rather than an inverted U-shaped curve. The first turning point is around 36,000 (*all values adjusted by purchasing power*), after which the share of animal proteins decreases where the local minimum is reached.

Does farm ownership structure matter? Distribution of CAP subsidies across primary and final beneficiaries in Slovakia

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This paper uses unique micro-level data to evaluate the distribution of CAP subsidies among primary beneficiaries (farms) and final beneficiaries (farm owners) in Slovakia in 2021. The results show that CAP subsidies are concentrated among few final beneficiaries and in general the concentration of subsidies is greater at the top distribution among the final beneficiaries than among primary beneficiaries: 10% largest final beneficiaries (i.e. 559 of farm owners) receive 41% CAP subsidies, whereas the same share of subsidies receive 51% of corporate farms (primary beneficiaries). The policy measures available in the CAP to address the unequal distribution of CAP (e.g. degressivity, capping, redistributive payments) were not able to redress this problem

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in Slovakia. In fact, the possibility to split farms in smaller units and the possibility for final beneficiaries to (co-)own several farms allows to bypass these measures and generate even greater concentration of subsidies among few individuals.

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Governance innovations for sustainable forestry: behavioural approach

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To understand the potential for governance innovations for sustainable and carbon neutral forestry under the complexity of global world calls for novel governance arrangements for their sustainable provision. This requires constant reflection and reconfiguration of governance arrangements to varying contextual conditions and actors. The paper is concerned with governance innovations for sustainable forest management using a behavioural approach. We use a newly designed role board game (RBG) – an interactive agent-based model for co-creation of novel governance demonstrated on six governance innovation cases in Europe. We aim to determine: (i) How can governance innovation strengthen long-term sustainability transformation in diverse forestry contexts? (ii) What motivates actors' behaviour towards sustainable provision of forest ecosystem services? (iii) What are the lessons learned to foster FES governance innovation? The results indicate institutional robustness, biophysical conditions and actors' dynamics as key contextual conditions for sustainable forestry. The RBG as an innovative method for simulation of real-world processes, assessing natural and social values interconnection and novel social practice while learning about ecosystem dynamics and potentially changing human behaviour.

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Parallel Sessions III., Stream A: Labor markets I.

Productivity-enhancing reallocation during COVID-19 pandemic

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We study the consequences of the COVID-19 pandemic and related extensive policy support on productivity and labour reallocation. Following Foster, Grin and Haltiwanger (2016), we estimate whether firm' current employment growth depends on its' relative productivity a year ago and analyse the presence of productivity-enhancing reallocation (PER). We use an extensive micro-distributed analysis to employ individual firm level data for 12 euro area countries. The unique firm-level database is constructed by merging balance-sheet and income statement data with policy support data, covering the whole universe of firms for most of the sample countries. Our comparative analysis shows that the pandemic led to a decline in productivity enhancing reallocation. We employ cross-country variation in the policy support to identify the effect of the pandemic policy support on PER and find that countries more generous with support had weaker productivity-enhancing reallocation in 2020. The preliminary cross-country evidence suggests that the policy support affected more the extensive than the intensive margin of the productivity growth.

Locking in or Pushing out: The Caseworker Dilemma

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Using rich administrative data on job seekers (JSs) registered by the public employment service (PES), we describe the implementation of the Youth Guarantee (YG) initiative through Slovak active labor market policy (ALMP). By adopting a dynamic estimation technique based on double machine learning (DML), we generate evidence on the impact of various types of ALMP programs provided in different periods of unemployment. The spectrum of ALMP programs ranges from classroom training through hiring incentives and subsidized employment in the private sector to public works organized at the municipality level. We identify the impact of participation in a particular ALMP program or sequences of ALMP programs on the absence of individuals from registered unemployment after three years. We demonstrate that due to the functionality of the dynamic DML estimator, one case study can generate comparative evidence affirming the conclusions of ALMP impact evaluation meta-analyses. Additionally, aiming to address the operational-level PES caseworker dilemma, we quantify the impact of the evaluated ALMP programs compared with those of two alternative counterfactual situations, assuming a more and less employable client.

The Impact of the Covid-19- and Energy-Related Price Hikes on Undeclared Work

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CEU, CELSI, EUBA, GLO

The Covid-19 pandemic and the energy crisis of the early 2020s have resulted in significant price hikes around the globe. Although consumers can mitigate some of these price hikes by adjusting their consumer baskets, low-income groups may be more constrained to do so as their consumer baskets contain larger shares of necessities. It turns out, in fact, that their costs of living increased more steeply than those of the other income groups, as the recent price increases were more profound in the categories of goods that constitute relatively large shares of consumer baskets of low-income groups. Such price hikes may increase labor supply on the fringes of the labor market, as especially low-income households may need to compensate for the decreased purchasing power of their nominal income by seeking additional employment out of necessity. In addition, price hikes on the input side increase the costs of production, possibly pushing employers and employees into undeclared work, or employers into layoffs or bankruptcies. Using a unique database of Living Wages measuring price hikes for low-income groups and measures of undeclared work in selected countries in this article we study the impact of the recent price hikes on the prevalence of undeclared around the world. This paper sheds light on some of the key drivers of undeclared work and informs the policy debate on tackling undeclared work in Europe and globally.

Parallel Sessions III., Stream B: Monetary economics

Fifty shades of QE: Robust evidence

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Lubos Pástor

Fabo, Jančoková, Kempf, and Pástor (2021) show that papers written by central bank researchers find quantitative easing (QE) to be more effective than papers written by academics. Weale and Wieladek (2022) show that a subset of these results lose statistical significance when OLS regressions are replaced by regressions that downweight outliers. We examine those outliers and find no reason to downweight them. Most of them represent estimates from influential central bank papers published in respectable academic journals. For example, among the five papers finding the largest peak effect of QE on output, all five are published in high-quality journals (Journal of Monetary Economics, Journal of Money, Credit and Banking, and Applied Economics

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Letters), and their average number of citations is well over 200. Moreover, we show that these papers have supported policy communication by the world's leading central banks and shaped the public perception of the effectiveness of QE. New evidence based on quantile regressions further supports the results in Fabo et al. (2021).

Raise your words, not your voice: Using NLP to break down information content of central bank communication

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Central bank communication has moved from the margin to core of monetary policy preparation over the past decade. For communication to become a proper tool, measuring the information power of words is essential. We propose a set of algorithmic steps based on text mining algorithms, deep learning and machine learning techniques to turn ad-hoc communication of the ECB Governing Council members into an index assessing its hawkish or dovish connotation. Such index helps in understanding the chemistry between what policy-makers signal in real time and what market agents capture and respond to. To document information content of such an index, we put the index to test in several areas of economic modelling.

Impact of Social Capital on Loan Behavior in CEECs

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Florian Horky

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We analyze the influence of social capital on loan behavior in Central Eastern and Southeastern Europe from 2007 to 2020. Social capital indexes are built, measured by the embeddedness in norms, the social trust of individuals and the strength of their networks. The loan behavior differentiates between the access to loans, the holding of a loan, the purpose of the loan, the plan to take out a loan and the adequacy of the loan. The influence of social capital is measured through multiple regressions using a probit model, and controlling for country effects, time effects, income, age, (financial) education, gender, size of the household, marital status and professions. The analysis finds, that social capital has a predominantly positive influence on the plan to take out a loan, access to credit, the likelihood of having a loan, and its adequate amount.

Parallel Sessions III., Stream C: Behavioral and experimental economics II.

Attempt to explain overconfidence using household size and composition characteristics

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According to the theory, risk taking for others cause cautious shifts, which may implicitly mean the decrease in overconfidence. We tested this assumption in the household framework on the micro data of the Household Finance and Consumption Survey (HFCS) held in Slovakia in 2017. We took the definition of overconfidence from Petrenko, Gogola (2022), and looked at the household size and composition characteristics for making our assumptions on their influence on the household's overconfidence. We assume that one-person household "heads" (individuals) are more overconfident than household "heads" with more members, and the latter are more

overconfident than household representative persons, whose household consists of more than one member with at least one dependent. We applied Fisher exact test for conducting the analysis, which failed to link the household characteristics we observed to the overconfidence of its “head”. We consider the peculiarities of within-household decision-making process (we don’t know who make the decision) and the particular qualities of the Overconfidence index construction (there are not many households who invest) as reasons for the failure attempt on explaining overconfidence using household size and composition characteristics. Therefore, it would be enlightening to replicate the analysis on panel data and on the data, which consists the relationships within households.

How to adapt future interventions for active school transport in an urban environment?

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FMUK and MIB

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Active school transport (AST) is a promising strategy to increase children’s physical activity, self-esteem and their overall well-being. There is evidence that the associations between behavior and subjective perceptions are stronger than those with objectively measurable environment parameters. Therefore, subjectively perceived barriers to AST are of particular interest. The present study is part of the project City for Kids conducted at the Metropolitan institute of Bratislava in Slovakia. It aimed to examine the prevalence, correlates, and perceived barriers to AST of parents and their children of 11 primary schools in Bratislava, Slovakia. The study sample includes 3425 adults, 584 children, aged between 10 and 15 years. We analyzed which environmental characteristics and which conditions are perceived as barriers by parents of primary school children. Common barriers for children (from their parents’ perspective) and for children (from their own and their parents’ perspective) were distance and safety. These findings can provide many starting points for future interventions, especially since most children and adolescents would opt for AST if given a choice.

Understanding Conditional Cooperation: A Simpler Method

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Tomáš Miklánek

*Prague University of Economics and
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Casual observations from the field, as well as an extensive experimental literature, document that people often cooperate in social dilemma situations. Fischbacher, Gächter and Fehr (2001) document that approximately half of the experimental subjects are conditional cooperators i.e., they exhibit a propensity to cooperate in response to cooperation by others. This finding has been replicated by numerous subsequent studies, establishing their method as a common approach for studying conditional cooperation. However, previous literature suggests that this method is not necessarily a reliable gauge of the true propensity to conditionally cooperate based on social preferences. To address this limitation, we propose a novel approach for measuring conditional cooperation in the economic experiments. We utilize a noncomputerized method to elicit contributions to the group account, incorporating variations in the meaningfulness of the conditioning variable and the possibility for participants to avoid inputting the entire contribution pattern. This approach allows us to explore whether the previously observed conditional contribution patterns, which may not be driven by the subjects’ prosocial preferences, still emerge due to other factors. The results shed light on the extent to which conditional cooperation as measured in the laboratory is an artifact of the original measurement methodology as opposed to being driven by social preferences. Additionally, our method offers a reliable means to investigate cooperative behavior while minimizing potential confounding effects.

SMEs Perceptions and Expectations of Availability of External Finance - An Investigation from a behavioral perspective

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Zeppelin University

Jarko Fidrmuc
Zeppelin University

The formation of availability perceptions and expectations for external financing in the case of SMEs is an important field of research for monetary policy, especially regarding the pandemic crisis and current energy crisis. For our investigation, we use data from the Survey on the Access to Finance of Enterprises collected by the European Central Bank. We show that experience as well as changing demand for financing are major drivers in building up past perceptions as well as future expectations for three different sources of external financing. Moreover, we can show that behavioral factors like loss-aversion and rational inattention have an extensive impact on forming managerial decisions. Finally, these results can also explain the low credit dynamics since the financial crisis, and they can imply similar developments after the pandemic crisis.

Event-Driven Changes in Volatility Connectedness: Evidence from Global Forex Markets

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Mendel University

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We thoroughly evaluate the volatility connectedness among G10 currencies using high-frequency data spanning from 2009 to 2023. Our study presents the first empirical evidence, employing the rigorous bootstrap-after-bootstrap procedure introduced by Greenwood-Nimmo et al. (2021), to demonstrate a clear association between increases in connectedness and recurring events. Moreover, we uncover the previously unexplored lagged relationship between the eighteen endogenously selected events, providing unique insights specific to G10 currencies. To enhance our understanding, we adopt the pioneering method proposed by Baruník and Ellington (2020) as the first in the forex market. This approach allows us to distinguish between the transitory and permanent impacts of events on connectedness, which is of utmost importance as permanent changes in connectedness are closely linked to systematic shocks. Furthermore, we investigate the effects of uncertainty and liquidity as drivers of connectedness, revealing significant variations in their impacts. Our findings remain robust across different volatility measures and hold direct implications for portfolio composition and hedging strategies. These insights offer valuable guidance to policymakers, enabling them to make informed decisions.

Shareholder activism: Blessing or affliction for incumbent CEOs?

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Warwick Business School

Jesus Gorrin
Warwick Business School

Jiaqi Zhao
Warwick Business School

We examine chief executive officer (CEO) career changes following shareholder activism events in their companies. To account for endogeneity between career outcomes and probability of being targeted by activists, we use the control function approach. We show that target CEOs suffer from lower likelihood of keeping their CEO jobs in the targeted companies, but also in the wider CEO market among other publicly listed and private firms. Target CEOs are able to get more board positions, which marginally improves their situation, but their overall standing is worse as board positions do not fully compensate for a loss of executive positions. We also show that the effects on CEO positions and board seats are only present in hostile campaigns when activists threaten or launch a proxy fight, which suggests rewards to effective

negotiations with activists. The negative compensation effect is still present also in non-confrontational campaigns, but is significantly less negative. Female CEOs suffer less negative shareholder activism effects despite the fact that they are more likely to be targeted.

Parallel Sessions IV., Stream A: Inequality and wealth

Exploring the gaps between Roma and non-Roma job-seekers in the access to employment programmes in Slovakia

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Active labour market policies are a key policy intervention tool for policy makers to bring disadvantaged groups closer to the labour market. To date relatively little is known about the implementation of ALMPs with respect to Roma specifically. This paper aims to fill this gap by empirically measuring patterns in allocation of jobseekers living in high/low Roma density municipalities to different ALMP measures, and interpret it in a broader context of policy design, targeting and labour market placement under conditions of structurally weak labour markets. We merge the municipality-level information on MRC population from the Atlas of Roma Communities (Atlas of Roma Communities, 2019) with administrative data on registered job-seekers registered in Slovakia during 2017 complemented by information on their participation in ALMPs, and follow their labour market activity paths until 2020. We focus on two labour market activity outcomes and estimate a series of logit models of the probability of a job-seeker: (i) exiting the register of unemployed due to a job placement/de-registration, and (ii) job-seekers' participation in various types of ALMPs, recognizing the different roles of various types of ALMPs including public works (PW), employment incentives (EI), counselling (CS), and training (TR). Our findings indicate that the probabilities of a job placements fall with a rising share of Roma population in the place of residence, while the probability to be de-registered (for non-cooperation) increases with the share of population living in MRC. Moreover, the more "intensive" or expensive ALMP programmes are less accessible for clients living in MRCs and the less "intensive" support is more often taken up by clients residing in municipalities with a higher share of MRC.

Impact of Automation and Augmentation Technologies on Employment in Europe

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This paper empirically investigates the impact of robotics, software and artificial intelligence (AI) on employment changes in Europe. Using objective measures of augmentation and automation exposure of European occupations created for this purpose, this study examines their relationship with employment growth at the occupation and industry levels. Our results reveal a positive impact of augmentation exposure on employment changes within industries and occupations, while automation exposure appears to have eroded employment over the past three decades. Narrowing our focus to individual technologies, robotics technologies exhibit a higher degree of complementarity with occupational output in manufacturing than in non-manufacturing. Software technologies show similar complementarities across sectors, but primarily substitute for labor in non-manufacturing sectors. In contrast, AI shows a lower point estimate of automation exposure compared to other technologies. Moreover, the augmentation potential of AI is more pronounced in manufacturing sectors, while automation exposure negatively affects employment growth in non-manufacturing sectors. Overall, our research suggests a more pronounced effect of labor displacement than labor reinstatement across all technologies analyzed. Building on the existing literature focused on the U.S. labor market, this study adds a new dimension by extending a country dimension to the European labor market and uncovering specific impacts that vary across manufacturing and non-manufacturing sectors and across technologies. These

findings highlight the complex relationship between technology and employment dynamics in Europe and shed light on the evolving role of technological advances in shaping past and future employment trends.

The impact of unexpected inflationary shock in 2022 and 2023 on the welfare of families: The case of Slovakia

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Alexandra Putzová

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In this paper we analyze the impact of an unexpected and steep increase in price level on the purchasing power of Slovak families in 2022 and 2023. Up to our knowledge this is the first and the only paper that looks at distributional impacts of inflationary shock in Slovakia. We combine a microsimulation model SIMTASK with the data on expenditures from Household Budget Survey to quantify the net effect of inflationary shock after the cushioning effects of adopted government measures and economic adjustments in the form of inflation-induced wage growth and an extra valorization of social benefits. We show that in 2022, the government measures were well targeted and succeeded to offset a significant part of a purchasing power drop for low-income families. For high-income families, economic adjustments were the component that helped to offset a significant part of their purchasing power drop. However, the overall net effect on welfare was negative in every income decile. The story is different in 2023. It turns out that despite the high inflation, the macroeconomic adjustment hand in hand with adopted government measures, including a generous price cap on energy prices and pro-family policy, more than compensate a drop in purchasing power. Only families with children benefit from newly adopted measures, and the more children are in the family, the higher is the benefit.

Gender differences in unemployment during the economic crisis and booms

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In this presentation we focus on the development of gender differences in unemployment during various periods of economic booms and crisis in Visegrad countries. We compare unemployment as measured by both administrative data and ILO methodology. The two main studied variables are unemployment share and share of females on total unemployment. We use LFS data for country level analysis and the LAU1 dataset (doi:10.5281/zenodo.6165135) for county level analysis. In many regions, the share of women on total unemployment is decreasing during economic crisis, hence women's unemployment is less affected by economic decline than men. On the other hand, during economic boom share of females is increasing – men are more likely to find jobs during economic boom than women. This correlation is mainly visible in rural regions. More urban regions, like regions around capital cities, do not have this trend visible. Similar trends are visible when analyzing share of low educated unemployed.

Out of the Dark into the Light? Impact of EU Eastern Enlargements on Development of Border Municipalities

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LEM - Université de Lille

Jan Fidrmuc

LEM - Université de Lille

Nicolas Debarsy

LEM - Université de Lille

Borders constitute market barriers that hamper the development in the surrounding regions. But what happens in the regions in the vicinity of borders once these barriers are reduced in the context of trade liberalization? In this paper, we use the EU enlargements in 2004, 2007 and 2013 as a quasi-experiment to investigate this question. To do that, we compare the growth of night-time lights in municipalities within 25 kilometres of the borders affected by the 2004, 2007 and 2013 enlargements to the ones located within 25 kilometres of the external EU borders using Callaway and Sant'Anna (2021) staggered difference in differences.

Economic Consequences of Landlockedness – What Makes a Difference?

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TU Wien

Guannan Miao

OECD

The economic disadvantage of landlocked countries is well established in the literature (Faye et al, 2004). This paper investigates the economic impact of landlockedness on convergence. The econometric analysis is carried out for three income groups following the World Bank classification according to the level of GDP per capita at constant 2010 US dollars and the time before and after the global financial crisis (GFC) of 2007/9. The quality of institutions, investment rate, landlockedness, international trading costs and trade openness are used as conditional variables. The time period under investigation is 1995 to 2016. This paper contributes to the debate between geography (Sachs, 2003) and institutions (Rodrik et al, 2004) as main obstacles for higher economic growth in landlocked countries.

The Spatial Solow Model with Capital and Labor Diffusion

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Spatial economics has become a prominent part of economic sciences over the past decades. One of its goals is to explain the flow and distribution of production factors in space. One possible way to do that is by employing theoretical economic models, such as the Solow model. This article aims to analyze the impact of including a labor diffusion term in the capital equation upon the steady state stability of the spatial Solow model, thereby bridging a gap in the literature. The results indicate that the diffusion coefficient has a profound effect on stability. Namely, high values of the coefficient can make the model unstable, but only if labor reacts to the density of capital.

Estimating Returns to Economic Integration

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The literature remains divided on whether economic integration benefits the participating countries, or whether adopting a common currency of a wider economic area boosts economic growth. The main reason for this ambiguity is the likely en-

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dogeneity: countries do not enter into integration arrangements at random but may prefer to form closer ties with countries with whom they are close geographically, historically or culturally. We utilize the post-communist transition to shed light on this question, arguing that it constitutes a situation akin to a natural experiment. Until the late 1980s, the communist countries followed a socialist economic system and refrained from participating in the European integration programs. Thereafter, they became free to choose the path to follow. Some joined the European Union while others remained outside. Some of the former even adopted the euro. The differences in these paths were mainly driven by political choices in the countries themselves. Over thirty years later, we compare the outcomes while focusing at NUTS 2 and 3 regions: while countries can choose integration arrangements endogenously, individual regions accept outcomes dictated from the center. We especially focus on the former members of multi-country unions where integration outcomes often varied significantly: Czechoslovakia, Yugoslavia, and the Soviet Union. We also pay particular attention to regions located near national borders affected by the various EU enlargements, as these are likely to have been affected by integration choices especially strongly.

Parallel Sessions IV., Stream C: Health and education economics

Locked in the House, Free Again: The Impact of COVID-19 on Fertility in Spain

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We focus on a high-income, low-fertility country Spain and estimate the impact of the COVID-19 pandemic on fertility. Specifically, we distinguish between the impact of a strict lockdown during the first wave of the COVID-19 pandemic and the impact of the subsequent post-lockdown relief. Spain was one of the two most COVID-19-affected countries in Europe and it imposed one of the strictest lockdowns on the continent. In the analysis, we exploit the unexpected announcement and immediate implementation of a strict, nationwide lockdown which started in mid-March 2020 and lasted for 8 weeks, until mid-May 2020. Apart from lockdown, we also consider the period of relief after the end of lockdown. We first predict the expected levels of fertility in the absence of the COVID-19 pandemic and lockdown. We choose one of 14 competing models with the best prediction quality based on four cross-validation criteria. Afterwards, we calculate the differences between predicted and actual fertility levels 9 months after the lockdown (lockdown in spring 2020, fertility affected in winter 2020) and also 9 months after the post-lockdown relief (post-lockdown as of summer 2020, fertility affected starting in spring 2021). We find that overall, lockdown had a very negative effect on fertility (-16.2% in the two most affected months) while the post-lockdown relief led to an increased fertility (3.5% during a 10-month period). The net effect for whole Spain is -0.4% but it is driven by a decrease in births to foreign mothers (-17.7% overall). When focusing on Spanish mothers only, the overall effect is positive (4.6%). In a heterogeneity analysis of Spanish mothers by cohabitation status, parity, and age, we find that virtually all groups experienced an overall positive net effect (3-11%) with the exception of very young mothers (ages 15-24).

A gamified approach to combat vaccine hesitancy

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The COVID-19 pandemic made vaccine hesitancy the focus of global attention and concern and was listed as a global health threat by the WHO. Even though finding effective ways of reducing vaccine hesitancy is more critical than ever, the lack of understanding of potential policy implementations has left many countries unarmed in this fight. Moreover, the "infodemic" – the rapid spread of false information – around COVID-19 resulted in a WHO's call for increased resilience against misinformation. Gamified interventions have become popular in recent years, but evidence remains scarce. We have therefore developed an online game designed around misinformation detection training and propose to bring evidence on whether this gamified type of training can influence vaccine confidence and ultimately increase vaccination intentions. In addition, we explore what role social preferences play in the context

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of vaccine hesitancy and game uptake. We will conduct a field experiment among university students in Eastern Europe, where COVID-19 vaccination uptake was lowest in Europe. We believe our results will contribute to the discussion about digital media's role in strengthening vaccine confidence. Later, the games can be translated into multiple languages, fine-tuned to fit other vaccine-preventable diseases or more specific audiences, or used in nationwide interventions.

The role of industrial relations in shaping adult learning participation in EU27.

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This paper seeks to contribute to empirical evidence on the features of adult learning systems in EU countries focusing on the role of industrial relations and social dialogue. Two dimensions of the adult learning systems are investigated: i) the intensity of adult learning ii) equity in adult learning participation. The empirical analysis is based on descriptive analysis of the patterns of adult learning participation and statistical analysis of the relationship between adult learning participation at the individual level and the role of the social dialogue in the context of the green and digital transition. The source of data is based on European Union Labour Force Survey combined with institutional data measuring industrial relations in the EU, extracted from the OECD-AIAS-ICTWSS dataset. The paper confirms that social dialogue does play a role in shaping adult learning systems. The findings on specific effects of industrial relations present an important contribution to evidence on how adult learning systems function and what are the policy implications for the role of social partners and the design of adult learning policies and tools. This is one of the key policy topics discussed in the past years across EU countries and regions and therefore strengthening the evidence base is vital.

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Afraid of robots? Get trained!

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Supporting individuals through labour market transitions presents one of the crucial pillars of the policy agenda addressing changes in the future of work. With the evermore-present impact of new technologies on the structure of occupations and demanded tasks, upskilling becomes one of the most tempting policy-making options. In this respect, training provided under the portfolio of active labour market policies (ALMPs) presents an ideal policy tool. We evaluate a reform of the training supplied to registered unemployed in Slovakia in 2015. Specifically, we explore six training specializations: healthcare workers, welders, truck drivers, security guards, accountants and beauticians, together accounting for over 70 percent of all trainings selected by registered jobseekers under the REPAS training scheme in 2015. Technological advancements alter the occupational structure of labour markets all around the world (Acemoglu and Loebbing, 2022), The pace of this change is expected to increase in the near future (European Commission, 2023). Reskilling becomes a necessary strategy for individuals and societies (Ernst et al., 2018). Occupations with a higher average risk of being automated are associated with lower wages and a higher risk of unemployment (Nedelkoska and Quintini, 2018; Schmidpeter and Winter-Ebmer, 2021). Although declaring to be afraid of automation (Kozak et al., 2020), employees in occupations with a higher risk of automation appear to invest less in continuing non-formal training (Koster and Brunori, 2021). Publically supported training presents a promising policy tool (Tomini and Groot, 2016; Kruppe and Lang, 2018). We use administrative data to: i. describe the change in the portfolio of training specialization resulting in giving the choice of specialization to training participants; ii. explore the labour market outcomes of participants by estimating the average treatment effects of training participation under the unconfoundedness assumption. We construct an exhaustive list of outcome indicators based on participants' income, employment or absence from the unemployment register during 36 months after participation. We trace

labour market outcomes of the six most numerous training specializations: healthcare assistants, welders, drivers, security guards, accountants and beauticians. Jobseekers tend to pick out of the most popular training specialisations (over 70 percent of all training was concentrated in the six most numerous specializations). Jobseekers use training to reduce their risk of automation, but there are substantial differences between the training specialisations. We estimate positive employment and income effects within two years, suggesting that training participation opens alleys to new employment options. In line with available empirical studies, we estimate a positive employment effect observable in the long run and a positive income effect in the short run. Additionally, our data allow us to observe outcome differences across training groups in respect of their automation risk. The training specializations with a lower risk of automation, healthcare assistants and welders, do not seem to benefit more from providing the training than specializations with higher automation risk such as security guards, drivers and accountants. This could be explained by exodus of retrained healthcare assistants and welders from Slovakia. Interestingly, a training specialization with the lowest automation risk – beauticians - does have a positive impact on the employment probability or income as expected. This finding can be explained by their movement to shadow economy and not reporting their true income. Some training specializations (healthcare assistants and welders) are used as channels to find employment abroad. In contrast, other training specializations (security guards and drivers) present a pipeline for low-skilled jobseekers to find jobs in Slovakia in occupations with a lower risk of automation. Re-training into accounting increases employment chances and thus also the potential income, but at the same time, increases the risk of automation. In contrast, being trained as a beauty professional reduces the risk of automation but also opens a gate to informal employment. Due to the impact of new technologies on the occupational structure, career transitions with associated unemployment periods will become even more frequent. Publically funded training offered to the unemployed support individuals during their career transitions. Shifting the choice of training specialization to the participants may result into sub-optimal allocations of public funds. For example, by opening a channel to unemployed jobseekers to find employment in the informal sector or abroad (in a situation of a scarced domestic labour force).

Parallel Sessions IV., Stream D: Macroeconomics

Chasing Yeti (Novel approach of output gap estimation in Slovakia)

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Lucia Šrámková

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This paper offers a synthesis of several approaches to measuring output gap in Slovakia and serves as an update of the original CBR work Finding Yeti after almost a decade. A “suite of models” approach is estimated and assessed to provide advantages over single models. Following the recommendation of the EU IFIs guide suggesting no one-size-fits-all approach for measuring output gap, our family of methods consist of two unobserved component models, principal component model, semi-structural model and Modified Hamilton filter. We propose a novelty approach to weighting the individual models capturing recent structural innovations in the economy to construct one central estimate of the output gap. Such a robust estimate is maximising its overall plausibility and applicability to prudent fiscal policy assessment.

A quarter century of Okun's law in scholarly literature

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Mariana Považanová

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In order to canvass the state of the art of research on Okun's law, the paper surveys 84 articles published in Web of Science journals between 1995 and 2020 occupied with estimating the relationship between unemployment and output in the spirit of an approach proposed by Okun (1962). A bibliometric analysis is conducted to identify the most influential works and authors, to establish links between them, and to outline research fronts and main paths of knowledge diffusion. Under a content analysis, the articles included in the survey are further classified by their leitmotif and research agenda as well as by their geographical scope. The basal methodological choices of the articles are overviewed and their temporal patterns are studied. An emphasis is put on the stylized facts constituting the research agenda of 57 of the surveyed applications of Okun's law (such as instability over time, asymmetries, or age and gender specificity). Lotka's law indicates an above-average level of research productivity of authors in this field. The findings provide insights into the intellectual structure of the empirics of Okun's law and act as guidance for a future research in this field.

To default, or not to default, that is the question

Zuzana Mucka

Council for Budget Responsibility

We present the idea of the country fiscal limit, a modelling corner-stone of the long-term fiscal sustainability evaluation used by the Council for Budget Responsibility, which represents the maximal level of the debt that the country is able to service. It is the point at which, for economic or political reasons, the government can no longer adjust taxes and spending to stabilize debt and government has no choice but to default on its long-term liabilities. We use this unique state-dependent, time-varying and stochastic concept of fiscal limit to determine country's safe debt levels and, employing institutional indebtedness estimates, the default risk. The probability of default is evaluated on the horizon consistent with the long term debt obligations maturity assuming debt mitigation problem while requesting similar conditions on financial markets during the whole life of newly-issued debt obligations. The endogenous stochastic discount rate directly linked to pricing financial derivatives, feedback effect to country's real economy, linkage to ongoing fiscal policy and sovereign credit ratings give us a unique opportunity to obtain realistic time-varying estimates of country safe debt levels and, given the projections of government debt the expected trajectory of the probability of default on sovereign debt on long term-horizon. Using this approach we show that permanent fiscal measures adopted in 2022 - increase in household benefits and the pension reform - were the major driver of instant and significant increase in the country's probability of default on the 2022-2040 horizon - from 5 percent estimated in 2021 to almost 18 percent estimated under 2022-year conditions. Indeed, the design of reforms and fiscal measures is crucial - instantaneous and sizeable increase in public spending with only gradual entry of the reform features with positive impact on public finance will cause a rapid increase in public debt exceeding 100 percent of GDP in 2040. The projected trajectory of indebtedness will mitigate the future prospectus of public finance sustainability improvement, leading to more than 80 percent chance of default on long-term obligations in 2040-2060 period, almost double in compare to our previous year estimates.

How would have Czechoslovakia fared? A Synthetic Matching Approach

Steven Yamarik
California State University

This paper uses a synthetic control method to examine the macroeconomic outcomes of Czechoslovakia if it had not split. The synthetic control methods constructs a counterfactual of Czechoslovakia as a weighted sum of matching countries. The matching countries are chosen based on pre-1993 covariates.

Parallel Sessions V., Stream A: Labor markets II.

The effect of Brexit on illegal immigration to the UK

Daniel Fidrmuc
Tilburg university

Brexit has had a negative impact on the UK's economy and may have had an impact on legal and irregular immigration. I attempt to estimate the level of irregular immigration in the UK and EU using the number of asylum applicants. I cover why irregular immigration might have increased, or decreased. I find that despite one of the objectives of Brexit being to "taking back control" of immigration, irregular immigration has increased in the UK since their formal exit from the EU in 2022. I argue that this is likely due to the loss of access to the Dublin III regulation, which seems to have been the UK's most influential policy tool to control irregular immigration.

A highway is not a panacea: Evaluating local impact of a new highway on labor market in Slovakia

Jan Fidrmuc
Université de Lille

In this paper, we explore the effect of transport infrastructure on regional labor markets by examining the impact of a new highway in central Slovakia, put into use in two stages: in 2000 and 2011. Our results show that although the unemployment of the whole region declined after the construction of the highway, we observe opposing effects at the municipal level: a decrease of unemployment in the municipalities near the first highway segment but a surge in unemployment rate of the municipalities in the vicinity of the second section. A possible explanation for these divergent patterns could be the different characteristics of the two regions, such as the quality of human capital or the ex-ante degree of industrialisation.

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Forecast of labor force replacement on the Slovak labor market

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We will present a forecast of labor force replacement on the Slovak labor market, focusing on 41 groups of occupations according to the ISCO classification in this contribution. At the same time, we will present the SLAMM microsimulation model, which has been developed for a long period at the Institute of Economic Research of Slovak Academy of Sciences. The applied version of the microsimulation model represents the first output, within which the most recent nationwide census of inhabitants, houses and apartments 2021 (Census 2021) was used. The paper also contains interesting findings coming directly from the survey of CENZUS 2021. The result of the forecast is the finding of a labor market deficit that we will face in the near future. A

possible solution to mitigating this fact is the return of the Slovak workforce located abroad, a greater inflow of foreign labor migration or an increase in participation in the labor market.

Eastward enlargements of the European Union, transitional arrangements and self-employment

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When the European Union expanded eastward in 2004 and 2007 to accession the so-called EU8 and EU2 countries, respectively, the incumbent member states imposed temporary restrictions on the employment of EU8 and EU2 nationals. Self-employed individuals were exempted from these transitional arrangements, prompting concerns that self-employment could be used as a means to evade the restrictions on labour market access. If the transitional arrangements led to an increase in EU8 and EU2 nationals' self-employment rates, as previous research suggests, then their removal should have led to a corresponding decrease. This article analyses whether the latter has indeed been the case. Using pooled cross section data from the EU Labour Force Survey, over the period 2004–2019, we show that removing the transitional arrangements has had a negative effect on the self-employment rates of EU2 nationals, but seemingly no effect on the self-employment rates of EU8 nationals. Distinguishing between types of capitalist regimes, however, reveals a much more nuanced picture, with significant variation in terms of the magnitude and significance of the effect across groups of countries.

Parallel Sessions V., Stream B: Public policy

How Nearshoring Reshapes Global Deindustrialization

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Martin Lábaj

University of Economics in Bratislava

Although recent decades were marked by within-country deindustrialization, this was not observed on the global level, as jobs moved from smaller, highly productive countries to large, less productive ones. We provide new empirical evidence that this trend reversed in the mid-2010s. We compiled annual employment data for 64 industries in 45 economies for 2010–2020 that are compatible with the multi-regional input–output tables provided by Eurostat in the FIGARO 2022 database. The data show that global employment generated by vertically integrated manufacturing activities has started to decline. The regionalization of global value chains was identified as the main driver that has reversed this trend, as the level of offshoring from most regions has declined.

Analyzing the Redistributive Policies of EU Member Countries in the Context of Welfare Regimes

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This study employs cluster analysis to analyse the evolution of social regimes in European Union (EU) countries within the context of their economic situations. The paper begins by presenting a comprehensive review of relevant theoretical studies and categorizes countries into distinct social regimes based on the existing literature. Subsequently, hierarchical cluster analyses are conducted for 2007 and 2019, separately considering redistributive and socio-economic variables. The cluster analysis results indicate that over time, the distinctions between individual social regimes have become less pronounced, and membership in a particular social regime no longer guarantees placement in the same cluster. Regarding redistributive variables, there is a mixture of new and old member states, while economic disparities between these countries persist.

What do we measure when we measure? Evaluation of maternity leave expansion and methodology changes.

Olga Zajkowska
University of Warsaw

Katarzyna Saczuk
Warsaw School of Economics

Evidence based policy is a golden standard for designing family and labor market related solutions aiming for better use of labour market potential. While within the last 20 years, we have observed increased interest in the development of estimation methods and identification strategies, less attention is devoted to measurement issues. We analyse the effects of the maternity leave extension introduced in 2013 in Poland. We use natural experiment covering so-called mothers of the first quarter – women who gave birth in the first quarter of 2013 who initially were not covered by the reform. We use LFS definitions' changes introduced in 2021 to compare how maternity and family leave extensions caused changes in female labour market activity. We try to decompose observed changes in activity into true economic effects and statistical artifacts caused by definitions used.

Political Parties' Ideological Bias and Economic Policy Convergence

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Jan Fidrmuc
Université de Lille, France

Sugata Ghosh
Brunel University London

In democracies, policies are jointly shaped by voters' preferences and politicians' (or parties') ideological biases. We explore the relative importance of the latter on some key economic policies in a broad sample of 71 democratic countries during 1995-2019. To deal with the likely endogeneity of electoral outcomes, we instrument government ideology with the closeness of the previous election and with the government's tenure in office. We find limited evidence that left-wing and right-wing governments deliver divergent policy outcomes in consolidated democracies, thus suggesting that economic policies in democracies tend to converge, regardless of ideological differences. Nevertheless, ideologically driven policy divergence can be observed in hybrid regimes and among non-Western democracies.

Parallel Sessions V., Stream C: Financial markets

Connectedness among commodities and commodity currencies: network and probabilistic analysis

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Evžen Kočenda
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Paulo Sergio Ceretta
Federal University of Santa Maria

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We comprehensively analyze volatility connectedness among commodity currencies and commodities using data from 2009 to 2023. Our investigation includes an examination of network connectedness between commodities and commodity currencies as the first for this combination of assets. Our findings reveal iron, coal, and the Australian dollar as volatility transmitters to other currencies and commodities, particularly during periods of economic downturn. Additionally, we present the first empirical evidence for commodity markets and commodity currencies, demonstrating that increases in connectedness correspond to systematic events. We bring these findings by employing a bootstrap-after-bootstrap procedure developed by Greenwood-Nimmo et al. (2021) and identify specific shocks in commodity markets contributing to this phenomenon. Remarkably, in nine out of ten events, we observe an escalation in connectedness within a maximum of one business month following the event's occurrence. Importantly, our results remain robust across various volatility measures and carry significant implications for portfolio construction and risk management strategies.

Investigating Support Vector Machines for Stock Price Prediction

Tilla Izsák
University J.Selye

In recent years with the advent of computational power, Machine Learning has become a popular approach in financial forecasting and for stock price analysis. One of the most important aspects of trading is the application of modern ML techniques in the price prediction and financial decision making. In this paper, we develop a non-recurrent active trading algorithm based on stock price prediction, using Support Vector Machines, and compare its performance to the commonly used portfolio performance metrics. Traditional market analyzing methods are limited by the available data. One of the major setbacks for most Machine Learning algorithms is the quality and the quantity of data used for the training. Indeed, one of the key aspects of any Machine Learning application is the presence of noise in the training database. Instead of the traditional approach of using readily available, and often aggregated trading data, we have procured trading data from a high-resolution source. The electronic access to this market data was facilitated through Interactive Brokers, a brokerage firm. We have been using the IBKR Application Programming Interface (API) to obtain real-time, non-aggregated market data. We have collected this data and have constructed a high-temporal resolution database containing realistic market data. Our dataset consists of approximately 100 instruments. After the initial evaluation, we have concluded that the instruments with high trading volume responded best to the training algorithm, and therefore we have selected instruments for our study with high trading volumes. We suppose that the reason behind the model's good performance was the high temporal resolution of the data. We have retrieved the tick data for the specific instruments, including the time, price, and other information about each trade. Tick data, also known as "time and sales data", is a record of every transaction that occurs on the stock market. The data is created on the premises of the Stock Exchange and is transferred to the users as fast as permitted by the user's network connection. We have been continuously examining and inspecting the instruments' price changes and have isolated moments followed by increasing prices. After identifying such moments, we collected data for the corresponding samples. The ticks types which we have chosen to use in our model are: Bid Price, Ask Price, Last Price, Market Price, Close Price, Low 13 Weeks-, High 13 Weeks, Low 26 Weeks, High 26 Weeks, Low 52 Weeks, High 52 Weeks. The first three features (Bid Price, Ask Price, Last Price) are represented as a time series format in the sample (each consisting of data collected over a 5-minute interval), the rest are represented as one parameter each. We have collected data for the training and testing sets using a slightly different approach. The SVM training set consisted of positive (when the price increases) and negative (when the price decreases) samples in approximately equal proportions, while the testing dataset had a ratio of negative samples exceeding 90 percent and positive samples less than 10 percent. Since the density of stock market trading varies, the amount of tick data received in a given time interval also varies, therefore with the use of interpolation, we have represented the data with a data series of 300 data points per 5 minutes, meaning a sampling density of 1 sample/second. For feature selection and dimensionality reduction we used the Minimum Redundancy Maximum Relevance (MRMR) feature selection algorithm. The abnormal return estimates were significant and positive and the systematic risk has been lower than unity in all cases, suggesting lower risk compared to the market. Moreover, the estimated beta values for all stocks were close to zero, indicating a market-independent process. The correlation analysis has revealed weak correlations among the processes, supporting the potential for risk reduction and volatility mitigation through portfolio diversification. We have tested an equally weighted portfolio of specific assets and have demonstrated a remarkable return of 230% during the evaluation period from January 1st, 2022 to January 1st, 2023. The results suggest that SVM can be a promising approach for creating an algorithmic trading strategy, which has the potential to generate statistically significant abnormal returns using historical market data.

Confirmation of T+35 Failures-To-Deliver Cycles: Evidence from GameStop Corp.

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In this paper, we examine the potential of cycles in the valuation of GameStop Corp. (GME) stocks, due to the unique exemptions in exchange-traded fund (ETF) creation/redemption activities. In order to satisfy liquidity in the market, a market maker and/or authorised participant is allowed to sell ETF shares that have not yet been created. With the use of wavelet coherence, we find evidence that ETF Failures to Deliver (FTDs) formed consistent cycles in the day T+35 FTD clearing period. Results also confirm less consistent but repeating cycles between the T+3 and T+6 periods. To the best of our knowledge, we are the first in the literature to empirically examine the potential of these cycles and their co-movement between FTD and stock prices.

Distributional Effects of Exchange Rate Depreciations: Beggar-Thy-Neighbour or Beggar-Thyself?

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Slovak Academy of Sciences

While it is often argued that exchange rate depreciation has a beggar-thy-neighbour effect, in this paper, we investigate, whether exchange rate depreciation has a beggar-thyself effect. Specifically, we explore the distributional consequences of exchange rate movements. Using a heterogeneous panel cointegration approach, we find that, on average, small depreciations of the domestic currency decrease income inequality over the long-term. However, large depreciations in excess of 25%, increase income inequality over the long term. Large appreciations of the domestic currency also increase income inequality. Next, we identify 119 episodes of managed depreciations to better capture the distributional consequences of exchange rate movements. Managed depreciations are defined as situations in which the central bank intervenes to depreciate its domestic currency. Using the local projections (LP) approach, we find that managed depreciation shocks decrease income inequality. We find no evidence supporting the idea that exchange rate depreciation has a beggar-thyself effect with respect to income inequality, as it does not seem to increase inequality.

Forecasting Day-ahead Expected Shortfall on the EUR/USD Exchange Rate: The (I)relevance of Implied Volatility

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The existing literature provides mixed results on the usefulness of implied volatility for managing risky assets, while evidence for expected shortfall predictions is almost nonexistent. Given its forward-looking nature, implied volatility might be more valuable than backward-looking measures of realized price fluctuations. Conversely, the volatility risk premium embedded in implied volatility leads to overestimating the observed price variation. This paper explores the benefits of augmenting econometric models used in forecasting the expected shortfall, a risk measured endorsed in the Basel III Accord, with information on implied volatility obtained from EUR/USD option contracts. The day-ahead forecasts are obtained from several classes of econometric models: historical simulation, EGARCH, quantile regression-based HAR, joint VaR and ES model, and combination forecasts. We verify whether the resulting expected shortfall forecasts are well behaved and test the models' accuracy. Our results provide evidence that the information provided by forward-looking implied volatility is more valuable than that in backward-looking realized measures. These results hold

across multiple model specifications, are stable over time, hold under alternative loss functions, and are more pronounced during periods of higher market uncertainty when risk modeling matters most.

Parallel Sessions V., Stream D: Aspirations and Subjective Well-being (APVV-19-0329)

Beyond Goals and Desires: Understanding Aspirations through Experimental Studies

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Throughout our lifetimes, we encounter numerous situations that require effort, and ultimately result in success or failure. These situations can include taking tests at school, participating in exams or interviews, and submitting applications or manuscripts. When faced with such situations, we often have aspirations, which refer to our future desires in various aspects of life. However, scholars often fail to provide a clear definition of aspirations in their studies. Aspirations are believed to be socially produced and considered influential factors shaping individuals' outcomes, such as educational attainment, occupation, or income. While aspirations typically encompass long-term goals and significant achievements, they can also relate to short-term wishes or desires, such as succeeding in a job interview or performing well in a specific task. In behavioural research, aspirations are often measured through participants' choices, wishes, or desires in single or multiple tasks. In this talk, I will present findings from a series of studies conducted in collaboration with my co-authors, focusing on different perspectives of aspirations. Study 1 explores the normative notion of aspirations. This concept reflects a shared understanding of what society expects from its members. Raising aspirations has become a common policy recommendation for promoting human capital investment. In an online experiment with nearly 3,700 participants from Slovakia, the UK, and the USA, we examine the extent to which individual normative views (first-order beliefs) on aspirations differ from socially-produced normative views (second-order beliefs). The experimental design allows us to elicit participants' individual and socially-produced normative income aspirations. Our findings indicate that participants in the Individual treatment report significantly higher normative income aspirations on average, compared to those in the Social treatments (both incentivized and non-incentivized). Study 2 focuses on the effects of the environment and feedback on participants' aspirations and performance. Aspirations are operationalized as individuals' wishes related to performance in a real-effort task. Participants from the same sample as Study 1 are randomly assigned to either a failure environment (hard condition) or a success environment (easy condition). They receive feedback on their actual performance (failed vs. succeeded). Our results show that the assignment to the experimental condition without feedback does not affect aspirations or performance. However, failing in a task framed as hard has a strong negative effect on aspirations, while succeeding in a task framed as easy has only a weak effect on aspirations. Study 3 examines the long-term effects of generic positive feedback (praise) on aspirations for a score in centrally administered national test in mathematics among 9th-grade elementary school students. Additionally, we study the effects of the same recurrent intervention on 8th-grade students' aspirations in a simulated test. The experiment was conducted among nearly 2000 students from 111 classes in 28 randomly selected schools in Slovakia between October 2022 and March 2023. Students were randomly assigned to either the intervention group (receiving praise within regular feedback for approximately five months) or the control group (no praise provided within regular feedback). Preliminary results indicate that the short-term feedback after the first round of testing (one month) does not yet have a discernible impact on children's aspirations. In summary, these studies shed light on various aspects of aspirations, including normative views, environmental influences, and the effects of feedback. The findings contribute to our understanding of aspirations and their implications in different contexts.

Overqualified and Underutilised: Exploring the Drivers of Higher Education Attainment

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Human capital is an essential element of economic development. Not surprisingly, governments aim to promote the growth of human capital by increasing the educational attainment of their populations. EU countries have set a target of increasing the share of the population completing tertiary education to 45% by 2030. Nevertheless, such policies can lead to overeducation and overskilling, which are typically associated with costs. Overqualification can particularly be a concern in countries with 'free' education, including the tertiary level, as this overqualification is generally financed by taxpayers. Individuals aspire to acquire education because it provides them with the essential knowledge, skills, and competences needed to perform well in their desired occupations in the labour market. According to economic theory, particularly theories related to human capital, individuals pursue higher education with the expectation that investing additional years in studying will lead to higher future earnings in the labour market. Assuming that individuals should acquire education up to the point where the marginal benefit (income) of additional years of study equals the marginal cost of acquiring that level of education, it may not be rational to study longer. In practice, this 'optimal point' can be thought of as the level of education that meets the general requirements of employers for the occupation an individual wishes to pursue. Nevertheless, a group of individuals choose to study longer and achieve a higher level of education that is not required by employers nor provides additional income, resulting in overqualified employees. We conducted an incentivised online experiment to examine the effects of refuting the common perception that bachelor's education is inadequate by informing participants about selected labour market statistics (share of job offers suitable for bachelor's and master's graduates and corresponding wages). The study was conducted among 1970 adults in Slovakia, of which 470 were university students. Slovakia is the OECD country with the highest proportion of bachelor's graduates continuing to their master's degree, making it an apt setting for our study. We elicited participants' second-order beliefs by utilising an incentivised economic coordination game designed to elicit social norms. We found that students in the treatment group (informed about current labour market statistics) were more likely to believe that bachelor's graduates should not automatically continue to the master's level of studies. This group of students was also more likely to believe that the bachelor's degree is fully accepted by employers. However, we did not find similar effects in the general adult population subsample (excluding students). Next, we explore a set of potential explanations for why participants believe that bachelor's graduates should automatically continue studying at the master's level. The results suggest that the motivation to obtain a master's degree is substantially stronger than any other potential factor. In addition, we designed an incentivised discrete choice experiment to quantify the importance of obtaining a master's degree while varying the proportion of theoretical versus practical knowledge acquired during the master's studies. The results suggest that obtaining a master's degree is a stronger factor for the labour market than acquiring practical experience.

Understanding the Transmission of Gender Norms in Mono-Ethnic Roma Communities

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Gender norms have been shown to be an important factor contributing to gender discrimination and have adverse impacts on women's economic outcomes, particularly their position in the labour market (women often have lower wages and are less frequently offered leadership roles compared to men). Social norms spur and guide actions by setting limits on individual behaviour, and they can be understood as shared understandings of actions that are obligatory, permitted, discouraged, or forbidden within a society. Generally, the transmission of norms occurs vertically (from parents to their children), horizontally (between peers), or obliquely (from other adults) through cultural transmission. This study focuses on the transmission of gender norms

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within relatively segregated, low-income, mono-ethnic Roma communities in Eastern Slovakia. We elicit injunctive norms, i.e., individuals' perceptions of what their community believes is right or wrong. To elicit norms, we employ a simple incentivized coordination game with 400 children and 395 adults from 257 families. We operationalize the measurement of social norms related to gender roles using a set of four vignettes: a man working as a homemaker (househusband), a man working as a nurse, a woman earning more than a man, and a woman being a community leader. First, we examine the differences in beliefs between adults and children and whether children are more likely to hold norms closer to their parents or peers. While understanding how norms are transmitted is an important first step, a natural subsequent question is to study the implications of parental and community norms on children's outcomes. Therefore, we also measure parents' educational and occupational aspirations for their children and study the correlation between aspirations and perceptions of social norms. We find that some gender norms are strongly prevalent in Roma communities and that children are more likely to hold gender stereotypical norms than adults. The results further suggest that both parents and the community play crucial roles in shaping children's beliefs. Importantly, we do not find statistically significant differences in parental aspirations for sons vs. daughters, indicating that parental aspirations remain consistent regardless of children's gender.

The Mediating Role of Negative Affect between Aspirational Gap and Subjective Well-Being: Evidence from Europe

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According to the theory of socially determined aspirations, an optimal level of aspirations lies at a reasonable distance from an individual's current situation. A departure from this level can result in either aspiration failure when individuals fail to aspire to their potential, or an aspirational gap, which occurs when individuals' socially generated aspirations are higher than their current socio-economic level. These predictions are particularly important in economic development research, as they highlight the potential impact of setting aspirations too low, leading to reduced effort, or setting aspirations too high, resulting in frustration. Both scenarios can contribute to the perpetuation of the poverty trap. In this study, we focus on one of the two aspirational biases - the aspirational gap. Consistent with the theory, individuals who experience an aspirational gap tend to have lower levels of subjective well-being (SWB) compared to others, and this lower level of SWB results from negative affect caused by aspiring beyond their current socio-economic level. Previous research has demonstrated an inverted U-shaped relationship between SWB and income aspirations, suggesting that excessively high-income aspirations are associated with lower levels of SWB. However, a deeper understanding of this relationship is lacking. We contribute to this body of literature by explicitly examining the relationship between SWB and the aspirational gap, which we operationalise as the relative difference between an individual's income aspirations and their current disposable income. Additionally, we investigate the mediating effect of negative affect in this relationship. Our analysis is based on 210,130 (236,076) observations from the 2013 and 2018 EU-SILC surveys, covering 32 European countries. Firstly, we demonstrate a strong negative relationship between SWB and the aspirational gap, consistent with findings reported in other studies. Next, we perform a mediation analysis to examine negative affect, proxied by three variables (feeling downhearted or depressed, down in the dumps, and being very nervous), as a mediator in this relationship. We find a negative relationship between SWB and negative affect, while the relationship between negative affect and the aspirational gap is positive. We employ two techniques for the mediation analysis, both leading to the same conclusions. We find strong evidence that negative affect mediates the relationship between the aspirational gap and SWB.

Physical Characteristics of Built Environments and Subjective Well-Being: Exploring the Direct and Indirect Effects of Urbanization

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Despite economists' skepticism towards subjective indicators, they have gained recognition as essential complements for capturing the complex nature of quality of life. Subjective well-being (SWB), one of these missing dimensions, is often measured through happiness and life satisfaction questions included in international surveys. Numerous empirical studies have examined the relationship between SWB and its potential determinants. In this study, we investigate the effects of physical characteristics of built environments on SWB. Previous research primarily focused on factors such as population density, size, degree of urbanization, and the urban-rural dichotomy. The spatial coverage varied from specific cities or metropolitan areas within a country to comparisons across multiple countries. However, the findings of these studies provide mixed evidence regarding the relationship between SWB and population density or related physical characteristics. Some studies have found a positive relationship between life satisfaction and population density in central urban areas, while others have found an opposite direction, no statistical significance, or even a curvilinear relationship. Most of these studies, however, only consider the total effect of the relationship between the two phenomena without examining the breakdown into direct and indirect effects. When the direct and indirect effects work in opposite directions, the total effect can be close to zero, suggesting no relationship between the variables. In this study, we contribute by exploring the indirect relationship between urbanization and SWB, mediated through characteristics of built environments (such as pollution, crime/violence, noise, green spaces, and environmental quality), as well as examining the direct relationship and the total effect. Our analysis is based on 199,074 (218,313) observations from the 2013 and 2018 EU-SILC surveys, covering 30 (29) European countries. Initially, we find that the total effects of urbanization on SWB are positive in three (3) countries, negative in twelve (10), and statistically insignificant in fourteen (16) countries. However, when we examine the direct and indirect effects, we find strong evidence for such effects in the majority of countries included in the survey. Our results suggest that in urban areas, high levels of noise are negatively associated with individuals' SWB. Additionally, increased pollution levels have adverse health consequences, leading to reduced satisfaction. The presence of crime and vandalism is identified as the most significant factor negatively affecting SWB in urban areas. In a limited subsample of countries, we further demonstrate that living in urban areas is positively associated with the possibilities offered by these areas, such as the availability of various services and events. One of the main takeaways from our study is that the null total effect of urbanization on SWB can be explained by the opposing directions of the direct and indirect effects.

Alternative Approaches to Estimating Subjective Poverty Lines: An Application to the EU-SILC Survey

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Understanding the evolving trends in key socio-economic indicators poses a significant challenge, as the manner in which these developments are portrayed can shape public opinion and policy decisions. Despite the European Union's recognition of the significance of objective and subjective aspects of well-being, no official subjective poverty statistics are currently reported within the EU. Consequently, governmental policies, which exert considerable influence on people's lives, may not be adequately captured by the existing official statistical measures. As a result, policymakers can only rely on scholarly articles that investigate subjective poverty to gain deeper insights into this crucial dimension. In addition, estimations of subjective poverty lines (SPLs) are commonly based on the Minimum Income Question (MIQ), which has re-

cently been dropped from the EU-SILC survey. EU member states are not obligated to collect data on this variable on a regular basis, making it challenging to track patterns in subjective poverty levels in the EU. An alternative approach to estimating SPLs is based on qualitative categories such as the economic ladder question or the Deleeck attitude question. In this study, we focus on the latter, phrased as 'Can you make ends meet with the actual income of your household with great difficulty/some difficulty/difficulty/fairly easily/easily/very easily?' This question is included in the EU-SILC survey and can be utilized to estimate SPLs. Previous research has adapted the Youden index to the subjective poverty context, defining SPLs (a cut-off point) as the income level that differentiates subjectively poor households from non-poor households. The estimation of the cut-off point is based on sensitivity and specificity classification measures derived from a confusion matrix. However, the literature provides further measures derived from the confusion matrix that can be used to determine a cut-off point. These measures include accuracy, the absolute difference of sensitivity and specificity, the intersection of sensitivity and specificity, the F1 score metric, Cohen's kappa, and others. We employ a set of classification measures derived from a confusion matrix to estimate alternative SPLs and assess their sensitivity. Our analyses are based on 2012-2021 EU-SILC microdata, the official source of data for poverty analyses in the EU. We report trends in the alternative SPLs and the corresponding shares of households (individuals) identified as subjectively poor, broken down by household type.

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