BOOK OF ABSTRACTS

University of Ioannina

Department of Economics

https://imaef.econ.uoi.gr/

ISSN: 1791-9800

Table of contents

Foreword	3
Session 1: Macroeconomics I	4
Session 2: Finance I	14
Session 3: Sustainability, Environment & Policy	25
Session 4: Economic Growth	33
Session 5: Applied Economics	43
Session 6: Behavior & Experiments	51
Session 7: Environment	59
Session 8: Socioeconomics	70
Session 9: Political Economy	80
Session 10: Macroeconomics II	89
Session 11: Banking	100
Session 12: Human Capital	111
Session 13: Finance II	121
Session 14: Institutions	131
Session 15: Taxation	138
Session 16: Markets, Firms & Trade	144
Session 17: Economics	152
Session 18: Education	159
Special Session I: 'Historical Perspectives on Industrial, Economic and Financial Development' *Co-organised by RHI-IHR*	166
Special Session II: 'The pandemic of Covid-19 and the socio-economic aspects of aging' *in collaboration with Hellenic Open University*	175
List of participants	183
Sponsors	187
Conference Programme	189

Foreword

We are delighted to write this Foreword to the Proceedings of the Ioannina Meeting on Applied Economics and Finance 2022 (IMAEF 2022), held in Argostoli, Cephalonia, Greece, June 22-24, 2012.

This is the eighth year of the international meeting on Applied Economics and Finance, which is organized by the Department of Economics of the University of Ioannina. IMAEF offers an international forum for the exchange of ideas in the application of theory to wide ranging issues in economics and finance.

Since the last meeting, there has been a severe public health and economic crisis due to the COVID-19 pandemic, which hit world economy and society for almost two years, and as this crisis subsided, a new crisis due to the war in Ukraine is evolving. The recent events add to the terrible human losses of the previous crisis and have worsened the economic situation created by the pandemic, as the energy crisis hits with world economy with unprecedented severity and a food crisis is expected to unfold soon.

There is an urgent need to design and apply policies for growth resurgence, with emphasis to the young generation and other vulnerable segments of the population as well as the need to build buffers and mechanisms to improve financial resilience. On the other hand, the enhancement of both quantity and quality of data underlines the need for more appropriate empirical methods and tools capturing the multiple factors affecting economic behavior of private and public decision makers so that decisions and policy formulation are better supported.

In this framework, the research outlined in these proceedings offers new directions for research in a wide spectrum of areas ranging from applied economics to financial markets and political economy. The proceedings include extended abstracts from 85 papers. All the contributed papers have been accepted for presentation in the Meeting and inclusion in the Meeting proceedings after peer review. Presenting authors come from institutions from 16 countries.

Plenary speeches from Professor Paul Heidhues, (Düsseldorf Institute for Competition Economics, Heinrich-Heine-Universität Düsseldorf) and Professor Steven Ongena (Department of Banking and Finance, University of Zurich, Switzerland), covered advanced issues in the areas of Behavioral Industrial Organization and Applied Financial Theory and Policy.

Concluding, the Organizing Committee of IMAEF 2022, would like to express their thanks to the contributors of the meeting, which will hopefully make it a great success.

Spyros Symeonides, Nikos Benos, Yorgos Goletsis

Session 1

Macroeconomics I

Fiscal Multipliers and The future of Fiscal Policy in EMU

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Abstract

In recent years, the global economy has faced two major disturbances—the financial crisis of 2007–8 and the pandemic crisis. National governments attempted to revitalise economies by providing necessary financial support. Consequently, their debt soared to unparalleled levels. These developments highlighted the issue of government debt, which has again drawn the attention of economists. The issue of debt becomes more complicated when the analysis concerns the member states of a monetary union (especially in the European Monetary Union-EMU). In the case of EMU, though fiscal cooperation is essential for the stability of the union, it is quite complex. Recently, fiscal rules have been criticised for being too strict and recessionary. All the aforesaid issues are the source of inspiration for the presentation. The hypothesis we attempt to analyse is whether the same fiscal rules can be applied to all the countries of the EMU which have numerous inter se differences. The dominant approach is that fiscal control and prudence are imperative for the stability of the currency. To analyze this issue we discuss fiscal multipliers. Recently, there has been increasing interest in re-estimating fiscal multipliers and simultaneously, examining the factors affecting the size of multipliers, which we place in two broad categories—business cycle and structural factors. The factors of the first category refer to the marginal propensity to consume, the output gap, the financial conditions of consumers, anticipation of future increase in taxes to compensate debt increase, the impact on wealth, the composition of fiscal shocks, all of which affect fiscal multiplier. As for the second category, we may find factors such as the response of Central Banks being decisive for the effectiveness of fiscal policy, the fiscal sustainability of the economy, financial developments, the degree of openness and the exchange rate regime.

We use a panel VAR model to estimate fiscal multipliers, controlling for three exogenous variables—the level of debt, openness, and the size of the country. We use

yearly data for the period 2002–2019. We choose this period because the new currency was introduced in EMU in 2002 and we extend the period to 2019, to avoid including data from the turbulent time of the pandemic crisis. The entire dataset is collected from AMECO. The findings are in line with the relevant literature and show that the fiscal multiplier is higher in small, less-open countries with less debt, vis-a-vis other countries.

We will conclude the presentation with the policy implication these findings bear. The re-activation of fiscal rules in the EMU means that some countries should follow strict programmes of fiscal adjustments. Yet, fiscal multipliers that determine the potency of fiscal policy vary substantially across member-states. This may cause **the multi-speed fiscal adjustment in Europe**, given that some countries will succeed in restoring their fiscal position faster and more effectively than others. This presentation will endeavour to contribute to this discussion of the appropriate fiscal programmes that should be implemented in EMU the day after the pandemic crisis.

Keywords: Fiscal Policy, European Monetary Union, Fiscal Multipliers, Debt, Fiscal Rules

JEL Codes: C50, E02, E12, E50, E62, H61

Military Spending, Economic Output and Inflation: An Empirical Investigation for Greece

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Abstract

Although the literature on the effects of military expenditures is ample covering a broad spectrum of economic aspects, the possible relationship between military spending and inflation has not attracted a great deal of attention by the recent literature. To fill this research gap, the present paper seeks to examine whether military budget expansions are linked to higher economic output and inflation levels. Particular attention is paid to Greece, an economy that has historically been characterized by high defense burdens and lax economic policies for several decades.

To test the above research question, the analysis relies on the model specification of Emmanouilidis and Karpetis (2021), who developed a Keynesian dynamic model for a closed economy augmented with the Philips curve, in which defense outlays is a distinct component of government expenditures. According to the employed theory, positive demand shocks stemming from increments of the defense budget should lead to an output gap temporarily; nevertheless, in the long run, and after adjustments to inflationary expectations, the economy should attain a new equilibrium point, where income is expected to reach its potential output, but at a higher price level. This means that the effects of demand shocks to the inflation levels are permanent, unless there is a response of the fiscal or monetary authorities that nullifies the demand shock.

Moreover, the econometric tools utilized to estimate the empirical specification account for both the short and the long-run relationships. More specifically, to examine the possible existence of a long-run relationship between military spending and inflation the cointegration methods of Pesaran, Shin and Smith, (2001), and Gregory and Hansen (1996) are employed. Besides, as a natural consequence of the

presence of cointegration among the model variables, the analysis proceeds with the estimation of the corresponding (restricted) error correction model as well as with the cointegrating regression methods of FMOLS and DOLS as a further robustness check on long-run relationships.

Overall, the extracted statistical output reveals that defense spending is responsible neither for better economic performance nor for higher inflation during the period under examination. This implies that the financing of the defense sector has not been detrimental to the Greek economic activity, despite the fact that the country is a net importer of defense equipment. Perhaps, this is because expenditures on defense equipment do not represent a large share of the total defense outlays. Additionally, from a theoretical perspective, the results contradict the Keynesian arguments regarding the short-term multiplier effects following a defense budget expansion, but they are consistent with the neoclassical views in the long run.

Keywords: economic fluctuations, Keynesian economics, military spending

JEL Codes: E32, E12, E62

A two country HANK model of Eurozone

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Abstract

We build a Heterogeneous Agents New Keynesian (HANK) model consisting of two countries that participate in a currency union. The model incorporates both cross- and within-country heterogeneity. Cross-country heterogeneity mimics the Eurozone imbalances. We solve the model for a creditor country (the Core), which acts as a net lender with current account surpluses and stable public finances, and a debtor country (the Periphery), which acts as a net borrower with current account deficits and weak public finances. International lending/borrowing takes place through a world financial intermediary located in the Core country, while its profits are rebated to the Core country's households. In addition, since the two countries adopt a common currency, they abandon independent monetary policies; thus, monetary policy in the union is conducted via a supranational authority, while each country follows independent fiscal policies. We also incorporate a rather rich within-country (household) heterogeneity by adopting the structure of the standard incomplete market models, i.e., Bewley-Huggett-Aiyagari models. Households in each country are subject to uninsured idiosyncratic productivity shocks, which affect their income and, subsequently, the accumulation of their assets. We define the currency union equilibrium as the point where the next excess supply of assets meets the excess demand for assets (i.e. debt). This setup allows studying within-country wealth, net income and earning heterogeneity. Our preliminary model-based results suggest that current account imbalances (similar to those observed in the early period of the Euro area) can have important wealth and income distributional implications at the union and country-level when countries have different levels of indebtedness. Our model

with these imbalances implies higher real interest rates and higher asset accumulation for both the periphery and core countries in order to finance government debt, compared to a balanced union. The higher interest rates and increased wealth accumulation observed for a typical household improve wealth inequality but decrease labour supply in both the Core and Periphery countries. Whilst the wealth inequality is reduced in such a union with current account imbalances and government debt asymmetry, consumption and welfare of the households at the bottom of the wealth distribution in the Periphery county are worse off. This is because these households are particularly affected by the higher labour taxes imposed by the Periphery government to sustain its high level of public borrowing. On the contrary, the average consumption and welfare of households in the Core country increase since these households benefit from high real interest rate payments on their savings and profits and lower labour taxes due to lower debt inherited by the Core country's government. Therefore, lowering public debt in the Periphery would improve overall income inequality in the union.

Keywords: Currency Union, Open Economy, Inequality, Incomplete markets

JEL Codes: F41, F45, D31, D52, E21

Sovereign Default with Unobservable Physical Capital

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Abstract

Purpose

The canonical position of international lenders is that foreign assets should be used for fostering economic growth through investments and in turn for generating returns for debt repayment. Nevertheless, the experience of several countries, such as Argentina in 2001, whose borrowing was not followed by the agreed level of investment programmes, opens up the issue for debate on whether international lending conditionality should stipulate that debtor countries use foreign assets for investment. Therefore assessing whether it is optimal for a borrower to use foreign assets for consumption and/or investment is crucial for designing effective international debt policies. Previous literature on sovereign default with physical capital assumed that physical capital is fully observable by lenders. Observable capital makes it possible to make the bond price schedule contingent on physical capital and provides a direct incentive for borrowers to increase capital investment in order to reduce the cost of borrowing (as a large stock of physical capital reduces the probability of default, implying a lower risk-premium).

Our paper assumes that the borrower's physical capital is not observable by the lender and therefore the bond price schedule does not depend on capital. This is a more realistic setting as lenders typically find it difficult to verify the capital stock of a country. In our setting, borrowers can therefore choose to borrow for consumption rather than for investment in physical capital, without altering the price of borrowing. Thus the question arises whether borrowers would use foreign assets for consumption only.

Our model

We specify an infinite horizon dynamic stochastic general equilibrium model with a representative household. Production is a function of physical capital and total factor productivity, in turn being subjected to shocks. The economy can save in physical capital and in foreign assets (or borrow if foreign assets are negative). The economy may choose to default, and if doing so it is excluded from the international capital market with re-entry occurring with an exogenous probability. We derive the bond-price schedule with unobservable physical capital when international lenders are risk neutral. We calibrate our model to the Argentina economy, and provide numerical solutions to the equilibrium functions using a discrete state space (which enables us to find the exact solutions given the grid). We compute the value function, policy functions, equilibrium default probability and the equilibrium bond-price schedule. We present the impulse-responses to positive and negative productivity shocks. We finally validate the model through 100,000 Monte Carlo simulations (comparing model moments with those of the data).

Results and implications

We find that, despite physical capital not being observable, it is still optimal for the borrower to borrow for both consumption and investment, and not only consumption. This implies that conditionality clauses are less of an issue. Furthermore, borrowers smooth investment in response to a shock and do not over invest. The reason is that there is no incentive to over accumulate capital in order to influence the bond-price schedule. Our simulated moments match those of the Argentina data well.

Keywords: Sovereign Default, Physical Capital, Unobservable Capital

JEL Codes: E21, E22, E32, F34, O16

Costly disasters and the role of fiscal policy

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Abstract

We examine the dynamic effects of natural disasters in US states and relate them to state and federal fiscal policy actions. Typically, disasters have important negative output but less severe unemployment consequences. Real effects vary spatially: coastal and poor states recover more slowly. Countercyclical fiscal policy reduces the severity of the real downfall. States with less stringent budgetary requirements and/or budget stabilization funds face smaller real costs. State spending is more effective than federal spending in reducing the negative effects of the disaster shock at the cost of mild and temporary increases in state debt.

Keywords: Natural disasters, recessions, federal transfers, state fiscal policy, debt accumulation

JEL Codes: C32, E27, E32, H30

Session 2

Finance I

How Low is the Demand for Extreme Risks insurance?

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Abstract

Experience shows that when the purchase of low probability high impact (LPHI) insurance is voluntary and not proposed at affordable price or not bundled with other common insurance policies demand is generally low.

The analysis of stated preferences widely used in the literature leads to heterogeneous results that are difficult to generalize. In addition, numerous systematic factors could affect stated preferences. All this raises the question about the functional chain along which fundamental and methodological factors may exacerbate irrational decision-making widen the gap with the EU model. While the focus has been on independently analyzing the demand for insurance for different target populations, little attention has been paid to the sensitivity of the results obtained to the specific characteristics of the risk, socio-economic factors and stated preference elicitation methods. Since the financial costs associated with extreme risks are expected to increase, it would be important to accurately identify and measure the effect of systematic factors and noise that may affect the difference between the (WTP) and the actuarial price while controlling for heterogeneity.

This paper explains through a meta-analysis the intrinsic level of demand for LPHI insurance observed from a sample of international studies. Our approach is based on a linear decomposition to measure and explain the average deviations of willingness to pay (WTP) from the actuarial price.

This meta-analysis is the first to focus on the large-scale explanation of differences in reported WTP from a panel of international studies. It combines the results of several independent studies conducted between the period 2006 and 2020. This research should complement existing systematic reviews by providing additional quantitative insights. This research also contributes to a better understanding the interaction of fundamental and behavioral factors in their influence of reported WTP.

Empirical results derived from a dataset of 65 primary studies show that, on average, the stated willingness to pay (WTP) adjusted by the fair price of insurance is around 68%. Meta-regression reveals that structural deviations from a risk-neutral WTP are mainly due to the study country and measurement method of WTP (real versus hypothetical method). Real methods overestimate WTP significantly (by 10%) more than hypothetical methods. Moreover, the WTP is found to be higher for smaller probabilities hazards, low-income populations and idiosyncratic extreme risks. These results are robust to alternative model specifications and estimation methods. A Multi-year risk-based premium combined with modular subsidies and more effective awareness-raising measures about extreme losses could enhance the attractiveness of insurance.

Keywords: Climate risks; Insurance demand; Economic experiment; Hypothetical survey; Willingness to pay; Meta-analysis

JEL Codes: O12, O13

Loan Approval Classification Using a Bio-inspired Neural Network

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Abstract

Since the turn of the century, banks and other financial institutions have been granting loans. Given that credit risk emerges mostly when borrowers are unable or unwilling to pay, rigorous background screen- ing of a customer prior to approval of a loan failing is an essential necessity to sustain oneself in such a business. It is worth noting that the amount of non-performing loans in the economy is significant because these loans weigh on bank profits and use valuable resources, limiting banks' ability to grant new loans. Problems in the banking sector can swiftly spread to other sections of the economy, jeopardizing employ- ment and economic growth. As a result, there is an urgent need to develop better models for determining whether or not to grant a loan. This paper introduces a 3-layer feed-forward neural network model for bi- nary classification problems that is trained using a novel bio-inspired weights-and-structure-determination (WASD) algorithm dubbed BI-WASD. The BI-WASD algorithm integrates a meta-heuristic optimization algorithm called beetle antennae search (BAS) for discovering the optimal weights and structure of the BI- WASD based neural network (BI-WASDNN). It is worth mentioning that WASD-based neural networks, i.e. neural networks trained by a WASD algorithm, are known to resolve the shortcomings of traditional back-propagation neural networks such as slow training speed and local minimum. This is due to the WASD algorithm's use of the weights-direct-determination (WDD) method to directly determine the optimal link- ing weights between the hidden and output layers while also acquiring the optimal number of hidden-layer neurons. Because BAS can solve combinatorial optimization problems, the BI-WASD algorithm outper- forms traditional WASD algorithms when it comes to obtaining the optimal weights for the neural network. It

is worth mentioning that the BI-WASD algorithm not only obtains the optimal hidden-layer weights directly, but also determines the optimal BI-WASDNN structure automatically and efficiently. Another improvement over traditional WASD algorithms is that the BI-WASD algorithm uses cross-validation to address bias and avoid being stuck in local optima during the training process. Applications on two loan approval classification datasets validate our BI-WASDNN model in order to demonstrate its outstanding learning and predicting performance. Since these applications use real-world datasets that include strings and missing values, an algorithmic method for preparing data is also suggested to make them manageable from the BI-WASDNN. A comparison of the BI-WASDNN model to five other high-performing neural network models is included, as well as a MATLAB package that is publicly available through GitHub to support and promote the findings of this research.

Keywords: Neural networks, WASD, beetle antennae search, loan approval classification

JEL Codes: G20, C38, C45, C63

Zeroing Neural Networks for the Mean-Variance Portfolio Selection Framework

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Abstract

Portfolio optimization plays a significant role in financial decisions. In finance terms, a collection of all stocks or assets held by a public or private institute is known as a portfolio. The portfolio selection problem refers to the optimal distribution of budget on the available stocks such that the expected mean- return is maximized (profit), and the risk is minimized. The factor to measure risk is the variance of the portfolio return, smaller the variance lower will be the risk. This approach was introduced few decades ago by Markowitz's modern portfolio theory. The Markowitz mean-variance portfolio selection (MVPS) is widely considered as a significant investment method. The use of quadratic programming (QP) techniques is one option for addressing the static MVPS problem. The continuous-time MVPS (CTMVPS) problem is defined and studied as a time-varying (TV) quadratic programming (TVQP) problem in this article. Using real-world datasets, the CTMVPS problem is approached by two different TVQP neural network solvers. These solvers are based on the Lagrange multiplier method and are called the zeroing neural network (ZNN) and the linear-variational-inequality primal-dual neural network (LVI-PDNN). The experiment findings illustrate and compare the performances of the ZNN and LVI-PDNN solvers in two various portfolio configurations. According to the numerical experiments, when the portfolio has small dimensions, the ZNN solver outperforms the LVI-PDNN solver in terms of accuracy, however when the portfolio has large dimensions, the contrary is happening. As a result, the efficiency of NN solvers is primarily determined by the portfolio dimensions. Our approach is also verified by these

experiments as an excellent alternative to conventional MATLAB methods, i.e., the MATLAB's QP solver "quadprog". To the best of our knowledge, this is an innovative approach that incorporates robust neural network techniques to provide an online, thus more realistic, solution to the CTMVPS problem. In this way, we present an online solution to a TV financial problem while eliminating static method limitations. It is worth mentioning that an online solution consists of consecutive solutions with the feature that the previous solution is used as an initial input instead of a random input at each solution's iterative process. Hence, the online solution of a time-varying financial problem is a great technical analysis tool as well as an important financial analysis tool. In addition, to promote and contend the outcomes of this research, we created a MATLAB repository for the interested user, that are publicly accessible on GitHub.

Keywords: Markowitz, zeroing neural networks, portfolio selection, time-varying quadratic programming.

JEL Codes: G11, C45, C61, C63

The impact of ESOPs on firm Performance: Evidence from China

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Abstract

On June 20, 2014 the China Securities Regulatory Commission (CSRC) issued the "Guidance on the pilot implementation of employee stock ownership plan (ESOP) by listed companies" which signified a new era of the employee ownership in Chinese listed companies. The purpose of the "Guidance" was to stimulate employees' enthusiasm and align their interests with those of owners through the implementation of ESOPs. To date, the empirical evidence on the impact of ESOPs on firm performance remains inconclusive. In specific, the extant literature on the impact of ESOPs on firm performance falls into two categories. The first strand of studies documents a positive relationship between ESOPs and firm performance. Proponents of the positive impact of ESOPs assert that employee ownership can improve efficiency by motivating employees to work harder and cooperate with management and each other. Thus, employee ownership aligns interests of employees with those of the company. The second strand of literature reveals a negative association between ESOPs and firm performance. In specific, a firm owned by employees is fundamentally an inefficient organization since all employees have the same motive. Moreover, the implementation of ESOPs have been intertwined with more conflicts among heterogeneous employees, increasing entrenchment and exacerbating agency costs which may consequentially result in negative effects on firm performance.

The purpose of this study is to examine the impact of employee ownership and engagement on the 620 Chinese listed companies' performance during the period between 2014 and 2020. Using pooled cross-sectional regression analysis, the results reveal a curvilinear impact of ESOPs on firm performance. In particular, there is an inverted U-shaped relationship between employee ownership and firm performance, where a proportion of less than 1% of employee stock ownership has a positive

impact on firm performance, while a proportion of more than 1% of employee stock ownership has a negative impact on firm performance. Moreover, the results suggest that the executive stock ownership exerts a sustained negative impact on company performance no matter the proportion of ESOPs. Finally, the duration of ESOPs is positively associated with firm performance. These results suggest that performance implications of employee ownership are positive up to a certain point, after which the marginal effect of employee ownership on firm performance becomes negative. As a result, these findings suggest that managers and shareholders should be careful when launching and increasing the level of employee ownership to not go beyond specific inflection points.

Keywords: Employee stock ownership plan, executive stock ownership, employee engagement, firm performance

JEL Codes: G32

Financial asset return, volatility, and uncertainty spillovers in industrial and emerging economies

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Abstract

Interdependence among stocks markets, as well as, other financial markets, has been well documented by empirical financial economists over the last forty years. Emergence of various measures of uncertainty (macroeconomic uncertainty, Economic Policy Uncertainty (EPU), etc) has led to mushrooming research on the relationship between uncertainty and economic activity and the cross-country transmission of uncertainty. This paper has two objectives: First, we employ the Diebold and Yilmaz methodology to investigate spillovers in (i) financial market returns and (ii) volatility of returns among a group of over 20 countries that includes both industrial countries and some emerging economies in three continents (Europe, the America and Asia) using monthly data from the 1990s up to 2021. We measure spillovers in three types of financial markets, namely the stock, bond, and foreign exchange markets using the total spillover index, the directional spillover indices, and the net volatility spillover index. Second, using VAR methodology, we investigate the relationship between financial market spillovers and uncertainty spillovers with uncertainty captured by the EPU index. Two types of financial market spillovers are considered: spillovers in financial returns and spillovers in the volatility of returns. Volatility is measured by the conditional variance of shocks to each series following the estimation of a GARCH model. Generalized rolling impulse response analysis is employed to shed light on the interdependence between financial markets and uncertainty spillovers in a time-varying framework where the dynamic responses are allowed to vary according to the time period under consideration.

In regards the first objective we find considerable evidence for spillovers in each of the three financial markets. The results indicate that return spillovers are highest for the stock market (84%) and lowest for US dollar foreign exchange returns (52%). The total connectedness index for the EPU for the full set of countries takes the value of 80% indicating quite high uncertainty spillovers. For European and Asian countries, the figures are 68% and 62%, respectively. In fact, uncertainty spillovers are similar in size to stock market return spillovers. When we focus on volatility spillovers, our results show similar evidence with that obtained for spillovers in returns. Volatility spillovers are highest for the volatility in stock returns and lowest for the volatility in foreign exchange returns. Given the time-varying nature of the spillover indices, we find that spillovers in both the financial markets and the uncertainty index have been on the rise since the start of the covid-19 crisis. Regarding the second objective, preliminary evidence based on generalized rolling impulse response analysis indicates that there is quite significant interdependence between financial market and uncertainty spillovers.

Keywords: return spillovers, volatility spillovers, Diebold-Yilmaz methodology, EPU, rolling impulse-response function analysis

JEL Codes: F65, G10, G15

Session 3

Sustainability, Environment & Policy

Green Financing for Shipping

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Abstract

Objectives: The global shipping industry, like many others, is under growing pressure to be more sustainable. Regulation, renewable energy advances and customer demand have created an opportunity to make shipping more environmentally sustainable, which entails significant funding. Traditional ship financing has been done on a secured basis, with few sustainability considerations. This approach is ripe for innovation, given the industry's environmental footprint. Evidence from other industries suggests borrowers could benefit in pricing and structure from sustainable borrowing, such as green bonds (proceeds are dedicated to environmental and social investment). While the trend is increasing for sustainable loans, there is growing demand for retrofit financing within existing vessels to meet CO_2 emission targets.

This paper aims to explore benefits to shipping entities of issuing unsecured and covered green, social and sustainable bonds. These could effectively advance the environmental and social agenda in the industry, strengthening environmental, social and governance (ESG) structures.

Methodology: Research methodology involves both primary and secondary sources. While sustainable finance increasingly permeates research and policy decisions, relatively little attention has been paid to the shipping industry. This undertaking builds upon initiatives in other industries (including transport and other vital services) to apply to shipping, where Greece and other coastal nations are important centres. The primary research plan involves gathering data from industry participants, where local networks have been built, and soliciting views about current financing methods and more sustainable, innovative alternatives. There has been identified a cohort of over thirty ship managers and shipping financiers who are being surveyed and

interviewed, using a set of pre-prepared questions to solicit opinions and sentiments. This is already yielding some interesting results, and eventually are intended to support some robust conclusions about optimal, sustainable financing which meet the needs of borrowers and investors. Evidence from other industries, transport and otherwise, are also helping to inform conclusions, from which recommendations are being developed to influence policy. This initial study examines green bonds in particular and their application to transport and shipping industries.

Findings: International shipping accounted for around 2% of global energy-related CO2 emissions in 2019. While shipping is the most energy efficient way to carry cargo, the transportation industry in general, and shipping in particular, has not historically kept pace with others in terms of decarbonisation. Given cargo volumes, shipping related CO2 emissions have changed little since 2000 (Petch, 2021).

Besides regulation and technology, a driver for environmental improvement is green financing. With green bonds, borrowers provide a set of sustainable criteria, and commit that capital to projects meeting those criteria. Lenders require regular reporting and set strict criteria to ensure compliance with green bond terms.

The economic incentivization of improved sustainability performance includes margin ratchets linking sustainability performance to loan interest margins. The margin increases or decreases depending on a firm's environmental, social and governance performance (Martin and Williams, 2019). Environmental, social and governance (ESG) criteria may curtail financing if firms do not adopt them. As more investors adopt ESG, firms are embracing ESG strategies so as not to risk losing investors (McCammon, 2020).

Implications: This initial overview of green bonds shows their great promise in promoting environmental and social responsibility, for transport and for shipping in particular. They ought to be an integral and increasing component of funding plans going forward.

Keywords: sustainability, green bonds, social bonds, green finance, shipping, transport

JEL Codes: G15, L92, Q52, Q56

Promoting green infrastructure investments through a debt service standstill

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Abstract

We develop a model to show how a debt-servicing standstill (temporary debt relief) for a heavily indebted poor country can facilitate energy investments that also promote economic growth.

Heavily indebted poor countries are vulnerable to ‘debt overhang’, which is the situation where a country’s sovereign external debt exceeds the country’ repayment ability with some future probability (Krugman, 1988; Sachs, 1989).

In particular, a high debt service burden, especially for external debt, creates disincentives for private investments given that future taxes on the private sector would be expected (Karagöl and Bilimler, 2004). In particular, Nguyen et al. (2004) show that although the stock of public debt does not appear to depress public investment, the level of debt service does. Furthermore, the quality of investments may also be reduced.

A number of institutional arrangements have attempted to tackle the above situation, mostly through debt relief, for example the Heavily Indebted Poor Country (HIPC) programme, a joint IMF – World Bank initiative launched in 1996. The initiative was endorsed by governments worldwide.

Participation in the HIPC debt relief programme is conditional to reforms including poverty reduction, sustained economic growth, diversified exports, improving public debt management, greater access to markets in developed countries, etc.

A similar, but region specific, proposal is from the Economic Commission for Latin America and the Caribbean (ECLAC) who is promoting “a swap of some of the region’s external debt for debtor-country commitments to make annual payments into a new Caribbean Resilience Fund” (UN, 2019).

Furthermore, temporary measures have also been implemented during crisis situations. For example, to combat the (economically) catastrophic effects from the COVID-19 crisis, the G20 agreed to a debt service standstill on bilateral loans for a group of 76 low-income countries [reference], especially as these countries were faced with a sudden collapse in capital inflows and unprecedented outflows (IIF, 2020). However, Bolton et al. (2020) argue that a similar standstill was also needed for middle-income countries, which would include all private creditors. Additionally, the IMF provided debt relief for a number of countries.

In this context, we develop a framework to show how temporary debt relief can promote green energy investments that can also trigger economic growth. This framework includes the creation of an array of national and international institutions, which collaborate but remain operationally independent of each other. In addition, to provide an indication of the merits proposal (e.g., welfare effects), we develop a formal macroeconomic model where we explore a competitive, decentralized model of endogenous economic growth, which relies on public investments. The results inform as to the potential gains of our proposal, but also provide guidelines for the efficient design or improvement of similar support schemes.

Keywords: energy; investments; debt

JEL Codes: F34, H63, O44

ESG and Systemic Risk

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Abstract

How do changes in Environmental, Social and Governance scores influence banks' systemic risk contribution? Using a panel of 367 publicly listed banks from 47 countries over the period 2007-2020, we document a beneficial impact of ESG Combined Score and Governance pillar on banks' contribution to system-wide distress. Stakeholder theory and theory relating social performance to expected returns in which enhanced investments in corporate social responsibility mitigate bank specific risks explain our findings. However, only better corporate governance represents a tool in reducing bank interconnectedness and maintaining financial stability. A similar relationship for banks' exposure to systemic risk is also found.

Keywords: Systemic Risk; Financial Stability, Corporate Social Responsibility (CSR), Environmental, Social and Governance (ESG) Scores

JEL Codes: G01, G21, M14

Policy responses to the Covid-19 pandemic: Understanding the role of natural resources and Sovereign Wealth Funds

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Abstract

COVID-19 pandemic has put pressure on governments to deploy significant public capital to address the unforeseen shock induced to the healthcare systems and to economic activity because of stringent measures.

Countries with better fiscal positions, ease of access to international capital markets or those sitting in accumulated assets, e.g., revenues from natural resource exploitation, should be able to employ strong economic stimulus to ease the impact of the pandemic on the domestic economy. At the same time, commodity exporters should be in a worse position to take strong policy responses against the pandemic, as they are faced with a dual challenge of dependence on (falling fast) commodity revenues on one side and increasing pressure on the expenditure side to address the pandemic effects. COVID-19 as a global external shock to commodity exporters, raises the following questions: Does resource-dependence relate to the magnitude of the policy responses to the pandemic? Do explicit tools of fiscal policy, like resource-based Sovereign Wealth Funds (SWFs), link to policy responses to the pandemic? We provide empirical evidence on the determinants of the COVID-19 policy responses with focus on resource rich countries and on the role of SWFs. In a global sample of countries, we check whether SWF presence is associated with larger policy responses to the COVID-19 pandemic as compared to countries not having a SWF. We find that fiscal stimulus is larger in developed, high-income and better credit rating countries. We also find that countries with higher public debt record high fiscal stimulus against the COVID-19 pandemic. Our findings on the role of natural resources and on the

explicit fiscal tools such as SWFs and fiscal rules, show that there is a weakly negative relationship between natural resources and fiscal responses to the COVID-19 pandemic. Oil exporters record lower fiscal responses, especially responses with a direct impact on the budget, as compared to non-oil exporting countries. Oil-based SWFs are not identified to support stronger fiscal responses to the COVID-19 pandemic. In contrast non-resource-based SWFs (pension and holding funds) link to stronger fiscal responses to the pandemic. The results remain important for their policy implications suggesting that: i) commodity-based SWFs may not always offer a fast support against the unexpected socio-economic shocks, and ii) a thorough understanding and potential design update is required to turn SWFs supportive against unexpected adverse conditions.

Keywords: Sovereign Wealth Funds, fiscal policy, COVID-19, socio-economic shocks

JEL Codes: E62, E02, H3, G28

Session 4

Economic Growth

The impact of financial development and income inequality on economic growth using dynamic panel data

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Abstract

The relationship between financial development, economic growth and income inequality has receive a considerable attention in the research community the past years. This study aims to examine the impact of financial development and income inequality on economic growth, for 23 European Union countries namely, Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovenia, Spain, Sweden, during the period 1987-2017 using dynamic panel data models. Financial development is measured by several proxies representing different dimensions of banking development and stock markets development such as financial depth, efficiency, stability, and stock markets liquidity. Specifically, financial development is measured by private credit, bank assets, liquid liabilities, stock market capitalization, net margin interest rate, Z-score which is the probability of a commercial bank default in a country, non-performing loans, stock market trade value, turnover ratio, and stock price volatility. Additionally, economic growth is measured by the growth rate of GDP per capita and income inequality is measured by the Gini index. Also, macroeconomic control variables such as government expenditures, research and development expenditures, investment, inflation, trade openness and enrolment in secondary education are included in the model. For the empirical analysis, the generalized method of moment difference estimator (GMM-Difference) for dynamic panel data is applied. The findings show that private credit, bank assets, non-performing loans and turnover ratio are statistically significant at a five per cent significance level and have a negative impact on economic growth. On the contrary, stock market capitalization and Z-score are

statistically significant at a five per cent significance level and have a positive effect on economic growth. Moreover, the liquid liabilities influence positively the economic growth and are statistically significant at a ten per cent significance level. The net margin interest rate, the stock market trade value, and the stock price volatility have a negative influence meanwhile are statistically insignificant factors of economic growth. Therefore, not only the size and the instability of the banking sector but also the liquidity of stocks markets remain obstacles to economic growth. However, the size of financial markets and the stability of the financial system stimulate economic growth. Regarding income inequality, the Gini index affects positively and statistically significant economic growth. Thus, a higher level of income inequality can be more beneficial for the economic growth. Finally, the R&D expenditures, the government expenditures, the investment, and the trade openness can enhance the economic growth. On the other hand, the inflation and the education have harmful contribution on the economic growth. To sum up, the policymakers can take the appropriate measures for the development and the stability of banking system by mobilizing capitals and diversifying the risk to promote the economic growth and liquidity measures are required by reducing the higher transaction costs to enhance the stock market efficient function.

Keywords: economic growth, financial development, inequality, GMM estimator, panel data

JEL Codes: C33, G20, O11

The effect of Gender Wage Gap on Economic Growth in Europe

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Abstract

While Gender Wage Gap's determinants are extensively determined, the opposite holds for its aftereffects. In this rather small literature, a debate between two scholars pulls the interest, that of Seguino (2000) and Winter-Ebmer and Schober(2011). The debate is about Gender Wage Gap's potential effect on economic growth. Seguino (2000) examines the effect of Gender Wage Gap to economic growth in semi-industriazed economies and concludes that wage inequality between women and men boosts GDP growth through the rise of Exports. Lower women's wages act as a landmark for higher profits, attracting Foreign Investments in female dominated export oriented industries. On the contrary, Schober and Winter-Ebmer (2011) find either negative or zero coefficient between the two variables, depending on the sample examined. Seguino's (2000) results are attached to a theory which seem to apply only to a particular countries sample, while Schober and Winter-Ebmers (2011) results are disputed by Seguino (2011). Despite that the research question is not answered yet, Smart Economics take as granted that the achievement of gender equality would boost economic growth, based mainly on the relatively homogeneous literature about the relationship between gender education inequality and economic growth.

The paper examines the effect of gender wage gap on GDP growth in Europe, a research which has never been conducted before, to the best of my knowledge. Thirty-one European countries (twenty-eight EU countries and three EFTA countries) constitute the sample covering a time period of twenty-nine years, from 1991 to 2020. Gender Wage Gap's data are derived from UNECE's (United Nations Economic Commission for Europe) Statistical Database, referring to the gender gap in average hourly earnings from employment, shown as a percentage of men's average earnings. Gross Domestic Product per capita growth was selected as the most representative proxy for economic growth, because it is the most acceptable and widely used

measure of economic progress. Our independent variables in regression analysis are the Gender Wage Gap, as a measure of gender wage inequality, and other common-used growth affecting factors, such as the initial GDP per capita, investment, education, government consumption growth, trade and inflation rates. The regression analysis is carried out using five-year averages for consistency and comparability with previews research analyzing the determinants of growth and the effect of Gender Wage Gap on Economic Growth specifically. Fixed effects and GMM regression analysis reveal a statistically significant positive effect of gender wage inequality on economic growth.

The existence and persistence of gender wage inequality worldwide and the fact that European Union endorsed gender mainstreaming as its official policy approach to gender equality makes the relationship between Gender Wage Gap and GDP growth essential for fiscal policy making.

Keywords: gender, inequality, gender wage gap, economic growth

JEL Codes: J16, J31, O47, O52

Trends, Cycles and Prospects of Income Inequality in Western Balkans

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Abstract

This paper analyses the evolution of income inequality in the Western Balkans from a long-run perspective using the best available statistical evidence. The case of income distribution in the Western Balkans countries (Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia) is interesting and worth studying on several grounds.

The growing income inequality from the mid-1990s has shifted the interest of scientific research from the traditional interpretation of wage inequalities and labor markets, and the trade-off between unemployment in Europe and inequality in the US in an effort to address unbridled technological progress and the inevitable globalization (Blau & Kahn 2002, Katz & Autor 1999, Morris & Western 1999), in new fields in microeconomics (economic, social, and moral incentives, as well as corporate governance, and family formation practices), and in macroeconomics (economic policy and institutions). The research of Thomas Lemieux, David E. Card, and Nicole M. Fortin contributed substantially to this trend (DiNardo, Fortin & Lemieux 1996, Fortin & Lemieux 1997, Lemieux 2008, Card & Krueger 2016). Given, therefore, the continuous interest in the distribution of income and/or wealth and the scientific research triggered by Facundo Alvaredo's analysis of the widening of inequality gaps in the most developed countries (Alvaredo et al. 2018, Alvaredo et al. 2013), the investigation of relevant trends in the Western Balkans, is of particular importance. If the current economic policy measures in the EU prove to be incomplete and temporary, as they do not seek social transformations and radical systematic change, as Alvaredo argues, nor do they consider that higher income

groups are usually considered heavier carbon emitters and polluters than poor people, then it is obvious that the current EU economic policy is currently failing to address income and wealth inequality. And this raises even more concerns in the case of the Western Balkan countries, increasing the gap between our expectations and the realities of state actions and policy measures in addressing wealth inequality and environmental protection.

Is there a safe European perspective for the Western Balkans? According to the World bank's recent economic reports, there are warning signals from the labor market while fiscal balances have started to improve due to stronger economic performance.

As recent research has shown by the Open Society Foundations (Open Society Foundations, 2021), there is an argument by civil society actors, that "confidence in the EU's ability to ensure good standards is greater when people see those standards being applied to current member states if problems arise". Also, there is a strong interest of the French Presidency of the Council of the European Union in enlargement, as confirmed by the statements of President Macron on the convening of a conference dedicated to the Western Balkans in June, asserting that the Western Balkans is more than Europe's neighborhood because it is "in the heart of Europe". Income inequality is closely related to the arguments addressed above. So, this study based on the analysis of the respective literature presents and discusses income inequality trends, cycles and prospects along with macroeconomic determinants of the Western Balkans countries.

The methodology applied in this study is based on time series analysis. More specifically, the trends of income inequality are estimated for every one of the Western Balkans countries group mentioned above. The time series decomposition model is used in order to discuss the trend evolution of disaggregate inequality indices such as the top 1% of income distribution. Economic variables such as GDP, inflation and unemployment are also used. First, we compute the trend component of each series. Then we obtain the cyclical component by taking deviations of the above trend from the actual series. Our aim is to find not only the trend but also whether inequality indices move procyclicality or not to each countries' output. The data we use are derived from use the World Inequality Database as well as Eurostat. Our top income shares estimates are based on data reported in personal income tax. The research results can be taken into consideration by policymakers in order to

evaluate the impact of any socioeconomic programs or policies undertaken in the EU as well as to create an appropriate development policy and a conducive business environment, but also by civil society actors.

Keywords: Income inequality, Time Series, Western Balkans, EU Enlargement

JEL Codes: C22, F02, F50, C2, E6

Economic Materialism, Cultural Change, and the Transition towards Sustained Growth

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Abstract

Motivation & Objective: In recent years, a growing body of research employed models that incorporate elements of cultural change to investigate issues pertaining to economic growth and comparative economic development. However, one cultural aspect that has eluded the attention of researchers involves the role of economic materialism, i.e., the set of values, beliefs, personality traits and attitudes that attach significant importance to the pursuit of material goals, thus promoting the acquisition and consumption of material goods. This oversight is by no means warranted though. On the contrary, it obscures the role of an important cultural factor for economic progress. The objective of this study is to fill this gap, by highlighting the role of economic materialism as a cultural phenomenon of significance in relation to economic transformation and development.

Methodology: We construct a model in which we divide the population into two groups that differ in their evaluation of the consumption of material goods for their utilities. Non-materialists only care about the goods they consume. Materialists, on the other hand, have material aspirations, in the sense that the also care about how their standards of living compare to those of their predecessors. The distribution of preferences among the population is endogenous, as it evolves through an intergenerational transmission of cultural traits. Productivity improvements are also endogenous, as they require purposeful investments by agents - activities such as innovation, learning and research – thus enabling them to increase the output they produce.

Results: We show that an endogenous cultural change towards more widespread adherence to materialistic values is both a cause and an effect of productivity growth.

The main mechanisms of the model are the following: Only materialists find optimal to undertake productivity-enhancing activities, as this choice offers them the income necessary to gratify their material aspirations. At the same time, productivity growth induces more intense cultural instruction in families with materialist parents; consequently, it causes a more widespread adherence to the values and attitudes of economic materialism. Thus, the economy follows a path where the mutually-reinforcing impact of productivity improvements and more widespread adherence to economic materialism, provides the foundation for the take-off towards sustained economic growth, and shapes long-run cultural outcomes in the sense that, gradually, a significant fraction of the population will end up upholding materialistic values. We also present numerical examples to investigate the quantitative performance of our framework. The model's calibration shows that it performs reasonably well in capturing the differences in the evolution of productivity and income per capita between European countries, from 1500 to 1880.

Implications: A cultural-economic complementarity (i) is a powerful mechanism of endogenous productivity growth, and (ii) also determines the prevalence of different cultural values vis-à-vis the prominence of material objectives. In this respect, our study contributes to a better understanding of important, yet unexplored, issues pertaining to comparative economic development.

Keywords: Economic materialism; Cultural transmission; Productivity; Economic growth

JEL Codes: D11; O1; O41; Z1

Session 5

Applied Economics

Co-movement in international zero coupon government bond yields

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Abstract

This paper studies the co-movement in international zero-coupon government bond yields using a recently proposed methodology by Choi et al. (2018) and Choi et al. (2021). We employ a readily available non-proprietary dataset which facilitates reproduction of the results but also comparability with the existing bibliography.

The importance of bond markets and consequently of sovereign bond markets in modern economies is unquestionable. Sovereign bond markets are intimately connected with budget deficit funding and the conduct of monetary policy. We address the question of whether information consolidation from international yield curves can help to uncover dependency patterns among yields curves of different countries, both contemporaneously and dynamically, updating our knowledge on the leading role of specific countries and the importance of increased globalization and financial integration. Several studies have shown strong dependencies of interest rates across countries and have uncovered systematic global factor(s) in the yield curve (Diebold et al. (2008), Modugno & Nikolaou (2009), Moench (2010), Bai & Wang (2015), Jotikasthira et al. (2015), Abbritti et al. (2018), Coroneo et al. (2018), Byrne et al. (2019), Kobayashi (2019), Stagnol (2019)).

Our empirical analysis provides two novel elements. First, we include zero coupon bond yields for Greece along 60 maturities, computed using three factor models, namely Nelson & Siegel (1987), Svensson (1994) and Diebold & Li (2006). Thus, the country sample dimension is increased from ten initially available countries to eleven covering the period March 1999 - May 2009 with T=123 observations and N=640 series in total. Second, we manage to highlight serious identification issues in the search for global factors that are successfully confronted by the adopted methodology

which notably includes (i) consistent estimation of the number of global factors, (ii) consistent estimation of the number of local factors (iii) consistent estimation of the aforementioned factors and the corresponding factor loadings. Choi et al. (2021) propose a two-step procedure to estimate the number of global and local factors and Choi et al. (2018) put forth a sequential multi-step approach to estimate consistently the global and local factors and loadings. The just mentioned steps are set out in more detail below:

Step 1, using two consistent selection criteria, the canonical correlations difference (CCD) and the modified canonical correlations (MCC), proposed by Choi et al. (2021)1, the number s of global factors is estimated.2 Step 2, once s is consistently estimated by CCD and MCC, the global factors G_t are concentrated out of the full data panel using an initial global factor(s) estimator3 $\hat{G}_t^{(1)}$ and existing criteria, such as those proposed by Bai & Ng (2002) and Ahn & Horenstein (2013),4 are employed to consistently estimate the number of local factors r_m for $m = 1, \dots, M$, where local factors are allowed to be mutually correlated. Steps 3-4-5, presented in detail5 in Choi et al. (2018) involve an initial estimate of Λ_m, F_{mt} by principal components, the final estimation of Γ_m, G_t (denoted by $\hat{\Gamma}_m^{(2)}$, $\hat{G}_t^{(2)}$) based on the previous estimates $\hat{\Lambda}_m^{(1)}$, $\hat{F}_{mt}^{(1)}$ and finally estimation of Λ_m, F_{mt} (denoted by $\hat{\Lambda}_m^{(2)}$, $\hat{F}_{mt}^{(2)}$) given $\hat{\Gamma}_m^{(2)}$, $\hat{G}_t^{(2)}$.

Our results, on variance decomposition ratios indicate the importance of more than one global factors on the zero coupon government bond yields both in the cross-sectional and time dimensions.

[1] These authors provide further guidance for the empirical selection of the common maximum number of factors that improve the selection precision of CCD and MCC in finite samples.
[2] Alternative consistent selection criteria for the number of global factors can be found in Chen (2012), Andreou et al. (2019) and Han (2021).
[3] The superscript "(1)" is employed to distinguish the initial global factor(s) estimator from the final estimator, $\hat{G}_t^{(2)}$, obtained in a later step (both are consistent).
[4] Choi et al. (2021) propose the use of BIC_3 by Bai & Ng (2002) and ER by Ahn & Horenstein (2013). Even so, we report results from the ER, GR procedures of Ahn & Horenstein (2013), all PC, IC criteria along with BIC_3 developed by Bai & Ng (2002) and the ED (edge distribution) procedure developed by Onatski (2010). We rely primarily on ER, GR and then IC_{p2} and BIC_3. Among others, one advantage of these estimators is their reduced sensitivity to the (common) maximum number of factors r_{max} allowed in each block.
[5] They correspond to steps 2, 3 and 4 in Choi et al. (2018).

Keywords: Sovereign bonds; Yield curve; Term structure; Multilevel factor model; Global factors; Local factors

JEL Codes: C10, E43, G12, G15

Production function estimation controlling for endogenous productivity disruptions

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Abstract

The current production function estimation framework, developed by Olley and Pakes (1996), Levinsohn and Petrin (2003), and Ackerberg, Caves, and Frazer (2015), assumes that productivity is a completely exogenous process, unaffected by endogenous factors. However, the input adjustment cost literature has, for years now, been producing evidence that lumpy investment in physical capital – large spikes in the investment rate relative to the typical investment behaviour of the firm – are followed by significant drops in productivity.

We propose a modification to the standard production function estimation framework that incorporates endogenous disruptions in the productivity process due to lumpy firm investment. We investigate the differences between our novel (disruption) framework and the existing (baseline) approach on a large proprietary panel of Greek Manufacturing firms.

With both models, we estimate a gross-output production function, instead of value-added, since Bruno (1978) and Diewert (1978) argue that the additional assumptions needed for a value-added specification are not subtle. Bond and Söderbom (2005) find that gross-output models are unidentifiable under the current framework, but recently Gandhi, Navarro, and Rivers (2020) have developed a new estimation method, which overcomes the current issues, and which we employ here.

The two models lead to significantly different production function estimates. Using the baseline model as a benchmark, the coefficient for capital is 1.4554 standard deviations higher, while for labour it is 1.4613 standard deviations lower.

In turn, the difference in estimates affects the results of subsequent inference. They imply different average levels of productivity. Using both structural and data based

estimates, the disruption model gives an average log TFP 2.5-2.6% lower than the baseline model.

The measured magnitude of the endogenous disruptions is also different. A sample matching experiment shows that, according to the baseline model, the average TFP of a sample of firms that display a spike drops by 5.46 percentage points, compared to about zero for a sample of statistically similar firms that do not. For the disruption model, the drop is by 6.31 percentage points.

Additionally, the baseline model lacks a structural representation of disruption costs and cannot capture their full dynamics, which extend across time. Using the disruption model's estimates and the data, we find that these costs take the form of forgone output and amount to 17.10% of output across time, only 5.05% of which is in the next period.

Finally, decomposing Aggregate Productivity Growth into its components gives substantially different results under the disruption model. We study average technical efficiency and reallocation efficiency for three subperiods: before the 2008 Greek financial crisis, during the crisis, and during recovery. In the pre-crisis period, the disruption model estimates average absolute technical efficiency to be 10.11% higher and reallocation efficiency 38.82% lower, compared to the baseline model. During the crisis, the disruption model gives a 4.36% lower magnitude for average technical efficiency and 10% lower reallocation efficiency. During recovery, the disruption model's technical efficiency is lower by 17.17%, while the baseline's reallocation efficiency is lower by 69.95%.

Keywords: Production function estimation, Investment spike, Productivity, Matching

JEL Codes: D22, D24, E22, L60

Asymmetric Reactions of Retail Fuel Prices on Changes in Crude Oil Prices in U.S. Regional Markets

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Abstract

In the paper we respond a question, if retail gasoline and diesel prices in the U.S. regional markets respond more quickly when crude oil price rises rather than when it decreases. The asymmetric reaction of output prices to input prices in production is one possible explanation for New Keynesian price rigidity. Three possible explanations for the asymmetric response of retail fuel prices are the oligopolistic coordination theory, the production and inventory cost of adjustment, and the search theory. The commonly used approaches in empirical studies of retail fuel price asymmetries involve error correction models and vector error correction models. We provide an alternative empirical approach based on the linear exponential adjustment costs (linex) formulation. The fuel price-maker chooses a price in order to minimize the linex cost function. We solve the first-order condition and, prior to generalised method of moments (GMM) estimation of the short-run relation, we replace expected values with actual values and we take the first differences to express the fuel price reaction function. The orthogonality conditions implied by the rational expectation hypothesis makes the GMM a natural candidate to estimate equation. The weekly data of retail gasoline and diesel prices in U.S. regions and crude oil WTI spot prices are gathered from the U.S. Energy Information Administration – the agency responsible for collecting, analysing, and disseminating energy information. The agency divides the USA into regions: East Coast, Midwest, Gulf Coast, Rocky Mountains and West Coast. On further subdivision, East Coast consists of regions: New England, Central Atlantic and Lower Atlantic. We estimate the coefficients of reactions functions for

both cases and for both retail gasoline and diesel. Testing the residuals of all corresponding equations we state that all equations are statistically significantly correlated. Therefore we estimate the equations with the system GMM. The standard errors are computed with the procedure of Newey and West. The most important feature of the procedures their consistency in the presence of both heteroskedasticity and the autocorrelation of unknown forms. Testing the coefficient restrictions we confirm that retail gasoline and diesel prices in the U.S. regional markets respond more quickly when crude oil price rises rather than when it decreases. From the price-maker's first order condition, using the coefficient estimates, we express the average gasoline or diesel price bias from the one-unit oil price increase caused by the asymmetry. The biases differ from region to region. The retail gasoline biases are between 0.04 in West Coast and Los Angeles and 0.37 cents per week and one-barrel oil price increase in Lower Atlantic. The retail diesel biases are between 0.04 in West Coast and Los Angeles and 0.19 cents per week and one-barrel oil price increase in New England. Our results support asymmetric transmission of changes in the price of oil to the price of gasoline in all U.S. regions. This information may be useful in specifying the sources of price rigidities in U.S. markets.

Keywords: asymmetric retail gasoline and diesel price reactions, linex adjustment cost function, system generalised method of moments

JEL Codes: C26, C51,Q41

Session 6

Behavior & Experiments

Subjective well-being: The importance of participating and attending local sport events

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Abstract

Purpose: Subjective well-being, as individuals' cognitive and affective evaluations of their satisfaction with life, depends on a wide range of factors. Physical activity as one of these factors has significant benefits for physical and mental well-being, while an emerging literature examines the impact of sports participation on subjective well-being. The aim of this study is to examine if active sport participation and sport attending can directly affect (positively or negatively) other elements of subjective well-being. There is a variety of studies focused on sport events, examining the economic impact of this event, or the health impact for all the participants, but this study tried to examine the event from a more personal perspective, asking the attendants to evaluate their decision by their own personal standards.

Methodology: A quantitative research conducted via a questionnaire distributed to participants and attendees, addressing the most important life domains that affect subjective well-being. Subjective well-being was measured through life satisfaction evaluation in a sample of participants and attendees in a half-Marathon local event. The results of the survey are presented by combining the use of both descriptive and inductive statistics. More specifically, with regard to the descriptive statistics tools used, they include the presentation of the frequencies and the relative frequencies of the respondents' answers, while for the presentation of the results of the answers identified by the Likert scales mean and standard deviation were used. In addition, the Pearson linear correlation coefficient was used in order to identify the relationship between subjective well-being and the frequency of engagement in sport events, while independent samples t-test and One-Way ANOVA test were used in order to conduct comparisons on the mean scores of subjective well-being based on the type of engagement and socio-demographic characteristics.

Findings: This paper will add new and important empirical evidence to the matter of engagement in community sport events as significant subjective well-being factor. It was found that the frequency of attending a sport events, both as an active and non-active participant, is related positively with subjective well-being, as the higher the frequency the higher the life satisfaction levels reported. Indeed, empirical literature has revealed that self-reported happiness increases with the frequency of participation in sports event. Present findings suggest that the relationship between engagement in sports activities in the community and subjective well-being is not affected by the demographic profile of the active and non-active participants. No statistically significant differences were found in terms of gender, age and family status, although there is empirical evidence that men may benefit more than women by participating in sports activities as regards their well-being. Individuals who actively participated in the Marathon event reported higher life satisfaction level. Education and frequency of participation were found to be significant mediation factors of the sports participation - subjective well-being relationship, with more educated and more frequent participants reporting higher life satisfaction

Implications: Following the findings of this specific research, engagement in community sports activities upgrades subjective well-being, and the power of this relationship is affected by the frequency of participation and other demographic variables. The event was supported and organized by local authorities and almost 95% of the participants were living in the surrounding area so the findings can have a deep impact in public policy decisions, especially in areas where subjective well-being is sidelined and needs to be boosted. These results could be useful for local authorities if they intent to maximize the positive outcome on local people's subjective well-being by organizing sport events for specific subgroups of the community.

Keywords: subjective well-being, sports participation, local sport events, local development, economic growth

JEL Codes: I3, Z2

The Expert and the Charlatan: An Experimental Study in Economic Advice

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Abstract

How do you recognize an expert on a topic, if you are not knowledgeable yourself?

In this paper, part of a larger agenda, we investigate how an average member of the public chooses the best adviser when presented with two candidates: one is always correct ("expert) and the other is worse than guessing at random, but always suggests the most popular answer ("populist"). The decision maker is aware of the success probabilities of the two advisers and how the populist's answers are chosen, but does not know who is who.

Our theoretical model shows that under some conditions, one is always able to identify the expert, but this sometimes involves choosing the adviser you agree with less.

To test this finding, we first develop a questionnaire on ten economic policy topics of moderate complexity where the correct answer is often counterintuitive and involves proper economic thinking, besides math. We valide the correct answers, using an international sample of academic economists from high ranking instututions, and we elicit the answers of the populist using a representative sample of residents in England and Wales.

We administered three treatments among 600 participants, using a representative sample in England and Wales. Our first treatment is a baseline, where subjects go through the questionnaire, choosing what they think are correct answers and

afterwards seeing the adviser recommendations. Once done with the questionnaire, they select the advisor who they think is the expert, without any feedback.

In the second treatment we give feedback regarding the number of to correct answers before the adviser choice, to control for overconfidence.

In the third treatment we ask participants to choose based on the answers of someone else, to remove ego-involvement.

The second and third treatments are interesting cases of our theoretical model in which one should always be able to choose the true expert. Our participants, though, exhibit a striking inability to identify the expert. In the baseline treatment about 1 in 3 identify the expert, worse than choosing randomly. Correcting for overconfidence improves the outcome to not statistically different from choosing randomly. Removing ego-involvement has no additional effect to correcting for overconfidence.

Our results demonstrate that identifying expertise when one is not knowledgeable on a particular topic is a hard problem. This is relevant to all kinds of problems with asymmetric information, from choosing a politician to a car mechanic.

On a second level, our findings suggest that pandering can be more profitable than showing evidence of proper expertise, in all these problems. For example, a populist interested in influencing (economic) policy has an obvious and very powerful strategy available to them, namely, to always endorse the most popular views regardless of their soundness.

JEL Codes: C91, A11

Directional predictability between returns and trading volume in the futures markets of energy: insights into traders' behavior

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Abstract

The objective to the present work is to investigate for directional predictability between returns and volume (and vice versa) in the energy futures markets. The study employs the cross-quantilogram approach that enables us to assess the temporal association between two stationary time series at different parts of their joint distribution. The data are daily prices and trading volumes from five energy futures markets, namely, West Texas Intermediate (WTI), Brent, Natural Gas, Heating Oil and Gasoline. The empirical results indicate that high levels of volume lead extreme returns. Low levels of trading activity have in general no information content about future returns. Extreme returns precede strongly high levels of volume only for the case of WTI. The findings shed some additional light regarding trader's behavior and strategies.

Keywords: Quantilogram; Energy prices; Volume; Futures

JEL Codes: G15, C01, G40

Definitivity Avoidance

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Abstract

A number of behavioral explanations have been identified to account for the empirical observation that individuals tend to inefficiently shy away from making certain decisions. We introduce a new bias, "Definitivity Avoidance" (DA), that induces individuals to avoid choices that involve a final judgment. This bias denotes situations in which an agent prefers to avoid making definitive decisions (i.e., those that involve a final judgment).

This kind of behavior may play an essential role in several applications in economics and finance. For instance, a bank's choice of rolling over debt for a poorly performing firm involves postponing a final decision instead of forcing the firm to file for bankruptcy. Indeed, numerous finance papers (e.g., Bernanke, 1989; Carey et al., 2012) have identified inefficiently high rates of debt rollover, thus suggesting that these decisions could be subject to systematic biases. Similarly, closing an investment position even in the presence of noisy signals definitively precludes capturing a possible upside, and this option could appear less attractive than leaving the position open, with the idea of eventually closing it when uncertainty declines.[6] Also, in judicial systems with 'double jeopardy' provisions, acquittals are more definitive as

[6] The widespread exposure to ABS securities during the great financial crisis offers possible support for this behavior.

they cannot be appealed. Indeed, anecdotal evidence by legal scholars (e.g., Leipold, 2005) highlights surprisingly high conviction rates in jury trials. Along these lines, Westman (1991) has highlighted the social costs of the puzzling length of foster care for children, arguing that this is due to the reluctance of court officials to make "definitive decisions ".[7]

After having modeled the effects of DA, we show that the introduction of a decision review system that allows a third party to review the correctness of decisions significantly affects decision makers' propensity to make definitive choices, if and only if they are characterized by this bias. More precisely, we exploit a unique natural experiment - the introduction of a technology-assisted review system in professional tennis - to test the model implications and confirm the relevance of this behavioral bias in a competitive setting.

The results of the empirical analysis subsequently permit us to derive welfare implications. In particular, we show that a review system that increases the share of definitive decisions always leads to a welfare improvement, unless it more than offsets a decision maker's initial DA by inducing her to become excessively definitivity loving (i.e., having a strict preference for definitive decisions over non-definitive ones). Even in this latter case, welfare can improve as long as the precision of the information received by the agents that are affected by the decision is sufficiently high, and the cost of invoking a challenge is sufficiently low in relation to the accuracy of the review technology.

Keywords: Prospect Theory; Natural Experiment; Uncertainty; Decision Avoidance; Behavioral Economics

JEL Codes: D81, D91, C93

[7] See Westman (1991), p 47.

Session 7

Environment

Second Best Optimal Fuel and Vehicle Taxes in the Presence of Pollution and Congestion

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Abstract

Purpose: We seek to address the question of how to tackle the two most important externalities from driving vehicles: pollution and congestion. Firstly, congestion cannot be fully addressed by only taxing fuel, as time spent on driving depend on the fuel-efficiency level of cars as well as gasoline used. Therefore, simply by charging a higher price on fuel would not fully solve the congestion externality as fuel efficiency is also related to vehicle attributes such as age/vintage of vehicle. Secondly, it is crucial to take into consideration of endogeneity of fuel efficiency. As fuel becomes more expensive, households respond to this by either driving more fuel-efficient vehicles or driving less, which means that fuel efficiency of the vehicle fleet matters. Thirdly, fuel efficiency may progress over time and more fuel-efficient vehicles generate less emissions and thus lower pollution level. To capture the long run impact of transport policy on the environment, we need a dynamic framework.

Our paper contributes to the theoretical literature by addressing the issues above, in particular seeking to answer: How are the second-best optimal corrective taxes determined? Should old vehicles bear a higher or lower fuel tax than new ones? Should old vehicles bear a higher or lower vehicle tax than new ones?

Our model: We introduce a complete set of corrective taxes (vintage dependent gasoline and vehicle taxes) and second-best income taxes (capital and labour) in an infinite horizon general equilibrium model. The representative household gets utility from the driving services from two vintage vehicles (old and new) in each period.

Driving services are proportional to gasoline consumption and the type of vehicle. There are two externalities, pollution and congestion, negatively affecting the utility of the household. Profit maximising vehicle producers choose fuel efficiency and quality of the vehicle, in each period. Using the first-order conditions from the decentralised economy together with the intertemporal budget constraint, we derive the implementability constraint. We then solve the government's Ramsey problem, and derive the implied taxes.

Results and implications: While the optimal capital income tax rate is always zero at a steady state, the optimal labour tax depends on the complementarity between driving services and consumption and leisure.

Decomposing the optimal environmental taxes, we find the additive property between the Pigovian element and the efficiency (second-best) element, analogous to Sandmo (1975).

If environmental concerns weigh higher than congestion concerns, old vehicles should be subjected to a higher gasoline tax than new ones.

The vehicle tax only correct for congestion. Typically new vehicles should be subjected to a higher vehicle tax than old ones. The reason is that, as new vehicles are more fuel efficient, they tend to be driven more.

As distinguishing between old and new vehicles when taxing gasoline may be practically difficult, we finally solve for a constrained problem where the fuel tax has to be uniform. The result is that the constrained fuel tax is a weighted average between the ideal tax for old vehicles and the ideal tax for new ones.

Keywords: Fuel Tax, Vehicle Tax, Dynamic General Equilibrium, Environmental Quality, Pollution, Congestion, Externalities, Vintage Model, Second-Best Optimal Taxation

JEL Codes: E20, H23, I31, Q53, Q58, R48

Strategic Taxation and Consumption Emission Leakage

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Abstract

Production and consumption activities in one country generate cross-border pollutants, e.g., green gas emissions, which not only deteriorate the quality of environment in that country, but also the environmental quality in other countries. In the presence of such cross-border pollutants, tax policies in a country which affect its domestic production and consumption activities, entail the so-called pollution leakage effects, e.g., increased levels of pollution in a country due to reduction of emissions in another as a result of latter the country's stricter tax/environmental policies. Furthermore, these policy induced pollution leakage effects can be exacerbated in the presence of non-tradable goods and of international capital mobility. Tax policies causes changes in the return to capital causing international capital movements and changes in the levels of economic activity and pollution in other countries.

Regarding consumption generated emissions, environmental pollutants such as carbon monoxide, carbon dioxide, and sulfur dioxide (SO_2) are generated from both indoors and outdoors residential consumption activities. At the same time, we adopt an expanded analytical framework, allowing for international capital mobility between the two countries, and for the production of tradable and non-tradable goods. We assume that countries are heterogenous and small open economies both in world good and capital markets. International capital mobility is limited between the two economies..

Within this framework, we derive the Nash equilibrium capital and consumption taxes, either concurrently or the one in the absence of the other, and we examine their efficiency in terms of reproducing the welfare effects of the cooperative tax setting.

We find that the presence of non-tradable goods alone, at Nash equiulibirum, render non-zero capital taxes/subsidies, despite the use of consumption taxes to control for cross-border pollution generated from the consumption of either the tradable or of the non-tradable good. The Nash equilibrium calls for (i) a consumption tax on polluting goods and (ii) a capital tax or subsidy. Specifically, when only the consumption of a tradable good is polluting, the Nash equilibrium policy on capital is a tax if the non-traded good is capital intensive and a substitute in consumption to the non-tradable good. When, however, it is only the consumption of the non-tradable good that causes pollution, then, the Nash equilibrium policy on capital is a subsidy if the non-tradable good is capital intensive.

Contribution of the paper: The main resut of the paper is that the existence of non-tradable goods makes a case for non-zero capital taxes/subsidies, despite of considering production to be a clean activity, and regardless of whether countries are small in world commodity and capital markets, and cross-border pollution is due to the consumption of tradable or non-tradable goods. These capital taxes are efficient in the sense that their non-cooperative and cooperative equilibrium rates are identical.

Keywords: Pollution Leakage, Non-tradeable Goods, Capital Mobility, Capital and Consumption taxes, Consumption generated Cross-Border Pollution

JEL Codes: F13, F18, H20, H21

Pollution permits and financing costs

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Abstract

We first introduce a two-period theoretical model that involves a lender (bank) -that lends to a polluting firm in each period. The bank's loan spread depends positively on the probability of the project success, which in turn is adversely affected by the cost of regulatory compliance. We do illustrate that the firm has an incentive in the first period to act proactively to deal with potential tighter future regulation, which implies a higher loan spread in the second period. The oversupply of permits in the second period reduces permit prices, which also drives down compliance costs. Risk is lower, and the loan spread follows. Both the proactiveness in holding allocated allowances (in the first period) and the lower permit prices (in the second period) induce reductions in loan spreads (in the second period), which in turn partly mitigates the effect of tighter regulation.

We empirically examine the results of our theoretical model. Our identification strategy examines the behavior of loan spreads before and after the implementation of phase III of the EU ETS program in 2013 for treated firms and nontreated firms. We find that the interaction term between the treatment-control groups and the pre-post 2013 dummy variable has a negative and significant coefficient. Our preferred specification shows that the treated firms have 25% lower loan spreads. We conduct many tests on the validity of our quasi-experimental approach. We then identify the main channels for the reduction in loan spreads due to the EU ETS policy. We find that the effect is most negative when the EUA price is at particularly low levels

[8] Christos has unfortunately passed away. His contribution in developing this project has been substantial and inspiring. We hereby honor his memory. May he rest in peace.

(below 10 euro), which is the case in 2013-2017. We also identify the firms' proactiveness, especially via allowances storage, as a factor that mitigates the effect of the permits market on loan spreads. In line with a key prediction of our theoretical framework, the decline in loan spreads is much smaller for treated firms that are net buyers of permits in the current year, which are the firms that have not been sufficiently proactive and thus are more exposed to the effects of the program. In contrast, the decline in loan spreads is considerably stronger for firms that are net sellers, implying that they have stored enough permits and, concomitant with the low EUA price during 2013-2017, are considerably less exposed to any policy risk.

Our analysis, placing financing costs at the heart of the effect of environmental policy, has real implications for the polluting activities of firms. By identifying lower financing costs among polluting firms after the implementation of phase III of the EU ETS program, we essentially show that for the treated firms, decreases in financing costs at least partially compensate for increased costs from the program. At the end of our analysis, we document a significant negative association between loan spreads and the treated firms' verified CO2 emissions, which together with our main findings suggests that the declining CO2 emissions (as noted by e.g., Bayer and Aklin, 2020) would have in fact been even lower if financing costs did not decline. Our estimates show a further 7.9% decline in CO2 emissions if there is no decrease in loan spreads.

Keywords: Pollution permits; Loan spreads; Bond spreads; EU Emission Trading System; CO_2 emissions

JEL Codes: G21; G12; Q5

Carbon Pricing in Germany's Road Transport and Housing Sector: Options for Reimbursing Carbon Revenues

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Abstract

In 2021, Germany launched a national emissions trading system (ETS) in its road transport and housing sectors. This climate policy instrument aims at raising the cost burden of consumers of fossil fuels, the major source of carbon dioxide (CO2) emissions. A promising approach to secure public acceptance for such a carbon pricing would be to entirely reallocate the resulting "carbon" revenues to consumers. This article discusses three alternatives: a) a per-capita reallocation to private households, b) the reduction of electricity prices by, e.g., decreasing the electricity tax, as well as c) targeted financial aid for vulnerable consumers, such as increasing housing benefits. To estimate both the revenues originating from carbon pricing and the resulting emission savings, we employ a partial equilibrium approach that is based on price elasticity estimates on individual fossil fuel consumption from the empirical literature. Most effective with respect to alleviating the burden of poor households would be increasing housing benefits. While this measure would not require large monetary resources, we argue that the remaining revenues should be preferably employed to reduce Germany's electricity tax, which becomes more and more obsolete given the steadily increasing amount of electricity generated by renewable energy technologies. Alas, reimbursing "carbon" revenues to consumers in the form of an electricity tax cut or, alternatively, by per-capita transfers is not foreseen by the German government. Rather, carbon revenues are scheduled to support a large spectrum of policy measures, such as increasing the subsidies for the purchase of electric vehicles from 4 to 9 thousand euros and increasing the commuting allowance of a driving distance to work as of 20 kilometers to outweigh the higher costs of driving due to carbon pricing. Such measures hardly yield any environmental benefits

and may even foster counterproductive behavior. Moreover, they tend to favor wealthy, rather than poor, households and are thus questionable from both an ecological and a social policy perspective. Instead, to sustain the currently wide acceptance of carbon pricing in Germany if carbon prices should rise substantially, which is indispensable for reaching the national emission reduction goals, it is critical that the government establishes measures to primarily favor poor households and alleviate their burden originating from carbon pricing.

Keywords: Electricity tax, housing benefits, distributional effects

JEL Codes: D12, Q21

Tradable Emission Permits and Strategic Capital Taxation

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Abstract

A long-standing policy debate is whether deeper economic integration in the form of higher degree of international capital mobility leads to a race to the bottom in environmental policies and to further environmental degradation. Of pivotal importance is the issue of taxing the earnings of internationally mobile capital, in a world of integrated capital markets. Countries, in order to attract internationally mobile capital, either impose low capital income taxes, i.e., race to the bottom in capital taxation, or tangle into international treaties to prevent double taxation and to limit tax avoidance and tax-base flight, between high and low-tax jurisdictions.

For these reasons, nowadays, one of the issues gaining academic and policymaking attention is that of controlling pollution when governments act non-cooperatively in the presence of international capital mobility and cross-border pollution externalities. To this end, the use of tradable emission permits is increasingly advocated over alternative environmental policy instruments to regulate the cross-border pollution externalities. Such emission permits are traded either nationally, i.e., only within a country, or internationally across different countries and/or regions.

We consider a model of a two asymmetric countries world, Home and Foreign, with international capital mobility. Each country produces a single consumption good which is freely traded. Its production generates perfect cross-border pollution which equally negatively affects the welfare of residents in the two countries. Commodity and factor markets in both countries are perfectly competitive. We examine the

effectiveness of the non-cooperative setting of tradable emission permits in reducing lobal pollution, under different rules of international taxation of capital earnings.

Although the policy implications of tradable emission permits have been examined, to the best of our knowledge, they have not been analyzed and compared under (i) nationally versus internationally tradable emission permits and (ii) the alternative systems of taxing the earnings of internationally mobile capital, i.e., capital tax-exemptions, or capital tax-credits, or capital tax-deductions of the repatriated capital earnings.

Given this realization, first, we evaluate and compare the effectiveness in reducing global pollution of nationally vs. internationally tradable emission permits, under these three rules of taxing the earnings of internationally mobile capital. Second, we evaluate under which rule of capital income taxation each of the two regimes of, nationally or internationally, tradable emission permits is more effective in reducing global pollution.

The innovative result of the paper is that when governments act non-cooperatively, then the lowest equilibrium level of global pollution is achieved when the policy-mix combines internationally, instead of nationally, tradable emission permits and either capital-tax exemptions or capital-tax credits. Therefore, the policy recommendation emerging from our analysis is that in a world of integrated capital markets, a way to mitigate global pollution levels is to switch from a system of nationally tradable emission permits to one of internationally tradable permits, and to adopt a rule of either tax-exemptions or tax-credits, instead of tax-deductions, in taxing the earnings of internationally mobile capital.

Keywords: Emission Permits, Cross-border Pollution, Capital Tax Competition, Capital Tax Rules

JEL Codes: F18, F21, H21

Session 8

Socioeconomics

Unemployment transitions and the role of minimum wage: from pre-crisis to crisis and recovery

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Abstract

During the last decade, unemployment in Greece climbed up to 28%, almost quadrupling due to the economic crisis that hit Greece. At the same time, labour market flexibility was considered to be an important tool in order to restore unit labour cost and competitiveness. In this context, a set of measures including the framework of collective bargaining, the national minimum wage setting procedure, the introduction of a youth subminimum wage, and the enhancement of flexible forms of employment was adopted.

In the present paper, we examine the determinants of the unemployment dynamics and especially the impact of the minimum wage on the probability of making a transition into and out of unemployment. We use quarterly micro-level panel data from the Greek Labour Force Survey for the period 2004-2019 and control for several demographic factors, macro-economic conditions, regional differences, and changes in statutory minimum wage so as to estimate the probability of exiting or entering unemployment. Our analysis is based on the estimation of a simple binary multivariate logistic model where the dependent variable is the transition in and out of unemployment.

The analysis indicates that the mobility in the Greek labour market remains low in all periods of examination. The results suggest that individual-level characteristics play an important role in making a transition into or out of unemployment. Changes in the real minimum wage are estimated to have either a statistically insignificant or a very small impact on unemployment entries and exits. This result is contrary to what we

would expect particularly for the period of the economic crisis. Further, the impact of economy's growth rate follows the theoretical predictions as higher growth rates increase unemployment outflows and decrease inflows, while the regional differences are also important. Our findings persist even when we split the sample in three periods (pre-crisis, crisis, recovery).

The results have important policy implications. Given that the disemployment effect of the minimum wage seems to be very limited in the Greek labour market, while the socioeconomic characteristics and regional characteristics play an important role, improving the skills of individuals through the educational system and reskilling or up-skilling programs, while targeting specific regions, may facilitate labour market mobility. Further, a need for policies that target to improve labour market participation incentives for women come up through our analysis. The large cross-regional differences in labour market mobility also reveal that there is room for public policies to exploit the dynamics that exist in labour demand in the different regions.

Keywords: minimum wage, unemployment transitions, labour mobility, Greek crisis

JEL Codes: J08, J21, J38, I38

Remittances and Gender Inequality

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Abstract

The role of remittances has been drawing increased attention in the economics literature. As the decision to temporarily migrate and send or receive remittances is a hugely gendered process, we explore potential links between the inflow of remittances and their role in reducing gender inequalities in recipient countries. We compile a bilateral panel dataset at the country level for 130 countries over an 8-year period (2010-2017) using mainly World Bank data to identify any links and potential mechanisms. We use the Natural Disaster database to account for occurrences in a migrant's destination country that arguably affect the economy and a migrant's ability to remit. This provides an exogenous source of variation to create an instrument for the propensity to migrate and remit. Suggestive evidence and preliminary results of the 2SLS estimation indicate that in countries that receive more remittances per capita the Gender Inequality Index (GII) tends to decrease after controlling for a number of other factors as well as country and time fixed effects. This result seems to be mainly driven by increased female schooling and reduced adolescent fertility. Some robustness checks include alternative specifications and time lags. Potential mechanisms that we explore firstly include increased female decision making power within the household as women control the family budget and are actively deciding on spending patterns and secondly the concept of "social remittances" that implies that remitters may absorb skills, societal norms, (political) ideology, knowledge, and customs from the destination countries and transfer them to the country of origin. We use the bilateral nature of our remittance data to link countries of origin with potential destinations to tease out some variation and uncover some of these mechanisms. The results seem to support the "social remittance" hypothesis as it does not seem to be the financial flow itself, but also where the money is coming from that matters.

Specifically, we find that the correlation is mainly driven by remittances received from OECD countries with arguably better gender records compared to other high income non-OECD countries. Further, we use a longitudinal household survey from Bangladesh (2012-2018) covering about 6,000 households that contain information on remittances and the country of the remitter's residence, as well as spending and decision making patterns within the household to further explore these mechanisms. Our findings could encourage policymakers to improve financial institutions and foster financial literacy and technologies as well as reduce costs and barriers for sending and receiving remittances.

Keywords: Remittances, Gender Inequality, Social remittances

JEL Codes: J16; J61; O10

Delay in Childbearing and the Evolution of Fertility Rates

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Abstract

During the last four decades, researchers have observed an increase of the mean age at birth in developed economies (e.g., Frejka and Sardon, 2006). Despite the plethora of studies that incorporate endogenous fertility in models of economic growth (e.g., Galor and Weil, 2000; Blackburn and Cipriani, 2002; de la Croix and Doepke, 2009; Vogl, 2016; Strulik, 2017; Futagami and Konishi, 2019), only a limited number have explicitly considered issues pertaining to the timing of childbearing (Iyigun, 2000; Momota and Horii, 2013; d'Albis et al., 2018).

In this paper, we present a growth model whose novelty is to explicitly account for the direct, preference-related factors that reinforce the delay in the timing of childbearing. We show that an intermediate stage of demographic change in a developed economy, where cohort fertility actually recuperates, emerges if and only if this preference-related factor contributes to the postponement of parenthood. This outcome is consistent with existing views and evidence that link the recuperation of fertility rates to culturally-induced changes that directly affect people's preferences (e.g., Arpino et al., 2015; Esping-Andersen and Billari, 2015; Feichtinger et al., 2017; Beaujouan, 2020). Nonetheless, the model also shows that the trend reversal from declining to increasing cohort fertility is followed by yet another reversal towards once more decreasing fertility rates. This latest phase of demographic change will eventually lead to a cohort fertility that is even lower compared to the one that marked the onset of the fertility rate's recuperation. This outcome has major policy implications: It implies

that, even when the rebound the fertility is a true change in demographic trends, it is still a temporary one.

Furthermore, the quantitative analysis of our results verifies that our model provides a good fit for actual data of the rebound of the completed cohort fertility rates in Nordic countries. The fact that these countries are widely considered as the most progressive ones, in terms of their cultural norms and in terms of their family-oriented policies, offers credence to the hypothesis that our model advances. More generally, our framework provides a platform for research that can uncover empirically relevant, but yet unexplored, mechanisms in the joint analysis of demographic change and economic growth.

Keywords: Economic Growth; Human Capital; Fertility; Timing of Childbearing; Culture; Behavioural Change.

JEL Codes: J13; O41

Stigma effects of unemployment persistence in the Greek labour market

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Abstract

The share of long-term unemployed in Greece, even during periods of low unemployment rate, is quite high. Even in 2008, when the unemployment rate stood below 8% at its lowest level, the long-term unemployed accounted for 40% to 45% of all unemployed. During the great crisis, three out of four unemployed remained unemployed for 12 months or longer, while in 2020 this share is estimated around 66%. Motivated by the fact that the long-term unemployment rate is systematically high, this study contributes to understanding Greek unemployment dynamics by documenting on the extent of unemployment persistence, as well as by analysing the extent to which observed unemployment persistence may be the result of stigmatization of unemployed.

In the literature there is ample evidence that unemployed individuals tend to stay unemployed. This may be due to observed heterogeneity, such as low qualifications or lack of experience, or unobserved heterogeneity, such as lack of ability or motivation. As long as observed and unobserved characteristics persist over time, they will tend to increase the likelihood of future unemployment, creating a relationship between current and future unemployment incidence. However, one cannot rule out the possibility that the actual experience of unemployment has a genuine causal effect on future unemployment, in the sense that past unemployment causally increases the unemployment probability in the future regardless of other observed and unobserved factors. In other words, there may exist genuine state dependence. This paper provides evidence on the magnitude of state dependence in individual unemployment incidence. Moreover, we attempt to explain whether this persistence is a result of stigma effects by exploring if unemployed individuals face systematically lower

chances of being hired because employers interpret their unemployment as a negative signal.

The main hypothesis underlying our empirical approach is that the stigma effect of being unemployed is low when aggregate unemployment is high, as in this case individual unemployment is not a strong signal for low individual productivity, while high in times of low unemployment. To check our hypothesis, we utilize data from the Greek Labour Force Survey and estimate the probability of being unemployed conditional on the employment state of the previous period (i.e., the state dependence effect), an interaction of past unemployment and measures of cyclical unemployment risk, as well as other covariates. We use a dynamic nonlinear correlated random effects probit model taking into account the initial conditions problem. Moreover, in nonlinear models, the interpretation of the coefficient on the interaction term of past unemployment and cyclical unemployment, which is crucial in our analysis, is not as straightforward as in linear models and requires the estimation of the cross-partial derivative.

Our initial but firm results show that positive deviations of the unemployment rate from its trend are indeed associated with a significant lower level of state dependence. In other words, the penalty for being unemployed is smaller in times of high unemployment and larger in times of low unemployment, suggesting that there is a stigma effect in the Greek labour market. This stigma effect seems to vary by gender and age. The existence of stigma on unemployment persistence is confirmed with various robustness checks and tests. However, its magnitude is not sufficiently large to explain by itself the systematically big share of long-term unemployed in Greece.

Our findings have important policy implications on the design of active labour market policies to fight unemployment. The fact that those longer in the unemployment face more disadvantages when striving to find a job because of stigma, especially in "good times", suggests that labour market policies should aim at preventing long-term unemployment and obstructing it from becoming permanent unemployment. In other words, short term policies to prevent unemployment and minimize its duration will have further long-term effects. It also suggests, given the vast pool of long-term unemployed in Greece, that radical interventions are required to mobilise the long-term unemployed and help them overcome the stigma.

Keywords: Unemployment persistence, State dependence, Stigma effects, Scarring, Greece

JEL Codes: J64, J65, C23

Session 9

Political Economy

Land distribution and economic development in a pre-industrial economy: Evidence from Greece, 1881-1907

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Abstract

We exploit a historical event affecting land ownership rights in early 20th century Greece. By examining the impact from an exogenous legal change in land relations, we contribute to the literature focused on preindustrial economies and development. Using Thessaly as a case study, we investigate the impact that changes in land relations had on regional development, as proxied by population growth. Furthermore, we investigate the mechanism behind this transition, specifically whether it affected the underlying trade-off faced by emancipated former cultivators between increasing long-term settlement or investing towards human capital, as proxied by marriages and literacy rates.

To explain how the change in ownership status affected regional development between 1880 and 1910, historical data on the community level for property rights and population were digitized from historical archives and combined with municipality level information about marriages and literacy from population censuses. To empirically assess how the change in ownership status affected development, a treatment indicator for communities that transitioned towards small ownership regimes is utilized. The intuition is that emancipated former cultivators that became landowners in these areas, were more likely to increase their long-term settlement and agricultural investment in their newly acquired private estates rather than increase their demand towards education, thereby increasing population density in the long run.

The empirical findings confirm that these abrupt changes in ownership had a positive effect on regional development. Communities that transitioned towards small ownership experienced a higher rate of population growth between the 1880s and 1910s, following the annexation. These findings are further reinforced when focusing on the underlying mechanism of the emancipated former cultivators that became landowners, using marriages and literacy ratios. In municipalities with higher share of treatment, there was a positive effect on the shares of married and illiterates, in other words individuals were more likely to increase their long-term settlement in the area, and less likely to search for out-of-farm opportunities.

Keywords: Historical events, property rights, land ownership, economic development

JEL Codes: N93, P48, O13, J12

Assessing the effect of international terrorism on civil liberties using a potential outcomes framework.

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Abstract

Civil liberties are often restricted when national security is threatened. When it comes to terrorism, United Nations' derogations suggest that a threatened state must sacrifice rights temporarily to protect national security, implying an exceptional "state of emergency." If there is an increase in repression in the aftermath of a terrorist attack, is it permanent or temporary? Overall, what weight do we attach to civil liberties in the context of a sense of threat? In the present paper, we uncover the terrorism-civil liberties nexus over time, suggesting that the magnitude of the estimated effect depends on the regime type.

Our argument rests on the idea of a trade-off between civil liberties and security. Democratic governments exploit this trade-off and react to an increase in terrorism by constraining the rights of their citizens, reflecting the demand for protection by the majority of their citizens. This results in an increased willingness to accept stricter surveillance and control that makes it harder for dissidents to exchange secret information and radical ideas. In contrast, in states with authoritarian rules, the regime has created conditions that foster repression, and incumbents have no further margin to repress civil liberties. In addition, autocrats are poorly equipped strategically due to the lack of commitment to civil rights and the estrangement from their people. Hence, any terrorist attack, instead of repressing civil liberties, will motivate authoritarian incumbents to reinforce them, acting as a means of non-violent expression and as a window dressing, masking governance inefficiencies and reducing accountability threats for the incumbents.

In this paper, we evaluate the effect of international terrorism on the civil liberties of the targeted states from 1972 through 2018, using a cross-country dataset. Our key dependent variable is civil liberties, while our variable of interest is international terrorist attacks.

Our primary goal is to uncover the terrorism-repression nexus by considering the evolution of repression in the absence of a terrorist attack, i.e., the counterfactual scenario. And we do that by differentiating between democratic and authoritarian settings.

We find that democracies substantially restrict civil liberties after an international terrorist strike; There is a non-negligible negative initial response that lasts on average for 1 to 8 years after the attack. Contrary, when international terrorists strike autocracies, i.e., countries with initially low respect for civil liberties, we provide evidence for a liberty reinforcing effect, lasting on average for 2 to 10 years after an attack.

Our empirical work has implications for states, international organizations, and non-governmental organizations that wish to empower the respect for civil liberties. These actors should carefully target their efforts toward the greatest threat to individual freedom and the rule of law.

Keywords: Terrorism; Civil liberties; Democracies; Autocracies; Potential Outcomes Framework

JEL Codes: D74, H56, P14, C31

Are Nationalist Countries More Protectionist?

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Abstract

We investigate the implications of consumer nationalism for multilateral trade cooperation. We first develop a two-country, two-firm model in which the firms produce horizontally differentiated products and engage in Bertrand price competition. We model consumer nationalism as a demand shifter. More specifically, stronger nationalist consumer preferences translate in our framework into an outward shift of the demand for the domestic product along with an inward shift of the demand for the import product. Moreover, we assume that there is asymmetry in consumer nationalism between the two trade partners, which is in line with the empirical findings in the literature on cross-country differences in consumer ethnocentrism. The governments and the firms interact in an infinitely repeated two-stage game as follows: in the first stage, the governments select their import tariffs; in the second stage, the firms choose their prices in both markets. We finally assume that countries are limited to self-enforcing multilateral agreements.

Three main results emerge from our theoretical analysis. First, the non-cooperative Nash tariff of a given country is decreasing in the degree of domestic consumer nationalism. Second, the country with the nationalist consumers is able to maintain more liberal trade policies than its trade partner in our repeated-game setting. Third, for a sufficiently low (high) discount factor, the most cooperative equilibrium tariff of the nationalist country is decreasing (increasing) in the level of its consumers' nationalism; by contrast, as far as the country with the non-nationalist consumers is

concerned, its most cooperative equilibrium tariff is always increasing in the degree of nationalism characterizing its trade partner's consumers. At a general level, these findings establish that, with respect to countries' ability to multilaterally cooperate in setting their trade policies, asymmetric consumer nationalism across countries has less pronounced adverse effects, if any, on countries with relatively more nationalist consumers, rather than vice versa.

In a nutshell, our theoretical model gives rise to two testable predictions. Our first hypothesis is that, within a given country pair, the country with relatively more nationalist consumers can sustain more liberal trade policies. Our second hypothesis states that, for a sufficiently low discount factor, a country's level of trade protectionism decreases in its consumer nationalism. We construct a cross-country antidumping (AD)–nationalism matched panel dataset covering the period 1995–2015 to test these predictions. Consistent with our first prediction, we find that countries with relatively more nationalist consumers can sustain relatively more liberal trade policies. Furthermore, to investigate the moderating role of the discount factor, we utilize a proxy for impatience from Chen (2013)—a study that argues that languages that grammatically associate the future and the present induce more future-oriented behavior. In line with our theoretical findings, our results show that impatient countries use AD less intensely in response to a higher level of consumer nationalism. On the other hand, patient countries employ AD more intensely as their level of consumer nationalism increases.

Keywords: Consumer nationalism; consumer ethnocentrism; multilateral cooperation; antidumping

JEL Codes: F12; F13; F14; F52

Democratisation and tax farming in an agrarian economy

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Abstract

A growing literature argues that state capacity is the cornerstone of modern economic growth and prosperity. State capacity comprises two components. The first one concerns the ability of the state to raise revenues from broad tax bases and to provide effectively public goods (fiscal capacity). The second one is related to the ability of the state to uphold the rule of law and to ensure protection of property rights and enforcement of contracts (legal capacity) (see Besley and Persson 2011). Since most of the pre-industrial states relied on private individuals to collect taxes the transition from tax farming to centralized, modern fiscal institutions is crucial for the development of a solid fiscal state capacity. But why this transition took place in some countries and not in others? What are the specific historical forces that determined the timing of this transition?

The paper at hand, investigates the political economy forces that shaped the structure and the functioning of the tax system implemented in the Greek state during the first decades after independence. To capture the effectiveness of the tax farming system - during that period- on a regional basis, we develop a unique historical dataset that contains data on tax delays for 48 Greek provinces over the period 1853-1879. More precisely, tax delays or delayed payments are defined as the difference between tax receivables (or taxes due) and actual or collected tax revenues divided by the amount of tax receivables. Fiscal data are obtained by the final fiscal accounts (i.e., Apologismoi) of the Greek state which are available in the Historical Archives of the National Bank of Greece (HANBG). This detailed dataset will allow us to study the

how the democratisation episode of 1864 affected the motives of local authorities and local elites (that were also the private tax agents) to collect taxes.

Our empirical analysis suggests that after democratization delayed payments increased in most tax categories. Moreover, our empirical findings provide evidence that delayed payments acted as a powerful political instrument that allowed local elites to increase their political influence on local population. For mayors that was an important instrument to increase their re-election prospects after the reform 1864, whereas for the local elite who was attached to the mayor and/or the MP's of the national government an instrument to increase their electoral clientele.

Keywords: democracy, tax farming, fiscal capacity

JEL Codes: P16, H2, H5

Session 10

Macroeconomics II

The role of time preference on government spending cyclicality

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Abstract

The behavior of government expenditures over the business cycle has long attracted the attention of scholars (see Gavin et al., 1996; Gavin and Perotti, 1997). Although existing empirical studies have adequately investigated a set of important factors that affect fiscal policy cyclicality (i.e., credit constraint, tax base variability, quality institutions) to the best of our knowledge, there is any study that investigates the potential role of culture, and more precisely the role of time preference on the cyclicality of fiscal policy over the business cycle. This lack of evidence is remarkable mostly for two reasons. First, the relationship between culture and economic outcomes is now pretty well established (see e.g., Guiso et al., 2006; Gorodnichenko and Roland, 2017). Second, in most of the theoretical models, the agents' rate of time preference appears to be a factor that affects the magnitude of the political pressures for fiscal resources in times of plenty, and consequently the cyclical pattern of the optimal fiscal policy (e.g., Alesina et al., 2008). So, it is rather surprising that there is any empirical study exploring the effect of time preference on government spending cyclicality as indicated by the relevant theoretical literature.

This paper seeks to investigate empirically the role of time preference on government spending cyclicality. Following the rationale developed by the relevant theoretical literature one should expect the ability of a government to run large surpluses in good times, to be hampered by political pressures for available fiscal resources (see Lane and Tornell, 1999; Talvi and Vegh, 2005). Obviously, these political pressures are also expected to be stronger the lower the time preference within a society (i.e., the lower the utility that individual gain from future rewards relative to the current ones). In other words, available fiscal resources may be more easily distributed among politically powerful groups, government agencies, provinces, and states -rather than been used to retire debt as the tax smoothing rationale would require- in economies

characterized by a lower level of patience ceteris paribus. As a result, one should expect lower time preference to be related with a more voluminous procyclical fiscal pattern.

The empirical findings are in line with our theoretical priors according to which lower time preference is expected to be negatively correlated to pro-cyclical fiscal policies across countries. More precisely, our empirical findings provide evidence that more impatient countries, i.e. the countries with lower time preference, such as East and South Asia, North Africa, and South America (see Falk et al., 2018), conduct procyclical fiscal policies than that long-term oriented countries, such as countries from Western Europe and the Scandinavian.

Keywords: fiscal policy, culture, time preference

JEL Codes: E62, E32, H3

Accommodative monetary policy and the pricing of climate change

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Abstract

Context and objectives:

This paper proposes to study the relationship between asset returns and unconventional monetary policy. There is a growing literature on climate change and the risks induced by it (physical risk and transition risk). However, there are still very few studies linking the main instrument of unconventional monetary policy, namely quantitative easing, to equity returns. Indeed, when conventional monetary policy tools are no longer effective to boost economic activity, central banks may resort to temporary (so-called unconventional) tools to re-establish monetary policy transmission channels. By definition, central banks inject liquidity into the economy by buying securities on the markets. As a result, one might ask whether this influx of liquidity would impact asset prices by remunerating them. In other words, quantitative easing (QE) might crush risk premiums, particularly those related to climate change. Thus, our paper is at the intersection of two literatures. On the one hand, the one stressing the impact of climate change on finance, especially concerning the pricing of climate risks on markets, and on the other hand the one which focuses on the crushing of risk premium related to unconventional monetary policy.

Methodology & Data:

The paper is structured around a theoretical model and an empirical application. The theoretical model is decomposed into two steps where we propose in the first step to price the climate risk on financial markets, and in the second step to measure the impact of quantitative easing on the risk premium associated with risk pricing (called the carbon premium).

The empirical application concerns 31 countries over the observation period from 2010 to 2020. We estimate a model with panel data with sector and time fixed effects.

Carbon emissions data and firms' equity returns are obtained from Datastream.

The main idea is i) to capture the relationship between prices and climate risk through the beta of a regression of price returns on a climate risk exposure over a cross section of sectors, for a given country i at a given year t; before ii) regressing the obtained betas on the unconventional monetary policy of the country i at time t.

Conclusion:

This paper shows that QE can hamper the efficient pricing of climate risk by reducing the informative content of prices. This effect disappears when QE becomes tapered, which involves a risk in term of short-term prices adjustments. The idea of underpinning monetary policy to climate risk would help to remove the distortive effect of QE on risk premia while maintaining an accommodative stance on aggregate.

Keywords: Climate change, Carbon pricing, Unconventional monetary policy, Risk premia

JEL Codes: E44, E48, E48, O13, Q49, Q54, G12, G15

Fiscal space and policy response to financial crises: Market access and deficit concerns

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Abstract

Existing literature suggests that fiscal space, that is, the room policymakers have to "manoeuvre" or to take action, matters for the policy response to financial crises. High public debt levels limit countries capacity to pursue macroeconomic and financial stabilization policies and resume growth after severe crisis downturns. The involved channels through which fiscal space matters for the policy response to financial distress documented in the literature include sovereign market access constraints and policymakers' views and ideas. In this paper, we study the channels through which fiscal space matters for the dynamics of fiscal policy after a financial distress in a panel of 30 OECD countries for the period 1980-2017. We introduce a measure of fiscal space that incorporates two appealing characteristics that differentiate it from the measures used so far; first, the measure considers simultaneously both the debt-to-GDP ratio (stock of debt) capturing long-run features of countries' policy-making processes and budgetary balances (flows of fiscal balances) that capture recent policy decisions and persistent fiscal deficits. Second, the fiscal space measure is non-linearly assessed, considering diminishing fiscal space returns from very high rates of debt-to-GDP and fiscal deficits-to-GDP. We provide descriptive evidence to characterize the dynamics of fiscal policy after a financial crisis for countries with different fiscal health and the channels through which fiscal health matters by estimating Jorda (2005)-style local projections.

We document a substantially strengthened role for sovereign market access in driving the policy response to financial distress once non-linearity is introduced in the model.

This result highlights the non-linearity involved in market participants' concerns about fiscal space. The non-linear fall of fiscal space, which essentially assesses its effectiveness, matters for market participants' concerns. The reinforced role of market access is obtained irrespective of which sub-factor dominates the nonlinear assessment of fiscal health, i.e., the vulnerability of market access concerning fiscal space is affected by either the debt-to-GDP ratio or fiscal balances dominating fiscal space assessment. The policymakers' views channel is more pronounced once average fiscal deficits are at the epicenter of the assessment of fiscal health. To the extent that persistent budget deficits embody forward-looking information that is important for policy response, e.g., persistent deficits may signal higher interest rates, thus raising policymakers' concerns about long-run market access and future growth, this result suggests that policymakers' concerns and views are mainly influenced by the flows of recent budget deficits rather than the stock of debt, suggesting the existence of a "deficit fears" views channel, which might drive the fiscal contraction in the absence of funding pressures.

Our results have important policy implications regarding the period after the COVID-19 pandemic crisis. Budget deficits have increased considerably in many OECD countries since the outbreak of the pandemic, as governments have resorted to emergency social-protection programs to alleviate the adverse economic consequences of the pandemic for households and firms. Such deficits that reduce fiscal space may affect policy choices in the near future (e.g., induce policy inaction driven by deficit fears) when the containment of the disease will be achieved and actions in a number of priorities, e.g., climate change, or persistent poverty, will still be a necessity.

Keywords: Fiscal space, budget deficits, debt, market access

JEL Codes: E62; F34; H62; H63

Bank Credit Risk and Macro-Prudential Policies: Role of Liquidity in Uncertain Times

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Abstract

This paper investigates the impact of macro-prudential policy on bank credit risk using a unique data set consisting of bank-level and country-level data for 429 credit default swap (CDS) spreads related to 149 banks from 36 countries over the period 2010-2019. The macro-prudential policy encourages the mechanism that promotes credit availability, strong liquidity, lending and economic growth. We find that bank CDS spread increases during uncertain times, and prudential regulation measures (counter-cyclical capital buffers) prevent any increase in bank CDS spreads. More specifically, we show that capital-based macro-prudential policies such as a tightening of countercyclical capital buffers (CCyB) are effective in dampening bank credit risk. In the presence of CCyB, banks can draw down liquidity buffers in times of financial distress which can subsequently prevent a bank from being unstable during a period of financial stress. Given the interconnected nature in which developed markets operate, the failure of one large bank, may cause a domino effect, resulting in the simultaneous failure of several large financial institutions. Hence, for the robustness

of our results, we further supplemented our analysis by incorporating the capital-based macro-prudential policy instrument which include risk weights, systemic risk buffers, and minimum capital requirements. The objective of introducing systemic risk buffer, which is reflected in our alternative measure of macro-prudential policy, is to address systemic non-cyclical risks which arise from systemically important financial institutions that are very large. In the absence of uncertainties, our findings indicate that the alternative macro-prudential measure is negative and marginally significant, suggesting that banks with stricter capital regulation and systemic buffers are better able to narrow their CDS spread and mitigate any adverse effect on their credit risk. Moreover, our results indicate that during real uncertainty and in the presence of high market volatility (VIX), banks with stronger capital requirements and systemic buffers are better able to limit any increase in their credit risks. These results suggest that central bank actions in providing liquidity during the COVID-19 pandemic are justified for containing financial market risks. We further show that bank-level factors, such as (i) an improvement in liquidity, (ii) a rise in capital ratios, (iii) an increase in profitability and, to some extent, (iv) better asset quality and (v) a fall in leverage are associated with lower bank CDS spreads. In identifying the transmission mechanism, we find that banks with higher liquidity are better positioned to comply with macro-prudential regulation, while mitigating the rise in credit risk during uncertain times. Finally, our results reinforce the importance of the macroeconomic environment matters in driving the CDS spreads suggesting that periods of high inflation are linked with rising tensions in the banking sector; and a rise in (financial, macroeconomic and real) uncertainty is associated with a significant increase in bank CDS spreads.

Keywords: Bank CDS, macro-prudential policy, bank-level characteristics, macroeconomic environment, uncertainty, liquidity

JEL Codes: G01, G15

The Currency Composition Channel of Monetary Policy and the Role of Macroprudential Regulation

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Abstract

We examine how domestic and foreign monetary policy affect the supply of bank credit when bank lending is denominated in domestic and foreign currencies, and how domestic macroprudential regulation shapes the transmission of foreign monetary spillovers. We use a country-level and a bank-level dataset from several European emerging economies on the lending activities of local banks broken down by currency denomination. We merge this information with indicators of monetary and macroprudential policy actions, and with bilateral trade linkages between countries.

Our identification strategy follows closely the most recent empirical literature assessing the effects of monetary policy on the provision of bank credit. We identify supply effects from the differential responses to changes in domestic and foreign monetary conditions, and of the offsetting effect of macroprudential regulation, by banks with different capitalization ratios. Further, to isolate monetary policy effects on banks' supply of credit in its currency dimension, we control for macroeconomic conditions and a multitude of fixed effects. In more demanding specifications, we account explicitly in our regressions for time-varying credit demand by resorting to the Bank Lending Survey that contains self-reported information on banks' credit supply and demand developments.

In addition to the identification strategy, our estimation technique takes into account spatial dependence in the data and corrects the estimated standard errors with respect to the unobserved determinants of foreign currency lending collected in the error term (spatial HAC error correction). Specifically, the econometric method relies on a

spatial generalized method of moments estimation that provides consistent estimates under heteroskedastic disturbances. Moreover, it is immune against a certain degree of misspecification of the spatial dependence of the disturbances.

We document three main results. First, there exists a domestic currency composition channel of monetary policy: domestic monetary changes affect the share of lending in foreign currency in the domestic banking sector. Second, monetary shocks transmit across countries through international trade networks giving rise to an international bank lending channel in its currency dimension. Third, macroprudential policies enacted in home lending banking systems partly offset the spillover effects of monetary policies initiated abroad, suggesting an active role for macroprudential regulation in shielding the home economy from foreign shocks.

Taken together, our results are policy-relevant. They suggest that when bank credit is granted in both domestic and international currencies, the design of optimal monetary policy by local policy-makers should also consider the effects of foreign monetary policies, particularly so from countries they engage with in trade. This implies that emerging market economies with high bilateral trade shares may benefit by more coordinated monetary policies with each other. In the absence of policy coordination or in the presence of limited coordination, the use of local macroprudential policies targeting banks' foreign exchange exposure can reduce the magnitude of spillovers stemming from foreign monetary policies.

Keywords: Foreign currency lending; Monetary policy; International spillovers; Trade linkages; Macroprudential policy; Emerging markets; Spatial econometrics

JEL Codes: C23; E5; F42; G21; G28

Session 11

Banking

Reasons for the delay of cooperative banks in Greece

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Abstract

The appearance of credit cooperatives took place in the second half of 19th century in Germany. It coincides chronologically with the emergence of capitalist relations of production that began to prevail in Europe. They pursue to solve the social and financial problems which emerge due to this prevalence. Farmers, artisans and micro-craftsmen need funds so as to be competitive as conditions require. So turning to commercial banks they cannot find sufficient funding. All this leaves a gap which is filled by credit cooperatives helping economically weak citizens to reassure the necessary funds so as to continue their operations and decent livelihood.

While in Europe, at the end of 19th century and the beginnings of 20th century, the credit cooperatives prevail, they just begin to emerge in cities and villages of Greece. During the second half of 19th century in Greece, the status and the infamous land redistribution remain pending. Farmers work the land that does not belong to them. Their pay is minimal and the profits from their work are reaped by big landowners. Under these circumstances there was no incentive for the development of a culture solidarity and mutual assistance among farmers. Thus the essential components for the creation of cooperatives are missing. At the same time, in the cities, the urban class has not been formed, which would indicate the prevalence of the capitalist relations of production. The time is not right for the creation of cooperatives in Greece.

Nevertheless, on 25th of June in 1900, the credit cooperative of craftsmen of Lamia is established there, and it is considered to be the first urban credit cooperative established in Greece. This is the result of the effort of a small group unknown people, and not the creation of (social and economic) conditions. After all, nothing of the sort exists in the rest of Greece for many years after that.

As a cause of this under-execution we must mention, the complete lack of legal framework for cooperative credit, until 1915 and the adopting the law 602. This law however, was referred generally to cooperatives and contributed to the creation of agricultural credit cooperatives. However, their main mission was not the execution of credit procedure and operations but how to carry them out. This fact did not make them self-sufficient to become cooperative banks later on.

In many European countries the cooperative banks have their roots in rural sector. That was the perfect breading ground for them to practice the rural credit. The agricultural credit in Greece was handed over initially through the state to the National Bank of Greece and after the establishment of the Agricultural bank of Greece in 1929 it passed to it. The complete control of Agricultural credit by banks of public sector in combination with the dominant culture did not leave room for the establishment and operation of credit cooperatives that would be addressed to the largest part of Greek population which was the farmers.

All mentioned above explain the under-execution of the development of institution-building, concerning the credit cooperatives in Greece and subsequently the cooperative banks.

Keywords: credit cooperatives, cooperative banks, rural credit

JEL Codes: G21, N90

Natural Disasters and the Banking System in China

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Abstract

Context & objective: This paper explores banks' behaviour to typhoons, in China. A focus is put on these extremely frequent damaging events in China as the country is particularly exposed to. Typhoons are more frequent in recent times due to global warming, hit a large share of the territory; and this brings in cascading effects in the context of country's rapid development and urbanization.

In this fast economic development of the Chinese economy, banks play a key role, financing firms and households. Hence, if banks get more exposed to detrimental climate-related events, this can affect their performance and might lead to adverse consequences for the real economy as a whole. At a glance, nevertheless, the effects of natural disasters on banks' performance and behaviour might be more ambivalent. On the one hand, small banks are likely to be less diversified, to face more capital constraints, and to have clients with high information asymmetry. Any shock depressing the borrowers' collateral values and creditworthiness exacerbates the asymmetries of information. This may lead to a decrease in bank lending. On the other hand, banks may have a good knowledge of local climate risks, markets and agents. This may dampen the impact of typhoons on their activity.

To conduct our analysis, we further take account of the Chinese banking system specificities: it has been liberalized recently; it is mainly characterized by four types of banks with specific scope and objectives (Stated-owned Commercial Banks, Joined Stock Commercial Banks, City Commercial Banks and Rural Banks). The characteristics of these different types of banks may induce specific responses to

typhoons. Our paper contributes thus to the scarce literature on banks and natural disasters in the case of emerging economies.

Method & data: We use a difference-in-difference (DID) approach with time and individual fixed effects to assess the impact of typhons on banks over a period of one to three years. The "treatment group" is made of banks that have been hit by intense typhoons. For identification purposes, we build individual measures of banks' exposure based on both the severity of the typhoon and the percentage of branches that are affected by.

Data comes from China Securities Markets and Accounting Research (CSMAR). It regroups all available information on standardized financial statement of Chinese banks. Our baseline estimates rely on 378 banks over the period 2004-2019, and a total of 486 typhons.

Results & conclusion: We find that there is a global increase in non-performing loans (NPLs) ratio in the wake of typhons. This suggests that such a natural disaster affects the ability of borrowers to repay their debts, as the deterioration of production capacities and the reduction in economic activity lower incomes.

Moreover, we find that commercial banks experience a decline in their loans. This is in line with the financial accelerator mechanism, as typhons are likely to exacerbate information asymmetries ensuing the destruction of collateral. On the contrary, loans distributed by policy and state-owned banks increase, possibly due to the politic need to support the reconstruction. At the same time, their capital-to-asset ratio significantly decreases, which may threaten their solvency.

Thus, we conclude that typhoons have an adverse impact on the Chinese banking system, by increasing NPLs and/or lowering solvency. More generally, given that the frequency and the severity of natural disasters are expected to increase, this raises further challenges for financing both the reconstruction and the energy transition, as they require huge investments.

Keywords: Banking stability, Weather-related physical risks, Chinese banking system, Difference-in-difference

JEL Codes: G21, Q54, C23

The long-run relationship between Economic Policy Uncertainty Components and NPLs: The case of Greece.

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Abstract

In this study by applying cointegration methodology and error correction models, we investigate any long run relationship between banking variables and Economic Policy Uncertainty measures in case of Greece. Quarterly data for the period between 2002Q4-2020Q1 used for non-performing loans (NPLs), Equity and Liquidity measures, Unemployment and Economic Policy Uncertainty Indices (Economic Policy Uncertainty, Economic Uncertainty, Banking Policy, Monetary Policy, Currency Policy, Pension Policy, Fiscal Policy with its sub-indices Debt Policy and Tax Policy).

The results suggest that the variables converge to long run equilibrium since the coefficients of the error correction term are negative and statistically significant. We can also conclude that almost all of the nine EPU's, are positively and statistically significant related to NPLs ratios, since an increase in uncertainty induce a corresponding increase in NPLs ratio.

Additionally, the Unemployment is in all specifications, positively related as predicted by the theory with NPLs, since an increase in Unemployment reduces the ability of businesses and households to pay off their debts. The same also holds for the Equity which in most of the specifications affects positively the ratio of NPLs confirming this way the too-big-to-fail hypothesis. We can also see that the Loans-to-Deposits ratio positively affects the NPLs ratio in most cases, confirming the liquidity risk hypothesis that the higher the Loans-to-Deposits ratio is the higher the NPLs ratio becomes.

From the Variance Decomposition Analysis becomes clear that in the case of NPLs, the Unemployment along with the EPU's play the most important role. The variance

of NPLs is explained at a great extent by itself in all categories up to the 15th period. After this period, the percentage of NPLs variance explained by Unemployment and EPU's increases. As regards the Equity's variance explained, the importance of NPLs, Unemployment and most of the various EPU's becomes present after the first fifteen periods. In case of Loans-to-Deposits ratio and Unemployment rate variability, only consumer NPLs play a dominant role. Worth mentioning at this point the 25% of unemployment variability due to consumer NPLs.

Finally, EPU main components' variability are explained to some significant extent (20%) by banking variables employed in the model. The participation of banking variables in each case depends on the measure of uncertainty.

Keywords: Vector Error Correction Model, Non-Performing Loans, Economic Policy Uncertainty Indices
JEL Codes: G20, G21

The role of asset transparency in bank deleveraging

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Abstract

Capital requirements are the most prominent macro-prudential instrument in the arsenal of bank regulators. Given the increasing focus of incorporating heterogeneity in bank characteristics in the design of regulation (as in Basel III), it is of particular interest to understand if banks' response to an increase in capital requirements vary in the cross-section. Yet, the existing literature mostly overlooks the role of differences in bank characteristics in the banks' response to changes in capital requirements.

The novelty of this paper is that we identify a characteristic which differs across banks, i.e., the extent to which a bank expects to acquire private information over its assets, and crucially affects banks' response to higher capital requirements. We show that banks with transparent assets (i.e., no anticipated informational advantage) respond differently to higher capital requirements than banks with opaque assets. Specifically, opaque banks rely on reducing risk-weights to de-lever more so than transparent banks. Hence, it may be misleading to evaluate banks' response to an increase in capital requirements without explicitly considering the composition of bank assets. We use the FAS 166/167 reforms for identification and explain our findings in a model in which opaque banks face an adverse selection discount when selling assets. We provide an explanation for why banks respond to an increase in capital requirements, even when the requirements do not immediately bind.

Our identification relies on the implementation of the FAS 166/167 in 2010. Following the implementation of the FAS 166/167, banks were required to consolidate the VIEs on to their balance sheets. Consolidation of the VIEs led to a mechanical fall in the level of the risk-weighted capital ratio, since the VIEs were included in the calculation of the risk-weighted assets. Our sample consists of annual

bank-level data for US Bank Holding Companies for the time-period between 2005 and 2015. We identify 33 banks which consolidated VIE assets between 2011 and 2015; these make up the treated banks. We identify an additional 60 securitizing banks which are comparable in size and these make up the control banks.

In response to the increase in capital requirements induced by the FAS 166/167 regulation, the treated banks rely on reducing risk-weighted assets (the denominator) to reduce leverage, rather than increasing their Tier 1 capital (the numerator). The result is striking since the mechanical impact of the reform would be to increase the treated banks' risk-weighted assets if banks did not respond to the reform. That the treated banks' risk-weighted assets are lower relative to the control banks', suggests that the treated banks' response to the reform was strong enough to overturn the mechanical impact of the reform. Overall, the treated banks increase their risk-weighted capital ratio following the reform, relative to the control banks by around 1.2%.

Keywords: Securitization, Off-balance sheet activities, Variable Interest Entity, Capital requirements

JEL Codes: G21, G28

Do large banks with large boards create value in the market for corporate control? The US banking sector in perspective

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Abstract

There is considerable evidence of the effects of board size on banking, suggesting that it has a significant effect on performance, efficiency, credit risk, and social responsibility. However, little consideration has been given to the impact of banks' board size on shareholder value in the context of mergers and acquisitions (M&A). In this study, we investigate the performance implications of board size in the context of bank M&A in the US. We also focus on bank size considering the theoretical arguments related to the need for greater advising requirements by large, complex firms and those with increased external financing (Coles et. al., 2008; Lehn et al., 2009; Adams and Mehran, 2012). In line with these arguments, The Conference Board (2021) shows that large US firms commonly have boards with ten or more directors, and a median board size of eleven. We employ a hand-collected sample of M&A announced by US banks over the period 2012–2018 to examine whether the board size is associated with value effects in the market for corporate control. Our key conclusion is that there is a negative relationship between the size of the board and the excess returns of acquiring banks. This basic result proves robust to alternative model specifications concerning different estimation models and alternative event windows. Furthermore, we provide evidence that the optimal board size lies below nine since the excess returns for banks with less than nine members are higher than returns of banks with at least nine directors. This result holds using the propensity score matching analysis to address self-selection bias. Our findings are consistent with the arguments in favor of small boards derived from agency theory, citing problems of

coordination and free riders that undermine the effectiveness of large groups. We also examine the size of the board concerning the size of the acquiring banks, considering that large, complex firms have greater advising requirements compared to simple ones. The results show a positive effect of large boards for banks with total assets greater than $50 billion (i.e., large banks according to the Dodd-Frank Act), indicating significant value implications of more board members for the wealth of acquiring bank shareholders. Large boards are likely to include more experienced and better-qualified directors who can deal with complex corporate issues (such as M&A) more effectively and, thus, lead to value-enhancing corporate decisions. Overall, our research provides useful insights regarding board size and its value implications in the market for corporate control and is, therefore, of interest to managers, regulators, and investors. It indicates that any regulatory rules or guidelines aiming to determine an optimal board size are unlikely to enhance shareholder value. In line with Redor (2016) and Coles et al. (2008), our findings challenge the "one-size-fits-all" approach to board composition, indicating that the ideal board size is dependent on a firm's specific needs. The board's resource provision abilities, in terms of monitoring and advisory roles, are affected by the opportunities, risks, and advising requirements of each firm.

Keywords: mergers; acquisitions; event study; corporate governance

JEL Codes: G14, G21, G34

Session 12

Human Capital

Conscription and Educational Outcomes: Evidence from the Republic of Cyprus

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Abstract

Peacetime military service has both positive and negative effects on human capital. While it depreciates academic abilities it also enhances non-cognitive skills. The net effect of conscription is hard to identify due to issues of self-selection, endogenous timing and omitted variables bias. We exploit the compulsory service of men in the Republic of Cyprus prior to university enrolment, to deal with the first two problems. After controlling for prior academic performance, admission age, and other relevant controls, we find that the duration of service has a positive effect on university test scores. Two exogenous reforms---one at the extensive and one at the intensive margin of military service---allow us to deal with omitted variables bias. We estimate difference-in-difference models, where female students act as a control group, and show that a reduction (increase) in the average length of the army service has a negative (positive) effect on male academic performance.

The commonly held belief is that a long compulsory service implies disconnectedness from academic skills as well as an outstanding career break for young males. However, the analysis of our unique dataset points to a significant positive influence of a longer army service on male students' grades in comparison with their female peers. This is an especially interesting finding given that higher academic grades usually imply higher earnings during an individual's life cycle.

By virtue of data available, we can directly relate academic outcomes, as measured by course grades, and the duration of military service, as captured by school terms spent in army training. We initially start with an ordinary regression analysis and then examine grade heterogeneity using quantile regressions. To overcome identification issues, we perform a difference-in-difference analysis by exploiting the reforms

described above. All of our results point in the same direction: compulsory army service unequivocally improved grades of male undergraduate students at the University of Cyprus. Thus, we contribute to the existing literature by directly relating academic performance to conscription duration, in a framework that arguably allows a causal interpretation of our findings.

Keywords: Military service, human capital, education, non-cognitive skills, academic outcomes

JEL Codes: C21; H56; I21; J24

Social policy gone bad educationally:

Unintended peer effects from transferred students

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Abstract

Education, with its multifaceted role, is a key social policy instrument that has been used to address inequality of opportunities and the structure of society. Such policies are strongly predicated upon the assumption of significant positive peer effects. We analyse one such example, where university access is used as a (non-cash transfer) social policy to help large and financially constrained families.

To gain university entry, students in Greece participate in a national examination system. Based on their grades and their declared preferences, students get allocated to different universities and departments. After this allocation, the Ministry of Education operates a special transfer system, as part of its social policy, to assist large and financially constrained families. This policy is giving students from such families the opportunity to "transfer" to a similar subject university department in (or near) their hometown, in case they had successfully gained entry to a university department far from home. The policy purpose was to help financially those families to pool their resources, by not needing to maintain a second household in a different city. However, transferred students were of lower academic quality than receiving students, thus raising the possibility of exerting a negative externality on their receiving peers. Various recent changes in the relevant legislation meant that there was a large, quasi-random, variability in the number of transferred students over time, creating serious problems both at the leaving and at the receiving departments.

In this paper, we present the first systematic examination of transferred university students' impact on the academic performance of receiving students. We construct a novel dataset from a top undergraduate economics department in Greece, by linking

students' personal and pre-university academic performance characteristics with their entire university academic performance record until graduation. Analysing the data, both at the aggregate (course) level and at the individual student level, we provide consistent evidence showing that transferred students exert a large negative externality on receiving students. This effect is larger as the percentage of transferred students increases, and is stronger at the lowest quartile of the ability distribution and becomes less intense as we move to higher quartiles, leaving the top quartile intact. In other words, we find consistent evidence that it is the weakest students that are mostly affected. Finally, we highlight that in our setting the negative externality mainly operates through courses that are heavy on mathematics and statistics. Overall, our research shows how a social policy that is meant to help financially constrained families and to alleviate inequalities has gone bad educationally, by lowering the academic achievements of receiving students.

Keywords: peer effects, externalities, university education, unintended consequences

JEL Codes: H520; I2

The economic crisis and its impact on the healthcare sector in Greece

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Abstract

The US subprime crisis in 2008 deregulated the world economy and unveiled the unsustainable nature of public debt in many developed countries, especially in Europe. The sovereign debt crisis in the Eurozone followed, revealing the structural imbalances of the euro area. The crisis exposed the Greek economy, which has reaped the benefits from the low-interest rate in the Eurozone and EU's financial deregulation by financing its debt and current account deficit cheaply. The high deficits, the enormous public debt, and the loss of access to the international financial market make the Greek government agree with the European Union (EU), European Central Bank (ECB) and the International Monetary Fund (IMF) (the so-called Troika) massive rescue package in May 2010 conditional to the implementation of a Memorandum of Economic and Financial Policies, namely free market-austerity policies. The extremely austere fiscal consolidation and the structural reforms accompanying the Greek Economic Adjustment Programmes (EAPs) produced significant socio-economic effects. The country's economy severely contracted, the households' disposable income reduced, the social welfare system weakened, and society's welfare dramatically declined.

The Greek healthcare system already facing structural problems regarding the financing, organisation and delivery of services had to be reformed. However, implementing the austerity policies on the Greek National Health System (GNHS), which included severe cuts on public health expenditures, further reduced the quality and availability of public health care services when Greek citizens experienced their impoverishment. The economic hardships of Greece's population due to high unemployment and income losses increased its health and mental health problems.

The purpose of this paper is to investigate the impact of GDP’s change on public health expenditures during the Greek economic crisis. Further, the effects of the change of public health expenditures on specific social indicators, like “AROPE”, “number of deaths from suicide”, “unmet health needs”, and “infant mortality” would be analysed. In this study we use time series dataset of the variables of interest for the period 2008-2018.

Our data supports a statistically significant positive relationship between per capita GDP and public health expenditures, while a highly significant negative correlation is found between the public health expenditures and the indicators “AROPE”, “number of deaths from suicide”, and “unmet health needs”. Finally, according to our data there is no statistically significant relationship between public health expenditures and infant mortality.

This paper contributes to the field’s literature since it determines the impact of GDP on public health expenditures and, consequently, on critical social indicators, specifically matched with empirical results to derive conclusive answers. Policymakers may benefit from research’s outcome and develop efficient health policies for a sustainable GNHS.

Keywords: health expenditures, economic crisis, GDP’s change

JEL Codes: H12, H51, I15, I18

Education and Credit: A Matthew Effect

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Abstract

Using a unique corporate loans dataset for entrepreneurs with small and microenterprises, this paper examines how educational attainment affects bank credit decisions and subsequent individual and firm outcomes. Our results highlight a "Matthew Effect," where an initial advantage is self-amplifying. We find that entrepreneurs who obtain university education are more likely to apply for credit, and receive higher credit scores, and better lending terms. Via this credit channel, such entrepreneurs have significantly better future firm outcomes compared to those without a university education. Furthermore, we find a key role for investments in innovation, intangible assets, and lower within-firm pay inequality.

Keywords: Education; Credit; Higher education; Loan application; Bank credit decisions; Firm performance; Pay Inequality

JEL Codes: G21; G32; I23, I24; I26

Career and Non-Career Jobs: Dangling the Carrot

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Abstract

Standard theories in modern labor economics predict that workers' wages increase with their opportunity cost and productivity. However, numerous empirical studies document that wages often deviate from this prediction, as there is a clear hierarchical structure within firms: wages are closely related to job levels, rather than effort or productivity, and a significant fraction of wage growth occurs through promotions. Workers at lower-level jobs may be willing to exert high effort, without an immediate pay reward, to increase their chances of promotion, and will gain a wage increase only upon promotion.

Previous work, however, analyzes the implications of such practices on wage dynamics of individuals within individual firms and in isolation from the rest of the labor market. To the best of our knowledge no previous paper analyzes the implications of such practices on aggregate labor market outcomes. Existing macroeconomic models of the labor market build around the standard assumptions that closely link wages to productivity (skills, human capital, experience) and outside option, and overlook the existence of job levels and career paths within firms.

While previous work focuses mainly on the firm, such practices can also have important macroeconomic implications as firms may react to changes in economic conditions by adjusting not only hirings and wages at entry, but also opportunities for internal promotions, thereby affecting overall wage, unemployment and productivity dynamics. However, existing macroeconomic models of the labor market overlook the existence of career paths in firms and build around the standard assumptions that closely link wages to only productivity and outside option.

This paper fills this gap by developing a model of the labor market in which there are both "career" and "non-career" firms. Non-career firms have the typical one-type job structure and pay their employees according to their marginal product, which exactly compensates them for the marginal disutility of their last unit of effort. In career firms, on the other hand, all workers start at the low rank, but have the possibility of getting promoted to a higher rank as a reward to a relatively higher effort. It is optimal for career firms to create a payment structure where workers' effort is compensated disproportionally depending on their job level. They compensate more the few workers that get promoted to the higher rank thereby creating incentives for the mass of the workers in lower ranks who are paid less. The latter are willing to put too high an effort for the compensation they receive as they also value the possibility of getting promoted to the higher rank that is compensated handsomely. Career firms may react to changes in economic conditions by adjusting not only hirings at lower ranks, but also wage spreads and opportunities for internal promotions. We contribute to the literature by demonstrating that this hierarchical wage structure, which, despite its empirical relevance, has be largely overlooked in macroeconomic models, is of particular importance for our understanding of aggregate labor market outcomes. We show how our model can shed light on macroeconomic puzzles such as the gender wage gap, the cyclicality of the labor wedge, and the cyclicality of the labor income share.

Keywords: career-jobs; wage gap; labor wedge; company hierarchy

JEL Codes: J01; J20; J31; J33

Session 13

Finance II

COVID-19 and bitcoin realized volatility

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Abstract

Cryptocurrencies' market attracted substantial attention from investors, policy makers and researchers. Many studies were conducted to analyze the behavior of altcoins and their value in the midst of a pandemic. The investigations have yielded ambiguous results regarding the presence of coronavirus in markets since several studies showed that COVID-19 has either positive and negative impact on return financial markets, for negative impact see Huang et al. (2021), Corbet et al. (2020), Conlon and McGee (2020), Conlon et al. (2020), Grobys, (2020), and Chen et al. (2020), while for positive impact see Demir et al. (2020) Huang and Duan (2021), and Mnif and Jarboui (2021). In our paper, we study how the Bitcoin market was affected by the pandemic disease of COVID-19 by using EMV index (Baker et al., 2019) a newspaper-based Infectious Disease Equity Market Volatility Tracker. More specifically, we focus our attention on cryptocurrencies' markets in order to investigate the impact of COVID-19 disease on altcoin market. More specifically, we focus on the pandemic disease of COVID-19 investigating the impact of COVID-19 disease on the Bitcoin prices. The purpose of the research is the careful consideration of the impact of the pandemic on the daily returns of Bitcoin compared to the return of Bitcoin before the advent of COVID-19. For our analysis, we have been using intraday Bitcoin price data for about five years. We apply the Realized Volatility (RV) to compute the daily volatility from the intraday data of Bitcoin prices. The period of the research extends from January 1, 2016, to July 18, 2021, i.e., our study is carried out with 2026 Obs. This period contains several market phases, the post-crisis growth period (the period of growth after the American and European crisis), the pandemic onset period and the pandemic

period. Also, our research is carried out using one of the most widely known models of volatility which are mainly used by researchers to predict volatility. This particular model is the Heterogeneous Autoregressive Model of Realized Volatility (HAR-RV) of Corsi (2009), and we use it to measure volatility and its forecast horizons are daily, weekly (t = 7), and monthly (t = 30). In addition, we include the variable for COVID-19 (as external variable) to the classic HAR-RV model since we focus on how the return of Bitcoin is affected by the new virus during the pandemic. Finally, the findings of the survey showed that the coronavirus caused upheaval in the financial markets (Chen et al., 2020). In particular, the presence of COVID-19 pandemic disease affects the Bitcoin market by increasing the realized volatility.

Keywords: Bitcoin, COVID-19, realized volatility, financial market, HAR-RV model

JEL Codes: F65, G01, G15

The Effects of Climate Change on the Financial Market

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Abstract

Climate change represents great physical and transition risks to the economy in the form of disasters and unaccustomed changes. Although these risks are recognized in the literature, there is still no unequivocal consensus on how to react or who should react to climate change and shield the economy against these risks. However, looking at the financial side of the economy, changes in investors' behaviors can give us ideas on how climate change can disrupt the financial market.

In my work, I examine financial markets' reactions to climate change. Specifically, I focus on capital flows' different behaviors to disastrous climate events. Capital flows are key contributors to the global economy through financial markets: they can improve the financial sector's competitiveness in a country, promote investment, and help to smooth consumption. However, their large size and volatility represent potential risks to the global and local financial systems.

The literature has assessed potential drivers of capital flows, but we lack information about the effect of climate change. I examine how climate events can be new drivers of capital flows, especially for sudden changes. Disastrous climate events may drive capital flows via two channels. First, climate events can be country-specific pull factors as investors might pull back from a country after a weather shock. Second, they might represent a global push factor: after an extreme climate event strikes outside the country, investors might still withdraw even without suffering actual loss, if the country is prone to disasters.

To understand financial markets' true reactions to climate change, I aim to identify its impact by examining local and regional climate effects. To quantify the local aspect, I proxy the severity of climate events through two methods. First, I evaluate the duration of disastrous events with respect to countries' climate history. Therefore, a

longer flood event will count more than a shorter one. Second, I control for the population's exposure to climate events. Hence, I capture the extent to which the population has been affected by a disaster, rather than focusing on possibly large but separate disasters in a country. This method can highlight that a storm might have a more significant effect in the densely populated Chicago than in the Sahara. To capture whether climate change represents a regional push factor, I count regional disasters around a country quarterly.

Both local and regional methods use climate event indices that capture climate change by focusing on common disasters. Specifically, the indices count droughts, extreme temperatures, floods, and storms. These new indices measure climate change more accurately, as they incorporate more than one disaster contrary to the common procedure in the literature, focusing solely on storms, for example. I find that both regional and local indices cause sudden increases in capital inflows.

My research has sound policy implications: countries experiencing sudden changes in capital flows are more susceptible to macroeconomic instability and may suffer more easily from other financial risks. Therefore, understanding whether climate change is a new driver of capital flows, domestic institutions can prepare their countries better for sudden changes.

Keywords: International Finance, Financial Market, Capital Flows, Climate Change, Climate, Disaster, Drought, Flood, Storm, Weather, Natural Disaster, Environmental Planning, Climate Policy

JEL Codes: F3 G1 Q5 Q54 Q58

Growing up with Finance:

Special Economic Zoning and Household Finances in China

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Abstract

We examine the effect of early life exposure to local financial markets using the reform of special economic zones and coastal cities (SEZ) in China that led to differential development of financial markets across Chinese cities. We utilise data from the Chinese Household Finance Survey of 2015, to identify cities, and distinguish between a treated group of individuals who were still at school age at the time of the reforms, and a control group of individuals who were not at school and/or not born in a reform region. We find that individuals who were still at school during the time and after the reforms are more likely to access finance from formal financial institutions, compared to a control group of individuals born in non-SEZ regions and those who were at post-schooling age during the reforms. Those exposed to local financial institutions early in life are less likely to obtain finance from informal sources and have lower informal-to-total finance ratios. Moreover, our difference-in-difference estimates reveal a large significant impact of growing up with finance on financial market participation, in terms of stock and risky-asset ownership and holdings, as well as on portfolio diversification. We establish the robustness of our findings in terms of placebo treatments of nearest cities to those exposed to the reform, and synthetic control groups of individuals with similar characteristics to those in the treated cities. We distinguish between individuals born and raised in the SEZ regions and those who moved there from other locations and find that our findings hold only for those born and raised in the SEZ regions, reinforcing the interpretations regarding early life exposure to conditions of financial development. Moreover, we experiment with a fuzzy RDD setting in which the distance from home to bank is used as a dependent variable, with reform exposure as the instrumental

variable. The results show the instruments distance to bank has strong explanatory power in our findings, particularly for the sample of individuals born and raised in the SEZ regions. The richness of the data enables the examination of the moderating factors to our findings, in terms of financial literacy, financial risk tolerance, and educational/single-child reform exposure, along with values of filial piety, trust, and the frequency of social interactions. We find that the greater financial literacy and financial risk tolerance for those still at school during the reform in SEZ regions exert a stronger moderating impact on our household finance outcomes, with financial literacy entailing the strongest impact. The findings suggest that the recent 2020 educational reform by the Chinese government placing great emphasis on financial literacy is in the right direction for improving household financial outcomes.

Keywords: Household Finance; Financial Development; Special Economic Zones;

Formative Exposure; Financial Literacy; China

JEL Codes: D14; G11; G53; P34

Forecasting Real Economic Activity using the Financial Stress Index: Evidence from Developed and Developing Countries

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Abstract

Aim of this paper is the study of the financial stress – macroeconomic fundamentals interrelations and the usefulness of financial stress as a leading indicator of macro-fundamentals. We construct a set of financial stress indices for 25 countries, both developed and developing. After assessing these indices ability to capture periods of macrofinancial instability, a forecasting exercise is conducted, where major macroeconomic variables are forecasted using the aforementioned early warning indicators. The out-of-sample forecasting evidence verifies the ability of these financial stress indices to act as valuable modern tools for assessing the vulnerability of a range of economies. We suggest that such aggregate financial risk capturing tools can be of great interest for policy makers, as well as individual investors.

Keywords: Financial Fragility, Financial Stress Index, Monitoring, Forecasting

JEL Codes: C43, G01, G15, F37

Enhancement in Firms' Information Environment via Options Trading and the Efficiency of Corporate Investment

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Abstract

We examine the association between enhancement in firms' information environment proxied by active options market trading and the efficiency of corporate investment in terms of deviation from optimal investment levels. Prior research has shown that options trading activity improves the informational efficiency of firms. Firm-level investment efficiency depends on the firm's information environment with adverse selection exacerbating both over- and under- investment problems. Therefore, we examine whether options trading volume, a factor that reduces information asymmetries and improves access to firms' internal information for outsiders, is associated positively with improved firm-level investment efficiency or lower deviations from optimal levels of firm investment.

We test this research question for US firms with options trading activity during 1996-2019 and find that options trading volumes associate positively and significantly with firm-level investment efficiency. Our results are robust under alternative model specifications and different ways of measuring options trading activity, and hold after various endogeneity controls. Endogeneity concerns may stem from the possibility that both options trading volumes and the degree of firm investment efficiency may be jointly determined by the quality of firms' information environment. To help alleviate such endogeneity concerns, we apply firm fixed effects and further employ GMM estimation in the context of a quasi-natural experiment involving selected firms' first-time inclusion in CBOE's Option Penny Pilot Program, representing a positive exogenous shock in liquidity and option trading volumes. Using first-time

Pilot Program inclusion as an instrument, our results are unaffected and actually become stronger. We also employ PSM between firms with high and matched firms with low options trading volumes.

We find support for an external monitoring/agency channel as a mechanism through which options trading activity might associate positively with investment efficiency, given that firms' information environment can be shaped by strong external monitoring that limits managerial entrenchment and alleviates adverse selection and moral hazard problems. When the strength of external monitoring and information-enriching mechanisms improve, proxied by susceptibility to takeovers, the size of institutional block holdings and the existence of long-term S&P debt rating, the association between the volume of options trading and investment efficiency significantly weakens. This suggests options trading volumes and the strength of external monitoring might work as substitutes supporting more efficient levels of investment through alleviating information asymmetry and moral hazard concerns.

We find little support for two alternative channels examined, namely managerial learning and a cost of capital channel. In supplementary analyses, we find that the positive association between options trading and improved investment efficiency holds mostly for firms with high unexpected investment (a signal of poor performance) and for firms with no CDS traded. This suggests that the positive association of options trading volumes with enhanced firm investment efficiency is stronger when firms' informational efficiency is lower.

Our broader evidence is consistent with active option market trading helping alleviate information asymmetry and moral hazard concerns associated with deviations from optimal levels of corporate investment. Overall, our findings suggest that informational improvements associated with trading in in options markets also benefit firms' investment-level activities through enhancing the optimal allocation of corporate resources and investment efficiency.

Keywords: Information environment enhancement, option trading activity, corporate investment efficiency, under- or over-investment, information asymmetry, agency costs

JEL Codes: G12, G31, D81

Session 14

Institutions

The role of Institutions in Entrepreneurial Ecosystems: A meta-analysis

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Abstract

Although relatively new, the concept of entrepreneurial ecosystems (EE) has attracted increasing attention among scholars and policymakers. EE definitions refer to complex and diverse interacting actors, roles, and environmental factors that determine the entrepreneurship in a territory. Within this context, the importance of institutional factors and social context is clear. However, the existing relevant literature provides scattered theoretical and empirical evidence on the role of institutions in EE. Literature review reveals that the EE concept still lacks a clear analytical framework while the impact of institutions on EE structure and performance is under-investigated. Moreover, existing studies focus on single regions or clusters, making generalization of results less clear. Given the above, the present meta-analysis is the first one to assess the effectiveness of formal and informal institutions in enhancing EE performance. Further, it aims at identifying potential external factors (moderators) that influence the relationship between EE and their institutional environment.

We conducted our literature search following the PRISMA protocol using the Scopus database and Google Scholar. The data retrieved from the 38 studies, which satisfied our inclusion criteria and qualified for our meta-analysis, were coded to provide our dependent and independent variables. Finally, to control for systematic differences in effect sizes or outcomes across studies we include four potential moderators (education, level of economic development, cultural background, and spatial context). Given the evidence of sizeable heterogeneity, we opt for random effect sizes to assess the strength of the relationship between variables. Our analysis highlights the need for

moderator analysis to determine the source of heterogeneity and how much this contributes to the observed variability of effect sizes between studies.

Our findings show that although formal and informal institutions and networks significantly affect EE performance, their effect sizes are influenced by the level of economic development and cultural and spatial specificities. Effect sizes of formal and informal institutions are greater in developed countries; in the developing ones, networks and informal institutions seem to have a significant impact. The role of informal institutions is greater in Western culture; in Eastern culture networks seem to play an important role.

Our findings can be used two-wise: From the one side, the above analysis can serve as a basis for the development of the still missing theoretical framework; on the other side, ecosystem stakeholders and policy makers can plan policies and activities by considering the dynamics and effects of different moderating factors.

Keywords: Entrepreneurial ecosystems, Institutions, Formal institutions, Informal institutions, Networks, Meta-analysis

JEL Codes: C12, D02, L26, O43

Political institutions and economic inequality: A labor and structuralist economics approach

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Abstract

Political institutions play a key role in ensuring and promoting an economic environment conducive to growth, making them a key factor in understanding a country's economic trajectory. Notable institutions which became widespread, solidified, and finally codified into most countries' laws during the 20th century are the minimum wage and trade unions, both recurring themes in contemporary political and economic discourse.

Since labor unions seek to increase wages, whereas businesses seek to lower them, it is plausible that capital flight and/or divestment will occur where unions are strong, thus increasing both the numbers of the unemployed as well as inequality. A similar case can be made for the minimum wage. Evidently, in both cases institutions play a very important role, and, as seen before, there is an interaction between the quality of those institutions and economic inequality. Therefore, the research question is three-fold:

1. How does the monetary amount of the minimum wage affect economic inequality?
2. How does the existence of trade unions (in terms of trade union coverage and strike rates) affect economic inequality?
3. How does institutional quality (in terms of the Economic Freedom index and civil liberties, as defined by Kotschy & Sunde, 2017) affect economic inequality?

To answer these questions, and given the breadth of the influence of institutions, a quantitative analysis will need to be undertaken focused on particular economic

indices. More specifically, panel data from a selection of countries will be utilized. General trends will be discovered and analyzed taking into account the wider economic and political context, which is of particular importance, given that the economic recession which started in 2020 stress-tested institutions worldwide, at a time when most were still feeling the effects of the Great Recession of 2007-09.

Quality of institutions as a factor to energy transition in South Africa: Econometric and System Dynamics modelling evidence

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Abstract

The level of greenhouse gas emissions globally with its dire consequences on climate has intensified the efforts of many countries in proceeding with drastic changes in their supply mixes, recognizing that the power generation sector is the main contributor to air pollution (AlFarra & Abu-Hijleh, 2012; Apergis et al., 2010; Bellakhal et al., 2019). The flexibility and more minor initial capital investment requirements of the renewable energy option also suggest them as a solution to energy (in)security and energy poverty, particularly in developing countries.

Even though however, the transition towards renewable energies and "away" from fossil fuels is a given internationally, not all countries adopt the new technologies with the same speed. Cadoret and Padovano (2016) concluded that regardless of the institutional and policy environment where usually decisions on the supply mix are taken, the ideological orientation of the government and industrial lobbying can hinder the adoption of renewable energies. Bourcet (2020) adds that complementary to the policy and regulatory framework included in the literature, the political environment is also considered in some studies: specific projects benefit from political stability and sound regulatory frameworks.

The primary purpose of this paper is to examine the impact of institutional and policy factors in the decision by countries to use renewable energy in their electricity supply mix in South Africa. To do so, this study will combine empirical evidence from a System Dynamics model and a time-series econometric model.

Econometrically, this paper follows a particular part of the literature (Komendatova et al., 2012; Cadoret and Padovano, 2016; Pfeiffer and Mulder, 2013; Verdolini and Vona, 2015; Holdmann et al., 2019) that attributes the delays in renewable energy

share increases to the role of national policy frameworks and government efficiency, as well as a historical dependency to fossil fuels and market structures. Most of these studies approached the part of political factors from the point of view of investment risk due to the relatively high cost of renewable energy. The current renewable energy technology pricing conditions are changing rapidly, with IRENA (2018) forecasting that renewable energy will cost less than fossil fuels per unit of electricity generation.

In our model, the dependent variable is the growth in renewable energy share in a country's energy supply mix. Following the literature, the explanatory variables will be categorized into three vectors: 1) political economy, 2) economic, and 3) environmental and energy variables. The political and governance variables will represent the quality of governance, institutional structure, levels of corruption etc. The Corruption Perception Index (CPI) from Transparency International and the Control of Corruption Index from the World Bank's World Governance Indicators will be employed to capture the quality of governance in South Africa. Another important factor that might hinder the adoption of new alternative types of energy is the share of fossil fuels historically in South Africa – reluctance to adopt renewables can be rooted in the already established power generation capacity in fossil fuels.

Subsequently, with the use of a fundamental system dynamics causal loop model, the study will examine the role of institutions in the renewable energy adoption for the South African electricity sector where the adoption has been considered relatively slow even though the country suffers from overall mismatches between supply and demand resulting in frequent power interruptions. The SD model's parameters will be derived from econometric partial equilibrium models to represent elasticities for the relationships between the model's variables.

Keywords: Institutions; Renewable Energy; Supply Mix; South Africa

JEL Codes: C22, E02, O43, O44, Q28, Q43

Session 15

Taxation

Income Tax Structure: A Comparison across Tax Systems

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Abstract

How does income tax structure affect tax progressivity? Although there is a lot of discussion in the literature about how progressivity affects economic stability (i.e., through economic stabilizers) there is no discussion about how the different income tax structures have differential effects on progressivity and subsequently revenue volatility. The purpose of this paper is to analyze the responsiveness of income tax revenue to changes in income and how this is related to the structure of the tax system and the distribution of income.

Using readily available aggregated administrative data on income distributions and tax parameters from different European countries, we estimate income tax revenue elasticities for different income levels and types of taxpayers under different tax structure scenarios. In particular, we use Ireland as our base case and compare the Irish tax system with the tax system of UK, Italy, Greece, France, and Sweden, in terms of income distribution and progressivity. The Irish income tax system is particularly unique: the existence of income tax credits, no tax-free allowance, and only two tax rates for two different income bands are unusual features compared to other European tax systems. The tax credit structure provides a unique opportunity to assess whether such a system is more progressive and volatile than the traditional multiple threshold ones.

In the first step of our analysis, we estimate income tax elasticities for the different income levels for Ireland using data for the period 2003–19. Second, we map the Irish income distributions on the income distributions of UK, Italy, France, Greece, and Sweden. We choose these countries because their tax systems have traditional

multiple threshold systems, i.e., tax rates across 4-6 income bands, with tax free allowance (apart from Italy). On the other hand, Sweden has a flat tax rate across the country and then different regional income taxes are implemented. In the last step of our analysis, we simulate the different income tax systems on the Irish data. We find that tax credits create a more progressive tax system, but they are more volatile in terms of revenue following a negative shock.

Keywords: income tax; tax structure; income tax progressivity, income tax credits

Seasonality and tax avoidance: empirical evidence from Greece

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Abstract

We explore a unique dataset for the universe of hotels in Greece to investigate the impact of seasonality "phenomenon" on business operations and corporate responsibility aspects, over the period 2010-2018. Contrary to what prior literature suggests we argue that seasonality has a positive impact on both general business performance and tax compliance. Specifically, we find that hotels operating under seasonal status enjoy higher profitability which is linked to a reduction of tax aggressiveness behavior by 3.7 percent compared to year-round hotels. We measure tax aggressiveness based on confidential tax returns data applied to the full sample. Results remain essentially unchanged when employing commonly used tax avoidance proxies which, by default, exclude loss firms. Despite it is a single country study we claim that the inferences can be generalizable to many other tourist service sectors affected directly by seasonality.

Optimal VAT Threshold(s)

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Abstract

Value Added Tax (VAT) has become a major source of revenue for governments around the world, with VAT taxation raising about a fifth of total tax revenues both worldwide and among the members of the Organisation for Economic Co-operation and Development (OECD). A popular element of a VAT tax system is the existence of threshold: the requirement, that is, of businesses (taxable persons) to register for VAT after their (gross) turnover (from supplied goods and services) exceeds a given level. But their level varies across countries. In the EU, for example, all countries (with the exception of The Netherlands and Spain) have VAT thresholds ranging from Euros 10,000 in Greece and Finland to around Euros 114,000 in the United Kingdom. There is also significant variation in VAT threshold across non-EU countries. Thresholds vary in terms of the sector business they belong, with some countries applying distinct thresholds to the provision of goods and services (such as, in the EU, France, Ireland, Malta, Portugal, and, for China and Japan for non-EU countries).

The economic rationale behind the existence of VAT threshold relies on the observation that the (gross) turnover distribution of businesses is such that a relatively small proportion of them account for a significant proportion of VAT revenues. Given capacity of resources available to revenues administrations, and the significant burden (relative to sales) that the VAT system imposes on revenue administrations and small businesses, revenue maximisation might dictate that some small businesses should be excluded from the requirement to register for VAT. But the variation of the threshold across countries shows that it is a very contentious issue, reflecting, partly, that revenue administrations are somewhat averse in excluding taxable entities from the

tax base and, partly, lack of a systematic approach in thinking about the optimality of the thresholds.

Thresholds create a ‘notch’, and a VAT threshold is no exception. The reason for this is that for businesses which are close to the threshold, their tax liability (and profits) changes discontinuously. The implication of this is that for those businesses who are close to the threshold (from above) the incentive to move to the threshold and ‘bunch’ with others is quite strong—one the one hand they reduce sales but on the other they save one compliance costs. This, from an economic point of view, is inefficient. But there is another inefficiency in production decision along the production chain, as the VAT these firms have paid on inputs cascades through the input choices, if they are non-VAT registered (this is against the VAT principle).

Despite the importance of the topic, the literature has not dealt with (with notable exceptions to which we turn to shortly below) the issue of optimal threshold and there is no, to the best of our knowledge, theoretical work investigating optimality of VAT threshold along the production chain justifying, or not, the existence, from an optimality point of view, of multiple thresholds. Despite the prevalence of VAT threshold, and its implication for tax revenues, it is therefore very surprising that the issue has not attracted the attention it deserves in the Public Finance literature. Perhaps this neglect arises because of the analytical complexities introduced when the VAT chain is modelled. This is the focus of this paper: To investigate whether the VAT threshold across the chain of production should be uniform or not and so different sectors should be treated differently along the production chain. It is shown that there is a case for differential VAT thresholds. The optimal threshold is also derived and calibrated to Bulgarian VAT data.

Keywords: VAT notches; VAT thresholds

JEL Codes: H21; H26

Session 16

Markets, Firms & Trade

"Tacit" bundling among rivals: Limited availability bargains to loss-averse consumers

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Abstract

Retailers often offer promotional deals that are subject to "limited availability" to induce their sales (e.g., early-bird discounts, limited-time offers). In many cases, such deals are conditional on the purchase of another product (bundle discounts). Even though bundled discounts are a widespread business practice, the literature mostly focuses on incentives to bundle by multiproduct firms (Adams and Yellen, 1976; Long, 1984; McAfee et al., 1989; Venkatesh and Kamakura, 2003; Armstrong, 2013) or by producers of different and unrelated products (Gans and King, 2006; Zhou, 2011; Brito and Vanscocelos, 2015; Hahn and Kim, 2016). To our knowledge, little attention has been given to the case where rival firms bundle their products that are at least partially related (Armstrong, 2013).

The current paper addresses a mechanism that encourages the bundle consumption of two substitute goods in a partially differentiated duopoly. Assuming consumer loss aversion à la Köszegi and Rabin (2006), we develop a bait-and-switch model, where the seller of the least preferred product offers a limited availability deal (Rosato, 2016) to attract consumers. Due to market competition, such a deal is an effective bait only when it is directed towards the purchase of both products. A tempting discount raises consumers' reference point up to joint consumption level and increases their willingness to pay when the discount is not available in order to avoid disappointment. This attachment effect exploits consumers' loss aversion and leads them to an ex-ante unfavorable purchase. Consumers are manipulated into buying both products even at high regular prices. As a result, this bait and switch strategy creates tacit collusion between the rival firms as they achieve bundle scheme sales

with high component prices. Hence, our results shed light on bait and switch practices under imperfect competition and require additional, well-designed antitrust policies.

Keywords: Bundling, Loss Aversion, Reference-Dependence Preferences, Limited Availability, Tacit Collusion

JEL Codes: D21, D43, D81, L13

Collusion through debt and managers

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Abstract

Collusion among firms to alleviate competitive pressure is a widespread phenomenon that generates substantial welfare losses. In this paper, we aim to explore the collusive effects of debt finance and managerial incentive schemes.

In the baseline model, we consider a market for a homogeneous good where firms compete à la Bertrand by setting their prices over an infinite time horizon. A firm's shareholders choose the debt structure and delegate pricing decisions to a self-interested manager. Whenever a firm is unable to repay its debt, bankruptcy occurs. Despite limited liability, the manager of an insolvent firm faces some personal costs of bankruptcy (such as reputational costs and the loss of their job or a drastic wage cut), which increase with the severity of financial distress, namely the amount of unrepaid debt. In this setting, we find that two opposite forces shape the impact of an expansion of debt on the sustainability of collusion. On the one hand, a higher level of debt makes managers more eager to deviate by undercutting the collusive price because the reversion to the competitive equilibrium in the punishment phase leads to bankruptcy, which cancels the residual debt due to limited liability. On the other hand, a debt increase imposes higher costs of bankruptcy on managers. As a result of the trade-off between these two opposite forces, a higher amount of debt facilitates collusion when the managerial costs of bankruptcy are sufficiently responsive to the severity of financial distress. Equipped with these results, we endogenize the level of debt and managerial incentives chosen by the firms' shareholders in order to maximize collusive profits. We show that, for intermediate values of the discount factor, collusion is only sustainable through a combination of debt and managerial incentives.

Interestingly, a higher amount of debt is accompanied by higher-powered managerial incentives to ensure the managers' participation. Hence, debt and managerial incentives act as complementary strategic devices to sustain collusion in otherwise competitive industries.

Afterwards, we incorporate into our model different degrees of limited commitment about debt and managerial contracts. Notably, our analysis provides theoretical corroboration for the recent empirical evidence about the anticompetitive effects of debt. Dasgupta and Žaldokas (2019) document a decline in debt after the breakdown of collusive activities associated with the adoption of a leniency law. Identifying a causal relationship between credit concentration and industry markup, Saidi and Streitz (2021) show that the presence of common lenders among firms leads to a reduction in the cost of debt and softens product market competition. This effect is more pronounced when a higher cost of debt is more likely to drive firms into bankruptcy. Our results emphasize that the role of common lenders in relaxing competition is more significant in markets where the firms' shareholders exhibit limited commitment powers about debt contracts. Uncovering the collusive effects of managerial incentives, we can shed some light on the adoption of managerial remuneration schemes that facilitate product market collusion. This generates some potentially relevant implications for antitrust policy and corporate governance regulation.

Keywords: Bankruptcy, collusion, commitment, corporate governance, debt, managerial incentives

JEL Codes: D21, G32, G33, L13, L41

Quality, innovation, and credit constraints in exporting

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Abstract

Trade economists have identified product quality as an important determinant of exports at the country level (Schott, 2004; Hallak, 2006; Hallak and Schott, 2011; Feenstra and Romalis, 2014; Vandenbussche, 2014) and in shaping trade activity at the firm level (Crozet et al., 2012; Gervais, 2015; Manova and Zhang, 2012). Strongly related to quality, innovation is considered to be one of the main factors underlying international competitiveness (Asheim and Isaksen, 1997; Michie, 1998). This paper aims at shedding light into this important topic by addressing the key question on what encourages or hinders innovation, and how such impacts affect the exporting activity of firms and, more specifically, their product quality. In particular, we claim that credit constraints at the firm level (see Manova et al., 2015; Minetti and Zhu, 2011; Feenstra et al., 2014) are an important determinant of the quality-innovation nexus, as to the extent that investment is required to upgrade export product quality, credit constraints may affect an exporter's investment decisions on R&D activity (Brown et al., 2012; Crino and Ogliari, 2017; Jin et al., 2019). To this end, we follow the literature that has examined the impact of access to finance in exporting and develop a simple theoretical framework to investigate the relationship among product quality, innovation, and credit constraints. Exporting firms choose their export quantity and quality, subject to their credit constraints and their level of innovative activities. Notably, the model does not require a distinction between product and process innovation and, hence, it is suitable for empirical investigation when detailed data on firms' innovative activities are not available. The model predicts that the relationship between product quality and innovation at the firm level is positive when the firm's innovation expenditures are above a cut-off point that depends on the firm's level of credit constraints, but it is negative when its innovation expenditures are

below this threshold. We test the predictions of the theoretical framework using a unique combined dataset for Greek exporting firms is used. Following Hallak and Schott (2011), the unobserved product quality is defined as any intrinsic characteristic or taste preference that improves the consumer appeal of a product given its price. Based on this definition and focusing on heterogeneous firms, we use the estimation strategy put forward by Piveteau and Smagghue (2019) to estimate time-varying product quality at the firm level for Greek exporters. This methodology estimates product quality based on a demand side approach, exploiting information from the importing activity of exporters to face the main challenge when estimating demand functions, i.e., price endogeneity. Specifically, an instrument for prices is obtained by interacting real exchange rates with firm-specific importing shares, which is exogenous to any measurement errors in prices and to the quality choices made by each firm. With the firm-level product quality estimates at hand and using data on firm-level R&D expenditure, R&D personnel, and leverage measures, we examine the relationship between export quality, innovation, and credit constraints. Consistent with the theoretical model, the empirical results confirm that that credit constraints at the firm level are an important determinant of the quality-innovation nexus.

Keywords: international trade, exports, product quality, innovation, credit constraints

JEL Codes: F1, F14, G32, L11

The Economic Effects of Trade Policy Uncertainty on Emerging Market Economies

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Abstract

We investigate the economic effects of U.S. trade policy uncertainty on the economies of emerging markets (EMs). We estimate a global vector autoregression (GVAR) model that combines individual country vector error-correcting models in which domestic variables are related to country-specific foreign variables. The model is estimated with monthly data over the period 2000:1 to 2019:12 for the U.S., other major developed economies and the 18 most economically important EMs. The global impulse response functions indicate that a shock to trade policy uncertainty has a negative and significant impact on US aggregate imports as well as the exports of EMs to the U.S. Moreover, we find evidence that TPU shocks have been associated with a reduction of China's exports to the U.S. while exports from other East Asian economies have increased, a phenomenon widely discussed in the global policy circles.

Keywords: Trade Policy Uncertainty, Emerging Markets, Global VAR

JEL Codes: F13, F40, O24

Session 17

Economics

A Carbon Leakage Mitigation Reform Strategy: The Role of Border Carbon Adjustments

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Abstract

On 14 July 2021 European Commission adopted the proposal of a Carbon Border Adjustment Mechanism as part of the European Green Deal (COM 2021) as a mechanism to mitigate the effects arising from countries' asymmetric environmental standards as well as to encourage countries with laxer environmental standards to adopt stricter ones. BCAs - a trade measure that equalises the cost of unilateral environmental regulations between domestic production and imports from countries with laxer one - have been central to both the academic and policy debate for more than a decade.

Despite the attention BCAs received, their design details and features are still debatable. This paper contributes to this ongoing debate on BCA design and effectiveness in the presence of Public Pollution Abatement (PPA) activities which have been neglected by the relevant literature. PPA activities are a significant part of the environmental policy of many Organization for Economic Co-operation and Development (OECD) countries with 40%–60% of total pollution and abatement control expenditures financed by public revenues.

This paper sheds light on the unidentified effects of unilateral environmental and trade actions within an international trade framework with two large open economies, transboundary pollution, and Public Pollution Abatement (PPA) activities. When private and public abatement coexists in the exporting country, stricter environmental policy by the importing one magnifies the carbon leakage effect. Pareto efficiency dictates that Border Carbon Adjustment (BCA) should account not only for the

difference in carbon taxes between the two countries but also for the policy's unintended consequences on PPA.

More importantly, this paper analyses the effectiveness of BCA as an incentive mechanism for countries with laxer environmental standards to adopt stricter ones. To do so, we explore how once BCAs are in place their conditional reduction can work as a carrot policy for the exporting country answering the question; Are BCAs here to stay?

We argue that a conditional reduction of BCA subject to stricter carbon tax by the exporting country in such a way so as to provide neutrality in exporting country's producer price, decreases global pollution and increases countries' welfare. The suggested reform strategy unambiguously increases the exporting country's welfare through the improvement of its competitiveness in international markets and the reduction of pollution.

Finally, we conclude our analysis by discussing the role of BCA when Foreign regulates pollution through cap-and-trade instead of carbon taxes. It is argued that when revenues from intra-nationally tradable carbon permits are earmarked for PPA activities, BCA still plays a role, accounting for its consequences on PPA activities. This contradicts the results of the relevant literature which supports that BCA serves no purpose other than rent shifting when Foreign uses cap-and-trade policy to control pollution.

Keywords: Transboundary Pollution, Carbon Leakage, Border Carbon Adjustment, Environmental Taxation, Public Pollution Abatement

JEL Codes: F18, H21, H23, Q56

Information aggregation by council

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Abstract

Collective decisions are challenging for a number of reasons. When diverging preferences need to be aggregated, then, as we know since Arrow, no preference aggregation mechanism exists that solves the collective choice problem in a satisfactory manner in general settings. When the agents agree in principle, but their imperfect information needs to be aggregated, then different aggregation mechanisms may be optimal in different environments.

In this paper we consider a society of truth-seeking, yet, imperfectly and privately informed individuals who face a binary collective issue, and compare the informational efficiency of a council (i.e. a small representative body able to deliberate before deciding) to that of an electorate (i.e. a large non-deliberative body deciding by majority). These two versions of democracy –representative and direct– have dominated real-world political institutions, and also the interest of scholars studying comparative politics. However, a head-to-head comparison of their welfare effects in a standard Condorcet-jury context is not yet available.

This is precisely the task that we undertake in this paper. We consider a sequence of societies of instrumental voters and we characterize the limit equilibrium outcomes (i.e. for large societies) under both of these collective choice institutions. We consider that as the society grows, both the electorate and the council grow, but in a disproportional manner. In specific, we consider that the electorate increases linearly with the size of the society, while the council increases in absolute size as the population grows, but becomes vanishingly small as a fraction of the society (e.g. it increases proportionally to the cube root of the population, as national parliaments have been found to scale).

An electorate possesses more pieces of information but less elegant tools to aggregate them, while a council possesses less information but can process it more efficiently via deliberation. In line with the literature, we model individual information regarding the state of the world (and, hence, regarding the welfare consequences of each alternative) as an i.i.d. draw of a signal from a state-dependent distribution, but we moreover permit aggregate uncertainty regarding the signal generating process. That is, we allow individuals to be imperfectly informed about the state-dependent distribution from which their signal is drawn.

When there is substantial uncertainty about the signal generating process, then the council is found to perform better than the electorate, while otherwise the electorate dominates. Importantly, we show that when an electorate aggregates information better than a council, it does so only slightly; while when a council aggregates information better than an electorate, the difference can be prodigious. These results, apart from their normative appeal, also admit a positive interpterion: they provide a novel rationale as to why most collective entities employ representative democracy institutions, delegating decisions to small deliberative bodies rather than large electorates.

Keywords: Information aggregation, strategic voting, council, electorate, deliberation, direct/representative democracy

JEL Codes: D72

Competition in Taxes and IPR

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Abstract

We examine competition for foreign direct investment when governments compete in tax incentives along with intellectual property rights (IPRs) protection. Higher IPRs result in a lower probability of the multinational enterprise (MNE) being imitated and thus higher expected profits and tax revenues, all else equal. We derive the Nash equilibrium strategies of two competing jurisdictions under different scenarios. Henceforth, the location outcome of the MNE in equilibrium is determined.

Our paper contributes to the literature threefold. Firstly, we are the first to examine the interplay between IPRs and taxes used to attract MNEs within a game theoretic framework. Our model is sufficiently flexible such that it is not simply a comparison of the two policy instruments but rather it allows for differences in the mapping between expenditures and the probability of imitation. Secondly, akin to a first-price-sealed-bid auction we determine the MNE's locational choice in equilibrium when taxes and IPRs are considered jointly. Finally, we find that the MNE hence the source country is generally better off under the competition regime than under joint policy formation. Interestingly, the IPR levels are shown to be higher under the competition regime than under the joint policy formation. We also discuss some relevant policy implications of this result.

In equilibrium, our model suggests that, relative to joint policy formation, unbridled competition has multiple potential sources of inefficiency from the perspective of the central government. Among these is that since a local policy maker does not account for the impact of prices on other jurisdictions, that they will tend to set IPRs higher than a coordinated policy would dictate. In addition, as is standard, taxes will be

competed downwards in order to attract the MNE to a given location. Thus, a MNE earns less under joint policy formation than it does when both jurisdictions compete independently to be the host. In addition, it shows an additional conflict between the interests of developing and developed countries when it comes to IPR enforcement, harkening to the debate over the TRIPS provision of the WTO. With the emergence of the novel coronavirus in 2020 bringing issues of FDI and MNE's intellectual properties in the medical sector to the forefront of international discussions – alongside concerns regarding the taxation (or lack thereof) of FDI – we hope that our results provide useful insights for current debates.

Keywords: IPRs competition, Tax competition, MNE, Policy coordination

JEL Codes: H77; H25; F23

Session 18

Education

Forecasting Blockchain Skills Demand and Supply

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Abstract

Popularity of blockchain technology has increased over the last decade. This is due to growing interest in faster, more transparent, and decentralised transfer of information. Although organisations from a wide range of industries and different areas of operations are using blockchain technology it requires a unique set of skills to implement such technology in any institutional setting. The key objective of this study is the development of a forecasting model for the supply and demand of blockchain skills in order to examine the impact of this emerging technology on the labour force across Europe over the next five years. We have collected a sufficient volume of blockchain labour market data to perform the time series analysis and forecast the evolution of blockchain skill demand and supply.

In order to forecast blockchain skills demand, we map over 6,500 blockchain related job adverts in 2021 to ISCO categories that are most likely to contain blockchain employment. We build on CEDEFOP's employment and occupational forecasts across Europe and incorporate EU-LFS occupational data to estimate changes in blockchain related occupations from 2021 to 2026. In order to forecast blockchain skills supply, we utilise information on the number of graduates from blockchain related and blockchain specific courses across Europe. The data for skills supply comes from national educational authorities and Eurostat. We apply linear trends to graduate data from 2015 to 2019 to forecast blockchain skills supply from 2020 to 2026.

We find that on average approximately 85% of blockchain related jobs in Europe are represented by the following five ISCO categories: software developers, database and network professionals, ICT Service managers, business services administration managers, and legal professionals. The remaining 15% of blockchain related are in

'Other' ISCO categories. Our forecasting results indicate that approximately 25,000 new blockchain jobs in Europe will be created from 2021 to 2026 of which 12,000 are estimated to be entry level or graduate jobs. We also find that approximately 14,000 new blockchain graduates in Europe will be available from 2020 to 2026. The results suggest that the number of blockchain graduates when compared to the demand for blockchain work at the graduate level in total across Europe are roughly in line. However, the findings vary distinctively at a country level, and it is likely that more specific training courses, focusing on key skill development areas that are relevant for blockchain labour demand are still required over the coming years.

This paper is the first to map blockchain related jobs to occupational categories in Europe, providing evidence on the occupations that blockchain workers are most likely to be employed in. Our findings from the blockchain skills forecasts also estimate the supply of blockchain workers over time to satisfy the demands by the sector. This paper provides detailed information, at a country level for Europe, to assist in the anticipation of future blockchain skill demand and supply, in order to act as an early warning information mechanism to mitigate possible labour market imbalances, and support education, training and labour market actors in making evidence-based decisions.

Keywords: Blockchain Skills; Distributed Ledger Technology (DLT); Forecasting; Labour Demand, Labour Supply, Skill Development; Higher Education; Government Policy

JEL Codes: E27; J23; J24; I25; I28; O38

Blockchain Skills in Europe: Trends and Drivers

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Economic and Social Research Institute (ESRI) and Trinity College, Dublin (TCD)

Abstract

Digitalisation, algorithmic management and AI are transforming business models, work practices and occupations, with consequences for skills demands (Eurofound, 2018; Ojanperä et al. 2018). Blockchain is a key technological trend in the ICT sector. Fifty per cent of businesses in the EU, regardless of size and field, see blockchain as a top priority for growth (Deloitte, 2019). Furthermore, there is a significant increase in blockchain start-ups (annual growth rate of 40%) and blockchain spending in the EU is forecasted to rise from €720m in 2019 to €4.5bn in 2023 (IDC, 2019). LinkedIn ranks Blockchain as the top tech skill sought after by EU companies in 2020 and the Glassdoor reported a 300 per cent growth in blockchain job postings in 2019. The fast pace of development is pushing up the demand for blockchain relevant skills.

This paper examines the development of blockchain skill demand and supply in Europe to examine the key determinants of blockchain skill demand. This paper uses data scraping of online job vacancy (OJV) data to analyse the OJV data on key terms related to blockchain skills. This provides a set of key competencies and skills (keywords) that characterise blockchain occupations and jobs. Subsequently, blockchain skill demand is modelled as a function of the macro-environment and sector-specific variables. This task relies on the identification of a reliable time-series for blockchain demand and relevant explanatory variables over the same time period across multiple regions. We have extended our analysis from the scraped job advertisement data by using the occupational categories identified to construct the relevant panel dataset using the EU-LFS at a disaggregated country level.

Our modelling framework uses the number of people in occupations (3-digit ISCO level) identified as blockchain-relevant occupations as our dependent variable in a GMM estimation framework. We use occupations identified previously to model this

as a function of supply and demand variables e.g. education, unemployment rate, participation rate, etc. In addition, this research is further enhanced by the inclusion of semi-structured interviews with field experts, stakeholders and decision makers (sectoral and national level) to examine the developments in blockchain skill demand and supply across Europe.

Due mainly to data constraints there has been relatively little assessment of blockchain skill demand from an aggregate country level perspective. By examining and comparing the determinants of blockchain skills at a comparative, cross-country level, we greatly improve our understanding of the macroeconomic, demographic and institutional forces that drive it.

Keywords: Blockchain Skills; Distributed Ledger Technology (DLT); Labour Demand, Labour Supply, Skill Development; Higher Education; Government Policy

JEL Codes: C23; I28; O38

Financial Literacy and Attitudes to Cryptocurrencies

Georgios A. Panos, Tatja Karkkainen, Adele Atkinson

Adam Smith Business School, University of Glasgow

Abstract

This study sheds light on the demand for cryptocurrencies by examining the determinants of attitudes to cryptocurrencies using data from a new consumer survey covering 15 countries. We attempt to identify the characteristics of cryptocurrency users and prospective users, focusing particularly on their financial literacy in terms of their understanding of fundamental financial concepts. Our main empirical question is whether the more financially literate are more likely to engage in the market for cryptocurrencies, in terms of owning and/or intending to own cryptocurrencies. We are also interested in the moderators underlying any such relationship, i.e., if any effect of financial literacy can be explained by digital literacy, age, inclination to informal practices, financial advice, or the enhanced understanding of the financial risk involved in cryptocurrencies. Our study utilizes data from the ING 2018 International Survey on Mobile Banking. The online survey questioned a representative sample of the general population aged 15+ in each of the 15 participant countries. Countries include the USA, Australia, the United Kingdom, several members of the European Union, along with countries in Eastern Europe and Central Asia. Our empirical approach matches the data from this survey with data from the S&P 2014 Global Financial Literacy Survey, based on country, gender, age and income groups. We also examine the external validity of our findings using data from the OECD 2019 Consumer Insights Survey on Cryptoassets of retail investors in Malaysia, the Philippines, and Vietnam.

Our estimates reveal that individuals who are more financially literate are less likely to own cryptocurrencies and more likely not to intend to own them in the future. As expected, they are more likely to have heard of cryptocurrencies before. The results are economically and statistically significant. An increase in the financial literacy score of one standard deviation (0.1470) from the average of 0.5133 decreases

the predicted probability of cryptocurrency ownership by 39.6%, i.e. by 3.71 percentage points − from 9.41% to 5.7%. The same increase in the financial literacy score increases the probability of having no intention of holding cryptocurrencies in the future by 22.7% and it decreases the probability of claiming to never have heard of cryptocurrencies by 18.8%. The results are robust in models with interaction terms between financial literacy and country, as well as models with interaction terms between financial literacy, education, and income. The results are also robust in models using bootstrapping, unweighted models, and models using alternative financial literacy proxies which standardize any country-level differences in financial literacy. In addition, they are robust to the use of a multinomial probit model with selection, in which awareness of cryptocurrencies is the dependent variable in the first stage. Finally, they are robust to an instrumental variable model that caters to concerns regarding omitted variable bias. The perception of the relative risk of cryptocurrencies and alternative assets is shown to be the key moderator explaining the established relationship between financial literacy and attitudes to cryptocurrencies.

Keywords: Financial Literacy; Cryptocurrencies; Attitudes; Bitcoin; Financial Risk

JEL Codes: B26; D18; E41; G11; G53

Special Session I

Historical Perspectives on Industrial, Economic and Financial Development

Co-organised by the RHI-IHR

Mediterranean capitalism and the euro, 1999-2019: the long march to debt, depression and divergence

Jordi Catalan

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Abstract

The origins of the Great Recession fit very well with the hypothesis of financial instability of capitalism anticipated by authors such as Keynes, Minsky or Kindleberger. However, the contraction turned into a long-lasting depression in the economies of Mediterranean capitalism which adopted the euro. Historical comparative analysis suggests that, in fact, European monetary unification constituted the main cause for the significant intensity and duration of the slump in the latter economies because it encouraged their over-indebtedness before 2007 and blocked national demand-management afterward.

The Byzantine Monastery as a Commons

Paschalis Arvanitidis[1], Charalampos Sofiadis[2]

Laboratory of Economic Policy and Strategic Planning, Department of Economics, University of Thessaly, Greece

Abstract

Over the last couple of decades scholars from various scientific disciplines have started to pay due attention to the issue of commons, defined as structures of collective governance that communities develop in an effort to self-manage their common goods. However, the vast majority of these studies place emphasis on modern commons, disregarding the fact that such collective governance structures did exist in the past enabling people to successfully conserve their common resources in a self-regulating and self-sustained way. Although few of these historical commons are still in force, their study is of great value since it enables to identify the challenges they encountered and the solutions that were devised.

One such a historical commons, still in operation, is the monastic institution that evolved within the spatial boundaries of the Eastern Roman Empire (Byzantium), the study of which is the subject of the current work. Drawing on historical sources and recent perspectives, the paper uses (a) historical-institutional analysis, to outline the structure of the institution, and (b) Ostrom's 8 design principles, to assess its efficiency as a commons. It is concluded that the Byzantine monastery was a successful case of a particular historical commons, the community of which, imbued with a robust framework of Christian values, had developed a high level of social capital and credible governance structures, all of which contributed to the sustainable management of the common goods and resources. Despite the lack of direct democratic processes (something which characterizes the modern commons), the monastic common has been able not only to successfully self-manage its resources but also to establish itself as an important economic, social, cultural and spiritual institution. The reliable, robust, and yet, flexible institutional framework that it had

developed, allowed it to adapt to the upcoming changes and guaranteed its survival until today.

Keywords: Commons; Institutions; Byzantine monasteries; Historical Institutional Analysis; Design principles

JEL Codes: B52, Z12, D71, P48, O35, N33, N53

From Sickle to Hammer: Frictions' Role in the Industrialization of Russia

Guillem Blasco i Piles, Federico Tadei

University of Barcelona

Abstract

This paper studies the structural transformation of Russia in 1885-1940 from an agrarian to an industrial economy. Historians have claimed that market frictions or wedges -i.e., deviations from perfect competition in production, consumption, and the labor markets- were the most critical obstacles to Russian economic development at the turn of the 19th century (Crisp 1978; Davies 1994). Indeed, it has been shown that the reduction in such frictions (in particular in the production processes) accounted for most of the structural change that occurred during Stalin's period and significantly contributed to GDP per capita growth (Cheremukhin et al., 2017). Yet, less is known about the reasons behind this reduction. In this paper, we aim to fill this gap by identifying the different factors that had the most significant impact on the reduction of frictions in the productive process. We evaluate the trend in production frictions by using a wedge accounting methodology and reconstruct time-series for several economic and political indicators (investments, inflation, education, trade, population, etc.) for Tsarist Russia and the Soviet Union during 1885-1940. We find that frictions were high during the Tsarist period, deterring industrialization, and that War Communism exacerbated market distortions. The subsequent reduction in production frictions can be explained by investment growth and the policies carried out during the First Five-Year Plan, particularly the soft budget constraints for the state-owned enterprises, easy credit from the *Gosbank*, and high production objectives.

Pupils today, astronauts tomorrow? The impact of Italy's 1962 school Reform on human capital accumulation

Gabriele Cappelli, Leonardo Ridolfi, Michelangelo Vasta

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Abstract

This paper investigates a major Reform that prompted the new construction and opening of middle schools (students aged 11-14) across Italy's municipalities in 1962. Drawing on untapped historical sources, we construct a new municipal-level dataset on school infrastructure (opening of additional schools) and adult attainment rates (15+) plus a wide range of social, political, demographic and economic aspects. We compare attainment rates in municipalities that opened a middle school following the Reform with those that did not, based on a difference-in-differences (DiD) model. Since the selection into treatment was not completely exogenous, we augment the DiD model by using Propensity Score Matching (PSM). We find that the opening of new middle schools led to a positive premium equal to one percentage point on attainment rates in the span of a decade. Our results hold when testing for spillover effects and the influence of other confounding factors like migration.

Gender (in)equality, maritime economies, and numeracy development in the regions of Ottoman Anatolia (Turkey) and Greece during the 19th and 20th century

Kleoniki Alexopoulou[1], Joerg Baten[2]

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[2]*University of Tuebingen, CEPR and CESifo, Germany*

Abstract

We study the history of human capital in the regions of Ottoman Anatolia (today's Turkey) and Greece during the 19th and 20th century. We investigate numeracy skills of the population from a comparative perspective both at the national and regional level. The history of border areas and multi-cultural regions, where many ethnicities and religions co-existed, is particularly fascinating. Furthermore, we test the effect of gender equality, geographic, demographic and socio-economic factors such as agricultural specialisation (i.e. cash crops, livestock keeping), trade and industry development as well as urbanization and migration on numeracy. We find that in both Turkey and Greece the gender gap is highly correlated with numeracy. In Greece, the gender gap effect fades out around 1910, while in Turkey it does not disappear until the birth decade of the 1950s. For a subsample, we can find evidence of a causal relation between gender gaps und human capital using an instrumental variable approach. Moreover, maritime orientation of the island economies was highly complementary with early numerical human capital and increasing gender equality.

Keywords: numeracy, gender equality, Turkey, Greece, 19th and 20th century

The Socioeconomic Implications of the Greek-Turkish Population Exchange for Native Greek Women

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[2]*European Training Foundation*

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Abstract

We exploit a major historical event for Greek history, i.e., the 1923 population exchange between Greece and Turkey, to explore how the interplay of native and refugee population affected native literacy, employment and divorce rates shortly after the refugee inflow as well as modern day norms towards women in Greece. On the 30th of January 1923, a bilateral agreement was signed between Greece and Turkey for the exchange of approximately 1.5 million Greeks already displaced from Turkey and 500,000 Muslims living in Greece. Despite the fact that it was the first such international agreement to be signed, it was nevertheless a forced displacement practice that involved millions of people and imposed enormous social and economic costs for the then Greek government. Collecting a very rich dataset from various historical and archival sources, we compile a dataset for 141 provinces (the totality of provinces at the time period under examination) for which we have data for two periods, i.e., 1920 and 1928. Our data includes rich information on literacy rates, employment rates and divorce rates at a very disaggregated level, i.e., by gender, by status (refugee or native), by age groups (for literacy), by sector (for employment) at the province level (as well as at the municipality level). We also have data on various other economic and social aspects of Greece at the time, which allows us to account for potentially confounding factors. Besides the unique historical dataset, we also exploit this "natural experiment" to implement a differences-in-differences approach. Using as a treatment the difference in the fraction of refugee population in a province

before and after the exchange, we explore how this massive inflow has affected literacy, employment as well as divorce rates in the short-run. Our findings suggest that in the short-run, while the presence of the refugee population has led to an increase in the literacy of both men and women, men experienced stronger effects. Similarly, for employment the native male population shifted from agriculture to industry, transportation, stock farming and trade sectors whereas no effect is detected for the female population. As for divorce rates, they increased comparatively more for women compared to men. Interestingly, considering the norms of the era, which were overly conservative for women, those effects were non-trivia and gave rise to new dynamics. Hypothesizing about the potential mechanisms that could explain this reduced form effect we come up with various potential explanations. These are an increase in growth rates of Greece driven by the presence of skilled and cheap labour force, competition between natives and refugees, positive externalities of the presence of the refugee population on natives and increased government spending to accommodate the huge refugee inflow to mention only a few.

Keywords: Forced displacement - Human capital - Employment- Regional analysis – Diff-in-Diff

JEL Codes: C24, I20, N34, N44, N64, N74, N94

Special Session II

The pandemic of Covid-19 and the socio-economic aspects of aging

in collaboration with Hellenic Open University

Social Capital, Fear and Mental Health in Individuals who isolated from two lock downs during the COVID-19 epidemic in Greece.

Stergiopoulou Eleftheria

Hellenic Open University, Greece

Abstract

The COVID-19 pandemic is the only one that has manifested itself in recent history in terms of its geographical scope and its impact on everyday life. All people are called to differentiate their habits. The effect of this change depends mainly on the family, the social environment and the financial situation of the individual. This study aimed to investigate the effects of social capital on mental health of people who isolated from two lock downs during the COVID-19 epidemic in Greece.

By analyzing data from the survey, I conducted in late December 2020 through a field survey using an anonymous questionnaire of 38 closed-ended questions, on 645 Greek citizens via the internet and social media. Social capital was assessed using the Personal Social Capital Scale Questionnaire 10 (PSCS-10), Mental health was assessed using the Life Orientation Test (LOR), and fear was assessed using the Covid-19 FCV-19S fear scale. Statistical analysis was performed using Kendall's correlation coefficient and ANOVA Multiple Regression to evaluate the fear of the pandemic and its effects on mental health in relation to social capital in Greece.

Results suggest that increased levels of social capital were positively associated with increased quality of mental health, but low levels of social capital were associated with increased levels of anxiety and fear. Through the results of the research, we observe how social capital can play an important role in the prevention of mental health in times of crisis.

During a period of individual isolation during the COVID-19 virus epidemic in Greece, the increase of social capital can improve mental health quality by reducing anxiety and fear.

Keywords: Covid-19, fear, pandemic, Social Capital, Mental disorders

JEL Codes: I10, I12, J14

The impact of frailty on aging-the Greek case

Chounti Maria

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Abstract

Purpose: Aging is a social, economic and epidemiological phenomenon that has various economic implications when health issues come abroad and create total imbalance. Frailty is a complex geriatric syndrome arising from a combination of genetic and environmental factors. It is categorized as a high-risk indicator followed by its long-term symptoms which affect elderly multidimensionally. It has great impact on the "successful aging" of elderly and their life survival overall. It has been associated with adverse health outcomes and high mortality.

Methodology: Questionnaires concerning Greek elderly will be collected in order to investigate frailty among the population. Multiple factors will be studied which are connected with the elderly's behavioral status, social, economic and health life.

Findings: There will be studied the level of fragility and its impact on the health level of the population. Also will be studied the factors which are responsible for this phenomenon and which of them cause greater or less impact.

Keywords: frailty, successful aging, geriatric syndrome, aging

JEL Codes: I10 & I12

Technological inequity and social exclusion of older people during the pandemic of Covid-19

Anna Tsetoura

Hellenic Open University, Greece

Abstract

Older people are usually coming face to face with social exclusion in their everyday lives. This is a phenomenon known way before the recent pandemic. However, taking into account that older people confront "technological disadvantage" and at the same time technology is the dominant factor more than ever in view of the covid crisis, social exclusion of older people has been deteriorated. The digital transformation of the contemporary societies could already have been considered by older people as a stumbling block. In particular though during the pandemic of Covid-19, the emphasis was given on the technological means which replaced the opportunities for physical socialization but as well as many health services. The purpose of this paper is to illustrate the phenomenon of social exclusion of older people linked to their vulnerability and the "covid circumstances" shaped by the various measures imposed by the different countries in order to limit physical contact leading to a technological inequity. Methodologically, this is a descriptive qualitative research based on data from international literature. The main research question is: "How the lack of technological skills of the elderly is interrelated with their social exclusion during covid-19?" The findings emphasize on the isolation of the elderly and the non-use or insufficient use of health services as well as long-term care services by them. Further implications relate to socio-economic costs arising from the inefficient treatment of their needs regarding their physical and mental vulnerability and yet their "technological vulnerability".

Keywords: technological skills, elderly, vulnerability, covid-19, isolation, health services, long-term care

The effect of covid-19 on self-perceived health status of citizens. The case of Greece

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Abstract

INTRODUCTION

The covid-19 pandemic started in 2019 when the first case of coronavirus disease was reported in Wuhan in the Hubei province of China on December 12. The pandemic spread rapidly throughout most of the world. On April30, 2021, 150,110,310 people have been infected with 3,158,792 deaths worldwide. It increased morbidly and mortality and affected people and economies at every level. Pandemics lead to social disruption and economic downturns both regionally and globally. National incomes decreased and governments implemented lockdowns which caused the interruption of economic activity. More and more people were faced with uncertainty and anxiety. At the same time the effect on the pandemic on the health care systems and on the lives of human beings were enormous.

Covid-19 took a heavy toll on older adults. Older adults were considered a group at risk for many reasons. Besides age, medical problems, long-term of drug use, nutrition and living conditions increased the probability of older people to be infected by covid-19. Data indicate that the most of deaths concerned older people. Thus, the chronic medical problems such as diabetes and neuromuscular disorders and the long – term use of medication make older people more vulnerable to infections (Tummala et al, 2010). Yamaroto et al. (1990) reported that severe underlying disease and poor general condition were associated with poor clinical recovery in older patients with hospital-acquired pneumonia.

The governments around the world implemented the social distancing and isolation as the necessary measures to save the lives and protect the vulnerable people, such as

older people. These measures lead to significant limitations of daily activities and limited the access to health workers on whom the older people are reliant. Furthermore, social activities of older people were interrupted due to the measures of keeping social distancing. The social isolation in older people could cause depression and other psychological problems. Lekamwasam and Lekamwasam (2020) report that older people should not be marginalized or made to feel marginalized regarding health and other social requirements. Pue et al (2021) using an online survey studied the impact of the covid-19 pandemic on wellbeing of older adults. They found that the participants in their survey reported a significant decrease in activity level, sleep quality and wellbeing during the covid-19 pandemic and the pandemic had a severe impact on the mental health of older adults.

The goal of our paper is twofold: a) to investigate the behavior of Greek people regarding their habits during the period of lockdown and the measures implemented by the government b) to analyze the determinant factors of the mental health of the participants during the period of lockdown.

RESEARCH METHODOLOGY

This study is based on a survey of 605 participants during the period after the first lockdown (End of February – end of May). 64% of the participants were people aged less than 40 years old and 36% of the participants aged more than 40 years old. The main research question is to explore the factors that affected the mental health of the participants during the period of the first and second lockdown and investigate the behavior of older people in comparison to the behavior of other age groups during the pandemic period. The questionnaire consisted of 19 categories of questions (total number of questions = 80 questions). The categories of questions referred to demographic characteristics of the participants, to their habits and their daily activities, to measures taken by the government and to the health status and the mental health of the participants. Correlations between age and other variables show the different behavior of older people in comparison to other age groups during the period of covid-19. Linear regression and binary logistic regression investigate the determinant factors of the health status of the participants.

CONCLUSIONS

The empirical results indicated that the mental health status of the people has been affected during the period of the lockdown. The restrictions imposed by the government negatively related the health status of the older people. It is also important to notice that older people showed a higher degree of compliance with pandemic measures.

Keywords: health status, covid-19, lockdown

JEL Codes: I10, I12, I18

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Conference Programme

University of Ioannina, Department of Economics

MEETING PROGRAMME

Wednesday 22/6

Time			
08.30-09.30	**Registration**		
09.30-09.45	**Welcome** ***N. Benos, Y. Goletsis***		
10.00-11.45	**S1-Macroeconomics I** *Main Hall* ***Chair: F. Canova***	**S2-Finance I** *Hall 1* ***Chair: S. Fountas***	**S3-Sustainability, Environment & Policy** *Hall 2* ***Chair: S. Tsani***
	Theodore Chatziapostolou *Fiscal Multipliers and The future of Fiscal Policy in EMU*	**Selim Mankaï, Sébastien Marchand, Ngoc Ha Le** *How Low is the Demand for Extreme Risks insurance?*	**Edward Bace** *Green Financing for Shipping*
	Kyriakos Emmanouilidis *Military Spending, Economic Output and Inflation: An Empirical Investigation for Greece*	**Spyridon D. Mourtas, Vasilios N. Katsikis** *Loan Approval Classification Using a Bio-inspired Neural Network*	**Tilemahos Efthimiadis, Panagiotis Tsintzos** *Promoting green infrastructure investments through a debt service standstill*
	Xiaoshan Chen, Spyros Lazarakis, Petros Varthalitis *A two country HANK model of Eurozone*	**Vasilios N. Katsikis, Spyridon D. Mourtas** *Zeroing Neural Networks for the Mean-Variance Portfolio Selection Framework*	**George Marian Aevoae, Alin Marius Andries, Steven Ongena, Nicu Sprincean** *ESG and Systemic Risk*
	Narongchai Yaisawang, Laura Marsiliani, Thomas I Renström *Sovereign Default with Unobservable Physical Capital*	**Apostolos Dasilas** *The impact of ESOPs on firm Performance: Evidence from China*	**Stella Tsani, Wee Chian Koh** *Policy responses to the Covid-19 pandemic: Understanding the role of natural resources and Sovereign Wealth Funds*
	Fabio Canova, Evi Pappa *Costly disasters and the role of fiscal policy*	**Stilianos Fountas, Dimitra Kontana, Paraskevi Tzika** *Financial asset return, volatility, and uncertainty spillovers in industrial and emerging economies*	
11.45-12.15	**Coffee Break**		
12.15 - 13.15	**Keynote Speech I: Steven Ongena** *Banks and Climate Risk* *Main Hall* ***Chair : M. D. Delis***		
13.15-14.15	**Lunch**		
14.15-16.00	**S4-Economic Growth** *Main Hall* ***Chair: D. Varvarigos***	**S5-Applied Economics** *Hall 1* ***Chair: K. Szomolányi***	**S6-Behavior & Experiments** *Hall 2* ***Chair: T. Bassetti***
	Theodora Sotiropoulou, Stefanos Giakoumatos, Antonios Georgopoulos *The impact of financial development and income inequality on economic growth using dynamic panel data*	**Ioannis A. Venetis, Avgoustinos Ladas** *Co-movement in international zero coupon government bond yields*	**Ioannis Papaiakovou** *Subjective well-being: The importance of participating and attending local sport events*
	Eleni Greenwood *The effect of Gender Wage Gap on Economic Growth in Europe*	**Plutarchos Sakellaris, Dimitris Zaverdas** *Production function estimation controlling for endogenous productivity disruptions*	**Kyriakos Drivas, Christos Kolympiris, Matthew Helsby** *The Effect of Ordering on Scientific Search*
	Alexandra Livada, Andreas Papastamou, P. Boulieris *Trends, Cycles and Prospects of Income Inequality in Western Balkans*	**Karol Szomolányi, Martin Lukáčik, Adriana Lukáčiková** *Asymmetric Reactions of Retail Fuel Prices on Changes in Crude Oil Prices in U.S. Regional*	**Theodore Alysandartos, Aris Boukouras, Sotiris Georganas, Zacharias Maniadis** *The Expert and the Charlatan: An Experimental Study in Economic Advice*
	Evangelos Dioikitopoulos, Dimitrios Varvarigos *Economic Materialism, Cultural Change, and the Transition towards Sustained Growth*		**Dimitrios Panagiotou** *Directional predictability between returns and trading volume in the futures markets of energy: insights into traders' behavior*
			Thomas Bassetti, Stefano Bonini, Fausto Pacicco, Filippo Pavesi *Definitivity Avoidance*

Thursday 23/6

Time	Main Hall	Hall 1	Hall 2
09.30-10.30	**Keynote Speech II: Paul Heidhues** *Behavioral Industrial Organization* *Main Hall* ***Chair: F. Antoniou***		
10.30-12.15	**S7 - Environment** *Main Hall* ***Chair: P. Hatzipanayotou***	**S8- Socioeconomics** *Hall 1* ***Chair: N. C. Kanellopoulos***	**S9- Political Economy** *Hall 2* ***Chair : P. Kammas***
	Xiaoxiao Ma, Laura Marsiliani, Thomas I Renström *Second Best Optimal Fuel and Vehicle Taxes in the Presence of Pollution and Congestion*	**Eirini Andriopoulou, Alexandros Karakitsios** *Unemployment transitions and the role of minimum wage: from pre-crisis to crisis and recovery*	**Pantelis Kammas, Argyris Sakalis, Vassilis Sarantides** *Land distribution and economic development in a pre-industrial economy: Evidence from Greece, 1881-1907*
	Michael S. Michael, Panos Hatzipanayotou, Nikos Tsakiris *Strategic Taxation and Consumption Emission Leakage*	**Dimitrios Minos, Evgenia Passari** *Remittances and Gender Inequality*	**Antonis Adam, Evi Tsavou** *Assessing the effect of international terrorism on civil liberties using a potential outcomes*
	Fabio Antoniou, Manthos D. Delis, Steven Ongena, Chris Tsoumas *Pollution permits and financing costs*	**Evangelos Dioikitopoulos, Dimitrios Varvarigos** *Delay in Childbearing and the Evolution of Fertility Rates*	**Costas Hadjiyiannis, Doruk İriş, Chrysostomos Tabakis, Gi Khan Ten** *Are Nationalist Countries More Protectionist?*
	Manuel Frondel *Carbon Pricing in Germany's Road Transport and Housing Sector: Options for Reimbursing Carbon Revenues*	**Ioannis Cholezas, Nikolaos C. Kanellopoulos** *Stigma effects of unemployment persistence in the Greek labour market*	**Pantelis Kammas, Vassilis Sarantides** *Democratisation and tax farming in an agrarian economy*
	Nikos Tsakiris, Panos Hatzipanayotou, Michael S.Michael *Tradable Emission Permits and Strategic Capital Taxation*		
12.15-12.45	**Coffee Break**		
12.45-14.30	**S10-Macroeconomics II** *Main Hall* ***Chair: K. C. Neanidis***	**S11-Banking** *Hall 1* ***Chair: I. Tampakoudis***	**S12-Human Capital** *Hall 2* ***Chair : D. Koursaros***
	Charoula Pariarou *The role of time preference on government spending cyclicality*	**Ioannis Lolis** *Reasons for the delay of cooperative banks in Greece*	**Ruzica Savcic, Nikolaos Theodoropoulos, Dimitrios Xefteris** *Conscription and Educational Outcomes: Evidence from the Republic of Cyprus*
	Benchora Inessa, Lucotte Yannick, Louis Raffestin *Accommodative monetary policy and the pricing of climate change*	**Pauline Avril, Grégory Levieuge, Camélia Turcu** *Natural Disasters and the Banking System in China*	**Christos Genakos, Eleni Kyrkopoulou** *Social policy gone bad educationally: Unintended peer effects from transferred students*
	Paraskevi K. Salamaliki, Ioannis A. Venetis *Fiscal space and policy response to financial crises: Market access and deficit concerns*	**Papadamou Stephanos, Pitsilkas Konstantinos** *The long-run relationship between Economic Policy Uncertainty Components and NPLs: The case of Greece.*	**Malescou Christina, Kolias Georgios, Triarchi Eirini, Karamanis Kostas** *The economic crisis and its impact on the healthcare sector in Greece*
	Nadia Benbouzid, Abhishek Kumar, Sushanta Mallick, Ricardo M. Sousa, Aleksandar Stojanovic	**Sonny Biswas, Kostas Koufopoulos, Songshan Li** *The role of asset transparency in bank deleveraging*	**Manthos D. Delis, Yota D. Deli, José-Luis Peydró, Adele Whelan** *Education and Credit: A Matthew Effect*
	Kyriakos C. Neanidis, Christos S. Savva *The Currency Composition Channel of Monetary Policy and the Role of Macroprudential Regulation*	**Ioannis Tampakoudis, Demetres Soubeniotis, Michail Nerantzidis, Nikolaos Kiosses** *Do large banks with large boards create value in the market for corporate control? The US banking sector in perspective*	**Andri Chasamboulli , Demetris Koursaros** *Career and Non-Career Jobs: Dangling the Carrot*
14.30-15.30	**Lunch**		
15.30-17.15	**S13-Finance II** *Main Hall* ***Chair : G. A. Panos***	**S14-Institutions** *Hall 1* ***Chair : Y. Goletsis***	**S15-Taxation** *Hall 2* ***Chair : C. Kotsogiannis***
	Despoina Argyropoulou, Konstantinos Gkillas, Christoforos Konstantatos, Athanasios Tsagkanos	**Yorgos Goletsis, Konstantina Christogeorgou, Nikolaos Mylonidis** *Exploring the effect of institutional framework on Entrepreneurial Ecosystems (EE): A meta-*	**Yota D. Deli, Fotis Delis, Theano Kakoulidou** *Income Tax Structure: A Comparison across Tax Systems*
	Viktoria Vidahazy *The Effects of Climate Change on the Financial Market*	**Konstantinos Kontos, Michael Chletsos** *Political institutions and economic inequality: A labor and structuralist economics approach*	**Kristjana Jace, Evangelos P. Koumanakos, Aggeliki Skoura** *Seasonality and tax avoidance: empirical evidence from Greece*
	Dongni Duan, Georgios A. Panos *Growing up with Finance: Special Economic Zoning and Household Finances in China*	**Inglesi-Lotz, R.** *Quality of institutions as a factor to energy transition in South Africa: Econometric and System Dynamics modelling evidence*	**Alessandro Di Nola, Christos Kotsogiannis, Konstantinos Serfes** *Optimal VAT Threshold(s)*
	Shenglin Ben, Man Luo, Andreas Tsopanakis *Forecasting Real Economic Activity using the Financial Stress Index: Evidence from Developed and Developing Countries*		
	Seraina C. Anagnostopoulou, Lenos Trigeorgis, Andrianos E. Tsekrekos *Enhancement in Firms' Information Environment via Options Trading and the Efficiency of Corporate Investment*		

Dinner will follow at 20.30

Friday 24/6

09.30-11.15	**Special Session I: 'Historical Perspectives on Industrial, Economic and Financial** *in collaboration with RHI-IHR* *Main Hall* ***Chair : G. Cappelli***	**Special Session II: 'The pandemic of Covid-19 and the socio-economic aspects of aging'** *on with Hellenic Open University* *Hall 1* ***Chair: M. Chletsos***	**S16-Markets, Firms & Trade** *Hall 2* ***Chair : A. Savvides***
	Jordi Catalan *Mediterranean capitalism and the euro, 1999-2019: the long march to debt, depression and divergence*	**Eleftheria Stergiopoulou** *Social Capital, Fear and Mental Health in Individuals who isolated from two lock downs during the COVID-19 epidemic in Greece*	**Anastasia Leontiou, Nicholas Ziros** *"Tacit" bundling among rivals: Limited availability bargains to loss-averse consumers*
	Paschalis Arvanitidis, Charalampos Sofiadis *The Byzantine Monastery as a Commons*	**Maria Chounti** *The impact of frailty on aging-the Greek case*	**Raffaele Fiocco, Salvatore Piccolo, Giancarlo Spagnolo** *Collusion through debt and managers*
	Guillem Blasco i Piles, Federico Tadei *From Sickle to Hammer: Frictions' Role in the Industrialization of Russia*	**Anna Tsetoura** *Technological inequity and social exclusion of older people during the pandemic of Covid-19*	**Eirini Thomaidou, Sarantis Kalyvitis** *Quality, innovation, and credit constraints in exporting*
	Gabriele Cappelli, Leonardo Ridolfi, Michelangelo Vasta *Pupils today, astronauts tomorrow? The impact of Italy's 1962 school Reform on human capital accumulation*	**Michael Chletsos, Antonia Fragkoulopoulou** *The effect of covid-19 on self-perceived health status of citizens. The case of Greece*	**Snezana Eminidou, Andreas Savvides** *The Economic Effects of Trade Policy Uncertainty on Emerging Market Economies*
11.15-11.45	**Coffee Break**		
11.45-13.30	**Special Session I: 'Historical Perspectives on Industrial, Economic and Financial** *in collaboration with RHI-IHR* *Main Hall* ***Chair: N. Benos***	**S17-Economics** *Hall 1* ***Chair : K. Hynes***	**S18-Education** *Hall 2* ***Chair: G. A. Panos***
	Kleoniki Alexopoulou, Joerg Baten *Gender (in)equality, maritime economies, and numeracy development in the regions of Ottoman Anatolia (Turkey) and Greece during the 19th and 20th century*	**Nikos Tsakiris, Nikolaos Vlassis** *A Carbon Leakage Mitigation Reform Strategy: The Role of Border Carbon Adjustments*	**Adele Whelan, Klavs Ciprikis, Paul Redmond, Seamus McGuinness** *Forecasting Blockchain Skills Demand and Supply*
	Nektarios Aslanidis, Pilar Nogues-Marco *Near-money in history: Cryptocurrencies versus bills of exchange*	**Nikolas Tsakas, Dimitrios Xefteris** *Information aggregation by council*	**Adele Whelan, Klavs Ciprikis, Paul Redmond, Seamus McGuinness** *Blockchain Skills in Europe: Trends and Drivers*
	Nikolaos Benos *The Implications of Population Exchange between Greece and Turkey on Native Female Socio-economic Outcomes*	**Ronald B. Davies, Yutao Han, Kate Hynes, Yong Wang** *Competition in Taxes and IPR*	**Georgios A. Panos, Tatja Karkkainen, Adele Atkinson** *Financial Literacy and Attitudes to Cryptocurrencies*
13.30-14.30	**Farewell Lunch**		
Meeting end			