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28<sup>th</sup> RSEP International Conference on  
Economics, Finance & Business

# CONFERENCE PROCEEDINGS

*Book of Abstracts*

Editors

Prof. Dr. M. Veysel Kaya

Dr. Patrycja Chodnicka - Jaworska

ISBN: 978-605-73146-4-2/December 2022

University of Washington Rome Center

November 24-25, 2022

Rome, ITALY

## 28<sup>th</sup> RSEP International Conference on Economics, Finance & Business

ISBN: 978-605-73146-4-2/ 3 December 2022

BC GRUP INC

Editors

M. Veysel Kaya

Patrycja Chodnicka - Jaworska

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Publisher: BC GRUP INC

Certificate No: 6641

Address: Mustafa Kemal Mah. 2134. Sokak Dereli Apt. No:15/2  
Cankaya/Ankara/Turkey

Publication Date: 3.12.2022

ISBN: 978-605-73146-4-2

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*“Special thanks to keynote speakers”*

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## Does the Movement in Total Market Risk Justify Unchanged and Sticky Cost of Capital Rates? A Financial-Statistical Analysis Using DAX-30 Data

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### Abstract

Despite low interest rates, DAX-30 companies in Germany continue to set high WACC. In the period from 2004 to 2020, the risk-free interest rate computed by the yield of a long-term government bond consequently declined from 4.1% in 2004 to -0.19% in 2020. This paper aims to evaluate the total market risk extent as explanatory variable for an implicitly increased risk exposure. Therefore, we use the logarithmic volatility of daily stock returns of the DAX-30 price index and extract WACC rates from annual reports. Additionally, total market risk developments are exposed to the observable practically invariable cost of capital. We provide evidence, based on two hypotheses using financial-statistical methods. Based on the results of these methods, this paper indicates that there is no across-the-board increase in the overall market risk extent expressed by volatility for log daily DAX-30 return data.

**Keywords:** cost of capital, market risks, financial-statistics, value-based management, risk measurement

**Jel codes:** G30, G32

## Analyzing the Causality Relationship Between Economic Growth Information and Communication Technologies Energy Consumption and Ecological Footprint: The Case of Türkiye (1975-2018)

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### Abstract

This study aims to examine the causal relationship between economic growth, information and communication technologies, energy consumption, and ecological footprint in Türkiye between 1975 and 2018. The Toda-Yamamoto causality test, which is one of the time series analysis methods, was used in this study. Descriptive statistics of the variables and correlation matrix were first created in the study. Then, the stationary structures of the variables were checked through unit root tests and it was understood that the variables were stationary at different levels. In the last stage, the analysis was completed by applying the Toda-Yamamoto causality test to the variables. In the analysis, a one-way causality relationship was found from information and communication technologies, energy consumption, and ecological footprint to economic growth. In addition, a one-way causality relationship was found from information and communication technologies to energy consumption and ecological footprint, while a one-way causality relationship was found from energy consumption to ecological footprint.

**Keywords:** economic growth, ecological footprint, energy consumption, information and communication technologies, Türkiye

**Jel codes:** C32, O47, P18, Q57

## Digitalization – The Impact on Tax Evasion and Sustainable Development: Case Study of Asian Developing Economies

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### Abstract

Most nations make an effort to combat and lessen tax evasion. The key to financing sustainable development is raising domestic revenue through taxation. The central aim of a tax policy in a developing market economy is to raise sufficient revenue equitably with minimal distortions. In most developing Asian countries, India included, the deployment of taxes is geared towards the achievement of many objectives besides raising revenue. The lack of simplicity in the tax systems has seen a majority of these countries complicate their tax systems by setting up preferences and exemptions to prioritize the achievement of some objectives. The overall effect of such approaches is uneven tax burden, with the ultimate beneficiary becoming foreign multinationals at the mercy of domestic companies as a majority of countries in the Asian belt persistently continue to extend a myriad of incentives to attract incentives with a particular focus on foreign investors. Due to the unprecedented health, social, and economic crises, countries have lately been recording enormous losses of revenue. There has been a remarkable rise in big data that has permitted cross-checking of relevant information pertaining to taxpayers. Imperatively, the volume of global data from online marketplaces, electronic cash registers, mobile payment providers, and other digital sources is expected to triple by the end of 2024. This has allowed tax administrators to easily review digital transactions and audit the digital trail that is often left by online transactions. This guarantees increased revenue which could spur economic growth, be reinvested in environmental sustainability, and create independence among countries.

**Keywords:** Tax evasion, developing Asian countries, digitalization, sustainability, carbon emissions, economy growth

**Jel codes:** H20, H26, O44, O53, Q53

## Economic Evaluation of Urban Lighting LEDification in Iran

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### Abstract

Due to the low cost of energy in Iran, as one of the world's largest oil and gas producers, any private sector investment to optimize energy consumption will lack economic reason. However, high energy consumption within Iran reduces the quantity of gas exports to other countries and the prospect of exporting electricity to Iraq. In other words, the opportunity cost of surplus gas and electricity utilized within Iran is equivalent to its global price. Therefore, government-implemented efforts to reduce energy use are economically justifiable. Among these plans is the LEDification of city roadways, which will significantly reduce electricity consumption. This paper describes in detail the economic evaluation of this plan's implementation of a 4-year plan and a 10-year financial horizon. The results indicate the presence of an economic advantage. Additionally, the paper includes information regarding the recovery of metal scraps from obsolete light fixtures and the decrease of carbon emissions.

**Keywords:** energy, lighting, LED, urban roads, LEDification

**Jel codes:** R59, Q48, H41

## Digital Coin Laundry - Anonymizing Mechanisms that Enable the Obscuring of the Public Blockchain

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### Abstract

The objective of this paper is to explore methods of how cybercriminals exploit virtual assets and anonymizing tools to obliterate the chain of transactions on the publicly identified blockchain. To merely enjoy the proceeds of virtual assets obtained through illegal means such as the following: stolen funds, sanctions evaders, scams, darknet market, ransomware, child abuse material, illicit actor organization, and/or terrorism financing. Methods such as using the following technologies, mixers, decentralized platforms, privacy wallets, or all to achieve (a) lower transparency (b) higher financial privacy, and (c) higher obfuscation of financial flows. This is an ongoing study to examine the loopholes in the virtual assets, and blockchain ecosystem and propose practical solutions to minimize crime in cyberspace. This can be found beneficial to the regulated exchanges and financial watchdogs to increase surveillance of illicit activities on the blockchain and become more robust in their countermeasures against cybercrime.

**Keywords:** knowledge management, anti-money laundering, money laundering mechanisms

**Jel codes:** G21, G22, G28, G30

## Gender Wage Gaps and Gender Norms: Evidence from Recent Graduates

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### Abstract

While there is plenty of evidence showing persistent gender wage gaps in the general population, we know relatively little about these differentials among recent graduates. This paper provides evidence on the extent of gender wage gaps five to six years after graduation across 19 countries and on the impact of gender norms on wage gaps. To address the potential endogeneity of gender norms we exploit two different instruments: i) gender norms of older cohorts and ii) and the ratio of labor supply of potential mothers and fathers of current graduates. Although men and women work almost the same number of hours per week, on average men earn more than women across all countries in the sample. At the mean, the total gender wage gap varies from 7 log points in Belgium to 21 log points in Estonia. Even though we have controlled for a large set of characteristics, these gaps are mostly left unexplained across countries. Using the unconditional quantile decomposition we find that men earn more than women at selected quantiles of the wage distribution and in addition we find considerable heterogeneity in the size of the wage gap across countries. As the distributions of various characteristics do not differ much across gender, the wage gap along the distribution is mostly driven by the wage structure effect. We find that the wage gap is either widening at the top of the distribution (the glass ceiling effect) and/or it is widening at the bottom of the distribution (the sticky floor effect) for half of the countries in our sample. Our IV estimates indicate that cultivating non-egalitarian attitudes and holding a traditional view on the role of women in the family play an important role in explaining higher wage gaps.

**Keywords:** gender wage gap, decompositions, university graduates

**JEL codes:** J16, J31, J71



## Impact of Retail Business Digital Transformation on Online Purchases in the European Union

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### Abstract

The accelerating digital transformation is challenging, restructuring and fundamentally changing the retail business models. This transformation is becoming a concept that transforms organizational dynamics and models the next evolutionary level in the way retailers do business. More and more retail companies are reconsidering the potential of digital transformation for generating higher revenue volumes from their physical assets and better market positioning compared to competitors. The main aim of the present study is to interpret some significant manifestations of the impact of retail business digital transformation on online purchases, taking into account the shift in consumer behaviour, and on this basis to derive certain dependencies. In order to explain these dependencies the paper examines various economic theories, opinions and empirical works in the issues being studied. It also examines and characterizes some changes in the absolute volume of the studied phenomenon, specifying the effect of influencing factors. The survey respondents are individuals from the 27 Member States of the European Union. The data on their income and consumption expenditure refer to the period 2016-2021 and are analyzed using the simple linear regression and correlation method. The generalization of the more important findings of the study is a prerequisite for highlighting certain manifestations of the impact of retail business digital transformation on consumers' online shopping behaviour. In this context, relevant conclusions are formulated, based on the analysis and evaluation of the obtained results.

**Keywords:** digital transformation, retailers, retail business, online purchases of individuals, income and consumption expenditure of individuals.

**Jel codes:** F14, F18, H31

## Testing the Waste Kuznets Curve on the Example of Bulgaria

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### Abstract

Waste generation is inevitably a part of any economic activity. It is widely accepted among scientists and policymakers that economic development leads to an increase in the volume of waste. However, the latter has a harmful impact on the environment. In the context of a transition to a circular economy, institutional efforts are aimed at decoupling economic growth from waste generation. One instrument for analysing the relationship between gross domestic product and waste is the inverted-U curve, known as the Waste Kuznets Curve. In this study, we present the theoretical framework of this curve and the mixed results obtained from its application in empirical studies. Our aim is to investigate the validity of the hypothesis of the inverted-U curve for Bulgaria in the period 2000 - 2020 in terms of gross domestic product and municipal waste. Considering the non-stationarity of the analysed time series, we fail to find evidence in support of the Waste Kuznets Curve for the studied period in Bulgaria.

**Keywords:** Waste Kuznets Curve, municipal waste, gross domestic product, ordinary least squares, Bulgaria

**Jel codes:** C10, Q50

## Digitalization Level of Businesses in EU Countries in Terms of their Sustainability and Risk of Bankruptcy

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### Abstract

Digitalization is one of the top priorities of the European Union. The concept of digitalization and sustainability of all spheres of society's life in EU countries is increasingly important and can represent a driving force for the development of their economies. As a result, the introduction of digitalization elements is necessary and important for the sustainable development of enterprises and the growth of their competitiveness. Due to the risk of possible bankruptcy, the digitalization of businesses and the use of digital tools by business employees have become a dominant topic in many EU countries, especially during the COVID-19 pandemic. The degree of digital adoption resulting from responses to COVID-19 varies across sectors and countries. The aim of this paper was to analyze the level and efficiency of the digitalization process of EU countries and their business environment based on selected indicators. The evaluation of digitalization elements implementation in EU countries and businesses was carried out for the years 2019-2021. The Malmquist index was used to assess the efficiency of the digitalization process of EU countries and their business environment. The results of the index confirmed the growth in the level and efficiency of ongoing digitalization processes within the EU countries. However, it is important to point out the fact that lagging countries are introducing digitalization elements, especially in the recent period, and the efficiency of their introduction is higher in these countries compared to more developed EU countries. This is due to the fact that developed countries have already introduced digitalization elements in most areas of life. The main contribution of the research is pointing out the need to evaluate the digitalization process not only static, based on the coverage of individual areas with digitalization elements, but also dynamically and thus evaluate the efficiency of their introduction.

**Keywords:** business, digitalization, efficiency, Malmquist index, sustainability

**Jel codes:** C44, M15, O33

## Comparison of Normative, Instrumental and Descriptive Approaches to Stakeholder Theory

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### Abstract

The paper aims to examine and identify the differences and similarities between normative, instrumental, and descriptive approaches to the concept of stakeholder. The mentioned approaches are compared concerning their fundamental ideas, heuristic nature, and the way they perceive and treat the company's stakeholders. Also, the idea of the nesting of the three perspectives is clarified and initiatives related to their integration are discussed. The comparison of the three approaches is carried out based on an examination of the existing literature in the field of stakeholder theory. The paper provides new insights that contribute to the clarification of key concepts and approaches to stakeholder theory. New insights may advance future empirical implementations of this theory.

**Keywords:** stakeholder theory; normative stakeholder theory; instrumental stakeholder theory; descriptive stakeholder theory

**Jel codes:** M10, M21

## Board Characteristics and Dividend Pay-Out Policy: Evidence from India

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### Abstract

The purpose of this study is to determine the impact of various corporate board characteristics on the dividend pay-out policy of Indian firms listed on the National Stock Exchange (NSE) for the period 2013-2014 to 2019-2020. The results revealed that board independence, board gender diversity, CEO duality, audit committee size, and board national diversity significantly impacted the dividend pay-out policy of Indian firms. Board gender diversity, audit committee size, and board national diversity were positively associated with the level of dividend pay-out, while board independence and CEO duality were negatively related to the level of dividend pay-out. The findings have important implications and provide insights to improve board effectiveness and corporate governance practices.

**Keywords:** corporate governance, board characteristics, dividend pay-out policy, India

**Jel codes:** G30, G34, G35

## What Type of Firms in China is Giving Cash Dividends?

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### Abstract

China has the fourth largest stock market worldwide, with more than 2000 companies listed at the Shanghai Stock Exchange (SSE) ([www.sse.com.cn](http://www.sse.com.cn)) and more than 2500 companies went public at the Shenzhen Stock exchange (SZSE) ([www.szse.cn](http://www.szse.cn)). The two main ways for listed firms in China to pay dividends are cash dividends and stock dividends. Just like the listed companies in other countries, only a fraction of firms pays cash dividends, and this brought financial economists' attention to why some pay cash dividends while others do not. By applying conditional (fixed-effects) logistic regression, based on total of 548 firms from the year of 2012 to 2015, the result with statistical significance suggests that larger and more profitable Chinese firms and those with less growth opportunities but greater proportion of earned equities tend to pay cash dividends, presenting as additional evidence on determinants of cash dividend policy.

**Keywords:** Cash dividend payers in China, Dividend policy, International

**JEL codes:** G32, G35

## **Agricultural Higher Education in Moldova: Some Economic and Financial Aspects of Management**

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### **Abstract**

Moldova's agricultural education and research system is confronted with many issues due to the aging of the teaching and research staff, the decline in enrollment below the critical level and the unattractiveness of science and education to the younger generation. Another factor that affects the efficiency of the agricultural higher education is the lack of a collaboration network between education, science, and production. The aim of this paper is to analyze the current economic and financial situation of the agricultural higher education system in Moldova. The research is based on data collected from the State Agrarian University of Moldova. Incomes, expenditures, revenues, profits, and other economic and financial management indicators are analyzed. The examined period is 2017-2021. Over the last years the institution registered losses, mainly because the number of students that apply for agricultural study programs decreased significantly, fact which contributed to lower revenues. Currently higher education has the largest share in revenues, while research and innovations represent less than ten percent of total incomes. To increase revenues, must be identified new sources for research financing, mostly international, and additional sources for modernization of infrastructure, capitalization of institutional patrimony. For a more efficient management in agricultural higher education, is required the modernization of the whole system, focused on education, science, and production network.

**Keywords:** agriculture, economic performance, higher education, university, research.

**Jel codes:** I20, M10

## Poverty and Unemployment Crisis: The Case of Afghanistan from Recent Evidence

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### Abstract

Afghanistan has been enduring a deepening and increasingly deadly humanitarian crisis, since the Taliban takeover in August 2021. Acute malnutrition is spiking across Afghanistan and 95% of households have been experiencing insufficient food consumption and food insecurity. At least 55% of the population is expected to be in crisis or emergency levels of food insecurity. More than 22 million people could face life-threatening food insecurity, and 9 million of them are close to being afflicted by famine. Nearly 100% of female-headed households are facing insufficient food consumption and 85% are taking drastic measures to obtain food. 82% of Afghan families had lost wages since August 2021 and almost one in five were sending children to engage in labor, while 7.5% stated they resorted to begging or requesting money or food from charities. Half a million people in Afghanistan have lost their jobs since the Taliban takeover and expected that job losses will increase to nearly 700,000 - 900,000 by June 2022. More than 770,000 boys and about 300,000 girls are involved in child labour. In rural areas where 9.9% or 839,000 children are much more likely to be in child labour than in urban areas 2.9% or 80,000. This paper provides a broad overview of the poverty and unemployment crisis from recent evidence (during COVID-19 and after Taliban takeover), the paper started with a brief overview of the current state of the Afghanistan economy, the impact of COVID-19, and collapsing the government on poverty and unemployment. Also, the causes of Afghanistan's Economic Collapse, Poverty, and Unemployment have been examined and the paper concluded with solutions and suggestions.

**Keywords:** Afghanistan, Humanitarian crisis, Unemployment, Poverty

**Jel codes:** E24, I30, I32



## **Analysis of the Activity of Private Equity Funds in Terms of Driving Innovation on the International Market: Prospects for the Republic of Moldova**

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**DOI:** <https://doi.org/10.19275/RSEPCONFERENCES232>

### **Abstract**

In today's world, private equity funds have emerged and are growing rapidly, offering new investment opportunities for the population. In the last decade, this industry has become one of the main investment players acquiring banks and companies both in Europe and globally. The dynamism of their development, the areas in which they direct their capital or risks and the prospects for the development of these structures in emerging countries are the subject of this research. Starting from the elucidation of the concept of the emergence and development of private funds, the analysis of their trends on the European market, as well as the comparative analysis of what they offer in comparison with other investment possibilities, in terms of innovation, efficiency and sustainability of investments. This research topic is of particular interest because private funds are currently not developed in the Republic of Moldova and in this case it is necessary to argue the need for the establishment of this type of structures, their functionality. Comparing the activity of private funds on the Romanian market and clarifying the prospects for their development in the Republic of Moldova are the key aspects of the study. Research methods: analysis, synthesis, deduction, correlation, based on the analysis of factual data.

**Keywords:** private equity, funds investment, innovation structure, investment risk

**Jel codes:** G23, G24

## **Formation of a Political Career in Romania Case Study: Prime Ministers, Romania from 1990-2020**

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### **Abstract**

This article examines the formation of the political careers of the Romanian prime ministers after the fall of communism. The analysis of political careers and training routes for the Romanian politician provides an overview of the entire political spectrum. Political career allows us to observe the reality that is established between the actors involved, state institutions, political parties, retraining mechanisms, or existing framework games. Political careers changed dramatically after the communist period. Democracy in Romania allowed the liberalization of this "trade", and the medium- and long-term effect was a decredibility of the politician, through the rise of political figures with academic quality, questionable morals and a rupture with intellectual elites.

**Keywords:** political career, prime ministers, politician

**Jel codes:** D72, D73

## Testing the Environmental Kuznets Curve Hypothesis: An Empirical Study for Türkiye

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### Abstract

This study aims to examine the causality relationship between environmental pollution, economic growth and energy consumption in Türkiye within the scope of the Environmental Kuznets Curve (EKC) hypothesis. The validity of the EKC hypothesis was analyzed via a quadratic form using the 1960-2015 time period data for Türkiye. The analysis consists of two stages. In the first phase, the stationarity of the series was tested with ADF and PP unit root tests. In the second phase, the existence of a causal relationship between the parameters was examined by the Granger Causality test. According to the empirical findings, there was no causality relationship between the variables of carbon dioxide emission, energy consumption and economic growth. It has been concluded that the EKC hypothesis, there was an inverse-U-shaped relationship between economic growth and environmental degradation, was not valid for the Turkish economy. In this case, governments need to take additional measures, as the negative effects on the environment will not decrease by themselves as income increases. Developing countries such as Türkiye should reshape the energy matrix in favor of renewable energy through technological transfer.

**Keywords:** Environmental Kuznets Curve, Granger Causality Test, economic growth

**Jel codes:** Q43, Q56, C12

## Time, as Influencing Factor in Influencer Marketing

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### Abstract

Besides the traditional marketing tools, nowadays companies are paying more and more attention to influencer marketing. Influencers are those special online actors who are able to determine the behaviour of consumers. Due to the ever-increasing digitization and online consumption of the Y- and Z-generations, the marketing role of opinion leaders will become even stronger in the future. Currently, micro- and nano-influencers form a special group of influencers, who can influence the decisions of their target audience thanks to their close influencer-follower relationship, which is considered authentic by the followers. The purpose of this study is to present the activities of micro- and nano-influencers who are active opinion leaders on the Hungarian social media site Instagram. In the study, the concept of influencer is clarified, and the main advantages of using micro- and nano-influencers as marketing actors influencing consumer decisions are also determined. Various views on the effectiveness of co-working between influencers and followers will be presented. Based on the results of the online questionnaire survey, the success of the influencers is not affected by the length of time spent on the field or the amount of experience gained in this way. The number (value) of company requests received by influencers is determined by other factors. The outstanding success of beginner influencers, is caused by the so-called novelty factor. Based on the results of the survey, there is no correlation between the age of the influencers and the expected duration of the influencer's activity. Beginners and more experienced influencers both think about the long-term continuation of the activity, while they also make similar statements about the factors that positively influence their stay in the studied field.

**Keywords:** microinfluencer, follower base, motivation, influencer

**JEL Codes:** M31, M37, O35

## **Institutional and Behavioural Diversity among the European Countries: Its Role in Choice of Strategies to Combat Pandemic**

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### **Abstract**

The study addresses the dilemmas confronting EU countries in the area of economic and health protection policy during the COVID-19 pandemic in 2020–2021, with a special focus on the 11 new member states in Central and Eastern Europe (CEE-11). Faced with the pandemic, EU governments have had to choose between protecting human life and health, on the one hand and maintaining jobs (employment levels) and existing levels of economic activity (economic growth), on the other. However, making any of the economic goals (e.g., sustaining economic growth) a priority for socioeconomic policy implied a trade-off with health protection policy, primarily in terms of an increase in excess deaths. The analysis of the strategies adopted in this area in the EU-27 countries was carried out based on the coefficient of health sacrifice. The health or the so-called Covidian sacrifice coefficient, shows the relationship between the excess relative number of deaths caused by the COVID-19 pandemic and the slowdown in economic growth (the depth of recession).

**Keywords:** pandemic, COVID, models of capitalism

**JEL codes:** P16, P27

## **Willingness to Pay for Sustainability : The Interplay between Voluntary Actions and Forced Choices**

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### **Abstract**

Through this paper we want to highlight the main developments and characteristics of the strategic partnership between Romania and the United States of America. The analysis is based on the study of strategic documents in the field and the realization of syntheses on the elementary points that surprise this type of partnership. Fitting into a theoretical profile of this type of partnership was a first step. A series of historical facts are presented that characterize the partnership between Romania and the United States of America, followed by a classification in figures and statistical data of the partnership, and the analysis ends with the presentation of a scenario of evolution of this partnership, especially in the context of the existing regional security crisis, as a result of regional security instability. The conclusion of the scenario aims at orienting the partnership towards an alliance treaty for the consolidation of common values between the two states. The method of data collection is represented by documentation, based on a historical/longitudinal method and descriptive method of analysis.

**Keywords:** willingness to pay, sustainability issues, conjoint analysis, voluntary actions, forced choices

**JEL codes:** Q50, Z30, D40, Q56

## Price Fairness and Personality Traits - An Analysis of Fairness Perceptions among Alpinists When Introduced to Variable Pricing

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### Abstract

Price differentiation has been applied in many areas of the tourism and hospitality industry over recent decades. This pricing scheme applies to businesses as long as the demand is varying and predictable, the capacity is relatively fixed, the marginal cost is low, and there are limited or no storage possibilities. Alpine ski resorts exhibit these criteria and have successfully introduced various price differentiation types in the last years. Some examples are dynamic pricing based on historical booking and sales data (e.g., Zermatt Bergbannen in Switzerland and Val Cenis in France), pricing depending on the weather forecast (e.g., ski resorts Pizol and Belalp in Switzerland), and online discounts and early-bird discounts (e.g., Arosa-Lenzerheide in Switzerland). Even if alpine skiing resorts can increase their profitability by using a more innovative and dynamic approach to pricing in their daily operations, important knowledge challenges still need to be addressed. One is customer acceptance and how this will affect future consumer behaviour. In this paper, we analyse how individual/psychological characteristics increase/decrease price fairness perceptions of RM (Revenue management). We are testing how the “big five” in personality tests (Neuroticism, Extraversion, Openness, Agreeableness, Conscientiousness) + Self-efficacy are related to perceived price unfairness, and further how perceived price unfairness is related to purchase and revenge. The analysis is based on survey data collected in 2022 from 2,100 skiers from the US, Canada and Europe.

**Keywords:** consumer behaviour, price fairness, revenue management, alpine skiing

**JEL codes:** D01, D11, D12

## The Russian Invasion of Ukraine and the Polish Zloty Exchange Rate: The Fallacy of Monetary Autonomy?

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### Abstract

This study seeks to assess the impact of the Russia's invasion of Ukraine on the EUR/PLN exchange rate. We use the Twitter's application programming interface (API) to construct a novel indicator capturing the varying relevance of the war in Ukraine for the public in Poland. We show that the VIX index, government bond yield spread, credit default swap and the novel Twitter variable are statistically significant determinants of the EUR/PLN exchange rate after the invasion. We estimate that the war in Ukraine was responsible for increase of EUR/PLN by about 4.2% in the first two weeks following its breakout and the weakening of PLN in the aftermath of the war contributed to increase in headline inflation by about 0.27 percentage points. Our results corroborate the results of the previous studies pointing to significant economic spillover effects of regional conflicts in neighboring countries. Our findings also suggest that even within the framework of floating exchange rate regime monetary policy autonomy can be substantially constrained due to conflicts in the nearby countries. Therefore, our study provides a strong argument for Poland seeking a Eurozone membership as a way to contain the impact of geopolitical factors on exchange rate volatility which are likely to remain at play in the longer run.

**Keywords:** inflation, monetary policy, war

**Jel codes:** E52, F31



## Stock Price Prediction Using Machine Learning

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### Abstract

Deep learning has emerged as a practical method for solving challenges in the healthcare, manufacturing, and transportation industries since its inception. With the growth of Fintech in recent years, the use of deep learning in finance and banking services is also gaining momentum. Deep learning methods hold a lot of promise for forecasting time series data. However, selecting the most appropriate type of deep learning model and optimising its parameters is a challenging task that requires specialist knowledge. Since financial data such as stock price data is typically structured with multiple rows and columns, recent deep learning libraries have focused on maximising the algorithm's ability to learn from this data structure with minimal hyperparameter tuning. Tabular neural networks handle categorical and continuous columns differently as compared to other algorithms such as Random Forest. This study sets out to investigate the efficacy of Tabular Learner (TL) and evaluated their performance with Long short-term memory (LSTM), Gated recurrent units (GRU), XGBoost (XG), Prophet (PH), Auto Arima (AA) and Random Forest (RF) models in making one hour ahead prediction of stock prices. fastai's TL was used for training while a strategic validation approach for time-series analysis was implemented. Results from evaluation using root mean square error (RMSE) and R2 metrics indicate that TL with various continuous and categorical features yielded highest R2 and lowest RMSE in estimating one hour ahead stock price. Findings from this study will serve as a basis for future study to further explore the further issues in stock price forecasting.

**Keywords:** Tabular Learner, Random Forest, LSTM, GRU, deep learning, time series forecasting

**Jel codes:** G10, G17, G11, G14

## Uncertainty and Crisis in Sovereign Bond Markets: A Threshold Regression model for Greek Sovereign Spreads

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### Abstract

A threshold regression model is estimated for Greek sovereign risk for the period ranging between the onset of the EMU and the first months of the COVID-19 crisis. The purpose of the model is to endogenously determine the critical threshold of uncertainty, above which Greece enters the so-called “crisis regime”. Below some critical threshold for uncertainty (“normal regime”), Greek sovereign risk pricing is driven by fundamentals. Above this critical threshold for uncertainty (“crisis regime”), market sentiment effects and uncertainty are shown to drive Greek sovereign risk. Months between the onset of the EMU and December 2020 are classified into two regimes: “Crisis” regimes correspond to the following months: August 2010, December 2010- January 2011, May 2011- September 2013, May 2015-June 2015, March 2016-April 2016. All other months, including the end of the Second Economic Adjustment Programme in 2014 and the end of the Third Economic Adjustment Programme in 2018, are classified as “normal”.

### Highlights

- Greek sovereign risk pricing is shown to be volatility-driven. Regimes are distinguished according to a level of uncertainty derived via a T-GARCH model for the Greek sovereign spread.
- The derived measure of uncertainty is shown to be a good proxy of the so-called “unknown unknowns”.
- Principal Component Analysis is performed to derive one of the data inputs to the threshold regression, capturing the relative riskiness of the Eurozone periphery to core countries.
- The ECB’s unconventional monetary policy in response to the Eurozone debt crisis is shown to have worked to the detriment of Greek sovereign spreads in periods when most needed by Greece (during “crisis” periods).

**Keywords:** sovereign spreads, debt crisis, Uncertainty, GARCH, Threshold Regression

**Jel codes:** G01, G1

## Opening the Black Box: Is there a Gender Gap in Digital Competences of Persons with Disabilities in Serbia?

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### Abstract

It is estimated that more than 700,000 individuals in Serbia face some form of disability (physical, sensory, intellectual), of which between 215,000 and 300,000 are part of the working-age population. Nevertheless, only about 13% of the total number of persons with disabilities in Serbia is employed. Persons with disabilities usually perform work tasks that are below the level of their qualifications, while employers tend to give them a reduced amount of work and less demanding tasks which are generally lower paid. As a consequence of facing discrimination, persons with disabilities have a greater tendency towards long-term unemployment and complete withdrawal from the labor market. However, the world of work is in constant change with the emergence of gig or platform work as one of the latest trends and digital labor platforms as one of its critical components. For years, Serbia has been ranked as one of the leading countries in the field of crowdwork on digital labor platforms. Moreover, digital labor platforms and the usage of advanced digital technologies create almost equal opportunities for persons with disabilities to engage in the virtual labor market and generate income. In order to have sufficient capacity to meet the maximum estimated requirements of their distant employers, remote workers are required to possess an adequate level of digital competences, skills and knowledge. Accordingly, the subject of this paper is the evaluation of the level of digital competencies of persons with disabilities in the Republic of Serbia in order to identify gender-related differences in that regard. The results obtained aim to identify the gap between the existing and required competences for starting an entrepreneurial venture or finding a job using digital (freelance) platforms. The paper's main contribution reflects the fact that digital competences of persons with disabilities in Serbia in the context of their self-employment are a topic insufficiently explored in the existing literature.

**Keywords:** digital labor platforms, freelancing, digital inclusion, digital competences, persons with disabilities

**Jel codes:** J21, J24, J81

## **The Impact of the Level of Digital Maturity on SMEs in Romania: An Association Rules Approach**

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### **Abstract**

The digital revolution has brought significant opportunities and threats, each affecting businesses and services from the micro-economic and meso-economic to the macro-economic level. Digital transformation through e-commerce, Internet of Things implementations through artificial intelligence, Industry 4.0 concepts, Cloud Computing and Big Data integration, acquisition of new potential customers, interaction with users on social networks have allowed corporations access to all markets, while SMEs are trying to survive in the digital ocean. In this paper, we intend to present the national level of technology in the digitization of SMEs and to identify the impact of digital maturity on the size and profitability of SMEs, by applying a questionnaire to over 300 companies in Romania, in the field of production. The methodological approach consisted in the application of association rules, adapted to our qualitative analysis data. Following the results obtained, the development of directions for increasing the level of digital maturity is pursued.

**Keywords:** digital maturity, SMEs, association rules

**Jel Codes:** C87, L26, O14

## Decoupling is not Enough : Evidence from Fossil Fuel Use in Over 130 Countries

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### Abstract

This study offers an in-depth analysis of decoupling economic growth from fossil fuel use in over 130 countries between 1992 and 2019. It also examines four potential fossil fuel use determinants: urbanisation, industrialisation, trade openness, and the share of renewable energy sources. To examine the analysed relationship, the mixed effect models are applied for the trend components of the series. Fossil fuel use is represented by two measures: domestic material consumption and material footprint. Countries are either clustered into four groups of human development tiers measured by the HDI index or their income is considered. The results reveal that a stronger decoupling, with an elasticity of 0.42, is obtained for domestic material consumption than for the material footprint (0.72). The degree of decoupling is more homogeneous among groups of countries in the case of material footprint. The correlation between decoupling strength and reference fossil fuel use is negative and very strong (around -0.97). As well-being increases, the sensitivity of fossil fuel use to economic growth tends to weaken; nevertheless, wealthier countries consume more fossil fuels. The development of renewable energy sources is the only factor leading to a reduction in fossil fuel use in countries at all levels of development.

**Keywords:** decoupling; fossil fuel use; DMC—domestic material consumption; MF—material footprint, well-being

**Jel Codes:** C33, Q01

## **Trade Policies in Central Asia after EAEU Enlargement and after Russian WTO Accession: Regionalism and Integration into the World Economy Revisited**

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### **Abstract**

This paper revisits the question of choice between regionalism and multilateralism in trade relations of Central Asia introduced by Pomfret (Pomfret in *Economic Systems* 29(1):32-58, 2005). Our study is motivated by a significant restoration of economic links between the former Soviet republics following Russian accession to the World Trade Organization (WTO), the creation of the Eurasian Economic Union (EAEU), and the formation of new trade ties with Vietnam, Iran, and Serbia. Above all, there have been substantial commitments made by the three Central Asian republics of Tajikistan, Turkmenistan, and Uzbekistan toward a multilateral system under the WTO rules. To this end, we apply a multi-region gravity model with interdependent trade flows using bilateral trade data of Tajikistan and Uzbekistan to study the ex-ante effects of economic integration with various bilateral, plurilateral, and multilateral partners. Our findings indicate the existence of substantial gains if the aforementioned economies would ascend to the EAEU in comparison to integration with China or Iran. We also document the presence of shared economic links between Tajikistan, Central Asia, and Turkey.

**Keywords:** Central Asia, WTO, regionalism.

**Jel codes:** P33, F13, F14

## **Evaluation of the Efficiency in Delivery of Government Services to Ameliorate the Covid 19 Pandemic: Recipients' Perspectives**

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### **Abstract**

The meteoric emergence of coronavirus inadvertently gave birth to exceptional inefficiencies entrenched in the pervasive delivery of government interventions to contain the disease and its economic effects. This paper plays an integral role in making sense of this unexplored efficiency complexities of government interventions that were designed to counter the impact of COVID-19 pandemic. The purpose of this paper is to investigate the efficiency in delivery of government services and interventions aimed at ameliorating the COVID 19 pandemic. The study utilised descriptive statistics and ordinal regression analysis to identify the drivers of inefficiency perceptions among recipients of social security interventions during the pandemic. Survey data for a sample of 855 participants was drawn from King Cetshwayo District municipality in KwaZulu Natal, South Africa. The key findings revealed that the delivery of most government interventions in South Africa were inadequate, not well coordinated and poorly communicated hence inefficient. Drivers of these perceptions included age, income level, race, and employment status. In addition, whether or not an individual had received some form of social security assistance during the pandemic also influenced their perceptions about government efficiency in providing social security support. We recommend strengthening monitoring and evaluation mechanisms across government service delivery initiatives and improving communication of government programmes to improve user experience and access.

**Keywords:** efficiency, government interventions, social grants, COVID-19 pandemic, ordinal regression

**Jel codes:** D10, D12, D60, R20

## Reinvestments in Dentistry and Differences between Western or Central and Eastern European Countries

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### Abstract

This paper has focused on the willingness of owners to reinvest their profit back into a company. Research gaps in the investigation of financial issues in the healthcare industry are apparent in the literature. The aim of this paper is to estimate the differences in reinvestments between dentistry companies operating in western or central and eastern Europe (CEE). Annual Orbis data were obtained from financial reports from 3,711 western and 1,173 CEE companies. The generalized method of moments with panel data, currently modified by Kripfganz (2019), has been deployed as the main estimation technique. The estimated sample has been divided according to the return on assets into quartiles. The results clearly show that western owners rather reinvested their earnings back into their businesses, whereas CEE owners reinvest at a lower level. Furthermore, the willingness to reinvest, as well as the financial constraints related to that, can affect the quality of dentistry services.

**Keywords:** Reinvestment of profit, Management of earnings, Dentistry, GMM with panel data

**Jel codes:** C58, D25, E21, G39



## Effect of Education on Economic Growth in SSA Countries: Do Institutions Matter?

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### Abstract

This paper used the ARDL model to investigate the marginal impact of education on economic growth, considering institutional quality, using panel data for 17 Sub-Saharan Africa (SSA) countries from 2000-2019. The results illustrate that education has an insignificant effect on economic growth. In addition, the results also show that institutional quality is an important factor in the relationship between education and economic growth in SSA countries. Therefore, the study findings suggest that economic conditions create an essential infrastructure which in itself is not sufficient. The quality of institutions seems to enhance the effectiveness of education output, which leads to productivity and economic growth. In other words, education can increase economic growth in the environment of strong institutions.

**Keywords:** education, economic growth, institutions quality, SSA countries

**Jel codes:** I25, C23, E02, O43, O55

## Duration Premium and Term Structure of Equity Returns

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### Abstract

We study the term structure of equity returns and the relationship between short-duration premium and other common risk factors such as size and value. Starting from proposing a duration model for equity under more realistic assumptions that is robust to changes in the discount rate, we provide empirical evidence using low interest rate sample from the Japanese market. Short-duration portfolios cluster with small-value firms with a relatively long history and yield over 10% annual return controlled for a market risk premium. Evidence show that the term structure is downward-sloping for equity returns and upward-sloping for return volatility even though the interest rate is low. A strategy of longing short-duration stocks and shorting long-duration stocks yields positive and persists for almost the whole sample period (2011–2020), even after controlling for size and value effects.

**Keywords:** portfolio, asset pricing, equities, risk premium, implied equity duration

**Jel Codes:** G12, G14, E43

## Climate Change and Price Dynamics

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### Abstract

This paper proposes a novel identification scheme to define a climate change shock which captures the maximum contribution to the spectral density of both temperature and precipitation over a long run frequency. The forecast error variance decomposition highlights that the climate change shock explains the bulk of the variation in both temperature and precipitation. Utilising a panel of 139 countries from 1960 to 2020, a panel VAR model with fixed effects is estimated to examine the impact of climate change shocks on price dynamics, a primary objective for monetary policy. The findings show that the identified climate change shock has a significant and negative impact on headline consumer prices, albeit by different magnitudes for countries of different income levels. Contextualising the transmission channels relevant in explaining this outcome, such as the sub-indices for inflation as well as demand side channels including both investment and consumption, we show that climate change shocks transmit to lower consumer prices through a dominance of negative demand side effects. Overall, our results signify the need for central banks to incorporate climate change into their mandate given the overall risk of climate change on price stability.

**Keywords:** climate change, Bayesian Econometrics

**Jel codes:** C, E, Q

## Multivariate Adaptive Learning Forecasting

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### Abstract

We examine the theoretical foundations of multivariate adaptive learning forecasting, as an extension of our published work on univariate adaptive learning. We explore the differences between the two approaches, offer theoretical prerequisites for performance enhancement, explain where the method might perform better a priori and where care is required in its application. We illustrate the potential of the method in forecasting with several real-world time series and show that it has both potential and wide applicability.

**Keywords:** time series forecasting, adaptive learning, multivariate forecasting

**Jel codes:** C51, C52, C53

## Macroeconomic Determinants of European Outward Foreign Direct Investment

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### Abstract

The increase in international trade flows and international flows of money and capital were caused mainly by the globalization of the international market. This fact is related with the strengthening of national industries at the international level, the internationalization of the economy and the development of business activities in the international market. Multinational Enterprises (ME) play an important role affecting Foreign Direct Investments (FDI). ME is defined as an enterprise that creates added value in more than one country. The aim of this paper is to test the hypothesis that the outward foreign direct investment (FDI) position of countries may be considered as a function of country specific characteristics, such as real income, exchange rate, openness of the economy, unemployment, corporate tax rate, European monetary integration and qualitative variables such as political stability and government effectiveness. The study of the factors is done individually in specific EU countries using time series model and as a whole using panel data model. Using statistical data for period 1980-2020, econometric time series and panel data models of outward FDI behavior, the statistical significance of the economic variables affecting outward FDI is examined. The models results indicate that real income, openness, exchange rate, European monetary integration are proved the most important determinants of outward FDI. Overall, the results verify that the outward FDI position of countries is influenced by national characteristics and that the same type of endowments have different significance for different countries. We expect the results of the relationships between outward FDI and the variables that affect them to give us useful conclusions regarding the economic policy issues of EU countries on FDI.

**Keywords:** outward, fdi, European Union

**JEL codes:** F1, F23

## Technological Innovation and the Spillover Effects of China's Energy Demand on Belt and Road Economies

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### Abstract

In this paper we model theoretically how the rise in China's global energy demand and its growing influences in developing economies' energy extraction and imports can affect firm-level innovation. We focus empirically on countries that are part of China's Belt and Road Initiative (BRI) and use an instrumental variables strategy that exploits the bilateral distance between China and each BRI country. We find that countries that have increased exports of energy to China have seen increased innovation domestically. In terms of magnitude, our results suggest that a one billion US\$ increase in energy exports to China increases the likelihood that domestic firms innovate by between 24.9% and 26.2%. We also examine the effects of China's energy demand on non-oil exporting economies and find that a one billion US\$ increase in energy demand from China increases the likelihood that firms innovate domestically by between 5.9% and 13.0% in these countries. Collectively, all the evidence we present suggest that there is a positive and robust positive impact of China's increased energy demand on innovation in BRI countries, except for innovation in services firms in non-oil exporting economies.

**Keywords:** China, innovation, energy, oil

**JEL codes:** D20, D22, F14, F61, L20, O30

## Gender Wage Gaps and Gender Norms: Evidence from Recent Graduates

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### Abstract

While there is plenty of evidence showing persistent gender wage gaps in the general population, we know relatively little about these differentials among recent graduates. This paper provides evidence on the extent of gender wage gaps five to six years after graduation across 19 countries. We use a harmonized microdata of university graduates which allows us to estimate gender wage gaps controlling for a rich set of individual and job characteristics. Using cross-country differences we examined the impact of gender norms on the wage gaps. In order to address potential endogeneity of gender norms we exploit two different instruments: i) gender norms of older cohorts and ii) and the ratio of labor supply of potential mothers and fathers of current graduates. Although men and women work almost the same number of hours per week, on average men earn more than women across all countries in the sample. Even though we have controlled for a large set of characteristics, these gaps are mostly left unexplained across countries. Using the unconditional quantile decomposition we find that men earn more than women at selected quantiles of the wage distribution and in addition we find considerable heterogeneity in the size of the wage gap across countries. We find that the wage gap is either widening at the top of distribution (the glass ceiling effect) and/or it is widening at the bottom of the distribution (the sticky floor effect) for a half of the countries in our sample. Our IV estimates indicate that cultivating non-egalitarian attitudes and holding a traditional view on the role of women in the family play an important role in explaining higher wage gaps.

**Keywords:** gender wage gap, decompositions, university graduates, field of study, gender norms

**JEL Codes:** J16, J31, J71

## **Investor Attention and Stock Market Activity (KSE 100 Index): Evidence from the Pakistan Stock Exchange**

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### **Abstract**

Our study aims to examine the impact of investor attention on the volatility and activity of Pakistan's stock market (PSX). According to the study, an investor's search behavior is used as a unique method for building a novel attention substitute, and "Google search trends" are exclusively used in the study. According to the study, there is a strong correlation between investors' attention and Google Search Volume(GSV), and GSV is an excellent indicator of investors' attention. This study also found that trading volume and investor attention are positively significant. These two factors contribute positively to predicting stock price volatility at a specific period. This study adds to the growing literature on GSV's predictive ability by hypothesizing that it might predict Pakistani stock market outcomes.

**Keywords:** search volume, KSE-100 Index, Stock Market, Google Trends

**JEL codes:** G1, G2, N2



## Engaging Diasporas in Development Countries

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### Abstract

Globally, governments recognize the role of the diaspora as a catalyst that contributes to development. Based on their role as a transformative and innovative asset for the development of the country of origin, this paper aims to analyze the structures engaged in developing countries to support their diaspora. Our goal is to explore the initiatives adopted by a wide range of countries in Asia and Africa and the work they are doing on the issue of immigration through a wide range of mechanisms and institutions as a strategic object of the policies of recent years. We aim to add to the wide literature on the diaspora a global map of the engagement of the diaspora from several regions of the world, to confront the countries between them and at the continental level with the aim of identifying and adapting the best models to follow. The findings suggest evidential support for governments that are strongly engaging in the issue of the diaspora through which they are filling the financial and human gaps not only for national objectives but also for international integration.

**Keywords:** diaspora institutions, cultivate the identity, recognition mechanisms, integration policies

**Jel Codes:** F22, J24, O15,F15

## Between Financial Performance and Corporate Reputation

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### Abstract

This study focuses on the manner of perception (rendering) of corporate reputation through the financial performance of several airlines from the point of view of investors. To understand this, I used for analysis a number of 22 companies, 19 companies in the World Airline Awards 2018 ranking on client satisfaction, and the 3 companies included in the Fortune ranking, representing the best corporate reputations in the airline industry. The analyzed period is between 2016-2018. The purpose of this study is to sort the airlines based on the financial characteristics used by financial reports, in other words, my intention is to analyze whether the 3 airlines included in the Fortune ranking for the 3 years analyzed will establish a new order in the ranking made taking into account the financial performance based on the Topsis method. The study found that, by compiling the ranking based on financial performance, the 3 companies included in the Fortune ranking did not intertwine, thus maintaining the same order. Moreover, the first airline designated by Fortune as having the best corporate reputation, proved to occupy the first place in our ranking too, a ranking we made based on financial performance. Thus, I tend to believe that companies with a good financial performance also have a good corporate reputation and the other way round, all from the point of view of investors.

**Keywords:** financial performance, corporate reputation, airlines, Topsis method

**Jel Codes:** L14, L25, L93

## **Micro and Macroeconomic Foundation of the Share of Foreign Value added in an Economy: An Update to Selected Trade Models**

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### **Abstract**

Globally, governments recognize the role of the diaspora as a catalyst that contributes to development. Based on their role as a transformative and innovative asset for the development of the country of origin, this paper aims to analyze the structures engaged in developing countries to support their diaspora. Our goal is to explore the initiatives adopted by a wide range of countries in Asia and Africa and the work they are doing on the issue of immigration through a wide range of mechanisms and institutions as a strategic object of the policies of recent years. We aim to add to the wide literature on the diaspora a global map of the engagement of the diaspora from several regions of the world, to confront the countries between them and at the continental level with the aim of identifying and adapting the best models to follow. The findings suggest evidential support for governments that are strongly engaging in the issue of the diaspora through which they are filling the financial and human gaps not only for national objectives but also for international integration.

**Keywords:** foreign value added, characteristics demand theory, Heckscher–Ohlin, gravity model of trade

**Jel Codes:** D00, F10