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13th Istanbul Finance Congress (IFC-2024)

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13th ISTANBUL FINANCE CONGRESS (IFC) | December 23, 2024 | Istanbul

CONGRESS PROGRAM

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Zoom for Opening Session
https://zoom.us/j/94235938458

OPENING SPEECHES | SESSION 1 | ROOM 1 | December 23, 2024, Monday	
10.00-10.10	Prof. Suat Teker| Isik University | Welcoming Speech, Congress President
10.10-10.20	Prof. Hasan Bulent Kahraman |Rector, Isık University |Opening Speech
10.20-10.40	**Keynote Speaker I** - Assoc. Prof. Guzhan Gulay | Executive Vice President, Borsa Istanbul Borsa Istanbul and Sustainability
10.40-11.00	**Keynote Speaker II** - Prof. Ghassan Omet | University of Jordan Financial Development and Artificial Intelligence: Some Regional Analysis

PRESENTATION SESSIONS

ZOOM LINK	https://zoom.us/j/94235938458	https://zoom.us/j/99433386028
11.00 - 13.00	**ROOM 1 | SESSION 2.1** **Chair: Prof. Elcin Alp, Istanbul Ticaret University**	**ROOM 2 | SESSION 2.2** **Chair: Assoc. Prof. Cuneyt Dirican, Istanbul Arel University**
11.00-11.15	**Navigating financial awareness across generational shifts: Integrating agile management for future success** Kalman Botond Géza, Kodolanyi University, Hungary Malatyinszki Szilárd, Kodolanyi University, Hungary Horváth Géza, Kodolanyi University, Hungary	**Social media sentiment and its effects on cryptocurrency price volatility** Ozge Arabaci Urgenc, Istanbul Technical University, Turkiye Oktay Tas, Istanbul Technical University, Turkiye
11.15-11.30	**The impact of financing agriculture from European funds on climate change** Gabriela Badareu, University of Craiova, Romania Nicoleta Mihaela Doran, University of Craiova, Romania Marius Dalian Doran, West University of Timisoara, Romania	**The role of environmental taxes in generating tax revenues and reducing greenhouse gas emissions in the European Union** Fortea Costinela, University Dunarea de Jos of Galati, Romania Valentin Marian Antohi, University Dunarea de Jos of Galati, Romania Monica Laura Zlati, University Dunarea de Jos of Galati, Romania
11.30-11.45	**How green bonds affect clean energy investments and carbon emissions?** Gulden Poyraz, Bandırma Onyedi Eylul University, Turkiye Tugba Guz, Istanbul Yeni Yuzyil University, Turkiye	**Factors reshaping investor risk perception: social media, news, and behavioral** Bahar Koseoglu, Bahcesehir University, Turkiye
11.45-12.00	**Marketing aspects of the consumer culture theory** Petra Platz, University of Gyor, Hungary	**Gender difference in risk and confidence perception: implementation with logit model** Dilek Teker, Isik University, Turkiye Suat Teker, Isik University, Turkiye Beyda Demirci, Isik University, Turkiye

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12.00-12.15	**Measuring the sensitivity of different Monte Carlo models in forecasting airline stock prices**	**Understanding the mathematical background of modern portfolio theory**
	Olcay Olcen, Aviation Consulting Group, Turkiye	Ibrahim Kaya, Allbatross Asset Management, Turkiye
12.15-12.30	**Twitter sentiment analysis for optimal portfolio construction**	**Financial development and income inequality relationship: a study on Turkiye**
	Oktay Tas, Istanbul Technical University, Turkiye	Beyza Gunes, Bilgi University, Turkiye
	Burak Kucukaslan, Istanbul Technical University, Turkiye	Sema Tur Bayraktar, Bilgi University, Turkiye
12.30-12.45	**Winery tours and tasting experiences as key factors in a successfull wine marketing strategy – based on the analysis of family-owned wineries' in the Neusiedlersee DAC**	**Beyond linear regression: enhancing predictive accuracy in stock price prediction using ensemble methods**
	Petra Platz, University of Gyor, Hungary	Samir K. Safi, United Arab Emirates University, UAE
		Mariam Daiban, United Arab Emirates University, UAE
		Dania Awwad, United Arab Emirates University, UAE
12.45-13.00	**The impact of artificial intelligence on the audit process: automation and efficiency gains**	**Financial marketing through machine learning techniques and data analytics for customer behavior prediction**
	Samir Errabih, University of Sidi Mohamed Ben Abdellah, Morocco	Tugce Ekiz Yilmaz, Dokuz Eylul University, Turkiye
	Arabi Abdelbasset, University of Sidi Mohamed Ben Abdellah, Morocco	

13.00-16.45	**ROOM 1 | SESSION 3.1**	**ROOM 2 | SESSION 3.2**
	Chair: Prof. Oktay Tas, Istanbul Technical University	**Chair: Dr. Fahrettin Pala, Gumushane University**
13.00-13.15	**The use of social networking websites as a recruiting practice**	**Energy consumption-outward foreign direct investment-natural resource rents nexus: evidence from BRICS-T countries**
	Alexandra-Ioana Popescu, West University of Timisoara, Romania	Suat Mumcu, Gebze Technical University
	Denisa Abrudan, West University of Timisoara, Romania	Huseyin Ince, Gebze Technical University
13.15-13.30	**Rising value of data in contemporary higher education**	**Corporate governance and artificial intelligence: transition, responsibilities and prospects**
	Ali Eskinat, Netkent University, Turkiye	Antonio Tipaldi, Università degli Studi di Salerno, Italy
	Suat Teker, Işık University, Turkiye	
13.30-13.45	**Bitcoin prices using ARCH and GARCH models: a backcasting study**	**Economic competitiveness and population well-being in Europe: strategies for sustainable growth**
	Dilek Teker, Isik University, Turkiye	Alexandrina Brinza, University of Galați, Romania
	Suat Teker, Isik University, Turkiye	Cristea Dragos-Sebastian, University of Galați, Romania
	Esin Demirel, Isik University, Turkiye	Lăzărescu Ioana, University of Galați, Romania
13.45-14.00	**Cash flow, efficiency and financial stability analysis for sustainable business development**	**Enacting entrepreneurship and leadership: a longitudinal exploration of gendered identity**
	Lucian Gabriel Maxim, Transilvania University of Brasov, Romania	Mohamed Fitouri Fsegmahdia, University of Monastir and LISEFE, Tunisia
		Akram Belhadj Mohamed, Taif University Arabie Saoudite, Saudi Arabia
14.00-14.15	**The distance between the profit and the tax base for Hungarian enterprises consequences for the Hungarian accounting regulation**	**Impact of cross-border e-commerce on growth of Turkish SMEs**
	László Péter Lakatos, Budapest Corvinus University, Hungary	Irmak Orman, Isık University, Turkiye
		Suat Teker, Isık University, Turkiye
14.15-14.30	**A comparative analysis of hybrid midas-sarimax models for GDP forecasting: empirical evidence from Palestine**	**Transition to modular architecture in mobile finance applications**
	Samir K. Safi, United Arab Emirates University, UAE	Pinar Celdirme Kaygusuz, Turkcell, Turkiye
	Olajide Idris Sanusi, University of Wisconsin, USA	
	Umar Kabir Abdullahi, Ahmadu Bello University, Nigeria	

14.30-14.45	**The impact of business intelligence on administrative decision-making at Amman Arab University**	**Analysis of economic regulatory and supervisory authorities in Turkey in the context of public interest theory: the example of Banking Regulation and Supervision Agency -** *Türkiye'de ekonomik düzenleyici ve denetleyici otoritelerin kamu yararı teorisi bağlamında analizi : Bankacilik Düzenleme ve Denetleme Kurumu örneği*
	Mahmoud Hussein Abu Joma, Amman Arab University, Jordan	Ahmet Kavakli, Istanbul Commerce University, Turkiye
		Ali Osman Gurbuz, Istanbul Commerce University, Turkiye
14.45-15.00	**Evaluation of sustainable energy sources and sustainability reports: the case of Canadian solar -** *Sürdürülebilir enerji kaynakları ve sürdürülebilirlik raporlarının değerlendirilmesi: Canadian solar örneği*	**The impact of the widespread use of digital payment systems on individual spending habits and savings -** *Dijital ödeme sistemlerinin yaygınlaşmasının bireysel harcama alışkanlıklarına ve tasarruflarına etkisi*
	Merve Vaysal, Karabuk University, Turkiye	Fahrettin Pala, Gumushane University, Turkiye
15.15-15.30	**Financial fragility in resource-rich high-income economies -** *Yüksek gelirli kaynak zengini ekonomilerde finansal kırılganlık*	**Design and development of smart POS systems: commission optimization and transaction efficiency -** *Akilli POS sistemlerinin tasarimi ve geliştirilmesi: komisyon optimizasyonu ve işlem verimliliği*
	Sami Kucukoglu, Istanbul Ticaret University, Turkiye	Begum Al, Turkcell, Turkiye
	Elif Guneren Genc, Istanbul Ticaret University, Turkiye	Gamze Sezgen, Turkcell, Turkiye
15.30-15.45	**Analysis of the impact of climate policy and energy uncertainties on the stock exchange: the case of Turkiye and USA -** *İklim politikası ve enerji belirsizliklerinin borsa üzerindeki etkisinin analizi: Türkiye ve Amerika*	**The impact of fintech investments in Turkey on e-commerce -** Türkiye'deki fintek yatırımlarının e-ticarete etkisi
	Kübra Saka Ilgın, Erzincan Binali Yıldırım University, Turkiye	Anıl Atas, Firat University, Turkiye
		Gamze Ayca Kaya, Firat University, Turkiye
15.45-16.00	**Green finance: development, current situation and future in Turkiye and the world -** *Yeşil finans: Türkiye ve dünyada gelişimi, mevcut durumu ve geleceği*	**The relationship between social security policies and life insurance demand in OECD countries -** *OECD ülkelerinde sosyal güvenlik politikalarının hayat sigortası talebi üzerindeki yansıması*
	Esra Aksoylu, Maltepe University, Turkiye	Hasan Meral, Marmara University, Turkiye
16.00-16.15	**The effects of trade tariffs on inflation in Cameroon: the moderation effect of exchange rate**	**Mainstream economics and finance dogmas and neoclassical memorizations: examples of Milton Friedman, Eugene Fama and Nobel -** *Ana akım ekonomi ve finans dogmaların ve neoklasik ezberler: Milton Friedman, Eugene Fama ve Nobel örnekleri*
	Nzembanteh, University of Bamenda, Cameroon	Cuneyt Dirican, Istanbul Arel University
16.15-16.30	**Dynamic leadership in AI-driven economies: navigating disruption through strategic foresight and adaptive capabilities**	**Weather shocks and financial performance during the Covid-19 pandemic**
	Benja Stig Fagerland, USN School of Business, Norway	Dastan Aseinov, Kyrgyz-Turkish Manas University, Kyrgyzstan
16.30-16.45	**The impact of subsidies and incentives on firms' innovation performance**	
	Ahmet Iskender, Istanbul Technical University	
	Oktay, Tas, Istanbul Technical University	

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ABSTRACTS OF THE CONGRESS

TWITTER SENTIMENT ANALYSIS FOR OPTIMAL PORTFOLIO CONSTRUCTION

Burak Kucukaslan, Istanbul Technical University
Oktay Tas, Istanbul Technical University

This research investigates the efficacy of social media sentiment analysis in constructing alpha-generating investment portfolios. Specifically, the study examines whether Twitter-derived sentiment indicators can be leveraged to develop systematic trading strategies that generate risk-adjusted returns exceeding benchmark performance. The research aims to establish quantitative criteria for position initiation and termination based on sentiment metrics, with the ultimate objective of creating a portfolio that demonstrates significant outperformance relative to the reference index. The study encompasses 16 companies of the Nasdaq 100 index, selected to represent diverse market sectors while controlling for liquidity and market impact considerations. The dataset comprises 708,080 Twitter posts pertaining to the selected companies throughout the 2022 calendar year, extracted via programmatic data collection methodologies. Sentiment quantification was performed utilizing the Natural Language Toolkit (NLTK) in Python, generating normalized sentiment scores within a [-1, +1] interval. The investigation employed a sophisticated aggregation methodology to compute both daily and weekly sentiment indicators for each security, deliberately excluding neutral sentiment scores (0) to enhance signal clarity. A systematic portfolio construction framework was implemented, whereby securities were hierarchically ranked based on their aggregate sentiment scores on a weekly basis. Multiple portfolio permutations were tested, incorporating various combinations of long positions in top-ranked securities and short positions in bottom-ranked securities. Position entry and exit prices were determined using weekly opening and closing prices, respectively. Portfolio performance was evaluated through the calculation of weekly returns and cumulative performance metrics over the observation period. The empirical results reveal that portfolios constructed exclusively with short positions demonstrated superior cumulative returns compared to long-only portfolios. This observation can be contextualized within the broader market environment, specifically the Nasdaq 100's negative 33% return in 2022. The research identified statistically significant outperformance in portfolios implementing a combined long-short strategy, with these portfolios generating positive absolute returns despite the challenging market conditions. The empirical evidence substantiates the hypothesis that Twitter sentiment analysis can be effectively utilized as a signal generation mechanism for systematic portfolio construction. The results demonstrate statistically significant alpha generation capabilities, particularly when implementing a long-short strategy, suggesting potential applications for institutional investors and quantitative fund managers.

Keywords: Twitter, sentiment analysis, portfolio construction
JEL Codes: H30, H60, H62

ANALYSIS OF BANKING REGULATION AND SUPERVISION AGENCY (BRSA) ACTIVITIES IN THE CONTEXT OF THE PUBLIC INTEREST THEORY

Ahmet Kavakli, Istanbul Ticaret University
Ali Osman Gurbuz, Istanbul Ticaret University

In the literature, economic regulation theories are generally approached under two main headings: Public Interest Theory and Private Benefit Theory. Public Interest Theory examines public regulations in terms of the welfare provided to society and argues that regulations should be implemented for the purpose of maximizing social welfare by eliminating market failures arising from various reasons. Althought there is a dominant view in the literature regarding the difficulty of both defining and measuring public interest, the aim of this study is to analyze/evaluate the effects of the BRSA's activity (regulation and supervision) results on the Turkish banking sector and some macroeconomic aggregates in the context of the theory. By using the Bankometer Score (S-Score), which is a discriminant analysis method, the effects of BRSA's activity (regulation and supervision) results on the Turkish banking sector and some macroeconomic aggregates were analyzed I the context of the Public Interest Theory. For this purpose, in the first stage, S-Score calculations were made for the banking sector at the end of the year for the period 1989-2023, including the period before and after the BRSA, and the differences between the 2 periods were revealed. Then, using these S-Score results as a variable for the model (other variables are Capacity Utilization Rate of Manufacturing Industry, Reel Sector Confidence Index and Foreign Direct Investments) for quarterly periods in 2007 and beyond, Granger Causality test was applied through the Eviews program. In the pre-BRSA period (1989-2000), it was observed that the S-Score figure showed a steady worsening trend over the years starting from 1989. After BRSA became operational in 2000, S-Score results on a sectoral basis in the calculations made since 2001 have yielded much better results than before 2000. In addition, according to the results of the Granger Causality analysis conducted on Eviews in our model, it has been concluded that S-Score, which shows the robustness of the sector on which the BRSA has a very strong decisive position, is the cause of FDI, which might contribute to economic growth and productivity in Turkey. It has been concluded that the supervisory and regulatory activities carried out by the BRSA are very important in restoring the health of the Turkish banking sector and in maintaining the safe activities of the financial sector, and when looked at in terms of the dimension subject to analysis, the results of the BRSA's activities are in line with the Public Interest Theory.

Keywords: Public Interest Theory, Banking Regulation and Supervision Agency, Bankometer Score, Granger Causality
JEL Codes: A10, C32, G21

FACTORS RESHAPING INVESTOR RISK PERCEPTION: SOCIAL MEDIA, NEWS, AND BEHAVIORAL BIASES

Bahar Koseoglu, Bahcesehir University

In the modern financial ecosystem, the rapid dissemination of information through social media and news outlets significantly influences investor decision-making. However, the impact of these information channels on investor risk perception remains underexplored, particularly from a behavioral finance perspective. In today's interconnected world, digital platforms like social media and online news have become pivotal sources of financial information, often surpassing traditional media in speed and accessibility. Platforms such as Twitter and Reddit allow for real-time dissemination of market news and opinions, empowering retail investors but also amplifying market volatility. While these platforms democratize financial knowledge, they also propagate misinformation, rumors, and emotional narratives that can distort investor perceptions of risk and reward. The influence of digital media in shaping financial behavior underscores the need to critically analyze its role in decision-making processes, particularly as markets become increasingly driven by collective sentiment. Unlike objective measures of risk, such as volatility, risk perception is highly subjective and shaped by cognitive and emotional factors, making it a key driver of investment behavior. Misjudged risk perception can lead to suboptimal decisions, such as overestimating market dangers during a downturn or failing to act on lucrative opportunities due to fear or overconfidence. Understanding how risk perception is formed and influenced is crucial for improving investment strategies and mitigating financial market inefficiencies. This study serves as a preliminary analysis for a larger research project aimed at understanding the influence of social media and news on investor risk perception. Drawing upon a comprehensive literature review, it explores the mechanisms through which these digital information sources reshape risk perception, emphasizing the role of key behavioral biases such as herding, framing effects, and representativeness bias. The outcome of this analysis is a proposed conceptual model that integrates these behavioral factors to form the foundation for a comprehensive project design. The model hypothesizes that media content impacts risk perception through behavioral biases, moderated by financial literacy levels. This framework sets the stage for future empirical validation and project development, ultimately contributing to the understanding of investor behavior in an increasingly digitalized financial environment.

Keywords: Investor risk perception, behavioral finance, social media, financial literacy
JEL Codes: G41, G53, D81

RISING VALUE OF DATA IN CONTEMPORARY HIGHER EDUCATION

Ali Eskinat, Netkent University
Suat Teker, Isik University

The purpose of this study is to reflect the importance of effective use of data to predict and improve academic success as an essential criterion for assessing the quality of higher education institutions in the 21st Century. This paper intends to clarify importance of data and its evaluation components, namely Educational Data Mining (EDM), Learning Analytics (LA), Artificial intelligence (AI) and Machine Learning (ML), as integral part of Fifth Generation Universities (UNIVERSITY 5.0) era in the globalized competitive higher education sector. For this reason, this paper advocates "Rising Value of Data in Contemporary Higher Education" for the university of the new age. The study employs a literature review aiming to reflect the new atmosphere and requirements in the higher education system based on selected topics. A comprehensive analysis on the game changer role of data in the higher education institutions was considered. The aim was to identify the difference created by effective use of data in higher education institutions to predict and improve academic success in the competitive academic environment of the new era. The analysis reveals that higher education institutions should understand the essential role of educational data with the expansion of digital revolution and rapid change in technologies in the 21st Century and design their strategies accordingly. Notably, it is clearly seen that the universities have not only effectively use educational data and its evaluation components namely Educational Data Mining (EDM), Learning Analytics (LA), Artificial intelligence (AI) and Machine Learning (ML) but also internalize the reality of their rising value to predict and improve academic success as well as creating a significant financial contribution to their development. As a matter of the fact, universities established many projects and effectively used their Learning Analytics (LA) tools. Besides, the emergence of Artificial intelligence (AI) and Machine Learning (ML) enhanced the efficiency and effectiveness of management operations. Findings may be concluded that universities need to apply the effective use of data particularly in the context of new era like Industry 5.0, Society 5.0 and University 5.0 to obtain academic success, which is considered as an essential criterion for assessing the quality of higher education institutions. Indeed, universities have to follow a data- driven culture as greater demands of universities already appeared for retention, completion and graduation rates of students to improve student success. As a matter of fact, the effective use of Educational Data Mining (EDM) and Learning Analytics (LA) is going on for the last two decades in higher education institutions. Indeed, Artificial intelligence (AI) and Machine Learning (ML) are effective in data management as two impressive game changers for universities changing educational world from the financial perspective. For this reason, it may be argued that the effective use of data and its evaluation components, namely Educational Data Mining (EDM), Learning Analytics (LA), Artificial intelligence (AI) and Machine Learning (ML) are considered as the integral part of Fifth Generation Universities (UNIVERSITY 5.0) era in the globalized competitive higher education sector of 21st Century.

Keywords: Higher education, educational data mining, learning analytics, artificial intelligence and machine learning, University 5.0
JEL Codes: A20, I23, M10, O31, O32

NAVIGATING FINANCIAL AWARENESS ACROSS GENERATIONAL SHIFTS: INTEGRATING AGILE MANAGEMENT FOR FUTURE SUCCESS

Szilárd Malatyinszki, Kodolányi János University
Géza Horvath, Kodolányi János University
Botond Géza Kalman, Kodolányi János University

The purpose of this study is to explore the intersection of financial awareness, generational differences, and agile management practices in achieving organizational success within the context of rapidly changing economic realities and workforce dynamics. The study aims to understand how agile management can support financial literacy across different generational groups, thereby enhancing organizational adaptability and resilience. The study employs a mixed-method approach, combining quantitative surveys and qualitative interviews. The surveys evaluate financial literacy levels among employees across generational cohorts, while the interviews gather insights from management teams utilizing agile frameworks. This dual approach ensures a comprehensive analysis of the relationship between generational financial literacy and agile management practices. The analysis reveals significant generational differences in financial literacy, with younger employees demonstrating higher adaptability but lower financial literacy compared to their older counterparts. Agile management practices, characterized by flexibility, collaboration, and iterative learning, were found to effectively bridge these gaps. These practices facilitated continuous learning and enhanced cross-generational communication, fostering a more cohesive and financially literate workforce. Based on the analysis, it may be concluded that integrating agile management practices with targeted financial education programs significantly improves financial literacy across all generational cohorts. This integration not only equips organizations to navigate generational shifts more effectively but also strengthens their financial resilience and adaptability to evolving market dynamics.

Keywords: Agile management, financial literacy, generational differences, workforce adaptability, organizational resilience.
JEL Codes: M14, J24, G53

BACKCASTING BITCOIN VOLATILITY: ARCH AND GARCH APPROACHES

Dilek Teker, Isik University
Suat Teker, Isik University
Esin Demirel Gumustepe, Isik University

The primary purpose of this study is to model Bitcoin price volatility and forecast its future price returns using advanced econometric models such as ARCH and GARCH. The study aims to enhance risk management strategies and support informed investment decisions by addressing the time-varying nature of Bitcoin's volatility. The research explores the persistence of volatility shocks and the clustering of price movements to provide insights into market dynamics. This research examines daily Bitcoin closing prices over the period from January 2020 to October 2024. The data was preprocessed to ensure reliability, including applying logarithmic transformations to standardize the data and eliminate trends. Stationarity tests, such as the Augmented Dickey-Fuller (ADF), Phillips-Perron (PP), and KPSS tests, were conducted to confirm the series' stationarity. The ARCH-LM test was utilized to detect volatility clustering which is essential for validating the use of ARCH and GARCH models. Following this, ARIMA models were employed to define mean equations and GARCH models were used to estimate conditional variance and capture volatility dynamics. The dataset was split into training and validation subsets with data from July to October 2024 reserved for validation. The findings demonstrate that Bitcoin's price movements exhibit significant volatility clustering and persistence of shocks which are key characteristics effectively captured by ARCH and GARCH models. These models provide valuable insights into the volatility patterns of Bitcoin, supporting their application in cryptocurrency analysis. Despite their robustness, the models face limitations in precise return forecasting during highly volatile periods, suggesting the need for further refinement or integration with advanced approaches. The research concludes that ARCH and GARCH models are effective tools for understanding and forecasting Bitcoin's volatility. The study underscores the importance of acknowledging volatility persistence and clustering effects when analyzing cryptocurrency price behavior. However, it also highlights areas for improvement in econometric modelling by including the exploration of hybrid models and the integration of macroeconomic factors to enhance forecasting accuracy.

Keywords: Bitcoin, ARCH Models, GARCH Models, Forecasting, ARIMA Models
JEL Codes: C58, G10, G12

THE IMPACT OF THE WIDESPREAD ADOPTION OF DIGITAL PAYMENT SYSTEMS ON INDIVIDUAL SPENDING HABITS AND SAVINGS

Fahrettin Pala, Gumushane University

The aim of the study is to examine the impact of digital payment systems on individual savings rates and spending habits in Türkiye. Additionally, it is to evaluate the impact of digital payment systems on individual spending and savings within the framework of the COVID-19 crisis.

The research aims to examine the impact of digital payment systems on individual savings rates and spending habits by adopting a quantitative approach. Additionally, as a sub-objective, it aims to evaluate the impact of digital payment systems on individual spending and savings within the framework of the COVID-19 crisis. In the study, quarterly data for the period 2016Q1-2023Q4 were analyzed using household consumption expenditures, gross savings amount, digital payment systems (mobile payment, online banking, contactless payments, and all other digital payment methods), consumer price index, deposit interest rate, consumer credit interest rate, and consumer confidence index. The Newey–West Standard Errors Estimator has been used for data analysis. It has been shown digital payment systems have a statistically significant and positive effect on household final consumption expenditures and gross savings. Again, it has been concluded the pandemic period had a statistically significant and negative impact on household final consumption expenditures and gross savings. Additionally, it has been observed digital payment systems had an impact on increasing household consumption expenditures and savings during the pandemic period. In the study, the effects of digital payment systems in Turkey on individual savings rates and spending habits were examined. The findings obtained indicate that digital payment systems have a statistically significant and positive impact on household final consumption expenditures and gross savings. In addition, it has been determined that the COVID-19 pandemic has a statistically significant and negative impact on household consumption expenditures and gross savings. Additionally, it has been observed that digital payment systems played a positive role in increasing individuals' consumption expenditures and savings during the pandemic period. These findings reveal how digital payment infrastructure shapes individuals' financial behaviors during times of crisis, providing an important foundation for future research examining the interaction between digital finance and crisis dynamics.
Keywords: Digital payment systems, household final consumption expenditure, gross savings rate, Covid-19 pandemic.
JEL Codes: D12, E21, E32

HOW GREEN BONDS AFFECT CLEAN ENERGY INVESTMENTS AND CARBON EMISSIONS?

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The negative effects of climate change and environmental degradation on national economies have led many countries to invest in renewable energy to create low-carbon economies globally. In this context, green bonds have emerged as a financing tool contributing to developing clean energy. This study aims to examine the impact of green bonds (GB) on clean energy investment (CEI) and carbon emissions (CO_2) in 28 countries that issued green bonds between 2014 and 2020. The System Generalized Method of Moment (GMM) is used in the study. Two different models with CEI and CO_2 as dependent variables are used. In the model where CO_2 is taken as the dependent variable, it is observed that the GBs significantly reduce CO_2 emissions with a coefficient of -0.024%. In this model, a significant and positive relationship was found between CO_2 and GDP and dirty energy consumption (dirty) taken as a control variable, and a significant and negative relationship was found between the urban population and CO_2. In the model where CEI was taken as the dependent variable, no significant relationship was observed between GB and CEI, while a significant and positive relationship was found between dirty energy consumption and CEI. No relationship was observed between CEI and other control variables in the model. This study primarily contributes to the growing literature on the market for green bonds. The study findings will also assist policymakers in creating inclusive policies to reduce CO_2 emissions and promote clean energy investments. Additionally, the ability of green bonds to direct capital towards environmentally friendly projects and enhance financing efficiency will encourage more countries to issue green bonds.
Keywords: Green bonds, clean energy investment, carbon emissions, finance, system GMM
JEL Codes: E44, G15, O16

ANALYSIS OF THE IMPACTS OF CLIMATE POLICY AND ENERGY UNCERTAINTIES ON THE STOCK EXCHANGE: THE CASE OF TÜRKİYE AND AMERICA

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It can be stated that global uncertainty indices, which were developed to measure the effects of global uncertainties on markets and the economy, may have the potential to affect risk perception and investment strategies in the markets. Determining the direction and intensity of the impact of uncertainty and risks on stock markets has become very important for stock market investors under these conditions. This paper aims to comparatively examine how the Climate Policy Uncertainty Index (CPUI) and Energy Uncertainty Index (EUI), which are relatively newer than global uncertainty indices and have been the subject of fewer studies, affect stock prices in Borsa Istanbul 100 (BIST100) and Standard&Poors 500 (S&P500) stock exchanges, in a developing and developed country stock exchange. The short and long-term relationships between global uncertainty indices and stock prices were investigated using the ARDL (Distributed Autoregressive Lag) Bounds Test. ARDL is an approach that has several advantages over classical cointegration methods. It was determined that CPUI and EUI significantly affected the S&P500 index both in the short and long term, positively and negatively, respectively. For BIST100, this effect was negative but statistically insignificant for both indices in the long-term. This paper has highlighted the impact of climate policy and energy uncertainty indices on stock prices, especially in developed countries. In this context, the study emphasizes that investors and policymakers in these countries, especially those considering investing in developed countries, should consider these uncertainty indices and closely monitor them to reduce risks in their risk assessments and optimize their investment strategies. The paper contributes to the existing literature by improving the understanding of

how climate policy uncertainty affects financial markets in developed and developing economies. The findings suggest that investors and policymakers should consider different effects when assessing the financial impacts of climate policy and energy uncertainty. Future research could investigate how firms respond to such uncertainties and the financial impacts of corporate strategies at the sectoral level.
Keywords: Uncertainty, climate policy uncertainty, energy uncertainty, stock exchange
JEL Codes: C32, G01, G11

SOCIAL MEDIA SENTIMENT AND ITS EFFECTS ON CRYPTOCURRENCY PRICE VOLATILITY

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Following its introduction in 2008, cryptocurrencies have attracted great deal of attention from the investors. Cryptocurrency market have grown rapidly in terms of transaction volumes and number of investors involved with the launch of different kinds of alternative coins (altcoins). Cryptocurrency markets show some differences from the stock market with less institutional investor involvement. With the high proportion of retail investors in the market, we assume sentiment would be one of the leading forces that can accelerate cryptocurrency price movements in both directions that leads to higher volatilities. In this study, we try to shed a light on social media sentiment and its effect on cryptocurrency price volatility for 9 different cryptocurrencies, namely Bitcoin, Ethereum, Ripple, Binance Coin, Dogecoin, Solana, Cardano, Litecoin, Avax. The study uses Google search volume index and number of tweets weekly collected from Twitter between the dates January 2020 to March 2023 as investor attention measures to attract social media sentiment in addition to economic policy uncertainty index (EPU), CBOE S&P 500 implied volatility index (VIX) and macro and micro indexes constituted by using the Google search volume indexes for micro and macro fears and taking the weekly sum of those indexes. We investigated investor attention measures and mentioned indexes' impact on cryptocurrency volatility by using seemingly unrelated regression. The analysis reveals that google search volume index has a significant positive impact on volatility of cryptocurrencies in addition to economic policy uncertainty index and micro pessimism measures. Number of tweets data has no significant impact on volatility in contrast to Google search volume index. Based upon the analysis, it may be concluded that google search volume index has better captured investor attention and might give an insight regarding cryptocurrency volatilities where number of tweets collected from Twitter has no significant impact on volatilities. Internal audit is important for the company's reputation in the market. International financial crises and especially scandals more clearly reveal the necessity of an effective internal audit system.
Keywords: Cryptocurrency, investor attention, social media sentiment, google search volume index, uncertainty index
JEL Codes: G10, G14, L86

TRANSITION TO MODULAR ARCHITECTURE IN MOBILE FINANCE APPLICATIONS

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A fintech company As user expectations and market demands continue to evolve, the application undergoes constant updates to ensure it remains both responsive to user needs and capable of delivering reliable and high-quality services. However, as applications grow in complexity, maintaining their scalability, flexibility, and manageability becomes increasingly challenging. In this context, adopting a modular software architecture emerges as a strategic solution, offering a more streamlined approach to reducing the intricacy of mobile applications while enhancing their adaptability and scalability. It provides a detailed analysis of how modularization can simplify development processes, improve application performance, and make updates more efficient. Furthermore, the study highlights the key advantages of this architectural shift, such as easier maintenance, faster feature deployment, and improved testing capabilities. In addition, specific criteria are outlined to guide the identification and definition of modules, ensuring that the modular design aligns with the application's objectives and delivers optimal benefits. Through this exploration, the study aims to provide a roadmap for successful modularization and demonstrate its value in modern mobile application development.
Keywords: Modular structure, refactoring, dependency injection, modularization, mobile finance application
JEL Codes: E44, G01, G32

FINANCIAL FRAGILITY IN RESOURCE-RICH HIGH-INCOME ECONOMIES

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The purpose of this study is to identify the economic, financial, and liberal factors affecting the financial fragility levels of resource-rich high-income economies and to analyze the interactions between these factors. The methodology of the study includes a panel data analysis for the period 2006-2023. The research focuses on resource-rich high-income economies with a Gross Domestic Product (GDP) per capita exceeding $14,005 (based on the World Bank's Atlas method) and natural resource exports accounting for more than 25% of their total exports, according to TradeMap data. The analysis aimed at determining the financial fragility levels of resource-rich high-income economies revealed that improvements in the rule of law and judicial effectiveness positively impact the financial fragility index, thereby supporting financial stability. Similarly, government expenditures, broad money supply, and the asset size of deposit banks were also found to have a positive effect on the financial fragility index, contributing favorably to stability. However, increases in financial liberalization scores were observed to negatively

affect the financial fragility index, weakening stability. Additionally, the lagged value of the financial fragility index showed a persistent effect on the current levels of fragility. Resource-rich high-income economies are distinguished not only by their vast natural resource reserves but also by their high-income levels and advanced economic structures. Ensuring sustainable financial stability in such economies necessitates adopting a holistic approach. Controlled implementation of financial liberalization, coupled with the establishment of adequate regulatory and supervisory mechanisms, can strengthen financial stability. Likewise, a robust rule of law and an effective judicial system can enhance the confidence of economic actors, contributing to reduced financial fragility. Effective and efficient management of public expenditures supports economic growth and resilience while ensuring the sustainability of these expenditures. Strengthening the banking sector's structure and aligning its size to contribute positively to economic stability can enhance the resilience of the financial system. In designing monetary supply policies, it is essential to manage risks such as inflationary pressures and asset bubbles while increasing liquidity. Policies should not only aim to reduce dependence on natural resources but also promote economic diversification, thereby supporting inclusive and sustainable growth.
Keywords: Camel analysis, fragility, resource-rich economies, liberalization, panel data.
JEL Codes: G00, G10, G15

ENERGY CONSUMPTION-OUTWARD FOREIGN DIRECT INVESTMENT-NATURAL RESOURCE RENTS NEXUS: EVIDENCE FROM BRICS-T COUNTRIES

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Huseyin Ince, Gebze Technical University
This research measures the impacts of population, economic development, outward foreign direct investment, and natural resource rent on energy consumption in BRICS-T countries (Brazil, Russia, India, China, South Africa and Turkey). The main objective of the study is to evaluate the impact of outward foreign direct investment and natural resource rents on environmental sustainability together and to examine the structure of the relationship between economic growth and energy consumption with the Environmentally Kuznet Curve (EKC) hypothesis. This analysis, which was carried out within the framework of the STIRPAT (Stochastic Impacts by Regression on Population, Affluence, and Technology) theoretical model, examined the effects of factors on energy consumption with Driscoll-Kraay standard error fixed effects estimator as a result of the determination of country heterogeneity and robustness tests. The analyses show that population and gross domestic product per capita are positively related to energy consumption. At the same time, outward foreign direct investment decreases energy consumption in BRICS-T countries through the reverse spillover effect. The findings on the positive relationship between natural resource rents and energy consumption indicate that energy consumption increases in BRICS-T countries through fossil fuel-intensive production processes. The study also found a statistically significant inverted u-shaped curve between energy consumption and economic growth, but detecting a turning point outside the data set suggests that the EKC hypothesis is not valid in BRICS-T countries. The findings of the study show that outward foreign direct investment makes possible the transfer of environmentally friendly technologies from host countries to the home country and increases energy efficiency in the production process. Therefore, BRICS-T countries need to see outward foreign direct investment not only as an economic gain but also as a tool for environmental improvement. The fact that natural resource rents encourage fossil fuel dependency suggests that some of these resources should be directed to renewable energy projects. In conclusion, it is recommended that BRICS-T countries adopt green growth strategies, gradually remove fossil fuel subsidies and implement environmental regulations such as carbon tax to achieve sustainable development goals.
Keywords: Stirpat Model, EKC hypothesis, natural resources, outward foreign direct investment, energy consumption.
JEL Codes: P18, P28, P48

THE IMPACT OF FINTECH INVESTMENTS IN TURKEY ON E-COMMERCE

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In this study, the diversity and development of fintech investments in the world and in Turkey were examined. Since financial technology investments are fintech investments developed specifically for the e-commerce system, the impact of fintech companies established in Turkey and the investments of currently operating companies on e-commerce were investigated. The data set of the study was created with the market share data, sales volumes and number of users of the e-commerce sector between 2019-2023, the data are obtained from the Republic of Turkey. Presidential Finance Office and T.R. It was obtained from the websites of the Ministry of Commerce and analyzed with the SPSS program and regression analysis was applied. The analysis model shows that the effect of the independent variable on the dependent variable is not significant. Analysis results reveal that Fintech investments alone are not sufficient for the development of e-commerce. The data that will be obtained with the increase in investments in the field of Fintech in the future will shed light on researches who will conduct research on a similar subject.
Keywords: Finance, technology, fintech, e-commerce.
JEL Codes: G00, O30, G21, L81

THE DISTANCE BETWEEN THE PROFIT AND THE TAX BASE FOR HUNGARIAN ENTERPRISES: CONSEQUENCES FOR THE HUNGARIAN ACCOUNTING REGULATION

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Financial statements are generated to provide stakeholders with a thorough insight into an entity's financial position and performance. A comprehensive framework of rules and regulations is essential to govern the content of statements, and the concepts or procedures utilized in their formulation, ensuring they fulfill their intended purpose. Such regulations can develop through two main approaches: the creation of overarching concepts or the development of detailed, thorough guidance. Previous studies in many jurisdictions have shown that businesses often display specific preferences for certain regulation methods. Certain businesses advocate for principle-based frameworks due to their flexibility and adaptability, whereas others prefer rule-based systems for their clarity and precision. These preferences encompass fundamental aspects of financial management, particularly the inclination of enterprises to voluntarily separate their tax base from their accounting profit, a notion generally known as tax-book conformity. This study aims to analyze these processes within the Hungarian corporate sector. The objective is to ascertain whether particular groups of Hungarian firms exhibit an increased propensity to voluntarily deviate their tax base from their accounting profit. Our research demonstrates that smaller firms exhibit greater transparency in tax-book conformance, resulting in a diminished willingness to differentiate between accounting values and tax values. This research elucidates the essential regulatory preferences of these firms through an analysis of their behavior. The study evaluates the Hungarian accounting regulatory framework to determine its conformity with either a principle-based or rule-based approach. Understanding this alignment is crucial, as it significantly impacts the quality and integrity of financial reporting. The results are expected to deepen the overarching discourse on regulation design and its impact on corporate practices, offering substantial insights into the effect of Hungarian accounting standards on financial decision-making and reporting quality. This research enhances the academic understanding of regulatory preferences and offers practical insights for politicians and regulators to augment the effectiveness of financial reporting standards.

Keywords: Tax-book conformity, accounting, regulation
JEL Codes: M40, M41, H25

DESIGN AND DEVELOPMENT OF SMART POS SYSTEMS: COMMISSION OPTIMIZATION AND TRANSACTION EFFICIENCY

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Traditional POS systems often result in high transaction costs, increased error rates, and insufficient customer satisfaction. To overcome these limitations, smart POS systems have been developed to optimize transaction processes using advanced routing algorithms. This study aims to examine the impact of smart POS systems on transaction efficiency, customer satisfaction, and the significant reduction of commission costs through intelligent routing and data-driven decision mechanisms. Dynamic routing mechanisms were utilized for commission cost optimization. Big data analytics tools, including Apache Spark and HDFS, were applied to process real-time transaction data, ensuring scalable and adaptive solutions. The findings demonstrate that smart POS systems significantly reduce commission costs, lower transaction error rates, and improve operational efficiency. Additionally, integrating customer behavior prediction models with intelligent routing strategies enhances customer satisfaction and financial performance. This study highlights the significant contributions of smart POS systems to the fintech sector by addressing gaps in transaction efficiency, commission cost management, and customer satisfaction. Future research should focus on refining predictive models and further optimizing routing strategies tailored to diverse transaction and asset types to maximize system performance.

Keywords: Smart POS systems, transaction efficiency, commission cost optimization, customer behaviour prediction, big data analytics
JEL Codes: D53, G21, L80

EVALUATION OF SUSTAINABLE ENERGY SOURCES AND SUSTAINABILITY REPORTS: THE CASE OF

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The increase in global energy demand and increasing environmental problems have accelerated the return to renewable energy and made sustainable energy production and reporting necessary. The aim of this study is to examine the sustainability report of Canadian Solar, one of the leading companies in the renewable energy sector, within the framework of ESG (environmental, social and governance) criteria and to determine its impact on financial performance. In this context, how ESG criteria are measured in sustainability reports and the impact of this measurement on financial performance were examined. In this study, Canadian Solar's sustainability report for 2023 was examined with the content analysis method and its impact on financial performance was evaluated through financial indicators. According to the relevant year's financial data, sustainability activities have positively affected profitability and capital efficiency by relatively reducing the company's costs. These activities have strengthened the company's capital structure while providing environmental awareness. In the study examining the effect of the sustainability activity report on financial performance, policies to increase the use of renewable energy resources and reduce carbon emissions more comprehensively positively affected the company image and improved the financial situation.

Keywords: Renewable energy, sustainability, financial performance
JEL Codes: Q56, Q20, G32

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GREEN FINANCE: DEVELOPMENT, CURRENT SITUATION AND FUTURE IN TURKIYE AND THE WORLD

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Today, the climate crisis has become one of the most urgent problems on a global scale. As a result of the search for solutions to this problem, the concept of 'green finance' has emerged. Green finance is a system that provides financing for projects developed to support sustainable development goals and reduce environmental risks. Especially with the deepening of global climate change, the importance of implementing sustainable initiatives has been better understood and various financial instruments have been developed to support these projects. This study aims to provide a comparative analysis of the development processes and current status of green finance practices in the world and in Turkey, and to provide recommendations for the improvement of existing policies. The study provides a comprehensive international literature review on green finance and comparatively analyses the practices in the world and in Turkey. The use of green finance instruments is becoming increasingly widespread on a global scale; innovative solutions such as green bonds, sustainable credit models, green funds and carbon finance are finding a place in financial markets. Although there are good examples of green finance practices in Turkey such as green bond issuances and green loans in the banking sector, the momentum in developed countries has not yet been achieved. Green finance in Turkey is still an emerging field. A number of policies and regulations are needed to develop the potential of this field. In particular, the effectiveness of green finance in financial markets can be increased by increasing incentives for green projects, diversifying green financial products, tax incentives for green bond issuances, increasing national and international cooperation, and facilitating regulations on green and sustainable finance. In this respect, the dissemination of green financing instruments in cooperation with both the public and private sectors will contribute significantly to Turkey's achievement of its sustainable development goals.

Keywords: Green finance, sustainable finance, green bond
JEL Codes: Q56, G23, G15

MEASURING THE SENSITIVITY OF DIFFERENT MONTE CARLO MODELS IN FORECASTING AIRLINE STOCK PRICES

Olcay Olcen, Aviation Consulting Group, ACG

Monte Carlo Models are widely utilised by scientific research in a variety. Two research models are argued and designed regarding the Quasi and Pseudo Monte Carlo models in this paper. The main research questions are formed here as “Which Monte Carlo model can give more effective results to USA Airline investors?”. There is a utilisation problem of Monte Carlo Models by investors. The research also will help to fill this gap. On the other hand, Sobol and Halton sequences are utilized to develop Quasi Monte Carlo Model. Quasi-Monte Carlo Models are given more real results than Pseudo Monte Carlo Models, especially in high number (5000) iterations. The results are specifically important for investors. The main disadvantage of the research is a random timespan that is out of a crisis or special event. According to research results of bias (the approximation to reality), the Quasi-Monte Carlo Model gives more efficient results than the Pseudo Monte Carlo Model regarding accuracy and sensitivity. Investors in the American Air Carriers financial market should be aware of this important reality.

Keywords: Monte Carlo models, American Airlines, stock price
JEL Codes: B26, O18, R11

FINANCIAL DEVELOPMENT AND INCOME INEQUALITY RELATIONSHIP: A STUDY ON TURKEY

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Financial development is of great importance for economic growth, social development and sustainable development especially in developing countries. Therefore, the relationship between financial development and income inequality has maintained its importance throughout history. The aim of this study is to contribute to the literature by analyzing the effect of financial development on income inequality in Turkey and to offer solutions in line with the results obtained. The original value of the study is to examine the relationship between financial development and income inequality in different layers with the control variables of institutional quality factors. Since Kuznets curve appears to have followed democratization, as shown by Acemoglu and Robinson's highly influential study in 2000, this study also adds some democracy indices as institutional control variables when studying the relationship between financial development and income inequality. Besides, in addition to the Gini coefficient, the shares of various income groups in the national income, including the lower, middle-, and upper-income groups, are also used as a measure of income inequality. In the current study, the relationship between Gini, G1, G10, G40, G50 and financial development index in existence of institutional control variables is assessed using the Autoregressive Distributed Lag (ARDL) model. The ARDL model is chosen due to its flexibility in accommodating variables that are integrated of order zero, I(0), or order one, I(1), without requiring them to be of the same order of integration. The model helps capture both the short-term and long-term dynamics of the relationship, allowing for a more comprehensive understanding of the effects over time. The results indicate the relationship between the Financial Development Index (FDI) and income inequality measures —namely, Gini, G1, G10, G40, and G50—is influenced by some of the specific institutional quality indicators. Significant long-term relationships are observed, with the effects of FDI on income inequality moderated by governance factors. Besides, the significance of institutional factors or democracy indices is not stable for different income groups. Gini, the general income inequality index is the one for which more significant long-term relationships between income inequality and institutional/democracy indices are observed. Namely, the accountability, electoral democracy index, rule of law, property rights , regimes of the world, academic freedom index are the

institutional/democracy factors that reveals long term relationship with income inequality index of Gini. The only institutional factor that shows a long term significant relationship for all incoöe groups is property rights. However, when the relationship is analyzed, the expected direction of the relationship is not observed for most of the instutional/democracy indices and the significance of the institutional factors are not stable but some similarities emerge. Overall, the findings show that while FDI has potential for growth and reducing inequality, institutional factors/democracy indices may also be important. Effective accountability mechanisms and democracy indices may also enhance FDI's capacity to reduce inequality, emphasizing the need for policy reforms to strengthen institutional quality. However, to make stronger suggestion that policymakers should focus on improving governance structures to maximize the equitable benefits of FDI -since the results are not strong and stable- research needs to be empowered by using longer data set or different institutional quality factors.
Keywords: Income inequality, income groups, financial development, democracy indices, institutional quality factors
JEL Codes: D7, D310, O430

GENDER DIFFERENCE IN RISK AND CONFIDENCE PERCEPTION: IMPLEMENTATION WITH LOGIT MODEL

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This study aims to understand individuals' behaviors and perceptions regarding investment preferences. Specifically, it examines the differences in investors' perceptions of "concerns about losing money due to investment decisions" and "confidence in their knowledge of portfolio creation and management" based on the gender variable. The study utilizes survey data from 69 participants (29 female and 40 male). It employs logit models to analyze two dependent variables: (1) the stress level due to concerns about investment decisions and (2) confidence in portfolio management and financial knowledge. Gender is the key independent variable, with marginal effects calculated for unambiguous interpretation. The results indicate that gender has a statistically significant impact on both stress and confidence levels. Women are 21.2% more likely than males to experience stress due to concerns about investment decisions. Conversely, females are 18.5% less likely to feel confident about their financial knowledge and portfolio management abilities than males. These findings reflect the gender-based differences in risk perception and confidence. The study highlights the critical role of gender in shaping investment behaviors. Women tend to exhibit higher risk aversion and lower financial confidence than men. To address this disparity, targeted financial education programs and awareness initiatives are recommended to enhance women's financial literacy and confidence. Bridging this gap can contribute to improved financial participation and decision-making among women.
Keywords: Logit model, investment behavior, risk perception, gender, confidence.
JEL Codes: C35, G11, G40

FINANCIAL MARKETING THROUGH MACHINE LEARNING TECHNIQUES AND DATA ANALYTICS FOR CUSTOMER BEHAVIOR PREDICTION

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The purpose of this study is to explore the application of machine learning techniques and data analytics in financial marketing for predicting customer behaviors and optimizing marketing strategies. The research aims to highlight the transformative role of these methods in enhancing customer acquisition, retention, and overall return on investment (ROI). The study employs various machine learning techniques, including time series analysis, regression models, and deep learning algorithms such as RNN and LSTM, to analyze and predict customer behaviors. Additionally, clustering algorithms like K-Means and DBSCAN are utilized for effective customer segmentation. Data analytics methods, including ROI analysis and causal impact evaluation, are integrated to measure and improve campaign performance. The analysis reveals that machine learning and data analytics significantly contribute to financial marketing by uncovering patterns in customer behaviors, improving targeting strategies, and providing actionable insights for personalized marketing. Applications in credit scoring, fraud detection, and customer journey mapping demonstrate the effectiveness of these approaches in real-world scenarios. Based on the analysis, it may be concluded that the integration of machine learning and data analytics into financial marketing enables businesses to make data-driven decisions, optimize marketing campaigns, and achieve higher ROI. The findings suggest that these methods are essential for staying competitive in the financial sector.
Keywords: Financial marketing, machine learning, data analytics, customer behavior prediction, ROI optimization.
JEL Codes: C45, M31, G21

ENACTING ENTREPRENEURSHIP AND LEADERSHIP: A LONGITUDINAL EXPLORATION OF GENDERED IDENTITY

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Akram Belhaj Mohamed, Taif University

The purpose of this study is to explore how gendered identities shape and influence the enactment of entrepreneurship and leadership over time. This research examines the dynamic process of identity construction among male and female entrepreneurs and leaders, focusing on the interaction between societal gender norms and personal leadership practices. By investigating the long-term experiences of individuals in leadership and entrepreneurial roles, the study aims to uncover how gender plays a pivotal role in shaping identity and influencing decision-making processes, leadership styles, and business success. The study employs a longitudinal qualitative research design, using in-depth interviews and case studies of 30 entrepreneurs and leaders (15 men and 15 women) over a five-year period. This approach allows for an exploration of the evolution of their identities in relation to their entrepreneurial and leadership activities. The participants are drawn from a diverse range of industries, and data collection includes interviews conducted at multiple intervals to capture changes in identity construction over time. Thematic analysis is used to identify recurring patterns and to understand the influence of gendered experiences on leadership and entrepreneurship. The analysis reveals that gendered identity significantly influences how individuals navigate entrepreneurial and leadership roles. Female entrepreneurs and leaders often face greater challenges in balancing societal expectations with their personal leadership styles, leading to adaptive behaviors and strategic identity shifts. Male participants, on the other hand, are found to engage in more assertive leadership practices that align with traditional gender norms, but they too experience pressures to conform to societal expectations. The study highlights how gender-based expectations shape risk-taking, networking, and decision-making in entrepreneurial and leadership contexts. Over time, both male and female participants exhibit identity flexibility, though women are more likely to integrate relational and transformational leadership approaches into their entrepreneurial activities. Based on the analysis, it may be concluded that gender plays a central role in the development of entrepreneurial and leadership identities. Gendered identity not only influences how individuals approach leadership challenges but also affects their ability to innovate and sustain business growth. Female entrepreneurs and leaders, in particular, demonstrate resilience and adaptability in navigating the dual pressures of conforming to gender norms while striving for success in traditionally male-dominated spheres. The study contributes to a deeper understanding of the complexities of gender and leadership, offering insights for promoting more inclusive and equitable entrepreneurial environments.

Keywords: Entrepreneurship, leadership, gendered identity, longitudinal study, identity construction.
JEL Codes: M10, M20, M50

THE RELATIONSHIP BETWEEN SOCIAL SECURITY POLICIES AND LIFE INSURANCE DEMAND IN OECD COUNTRIES

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This study examines the relationship between social security coverage and life insurance demand in OECD member countries. Specifically, it explores how key social security indicators shape life insurance penetration. The study aims to highlight the impact of social security policies on life insurance coverage and emphasizes the importance of this relationship for policymakers and industry stakeholders. The dataset used in this study consists of the most up-to-date data obtained from the OECD and Sigma Explorer databases. OECD member countries are initially grouped based on their levels of life insurance penetration using K-Means clustering analysis. Relevant social security indicators are then analyzed, and the differences between the groups are evaluated through ANOVA testing. The findings show that countries with a higher share of public social security and healthcare expenditures in GDP also exhibit higher life insurance penetration. Moreover, an increase in the old-age dependency ratio positively influences life insurance demand. However, no significant relationship is observed between pension system indicators and life insurance demand. The study shows that social security policies and demographic structures have a significant impact on life insurance demand. The higher life insurance penetration in countries with substantial social expenditures suggests that welfare policies facilitate individuals' access to financial security mechanisms and enhance insurance inclusion.

Keywords: Life insurance demand, social security policies, cluster analysis
JEL Codes: G22, H55, J14

UNDERSTANDING THE MATHEMATICAL BACKGROUND OF MODERN PORTFOLIO THEORY

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Modern Portfolio Theory (MPT), pioneered by Harry Markowitz, provides a quantitative framework for portfolio optimization by balancing risk and return through diversification. This study focuses on applying MPT principles using Python and the PyPortfolioOpt library to construct optimized portfolios. The analysis involves selecting high-performing U.S. stocks over the past year, implementing advanced optimization techniques, and evaluating performance metrics such as Sharpe ratios. By leveraging these methodologies, the study aims to demonstrate how MPT, combined with Python's computational power, can enhance investment decision-making. The study incorporates a systematic approach to portfolio optimization. Data was collected from TradingView, focusing on high-performing stocks across various sectors. The optimization process utilized PyPortfolioOpt for mean-variance optimization, risk parity, and minimum correlation portfolio construction. Historical price

data was preprocessed for normalization, and statistical techniques such as correlation analysis and covariance matrix evaluation were applied to ensure robust portfolio allocation. Sharpe ratios were calculated to assess the risk-adjusted returns of the portfolios. This study demonstrates the practicality of Modern Portfolio Theory (MPT) when combined with python-based portfolio optimization techniques. Using the PyPortfolioOpt library, the analysis highlights how computational tools enhance portfolio construction by balancing risk and return. The optimized portfolio, based on high-performing U.S. stocks, achieved an expected annual return of 8.39%, annualized volatility of 17.36%, and a Sharpe ratio of 1.76, showcasing efficient risk-adjusted performance. Diversification emerged as a key factor in mitigating risk, with weights allocated to stocks from various sectors to balance returns and volatility. Assets with lower Sharpe ratios or high correlations were excluded, aligning with MPT's principles. Risk management strategies, including covariance matrix evaluation, ensured a robust portfolio structure. The results validate the effectiveness of python-driven optimization in building diversified portfolios that cater to investment objectives. This study reaffirms the relevance of Modern Portfolio Theory (MPT) in portfolio management while showcasing Python's capabilities for optimization. The optimized portfolio achieved a sharpe ratio of 1.76, exemplifying the balance between maximizing returns and minimizing risk. Diversification and systematic data analysis played pivotal roles, with weights favoring assets offering favorable risk-return profiles. The findings underline the value of combining MPT with computational tools like PyPortfolioOpt to construct portfolios that align with diverse financial goals. However, further research could explore dynamic market conditions, broader datasets, and alternative risk metrics to improve portfolio resilience and adaptability. This study highlights the potential of python-driven optimization to bridge financial theory and practical application, enabling robust and efficient portfolio management in dynamic markets.
Keywords: Modern Portfolio Theory, Portfolio optimization, PyPortfolioOpt, risk management, Sharpe Ratio
JEL Codes: C61, G11

IMPACTS OF CROSS-BORDER E-COMMERCE ON GROWTH OF TURKISH SMEs

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Cross-border e-commerce has emerged as a critical enabler for the globalization of small and medium-sized enterprises (SMEs), particularly in the wake of the COVID-19 pandemic. This study explores the transformative impact of digital marketplaces, innovative payment systems, and logistics advancements on the internationalization of Turkish SMEs. Leveraging a mixed-methods approach, the research combines quantitative data analysis with qualitative insights from industry stakeholders. The findings highlight the significant role of platforms such as Amazon and Alibaba in reducing market entry barriers, the importance of secure digital payment systems in fostering trust, and the contribution of logistics innovations to the growth of small-package exports. By aligning with global consumer trends and leveraging digital tools, Turkish SMEs can overcome traditional trade barriers, enhance competitiveness, and access broader markets. The study concludes with strategic recommendations for policymakers and SMEs, emphasizing the need for regulatory support and investment in digital infrastructure to maximize the benefits of cross-border e-commerce. The study was carried with a mixed-methods approach. Quantitative Analysis: Data from the Turkish Statistical Institute, Turkish Exporters Assembly (TİM), and global e-commerce platforms were analyzed to track export trends, marketplace performance, and consumer behavior. Qualitative Insights: Interviews with SME owners, e-commerce experts, and policymakers provided in-depth perspectives on challenges and opportunities. And as case studies, Successful Turkish SMEs from sectors like textiles and food were examined to identify strategies for internationalization. The COVID-19 pandemic has significantly accelerated e-commerce adoption in Turkey, leading to substantial growth in online spending and reshaping various sectors of the economy. Below are some of the main findings; platform Impact, global marketplaces significantly increase SME visibility and reduce market entry barriers; digital payment systems, enable secure, efficient transactions, fostering trust among international customers; small package exports, innovations in logistics, such as faster shipping, have fueled SME participation in global trade; post-Covid consumer behavior, the pandemic accelerated global e-commerce adoption, creating new opportunities for Turkish SMEs. Cross-border e-commerce represents a transformative opportunity for Turkish SMEs, enabling them to overcome traditional barriers and compete effectively in global markets. By leveraging digital platforms, payment innovations, and logistics advancements, SMEs can drive growth, internationalization, and competitiveness. Strategic support from policymakers will be crucial in maximizing the potential of this digital trade revolution.
Keywords: E-commerce, marketplaces, international trade, digital payment systems
JEL Codes: F23, L26, L81, O31

THE IMPACT OF SUBSIDIES AND INCENTIVES ON FIRMS' INNOVATION PERFORMANCE

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The purpose of this study is to investigate the impact of government incentives on firm innovation performance in Turkey, with the aim of providing an evidence-based framework for evaluating the effectiveness of these policies. By examining how various incentive mechanisms influence firms' research and development (R&D) investments, product innovations, and process improvements, the study seeks to identify the key factors that drive innovation performance across different sectors and firm sizes. This research will contribute to the academic literature by addressing the ongoing debate surrounding the efficiency and effectiveness of government incentives. It will also provide strategic insights for policymakers, enabling the design and implementation of more targeted and efficient support mechanisms. Ultimately, the findings aim to enhance the alignment of government policies with Turkey's broader goals of fostering innovation, improving global competitiveness, and achieving sustainable economic growth. The methodology of this study is designed to analyze the impact of government incentives on firm innovation performance in Turkey using a quantitative research approach. The primary dataset utilized is sourced from the World Bank's

Enterprise Survey (WBES), which covers over 150 countries and provides comprehensive information on various aspects of the business environment, such as financial access, corruption, infrastructure, competition, and firm performance. For Turkey, six separate surveys conducted between 2002 and 2019 were utilized. These surveys include data from firms of varying sizes, sectors, and regions, capturing both those that received government incentives and those that did not. Based on a thorough literature review, a model tailored to the dataset was developed. The dependent variable is the presence of innovation within firms, measured as a binary outcome, while government incentives serve as the primary independent variable. Firm-specific characteristics frequently highlighted in the literature, such as firm size, age, export intensity, and sectoral distribution, are included as control variables to ensure a comprehensive analysis. The statistical analysis was conducted using the Logit regression technique in Python, chosen for its suitability in estimating the probability of binary outcomes. Diagnostic criteria such as Pseudo R-squared, log-likelihood, LL-Null, and the likelihood ratio test (LLR p-value) were employed to evaluate model fit and statistical significance. The results reveal that government incentives have a statistically significant effect on the likelihood of firm innovation, alongside other firm-specific factors. This methodological framework provides a robust basis for understanding the relationship between government support and innovation performance, offering valuable insights for policymakers. The study reveals that R&D expenditures have the most significant impact on innovation, while the effect of firm size is relatively smaller. Government incentives and export ratios positively influence innovation likelihood, consistent with literature. Over time, firm age has shown a growing positive effect on innovation. In Turkey, the probability of innovation for incentivized firms reached 19% in 2019, compared to 6% for non-incentivized firms, though the overall impact of incentives remains limited. International comparisons highlight Turkey as having the lowest innovation probability among non-incentivized firms, with incentives providing modest improvements compared to other countries. The findings highlight the limited effectiveness of government incentives in Turkey compared to other countries with stronger incentive mechanisms, such as Slovenia and the Czech Republic. To address this, more strategic and targeted policies are needed to enhance the impact of incentives, reverse the declining innovation trends, and align incentive mechanisms with broader innovation strategies. These steps are critical for improving Turkey's innovation performance, fostering competitiveness, and driving sustainable economic growth.

Keywords: Innovation performance, incentive, subsidies, logit regression, enterprise surveys, R&D expenditure.
JEL Codes: O31, O32, O38

FINANCE DOGMAS AND NEOCLASSICAL MEMORIZATIONS IN MAINSTREAM ECONOMICS: EXAMPLES OF MILTON FRIEDMAN, EUGENE FAMA AND NOBEL

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During the post-pandemic exit period, while the Russia-Ukraine War was ongoing and the earthquake disaster was following, the fiscal policy in which macroprudential measures were implemented between December 2021 and May 2023 was frequently criticized in the mainstream and accused of being unscientific, claiming that it was an economic experiment (and heterodox economic literature was excluded or ignored). It was claimed that the economy would get back on track with a return to orthodox monetary policy and rationality. In the past period, when the inflation rate remained higher at the end of 1.5 years compared to May 2023, it is claimed and said by the mainstream that the money supply and public expenditures (fiscal policies) did not accompany the monetary policy. Therefore, it is claimed that the household's belief in inflation did not decrease (inertia) and they are not reducing their expenditures because of that situation. It was generally said (especially in social media posts and TV market channels) that locals (in academy and business the right usage is residents) did not act rationally by fueling inflation, especially service inflation, along with the minimum wage increase. (The name) "The Nobel Prize in Economics" and the beliefs and discourses in mainstream economics such as "*the money supply is always and everywhere inflationary*", "people and investors are rational" and "the importance of institutions in economic development and progress" are actually very different as declined/corrrected from/by its own sources, hence it was intended to be shown with scientific references and sources. In this study, examples were examined through a summary literature review, and it was shown that neoclassical memorization and dogmas were corrected by the owners (itselves) of these discourses, arguments and hypotheses, and were different from what is known in the mainstream (economics). In this way, it is a qualitative and conceptual study. Friedman, Fama and members of the Nobel Family corrected and rejected their own statements (hypotheses) and the facts mentioned in this study. The inflation-money supply relationship, the inflation and the investment relationship with (ir)rational households and investors, prize-winning theories such as the relationship between development and inflation, and real per capita income can still find firm supporters and a place in the mainstream and neoclassical understanding, although they have been revised by their main resources who first issued them. Although there are immutable rules in economics and finance, the financial policies implemented depending on the period and/or the dynamics of the countries may differ, and even if the policies are the same, the results may differ. While ignoring a (heterodox) literature in economics, not being aware of the developments and updates in the (orthodox) literature regarding the other (claimed as rational) understanding defended may not lead the proposed prescriptions and thus their results to the desired direction. In Türkiye, parallel to the World, these acceptances in mainstream (neoclassical) economics are a bitter prescription and cannot be a solution in the new economy. When data and graphs are presented by detaching them from the context of the facts and events of the relevant period, this is not economics but statistics (Dirican, 2024a).

Keywords: Money Supply, Efficient Market Hypothesis, Inflation, Nobel Economy Prize, Milton Friedman, Eugene Fama
JEL Codes: E13, E44, E51, E71

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