CORVINUS UNIVERSITY of BUDAPEST

14th Annual Financial Market Liquidity Conference

9th – 10th November 2023

Budapest, Hungary

BOOK OF ABSTRACTS

14th Annual Financial Market Liquidity Conference
Budapest, Hungary
9th – 10th November 2023

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Welcome from the Chair

Welcome to the 14th Annual Financial Market Liquidity (AFML) Conference. It is with great pleasure and enthusiasm that I extend my warmest greetings to each of you. After the unprecedented challenges we faced during the pandemic years, it is truly heartening to host this year's event in Budapest, gathering in person to rekindle the spirit of academic collaboration and exchange. Unlike the previous year's hybrid format, the opportunity to meet face-to-face, engage in lively discussions, and foster genuine connections is invaluable and will undoubtedly enrich our collective experience.

Our continued focus on addressing the intricacies of financial markets and liquidity remains steadfast. With the current economic landscape characterized by constant fluctuations and unforeseen global events, the significance of our scholarly pursuits is more pronounced than ever. We aspire to leverage the wealth of knowledge and insights generated over the years to confront the challenges facing the global economy today.

I am deeply grateful for the unwavering dedication and support of all the contributors to this event. My sincere appreciation extends to our esteemed invited guests, distinguished speakers, committed participants, and diligent session chairs. Moreover, I extend heartfelt gratitude to our esteemed sponsors, whose continued support has been instrumental in realizing the objectives of this conference.

I extend my heartfelt thanks to the members of the scientific committee and the local organizing team. Their exemplary efforts and tireless commitment have contributed significantly to the smooth execution of this event.

With the anticipation of fostering an engaging and collaborative environment, I encourage each one of you to actively participate and contribute to the discussions and deliberations throughout the conference. May this gathering serve as a catalyst for new ideas, insights, and partnerships that will shape the future of financial markets and liquidity.

I am confident that the collective energy and scholarly rigor that each of you brings will help create a memorable and fruitful experience for all in attendance. Let us relish the moments of shared learning and professional camaraderie.

Wishing you an enriching and enjoyable 14th AFML Conference.

We are also committed to organizing the 15th AFML Conference in 2024, with further details set to be unveiled shortly.

Best Regards,

Attila A. Víg
Chair of the Organizing Committee

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Keynote speakers

Analysts and Affiliated Money Managers: Do They Talk More Than They Should?

Thomas Walker, Sergey Barabanov

We study whether underwriters of newly listed companies have an information advantage over other institutional investors. Focusing on companies facing IPO-related class action lawsuits and a matched sample of companies that are not sued, we find evidence that lead underwriters maintain an informational advantage in the companies they make public and capitalize on this information by closing or reducing their holdings in sued companies before the lawsuit announcement date. A study of analyst opinions suggests that analysts affiliated with lead underwriters are reluctant to reduce their earnings forecasts or downgrade the ratings of sued companies before the date of litigation.

Algorithmic Pricing and Liquidity in Securities Markets

Jean-Edouard Colliard, Thierry Foucault, Stefano Lovo

We let ``Algorithmic Market-Makers'' (AMs), using Q-learning algorithms, choose prices for a risky asset when their clients are privately informed about the asset payoff. We find that AMs learn to cope with adverse selection and to update their prices after observing trades, as predicted by economic theory. However, in contrast to theory, AMs charge a mark-up over the competitive price, which declines with the number of AMs. Interestingly, markups tend to decrease with AMs' exposure to adverse selection. Accordingly, the sensitivity of quotes to trades is stronger than that predicted by theory and AMs' quotes become less competitive over time as asymmetric information declines.

Firm-specific Climate Risk Estimated from Public News

Thomas Dangl, Michael Halling, Stefan Salbrechter

"We estimate firm-specific exposures to climate risk from public news covering a period of 20 years by applying a novel topic modeling algorithm. We differentiate between regulatory (or transition) and physical climate risks and document that financial markets price both risks. Our study is the first to find a positive and statistically significant risk premium for physical climate risk. For regulatory climate risk we find a regime shift occurring around the year 2012 reconciling the conflicting evidence in the literature. While the risk premium is positive in the earlier period, it becomes significantly negative in the later one. A long-short portfolio that is long "green" firms and short "brown" firms, as identified by their topic exposures in public news, constitutes a priced risk factor and shows a surprisingly strong correlation with an ESG-sorted benchmark portfolio.

The Myth of Risk Aversion from Female Leadership — the Case of US High-Tech Sector

Rose Neng Lai, Shaohua Tian, Yang Zhang

It has been evidenced for long that top corporate management is dominated by male, and that female leadership could often induce more prudent risk-taking. The same might not be true, however, when the corporation is in a “high risk high expected return” setting, such as high-tech. Using data of the S&P 1500 listed companies, we show that high-tech firms with female CEOs are inclined to take higher risks, but not with female directors on the boards. Results are robust to alternative identification strategy and risk measures. Additional analyses indicate that female directors mitigate firm riskiness by enhancing the likelihood of success in innovation, increasing the annual report readability and lowering volatility of firm-level profitability. Interestingly, corporations with female CEOs have higher ESG scores, suggesting that high risk-taking is perhaps for enhanced sustainability. Our findings thus provide interesting implication that, contrary to the strong association between female leaders and lower firm risk, female CEOs can enhance more adventurous and sustainable development of high-tech firms, which in turn facilitate better decision making when appointing executives and exercising corporate risk oversight.

Invited Speakers

Capturing the risk of emerging markets: assessing diversification benefits vis-à-vis marginal risk contribution

Peter Csoka, Martin Markus, Gabor Neszveda

We analyze weekly returns across a span of 42 emerging and 25 developed countries, covering the period from 1990 to 2022. Our study employs a two-step approach to assess risk and diversification effects. First, for each country, we compute the individual expected shortfall and its extended form, spectral risk, representing the weighted average of the worst six weekly losses within the last 52 weeks. Subsequently, we determine the allocated risk, referred to as marginal risk contribution, by averaging the weekly returns over the six weeks corresponding to the highest market losses within the last year. Our investigation centers on the calculation of diversification benefits, defined as the positive discrepancy between individual risk and allocated risk. This metric serves as a gauge of country-specific risk, with a higher diversification benefit indicative of elevated risk when incorporating the respective country into the global portfolio. Notably, our findings demonstrate that emerging economies consistently exhibit higher diversification benefits over the entire examined period, including post-global financial crisis. We validate the robustness of our results across various specifications and controls, affirming the stability of our conclusions.

Textual analysis of corporate sustainability reporting and corporate ESG scores

Urša Ferjančič, Riste Ichev, Igor Lončarski, Syrielle Montariol, Senja Pollak, Katarina Sitar Šuštar, Aleš Toman, Aljoša Valentinčič, Martin Žnidaršič

For assessing various performance indicators of companies, the focus is shifting from strictly financial (quantitative) publicly disclosed information to qualitative (textual) information. This textual data can provide valuable weak signals, for example, through stylistic features, which can complement the quantitative data on financial performance or on Environmental, Social, and Governance (ESG) criteria. In this work, we investigate the link between ESG quantitative scores and textual features on the topic of sustainability from various aspects - the evolution of ESG topics over time, industry-specific features and effects, and the relationship between corporate ESG scores and text-based sustainability reporting measures.

The connectedness of cryptocurrencies

Barbara Będowska-Sójka, Piotr Wójcik

The cryptocurrency market is evolving rapidly and the issue of interdependence between coins, with implications for systemic risk, is becoming important. This study aims to identify the leading cryptocurrencies, their linkages, and the propensity to create hubs. We use a network approach based on the frequency domain connectedness analysis for the volatility of cryptocurrencies' returns and for their liquidity. Moreover, we check the

stability of constructed networks in two subperiods. Our sample consists of more than 90 coins that were continuously traded from 1 January 2017 to 22 March 2023 (2269 days). In order to combine variable selection and shrinkage, we apply the least absolute shrinkage and selection operator (LASSO) regression with an extension of the adaptive elastic net. We find that the larger the cryptocurrency measured by its market capitalisation, the greater the volatility affecting the overall system. Smaller coins seem to be less prone to connect with other coins than big ones. While there is no clear leader in the cryptocurrency market, Bitcoin is the most active in sending and receiving volatility. Several coins relevant to the transmission of the liquidity shocks are identified.

The Issuance Costs of UK Government Debt: 1987-2022

Mahnaz Oliaie, James Steeley

We estimate and model the costs of issuing UK government debt by auction from the inception of the auction market in 1987 through the financial crisis and the phases of QE and into the period of policy responses to SARS-CoV-2. Issuance costs decreased from the start of QE and have remained broadly stable since, although the period immediately following the UK's decision to leave the EU saw the UK government able to issue debt at a premium, on average. We examine the full-sample period as well as partitions based on the onset of QE, a change to the definition of Concession adopted by the UK DMO in 2014, and the need to estimate the concession prior to 2002 when the DMO first began measuring concession. We also examine the sample sub-divided by short, medium, and long maturity brackets to enable us to isolate segmentation effects. Our explanatory variables encompass characteristics of the auction including the size of the issue, the number of bidders, and the elapsed time since the most recent auction; characteristics of the bond being auctioned including its maturity, liquidity and benchmark status; and characteristics of the financial markets including measures of volatility and indicators of crises.

Speakers

CHALLENGES IN ESG RATINGS: UNDERSTANDING ESG RATING DISAGREEMENT AND ITS EFFECTS ON FINANCIAL DECISION MAKING

Fanni Dudás, Helena Naffa

The most widely applied indicators for sustainability are the Environmental, Social, and Governance (ESG) indicators, commonly used in academia and practice. However, these metrics lack standardization, resulting in potential discrepancies in performance assessments from different ESG rating agencies, referred to as ESG rating disagreement in the literature. Using ESG ratings from three different data providers for a sample of firms in the MSCI All Country Index for 2020, we calculated the ESG rating disagreement between Sustainalytics, Refinitv, and MSCI ESG scores. We applied quantile regression and provided evidence of a positive relationship between ESG rating disagreement and firm financial performance. Our findings contribute to a better understanding of companies' ESG performance and the relationship between ESG performance and financial performance especially today's ESG engagement and anti-ESG debate, as it is a cardinal question whether companies with medium and high ESG rating disagreement will join the ESG leaders or become ESG laggards in response to anti-ESG voices.

CONFLICT AT THE CROSSROADS: THE NEXUS OF COMMODITY AND FINANCIAL INTERDEPENDENCE

Florin Aliu, Ujkan Bajra

This research investigates the dynamics of currency exchanges involving Czech koruna, Polish zloty, Hungarian forint, Swedish krona, and Turkish Lira, examining their relationships with external factors. The findings reveal that fluctuations in gas, oil, wheat, and corn prices minimally affect the currencies under study. Conversely, the study underscores the susceptibility of these currencies to geopolitical factors, particularly the impact of the Russian Ruble. The mandatory use of Rubles for gas payments, dictated by the "unfriendly list," contributes to the gradual devaluation of these currencies. In essence, while commodities like gas, oil, wheat, and corn exhibit limited sway on the currencies under investigation, the Russian Ruble emerges as a pivotal factor with considerable influence on the foreign exchange market. This underscores the importance of geopolitical context in shaping currency dynamics, especially those tied to specific currencies like the Russian Ruble. The research emphasizes the intricate interplay between fiat currencies, geopolitical influences, and the obligations associated with particular currencies. In this context, commodities have a restricted impact on exchange rates, while geopolitical decisions retain substantial power in determining the value of fiat currencies.

Co-opted Boards and Bidder Performance

Hussain Tanveer, Luong Hoa, Ovi Nafisa Zabeen, Shams Syed

Drawing from the poor monitoring under co-opted boards, we examine U.S. M&A transactions over the 1999-2019 period. The results depict a significant negative relationship between a co-opted board and return to acquirers, suggesting that managers under co-opted boards make value-destructing M&A deals. We also show that the relationship between board co-option and acquisition performance is positively moderated by young CEO, CEO religiosity, and institutional ownership while being negatively moderated by an entrenched board. Our additional tests reveal that board co-option reduces acquisition efficiency and leads to worse financial performance. Overall, this study offers important implications for regulators and policymakers on how poor monitoring of the board of directors can influence announcement returns.

Corporate Fraud and the Consequences of Securities Class Action Litigation

Tamas Barko, Luc Renneboog, Hulai Zhang

We analyze class action litigation as a corporate governance device. Firms that have lower internal governance standards and those with fewer external monitors are more likely to be indicted. Lawsuit announcements are salient information to the market, as firms, on average, lose 12.3% without a reversal up to three years following the first court date, which points to a substantial reputation loss. Indicted firms readjust their operations, meanwhile, sophisticated investors decrease their positions. Stock market activity surges for firms suspected of fraud, and a conservative trading strategy yields significant returns over the subsequent period. Lawsuits also affect competitors both through competitive and contagion channels.

Credit Recovery Modelling via Sequential Monte Carlo Optimization

Jin-Chuan Duan, Andras Fulop, Patrick Tang

We present a new recovery rate modeling framework via a Sequential Monte Carlo (SMC) based combinatorial optimization technique where a small set of predictive features is selected from a large set of potential variables. This combinatorial optimization problem is mapped into sampling using a discrete distribution over combinations of predictors, and then executed via density/probability-tempered SMC techniques. Our target is a parsimonious beta-distributed recovery rate model executed on a data set comprising post-default bond recovery rates for US dollar denominated bonds with a set of 187 potential variables applied to the beta distribution's mean and variance equations. Our result is a robust model with nine predictors in mean and four in variance, offering novel insights into the factors that drive recovery rates.

Currency Mismatch Exposures and Exchange Rate Shock: Impact on the Bank lending channel

Palma Filep-Mosberger, Lorant Kaszab

In this paper, we examine the impact of two types of currency mismatches on banks' balance sheets - net foreign currency asset positions and lending to unhedged borrowers - and their influence on the transmission of exchange rate shocks to local currency borrowers through credit supply. Analyzing the unexpected appreciation of the Swiss franc in January 2015 using Hungarian credit registry data, our results show a positive correlation between banks' pre-shock net Swiss franc asset positions and post-shock loan growth. In contrast, pre-shock lending to unhedged firms negatively affects post-shock loan growth. We find banks' credit supply responses to exchange rate shocks to be heterogeneous, either contracting or expanding based on individual bank balance sheet structures. Furthermore, we present evidence that fluctuations in bank credit supply significantly impact small firms' activities.

Decoding Corporate Depositor Behavior - A Transnational Analysis of the Influence of Deposit Insurance

Sophie Döpp, Johannes Heuel, Alexander Szimayer

This research project explores how deposit insurance influences the behavior of corporate depositors in different countries. We utilize a comprehensive dataset that encompasses customer-level data, including sight deposits and interest rates, obtained from four central European banks. Our objective is to assess how different groups of corporate customers react to changes in economic fundamentals depending on their deposit insurance. Additionally, we investigate the impact of the COVID-19 crisis on corporate customers within their respective economies. To examine the relationship between deposit insurance coverage and customer behavior, our empirical analysis employs a dynamic panel data methodology. Through this study, we discover that deposit insurance coverage significantly influences corporate deposits under changing economic conditions.

Demand deposits and bank monitoring

Matej Marinč

This paper provides a novel rationale for why banks combine lending and deposit-taking. It shows that liquidity provision through demand deposits commits banks to monitoring. Investors with liquidity need to withdraw their deposits early and are not willing to refinance a bank. This curtails excessive bank lending and limits the moral hazard problem of a bank. In contrast, banks with tradable debt face a refinancing problem in which they expand on risky lending by reissuing bonds and exploiting investors who need to trade. In this setting, demand deposits may commit banks to monitoring even in the presence of deposit insurance.

Drivers of Sustainable Investment in the Population in Central and Eastern Europe: A Note on the Role of Education, Family, and Gender

Zsuzsa R. Huszár, Erzsébet T. Varga

We examine the drivers of Environmental, Social, and Governance (ESG) investment demand in Hungary, focusing on the role of education, gender, family, financial experience, and wealth. Using a representative Hungarian population survey, we find that on average, ESG plays a role in portfolio diversification. On average, younger people, with higher levels of education and regular investments, are more likely to express a preference for ESG investment options. The relation between wealth and ESG preferences displays a degree of nonlinearity, as we provide some evidence that high-net-worth individuals and experienced investors exhibit comparatively lower levels of interest in ESG investment opportunities. We also find that caretaker people, or those who own household pets are also more likely to be interested in sustainable investment options. Lastly, contrary to media reports, we do not find evidence that the Hungarian Generation Z is predominantly interested in ESG investments.

Establishing a New Market in Derivatives on Recycled Materials: Practical Considerations

Daniel Folkinshteyn, Jordan P. Howell, Jordan Moore

The listing of exchange-traded futures on recycled materials has the potential to help the environment by improving recycling efficiency while allowing corporations to achieve their sustainability goals. We examine the practical issues associated with developing a robust market in exchange-traded futures on recycled material. We interview important stakeholders including waste management industry executives, corporate ESG executives, derivatives risk managers, and regulators. We also relate our research to previous studies on factors influencing stock market participation and the adoption of new technologies. Although there are some practical benefits to using cash-settled futures, these futures must settle to a transparent and robust index. An optimal futures contract size is small enough for retail participants, but large enough to justify fixed exchange fees per contract. It is critical to engage speculative community participation because corporate end users of the contract will face position limits that are tied to the amount of total contract open interest. It will be critical to identify and educate communities of influential and financially literate professionals as to the potential usefulness and ease of using these contracts. Listing exchange-traded futures on recycled material on a well-established exchange or OTC network will help develop trust and interest among these influential market participants.

Evaluation of Support Vector Machine Based Stock Price Prediction

Tilla Izsák, László Marák, Mihály Ormos

In recent years with the advent of computational power, Machine Learning has become a popular approach in financial forecasting, particularly for stock price analysis. In this paper, we develop a non-recurrent active trading algorithm, based on stock price

prediction using Support Vector Machines on high-frequency data, and compare its risk-adjusted performance to the returns of a statistical portfolio predicted by the Capital Asset Pricing Model. We have selected the three highest volume securities from a pool of 100 randomly selected stock datasets to investigate our algorithmic trading strategy. The abnormal return estimates are significant and positive and the systematic risk is lower than unity in all cases, suggesting lower risk compared to the market. Moreover, the estimated beta values for all stocks were close to zero, indicating a market-independent process. The correlation analysis has revealed weak correlations among the processes, supporting the potential for risk reduction and volatility mitigation through portfolio diversification. We have tested an equally weighted portfolio of these three assets and have demonstrated a remarkable return of 1348% during the evaluation period from July 1st, 2020 to January 1st, 2023. The results suggest that the weak form of market efficiency can be questioned, as the algorithmic trading strategy, employing a Support Vector Machine binary classification model, has consistently generated statistically significant and substantial abnormal returns using historical market data.

Expected Bond Liquidity

Marcel Müller, Michael Reichenbacher, Philipp Schuster, Marliese Uhrig-Homburg

We propose a machine learning methodology for predicting the future liquidity distribution of individual bonds in the U.S. corporate bond market and use it to compute two forward-looking liquidity measures: the expected illiquidity and downside liquidity risk, representing the tail expectation of the distribution. We highlight three key insights into corporate bond pricing using our measures. First, bonds characterized by higher expected illiquidity and downside liquidity risk command considerably higher yields. Second, a one-standard-deviation shock to downside liquidity risk leads to a substantial alpha increase of 0.7% p.a. Conversely, a similar shock to expected illiquidity results in an elevated systematic risk premium of 1.8% p.a. In contrast, employing a simplistic forecast based on today's liquidity yields no significant alpha, and the systematic risk premium is underestimated by about 25%. Third, our study demonstrates preemptive selling behavior by investors in corporate bond mutual funds in response to anticipated liquidity declines in underperforming funds. Incorporating our expected illiquidity measure more than doubles the impact on fund flows compared to considering only current liquidity.

Foreign Exchange Risk and Stock Returns in the Eurozone

Christoforos Andreou, Soteria Charalambous, Andreas Savvides

This paper examines the impact of foreign exchange risk on future stock returns in eleven Eurozone stock markets from 2000 to 2019. Using 343,222 firm-month observations of 3,341 Eurozone-listed stocks, we document a significant negative relationship between currency risk and future stock returns. The negative relationship persists even after controlling for various firm characteristics such as market beta, size, book-to-market ratio, asset growth, momentum, and profitability. Our analysis also identifies four prominent asset pricing anomalies in the Eurozone, value, profitability, asset growth, and momentum, but does not find evidence of size anomaly. Our findings are robust to alternative specifications of foreign exchange risk. This study offers practical investment

insights that emphasize the importance of foreign exchange risk in the pricing of stocks in Eurozone markets.

Green direction in central banking

Ádám Banai, Eszter Baranyai, Pál Péter Kolozsi, Kristóf Lehmann, Gábor Neszveda

We are the first to investigate how the general public perceives the green direction in central banking – a highly relevant topic given the importance of trust for central banks that pay increasing attention to climate risks. Using a unique representative survey for Hungary we document broad-based support and the potential for some increase in trust. A higher level of climate worry, seeing environmental protection as important, being a woman, and being a student are associated with an expectation that trust would increase following pro-environmental measures. Respondents with an interest in the economy are more likely to think their trust level would change – especially in a negative direction. Even amid a macroeconomic environment of high inflation, the risk of trust deteriorating appears limited. Findings may also be useful for other jurisdictions as we document similarities in the trust-building process vis-a-vis central banks.

In labels we trust? The influence of sustainability labels in mutual fund flows

Sofia Brito-Ramos, Maria Céu Cortez, Svetoslav Covachev, Florinda Silva

The European sustainability mutual fund market is characterized by the co-existence of several labels and certifications designed to guide investors in their investment decisions. This study is the first to explore the influence of government and non-profit organization (GNPO) sponsored sustainability labels on fund flows and the marginal impact of multiple ESG labels. Our evidence documents that GNPO labels have an impact on fund flows. Additional effect is stronger for younger funds and funds lacking other sustainability signals. We also find that when a fund already has other signals of sustainability, the addition of a GNPO label does not appear to attract additional fund flows unless the fund has an ESG-related name. The evidence using the upgrade of funds to article 8 and 9 of the SFDR classification also corroborates that the marginal impact of more labels is questionable in a setting of proliferation of labels. Our paper provides useful insights into the effectiveness of different labels as signals for investors, suggesting that an easy-to-grasp signal like the name seems more salient than third-party certifications, while also highlighting the relevance of holding aligned sustainability signals.

Information-Based Equilibrium Asset Pricing

Dániel Léber, Mihály Ormos

We focus on entropy as a measure of risk and what role it can play in equilibrium asset pricing. Similar to the traditionally used capital asset pricing model (CAPM), the entropy can also be divided into mutual (a measure of the non-diversifiable risk) and conditional (a measure of the comovement with the market portfolio) components. We investigate what is the relationship between these and the conventionally used risk metrics, like standard deviation and Beta. We also propose a better solution to the notorious puzzles

of asset pricing. Entropy as a measure of risk has been already described and its advantages in portfolio optimization and risk management are also acknowledged in the economic literature. We use data from the OpenBB database and Kenneth R. French's data library to calculate daily returns and the various risk measures associated with them. We show the diversification effects of different risk measures and their stability over time. We introduce a new method to separate individual and systemic risks of the assets. We also validate our model using the conventional test of the CAPM model. Our regression-based results are tested both in-sample and out-of-sample. The robustness of our model is evaluated by both cross-validation and the use of the rolling windows over time.

Interbank liquidity and short-term yields in an emerging market economy – the experience of Hungary in 2016–2020

Pál Péter Kolozsi, Gábor Horváth, Csaba Lentner

Liquidity has an impact on short-term yields, which makes it a key determinant of monetary transmission. The aim of the research was to examine how the increase in the banking system's liquidity and its distribution within the banking system affects yields. To better understand this relationship, this analysis gives an econometric estimate of the interbank liquidity demand function. The research covers Hungary being a representative of small, open, emerging market economies. The analysis is based on segmented regressions, the study covers the period 2016–2020 regarding overnight interest rates. The slope of the demand function is negative, the coefficients decrease with the increase in excess reserves. The most significant breakpoints of the demand curve are detected around 0.83% and 1.53% of M2 in excess liquidity. There is a correlation between the level of excess reserves and its distribution and concentration. The distribution of liquidity became more balanced along with the increase in excess liquidity. The saturation of the banking system depends on the concentration of liquidity among banks. The results can be useful for other small and open emerging market economies with abundant liquidity, especially in the coming tightening cycle.

More ESG, less misconduct?

Edina Berlinger, Barbara Dömötör, Martin Márkus, Gábor Neszveda

We investigate the effect of ESG performance on corporate misconduct in the financial and non-financial sectors. Misconducts are defined as operational loss events reported in the SAS Global Oprisk database, especially where the responsibility of the firm was established explicitly by regulators or legal body. Our data sample covers 661 loss events of 6,132 firms traded in stock exchanges NASDAQ and NYSE between 2013 and 2019. ESG rating, while it is not significant for the frequency, is significant for the severity of misconducts. One standard deviation higher ESG results in 50-58% lower severity. Our findings are robust to a great variety of model specifications and support the signaling and the risk management theories of corporate social responsibility. We conclude that ESG ratings can capture key characteristics of firms' downside risk relevant for shareholders and other stakeholders as well.

Multidimensional Stock Market Liquidity and Business Cycles

Thomar P. van Hees, Willem F.C. Verschoor

Recognizing the difficulty in measuring stock market liquidity and its multidimensional nature, we examine the impact of multidimensional stock market liquidity on business cycles that captures the key market liquidity characteristics. Using 10 different liquidity measures and 5 sub-dimensions, we find that the effect of liquidity on economic growth, investment growth, and consumption growth differs among liquidity sub-dimensions in the US stock market during the period 1953 to 2019. We find some evidence that indirect trading costs are better apt to capture information about the macro-economy, although we find no evidence that a single dimension or measure is outperforming others. On the contrary, we conclude that the relationship between stock market liquidity and the real economy is mostly driven by the commonality in liquidity. We find that an overall measure of liquidity contains relevant information about future macroeconomic variables and business cycles. Our findings exemplify the importance of liquidity proxies in explaining the state of the US economy.

OPEC announcements and uncertainty: When does the OPEC matter?

Milán Csaba Badics, Pálma Bernadett Szilárd

We analyse the impact of the OPEC production quota decision on the price of WTI crude oil futures between 1985 and 2020. This paper examines the joint impact of OPEC production quota decisions and uncertainty on the price of West Texas Intermediate crude oil futures between 1985 and 2020. The employed two-step event study methodology is able to model crude oil returns outside the event window and to identify the financial and economic factors explaining abnormal returns in times of OPEC decisions. The abnormal returns around OPEC announcements are estimated with a GARCH model to account for time-varying volatility and other stylized facts in the crude oil market. The findings regarding the announcements indicate that the OPEC decisions respond to geopolitical affairs and also accommodate global crude oil demand factors given that geopolitical risk and world industrial production significantly affect price movements of crude oil in the announcement window. Other measures of risk and uncertainty do not seem to have any impact on crude oil prices around the event window. The results are robust to alternative specifications of the abnormal return model, different components of geopolitical risk, and alternative rollover methods of WTI crude oil futures contracts.

Subsidy-Driven Firm Growth: Does Loan History Matter? Evidence from a European Union Subsidy Program

Banai Ádám, Goel Tirupam, Takáts Előd, Telegdy Álmos

Subsidies should target firms with profitable opportunities but without funding. We study how credit registry data can help design efficient subsidy programs. Using subsidy winners and losers as treated and control groups, we leverage variation in access to loans

to identify the differential impact of subsidies. Despite the higher marginal value of capital, the impact of subsidy on assets and performance is not greater in loan-deprived than in loan-acquiring firms. Thus, loan deprivation is likely caused by borrower shortcomings instead of credit rationing. In such cases, subsidies need not privilege loan-deprived firms and banks may be better at distributing subsidies.

Systemic turbulence and risk spillovers in IBOR rates in Europe

Ewa Dziwok, Marta Karas, Michał Stachura

We propose and apply a novel systemic turbulence measure (STM) to investigate if all European IBOR rates were similarly susceptible to such turbulence as LIBOR rates. We analyze immediate systemic turbulence spillovers based on coefficients analysis and compare the markets based on turbulence characteristics. We also use Dynamic Time Warping to cluster analyzed markets based on the course of turbulence, showing variable and time-changing commonalities in IBOR turbulence. Additionally, we analyze systemic risk spillovers between different IBOR rates in Europe and between these rates and the studied banking systems between 2006 and now, for which we employ a set of innovations in calculating ΔCoVaR. We study 33 European countries, including 72 banks systemically important for Europe and 19 IBOR term structures, making this paper the most comprehensive analysis of Western, Central, and Eastern Europe concerning interbank market turbulence. We report different levels of overall systemic turbulence for different groups of IBOR rates and in different periods. We find variable evidence of similarity and risk spillovers between LIBOR and IBOR rates. We discuss the empirical results in the context of the challenges, risks, and feasibility of a full transition toward the new rates in Europe. Conclusions are relevant for market regulators in the investigated region because they apply not only to the IBOR rates in a backward-looking manner but also to the new rates to be adopted in a forward-looking one.

The Causal Effects of Housing on Stock Demand

Renato Božič, Igor Lončarski

Houses are the most considerable assets owned by European households. According to the Eurosystem Household Finance and Consumption Survey (HFCS), the average value of primary dwellings in the balance sheet of homeowners exceeds 80% of the average value of the total assets owned by households with nonzero assets holdings. At the same time, the effects of housing on stock demand remain largely unexplored. Identifying exogenous variation in homeownership status plays a crucial role in estimating the causal effects of housing on stock demand. We instrumentalise endogenous housing decisions with exogenous housing assignments in the form of intergenerational transfer, such as inheritance or gifts. We found that homeownership reduces the likelihood of stock market participation by 10 percentage points and decreases stock share in households' financial portfolios by 2 percentage points. Considering the limited stock demand of European households, those effects equal over 100% decline in stock demand. The methodology of this paper stands on the works of Imbens and Angrist (1994) and Angrist, Imbens, and Rubin (1996), who developed the procedure for identifying and estimating the local

average treatment effects. This study employs the first three waves of pooled cross-sectional HFCS data for young to middle-aged European households.

The Effects of Europe's 2020 Short Selling Bans on Securities Markets

Bogdan Stankovski, Christian Westheide

We investigate the impact of the short-selling ban in 2020 imposed by some European countries on equity market liquidity and returns, stock price behavior surrounding earnings announcements, and corporate bond prices and liquidity. We find that the short selling ban had a detrimental impact on stock market liquidity and little effect on returns. Negative earnings announcements were followed by larger decreases in stock prices, suggesting that the markets reflected overly optimistic opinions during the short-selling ban. The effect on the liquidity of corporate bonds of firms with publicly listed stock was positive, though bond returns were negatively affected. There is some evidence for positive effects on the issuance of new corporate bonds. Altogether, the findings provide a more nuanced picture than much of the existing literature suggests.

The Market for Quasi-Credits. The Inter-household Lending in the East of Northern Hungary

Daniel Havran

The usage of quasi-credits signals a remarkable vulnerability of households. Inter-household loans emerge before payday in areas where people live close to the poverty line, are exposed to income shocks and lack access to finance. Such forms of credit can act as mutual insurance to smooth consumption. This study explains how the informal market for liquidity works and provides empirical evidence on borrowing and lending motives. I develop a theory that identifies the conditions of being a borrower or lender in the quasi-credit market, defines the motivation of reciprocal transfers for creditworthy households, and implies a lower propensity to save for the participants. Using surveys from the eastern part of the Northern Hungary region, I also provide insights into informal money transfers, which are rarely observable through administrative data. The study describes the determinants of borrowing in terms of income level, expenditure structure, and access to liquidity. It also explains the number of months borrowed by the level and uncertainty of income and previous payment problems. Considering reciprocal transfers, I find that households having access to finance but lacking self-efficacy provide liquidity informally. In addition, data justifies a lower proportion of savers among quasi-credit users.

The application of put-call parity to measure inefficient price setting

Nóra Fellödi-Szűcs, Balázs Králik, Kata Váradi

This paper introduces the concept of "Absolute Market Unfairness" (AMU), quantifying pure arbitrage profits obtainable by market makers in any option market, utilizing the put-call parity relationship. The AMU measure is based on the phenomenon that in the

emerging crypto options market appreciable put-call parity breaking remains after all costs of putting on an arbitrage position are considered, and tradable pure arbitrage profits can be obtained by those enabled to short naked options. This paper primarily focuses on market efficiency through the no-arbitrage pricing perspective. Notably, our findings are entirely model-free and don't depend on any previous assumptions related to pricing. In our study, we identify market inefficiencies within the Binance crypto option market, we extend our analysis to a more mature capital market as well, in which we can also quantify inefficiency with the AMU measure. As a single figure, AMU is easy to interpret and be compared between different markets. Therefore, we recommend the utilization of this metric to evaluate the investor-friendliness of options markets for regulatory assessment.

The bank-lending channel of macroprudential policy: evidence from cross-border bank flows

Josefine Fabiani, Kyriakos Neanidis

We examine the impact of cross-border bank flows from source countries on the lending behavior of banks in destination countries. Separately, we investigate how this spillover might change due to macroprudential policy action taken in source countries, and if there is a role for destination-country macroprudential policy in mitigating an inward transmission. We tackle these issues by combining bilateral cross-border credit data with destination-country bank-level loan data and data on national macroprudential policies. We find evidence in favor of a bank-lending channel of cross-border flows, where destination-country banks issue more loans to non-bank borrowers in response to a greater inflow of credit from abroad. Macroprudential policy tightening in source countries reduces the magnitude of the international spillover, unveiling a bank-lending channel of foreign macroprudential policy, that is more pronounced for supply-side policy instruments. However, we find no role for destination-country macroprudential policy in mitigating the impact of cross-border flows on host-bank lending.

The cost of biodiversity portfolio alignment at different ambition levels

Helena Naffa, Gergely Janos Czupy

We estimate whether ESG investors sacrifice Sharpe ratio (risk-adjusted return) in exchange for biodiversity portfolio alignment. We use the biodiversity-exposed constituents of the MSCI All Country World Index as an investment universe and define three levels of portfolio alignment by excluding its 25%, 50%, and 75%. At each alignment level, we estimate the difference between the maximum attainable Sharpe ratio by biodiversity screening and random asset selection between 2013 and 2023. The difference is considered the cost of biodiversity portfolio alignment. The results show that screening decreased the maximum attainable Sharpe ratio in the universe by 9.0%, 21.3% and 40.4% at low, moderate, and high alignment, respectively. Biodiversity screening reduced the attainable Sharpe ratios by an additional 2-4% on average.

The role of ESG in investments
Empirical evidence from US Banking and Energy sector

Barnabás Timár

In my study, I test the effect of the ESG score incorporation into investments in the banking and energy sector through the most common ESG investing styles. I test these investment strategies through a portfolio approach and also use the Fama-MacBeth regression simultaneously. Therefore, compelling a more comprehensive analysis. To better account for investor needs, I not only focus my analysis on the returns, but statistically test the standard deviation and downside standard deviation as two measures of risk. I also evaluate the performance through three different risk-adjusted return ratios (Sharpe, Sortino, and Information ratio). Looking for structural or systemic differences I divide the data into sub-periods at the Paris Agreement, and into periods of recessions. The most interesting result is for the Environment portfolio in the banking sector, which consistently outperforms the sector average in terms of risk-adjusted returns, standard deviation, and in some cases in raw return as well. The results are robust for equal and value weighting, different time periods, market conditions, and testing methods. It is especially strong in times of recession. The positive screening investing style in the banking sector also generally outperforms the sector average in terms of risk-adjusted return. However, the results in the energy sector are not so clear. There is no clear good strategy, the results are sensitive for weighting and for time. The positive screening style shows some positive results and the negative screening techniques also have some promising results in the energy sector. In conclusion, my results support the incorporation of ESG into investment decisions for better risk-adjusted performance in both the banking and the energy sector. With a stronger performance in the banking sector for the Environmental factor.

The role of small traders in the stock market

Ustun Ceyda

In cases of liquidity imbalances in the market, I examine the role of small traders in liquidity provision at different frequencies and whether they have a role in leaning against the imbalance. Using data from the benchmark Turkish BIST30 index from Borsa Istanbul for 2019, this paper examines the liquidity imbalance and returns with different levels of frequencies and different type traders categories, especially small traders. I find that small traders may have an important role in providing liquidity not only at a daily level but also at an intraday level. I show that small traders, especially those classified as passive (i.e., those who transact mostly via limit orders) provide liquidity of higher magnitude compared to those classified as aggressive (i.e., those who transact mostly via market orders). More active aggressive small traders are liquidity takers from the market by chasing trends, whereas less active aggressive small traders enter the market later and provide liquidity with a delay at an intraday level. The passive small traders seem to profit more from the liquidity provision than those classified as aggressive in my sample.

Three Variations on Common Priors, No Trade, and Money Pumps

Ziv Hellman, Miklos Pinter

We consider three different variations of what the concept ‘common prior’ can mean in infinite state spaces. We show that in many cases the common prior concept needs to be extended to a consistency property, rather than identifying a single measure that can serve as a common prior to a collection of posteriors. We further show that to each variant of the common prior there are distinct associated concepts of conglomerability, agreeable bet, no trade theorem, and money pump. We study the interrelations of all of the concepts from epistemic and behavioural perspectives. Finally, we revisit the Agreeing to disagree theorem by Aumann (1976), and give three variants of it.

Trading the ECB: Anticipating The Conduct of Monetary Policy

Jonas Becker, Alexander Valentin

The selection of securities eligible to serve as collateral for liquidity is crucial for monetary policy conduct. In the Eurozone, this selection is opaque within a set of securities satisfying minimal criteria. Using proprietary data, we empirically show that German banks anticipate the inclusion of corporate bonds into the ECB's collateral framework, purchasing them prior to official announcements, and earning an annualized premium of up to 145 basis points. This is at odds with the market-neutral conduct of monetary policy and favors large commercial banks with larger trading portfolios and fewer deposits (relative to their total assets). A neural network rationalizes these findings by predicting the future eligibility of a large number of bonds. Our findings highlight the need for greater transparency in the collateral framework selection process to ensure neutral monetary policy conduct.

Understanding liquidity commonality in the cryptocurrency market

Milán Csaba Badics, Boglárka Sass

Cryptocurrencies have significantly increased in popularity and received substantial attention in recent years. Our paper tests the existence and examines the drivers of liquidity commonality in the cryptocurrency market. The sample includes the top 100 cryptocurrencies by market capitalization and covers the extensive time period between January 1, 2015, and February 28, 2023. Liquidity commonality was calculated using the “market model” of Chordia et al. (2000). According to my analysis, a relatively high level of liquidity commonality can be observed in the examined period. Moreover, the level of commonality varies significantly between groups of cryptocurrencies. The liquidity of coins is more sensitive to the daily changes in market-wide liquidity than that of tokens. If we group cryptocurrencies by their technologies, we also find a significant difference between the groups: the liquidity of smart contracts shows the strongest commonality with market liquidity, while the liquidity of conventional cryptocurrencies shows the weakest. We found that COVID-19 significantly affected liquidity commonality: the relationship between individual cryptocurrency liquidity and aggregate market-level liquidity became significantly stronger after the coronavirus outbreak. Our results also indicate that liquidity commonality in the cryptocurrency market varies over time. The

commonality was the highest during major crisis events, such as COVID-19 and the start of the war in Ukraine. We also showed that there is a strong relationship between funding liquidity and market liquidity in the cryptocurrency market. To examine the robustness of these results, four different low-frequency liquidity measures were used to calculate individual cryptocurrency and market-wide liquidity.

Volatility spillovers of ESG stock indices under rising geopolitical risk: New insights from developed and emerging markets

Renata Karkowska, Szczepan Urjasz

The role of the capital market in financing the energy transition, reducing global warming, and social imbalances seems invaluable. However, it is important to note that above-average investment in environmentally, social, and governance-based companies (ESGs) may generate speculative activities, dictated by inadequate valuation. In response to the rapid growth of sustainability investments, we examine the linkages of the world's most important ESG equity indices, covering developed and/or emerging regions, during a time of unexpected turbulence related to the COVID-19 pandemic and Russian aggression in Ukraine. We used volatility connectedness indices based on the novel methodology proposed by Diebold and Yilmaz (2012, 2014), as well as structural breaks. The study has the potential to make a significant contribution to the field of systemic risk pricing and portfolio risk management in situations of increasing geopolitical risk.

Who Knows? Information Differences Between Trader Types

Albert J. Menkveld, Ion Lucas Saru

We study the informativeness of agency and principal trades. Order informativeness depends on the horizon and frequency we analyze. In line with the literature on high-frequency trading, principals are more informed than agents at the highest frequency, as measured by the contribution of the respective order flow series to the variance of efficient price innovations. Once we move to lower frequencies, price discovery is dominated by agents, while the share of principals goes to zero. This is reflected in the gross trading revenues of agents and principals at different frequencies. Our results hold across market conditions as measured by the VIX.

Poster Presentations

Implied correlation on the CEE FX market

Sándor Misik

The aim of the study is to compare the forecasting ability of the foreign exchange market implied correlation with the time series based models concerning the CEE foreign exchange markets - namely Czech Krone, Hungarian Forint, and Polish Zloty - and to analyse the main drivers of the potential differences. Based on the daily data on CEE FX trios of 16 years between 2006 and 2023 the results seem to confirm the findings of others according to which the implied correlation alone cannot be considered a clearly better predictor but in most cases provides additional information to EWMA based correlation which seems to have the highest forecasting accuracy the currency trios formed between CEE FX rates and EUR - USD for one- and three-month forecast periods. Another result is that in the case of the HUF and PLN currency trios, the forecasting accuracy of the correlation between CEE/EUR and USD/EUR rates has a special importance that might be traced back to the market structure whereas CEE/EUR and USD/EUR FX rates can be considered as “independent” markets. Also, we find that FX volatility forecasting and FX correlation forecasting do not result in the same rank among methodologies.

Navigating the Link Between Cryptocurrency Adoption and Carbon Footprint in Decentralized Finance

Ujkan Bajra, Ermir Rogova

This study, spanning from the second BTC halving event in July 2016 to August 31, 2023, explores the environmental impact of Bitcoin (BTC) and Ethereum (ETH) adoption. Using instrumental regression analysis, it establishes a strong link between BTC adoption (measured by transaction volume) and carbon emissions. Notably, one million BTC transactions contribute to 0.86 Megatons of carbon emissions, with an individual BTC transaction emitting about 844 kg (0.844 metric tons) of carbon, equivalent to consuming roughly 1,000 kWh of electricity. The study highlights significant emissions associated with BTC, primarily due to its Proof-of-Work (PoW) block creation and market capitalization. Conversely, the study shows that ETH adoption has a minimal environmental footprint, thanks to its energy-efficient Proof-of-Stake (PoS) protocol. Interestingly, there's a slight positive correlation between ETH market capitalization and carbon emissions. Ethereum emits roughly 27 times fewer carbon emissions than Bitcoin during the study period. In summary, these findings underscore the intricate relationship between cryptocurrency adoption and environmental concerns, emphasizing the urgent need for eco-friendly blockchain technologies like PoS. This urgency becomes especially pertinent with the upcoming fourth halving event, expected in April 2024, and beyond. This event may exacerbate block creation challenges, potentially leading to reduced BTC rewards, increased energy consumption, and heightened uncertainty

Performance analysis of ESG-dedicated international organizations

Hedvig Gal

The paper describes a performance analysis of the selected institutional organizations that have comparative merits and incorporated Sustainable Development Goals (SDGs). The related study has identified additional traits of institutional organization in the context of Environmental, Social, and Governance (ESG) activities. The quantitative analysis deploys Granger causality on the data, which has been started to gather by the governments of Australia, Denmark, the Netherlands, Sweden, United Kingdom 15 years ago; and a professional institution, the Multilateral Organisation Performance Network (MOPAN) 20 years ago. The intention of the Granger-causality analysis is to prove the causal relationship between the performance and its influential factors, such as policy autonomy and net income level for the institution of Global Environment Facility (GEF), Climate Investment Funds (CIF) and United Nations Environment Programme (UNEP). Additionally, the Green Climate Fund (GCF) was included in the average performance indicator (AVPI) analysis.

Stock market co-movements in South-Eastern Europe: Does the SEE Link Integration beneficial for the participants?

Judit Burucs, Fanni Dudas

The bank-based financial system characterizes Europe, especially South-East Europe (SEE) countries. However, the Capital Markets Union initiative -started in 2015 in the EU- aims to mobilize European capital and channel it to companies because it assists economic growth. The stock markets of Slovenia, Croatia, Bulgaria, Serbia, North Macedonia, and Bosnia & Hercegovina joined the South Eastern Europe Link (the SEE Link) Platform without a merger to provide more trading alternatives. This article analyses the degree of SEE Link and the benefits of integration for these small, mainly middle-income countries' capital markets. We examine time-varying stock market co-movements in South-Eastern Europe employing the dynamic conditional correlation multivariate GARCH model. Using daily data from 2010 to 2019, we find that the correlations among stock markets in South-Eastern Europe decreased over time. Our findings suggest that the integration has not influenced the individual markets; an explanation can be that problems related to the technical, regulatory and governance measures do not stimulate foreign investments. The low integration level may not decrease the availability of portfolio diversification benefits for the investors. The contribution of this article to current literature is that it assesses whether capital market integration is advantageous for the capital market of small, developing countries.

Talk or action? The impact of climate conferences on Polluting and Green investments

Barnabás Timár

Given the serious, complex, and rather concerning effects of climate change, many countries and global organizations have begun working together to prevent or mitigate the potential damages in the form of conferences. In my study, I investigate the impact of these conferences through their effect on polluting and green investment. As a proxy, I use three ETFs for each sector. I use the event study methodology for testing the effect of the events. I also classify the events based on their sentiment and previous expectations to create the possibility of more detailed research. My hypotheses are the followings: In case of a positive sentiment event, we can see a significant negative abnormal return in the polluting sector, while a significant positive abnormal return in the green investments. Also, in case of a negative sentiment event, we can see a significant positive abnormal return in the polluting sector, while a significant negative abnormal return in the green investments. This would mean that the conferences have real impact, and they are not just talks with empty promises (greenwashing). However, my results indicate that the conferences have no significant effect neither on the polluting nor on the green investments. Therefore, I reject all my hypotheses. These results are robust for different tests and time periods as well. Overall, my study supports the greenwashing critics of the climate conferences for their lack of real impact.

Understanding liquidity commonality in the cryptocurrency market

Milán Csaba Badics, Boglárka Sass

Cryptocurrencies have significantly increased in popularity and received substantial attention in recent years. Our paper tests the existence and examines the drivers of liquidity commonality in the cryptocurrency market. The sample includes the top 100 cryptocurrencies by market capitalization and covers the extensive time period between January 1, 2015, and February 28, 2023. Liquidity commonality was calculated using the "market model" of Chordia et al. (2000). According to my analysis, a relatively high level of liquidity commonality can be observed in the examined period. Moreover, the level of commonality varies significantly between groups of cryptocurrencies. The liquidity of coins is more sensitive to the daily changes in market-wide liquidity than that of tokens. If we group cryptocurrencies by their technologies, we also find a significant difference between the groups: the liquidity of smart contracts shows the strongest commonality with market liquidity, while the liquidity of conventional cryptocurrencies shows the weakest. We found that COVID-19 significantly affected liquidity commonality: the relationship between individual cryptocurrency liquidity and aggregate market-level liquidity became significantly stronger after the coronavirus outbreak. Our results also indicate that liquidity commonality in the cryptocurrency market varies over time. The commonality was the highest during major crisis events, such as COVID-19 and the start of the war in Ukraine. We also showed that there is a strong relationship between funding liquidity and market liquidity in the cryptocurrency market. To examine the robustness of these results, four different low-frequency liquidity measures were used to calculate individual cryptocurrency and market-wide liquidity.

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See you in 2024 at the 15th AFML Conference!