

## **The EFA Annual Meeting 2021 in Milan, Italy, and Shifts in Focus Regarding Contents from 2009 to 2021**

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### **I. Overview**

Similarly to 2020, the 48<sup>th</sup> Annual Conference of the European Finance Association (EFA) also took place virtually, but was hosted at the Bocconi University in Milan, Italy, from 25<sup>th</sup> August until 27<sup>th</sup> August 2021. Professor Itay Goldstein from the University of Pennsylvania, USA, could be won as the keynote speaker.

In contrast to the previous year, only 180 of the approximately 2,144 papers submitted were admitted for presentation resulting in an all-time low acceptance rate (at least since 2009) of merely around 8.40%. Table 1 presents the development since 2014 in detail. Certainly, it would be interesting to know why the organizers reduced the number of presentations by more than 25% despite a new record number of submissions.

A total of 518 scientists contributed to the 180 papers presented at the conference, with 31 authors – who participated in 21 papers – being from 15 universities and institutions based in Germany. The ratio of “German papers” of 21/180 = 11.66% is well above the previous average of 10.03% realized since 2009.

Measured by the number of downloads from the Social Science Research Network (SSRN; deadline: October, 15th, 2021), the three most successful contributions with German participation were:

1. Ilhan, E. (Frankfurt School of Finance & Management)/Krueger, P. (University of Geneva)/Sautner, Z. (Frankfurt School of Finance & Management)/Starks, L. T. (University of Texas at Austin): Climate Risk Disclosure and Institutional Investors, 1,639 downloads, ranking position 20 based on total downloads.

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*Table 1*  
**Selected Key Figures in Annual Comparison 2014 to 2021**

	Average 2009–2020	2014	2015	2016	2017	2018	2019	2020	2021
Submissions	1,683	1,700	1,700	1,853	1,800	1,900	1,900	1,884	2,144
Acceptances	233	267	240	243	222	243	243	243	180
Acceptance rate	14.10 %	15.71 %	14.12 %	13.11 %	12.33 %	13.50 %	13.50 %	12.90 %	8.40 %
“German” papers	23	30	18	29	27	22	27	23	21
Rate Germany	10.03 %	11.24 %	7.50 %	11.93 %	12.16 %	9.05 %	11.11 %	9.46 %	11.66 %
Downloads total	35,821	31,923	32,613	35,454	34,523	44,646	36,372	51,057	54,760
Available via SSRN	160	181	145	144	148	176	174	185	127
Rel. availability	68.62 %	67.79 %	60.42 %	59.26 %	66.67 %	72.43 %	71.60 %	76.13 %	70.56 %
Downloads per paper	224	176	225	246	233	254	209	276	431
Downloads German Top 3	1,568	1,607	685	1,236	1,729	2,213	2,421	915	2,728
Ranking German Top 3	18	11	47.67	15	15.67	13.33	12.33	23.33	22.33
Downloads Top 7	9,222	6,445	7,328	9,313	8,370	10,173	8,498	17,187	21,134
Percentage of downloads Top 7	25.04 %	20.19 %	20.19 %	26.27 %	24.24 %	22.79 %	23.36 %	33.66 %	38.59 %

2. Kalda, A. (Indiana University)/Loos, B. (Technical University Munich)/Previtiero, A. (Indiana University)/Hackethal, A. (Goethe University Frankfurt): Smart(Phone) Investing? A within investor-time analysis of new technologies and trading behavior, 551 downloads, ranking position 19 based on total downloads.

3. Fabo, B. (National Bank of Slovakia)/Jančoková, M. (European Central Bank)/Kempf, E. (University of Chicago)/Pástor, L. (University of Chicago): Fifty Shades of QE: Comparing Findings of Central Bankers and Academics, 538 downloads, ranking position 28 based on total downloads.

This results in a total number of downloads of 2,728 with an average placement of 22.33, which is considerably worse than the average of 18 since 2009 (see Table 1 again). The download figures reported for the years 2014 to 2021 are based on the figures from the first half of October of the respective year. In general, 127 of the 180 papers accepted at the Milan meeting are available for download via SSRN. The rate of 70.56% is somewhat higher than the average of 68.62% achieved so far since 2009. The total number of downloads of 54,760 (until 15.10.2021) as well as the number of downloads per paper of 431, however, are considerably better than the respective averages since 2009.

Table 2 shows the shares of authors from selected countries of origin over the years 2014 to 2021 for the respective total number of presentations. The authors were assigned to countries according to the location of the university or institution where they work. If there are several locations mentioned for an author, only the first one from the list was taken into account. Furthermore, each author was weighted according to his or her proportionate participation in a conference contribution (e.g. with 0.5 participation points for two authors or 0.33 for three authors). Germany achieves a share of 5.4%, which is well below the long-term average for 2009 to 2020 of 6.8% and a persistent pattern since 2018. However, one more time, the third rank could be regained from China which is still on the rise in the long run but in 2021 only reaches a somewhat disappointing share of 5.3%. The places 1 and 2 go to the “usual suspects” which are the USA and Great Britain. Also in accordance with all previous conferences at least since 2009, the country hosting the conference, here: Italy, is able to reach an above-average submission success. This “host country bias” is remarkably stable and all the more noteworthy, since it can also be observed for online conferences.

Table 3 shows the relevance of individual topics of the EFA 2021 meeting according to the respective number of accepted manuscripts and the corresponding downloads. The classification according to the current EFA meeting was adopted. Compared to previous annual conferences, a special subject “International Finance” is missing. However, “Climate Finance” has been introduced as an obviously rather topical new field. In accordance with previous years, empirical topics clearly dominate the conference with “Asset Pricing” being in the lead

Table 2  
**Percentages of Authors by Country of Origin 2014 to 2020**

	Average 2009 – 2020	2014	2015	2016	2017	2018	2019	2020	2021
USA	42.3 %	42.0 %	44.0 %	40.2 %	43.0 %	49.3 %	51.7 %	46.2 %	50.0 %
Great Britain	9.7 %	12.3 %	11.2 %	9.7 %	9.5 %	10.2 %	11.0 %	5.6 %	9.6 %
Germany	6.8 %	7.2 %	5.3 %	7.9 %	8.1 %	6.0 %	5.8 %	5.4 %	5.4 %
China	3.6 %	3.5 %	4.2 %	3.6 %	5.7 %	3.0 %	5.7 %	6.4 %	5.3 %
France	4.3 %	4.8 %	4.8 %	4.7 %	2.1 %	5.5 %	3.7 %	3.2 %	5.3 %
Canada	4.8 %	4.0 %	6.8 %	4.3 %	6.9 %	3.6 %	3.8 %	6.2 %	3.2 %
Switzerland	4.8 %	7.2 %	2.8 %	4.8 %	3.5 %	3.6 %	3.5 %	6.0 %	3.0 %
Sweden	1.7 %	2.0 %	1.9 %	1.8 %	3.3 %	1.4 %	1.6 %	1.4 %	2.8 %
Italy	2.1 %	2.8 %	0.9 %	2.3 %	2.0 %	2.6 %	1.1 %	1.8 %	2.6 %
Netherlands	4.0 %	2.5 %	4.7 %	4.8 %	2.5 %	2.9 %	3.1 %	3.8 %	1.5 %

as usual. Theoretical papers in the fields of “Asset Pricing”, “Corporate Finance”, and “Financial Intermediation” have lost ground to a large extent. They only contribute about 5% of all downloads and less than 20% of all papers which is rather little compared to the respective figures of more than 70% and more than 55% for their empirical counterparts and – with respect to downloads – even smaller than the value for the six papers on climate finance.

*Table 3*  
**SSRN Downloads and Conference Contributions per Topic Area**

	<i>Number of downloads</i>	<i>Percentages of downloads</i>	<i>Number of conference contributions</i>	<i>Percentages of Conference contributions</i>
Asset Pricing, Empirical	28,294	51.67 %	42	23.33 %
Corporate Finance, Empirical	6,615	12.08 %	36	20.00 %
Financial Intermediation, Empirical	5,146	9.40 %	24	13.33 %
Climate Finance	3,236	5.91 %	6	3.33 %
Household Finance	2,714	4.96 %	15	8.33 %
European Central Bank	2,261	4.13 %	3	1.67 %
Market Microstructure	2,068	3.78 %	12	6.67 %
Corporate Finance, Theory	1,165	2.13 %	12	6.67 %
Asset Pricing Theory	1,158	2.11 %	15	8.33 %
Norges Bank Investment Management	945	1.73 %	3	1.67 %
Bank for International Settlements	557	1.02 %	3	1.67 %
Banca d'Italia	405	0.74 %	3	1.67 %
Financial Intermediation, Theory	196	0.36 %	6	3.33 %
<b>Total</b>	<b>54,760</b>	<b>100 %</b>	<b>180</b>	<b>100 %</b>

## II. The Most Important Contributions

In contrast to the previous years, German authors have not managed to enter the list of the top 7 papers according to total download numbers with at least one contribution. 38.59% of all downloads are accounted for by these top 7, which is considerably above the average observed since 2009. Furthermore, the top 7 are presented in detail according to their total download numbers.

Barber, B. M. (Graduate School of Management UC Davis)/Huang, X. (Olin Business School Washington University St. Louis)/Odean, T. (Haas School of Business University of Californiy, Berkeley)/Schwarz, C. (Merage School of Business UC Irvine): Attention-Induced Trading and Returns: Evidence from Robinhood Users, 8,143 downloads, ranking position 1 based on downloads per day.

Robinhood was the first brokerage to offer commission-free trading on a simple mobile app. The app presents only a small part of the stock level indicators that are offered by other brokerage platforms. Instead, easily understood lists of stocks are used such as the “Top Mover” list of stocks with the largest price moves on the current day. This paper wants to investigate how these changes in the investment landscape alter individual investors’ trading behavior using data on Robinhood users at the stock-day level from May 2018 to August 2020. The lack of commissions and simplicity may reduce the costs and barriers to investing in the stock market, but Robinhood also added features to make investing more like a game. It is shown that Robinhood users are more likely to be influenced by attention than other investors, because they are less experienced and inexperienced stock investors are more heavily affected by attention and by biases that lead to return chasing. As a consequence, Robinhood investors herd more than other investors and realize negative abnormal returns on average. These findings suggest that information disclosure alone is not sufficient to assure good investor outcomes; how information is displayed can both help and hurt investors and not only complexity, but also simplicity of information is a relevant issue.

Bondarenko, O. (University of Illinois at Chicago)/Muravyev, D. (Michigan State University): Market Return Around the Clock: a Puzzle, 2,749 downloads, ranking position 7 based on downloads per day.

The authors study how the excess market return reflected by the S&P 500 index changes over day and night. They call the time between 11:30 pm and 3:30 am Eastern Time “EU-open”. These four hours produce a 7.6% annualized return and correspond to the opening of European stock markets while Asian markets close during this time. The uncertainty resolution hypothesis implies that market returns are low during the night pre-EU-open, when uncertainty accumulates, and high during EU-open, when uncertainty unravels. The reason

for the accumulation of uncertainty overnight is that a critical mass of investors is necessary to fully process arriving information. Although Asian investors respond to information, the Asian asset management industry is relatively small. Uncertainty therefore gets fully incorporated into prices only when Europeans arrive, leaving little for Americans to add (unless there are holidays in the EU). Several tests support this hypothesis, e.g., higher uncertainty predicts higher EU-open returns. Other explanations only receive little support, e.g., the return patterns are not an expression of illiquidity or limits to arbitrage. A simple trading strategy buys futures right before EU-open and sells them after its end. Despite trading twice a day, it remains profitable even after accounting for trading costs. These results have several implications. First, information uncertainty arises naturally in financial markets, and its resolution is an important determinant of the average market return. Second, the market's ability to absorb arriving information can be limited at night when a critical mass of investors is missing. Third, European investors are often neglected, but they help process uncertainty during EU-open.

Jiang, J. (University of Chicago)/Kelly, B. (Yale University)/Xiu, D. (University of Chicago): (Re-)Imag(in)ing Price Trends 2,624 downloads, ranking position 2 based on downloads per day.

A large literature examines the ability of past prices to forecast future returns, producing a handful of famous and robust predictors including price momentum and reversal. The subject of this paper is to make use of machine learning approaches to forecast future price developments on the basis of past ones for US stocks from 1993 to 2019. When doing so, two countervailing concerns have to be reconciled. On one hand, the method must be flexible enough to find potentially complex predictive patterns. On the other hand, the method's output should consist of interpretable patterns. The authors encode market data as images and investigate them with a return prediction based on a convolutional neural network (CNN). The CNN model is trained to predict the direction (up or down) of future stock returns by constructing image-based forecasts that in general outperform (and are largely distinct from) traditional price trend signals suggested in the literature. The predictive patterns isolated by the CNN are highly robust to variations in model specification and controlling for a wide range of alternative predictor variables. Models trained on daily data are similarly powerful when transferred to data sets sampled at lower frequencies, and models trained on US data but applied to international stock markets outperform models trained on data from local markets. Moreover, for illustrative purposes, the authors search for a linear regression of the data underlying images that best approximates the CNN model. Such a linear approximation shows that when a stock closes on the low end of its recent high-low range, future returns tend to be high. Summarizing, this paper highlights image analysis as a future

research direction with great potential to improve the general understanding of financial market phenomena.

Gibson Brandon, R. (University of Geneva)/Glossner, S. (University of Virginia)/Krueger, P. (University of Geneva)/Matos, P. (University of Virginia)/Steffen, T. (Osmosis Investment Management): Do Responsible Investors Invest Responsibly?, 2,060 downloads, ranking position 9 based on downloads per day.

There is a growing global interest in “responsible investing,” i. e. the extent to which institutional investors incorporate environmental, social, and governance (ESG) issues into their investment processes. The Principles for Responsible Investment (PRI) constitute the basis for the largest global network focused on responsible investment. The authors compare what institutional investors report doing in terms of ESG incorporation in the PRI reporting framework survey to their actual portfolio-level ESG scores aiming to answer the question of whether or not responsible investors actually invest responsibly. For institutions domiciled outside of the US, it is shown that PRI signatories that report to fully or partially incorporate ESG considerations into their active equity holdings have better portfolio ESG scores than non-PRI signatories. In the US, however, there is no corresponding link between “words” and “actions”. There are no better scores for US-domiciled signatories, not even for those that report full ESG incorporation. These findings are consistent with “greenwashing” US-American signatories seeking to attract responsible flows. In the US, there seems to prevail a more business-oriented approach to ESG, while in other parts of the world ESG investing appears to be more intrinsically motivated by social norms. The insights of this paper emphasize the need to look beyond a signal such as the PRI membership of investment managers when evaluating the sustainability of their behavior.

Edmans, A. (London Business School)/Fernandez-Perez, A. (Auckland University of Technology)/Garel, A. (Audencia Business School)/Indriawan, I. (Auckland University of Technology): Music Sentiment and Stock Returns Around the World, 1,972 downloads, ranking position 3 based on downloads per day.

According to the behavioral finance literature investor sentiment significantly affects stock returns. The contribution of this paper is to introduce a continuous, high-frequency, country-level measure that captures direct manifestations of citizens’ sentiment and is globally comparable. According to the latter requirement, the proxy should be language-free and not refer to a sentiment dictionary, the accuracy of which may vary across languages. Therefore, the authors study the sentiment of songs that a country’s citizens listen to, since individuals reflect their mood in their music choices. Listening data is available on a large scale from Spotify, the leading online music platform worldwide. It had 286 million monthly active users as of Q1 2020, ensuring that music played on



the platform reflects the mood of a sizeable share of a country's population. Spotify provides daily statistics of the top 200 songs by the total number of streams in a particular country. It also has an algorithm that classifies a song's positivity. The outcome of this algorithm for the daily top 200 songs played on Spotify in 40 countries is used as a measure of the mood of its citizens. The authors identify a positive and significant relationship between music sentiment and contemporaneous returns, controlling for past returns, the world market return, seasonalities, weather conditions, and macroeconomic variables. A one standard deviation increase in music sentiment is associated with a higher weekly return of 8.1 basis points (bps), or 4.3% annualized. This effect reverses over the next week: a one standard deviation increase in music sentiment predicts a lower next-week return of 7.0 bps or 3.7% annualized. Both results are consistent with sentiment-induced temporary mispricing. Numerous additional tests are presented, in particular, to address the concern that people may choose to listen to songs whose sentiment contrasts their actual mood to attenuate mood swings caused by exogenous events. Contrary to this objection, periods of declining mood (e.g., September to October in the Northern Hemisphere) coincide with a significant decrease in the music-based sentiment measure. In addition, prior literature documents evidence that cloud cover dampens investor mood. Something similar is true with respect to music-based sentiment. Third, the extent of governmental restrictions imposed in response to the COVID-19 pandemic negatively affected citizens' mood and, at the same time, induced a reduction in music sentiment.

Bryzgalovai, S. (London Business School)/Pelger, M. (Stanford University)/Zhu, J. (Stanford University): *Forest through the Trees: Building Cross-Sections of Stock Returns*, 1,874 downloads, ranking position 14 based on downloads per day.

The determinants of expected returns is one of the core issues of financial economics. It has two dimensions: What are the features of returns one wants to explain (that is, what are the so-called test assets), and what is the model that succeeds in doing so? This paper addresses in depth the first issue. Based on utilizing decision trees as well as standard double and triple sorts, optimal test assets are determined that form a cross-section of interpretable, well-diversified portfolios providing a robust span of the stochastic discount factor conditional on numerous features. The superiority of this new approach to traditionally used cross-sections of portfolios and their combinations is confirmed out-of-sample by an empirical application. Using these novel test assets in the future would not only lead to a better description of the determinants of stock returns but also help to reduce problems like the seemingly ever more expanding "factor zoo" from the literature on asset pricing.

Von Binsbergen, J.H. (University of Pennsylvania)/Han, X., (University of London)/Lopez-Lira, A. (University of Florida): Man vs. Machine Learning: The Term Structure of Earnings Expectations and Conditional Biases, 1,712 downloads, ranking position 8 based on downloads per day.

Pricing risky assets requires estimates of expected future cash flows. Analysts' earnings forecasts are often utilized as a measure of expectations, despite their shortcoming of being on average biased upwards. In this paper, a novel approach for constructing a statistically optimal and unbiased benchmark for earnings expectations in real-time is proposed which uses random forest regression to combine cross-sectional information of firms' balance sheets, macroeconomic variables, and analysts' predictions. In contrast to linear forecasts, this new benchmark is effective out-of-sample. Moreover, it can be used to determine the (conditional) bias in analysts' forecasts leading to two remarkable results: First, stocks with overly optimistic analysts' expectations earn lower subsequent returns and vice versa. Second, managers of those companies with the largest biases seem to take advantage of these expectations by issuing new stocks. In addition, the authors' machine learning approach could be easily extended to other applications in the field of, e.g., real investment and dividends.

### **III. The Progression of Research Interests in Finance over Time**

As already exemplified by the increasing relevance of the topic "Climate Finance" at the EFA annual meeting in Section 1, research foci and interests in finance are developing over time as a reflection of fundamental changes in technologies, society, and the economy. To take a closer look at how such ongoing changes are approached by financial research, a programmatically derived overview of the most relevant topics at the annual EFA meetings in the years 2009, 2015, and 2021 is provided.

*Table 4*  
**Number of Papers with at Least one Keyword in Abstract per Topic**

		<i>Panel A) Topics and keywords</i>			
T1 Sustainability		carbon, climate, ecolog*, environment*, esg, green, impact invest*, pollution, sustainab*			
T2 Machine Learning		algorithm*, artificial intelligence, fintech*, insurtech*, machine learning, neural network, supervised			
T3 Diversity		divers*, discriminat*, female, gender, race, racial			
T4 Crash		bubble, collaps*, crash, crisis, disaster, systemic			
		<i>Panel B) Relative occurrence</i>			
	# all papers	T1 (Sus)	T2 (ML)	T3 (Div)	T4 (Cr)
2009	215	3.7%	0.5%	5.6%	9.8%
2015	240	1.7%	0.4%	3.8%	9.2%
2021	180	11.4%	3.9%	7.8%	12.8%

This table presents the relative frequencies of the coverage of four topics in EFA conference papers in the years 2009, 2015, and 2021. The four topics and their keywords are displayed in Panel A) while Panel B) presents the ratio of the number of papers where at least one keyword of a topic is present and the total number of papers. The character \* illustrates a wildcard that matches all words with the same word stem as shown before that character.

*Table 5*  
**LDA Analysis of Titles of EFA Conference Papers**

<i>Top 8 words</i>	
2009 topic 1	term, structure, premia, rate, dynamic, inflation, uncertainty, equilibrium
2009 topic 2	market, risk, volatility, liquidity, idiosyncratic, role, equilibrium, funding, compensation
2009 topic 3	pricing, asset, evidence, shareholder, loan, arbitrage, cost, decision, analysis
2009 topic 4	liquidity, financial, price, effect, trading, diversification, crisis, liquidation
2009 topic 5	investment, rate, foreign, exchange, conflict, optimal, dividend, bankruptcy
2009 topic 6	equity, credit, risk, choice, private, investment, effect, dynamic
2009 topic 7	corporate, information, portfolio, governance, rating, asset, option, control
2009 topic 8	stock, fund, return, cross, hedge, price, derivative, pattern
2009 topic 9	capital, firm, bank, performance, evidence, venture, mutual, policy
2015 topic 1	risk, international, bank, liquidity, macro, systemic, market, sale
2015 topic 2	information, investor, trading, institutional, trade, spread, risk, flow
2015 topic 3	corporate, evidence, competition, cash, management, market, mortgage, governance
2015 topic 4	stock, financial, return, firm, market, bankruptcy, activity, predictability
2015 topic 5	credit, evidence, debt, bond, U.S. law, effect, bank
2015 topic 6	asset, market, pricing, effect, model, theory, bank, local
2015 topic 7	fund, performance, hedge, real, risk, mutual, effect, trading
2015 topic 8	investment, uncertainty, shareholder, role, collateral, affect, arbitrage, acquisition
2015 topic 9	capital, price, structure, risk, mode, term, optimal, dividend
2021 topic 1	price, asset, monetary, competition, data, policy, risk, structure
2021 topic 2	bank, evidence, loan, financing, taking, synergies, protection, program
2021 topic 3	financial, firm, bank, disclosure, <i>climate</i> , money, liquidity, testing
2021 topic 4	trading, cost, return, rate, labor, evidence, channel, selection, inventor, floor, close

2021 topic 5	risk, corporate, stock, return, market, sentiment, section, cross
2021 topic 6	market, <i>learning</i> , dynamic, bond, banking, <i>machine</i> , price, economy
2021 topic 7	evidence, pricing, capital, risk, asset, <i>green</i> , finance, choice
2021 topic 8	information, investing, investor, lending, credit, lender, finance, <i>fin-tech</i>
2021 topic 9	evidence, <i>gender</i> , equity, private, <i>fintech</i> , factor, banking, investment

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This table shows the top 8 words for each of the nine topics found by the LDA (Latent Dirichlet Allocation) in the titles of all papers in the years 2009, 2015, and 2021 presented at the EFA conferences (words ranked according to their relative importance).

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With the exception of the recent annual meeting in Milan, more than 200 papers have been presented at each annual meeting since 2009 during a multitude of sessions that bundle papers with similar overarching themes. To condense and extract the relative frequency of these themes over time, first a clustering approach is applied and the relative numbers of pertinent keywords of the four chosen topics Sustainability, Machine Learning, Diversity, and Crash are counted. Table 4 documents these four topics with their keywords and their respective occurrences in the conference presentation's abstracts in the years 2009, 2015, and 2021 in an aggregated form.

Rather interestingly, the percentage of papers as identified according to these four criteria has slightly decreased when comparing 2009 to 2015 but significantly increased when comparing 2015 to 2021. While the slight decrease may be insignificant and a random result, the change in the frequency of the topics when comparing 2015 to 2021 looks considerable. This means that the four chosen topics became more relevant to the scientific community between the years 2015 and 2021. The increasing interest in sustainability issues seems particularly striking, while papers on machine learning have gained ground even more in relative terms. Crash issues have already been of interest since 2009 due to the financial crisis of the same year. Diversity issues are certainly in some sense of timeless relevance. However, even here the focus has sharpened recently.

Next, a co-occurrences analysis of the paper titles that highlights words which commonly occur together is undertaken. Figure 1 documents the results for the three years 2009, 2015, and 2021. It highlights that – not very surprisingly – concepts like “Asset Pricing” and “Stock Returns” were integral in most of the research during all years reflecting the discussion of Table 3 in the preceding section. Rather remarkably, however, “machine learning” entered the picture in 2021.

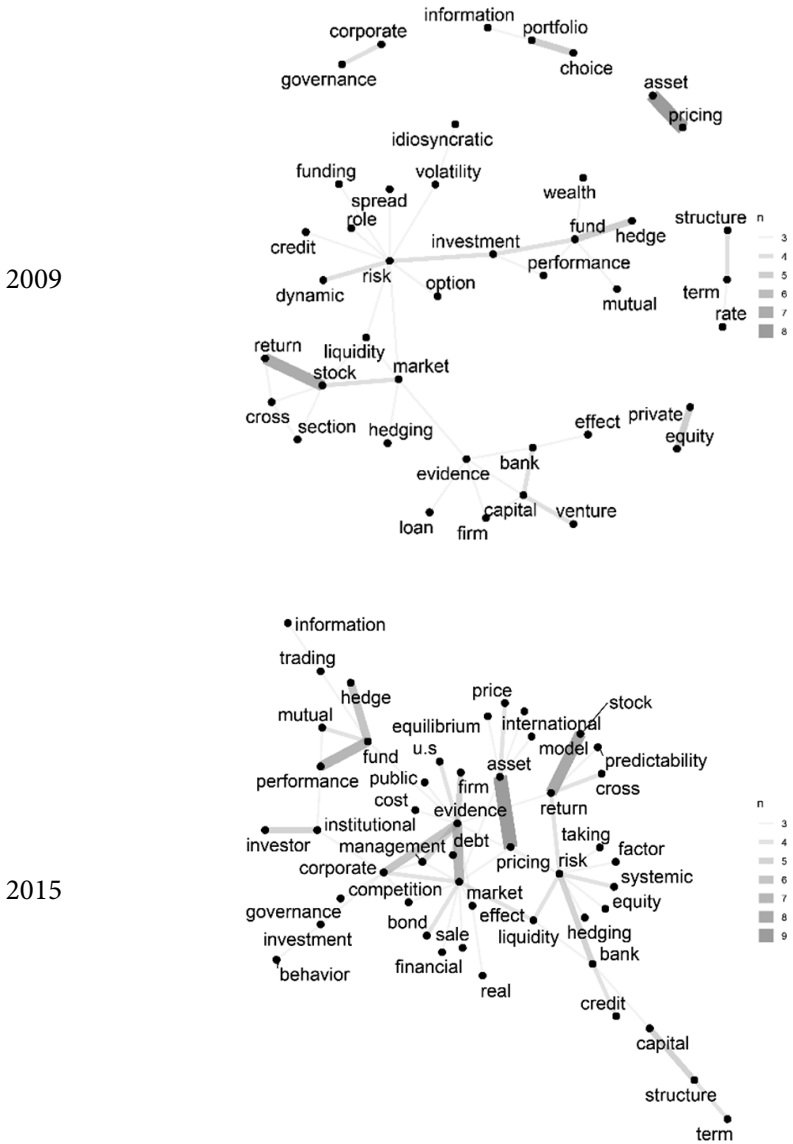
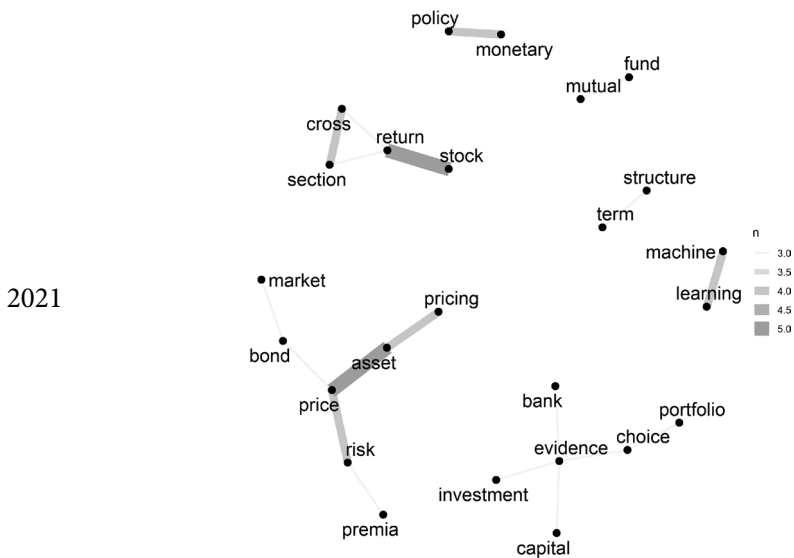


Figure 1: Bi-Grams of Common Words in Paper Titles

(Figure 1 continued)



Bi-grams of EFA conference papers from the years 2009, 2015, and 2021. This figure shows the most common word pairs in working paper titles. The thickness of the connection lines indicates the number  $n$  of co-occurrences; the most common words are located in the center.

In order to delve deeper the topics covered in conference papers using the state-of-the-art machine learning method “Latent Dirichlet Allocation” (LDA) (Blei et al., 2003) is analyzed. The LDA is an advanced textual analysis technique that views each abstract as a union of topics and each topic as a union of words. This approach mimics human language processing, as it classifies documents into natural groups without any pre-specified topics. The LDA applies mathematics to reduce the dimensionality of datasets and thus is similar to a factor analysis (Dyer et al., 2017). This reduction is achieved by defining a topic as a collection of words where each word is assigned a probability of belonging to a topic. Thus, the LDA connects documents with probability distributions belonging to topics so that one document can contain several topics. The analysis is restricted to the nine main topics for each year on the basis of the working paper titles. The results are shown in Table 5, which lists relevant topics and their most important words. One problem with the LDA is that one has to determine a suitable heading for each topic “manually”, as this cannot be generated automatically. However, this is not the main concern here. Instead, it is noteworthy to point out that – consistent to the analysis of Table 4 – “climate” and “green”

as a reference to sustainability can be found in topics 3 and 7, respectively, of 2021 as well as “gender” in topic 7 referring to diversity issues and “fintech” in topics 8 and 9 as well as “machine” in topic 6 related to machine learning. Quite noteworthy, none of these terms managed to enter the main topics identified for 2009 and 2015 by the LDA approach. Apparently, this shows that there is something going on in the financial community with respect to the topical subjects described in Table 4.

#### IV. Conclusion

Once again, the annual meeting of the European Finance Association took place as an online event. Some things are similar to previous years, i.e. the dominance of Anglo-Saxon presentations and empirical papers, a “host country bias” with respect to accepted papers for presentation and a strongly skewed distribution of downloads per paper with the top 7 papers contributing almost 40% to overall downloads. However, a closer look at the topics of the 2021 annual meeting reveals a remarkable shift. In particular, sustainability, diversity, and machine learning issues are clearly on the rise showing the evolution of an active scientific community responding to recent trends in society and economics.

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