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Robo-Advisor – Solutions Solely for Digital Natives or Everyone?

The Effect of Robo-Advice on Stock Market Participation

Increasing Sales Performance through Social Media Activities

Principal Trading and Its Role in Today's Markets



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Editorial

Robo-Advisor – Solutions Solely for Digital Natives or Everyone?

Andreas Zubrod

Robo-advisory has become one of the most discussed subjects in the asset and wealth management industry lately. Betterment, Wealthfront, and Nutmeg have been the first to offer wealth management online.

Obviously, the user behavior of customers has changed over the last decade. Especially the so-called millennial generation is used to online banking and uses the Internet as the main channel to schedule appointments, talk to friends, look for a job, etc. Thus, one obvious next step is managing investments online. The majority of consumers does not want to deal with asset management on their own. They still prefer a partner/advisor to manage their investments for them. That makes sense from my point of view since there are experts who have the knowledge and experience in asset management.

Given the current online behavior, it makes perfect sense to combine the financial expert-

ise with the opportunities that today's technology provides.

From my point of view, robo-advisors will be successful if they focus not only on the technology but consider the needs of the consumer. This must include a transparent high-quality product, a fair and transparent cost structure, and genuine simplicity when it comes to customer experience. In my opinion, the technology is the medium but the real differentiator is the approach of a trustworthy company to offer relevant and differentiated services tailored to the needs of real people, not only a small group of financial experts.

Robo-advice has just begun, and so far it follows the algorithms that humans have created and programmed. When we look at the artificial intelligence that is already available, there will be a lot more sophisticated robos in the future combining the experience/emotional competence of humans with the self-learning



Dr. Andreas Zubrod
Chairman of the Supervisory Board
VisualVest

technology and its superior cognitive abilities. There have been lots of discussions in the industry about the threats of robo-advisors. We strongly believe that it is rather an opportunity than a threat. It is an opportunity to reach out for customer groups that were not or are not approachable anymore. It is furthermore an opportunity to create new offerings and services as well as to build up a state-of-the-art technology. A technology that will provide better outcomes in advisory for the benefit of customers and human advisors as well. That was one of the reasons we founded VisualVest. VisualVest is a so-called robo-advisor established in 2015 and launched in March 2016. It combines the best of both worlds: the decades of expertise and knowledge of a leader in the investment industry and the agile, fast-moving, consumer-oriented online start-up mentality. VisualVest offers diverse portfolios with a balanced mix of asset classes with seven different risk levels. Depending on their pref-

erences, customers can choose each portfolio with actively managed funds as well as ETF funds. VisualVest has access to approximately 13,000 funds. To be eligible for the customers' portfolios, the funds must comply with high-quality standards.

Since May 2016, VisualVest offers three portfolios with sustainable funds only, so-called GreenFolios. That differentiates VisualVest from every robo-advisor around the globe. Based on our market research and many trend reports, we strongly believe that more and more private investors care about the sustainability of their investments.

Of course, there have been lots of discussions if FinTech, e.g., robo-advisors, are threatening the traditional banking sector. On the contrary, we believe it opens new doors to customer segments and interesting opportunities to cooperate with banks to strengthen our market position.

Research Report

The Effect of Robo-Advice on Stock Market Participation

DESPITE A RECENT SLIGHT RECOVERY FROM CRISIS LOW LEVELS, STOCK MARKET PARTICIPATION IN GERMANY IS STILL AT ONLY 14% OF ADULT POPULATION. PREVIOUS RESEARCH SHOWED THAT TRADITIONAL PERSONAL ADVICE – DUE TO HIGH COSTS AND MISALIGNED INCENTIVES – CAN HARDLY ALLEVIATE PRIVATE INVESTORS' INVESTMENT MISTAKES, OF WHICH STOCK MARKET NON-PARTICIPATION IS ONE. ROBO-ADVICE IS A "HOT TOPIC" IN REGULATORY AND INDUSTRY DISCUSSIONS. THE RESULTS OF THIS STUDY SHOW EMPIRICAL EVIDENCE THAT INVITATIONS TO ROBO-ADVICE INCREASE STOCK MARKET PARTICIPATION.

Sebastian Scheurle

What Is Robo-Advice?

Robo-advice refers to online services and tools that provide guidance on investment decisions based on the users' data and investment preferences (European Joint Committee, 2015). In essence, robo-advice aims to match people with sound portfolios. The recent emergence of robo-advice has been vividly discussed by the industry and regulators. The European Joint Committee (2015) identified three main advantages over traditional personal advice:

- better accessibility, especially to people from lower wealth bands through transparent and inexpensive price schemes and very low minimum investment amounts;
- comprehensible investment guidance that is

reproducible and that is continuously updated against new data; and

- open architecture design with access to products from a wide range of issuers.

Along the same lines, the FCA (Financial Conduct Authority, 2016) states that demand for professional financial advice is often inhibited by high total cost relative to available funds-to-invest and limited financial confidence of clients. Against this background, the FCA recommends mass-market automated advice.

The Case of Stock Market Participation

Stock market non-participation is one of the major puzzles in household finance (Camp-

bell, 2006) and has been estimated to account for a welfare loss of up to 2% of annual consumption (Cocco et al., 2005). Participation levels vary considerably between households from different social groups and also between countries. One strand of literature points at heterogeneity in investor attributes such as cognitive skills and lack of trust as an explanation. Other studies emphasize participation and information search cost as participation barriers especially for lower-wealth individuals (Kim et al., 2016).

Compared with such large body of evidence concerning inhibiting factors, there exists only relatively little evidence on how barriers to participation, such as high perceived cost of participation, low financial literacy, and ignorance, can be effectively surmounted in practice. One factor that has been documented to spur stock market participation is social interaction. While advertisements by listed firms have been found to increase their stock returns and marketing for funds increases fund flows, respectively, it remains unclear whether the effect is driven by existing or new investors.

Financial advice seems to be an intuitive solution. However, at least for traditional personal advice, evidence shows that individuals are largely reluctant to use advice as a means to improve their investment decisions. In a field study where individuals that already invested in the stock market were invited to use unbiased personal advice, Bhattacharya et al. (2012) found that only 5% of treated investors

accepted the offer, even though the advice was offered free of charge. Among those who did accept the offer, only 20-25% followed the recommendations.

Field Study: Invitation to Robo-Advice

The research design builds on a large field study in cooperation with a large German online bank. The launch of a robo-advice tool at that bank was followed by a series of marketing campaigns between August 2014 and December 2015 inviting almost 60,000 pre-selected clients to use the service. The selection was made according to low levels of assets under management or income, thus exhibiting only very weak discrimination. The invitations, which were extended to clients via electronic message, letter, or phone, are the treatments in the field study. Invitees were randomly assigned to groups that received the treatments in different points in time. This allows for "within-subject" controls. Plus, the bank pulled separate groups of clients who matched the selection criteria, but did not obtain any invitation to use advice. Some of the clients also received an invitation to use the bank's personal advice services. Both allows for "between subjects" controls over the entire observation period.

Empirical Findings

In this study, a Cox proportional hazard model has been used to measure the treatment effect of robo-advice invitations on first-time market participation by sample clients. Hazard models combine one separate binary outcome analysis per observation-day. In the given setting, a hazard model has three major advan-

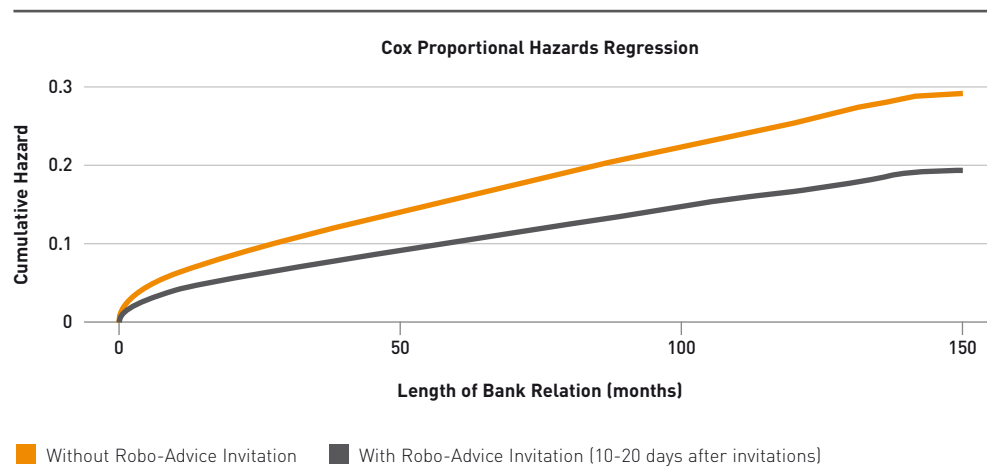


Figure 1: Predicted Cumulative Hazards for Stock-Market Participation 10-20 Days post Robo-Advice Invitation for Invited and Non-Invited Customers

tages over a single binary-outcome analysis: First, it accounts for right-censoring. Second, person-day-observations are not treated as independent. Third, the interpretation of hazard rates is straightforward as they can be treated like factors on baseline probabilities.

Results suggest that invitations to use robo-advice increase the average propensity of clients to participate over the ten day period post invitation by a factor of 2.34 (t-statistic = 12.27) reducing to 1.86 (t-statistic = 7.80) over the ten to twenty days period. These factors do not yet tell anything about the actual probability to participate. Figure 1 plots the cumulative probability to participate in the stock market across the lifetime of a bank customer relationship showing economic significance. Results are robust controlling for a battery of customer and account activity characteristics, all treatment

selection criteria, time- and cohort-effects, and past stock market return as well as volatility. Finally, other types of marketing campaigns for investment opportunities are controlled for to obtain the effect of robo-advice that goes beyond a potential effect of general awareness for the stock market.

What are the mechanisms behind this effect? It is unlikely that the invitation to use the robo-advice service directly augments a client's level of financial literacy, his social interaction activity, or his general trust into the bank institution. Instead, it can be conjectured that robo-advice reduces the cost of stock-market participation as perceived by invitees. To test this conjecture, we exploit the fact that the bank also reached out to a subset of treated clients and to other clients to invite them to use the personal advice service. As part of that personal advice service,

bank advisors navigate through an investment process that is very similar to the process built into the robo-advice tool, but personal advice carries an explicit fee and requires sign-up through a personal call. The model does not predict a positive influence of the personal advice treatment on participation (e.g., for the ten days post treatment: hazard ratio = 0.79, t-statistic = -1.20), while the positive effect for robo-advice remains (hazard ratio = 2.42, t-statistic = 13.22).

Moreover, the interaction of invitation treatments and client wealth is consistent with the conjecture on participation cost. In the case of robo-advice, the propensity to participate increases especially in the group of less wealthy clients (e.g., for the lowest wealth band: hazard ratio = 1.75, t-statistic = 11.70). In contrast, for personal advice the highest factor is observed for the highest wealth bands, although not statistically significant (hazard ratio = 1.87, t-statistic = 1.25).

Conclusion

The results of this study (Scheurle, 2016) are consistent with the conjecture that robo-advice promotes market participation through a reduction in perceived participation cost. This result resonates well with the viewpoints on robo-advice voiced by the European Joint Committee (2015) and the FCA (2016). We continue our research in order to test further conjectures on the longterm effect of robo-advice.

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Research Report

Increasing Sales Performance through Social Media Activities

SOCIAL MEDIA PLATFORMS PRESENT UNIQUE POSSIBILITIES FOR COMPANIES TO INTERACT WITH THEIR CUSTOMERS AND TAKE UP A KEY ROLE IN BUILDING RELATIONSHIPS. HOWEVER, LITTLE IS KNOWN CONCERNING THE FINANCIAL RETURN ON INVESTMENT FROM SOCIAL MEDIA ENGAGEMENT AND SPECIFIC STRATEGIES TO LEVERAGE IT. THE ANALYSIS OF OVER 1.5 MILLION TWEETS REVOLVING AROUND TEN CAR MANUFACTURERS SUGGESTS THAT COMPANIES CAN INCREASE THEIR SALES VOLUME THROUGH GREATER RELATIONSHIP INVESTMENT AND BY ADOPTING A SOCIAL MEDIA STRATEGY THAT PROMOTES THE USERS' RELATIONSHIP SATISFACTION.

Marten Risius

Janek Benthaus

Fabian Akolk

Introduction

Social Media platforms have become an established channel for companies to engage with users, draw conclusions about their opinions, and increase brand awareness. Especially the service-driven financial sector can use Social Media as a means of contact with their customers and as a channel to frequently engage with customers. Accordingly, many companies operate Social Media accounts to exchange information with their customers. 56% of practitioners report that the biggest issue of social marketing was to relate Social Media activities to business outcomes and that – as Social

Media mature – bottom-line objective financial outcomes become essential. However, research has just begun to investigate the return on investment (ROI) that companies can derive from Social Media. The majority of the respective finance research measures the effects on firm equity value (e.g., Tobin's q, abnormal returns, stock prices) especially under consideration of user-generated content. In this study, we focus on factors in the context of Social Media that enhance objective firm performance, which is currently only insufficiently understood (Aral et al., 2013). For this purpose, we transfer the established relationship mar-

keting framework of factors influencing the effectiveness of relationship marketing from Palmatier et al. (2006), which provides an extensive overview of key constructs and their relations [see Figure 1 based on Palmatier et al., 2006].

Social Media Affecting Objective Firm Performance

Substantial amounts of research have investigated the role of Social Media on firm performance. Finance research generally established a positive relationship between objective firm performance in terms of equity value and user

sentiment across different types of content (i.e., consumer ratings, forum postings, blogs, and microblogging messages) with a particularly strong effect of negative sentiment and user engagement (i.e., postings, comments, likes). Regarding actual sales figures, findings demonstrate the respective predictive power of online search behavior, user sentiment, active corporate Social Media engagement, and marketing campaigns. Recent research, however, suggests a more complex and mediated process in which Social Media activities affect sales (Goh et al., 2013), which has generally been neglected so far. Thus, we dismantle

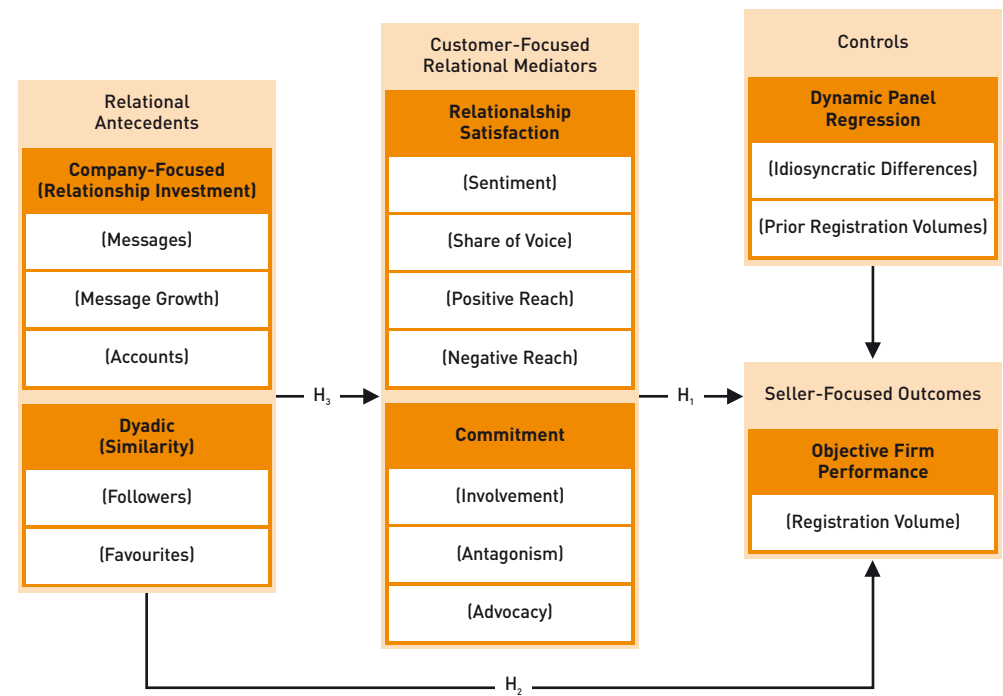


Figure 1: Research Model for Dismantling the Process of Social Media Related Sales Performance

the process of Social Media related sales by applying an established relationship marketing framework (Palmatier et al., 2006).

Relationship Satisfaction and Commitment Improving Sales

Most of the relevant research relating Social Media metrics to actual firm performance has

addressed these customer-focused perceptions of a brand: commitment and relationship satisfaction.

Commitment describes the enduring desire to maintain a valued relationship while relationship satisfaction represents the customer's affective or emotional attitude toward a rela-

tionship. Both constructs have been assessed in different ways, such as user ratings of a company's products, the sentiment expressed in messages about a company across different platforms (i.e., blogs, microblogs, e-commerce websites, and forums), or active consumer engagement. The Social Media enabled relationship strength has even stronger explanatory power of company performance than alternative behavioral metrics online (e.g., Google searches) or offline (e.g., conventional media). These findings pertain across industries as well as in the automotive sector. Considering the apparent theoretical and empirical insights, we propose:

Hypothesis 1: The stronger the relational bonding between users and companies, the better the companies' sales performance.

Increasing Sales through Similarity and Relationship Investment

Relationship investment has been found to have the strongest direct impact on sales performance. It is defined through the amount of resources (e.g., time, effort, or personnel) spent on building stronger relationships with customers. Similarity of users and companies is broadly understood as the degree of commonality in appearance and values between parties. Research generally shows that increased corporate engagement in Social Media and a firm's capability to implement user-generated innovation recommendations improves its financial value. Furthermore, the public display of similarity with a brand by becoming a follower has been found to cause a feeling of connectedness and increases the profitability of a company.

Thus, we hypothesize:

Hypothesis 2: The stronger the relational antecedents, the better the companies' sales performance.

Mediated Impact on Sales Figures

While the specific type of relational bonding variable usually differs across studies, relationship marketing literature consistently assumes a mediating model for the impact of relational antecedents on objective performance. Relationship investment and similarity have been found to be strongly related to relational mediators. Only a small share of information systems research has considered mediating effects on the firm sales performance. These findings, however, support the assumption of a mediating role of user-focused characteristics for the efficacy of corporate endeavors on its profits. Increased offline investments in terms of advertizing campaigns translate into improved relationship satisfaction on Social Media platforms (i.e., share of voice and sentiment), which account for abnormal returns on the stock market. Similarly, commitment in terms of user engagement behavior has been found to mediate the effects of regular relationship investment on corporate equity values. We therefore assume:

Hypothesis 3: The effects of relational antecedents on the companies' sales performance are mediated by the strength of the relational bonding between users and companies.

Empirical Investigation

In order to examine the effects of Social Media on business outcomes and how companies can

Objective Firm Performance		Model 1		Model 2		Model 3	
		b	(SE)	b	(SE)	b	(SE)
Relational Antecedents							
Company-Focused	Messages	-4,6*	(2.22)	---		-3.033†	(1.78)
	In_Messages	-468.03	(298.29)	---		-616.25	(388.11)
	Accounts	522.19*	(263.77)	---		413.73	(252.79)
Dyadic	Followers	.3**	(.1)	---		.2	(.1)
	Favourites	-.014	(.01)	---		-.0144†	(.008)
Customer-Focused Relational Mediators							
Relationship Satisfaction	Sentiment	---		-2026.68	(2194.29)	---	
	Share of Voice	---		.33*	(.14)	.66**	
	Positive_Reach	---		1430.5*	(697.62)	---	
	Negative_Reach	---		1261.86	(944.59)	---	
Commitment	Involvement	---		1154.96*	(658.2)	---	
	Antagonism	---		-424.73	(279.8)	---	
	Advocacy	---		1592.63*	(788.9)	---	
Model Test Specifications							
Observations	274		389		274		
Instruments	193		204		194		
Groups	25		25		25		
Test Statistic	4827.79***		26470.57***		4513.59***		

Test statistic. Wald-X² for the regression analyses.
 Statistics. Robust standard errors displayed in parentheses behind unstandardized coefficients for the regression analyses; follower numbers in thousands.
 p-values. *** p < 0.001; ** p < 0.01; * p < 0.05 significant; † p < 0.1 tentential significance.

Table 1: Results of the Five Month Lagged Dyadic Panel Regression Analysis

extract value from Social Media, we analyzed B2C relationships between carmakers and their customers on Twitter and the respective seller performance in terms of new car registrations. To test the assumed research model, we collected and analyzed a data set of over 1.5 million Twitter messages revolving around ten car manufacturers and measured the impact on new car registration volumes. We transformed our data set into the different antecedent, mediator, and outcome variables. To measure the objective performance of a company, in line with previous studies, we used the monthly new vehicle registration volumes as a proxy for car sales. To test our hypotheses, we conducted three separate five-months lagged linear dynamic panel regressions with robust standard errors and a canonical correlation between predictor and mediator variables to consider respective interdependencies principally guided by the classical mediator analysis approach (Table 1).

The second panel regression (see Model 2 in Table 1) reveals that the relational bond between users and companies on Social Media can predict car registrations five months in advance (hypothesis 1). They show more precisely that an outspoken support community which reaches a large follower base can encourage prospects to purchase a vehicle, while brand antagonists cannot deter generally interested customers and, thus, cannot reduce sales figures.

The results regarding hypothesis 2 generally show that not only user-focused metrics but

also corporate and dyadic relational endeavors affect a company's performance (see Model 1 in Table 1). Out of the different facets considered in this study, we find that the number of accounts a company operates and the number of followers of these accounts positively affect car sales. The number of messages a company sends, however, negatively influences registration numbers. It seems not necessarily expedient to send large amounts of messages, but that it is advisable to occasionally send fewer messages to a targeted community through specialized company accounts.

Thus, to test the mediating effects of hypothesis 3, we included user share of voice – based on the findings of a canonical regression – as a mediator variable in the third regression (see Model 3 in Table 1). The user share of voice indicates the relative share of the addressed user group. The analysis generally supports the hypothesis that customer-based relationship bonds mediate effects of relational antecedents on sales performance. This indicates that by operating multiple accounts, providing targeted information, and inspiring users to follow the accounts, companies can increase their share of voice among users and ultimately increase the number of sold cars.

Discussion of the Results

The goal of this study was to investigate the impact of corporate engagement efforts (i.e., relationship investment), customer-conceived relationship bonding (i.e., relationship satisfaction and commitment), and shared rela-

tionship perceptions (i.e., similarity) on the objective corporate performance. Generally, our results support the assumed model of strong relational antecedents translating into increased sales numbers mediated through the customer-focused relationship strength.

Specifically, we find that an increased corporate relationship investment in form of targeted communication from interest group specific accounts translates into higher sales numbers. Also, the commonly neglected dyadic relational antecedents, which are measured by follower numbers, translate into an improved sales performance. The regression coefficient seems relatively small ($b_{\text{Followers}} = 0.3$), which indicates that approximately for every additional 3,333 followers reached by a company, one additional car is sold. In a simplified calculation, considering the average price of EUR 28,330 (approximately USD 37,679) of a newly registered car in the considered market during the analysis period, this would represent an average gross value of EUR 8.50 (approximately USD 11.30) for every follower in our study setup.

Based on the apparent findings, to increase the Social Media financial ROI, our recommendations for Social Media managers on Twitter are as follows:

- Social Media managers should focus on increasing the company's share of voice among the users in order to leverage the

financial return of the corporate relationship investment and their follower base. Related research has shown that this can be achieved, for example, through aligned online or offline advertisement campaigns.

- Firms benefit from a far reach of positive messages about the brand made by supportive users. Thus, we recommend concentrating Social Media activities on building user advocates and encouraging them to spread positive messages about the company. This can be achieved, for example, by sharing targeted interest group specific information.

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Insideview

Principal Trading and Its Role in Today's Markets

INTERVIEW WITH PIEBE TEEBOOM

Due to new trading technologies and evolving market structures, the role of principal trading has changed significantly. FIA EPTA represents the interests of European principal traders. What is FIA EPTA and what are principal trading firms?

The European Principal Traders Association (FIA EPTA) was established in 2011 and is affiliated with the Futures Industry Association. It represents 29 firms in Europe who trade with their own capital. EPTA voices the opinions of members to legislators and regulators helping to guide legislation through better understanding of trading practices. This year, the association celebrated its fifth anniversary and we believe we have made a significant contribution to improving regulation and better functioning markets.

Principal trading firms are a distinct group of market participants who use their own capital to trade. As opposed to banks and hedge funds, principal trading firms do not take client monies or assets. Our members are active almost exclusively in the on-venue, multilateral, centrally cleared markets. While they all share this

characteristic, EPTA's membership consists of a diverse group of firms, large and small. Some apply advanced automated trading technologies, others use manual or hybrid methods of trading. Likewise, EPTA's members are active in a variety of asset classes, including equities, foreign exchange, commodity derivatives, and fixed income.

Why are principal traders important to markets?

Principal trading firms are a critical and consistent source of liquidity in the on-venue markets. Increased market liquidity leads to a more stable, less volatile market for investors to manage their business risks to enter and exit the markets efficiently. Principal trading firms help increase market efficiency and reduce trading costs by narrowing the bid-ask spread. It is fair to say that principal trading firms are the original FinTech companies using technology to make markets more efficient. They have also been instrumental in many of the new market structure initiatives that have created greater diversity and choice for investors.



Piebe Teeboom
Secretary General
FIA European Principal Traders Association

What is the recent perspective of regulators on this type of trading?

There have been numerous reports by financial regulators recently. Each report uses a particular methodology and data set to examine a particular element of electronic trading. Many of these reports have been under the radar in public discussions but they consistently point in the same direction and are helping to address the myths around the trading technologies some of our members use. For example, last June, the Dutch Authority for the Financial Markets looked at whether principal trading creates 'ghost liquidity' and found this was not the case. This conclusion was mirrored by an ESMA study published at the same time focusing on the change in equity markets over the last decade. It found that order duplication used by traders to ensure execution across multiple trading venues contributes positively to liquidity. A Bank for International Settlements working paper in May 2016 looked at who provides liquidity in limit order books. Their research found that proprietary traders, fast or slow, provide liquidity with contrarian marketable

orders, thus helping the market to absorb shocks even during a crisis.

What are FIA EPTA's immediate priorities?

We strongly believe that well-regulated and transparent markets provide stability and create efficiencies. We are working hard with our members on the implementation of MiFID II. However, regulation needs to be appropriate in order to be effective. This is currently not the case with the existing European capital requirements regime for investment firms. It treats all investment firms as if they were banks, which they aren't. Fortunately, this has been recognized by regulators, including the European Commission and EBA. We are actively working with them to ensure that the new prudential regime for investment firms will be more proportionate. Principal trading firms are providing liquidity at a time when traditional financial institutions are ever less willing to do so. We need to make sure that rules are carefully calibrated so that principal trading firms can continue to perform this role.

Thank you for this interesting conversation.

Infopool

News

Joint Blockchain Conference of the E-Finance Lab and DZ BANK

On September 1st, 2016, the E-Finance Lab and DZ Bank jointly hosted the first conference on "Blockchain: Technology, Legalities and Regulation, and Application in the Finance Realm". More than 600 participants joined the conference and were introduced to this disruptive technology and discussed its potential application in finance as well as regulatory issues with experts from practice and research.

Virtual Reality Workshop at Union Investment

On August 31st, 2016, Marten Risius (layer 1) hosted a Virtual Reality workshop in cooperation with Union Investment for over 30 people from all different areas. Participants were informed about augmented reality and got hands-on experiences with the Oculus Rift.

Successful Disputations

Philipp Blommel (team Prof. Hackethal, layer 3) held his thesis defense on June 26th, 2016, on "Essays on German Consumer Debt Behavior". Steffi Haag (team Prof. König, layer 1) defended her thesis on July 7th, 2016, on the topic of "Shadow IT – Insights from Multiple Research Perspectives". And, finally, Melanie Holloway (née Siebenhaar) (team Prof. Steinmetz, layer 1) has received her doctoral degree on August 15th, 2016, with a dissertation on "Service Level Management in Cloud Computing". Congratulations!

Layer 2 Master Student honored with Maravon Markets Award

Aetienne Sardon has been awarded with this year's Maravon Markets Award for his master thesis "The Role of CCPs in Derivatives Clearing – An Analysis of Interoperability" (supervised by Prof. Gomber and Florian Glaser, layer 2). Maravon Markets honors each year the best master thesis in the area of financial markets with this prize. Congratulations!

Fintech-Zentrum Frankfurt

In January, Prof. Hackethal became member of the working group "Fintech-Zentrum Frankfurt" at the Hessian Ministry of Economics. The center, called "Tech Quartier", will be located at the Pollux building near Frankfurt Central Station. An operating company was established in August, which coordinates the office availability, events, and research projects. In October, the first events will take place in the Tech Quartier and the official opening ceremony is scheduled for November.

Marten Risius appointed to ForDigital

Marten Risius will start a position on October 1st, 2016, as Post Doc at "ForDigital", a research alliance between Karlsruhe Institute of Technology (KIT) and University of Mannheim that focuses on digital transformation. We wish him all the best for his future career!

IBM's Hackathon at the House of Finance

Let's hack to innovate banking and financial services with cognitive APIs. Innovation that matters – considering barrier-free accessible financial services to everyone. Join IBM's Hackathon at the House of Finance at Campus Westend, taking place between November 25th–27th, 2016. Several partners like Etechure@Ogilvy, Goethe University, FinTech Headquarter UG, and the E-Finance Lab are supporting the event and are offering a variety of valuable prizes.

Selected E-Finance Lab Publications

Bhattacharya, U.; Loos, B.; Meyer, S.;

Hackethal, A.:

Abusing ETFs.

Forthcoming in: The Review of Finance (2016).

Gomber, P.; Gvozdevskiy, I.:

Dark Trading under MiFID II.

Forthcoming in: Regulation of the EU Financial Markets, Oxford University Press, 2016.

Hans, R.; Steffen, D.; Lampe, U.;

Richerzhagen, B.; Steinmetz, R.:

Short Run: Heuristic Approaches for Cloud Resource Selection.

In: Proceedings of the 9th International Conference on Cloud Computing, San Francisco, CA, USA, 2016.

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The Role of Qualitative Success Factors in the Analysis of Crowdfunding Success: Evidence From Kickstarter.

In: Proceedings of the 20th Pacific Asia Conference on Information Systems (PACIS), Chiayi, Taiwan, 2016.

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Wunderlich, N.; Beck, R.:

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In: Proceedings of the 50th Hawaii International Conference on System Sciences (HICSS), Big Island, Hawaii, USA, 2016.

For a comprehensive list of all E-Finance Lab publications see <http://www.efinancelab.com/publications>

E-FINANCE LAB SPRING CONFERENCE 2017

The E-Finance Lab cordially invites to its annual Spring Conference. The event will be held on February 15th, 2017, at Campus Westend of Goethe University Frankfurt and is organized by Prof. Steinmetz and his team (layer 1). Participants have the chance to discuss the topic "Cyber Security and Finance – Challenges, Counter Measures, and Application Experiences" with speakers from science and practice. In a few weeks, you will find further information on our website (<http://www.efinancelab.de>). Here, you will also be able to register for the event. As always, the participation is free of charge.

Infopool

RESEARCH PAPER: TRENDS IN CRYPTOCURRENCIES AND BLOCK-CHAIN TECHNOLOGIES: A MONETARY THEORY AND REGULATORY PERSPECTIVE

The Internet era has generated a requirement for low cost, anonymous, and rapidly verifiable transactions. Besides using electronic money, lately two new types of money emerged – centralized virtual currencies, usually for the purpose of transacting in social and gaming economies, and cryptocurrencies, which aim to eliminate the need for financial intermediaries by offering direct peer-to-peer (P2P) online payments. The authors describe both the historical context that led to the development of these currencies as well as recent trends. As these currencies are purely digital constructs, the authors discuss them in the context of monetary theory. Finally, they provide an overview of the state of regulatory readiness (e.g., dealing with transactions) in various regions of the world.

Peters, G. W.; Panayi, E.; Chapelley, A.:

In: *Journal of Financial Perspectives*, 3 (2015) 3, pp. 92-113.

RESEARCH PAPER: HOW DOES HOUSEHOLD PORTFOLIO DIVERSIFICATION VARY WITH FINANCIAL LITERACY AND FINANCIAL ADVICE?

The author discusses whether simultaneous deficits in financial literacy and financial advice have an impact on the diversification of household portfolios. Analyzing a Dutch household survey, Gaudecker draws the conclusion that the largest losses resulting from underdiversification are suffered by those who are not willing to accept financial advice and have below-median financial literacy. Whereas, nearly all households that score high on financial literacy or rely on professionals or private contacts for advice achieve reasonable investment outcomes. Households with below-median financial literacy scores that do not take financial advice lose 50 basis points per year on average. Therefore, underdiversified portfolios rather reflect investment mistakes due to overconfidence than optimal strategies.

von Gaudecker, H.-M.:

In: *Journal of Finance*, 70 (2015) 2, pp. 489-507.

E-Finance Lab Quarterly

The E-Finance Lab publishes the Quarterly in the form of a periodic newsletter which appears four times a year. Besides a number of printed copies, the EFL Quarterly is distributed digitally via E-mail for reasons of saving natural resources. The main purpose of the newsletter is to provide latest E-Finance Lab research results to our audience. Therefore, the main part is the description of two research results on a managerial level – complemented by an editorial, an interview, and some short news.

For receiving our EFL Quarterly regularly via E-Mail, please subscribe on our homepage www.efinancelab.de (→ news → sign up / off newsletter) as we need your E-mail address for sending the EFL Quarterly to you. Alternatively, you can mail your business card with the note "EFL Quarterly" to the subsequent postal address or send us an E-mail.

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www.efinancelab.com.



The E-Finance Lab is a proud member of the House of Finance of Goethe University, Frankfurt.
For more information about the House of Finance, please visit www.hof.uni-frankfurt.de.

THE E-FINANCE LAB IS AN INDUSTRY-ACADEMIC RESEARCH PARTNERSHIP BETWEEN FRANKFURT AND DARMSTADT UNIVERSITIES AND PARTNERS DEUTSCHE BANK, DEUTSCHE BOERSE GROUP, DZ BANK GRUPPE, FINANZ INFORMATIK, IBM, 360T, INTERACTIVE DATA MANAGED SOLUTIONS, AND USD LOCATED AT THE HOUSE OF FINANCE, GOETHE UNIVERSITY, FRANKFURT.

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