

Unexpected Help – Why PaaS Providers  
Might Come to the Rescue of Many FinTechs

Was Friedman Right? New Evidence on  
Household Consumption in Response  
to Permanent and Transitory Income

Enhancing Market Liquidity through  
Liquidity Provider Incentives

MiFID II – Finally a Reality!



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## Editorial

# Unexpected Help – Why PaaS Providers Might Come to the Rescue of Many FinTechs

Tim Grünke

The entire financial industry is currently observing the most fundamental transformation in its recent history. New technologies, such as artificial intelligence, the shift to mobile, cloud computing, big data, blockchain, and new powerful analytics are beginning to leave their mark on the established players in the industry.

Nearly all financial organizations have made their digitalization efforts a top priority of their overall strategic agenda. The digital transformation is not a business goal in and of itself. Given the state of modern technology, it is "just" the tool of choice to reach more fundamental business objectives. In the end, being digitally successful means applying new technologies to better solve one's business problems, or creating better customer experiences. These are exactly the reasons why many FinTechs came into existence and prominently proclaimed their objective to overtake incumbents and become the new dominant players in financial services. So where do we currently stand?

Until now, the ambitious plans of many FinTechs have yielded only moderate results. After the first wave of the FinTech revolution, many firms are now faced with the hard business reality that they need to deliver on their promises. High customer acquisition costs, customer stickiness, strong compliance requirements, onboarding problems, and infrastructure investments have influenced the road to success.

Established digital platforms that act as intermediaries between financial institutions and innovative newcomers have the potential to come to the rescue by solving some of the common problems. They offer FinTechs the ability to engage directly with financial institutions, to leverage their existing sales-force, and to create the opportunity to become the dominant delivery model of the new breed of financial services.

Adopting a cloud-based solution allows digital players to scale up their cost structure as revenues grow, thus achieving a faster break-even point.



**Tim Grünke**  
 Senior Vice President  
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Engaging with platform as a service (PaaS) providers offers many advantages to FinTechs as these clients will have immediate access to the most up-to-date technology, comprehensive datasets, and powerful adjacent APIs. New and co-developed software can be easily integrated into the overall platform, which allows business users to innovate faster. Moreover, as platform services are often billed on a subscription basis, PaaS provides the financial flexibility to scale investment up and down in line with business needs. This is exactly what all types of innovators demand – they need to be able to experiment and co-create new applications without the need for significant upfront investment.

Financial institutions can benefit as well since they seek specialized applications from smaller FinTech firms. FinTech startups typically struggle with compliance associated with all necessary checks and processes of financial institutions, and thereby lose precious time solving problems that established PaaS players have already solved. The PaaS

approach should allow FinTechs to reduce the operational burden associated with the availability of data, rich analytics, stability, scalability, short development cycles, and established deployment models.

For such an operating model, simplicity is also critical to success. Every aspect of this business needs to be simple and efficient, including the process for onboarding, the application development and deployments, the partnership model, revenue sharing models, and all the associated legal aspects, including contracts and service level agreements. Finally, when it comes to innovation, speed and time to market matter.

PaaS providers might come to the rescue of the FinTech industry and create a win-win situation for all involved parties. In the end, the whole story boils down to a fundamental component of any successful business: Focus on your own strengths and find innovative solutions to leverage them.

## Research Report

# Was Friedman Right? New Evidence on Household Consumption in Response to Permanent and Transitory Income

UNDERSTANDING HOW HOUSEHOLDS REACT TO THE ARRIVAL OF PERMANENT AND TRANSITORY INCOME IS OF INTEREST FOR RESEARCHERS AND REGULATORS. PREVIOUS STUDIES HAD TO USE IMPRECISE SURVEY DATA TO MEASURE CONSUMPTION AND THUS CONCLUSIONS OFTEN DIVERGED. WE LEVERAGE GRANULAR PERSONAL FINANCE MANAGEMENT FINTECH DATA TO TEST FRIEDMAN'S PERMANENT INCOME HYPOTHESIS AND TO ASSESS HOUSEHOLD SPENDING ELASTICITY AND MARGINAL PROPENSITY TO CONSUME FOR VARIOUS SPENDING CATEGORIES IN RESPONSE TO DIFFERENT INCOME TYPES.

Gregor Becker

### Introduction

Friedman's (1957) permanent income hypothesis (PIH) states that households plan and smooth consumption contingent on nearterm permanent income. Consumption patterns should thus be unaffected by the timing of anticipated income, unless households are liquidity-constrained. And if large windfall income arrives, households would not consume all of it right away (Friedman, 1957; Deaton, 1991; Carroll, 2001).

Predicting households' consumption elasticity and marginal propensity to consume (MPC) in response to permanent and transitory income is in the interest of researchers and regulators. They share the mutual interest in an effective design

Andreas Hackethal

and in the respective assessment of economic stimulus programs, taxation schemes, and social security systems.

Consequently, the validity of Friedman's PIH was tested frequently, yet with mixed results. A drawback of previous studies is the use of survey data to assess consumption, which could econometrically bias results.

New research opportunities with cleaner data have developed since the emergence of digital personal finance management (PFM) FinTechs such as mint.com. These FinTechs record and automatically group households' current account transactions into granular income and spending

categories. Still, despite using this new data, recent results by Gelman et al. (2014) and Olafsson and Pagel (ftc.) on the validity of PIH are contradicting. While Gelman et al. (2014) confirm Friedman's theory, Olafsson and Pagel (ftc.) find evidence against PIH but "remain agnostic about which [...] theories drive" results. Researchers and regulators are thus still left with differing results and unclear validity of the PIH.

Our research aims to test the validity of Friedman's PIH by leveraging even more granular PFM data, which we source from a major European bank in Germany. As we observe over 65,000 customers and 42 million transactions, this dataset is currently the largest of this kind in household finance. Its size and granularity allows us to run more detailed analyses than possible for Gelman et al. (2014), while we find additional insights that can help avoiding the agnosticism in the results by Olafsson and Pagel (ftc.).

### Method: Leveraging Granular PFM Data to Observe Household Income and Spending

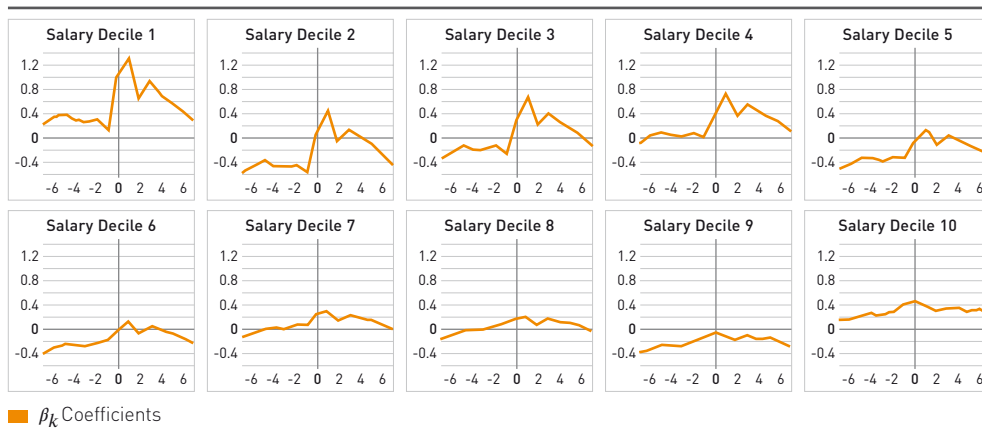
Since part of the diverging results on validity of PIH are driven by different interpretations of what theory actually predicts (Carroll, 2001), we initially generate testable, normative predictions based on most recent amendments to the model (Deaton, 1991; Carroll, 2001). We differentiate income types by sustainability (permanent or transitory) and by degree of anticipation.

By using proprietary PFM data, we benefit from more complete household income and spending records – compared to survey data. Additionally, we take advantage of the PFM's identification as

transactions are allocated into specific income and spending categories.

However, using current account data has caveats. Following Gelman et al. (2014) and Olafsson and Pagel (ftc.), we first exclude recurring spending, which might coincidentally occur on the same day as income arrivals and thus cannot be used to test PIH validity. Additionally, it is necessary to identify savings and peer-to-peer outflow transactions, which should be differentiated from immediate consumption. We further distinguish spending into durable and non-durable consumption. Moreover, not all current account inflows are income in an economic sense. In particular, transactions right after self-initiated cash inflows, e.g., from selling securities out of one's own portfolio or from taking out a consumer loan, are of interest for researchers, but should not be relevant for testing PIH validity. Fortunately, the granular PFM data allows to identify these types of transactions and thus to run several adapted analyses.

To account for heterogeneity, we group households by income decile, which we use as proxy for liquidity constraints (Johnson et al., 2006). We run cluster robust panel regressions with individual- and time-fixed effects to assess the impact of permanent income, including salary and governmental transfer payments, and transitory income arrival, e.g., tax refunds and dividend payments, on spending elasticity and MPC of different spending types, e.g., gross household spending including savings and peer-to-peer transactions, durable and non-durable consumption, and only non-durable consumption.



**Figure 1: Household Durable and Non-Durable Consumption Elasticity in Response to Permanent Income Arrival by Income Decile (The  $\beta_k$  Coefficients Reflect Additional Consumption on Days Before and After Payment Arrival)**

### Empirical Findings

We find that only low-liquidity households increase consumption after permanent income arrival. More liquid households hardly react to the arrival of permanent income (Figure 1). Reaction to salary, social security, and unemployment payments confirm these results and show no increase in MPC nor spending elasticity for high-liquidity households.

Considering the reaction to aggregate transitory inflow, we find excessive household spending on the day of arrival. On first sight, this appears to confirm results by Olafsson and Pagel (ftc.). Yet, other than Olafsson and Pagel (ftc.), we find that this effect is very heterogeneous for different income and spending categories. In our data, it is largely driven by spending on specific non-consumption purposes, such as savings and peer-to-peer transactions. When assessing the effect of transitory income arrival on durable and non-

durable consumption, we do not observe amplified elasticity. Additionally, the observed response to transitory income arrival is driven by anticipated, self-initiated transactions, e.g., cash deposits. Yet, these financial transactions might not reflect exogenous income in an economic sense. When assessing household consumption reaction in response to the arrival of anticipated, exogenous, transitory income, effects on spending elasticity and MPC are negligible. In response to the arrival of transitory tax refunds, we observe consumption spikes for low-income households. However, MPCs remain in line with Friedman's normative predictions (Carroll, 2001).

Finally, we provide evidence that contradicting research results by Olafsson and Pagel (ftc.) compared to Gelman et al. (2014) and this paper might be driven by differences in the observed retail payments clearing system, by differences in data availability and compilation (esp. for income

types), and by analyzing both elasticities and MPCs.

Given our findings, we conclude that Friedman's (1957) PIH, expanded by Deaton's (1991) liquidity constraints model, is a fairly good description of households' consumption reaction to the arrival of permanent and transitory income. The observed "earmarking" of self-initiated, transitory income for specific spending purposes hints at mental accounting.

We contribute to research on the lifecycle consumption/permanent income hypothesis (LCPIH) by testing and confirming PIH with new and granular data, which might affect the whole economic profession.

Regulators can benefit from our finding that PIH is an adequate predictor of household consumption response to income arrivals. As the economic stimulus program of quantitative easing is losing supporters, the urgency to know whether and which households increase consumption in response to permanent or transitory income arrivals has increased. Regulators thus might more credibly rely on Friedman's (1957) PIH for new taxation or governmental support schemes.

### Conclusion

Friedman's PIH predicts households' reaction to the arrival of permanent and transitory income, which is highly relevant for researchers and regulators. Yet, previous studies disagree on theory's validity. We leverage granular household spending and income data from a PFM FinTech to test this theory for a variety of income

and spending types. We conclude that PIH (Friedman, 1957; Deaton, 1991) is a fairly good description of household behavior.

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## Research Report

# Enhancing Market Liquidity through Liquidity Provider Incentives

AGAINST THE BACKGROUND OF FRAGMENTED EUROPEAN EQUITIES TRADING, MARKET OPERATORS HAVE EMPLOYED DIFFERENT STRATEGIES TO INCREASE LIQUIDITY ON THEIR MARKET RELATIVE TO OTHER TRADING VENUES. ONE OF THESE STRATEGIES IS TO INCENTIVIZE LIQUIDITY PROVIDERS VIA FEE REBATES. THIS ARTICLE PRESENTS AN EMPIRICAL INVESTIGATION OF THE INTRODUCTION OF THE XETRA LIQUIDITY PROVIDER PROGRAM AT DEUTSCHE BÖRSE AND ITS IMPACT ON LIQUIDITY AND TRADING VOLUME ON THE INTRODUCING MARKET ITSELF AND ON THE CONSOLIDATED EUROPEAN MARKET.

Benjamin Clapham

Peter Gomber

Jens Lausen

Sven Panz

### Introduction

Due to the increased fragmentation of securities markets after the introduction of the Markets in Financial Instruments Directive (MiFID II) in Europe, incumbent exchanges and alternative venues intensively compete for investors' order flow. Therefore, market operators implemented specific fee schedules and rebate schemes. By these, market participants are incentivized to increase liquidity, which thereby lowers implicit transaction costs and thus total transaction costs.

On October 4<sup>th</sup>, 2016, Deutsche Börse introduced an incentive program on its electronic trading platform Xetra offering fee rebates for liquidity

providers. Specifically, participating market makers are rewarded a 100% fee rebate for passively executed orders and quotes in DAX30 instruments if they fulfill certain obligations concerning quoted volume and presence time at the best bid and ask. The Xetra Liquidity Provider (XLP) Program originally started as a pilot but was transferred into a regular pricing scheme immediately after the end of the pilot on March 31<sup>st</sup>, 2017. The goal of the XLP Program is to enhance liquidity on Xetra and thus to attract more trading volume due to decreased transaction costs for market participants.

The introduction of the XLP Program on Xetra serves as a quasi-natural experiment to analyze

the behavior of market makers and market participants in terms of liquidity provision and trading. We also investigate how single-market liquidity provider incentives influence liquidity and trading volumes both on the single market itself and on the consolidated European market as a whole. On the one hand, this analysis is relevant from the perspective of a market operator in order to assess whether the introduction of liquidity provider incentives is successful in increasing the venue's trading volume and market share. On the other hand, the analysis of a single-market liquidity provider program is also highly important from the perspective of market participants caring about aggregate market liquidity of a stock available on different venues. Higher aggregate liquidity supply in fragmented markets lowers costs, might attract additional trading volume, and reduces the cost of capital for issuers.

### Fee Schedules Aimed at Increasing Liquidity and Trading Volume

In particular, our analysis is related to the empirical findings by Dosanjh (2013), who shows that liquidity significantly improved after the introduction of market maker incentives on the Australian ETF market. Moreover, our analysis contributes to research streams which analyze the effects of specific fee schedules and other means to improve market liquidity: Foucault et al. (2013) as well as Malinova and Park (2015) investigate the effect of maker/taker pricing that is predominantly implemented by new alternative venues to attract liquidity in the fragmented market environment. Another stream of research analyzes the

so-called "payment for order flow", in which venues and market makers award brokers with cash payments in order to receive uninformed retail order flow (Battalio et al., 2001; Parlour and Rajan, 2003).

### The Xetra Liquidity Provider Program

The goal of the XLP Program is to incentivize liquidity provision at the visible best bid and offer in continuous trading of DAX30 instruments on Xetra. The pilot phase, which was announced on August 22<sup>nd</sup>, 2016, started on October 4<sup>th</sup>, 2016 (Deutsche Börse Group, 2016). Liquidity providers who want to participate in the program have to sign an additional contract with Deutsche Börse. For each full month of participation, Deutsche Börse will grant a 100% fee rebate for passively executed orders and quotes in DAX30 instruments.

In order to qualify for the fee rebates, market participants have to fulfill two monthly requirements: First, the registered liquidity providers have to place orders at the visible best bid and offer with at least EUR 5,000 minimum volume per side with a presence time of at least 20% during continuous trading. The presence time is averaged over bid and offer of all DAX30 instruments. Second, liquidity providers have to account for at least 1% of total passively executed volume in DAX30 instruments.

### Empirical Investigation

For the empirical investigations, we use Thomson Reuters Tick History (TRTH) high-frequency trade and order book information.

Since the XLP Program is applied for DAX30 instruments only, the constituents of this index traded on Xetra are the main subject of interest. To derive robust results on the effects of the liquidity provider incentives, we consider different observation windows up to 100 trading days before and after the start of the XLP Program. Therefore, our observation period lasts from May 13<sup>th</sup>, 2016, to February 21<sup>st</sup>, 2017.

In order to analyze the effects of the XLP Program on liquidity and trading volume on Xetra as well as on the aggregate liquidity and trading volume in the fragmented market environment for trading DAX30 instruments in Europe, we apply a difference-in-differences (DiD) approach to exclude possible confounding effects. In our case, the treatment is the introduction of the XLP Program on Xetra. For the control group, we rely on the highly correlated stocks of the French CAC40 index not being subject to changes in the fee schedule during our observation period. For each

constituent of the DAX30 and the CAC40, we construct a synthetic consolidated order book, in which we merge all information from the main market and the alternative venues Bats, Chi-X, and Turquoise on a tick-by-tick basis.

**Effects on the Main Market Xetra**

Table 1 reports the changes in liquidity and turnover on Xetra relative to the Euronext control group after the introduction of the XLP program. All liquidity measures, i.e., relative spread, order book depth (Depth(10)), and volume on the top (i.e., the first level) of the order book (L1-Volume), on Xetra significantly improve due to the liquidity provider program. However, no relevant positive effect on turnover can be observed.

This result is also supported by a DiD regression showing that relative spreads on Xetra decreased significantly after the introduction of the liquidity provider program even when controlling for possible confounding effects via

the control group (trading in CAC40 stocks on Euronext). By investigating different subsamples of ten, 50, and 100 trading days, we observe an increasing magnitude from ten to 100 days for this effect. For longer observation windows, our results suggest that liquidity providers at least partially pass over savings in transaction fees to market participants in the form of tighter spreads. The competition between liquidity providers is further enhanced by the obligation of 20% presence time at the best bid and ask. Dividing the observed stocks in three equally sized subsamples with respect to market capitalization and price level, the decrease in spreads is robust across all six groups. However, the DiD coefficient is only significant for those DAX30 stocks with medium and small market capitalization or price level, respectively. A possible explanation for this observation could be the fact that competition between market makers is already very high for the most liquid stocks with high market capitalization so that the fee rebates

do not significantly decrease spreads even further. Moreover, many high market cap stocks already trade at their minimum tick sizes leaving less room for further improvement.

Besides improvements in relative spreads, the XLP Program also aims at increasing volumes at the top of the order book. This is also shown by our results since both the order book depth measured by Depth(10) as well as the euro volume on the top of the order book (L1-Volume) increase as suggested by positive DiD coefficients, which are robust across all observation windows and subsamples. The rationale behind the increase in order book depth and L1-Volume is that liquidity providers need to fulfill minimum volume requirements of EUR 5,000 in order to qualify for the fee rebates. Moreover, minimum presence time at the top of the book incentivizes liquidity providers to provide liquidity at the first order book level and to shift volumes on deeper order book levels to the top more often.

		Pre	Post	% Change	DiD
Turnover	Xetra	72.20	78.50	8.72%	1.28%
	Euronext	54.93	59.02	7.44%	
Relative Spread	Xetra	4.93	4.39	-10.93%	-8.09%
	Euronext	4.19	4.07	-2.85%	
Depth (10)	Xetra	1.08	1.25	16.07%	13.29%
	Euronext	0.83	0.86	2.78%	
L1-Volume	Xetra	0.10	0.13	28.80%	16.63%
	Euronext	0.09	0.11	12.17%	

Table 1: Changes in Liquidity and Turnover on the Main Venue Compared to the Control Group

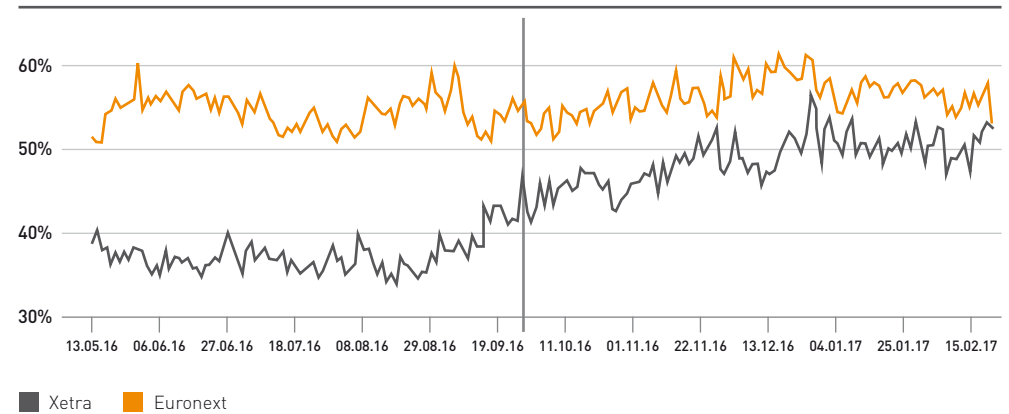


Figure 1: Contributions of the Main Market to Consolidated L1-Volume (in %)

As the analysis has shown, the XLP Program was successful in increasing liquidity on the main market Xetra along different dimensions. Consequently, the market might gain additional order flow resulting in higher trading volumes.

### Effects on the Aggregate Market

The picture of the contributions of the single market to the consolidated market supports the success of the XLP Program further. As depicted in Figure 1, the contribution of Xetra to the aggregate volume at the European best bid and offer (L1-Volume) has improved after the liquidity provider program. However, while we can observe positive effects for the market introducing the liquidity provider program, the descriptive results depicted in Table 2 show a less positive effect for turnover and liquidity measures in the fragmented market as a whole. In contrast to the main market (see Table 1), the descriptive results in Table 2 show

that turnover in the aggregate market rather decreases. Yet, the results of the DiD regression show no significant effect for turnover, indicating that the main market gains market share at the expense of other markets trading the same instrument. In addition, we do not find a relevant increase in aggregate liquidity. Despite the positive effects shown by the descriptive analysis, the results of the DiD regression are insignificant for relative spread, Depth(10), and L1-Volume for most observation periods and subsamples.

Since there is no incentive to provide tighter spreads on the alternative venues, the effect of the main market is too weak to result in a significant change in the consolidated market. Consequently, gains of Xetra, on which the liquidity provider program is implemented, are largely at the expense of competing alternative venues. In summary, the analysis of the consolidated market perspective reveals that

there is no benefit of a single-market liquidity provider program for the consolidated European securities market.

### Conclusion

Our results show strong support for the effectiveness of liquidity provider incentives for the market that introduces them. This is especially relevant for stocks beyond the most-liquid stocks. However, no gains for aggregate liquidity and turnover can be observed. In the consolidated market, rather than increasing aggregate liquidity due to lower transaction costs, market participants seem to redistribute liquidity provision and trading activity to the market offering fee rebates. Consequently, a single-market liquidity provider program, which only links the incentive to quality parameters on that market, increases the respective market's liquidity and market share at the expense of competing venues. While it leads to welfare gains for market participants that solely have access to the respective market, e.g., customers of retail brokers, it does not lead to welfare gains for market participants that have full access to the fragmented market environment. Therefore, linking incentives to quality parameters referring to the consolidated market, i.e., an incentive for quotation at the consolidated spread (European best bid and offer), likely will not only grow the market share of the incentivizing market but also in parallel increase aggregate liquidity and turnover in the fragmented market as a whole.

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		Pre	Post	% Change	DiD
Turnover	DAX30	138.22	132.99	-3.79%	-9.37%
	CAC40	96.47	101.86	5.59%	
Relative Spread	DAX30	3.54	3.40	-3.96%	-2.13%
	CAC40	3.25	3.19	-1.83%	
Depth (10)	DAX30	1.84	1.97	6.87%	7.37%
	CAC40	1.35	1.35	-0.50%	
L1-Volume	DAX30	0.16	0.19	17.71%	4.26%
	CAC40	0.12	0.14	13.44%	

Table 2: Changes in Liquidity and Turnover in the Consolidated Market



## Insideview

# MiFID II – Finally a Reality!

INTERVIEW WITH TORSTEN SCHAPER

**After more than eight years of intensive discussions and preparations by regulators and by the financial industry, MiFID II and MiFIR went live on January 3<sup>rd</sup>, 2018. Most market observers agree that this has been the biggest regulatory overhaul in European financial markets ever. Do you agree?**

I could not agree more. We started our MiFID II project at Deutsche Börse back in 2010. And it was massive. It took the EU almost four years to agree on the Level 1 legislative text alone. After that, the detail work started to clarify all technical details – for some of them this took even until very recently. So it has been – and still is – challenging to get everything implemented in time.

Now, eight years later, Europe finally made it: MiFID II is a reality! It is a very comprehensive piece of legislation: It affects all institutions that act on financial markets and it got bigger than anybody would have ever expected. In total, it now consists of more than 30,000 pages, including:

- Reactions to the financial crisis such as the introduction of the trading obligation for derivatives;

- The extension of the transparency regime from equities to all financial instruments;
- Adoptions due to technological developments such as algorithmic trading;
- An adaptation to the new regime to achieve more harmonization across the EU; and finally
- The optimization resulting from the planned review of MiFID I.

### **What are the most important changes concerning trading and market infrastructures?**

Most important from my perspective is the extension of the transparency regime to all financial instruments – especially for bonds and derivatives. The implementation of these requirements not only resulted in massive changes in parameters, processes, and systems but will shake up market structure and trading operations in some asset classes. Furthermore, the trading obligations for equities and derivatives will change trading behavior and ensure that more trading will take place on regulated trading venues. As a result, more trading will contribute to price formation. Finally, MiFID II helps competent authorities to



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do their job as they are provided with the information they need.

### **What are the drivers behind the introduction of the trading obligations?**

The main intention is to ensure a higher level of transparency. On the derivatives side, this is a lesson learnt from the financial crisis. On the equities side, this is a lesson learnt from MiFID I leading to a too high share of OTC trading not contributing to public price formation. From now on, OTC trading will only be allowed if these trades fulfill pre-defined criteria.

### **Which other concepts within MiFID II will influence European financial markets?**

First of all, as of January this year, a completely new category of trading venues called Organised Trading Facility comes into existence. These venues capture new types of organized execution for bonds, structured finance products, emission allowances, and derivatives outside of regulated markets and multilateral trading facilities. The main intention is to ensure a level playing field between various venues offering multilateral

trading services. Second, a so-called “double volume cap regime” for equity trading is introduced. Its goal is to protect the price discovery process on public markets by limiting the amount of orders executed in unregulated dark pools.

### **How will Brexit change MiFID II?**

MiFID II was originally designed for 28 EU countries, including the UK. Once the UK has left the EU, it loses the EU passport for financial services and becomes a third country. The existing regime will reach its limits given the volumes of EU trading taking place in the UK and vice versa. Many thresholds that are essential parts of MiFID II for determining transparency and trading obligations will need to be recalibrated as the biggest financial centre will not be part of the sample anymore. In addition, we need third country regimes that are able to cope with the relevance of the UK for EU financial markets.

Only if this is considered properly, the MiFID II objectives to increase transparency, stability, and investor protection can be ensured.

**Thank you for this interesting conversation.**

# Infopool

## News

### Dr. Marten Risius Receives IHK Dissertation Award 2017

Dr. Marten Risius (layer 1) has been awarded with the IHK Dissertation Award 2017 for his dissertation "Social Media Management – Advancing Social Media Analytics and Engagement". The Frankfurt am Main Chamber of Commerce and Industry (IHK) grants this award annually as an acknowledgement for excellent academic research with high relevance for practice. Congratulations!

### Dr. Siham El Kihal Receives German Market Research Award

Dr. Siham El Kihal (layer 3) receives the German Market Research Award 2017 for her dissertation "Product Return Management in Online Retailing". The "Berufsverband Deutscher Markt- und Sozialforscher e.V." assigns the prize to the best dissertation concerning market research. Congratulations!

### Deutscher Marketing-Verband e.V. (DMV) Awarded Dr. Daniel M. Ringel with the Science Prize 2017

Within the "German Marketing Day", the German Marketing Association e.V. (DMV) honored Dr. Daniel M. Ringel on November 23<sup>rd</sup> with the Science Prize 2017. With his dissertation "Creating Insights in Large Markets", Daniel Ringel convinced the jury consisting of members from academics and practice. Congratulations!

### Dr. Siham El Kihal Received Alfred Gerardi Memorial Award

In September 2017, Dr. Siham El Kihal (layer 3) received the Alfred Gerardi Memorial Award from the German Dialogue Marketing Association for her dissertation "Product Return Management in Online Retailing". The award is regarded as one of the most prestigious prizes in the German direct marketing industry. Congratulations!

### Successful Disputation

Martin Haferkorn (layer 2) has received his doctoral degree on October 5<sup>th</sup>, 2017, with his dissertation "High-Frequency Trading in Fragmented European Equity Markets – Implications for Market Quality". Congratulations!

### Meet the Best Students!

On November 6<sup>th</sup>, 2017, the E-Finance Lab together with its industry partners hosted a "Get-in-Touch" event for the best bachelor and master students from the areas of finance, marketing, informatics, and information systems of Frankfurt and Darmstadt universities. These students and our industry partners used this platform to intensively discuss potential future perspectives and collaborations.

### New Colleague at the Chair of Prof. Hackethal

Dominique Marcel Lammer joined the Chair of Prof. Hackethal (layer 3) as an external doctoral student in October 2017. He holds a CEMS Master in Management degree from the London School of Economics and the University of St. Gallen. During his doctoral studies, he will focus on different influences on the savings and investment behavior of individuals as well as on retirement decisions.

## Selected E-Finance Lab Publications

### Ament, C.:

The Ubiquitous Security Expert: Overconfidence in Information Security.  
In: Proceedings of the 38<sup>th</sup> International Conference on Information Systems (ICIS), Seoul, South Korea, 2017.

### Haferkorn, M.:

High-Frequency Trading and its Role in Fragmented Markets.  
In: Journal of Information Technology, 32 (2017) 3, pp. 283-296.

### Leuz, C.; Meyer, S.; Muhn, M.; Soltes, E.; Hackethal, A.:

Who Falls Prey to the Wolf of Wall Street? Investor Participation in Market Manipulation.  
In: NBER Working Paper, 2017.

### Nguyen, T. A. B.; Agnihotri, P.; Meurisch, C.; Luthra, M.; Dwarakanath, R.; Blendin, J.; Böhnstedt, D.; Zink, M.; Steinmetz, R.:

Efficient Crowd Sensing Task Distribution Through Context-aware NDN-based Geocast.  
In: Proceedings of the 42<sup>nd</sup> Conference on Local Computer Networks (IEEE LCN), Singapore, 2017.

### Siering, M.; Clapham, B.; Engel, O.; Gomber, P.:

A Taxonomy of Financial Market Manipulations: Establishing Trust and Market Integrity in the Financialized Economy Through Automated Fraud Detection.  
In: Journal of Information Technology, 32 (2017) 3, pp. 251-269.

### Wunderlich, N.; Beck, R.:

25 Years of CIO and IT Leadership – Revisiting Managerial Roles in Information Systems Research.  
In: Proceedings of the 21<sup>st</sup> Pacific Asia Conference on Information Systems (PACIS), Langkawi, Malaysia, 2017.

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

### JOINT SPRING CONFERENCE 2018 OF THE E-FINANCE LAB AND IBM DEUTSCHLAND

The E-Finance Lab and IBM Deutschland cordially invite to the annual Spring Conference on "Data Science in Financial Services". The event will take place during the afternoon of February 1<sup>st</sup>, 2018, at Campus Westend in Frankfurt and is organized by Prof. Skiera and his team (layer 3). Speakers from science and practice will present insights from the implementations of data science projects and discuss current developments. The registration form and further information are available on our website [www.efinancelab.de](http://www.efinancelab.de) (→Events →Spring Conference 2018). As always, the participation is free of charge.

As special events, there will be two pre-conference "hands-on" workshops that will illustrate how to implement data science solutions in R, Python, or IBM's Data Science Experience.

## Infopool

### RESEARCH PAPER: ALGORITHMIC REGULATION: AUTOMATING FINANCIAL COMPLIANCE MONITORING AND REGULATION USING AI AND BLOCKCHAIN

The concept of “algorithmic regulation” is to stream compliance data, social networks data, and other kinds of information from different sources to a platform where compliance reports are encoded using distributed ledger technology. Regulations are codifiable and executable as computer programs using the same technology being developed for blockchain smart contracts. The authors refer to algorithmic regulation for systems that facilitate compliance and regulation decision-making in financial services using mathematical tools and blockchain technology. They discuss five areas: intelligent regulatory advisors, automated monitoring (of online and social media to detect consumer and market abuse), automated reporting, regulatory policy modeling (using smart contract technology to codify regulations), and automated regulation (employing blockchain technology to automate monitoring and compliance).

Treleven, P.; Batrinca, B.:

In: *Journal of Financial Transformation*, 4 (2017) 45, pp. 14-21.

### RESEARCH PAPER: ON THE ORIGINS OF RISK-TAKING IN FINANCIAL MARKETS

Although financial investment behavior varies significantly across individuals, it is highly correlated between parents and their children. Thus, parents who hold riskier financial portfolios tend to have children who themselves hold riskier portfolios. Using Swedish data, the authors found that the decision of adoptees to hold equities is associated with the behavior of both biological and adoptive parents, implying a role for both genetic and environmental influences. However, nurture has a stronger influence on the share of financial assets invested in equities and on portfolio volatility, suggesting that financial risk-taking is substantially environmentally determined. The parental investment variables substantially increase the explanatory power of cross-sectional regressions and so may play an important role in understanding cross-sectional heterogeneity in investment behavior.

Black, S. E.; Devereux, P. J.; Lundborg, P.; Majlesi, K.:

In: *Journal of Finance*, 72 (2017) 5, pp. 2229–2278.

## 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](http://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](http://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](http://www.hof.uni-frankfurt.de).

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

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