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The Future of Blockchain Technology

Cyclicality of Collateral Haircuts and Systemic Illiquidity

Virtual Portfolios as a New Data Source to Analyze Investment Decisions

TechQuartier to Boost the Start-Up Scene in Frankfurt am Main



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Editorial

The Future of Blockchain Technology

Heiko Hees

In the following, I would like to take a brief look at the most recent and promising technological developments regarding blockchain infrastructure technology. Today, a very common perspective of the financial industry and other practitioners is that three essential issues are overshadowing the innovative potential and advantages of blockchain technology: scalability, privacy, and high energy consumption. However, a multitude of initiatives are working actively on turning viable solution proposals into running code. The aim of this editorial is to shed light on innovative solutions for these alleged issues.

Currently, permissioned ledger systems (aka private chains) are frequently applied to improve scalability and privacy properties that public blockchains are currently lacking. However, with the rise of private chains, new disconnected "islands of trust" will be created among which interoperability is low. This results in an intra-bank IT infrastructure

update which is at best decreasing costs within that particular network.

But what are viable remedies for blockchains in general?

First, two generic approaches to provide scalability are sharding and state channel networks. Sharding means splitting up the blockchain database into multiple non-overlapping "shards" of data according to their business domain. This enables nodes to store and process only transactions that are relevant to their business domain. Off-chain state channel networks are developed for the Bitcoin (Lightning Network) and Ethereum (Raiden Network) projects. State channels provide infrastructure to perform bilateral transactions off-chain (i.e., the transactions are neither recorded nor verified on a global ledger) while preserving the level of security known from the blockchain concept. As these channels require no network wide con-



Heiko Hees
CEO
brainbot technologies AG

sensus for each block of transactions, the number of transactions per second can be increased by several orders of magnitude.

Second, the privacy issue is tackled in two different ways: cryptographic improvements and state channel networks. Rather than relying on sophisticated cryptography with all its caveats and complexity, state channel networks introduce privacy as they move a large share of transactions into bilateral channels. Hence, transactions are only visible to the two interacting participants. On the other hand, transaction privacy is provided by integrating cryptographic techniques (i.e., Zero-Knowledge Proofs) into the validation mechanism. Thereby, transaction sender and receiver can no longer be put into relationship. The most recently launched blockchain system following this road is ZCash. The Ethereum project has already announced implementing this technology in its upcoming versions.

Third, the high energy consumption of proof-of-work (PoW) consensus algorithms which are used by most public blockchains is a reasonable cause of concern to many users. However, Ethereum 2.0 will use an advanced form of proof-of-stake algorithm called "Casper" as its consensus protocol. It replaces resource expensive PoW "mining". Blockchains are then no longer backed by "proof of burned energy" but secured by deposits.

At the time of writing, various details concerning the actual implementations still need to be discussed and worked out. However, the rate of development progress of approaches, such as state-channel technology, sharding, and advanced cryptography, is nothing short of astounding. These developments suggest that the way of how we as a society can transfer and manage value will fundamentally change as it will no longer be dependent on intermediaries.

Research Report

Cyclicalities of Collateral Haircuts and Systemic Illiquidity

PRO-CYCLICALITY OF COLLATERAL HAIRCUTS AND MARGINS HAS BECOME A WIDELY PROCLAIMED BEHAVIOUR BUT EMPIRICAL EVIDENCE ON THIS TOPIC IS QUITE SPARSE AND THE DISCUSSIONS ARE PRIMARILY DRIVEN BY INSIGHTS DERIVED FROM THEORETICAL MODELS. BASED ON A UNIQUE DATA SET, WE CONSTRUCT A MEASURE OF SYSTEMIC ILLIQUIDITY OF BOND COLLATERALS AND APPLY BUBBLE DETECTION TECHNIQUES TO IDENTIFY IRRATIONAL BEHAVIOUR AND PRO-CYCLICAL TENDENCIES. FINALLY, WE PROPOSE A QUANTITATIVE TRIGGER AND DESIGN FOR MACROPRUDENTIAL HAIRCUT ADD-ONS.

Florian Glaser

Sven Panz

Introduction

Pro-cyclical tendencies of haircuts and margins are subject to an ongoing discussion among academics and regulatory authorities since the aftermath of the financial crisis in 2008. The basic line of argumentation is that in calm periods of the business cycle, lower margins (due to lower volatility of market prices) and lower collateral haircuts (due to high levels of liquidity and low counterparty risks) lead to an expansion of overall leverage and of the value of collateral portfolios. During times of financial distress, the same effects work in the other direction and result in lower values of collateral portfolios, i.e., constraints of (fund-

ing) liquidity. If funding liquidity deteriorates suddenly and sharply, i.e., a shock occurs, participants might be forced to liquidate positions, which increases volatility and hence margins. Others might be affected by rising margins and are forced to sell in already falling markets, which might be further fueling distress and result in pro-cyclical tendencies. These interacting effects, known as liquidity spirals, have a systemic character in form of market-wide and exacerbated illiquidity and hence compromise financial stability. As a consequence, regulatory authorities (1) call for further investigation of this phenomenon, (2) demand through-the-cycle monitoring metrics, and (3) have pro-

posed macroprudential counter-measures (ESRB, 2015). Particular measures are counter-cyclical macroprudential add-ons for collateral haircuts. Furthermore, counter-measures to market-wide illiquidity resulting from general loss of confidence in financial markets or exacerbated counterparty risk perceptions are called for in order to mitigate systemic tendencies (ESRB, 2013). Therefore, it is important to measure systemic illiquidity using adequate methods. Additionally, the measure should be able to serve as a quantitative basis for a macroprudential haircut add-on to identify periods of irrational tendencies, in which the haircut add-on should be applied. Thus, any discretionary decisions regarding the triggering process can be avoided.

Methodology

Noise as Illiquidity Measure: Besides several basic measures, only a few comprehensive measures exist to quantify systemic illiquidity. We decided to rely on Hu et al. (2013) and measure systemic illiquidity as the price deviation from actual and theoretical bond yields (also referred to as "noise"). This noise measure can be understood as the aggregation of cross-sectional pricing errors between theoretical bond yields which are computed as the present value of discounted coupons neglecting any risk and actual market yields. The key component of our approach is deriving two different time series representing systemic illiquidity. First, we derive the noise measure for actual market yields (*Noise*) measuring the overall market illiquidity. Second, we derive the synthetic noise measure together with the consideration

of applied haircuts measuring the illiquidity within the collateral portfolio (*Noise_{HC}*).

Identifying Explosive Behavior: After the construction of two different time series for overall market illiquidity and illiquidity within the collateral portfolio, we seek to identify periods of explosive- and bubble-like behavior. Due to the fact that the test procedures of Phillips et al. (2015) allow to identify multiple, structural breaks and provide a date stamping methodology at the same time, we choose their test statistic as the most suitable method. Therefore, we use the Generalized Sup Augmented Dickey-Fuller (GSADF) test procedure to identify the existence of multiple bubbles. This procedure is a recursive and straight-forward application of the Supremum Augmented Dickey-Fuller (SADF) methodology, which is designed to provide additional power in identifying multiple breaks of exuberance and collapse. A similar test procedure (BSADF: Backward Supremum Augmented Dickey-Fuller methodology) can additionally be used as a date stamping method. The application of this method results in consistent estimates of time periods (origination and termination dates) of explosive behavior.

Empirical Analysis

To analyze whether haircuts show pro-cyclical behavior, we start by applying the mentioned test procedures and test the two distinct time series of systemic and portfolio illiquidity (Figure 1) for existence of multiple breaks. Subsequently, if the tests indicate multiple periods of explosive behavior, we identify the origination and termination dates of the corre-

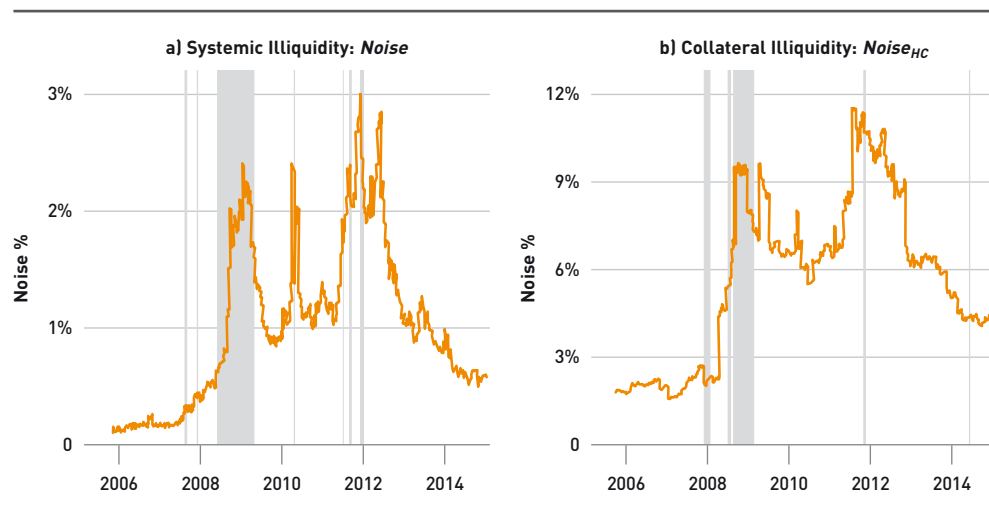


Figure 1: Overall Systemic Illiquidity (a) and Collateral Illiquidity (b) as Well as Periods of Explosive Behavior (Shaded Periods)

sponding periods. All test statistics indicate multiple periods of structural breaks far beyond the critical values of 99% confidence. To identify explosive periods, we shaded the periods where the BSADF test statistics exceed their 95% critical values. The identified periods of irrational and explosive behavior (identified with Noise in Figure 1a) include the global financial crisis where the first signs of a crisis are identified in August and December 2007. The outbreak of the financial crisis in Europe is identified in June 2008 lasting until April 2009. The second spike is related to the periods of financial turmoil in Greece and is identified in April 2010, very timely after the formal request of a first bailout package for Greece. The third set of periods with explosive behavior is identified in July 2011 and is obviously related to the European debt crisis and the ongoing financial distress in many

European countries. The bubble periods identified with $Noise_{HC}$ (see Figure 1b) are very similar to the bubble periods described above but they differ in length and with respect to the starting point. The length is considerably shorter. We only identify 43 weeks of irrational illiquidity instead of 62 in the normal measure. Due to the fact that the noise measure considering haircuts ($Noise_{HC}$) always displays less bubble periods than the normal noise measure (43 and 49 weeks instead of 62 and 69 weeks, respectively) and that we are not able to observe a foreshadowing or amplifying behavior of $Noise_{HC}$, we conclude that the design of past and present haircuts does not come or even exacerbate market-wide illiquidity. Furthermore, we observe that illiquidity measured by noise with applied haircuts ($Noise_{HC}$) is much smoother and is not as explosive as the normal illiquidity measure.

Macroprudential Add-On: Haircut Discounts

As a final step, we introduce a method to derive haircut discounts in times of irrational (funding) liquidity distress to provide relief of distrust-induced systemic illiquidity. The proposed haircut add-ons are only granted for periods in which we identify irrationality. They are computed by integrating the area under the $Noise_{HC}$ curve from the start of the bubble until the day the discount is applied. Hence, on the one hand, the add-on is designed in a way that the discount increases with observed systemic illiquidity. On the other hand, it increases with the level of irrationality.

By running a simulation and neglecting any possible reaction of market participants, we observe that our proposed methodology prevents lasting periods of irrationality. However, it does not intervene if the systemic illiquidity is of short temporary nature and if it is dissolved by the market itself. During the period of the longer lasting financial distress phase beginning in 2008, the add-on becomes increasingly active and smoothes the irrational component of the system-wide illiquidity. We argue that this is a highly desirable feature since market interventions should be reduced to a minimum and should be based on a data-driven approach instead of discretionary or even political decision making processes.

Conclusion

The question of whether collateral haircuts show a pro-cyclical pattern is investigated and a macroprudential haircut add-on to mitigate irrational illiquidity is proposed. We can

reject the hypotheses that collateral haircuts amplify systemic illiquidity by comparing the noise measure for yields with and without haircuts. For our analysis, we apply a measure to identify the start and end points of periods of irrational systemic illiquidity. In addition, this indicator serves as a quantitative trigger for a macroprudential haircut add-on. The proposed haircut add-on shows desirable features to mitigate stretching periods of irrational liquidity constraints during periods of financial distress.

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Research Report

Virtual Portfolios as a New Data Source to Analyze Investment Decisions

EMITTERS OF MUTUAL FUNDS AND OTHER FINANCIAL PRODUCTS LACK INFORMATION ABOUT THEIR CUSTOMERS. THEY MOSTLY OPERATE WITH A PRODUCT-CENTRIC MARKETING CONCEPT. WITH INFORMATION ABOUT CUSTOMERS, THEY COULD SHIFT TOWARDS A MORE CUSTOMER-CENTRIC STRATEGY. HOWEVER, SUCH A STRATEGY DEMANDS INFORMATION THAT IS HARDLY AVAILABLE. VIRTUAL PORTFOLIOS CAN BRIDGE THIS GAP AND PROVIDE EMITTERS OF FINANCIAL PRODUCTS WITH KNOWLEDGE ABOUT THEIR CUSTOMERS AND THEIR COMPETITORS. THIS ARTICLE ILLUSTRATES THE INSIGHTS THAT VIRTUAL PORTFOLIOS CAN PROVIDE TO EMITTERS OF A MUTUAL FUND.

Christopher Grohmann

Thomas Etheber

Bernd Skiera

Introduction

The 'producer' or emitter of financial retail products, such as mutual funds, warrants, and financial certificates, frequently has only limited knowledge about the actual 'customer', respectively investor. Usually the (financial) 'product' is administered in a securities account of a retail bank. The retail banks have information about individual customers' portfolios but communicate with the emitters of the financial product on an aggregate level. Therefore, producers lack important information about the individual actions, wants, and desires of their customers.

Need for Information

Producers have three major ways of marketing concepts: the product-centric, the market-centric, and the customer-centric view (Shah et al., 2006).

The first one, the product-centric view, assesses products from a technical point of view. The technical specifications and the ability of a company to deliver them is the orientation of an organization (Sheth et al., 2000). The focus is internal, resulting often in companies being organized around products.

The second is the market-oriented view (Lamberti, 2013). Market orientation recognizes the need for market intelligence to learn and capture market insights. Not only insights about customers' current needs and desires but also those of the future. Furthermore, the importance of intelligence being shared and used across organizational functions is emphasized when addressing market orientation. Additionally, as implied by the word 'market', this view also focuses on monitoring external stakeholders (e.g., competitors or government), technology, and all factors that shape the market.

The third one is the customer-centric point of view. This is a development of the market orientation and is not only about understanding needs and desires and sharing intelligence across functions, but also engages customers in firm activities (Lamberti, 2013).

In recent years, there has been a major shift in different industries from a product-centric view towards a market-oriented view and further onto a customer-centric view (Shah et al., 2006). Product-centric organizations tend to focus too much on technical aspects of products (which

are eventually not even valued by their customers) and miss important niches. Also they come and go with their products. When the once popular product is no longer popular, the company will either need to come up with another stellar product or close its doors.

The essential part of turning an organization towards customer centricity is fine granular information about the actual wants and desires of customers. Information about the actions and attributes of customers is the first step to elicit these preferences. The logical subsequent step is to gain reliable insights on the existing competitors and their individual strengths and weaknesses in satisfying the identified customer demands. Indeed, aggregate information such as the information available to emitters in the retail investment market is hardly sufficient for implementing customer centricity.

Different Degree of Knowledge About the Customer

There are different emitters of financial products that also have different degrees of integration into retail banks. In the following, this article focuses on emitters of mutual funds.

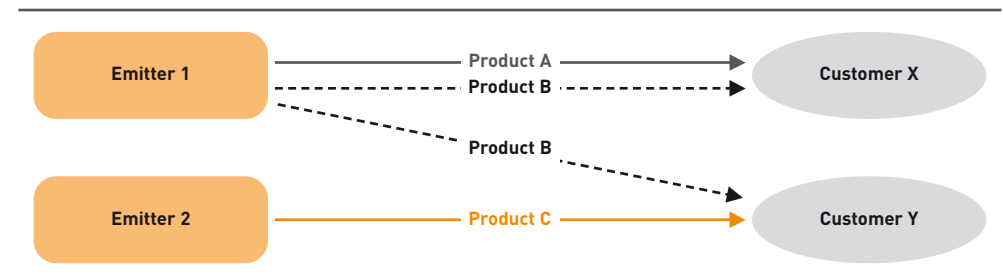


Figure 1: Desired Information Status

Figure 1 presents an idealized view of the information about customers of an emitter, where all customers and their investments are known and the emitter can get a complete picture of the investment of single customers and their competition.

In Germany, there are several major asset managers that emit mutual funds aimed at retail investors, their customers. However, these customers often hold more than one securities account eventually at different retail banks. Frequently, these accounts administer shares of mutual funds together with other types of securities like stocks or structured products.

In general, the emitter of the mutual fund only communicates with the bank as an intermediary, which pools the holdings and all transactions of its clients. Additionally, the counterparty of all associated payments and further information flows is again only the bank. Thus, emitters do not generally know:

- who their customer is (socio-demographic information and other characteristics),
- how many customers they have,

- what their customer holds besides fund, and
- what products are competing with their fund in the investment decisions of the customer.

Figure 2 displays this information set.

Some emitters operate on their own and their funds are marketed directly to customers, while others are part of a corporate group of financial services providers.

The first group of emitters (e.g., Blackrock, Vanguard, Flossbach von Storch) does not have further information about their customers, while the second group (e.g., DWS, Union Investment, Deka) may get some secondary information. A lot of the sales of the latter group stem from its own distribution network and sometimes the asset manager itself is the entity that manages the securities account in the corporate group. Although the second group knows more about their customers than the first group, its information set is less than perfect. They only know about one securities account of a customer, these securities accounts often just keep one type of security (i.e., mutual funds) and often these accounts are restricted to carry only own products.

Additionally, they only know about customers that already do business with them, but neither potential new customers nor the ones that are affiliated with a competitor.

Possibilities to Gain Information

Traditionally, when faced with such information constraints, producers turn towards a market research company. A producer of diapers also only sells to a retailer but gains information about his customers through a third company (here, a market research company, such as GFK or Nielsen).

In the case of financial products, however, market research companies and their usual methods are not adequate. First, these companies do not have a basket analysis of financial decisions on a granular level (single investment products). Second, granular surveys about hundreds and thousands of possible financial products are not feasible. Third, investment decisions largely depend on externalities such as the current state of the market. Furthermore, actual observed behavior is more reliable than survey data (Newman and Lockeman, 1975; Campbell, 2006). On top of that, it is important to assess granular decisions of a customer to distinguish between competing products. Surveys can reveal that, e.g., mutual funds are part of a customer's portfolio, but usually not which particular fund the customer owns.

Another and until now rather unexploited possibility to get information about investment decisions of hundred thousands of customers

provide virtual portfolios. Virtual portfolios are free and offered by many websites to let individuals gain experience about financial markets without forcing them to make an actual investment. They often offer comprehensive analytic tools for the portfolio and a time series of performance.

These virtual portfolios represent a novel data source and offer new insights to emitters who never had this kind of information before. Positive aspects are: virtual portfolios are not affected by banking secrecy, offer granular information about behavior, show portfolio composition at any point in time, and are available for multiple institutions, not only single retail banks. Also they are available in relative abundance and are cheap compared to survey data. The data set in this study has over 16 million virtual transactions of over 500,000 individual customers using over 450,000 different financial products. Yet, a typical restriction for data sets of virtual portfolios is their mixed quality. Cleaning and validating the data is essential for the validity of the results. But using only 10% of the data remaining after the cleaning process still results in a sample that is larger and more detailed than most survey studies.

Virtual portfolios can give an insight to the customer's perspective on investment decisions and reproduce her/his wants and needs. In contrast to observing just the volume of funds in comparison to other funds using the same technical investment strategy, emitters can look beyond the product focus toward the customer's preferences.

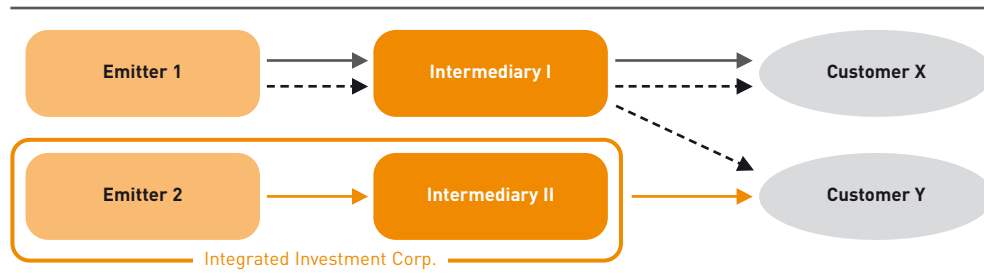


Figure 2: Actual Information Status

Forming customer archetypes, that is, a customer who stands representative for the behavior of a whole group, and segmenting customers can lead emitters to design better products that fit the customers of the respective archetypes. However, to create customer archetype there is a need for information, not only about the desired outcome and self-proclaimed risk preferences (Dorn and Huberman, 2005), but also about actual decisions. When facing market fluctuations, customer archetypes will differ in the way they deal with losses and knowing these types enables emitters to design special products that honor customers' individual preferences.

Example for Analyzing Competition for a Fund

The following example deals with one of many possibilities of leveraging this new data source to produce statistics about market environment that were simply not available before.

The aim of this example is to get information about the competition for a mutual fund, the name of which we do not disguise. The emitters of the mutual fund do not have access to a retail partner that provides information about the customers, their demographics, investment preferences, and portfolio composition.

In order to assess the competition, one computes the lift with every other financial instrument. The aim is to get those products that are most similar to the mutual fund in question. In this context, 'similar' means being picked by the same customer. The lift normalizes the frequency of two co-occurring products and, therefore, does not overemphasize the co-occurrence for a product, which has a very high probability to be in every portfolio (Turney and Littman, 2003). $Lift(A,B) = P(A,B)/(P(A)P(B))$.

Table 1 shows the ten funds that have the highest lift with our mutual fund, while Table 2

shows the ten financial products with the highest lift. Other than expected, only two of the products with the highest lift are actually funds. The customers of the mutual fund have a much higher probability to be invested in certificates and especially in discount certificates on the DAX than the average customer. So, instead of just watching their competition with other mutual funds, managers of our mutual fund should consider passively managed mutual funds (i.e., ETFs) as their strongest competitors.

This example shows that with new available data sources about granular investment decisions, companies can gain insights in customers' preferences and can turn into a more customer-oriented organization.

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1	ACMBERNSTEIN GLOBAL HIGH YIELD PORTFOLIO A	Funds
2	AMUNDI ETF MSCI EMERGING MARKETS UCITS ETF - EUR	Funds
3	BL EMERGING MARKETS A	Funds
4	DWS VORSORGE RENTENFONDS 7Y	Funds
5	ISHARES MSCI EMERGING MARKETS UCITS ETF (LUX)	Funds
6	DB X-TRACKERS PORTFOLIO INCOME UCITS ETF 10	Funds
7	DB X-TRACKERS PORTFOLIO TOTAL RETURN UCITS ETF 1C	Funds
8	LYXOR UCITS ETF EUROMTS ALL-MATURITY INVESTMENT GRADE (DR) EUR	Funds
9	DEKA IBOXX EUR LIQUID NON-FINANCIALS DIVERSIFIED UCITS ETF	Funds
10	SIEMENS WELTINVEST AKTIEN	Funds

Table 1: Other Funds That Occur Often Together with Our Mutual Fund

1	DISCOUNT CERTIFICATE (BLOC) ON DAX PERFORMANCE-INDEX	Certificate
2	DISCOUNT CERTIFICATE (BLOC) ON DAX PERFORMANCE-INDEX	Certificate
3	OPEN END TURBO PUT WARRANT ON DAX PERFORMANCE-INDEX	Certificate
4	UNLIMITED TURBO LONG ON DAX PERFORMANCE-INDEX	Certificate
5	UNLIMITED TURBO LONG ON DAX PERFORMANCE-INDEX	Certificate
6	WAVE UNLIMITED CALL ON DAX PERFORMANCE-INDEX	Certificate
7	UNLIMITED TURBO LONG ON DAX PERFORMANCE-INDEX	Certificate
8	ACMBERNSTEIN GLOBAL HIGH YIELD PORTFOLIO A	Funds
9	MINI FUTURE CERTIFICATE LONG ON ICE BRENT CRUDE FUTURES (BRN) - ICE/C1	Certificate
10	AMUNDI ETF MSCI EMERGING MARKETS UCITS ETF - EUR	Funds

Table 2: Other Products That Occur Often Together with Our Mutual Fund

Insideview

TechQuartier to Boost the Start-Up Scene in Frankfurt am Main

INTERVIEW WITH SEBASTIAN SCHÄFER

Only some weeks ago, the Frankfurt-based TechQuartier was opened officially. It will offer various services to the start-up and FinTech community and is supposed to boost the start-up scene in Frankfurt. What are the main obstacles start-ups have faced so far and what are their main needs?

Up to now, we haven't had a focal access point in the Rhine-Main region. In particular for international founders and start-ups, there is no defined place to meet and mingle. Also, there is no entry point to the start-up community which has a strong local embeddedness. Most of the founders in the region were also born in the region. Of course, this is also a sign of the ecosystems strength, but in order to further accelerate the ecosystem development we need to fill this gap, attract people outside of Frankfurt, and build a community that focuses on ambitious entrepreneurs who want to change the world of tech.

What are the special features and services

of TechQuartier and how will this initiative boost Frankfurt's start-up scene?

First of all, we offer the infrastructure and the space with flexible contracts. With our different membership options, we can support start-ups of all different phases – from early to later stages. Secondly, our community includes mentors and advisors with all different kinds of experiences and expertises. Thirdly, a huge variety of events and programs will help to strengthen the community's ties and also attract international investors. We will, for example, run the Hessian Israel Partnership accelerator that will connect the start-up scene in Israel to the scene in Frankfurt. Fourthly, our start-ups will benefit from a strong corporate involvement with our main partners and sponsors, mostly from the financial industry – including Commerzbank, Deutsche Bank, Deutsche Börse, DZ Bank Group, Helaba, ING DiBa, and Sparda-Hessen. Moreover, besides Allen & Overy, three of the Big 4 Auditors – EY, KPMG, and



Dr. Sebastian Schäfer
Managing Director
TechQuartier, Frankfurt

PWC have joined as partners of the first hour. Last but not least, our infrastructure will include a Tech Lab to promote co-innovation among our diverse members and to strengthen the link between talent, academia, industry, and the start-up scene.

How would you rate the potential of FinTech start-ups especially for the financial center Frankfurt am Main?

One of our main challenges is that we have too few start-ups in the region so far. In order to increase that number, we need to do our homework and boost the general drivers of the local ecosystem. The first and foremost ingredient that is urgently required is talent. We need to attract and educate more entrepreneurial talents, but we also need to streamline our support programs and institutions.

Often, FinTech start-ups are seen as a potential threat to incumbent banks and

financial services providers. What is your view on this?

In fact, I think they are rather a chance for the entire financial and banking industry than a threat. Think of the digital giants such as Amazon, Google, or Apple. They will be happy when banks and smaller FinTechs have an internal fight for customers. If done right, there are so many chances for fruitful collaborations. As an example – especially valid for new start-ups – we refer to one important factor that banks have and FinTechs don't have: customers. Another factor that FinTechs have and banks often don't have: the agility to develop radically new products. So why not collaborate and bring in the strengths of both sides? With the right approach, the pie will only get bigger for both. So, in that sense, I think that a collaboration of banks and FinTechs comprises much more chances than threats.

Thank you for this interesting conversation.

Infopool

News

Frankfurt FinTech Center "TechQuartier" Opening Ceremony

On November 17th, 2016, the new Frankfurt FinTech center called "TechQuartier" was inaugurated by Hessian Minister Tarek Al-Wazir. Prof. Hackethal (layer 3) was a member of the working group initiating and designing the new center and will represent Goethe University and the E-Finance Lab on TechQuartier's steering committee.

Prof. Skiera Receives "2016 Best Teaching Award"

Prof. Skiera (layer 3) has received the "2016 Best Teaching Award" of the Graduate School of Economics, Finance and Management (GSEFM). Congratulations!

Dr. Kai Zimmerman Receives IHK Dissertation Award

Dr. Kai Zimmermann (academic supervisor: Prof. Gomber, layer 2) has been awarded with the IHK Dissertation Award 2016 for his dissertation "Market Efficiency and Safeguards in Fragmented Securities Markets". 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!

Appointment as Member of Consultative Working Group of ESMA

Prof. Gomber (layer 2) has been appointed a member of the Secondary Markets Standing Committee Consultative Working Group (CWG) of the European Securities and Markets Authority (ESMA). The CWG supports ESMA in its work relating to the structure, transparency, and efficiency of secondary markets for financial instruments and contributes to the development of technical standards and guidelines, preparing advice to the European Commission relating to MiFID.

Special Issue "Marketing and Data Science"

Prof. Skiera (layer 3) published the Special Issue "Marketing and Data Science" of the Journal "Marketing Intelligence Review". All articles are available free of charge at www.degruyter.com/view/j/gfkmir.2016.8.issue-2/issue-files/gfkmir.2016.8.issue-2.xml.

Europe's Biggest Onsite Coding Contest in Frankfurt

EFL partner 360T is hosting the coding contest that celebrates its 10th birthday at the House of Finance on March 31st, 2017. Measure up your algorithmic skills against hundreds of coders from around the world in a four-hour contest and win great prizes. Mingle with the developers of the world's fastest real-time trading platform at the after-hours party and find out about interesting job offerings. Registration and more information: contest.catalysts.cc.

Successful Disputation

On November 4th, 2016, Marten Risius (layer 1) has successfully defended his thesis on the topic of "Social Media Management – Advancing Social Media Analytics and Engagement". Congratulations!

New Colleagues at the Chair of Prof. Hackethal (layer 3)

Tobin Hanspal and Konstantin Bräuer have joined the team of Prof. Hackethal as Post Doc and Ph.D. scholarship holder, respectively. Welcome!

Selected E-Finance Lab Publications

Glaser, F.; Panz, S.:

(Pro?)-Cyclicity of Collateral Haircuts and Systemic Illiquidity.

In: 23rd Annual Meeting of the German Finance Association (DGF 2016), Bonn, Germany, 2016.

Gomber, P.; Clapham, B.; Haferkorn, M.; Panz, S.; Jentsch, P.:

Ensuring Market Integrity and Stability – Circuit Breakers on International Trading Venues.

Forthcoming in: Journal of Trading, 2017.

Hanspal, T.:

Once Bitten, Twice Shy: The Role of Inertia and Personal Experiences in Risk Taking.

In: University of Münster Finance and Insurance Seminar, Münster, Germany 2016.

Richerzhagen, B.; Richerzhagen, N.; Zobel, J.; Schönherr, S.; Koldehofe, B.; Steinmetz, R.:

Seamless Transitions Between Filter Schemes for Location-based Mobile Applications.

In: Proceedings of the 41st IEEE Conference on Local Computer Networks (LCN), Dubai, United Arab Emirates, 2016.

Siering, M.; Koch, J.-A.; Deokar, A.:

Detecting Fraudulent Behavior on Crowdfunding Platforms: The Role of Linguistic and Content-Based Cues in Static and Dynamic Contexts.

In: Journal of Management Information Systems, 33 (2016) 2, pp. 421–455.

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. Selected speakers are Christian Funk, Head of Global Research & Analysis Team at Kaspersky Lab, Abdou Naby Diaw, Chief Security Officer (CSO) at Vodafone GmbH, and Martin Borrett, CTO at IBM Security Europe. The registration form and further information are available on our website <http://www.efinancelab.de> (→ Spring Conference 2017).

Furthermore, at the E-Finance Lab Spring Conference 2017, there will be a Live Hacking Demonstration on "Modern Robbery – the various methods of criminals in the digital world". In this Live Hacking Demonstration, security specialists show how an attacker breaks into a fictional internal company network using an elaborate set of technological and social engineering methods.

Infopool

RESEARCH PAPER: CORPORATE SCANDALS AND HOUSEHOLD STOCK MARKET PARTICIPATION

The ability to reap equity returns is of central importance for households. This paper examines whether market regulation and corporate governance failures negatively affect stock market participation. The authors provide evidence that the revelation of corporate fraud creates a loss of trust across the stock market. They show that even if households do not hold stocks in fraudulent firms, they decrease holdings in both fraudulent and non-fraudulent firms. The Arthur Andersen demise, that followed the 2002 Enron scandal, serves as an exogenous shock in the main analysis, since the firm's corporate clients had a higher probability of being identified as having committed fraud. US states with large fraction of Arthur Andersen clients face a larger decrease in stock market participation. Furthermore, households with more lifetime experience of corporate fraud hold less equity.

Gianetti, M.; Wang, T. Y.

In: *Journal of Finance*, 71 (2016) 6, pp. 2591–2636.

RESEARCH PAPER: FINANCIAL INNOVATION: THE BRIGHT AND THE DARK SIDE

Since the recent global crisis, financial innovations are often perceived with primarily negative outcomes. Based on data from more than two dozen countries between 1996 and 2010, this study analyzes the relationship between financial innovations and bank growth, fragility, and economic growth. Innovations are related with faster bank growth, higher fragility, and worse bank performance during the crisis, but also linked with higher growth in countries and industries with better growth opportunities.

Beck, T.; Chen, T.; Lin, C.; Song, F. M.

In: *Journal of Banking and Finance*, 72 (2016), pp. 28–51.

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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Further information about the E-Finance Lab is available at
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 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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