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ICOs and Improvement Potentials for a Global Digital Market Infrastructure

Competitive Forces in the Crypto-currency Exchange Landscape

The Value of Verbal Information

Paradigm Shift in Central Bank Statistics

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Editorial

ICOs and Improvement Potentials for a Global Digital Market Infrastructure

Martin Steinbach

Dr. Martin Steinbach
Partner, Global and EMEIA IPO Leader EY

With the increasing popularity of initial coin offerings (ICOs), let's take an opportunity to better understand their framework as there is an expectation that they will become even more commonly used in the immediate future. Global ICO markets have grown rapidly. Recent EY research (initial coin offerings, aggregate data 2015-2017, January 2018) shows that 372 ICOs around the world raised USD 3.7 billion in funds in the past three years. Offerings are taking place on platforms that span national borders in a digital market environment. ICO projects use either existing or custom blockchain platforms, with 77% using Ethereum.

From Investor Frenzy to Bans

ICOs are a way to raise funds through crowdfunding efforts, where companies offer utility or security tokens for fiat currency or cryptocurrency instead of an equity stake in a company. This fund-raising method is beneficial for start-ups seeking funding as they have access to a larger pool of capital without giving up equity and voting rights in their business. Often, ICOs are used to bypass the rigorous and regulated capital-raising process required by venture capitalists or banks. Different regions have varying levels of regulatory strictness for ICOs and regulators around the world have raised a number of concerns in consumer warnings, public statements (i.e., US and Europe), or have banned ICOs (i.e., China). Key questions are about:

(1) the legal and regulatory status of a digital token or coin as a potential security or financial instrument, and
(2) the process of when, how, and where ICOs are offered.

Uncertain Regulatory Space

Tokens are not standardized like shares and are seen as an intangible asset utilizing blockchain technology. They are based on smart contracts that widely vary in terms, rights, and interests. Also, the interpretation of the nature of a token often is unclear: is it a utility, property, security, or currency? The consequence is that ICO concepts need to be analyzed carefully on a case-by-case basis to clarify the rules that apply. Issuers, promoters, influencers, and trading platforms are making transactions in a given regulatory framework, which does not provide full clarity for ICOs yet and raises uncertainty to keep in compliance with securities offering, investor protection, fraud, and anti-money laundering rules.

Selling a Little More than an Idea

Unlike initial public offerings (IPOs) in the stock market, ICOs are sold into the market before a business solution exists. Our research shows that many ICOs are either representative of the idea (84%) or prototype (11%) stages. Often, the only foundation for the ICO is a white paper that describes the planned technology and a small piece of software that governs how the tokens are issued. Accordingly, valuations are based solely on a conceptual document. The lack of fundamental valuation and due diligence process by investors is leading to extreme volatility in the market. That's why markets received "buyer beware" messages from many regulators.

Building Market Confidence

Like IPO markets, investor confidence and market integrity are key assets of a functioning marketplace. While ICOs can help create greater transparency in the fundraising process and can lower costs, we still need to consider improvements to further develop the ICO market, such as:

(1) standardize the minimum transparency requirements for issuers (legal structure of a token, the offering process and document pre-ICO, and use of proceeds and financial reporting disclosure post-ICO) to support confidence;
(2) establish clear regulations (prevent market abuse and fraud, taxation, and corporate governance to keep issuers accountable) and safe harbors for all market participants to enhance integrity;
(3) ensure global oversight and extraterritorial enforcement of rules to better protect investors.

ICOs are part of our future, so let's ensure we understand how to improve them.

Research Report

Competitive Forces in the Cryptocurrency Exchange Landscape

THIS EXPLORATORY STUDY INVESTIGATES DRIVERS OF THE CRYPTOCURRENCY EXCHANGE COMPETITION. WE EXAMINE THE IMPACT OF MARKET-RELATED AND COMMUNITY-RELATED ASPECTS OF CRYPTOCURRENCY EXCHANGES ON TWO DISTINCT TYPES OF COMPETITION. OUR EMPIRICAL ANALYSIS OF THREE DATASETS INDICATES THAT THE COMPETITION FOR TRADING FREQUENCY IS DRIVEN BY BOTH THE MARKET AS WELL AS THE COMMUNITY WHEREAS THE COMPETITION FOR TRADING QUANTITY IS DRIVEN SOLELY BY THE MARKET.

Christian Janze

Ilya Gvozdevskiy

Introduction

Pseudonymous cryptocurrencies, such as Bitcoin (Nakamoto, 2008), represent a paradigm shift away from centrally controlled fiat currencies towards a self-regulating decentralized peer-to-peer system. However, similarly to traditional central bank controlled currencies, they are traded against other crypto- and fiat currencies on exchanges.

While numerous studies examine the competition between different cryptocurrencies, little research on the competition of cryptocurrency exchanges exists and is limited to an analysis of Gandal and Hałaburda (2014). In light of the exponential growth in both the number of cryptocurrencies as well as their total market capitalization, an understanding of the competition among cryptocurrency exchanges is important. For example, in a recent study, Gandal et al. (2017) examine suspicious trading activities on the now defunct cryptocurrency exchange Mt. Gox. They find that the actions of a single rogue trader resulted in a tanking Bitcoin price, which took three years to recover. During that time, Mt. Gox was handling around 70% of the entire Bitcoin trading volume on exchanges.

This example fosters our assumption that a healthy competition between cryptocurrency exchanges (i.e., a high level of market fragmentation) is beneficial – particularly to ensure that no single venue is "too big to fail". Gandal et al. (2017) argue that "regulators may want to begin taking an active oversight role as the Bitcoin ecosystem becomes more integrated into international finance and payment systems". To regulate cryptocurrencies and cryptocurrency exchanges, it is necessary to gain an understanding of ways to measure competition in the first place. Then, a thorough analysis of driving forces behind competition metrics can help to guide regulatory efforts. However, it is important to recognize that regulations targeting cryptocurrencies directly cannot be efficiently enforced due to their inherently decentralized nature. Thus, any potential regulation of the cryptocurrency market must address more centralized components of the Bitcoin ecosystem – such as cryptocurrency exchanges. Based on these considerations, we formulate the following research question (Janze and Gvozdevskiy, 2017): *How does the market and community influence the competition of cryptocurrency exchanges?*

Methodology

To address our research question, we design an exploratory research model taking both market-related and community-related aspects of two different types of cryptocurrency exchange competition into account: First, the competition regarding *trading frequency* (fragmentation of the total daily transactions), and second, regarding the *trading quantity* (fragmentation of the total daily traded quantity), both measured by means of the Herfindahl-Hirschman-Index (HHI).

We operationalize our research models by formulating five sets of testable hypotheses (H) related to the market (H1, H2) and the community (H3, H4, H5), which we derived from previous theoretical considerations and empirical observations. To test our hypotheses, we compile a data set from three data sources. Our final data set comprises daily data regarding 24 Bitcoin-fiat currency pairs traded on 79 cryptocurrency exchanges covering the time frame from 2011 to 2015. Furthermore, the data includes posts discussing the 79 exchanges on Reddit, which we extracted from a corpus of 2.13 billion posts. We further preprocess the data and create new features via natural language processing and Latent Dirichlet Allocation (LDA). Furthermore, our data set entails Wikipedia search query statistics. The following equation explicitly formalizes our panel regression specifications.

$$HHI^{v}_{t,ccy} = \sum_{k=1}^{K} \beta_k X_{t,ccy,k} + \sum_{d=1}^{D} \lambda_d C_{t,ccy,d} + \varepsilon_{t,ccy}$$

where v is the type of competition (model 1: trading frequency, model 2: trading quantity) and $X_{t,ccy}$ is a set of K independent market- and community-related variables clustered by time t and currency pair ccy. C denotes a set of D controls and ε an error term.

Empirical Findings

Table 1 summarizes our OLS estimation of both panel regression specifications. Within hypotheses set H1, we investigate the influence of market participants' trading activity on the level of competition: H1a posits that an increased level of trading activity (total number of executed trades) is associated with an increased level of competition. We accept this hypothesis for both models. This implies that an increase in trading activity results in a more competitive market. H1b states that an increased average execution size results in an increased level of competition. We accept this hypothesis for model 2.

Competitive Force		Hypothesis	Model 1: Frequency	Model 2: Quantity
A Market	Activity	H1a ↑ trading activity → exchange competition ↑	accept	accept
		H1b ↑ average execution size → exchange competition ↑		accept
	Uncertainty	H2a ↑ price entropy → exchange competition ↓		
		H2b ↑ trading entropy exchange competition ↑		accept
B Community	Engagement	H3a ↑ novice interest → exchange competition ↓	accept	
		H3b ↑ enthusiast coverage → exchange competition ↓		
		H3c ↑ enthusiast concentration → exchange competition ↓		
	Writing Style	H4a ↑ positive sentiment → exchange competition ↑		
		H4b ↑ depth → exchange competition ↓		
		H4c ↑ topical focus → exchange competition ↓	accept	
	Social Feedback	H5a ↑ grades → exchange competition ↓		
		H5b ↑ controversity → exchange competition ↑	accept	
		H5c ↑ donations → exchange competition ↓		

Note: the symbols ↑, ↓ and → represent an increase, decrease, and a hypothesized relationship, respectively.

Table 1: Drivers of the Cryptocurrency Exchange Competition

Hypotheses set H2 is concerned with the effects of uncertainty on the level of competition: H2a assumes that an increased level of price entropy (standard deviation of the mean execution prize on exchanges) is associated with a decreased level of competition between cryptocurrency exchanges. We reject this hypothesis for both types of competition examined. H2b states that an increased level of trading entropy (volatility of the number of trades) is associated with an increased competition between cryptocurrency exchanges. We accept this hypothesis for model 2.

Within hypotheses sets H3, H4, and H5, we examine the impact of the community on the level of competition.

Hypotheses set H3 is concerned with the engagement of the community: H3a suggests that an increased level of novice interest (page views of the English Wikipedia Bitcoin article) in cryptocurrencies is associated with decreased cryptocurrency exchange competition. We can confirm this hypothesis for model 1. H3b posits that an increased level of enthusiast coverage (number of Reddit posts) is associated with a decreased cryptocurrency exchange competition, whereas H3c assumes that an increased level of enthusiast concentration (number of Reddit posts per author) is associated with a decreased cryptocurrency exchange competition. We reject both hypotheses H3b and H3c for both models.

Hypotheses set H4 examines the impact of the writing style on the competition of cryptocurrency exchanges: H4a expects that an increased positive sentiment expressed by the community towards the overall cryptocurrency exchange market is associated with an increased competition. H4b assumes that an increased depth of community contributions regarding cryptocurrency exchanges (mean word count of Reddit posts) is associated with a decreased competition. We reject both H4a and H4b. H4c states that an increased topical focus of contributions regarding cryptocurrency exchanges (mean HHI of LDA-10 topic distribution of Reddit posts) is associated with a decreased competition between cryptocurrency exchanges. We confirm this hypothesis for model 1.

Hypotheses set H5 studies effects of social feedback on the competition of cryptocurrency exchanges: H5a posits that higher grades assigned by consumers of community contributions regarding cryptocurrency exchanges (Reddit score) are associated with a decreased competition between cryptocurrency exchanges. We reject this hypothesis for both model 1 and 2. H5b expects that an increase level of controversial votes on Reddit assigned by consumers of community contributions regarding cryptocurrency exchanges are associated with an increased competition between cryptocurrency exchanges. We confirm this hypothesis for model 1. H5c states that an increased level of donations by consumers of community contributions to the creators of the contributions is associated with a decreased competition between cryptocurrency exchanges. We reject this hypothesis for both model 1 and 2.

Conclusion

Within our study, we examine two potential driving forces of the cryptocurrency exchange competition. The first driver covers the market itself. The second driving force covers the surrounding user community, i.e., discussions around the cryptocurrency exchanges on user-generated content (UGC) platforms. We focus on these two types of drivers since they are observable on both cryptocurrency exchanges as well as UGC platforms, which both are mostly centralized. This makes the enforcement of regulations aiming at improving and sustaining a healthy level of competition viable.

We find that the competition for transaction frequency between cryptocurrency exchanges is both driven by the market as well as the surrounding community. Furthermore, we find that the competition for quantity is only driven by the market. Future studies should conduct Granger tests to identify cause and effect relationships among the competitive forces.

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Research Report

The Value of Verbal Information

TO MAKE PROFITABLE INVESTMENT DECISIONS, INVESTORS NEED TO ASSESS THE FINANCIAL FUTURE OF FIRMS. DUE TO INVESTORS' LACK OF INTERNAL INFORMATION ABOUT THE FIRMS' FUTURE PROSPECTS, THEY OFTEN HAVE TO RELY ON MANAGERS' VERBAL STATEMENTS FOR THIS TASK. HOWEVER, AS MANAGERS MIGHT HAVE AN INCENTIVE TO PRESENT POSITIVELY BIASED INFORMATION, THE VALUE OF THEIR STATEMENTS FOR INVESTORS IS NOT CLEAR.

IN THIS REPORT, WE SHOW HOW TEXTUAL ANALYSIS TOOLS CAN BE USED TO ASSESS THE VALUE OF MANAGERS' VERBAL STATEMENTS DURING EARNINGS CONFERENCE CALLS FOR INVESTORS. WE FIND THAT IN PARTICULAR MANAGERS' NEGATIVE STATEMENTS SIGNIFICANTLY PREDICT LOWER FUTURE EARNINGS.

Maximilian Matthe Alexander Hillert

Introduction

There are different ways to present similar news:

"In conclusion, we are disappointed in our 2008 performance.", "We all recognize that stocks [...] are not currently in favor.", "Our near-term priority is to return to profitability as soon as possible." (Integra Bank, 2008Q4 call, earnings surprise: -2.7 USD/share, negative word share: 2.26%)

"I want to be clear – we're not giving up on the possibility that we can show both top and bottom line growth [...].", "Looking ahead, we have a number of opportunities for growth." (Playboy Enterprises, 2008Q4 call, earnings surprise: -2.6 USD/share, negative word share: 1.19%)

Although the context of both statements is comparable (results are significantly lower than expected), the way in which results are communicated is very different. Our idea is to explore whether such statements by managers provide additional value beyond the reported results for investors.

By "verbal information" we refer to all information from managers' statements. Thus, verbal information comprises not only what managers say, but also how they say it (e.g., the negativity or vagueness of their statements).

We conduct our analysis in the context of quarterly earnings conference calls. Earnings conference calls are a popular platform, especially in the US, where a firm's executive board presents and discusses information with analysts and investors. Together with prepared press releases, conference calls accompany the quarterly earnings announcements and are hosted around the report date. Earnings conference calls typically consist of two parts:

(i) a prepared presentation by the firm's management and

(ii) a – to some degree – spontaneous questions and answers (Q&A) section.

There is reason to believe that verbal information in earnings conference calls is valuable: Managers have more information about their firm's threats and opportunities than investors. Given that, managers' verbal information could bring insights that are valuable for predicting the firm's financial future. However, as investors cannot verify managers' information, managers may also have an incentive to provide only positive news or present negative news in a positively biased way.

To explore the value of verbal information from earnings conference calls empirically, we use a large sample of transcripts which firms have to make available for regulatory reasons since 2000. Since this data is present in textual, unstructured form, whereas econometric techniques require numerical, structured data, we first need to apply textual analysis to quantify the information within these transcripts.

Textual Analysis in Finance

In financial economics, textual analysis was first applied to media content. For example, Tetlock et al. (2008) analyze firm-specific news stories from financial newspapers and demonstrate that their linguistic tone predicts both future firm fundamentals and persistent stock market reactions. These findings suggest that verbal information can provide additional value-relevant information beyond traditional "hard" information sources, such as earnings figures.

Earnings conference calls differ from media content in a fundamental aspect: Whereas media articles typically reflect public information, speech expressed by conference call participants are likely to include private information as well. Thus, conference calls could have an even higher potential of containing valuable verbal information.

If verbal information is valuable, it should be related to a firm's financial future. Therefore, we analyze the following research question: *Does verbal information from earnings conference calls predict future firm performance?*

Empirical Study

To empirically analyze the value of verbal information in earnings conference calls, we rely on a hand-collected sample of more than 10,000 firm-quarter observations covering the period between 2000 and 2016. We start to gather this data by drawing a random sample of 1,000 firms listed on one of the three major

US stock exchanges (NYSE, NASDAQ, AMEX) in the beginning of 2000. We then supplement the sample with data from three additional sources: (i) we obtain data about firm performance, measured as quarterly reported earnings per share, and corresponding forecasts from the International Broker Estimate System (I/B/E/S), (ii) fundamental firm characteristics from Compustat, and (iii) market-related variables, including daily market and stock returns, from the Center for Research in Security Prices (CRSP).

For each firm and quarter, we subsequently gather conference call transcripts from the database LexisNexis. As LexisNexis does not share a common identifier with the other data sources, large parts of the data processing have to be conducted manually. The final dataset consists of 10,258 transcripts covering 429 different firms. The sample period includes 64 consecutive quarters between 2001Q1 and 2016Q4. As some stocks disappear (e.g., through bankruptcies or mergers) during the sample period, the number of firms per quarter decreases over time.

To quantify verbal information from textual data, we follow a dictionary based (bag-of-words) approach. Within this class of methods, text documents are simply represented as a matrix of word counts, i.e., the total number of appearances for each word in each document. Empirical measures of linguistic tone can be derived by classifying individual words into groups designed to represent a common theme (such as "optimism", or "uncertainty"). Word appearances are then counted for each category – optionally under different weighting schemes.

Although some previous studies used machine learning techniques for this categorization (examples include Naïve Bayes Classifiers or Support Vector Machines), their usage requires previous labeling of a study-specific training sample, which reduces both reproducibility and comparability. Therefore, we follow the more common approach and use external, well-tested dictionaries to classify words into categories.

While many early studies in finance and accounting research relied on the word categorization from a psychological dictionary – prominent examples include Tetlock (2007) or Tetlock et al. (2008) –, Loughran and McDonald (2011) show that in a business context, almost three-fourth of negative-tagged words of this general-purpose dictionary are misclassified (e.g., "liability" or "cost"). To overcome this problem, the authors develop a finance-specific dictionary, which is based on word appearances in firms' annual reports.

The misclassification of context-specific words represents a substantial challenge for researchers since word frequencies are far from being uniformly distributed. In our sample, the top 34 words account for 50% of all word appearances within the negative category. This phenomenon, also referred to as Zipf's Law, is common in quantitative linguistics. Thus, the approach is highly sensitive to erroneous classification. If one of these high-frequency words is misclassified, a small measurement error has the potential to severely bias the results.

To account for this, we manually screen the frequency distributions for each category to spot any obvious misclassification and subsequently make the following adjustments: We exclude the words "question" and "questions" from the negative list, as they are often used to moderate the discussion (e.g., "the next question comes from..."). Positive words are not counted when appearing in common opening phrases ("good morning | afternoon | evening | question"). Lastly, we correct for negation by not counting positive words if one of the three preceding words in the same sentence matches a term of negation ("not", "no", "none", "never", "neither", "nobody") or ends with "n't".

The dictionaries feature five categories of interest: positive, negative, uncertain, weak modal, and strong modal, where modal words reflect degrees of confidence. Examples of frequent words for each category in our sample are shown in Table 1. For each category, we then calculate its relative share within a call. Moreover, we measure negativity as the ratio of negative to positive words.

Negative		Positive		Uncertain		Weak		Strong	
Word	Share	Word	Share	Word	Share	Word	Share	Word	Share
LOSS	5.05%	GOOD	8.78%	COULD	12.15%	COULD	28.68%	BEST	24.50%
DECLINE	4.59%	STRONG	6.81%	MAY	8.99%	MAY	21.23%	ALWAYS	5.29%
RESTRUCTURING	2.66%	GREAT	5.85%	BELIEVE	8.58%	MAYBE	15.86%	CLEARLY	4.46%
DIFFICULT	2.60%	BETTER	4.52%	APPROXIMATELY	7.69%	MIGHT	9.61%	DEFINTELY	1.64%
NEGATIVE	2.33%	OPPORTUNITIES	3.49%	PROBABLY	6.75%	ALWAYS	4.46%	NEVER	1.53%

Table 1: Top-Five Words of Each Tone Category Ranked by Within-Category Share of Appearance

To investigate the effect of verbal information on future financial firm performance, we apply panel regressions. All models include control variables for current and past economic conditions, stock market performance, and firm characteristics. Furthermore, to control for unobserved heterogeneity of firms, we include firm fixed effects.

Summary of Findings

Overall, we find that verbal information in earnings conference calls predict future financial firm performance: More negative (positive) tone within a call significantly predicts lower (higher) future earnings. However, the effect size of positive tone is considerably smaller. Other tone categories, such as uncertainty or confidence, do not show any significant relation with future firm performance.

The observed effect sizes in our sample can be substantial: A one standard deviation increase in negative tone is associated with a 9% decrease in next quarter earnings.

Consider the introductory example of Integra Bank and Playboy Enterprises: The two companies exhibit negative word shares of 2.26% and 1.19% in their calls, respectively. This difference predicts, ceteris paribus, a USD -0.11 difference in next quarter's earnings per share according to our model (for comparison, the sample mean for next quarter earnings per share is USD 0.29).

Seperating the call into its individual sections and speakers, we observe the following findings: Presentation tone is more predictive of next quarter's earnings than Q&A tone. However, at longer time horizons, the opposite is true. This result suggests that while the content of the presentation is more directed towards current topics, the scope of Q&A discussions is broader and its tone can, thus, be a valuable predictor for long-term future performance.

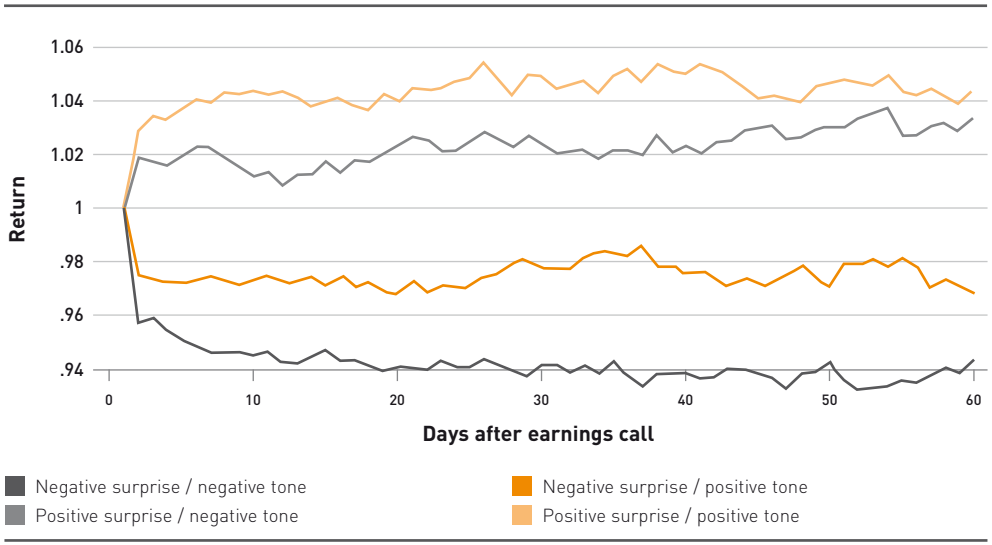

Figure 1: Cumulative Market-Adjusted Returns of Stock Portfolios Sorted by Earnings Surprise and Tone for the 60-Day Period Subsequent to an Earnings Conference Call

The effect of negative tone on future financial performance is moderated by the economic conditions faced by a firm. When facing times of high investor uncertainty measured by large stock price volatility, the effect of negative tone increases. Thus, negative statements by managers are especially predictive for low future earnings when uncertainty about future financial performance is high.

Comparing speakers, we find that the tone of CEOs who receive the highest attention and have more freedom in selecting the topic to talk about is more valuable than CFO tone. However, positive CEO tone has no predictive power at all. Thus, we do not find any credibility for frequently observed, overly optimistic statements by CEOs.

Besides future earnings, we also consider future stock returns as a measure of financial performance. Therefore, we sort stocks into portfolios by earnings and their calls' negativity. Figure 1 shows average cumulative stock returns during the quarter following the call. As for future earnings, more negative tone also predicts lower future stock returns. Firms with comparable earnings but more negative tone (as Integra Bank and Playboy Enterprises) experience differences in stock returns of up to -2% after 60 days of trading.

Conclusion

Using a manually collected dataset of transcripts of earnings conference calls, we explore the value of verbal information from managers' statements for investors. We find that verbal information, especially negative tone, can be valuable for predicting firms' financial future.

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Insideview

Paradigm Shift in Central Bank Statistics

INTERVIEW WITH REINHOLD STAHL

Reinhold Stahl
Director General Statistics
Deutsche Bundesbank

The importance of statistics at central banks has increased enormously in recent years. In response to various financial crises, new institutions have been set up at the national, European, and international level to monitor financial systems and financial stability – and these institutions need data to perform their tasks. Using statistics and data as a basis for decision-making is a frequent topic of discussion at the moment. How have central bank statistics responded to the surge in demand?

The new institutions and existing organizations identified a number of data gaps for their new analyses and monitoring tasks. Data users required highly granular, multifunctional, and flexible-use statistics that made a wide variety of analyses possible. As a result, new collections of highly granular data were set up and the European legal framework for the dissemination of data between institutions was revised. That triggered the paradigm shift from the established macrodata-oriented statistics to microdata-oriented (granular) statistics.

How are you dealing with the new diversity in data?

The surging demand for data is giving rise to increasing data variety and an expanding data volume. The greater the amount of data collected, the more important harmonization, standardization, and organizational structure become. Central banks are supporting initiatives to further harmonize and standardize the methods used to collect statistical data, with the aim of collecting data only once, where possible. This should reduce reporting agents' reporting burden. On the technical side of things, an organizational structure will be implemented by harmonizing the methodology and semantics. SDMX (Statistical Data and Metadata eXchange) will play a major part in this.

What inspired you to write your book 'Measuring the Data Universe'?

SDMX is a global ISO standard, which provides a well-functioning information model for data. But the community has long been complaining about the lack of literature providing an easy-to-read introduction to the data standard. With that in mind, I hope that my co-author Dr. Patricia Staab and I can close this gap, especially with the forthcoming English version of our book, and do our bit to make this data standard more widespread.

Is it possible to cope with the demands placed on you using this organizational system alone?

No! Harmonized statistics with a high degree of standardization in terms of methodology, semantics, and technology, as well as a good organizational system for the data, constitute an essential but by no means sufficient prerequisite for optimally supporting the analytical and research communities. We find ourselves confronted with increasingly customized analysis requirements that necessitate the sophisticated linking of multiple datasets, good documentation in a metadata system, and – in many cases – anonymization. This work cannot be completely automated; we need smart minds for it. That's why we set up the Research Data and Service Centre (RDSC) four years ago to support internal and external analysis and research activities.

What other challenges do you envisage for the future of statistics at central banks?

The "how" of our work will evolve dramatically in the years to come. In addition to the rapid increase in data variety and data volume, the role played by statistics at central banks will be radically transformed over the next few years as a result of digitalization and new technologies. This will go hand in hand with a change of skill profiles for statisticians working at central banks. In short, one could say that the way in which we deal with information may change, but the significance of facts and (statistical) evidence as a basis for decisions and how we assess them will not.

Thank you for this interesting conversation.

Infopool

News

The E-Finance Lab Invites to Its Monthly EFL Jour Fixes
Once a month (during lecture time), the E-Finance Lab organizes a Jour Fixe on a specific research topic. We cordially invite you to these EFL Jour Fixes. For further information, please visit: http://www.efinancelab.de/events/jours-fixes/efl-jours-fixes-2018/. The next Jour Fixes will focus on blockchain applications and robo-advice:

- "Blockchain Applications for Automated Supply Chains", Prof. Dr. Paul Müller, TU Kaiserslautern (layer 1), May 7th, 5:00 pm, in the "Deutsche Bank" lecture room (House of Finance);
- "Fund Savings Plans Choices with and without Robo-Advice", Konstantin Bräuer (layer 3), June 11th, 5:00 pm, in the "Deutsche Bank" lecture room (House of Finance).

Chair at the University of Luxembourg and FNR PEARL Grant Offered to Prof. Gomber
The University of Luxembourg has offered the "PayPal-FNR PEARL Chair in Digital Financial Services" to Prof. Gomber (layer 2). This Chair is a joint initiative of the Luxembourg National Research Fund (FNR), the University of Luxembourg, and PayPal (Europe). With the PEARL Grant, the FNR offers attractive research funding to draw established and internationally recognized researchers from abroad to Luxembourg. This international offer underscores the excellent research at the E-Finance Lab and at Goethe University. Congratulations!

VDE|ITG Awarded Prof. Steinmetz with the ITG-Fellow 2017
The VDE|ITG ("Informationstechnische Gesellschaft im Verband der Elektrotechnik Elektronik Informationstechnik e. V.") honors Prof. Steinmetz (layer 1) with ITG-Fellow 2017. The VDE|ITG awards the ITG-Fellow for outstanding scientific or technical achievements in the area of information technology which significantly enhanced fundamental insights in scientific or technical issues. Congratulations!

New Colleague at the Chair of Prof. König
Muriel Frank joined the Chair of Prof. König (layer 1) as a doctoral student in March 2018. She holds a Master in Management degree from Goethe University Frankfurt. During her doctoral studies, she will focus on current issues related to information security. Prior to joining the Chair, Muriel worked as a reporter and editor for the Frankfurter Neue Presse.

New Colleague at the Chair of Prof. Hackethal
Philipp Klais joined the Chair of Prof. Hackethal (layer 3) as an external doctoral student in December 2017. He is a consultant at McKinsey & Company and holds a Master in Finance degree from WHU-Otto Beisheim School of Management. 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

Andersen, S.; Hanspal, T.; Nielsen, K. M.:
Once Bitten, Twice Shy: The Power of Personal Experiences in Risk Taking.
Forthcoming in: Journal of Financial Economics.

Soffer, P.; Hinze, A.; Koschmider, A.; Ziekow, H.; Di Ciccio C.; Koldehofe, B.; Kopp, O.; Jacobsen, A.; Sürmeli, J.; Song, W.:
From Event Streams to Process Models and Back: Challenges and Opportunities.
Forthcoming in: Journal of Information Systems.

Janze, C.; Gvozdevskiy, I.:
What Drives the Competition of Cryptocurrency Exchanges? Examining the Role of the Market and Community.
In: Proceedings of the 38th International Conference on Information Systems (ICIS), Seoul, Korea, 2017.

Clapham, B.; Gomber, P.; Lausen, J.; Panz, S.:
Liquidity Provider Incentives in Fragmented Securities Markets.
In: 5th Paris Financial Management Conference (PFMC), Paris, France, 2017.

Clapham, B.; Gomber, P.; Panz, S.:
Coordination of Circuit Breakers? Volume Migration and Volatility Spillover in Fragmented Markets.
In: 24th Annual Meeting of the German Finance Association (DGF), Ulm, Germany, 2017.

Wunderlich, N.; Beck, R.:
You'll Be Surprised – Digital Business Strategy as Driver of Organizational Innovativeness.
In: Proceedings of the 51th Hawaii International Conference on System Sciences (HICSS), Big Island, Hawaii, US, 2018.

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

E-FINANCE LAB SPRING CONFERENCE 2018

This year's Spring Conference was organized and hosted together with IBM Deutschland. On February 1st, about 300 international experts, high-profile representatives of key industry players, and academics joined us in the Casino Building at Goethe University to discuss "Data Science in Financial Services". The slides of the speakers are available for download at the conference website: **http://www.efinancelab.de/events/conferences/spring-conference-2018/.**



Infopool

RESEARCH PAPER: WHY DO INVESTORS HOLD SOCIALLY RESPONSIBLE MUTUAL FUNDS?

To understand why investors hold socially responsible mutual funds, the authors link administrative data of conventional and socially responsible investors to survey responses and behavior in incentivized experiments. The authors find that both social preferences and social signaling explain socially responsible investment (SRI) decisions. Financial motives play less of a role. Socially responsible investors expect to earn lower returns on SRI funds than on conventional funds and pay higher management fees. This suggests that investors are willing to forgo financial performance in order to invest in accordance with their social preferences.

Riedl, A.; Smeets, P.
In: Journal of Finance, 72 (2017) 6, pp. 2505–2550.

RESEARCH PAPER: COMPETING WITH SUPERSTARS

Prestigious CEO awards for companies in the financial sector may result in decreasing firm performance – and even strengthen competitors. Major newspapers, such as Business Week, Forbes, or Time, award these accolades of highest business executives, leading to exceptional media attention in the upcoming years. Empirical examination evokes that arising conflict of interests within an award winning firm contribute to the detrimental valuation effects. For competing firms, increased incentivizing leads to enhanced risk taking, operating performance, and patenting activities. As a consequence, cumulative abnormal returns are observable for competitors up to three years subsequent to the rival's award. This research also postulates that valuable performance improvements for major competitors surpass the negative impacts on winners. Thus, prestigious awards improve the overall welfare in the finance sector, even though they do not bolster all firms equally.

Ammann, M.; Horsch, P.; Oesch, D.
In: Management Science, 62 (2016) 10, pp. 2842–2858.

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.

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For more information about the House of Finance, please visit www.hof.uni-frankfurt.de.

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