

NEWSLETTER

CRC 649

Collaborative Research Center 649 „Economic Risk“

Ot

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NL 09, SEPTEMBER

Editorial:

Collaborative Research Center 649:
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"There is no rain above the clouds"

NEWS OF THE CRC

22. August 2016 *Q-Kolleg with Humboldt-Universität and the National University of Singapore*

Master's students of the School of Business and Economics at Humboldt-Universität zu Berlin (HU) worked with PhD students in Statistics from NUS on three projects related to digital economy.



In May, NUS students were invited to Berlin to work on their joint projects. After an intensive phase of discussions and research, some preliminary results could be presented before the NUS students left Berlin in the beginning of June. Since then the students continued to work on their project through virtual communication channels. On August 22, a students' conference was set up in Singapore for the students to present their final results and get feedback from a broader audience.

In the first half of the semester, numerous national and international guest speakers were invited to Humboldt-Universität to present their current research. The sessions were broadcasted to Singapore so that NUS students could follow the talks and interact with the speakers. One session, on the other hand, was held in Singapore and broadcasted to Berlin. Through this concept, students got an insight into some hot topics in digital economy and used these inputs to work out their own research questions. The second half of the semester was reserved for students to devote themselves to their own project.

Please visit the [events' website](#) and the [events' timetable](#) for further informations.



NEWS OF THE PROJECTS

Wolfgang Karl Härdle (B1) organized the Q-Kolleg with Humboldt-Universität and the National University of Singapore on the 22nd of August (see above). Also he has given a talk on “Q3-D3-LSA” on this occasion. On the 23rd of August he has given a talk at the Lee Kong Chian Business School Singapore Management University, Singapore, on “The Etrics of the CRIX (CRyptocurrency IndeX) family”. Furthermore he has given a talk at the Singapore Institute of Management, Singapore, on “TEDRIS - Tail Event Driven Risk Structures” on the 25th of August.

Simon Trimborn (B1) has given a talk on “CRIX or Evaluating Blockchain Based Currencies” at the Q-Kolleg with Humboldt-Universität and the National University of Singapore on the 22nd of August. Also he has given talk at the Lee Kong Chian Business School Singapore Management University, Singapore, on “The Cross-Section of Cryptos as Financial Asset” on the 23rd of August.



Zhiwei Shen (C11, T1) has been awarded a Postdoctoral Researchers International Mobility Experience (P.R.I.M.E.) fellowship funded by German Academic Exchange Service (DAAD) and will work on his new research project on the mitigation of data scarcity in crop insurance pricing. This highly competitive program provides support for the international mobility of postdocs, thus Dr. Shen will first spend 12 months starting from November 2016 as visiting scientist at the Mississippi State University in the US and then 6 months at Humboldt Universität zu Berlin.

Till Strohsal (C14) has attended the 2016 Asian Meeting of the Econometric Society in Kyoto from the 11th to the 13th of August where he presented the paper "The Anchoring of Inflation Expectations in the Short and in the Long Run" (co-authored by **Dieter Nautz (C14)** and **Aleksei Netsunajev (C14)**).

Marco Lintons' (Guest) research project has involved exploring the use of topic models such as latent dirichlet allocation and the dynamic topic model. More specifically, I worked on collecting large quantities of textual data from a cryptocurrency forum and applying these topic models to the data in order to study

the development of topics and trends over time and their causes or impact on the crypto community. These techniques were used with applications in trend identification and fraud detection in mind. The code used for preprocessing the collected data and analysis of the topic models are on github and available on quantnet in the project XFGdtm: <https://github.com/QuantLet/XFG3/tree/master/XFGdtmres> . The collected data is available from the RDC.

Cathy Y. Chen (Guest) has given a talk at the Lee Kong Chian Business School Singapore Management University, Singapore, on “Dynamic Default Intensity in a network topology” on the 23rd of August.

GUESTS OF THE CRC 649

You find a summary of all guests here:
sfb649.wiwi.hu-berlin.de/fedc/guests_actual.php

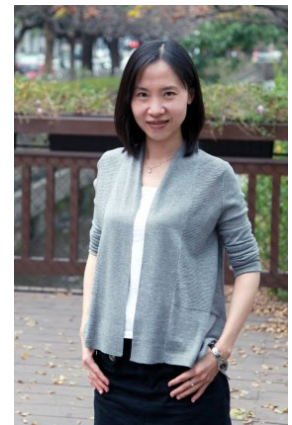
01.08.2015 -
30.08.2016

Chen, Yi-Hsuan Cathy
Chung-Hua University (TW)

Project: The integration of credit default swaps markets

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04.04.2016 -
15.09.2016

Yamamoto, Yoshiro
Tokai University (JP)

Project: Computational statistics (data visualisation, data analysis system, statistical education)

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05.04.2016 -
28.02.2017

Karahanoglu, Ilhami
Development Bank of Turkey (TR)

Project: Copula Based Models for Financial Time Series
Including the Credit and Market Risk - Portfolio VaR

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01.07.2016 - **Chen, Shiyi**
15.09.2016 Fudan University (CN)

Project: Air pollution reduction, related health problem, and economic sustainable development

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20.08.2016 - **Zhu, Leo Jun**
21.08.2017 Nanjing University of Finance and Economics (CN)

Project: DSGE and Bayesian Methods, Dynamic Fiscal Policy, Chinese Economy

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NEW DISCUSSION PAPERS

More detailed information is available [here](#).

2016-026

"VAT multipliers and pass-through dynamics" ([File](#))
by Simon Voigts, August 2016.

2016-027

"Can a Bonus Overcome Moral Hazard? An Experiment on Voluntary Payments, Competition, and Reputation in Markets for Expert Services" ([File](#))
by Vera Angelova and Tobias Regner, August 2016.

2016-028

"Relative Performance of Liability Rules: Experimental Evidence" ([File](#))
by Vera Angelova, Giuseppe Attanasi and Yolande Hiriart, August 2016.

2016-029

"What renders financial advisors less treacherous? On commissions and reciprocity" ([File](#))
by Vera Angelova, August 2016.

2016-030

"Do voluntary payments to advisors improve the quality of financial advice? An experimental sender-receiver game" ([File](#))
by Vera Angelova and Tobias Regner, August 2016.

2016-031

"A first econometric analysis of the CRIX family" ([File](#))

by Shi Chen, Cathy Yi-Hsuan Chen, Wolfgang Karl Härdle, TM Lee and Bobby Ong, August 2016.

2016-032

"Specification Testing in Nonparametric Instrumental Quantile Regression" ([File](#))

by Christoph Breunig, August 2016.

PUBLICATIONS

López Cabrera, B. and Schulz, F.

Forecasting Generalized Quantiles of Electricity Demand: A Functional Data Approach

Journal of the American Statistical Association

DOI: 10.1080/01621459.2016.1219259

Bibinger, M. and Mykland, P. A.

Inference for Multi-Dimensional High-Frequency Data with an Application to Conditional Independence Testing

Scandinavian Journal of Statistics

DOI: 10.1111/sjos.12230

Angelova, V., Armantier, O., Attanasi, G. and Hiriart, Y.

Relative performance of liability rules: experimental evidence

Theory and Decision

DOI: 10.1007/s11238-013-9405-0



Quantlets

Forecasting Limit Order Book Liquidity Supply-Demand Curves with Functional AutoRegressive Dynamics

Project: VFAR

Limit order book contains comprehensive information of liquidity on bid and ask sides. This project proposes a Vector Functional AutoRegressive (VFAR) model to describe the dynamics of the limit order book and demand curves and utilize the fitted model to predict the joint evolution of the liquidity demand and supply curves. In the VFAR framework, they derive a closed-form maximum likelihood estimator under sieves and provide the asymptotic consistency of the estimator. In application to limit order book records of 12 stocks

in NASDAQ traded from 2 Jan 2015 to 6 Mar 2015, this project shows that the VAR model presents a strong predictability in liquidity curves, with R-squared values as high as 98.5 percent for in-sample estimation and 98.2 percent in out-of-sample forecast experiments. In addition, the project produces accurate 5-, 25- and 50-minute forecasts, with root mean squared error as low as 0.09 to 0.58 and mean absolute percentage error as low as 0.3 to 4.5 percent.

More details of results and methodology are described in the recent discussion paper Ying Chen, Wee Song Chua and Wolfgang K. Härdle (2016) "Forecasting Limit Order Book Liquidity Supply-Demand Curves with Functional AutoRegressive Dynamics", [SFB 649 DP 2016-025](#).

All corresponding R codes can be found [here](#) in QuantLet on Github. The Quantlet [VFARcrossCorrPlot](#) estimates the sample cross correlation function between log-accumulated volumes at best bid and ask prices for AEZS from 2rd Jan,2015 till 6th Mar,2015. (see Fig. 1).

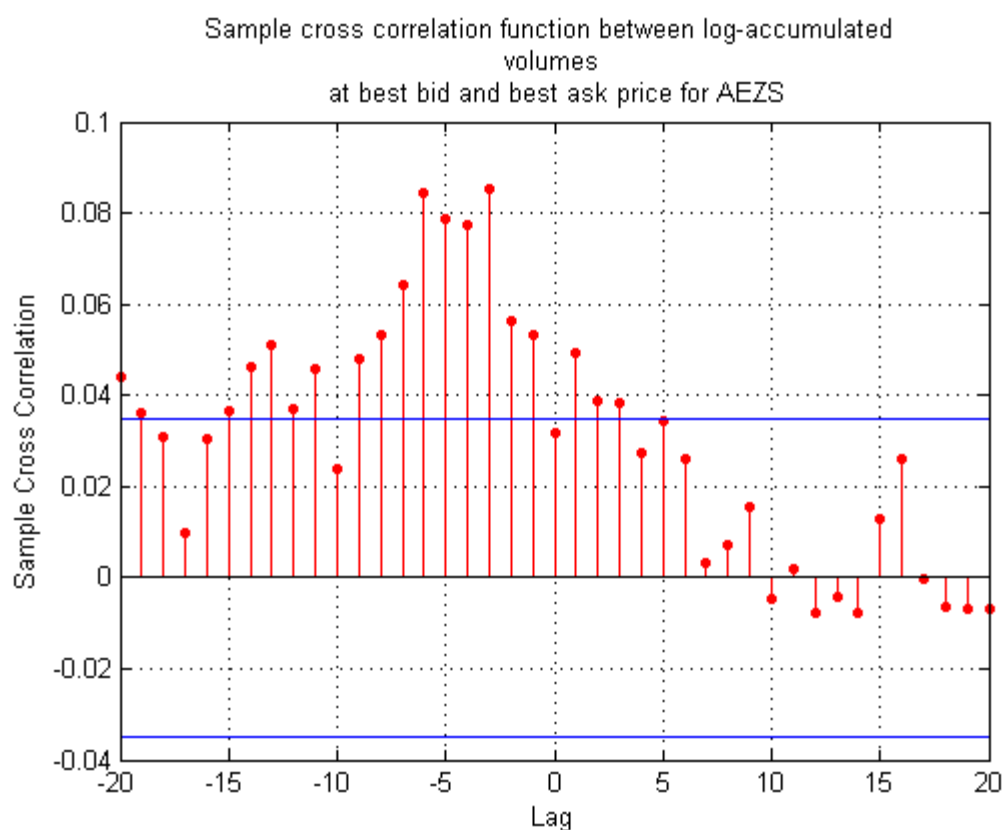


Fig. 1 Sample cross correlation function for AEZS.



Please visit the projects' website for further informations: <http://crix.hu-berlin.de/>

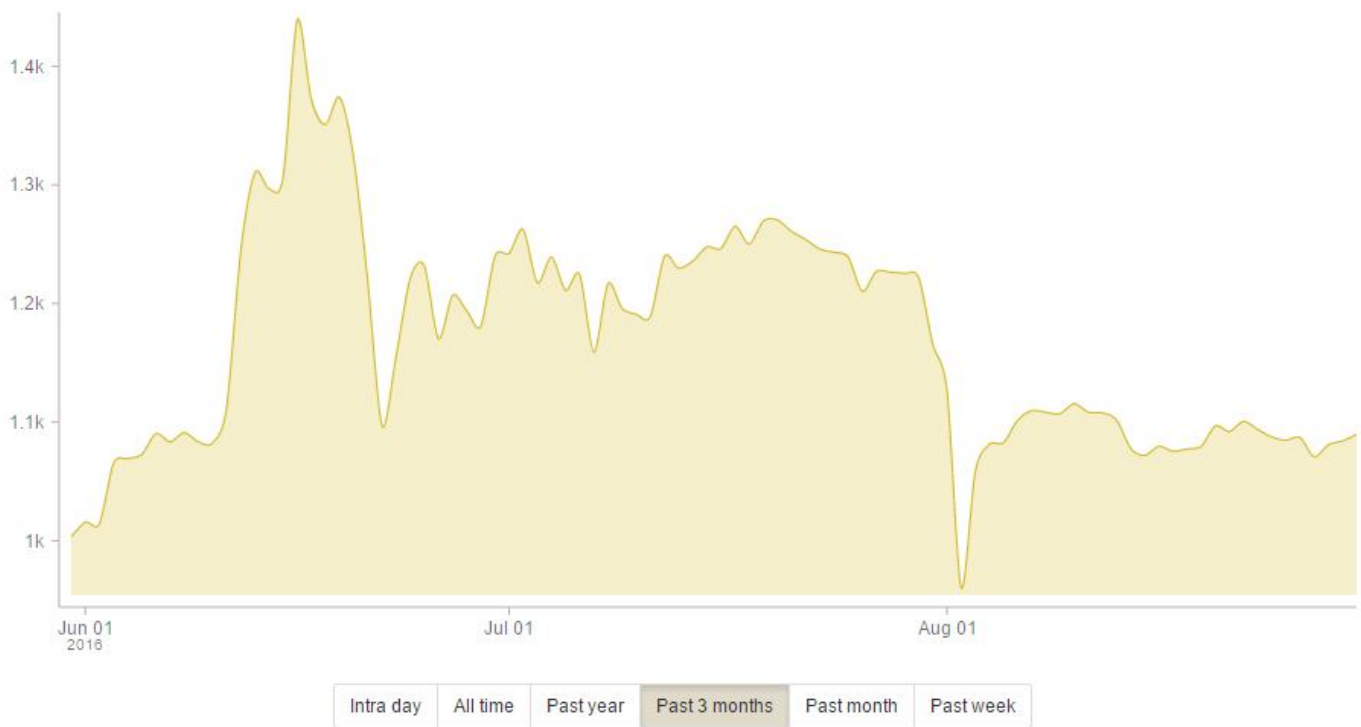


Figure. 2 CRYPTOCURRENCY INDEX showing past three months' progress.

financialriskmeter

Please visit the projects' website for further informations: <http://sfb649.wiwi.hu-berlin.de/frm/>

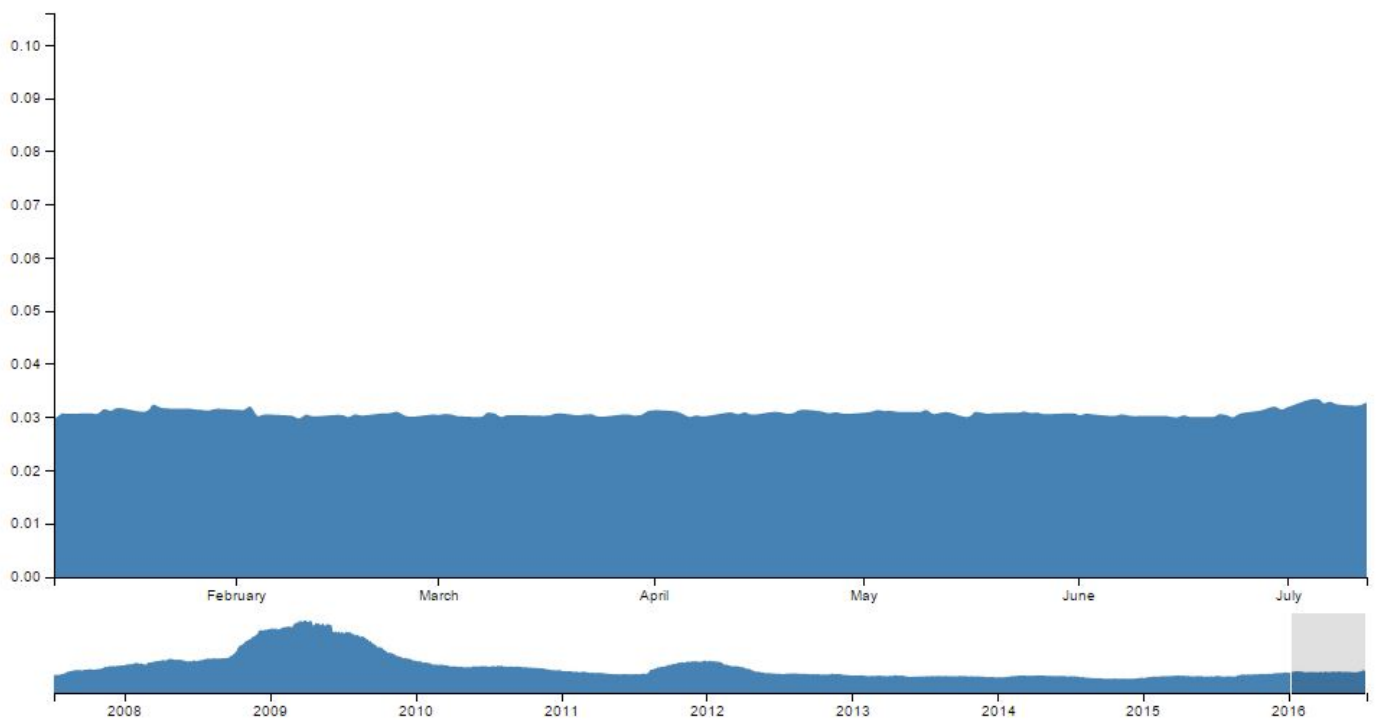


Figure. 3 Linear CoVaR Time series. Interactive moving time window available online.

QUOTE OF THE MONTH

读书须用意，一字值千金

Dú shū xū yòng yì, yī zì zhí qiān jīn

“When reading, don’t let a single word escape your attention;
one word may be worth a thousand pieces of gold”

Chinese Saying

Please also note that the newsletter is published on the homepage of the CRC 649.

Editorial deadline for the Newsletter of August 2016 is 29.09.2016.