CONTACT
INFORMATION

London Business School
Regent's Park, London
NW1 4SA, United Kingdom

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ACADEMIC
POSITIONS

London Business School
Assistant Professor of Finance, August 2018–now

Stanford Graduate School of Business
Assistant Professor of Finance, September 2015 – July 2018

EDUCATION

London School of Economics and Political Science, UK
  Ph.D. in Economics, 2015.
  MRes in Economics, 2011. *Distinction*

International College of Economics and Finance
National Research University Higher School of Economics, Russia
  MSc in Financial Economics, 2009. *Distinction*

National Research University Higher School of Economics, Russia
  BA in Economics (Mathematics), 2007. *Distinction*

RESEARCH
INTERESTS

Empirical Asset Pricing, Capital Markets, Financial Econometrics

WORKING PAPERS

"Spurious Factors in Linear Asset Pricing Models", *R&R* at *Review of Financial Studies*
When a risk factor has small covariance with asset returns, risk premia in the linear asset pricing models are no longer identified. Weak factors, similar to weak instruments, make the usual estimation techniques unreliable. When included in the model, they generate spuriously high significance levels of their own risk premia estimates, overall measures of fit and may crowd out the impact of the true sources of risk. I develop a new approach to the estimation of cross-sectional asset pricing models that: a) provides simultaneous model diagnostics and parameter estimates; b) automatically removes the effect of spurious factors; c) restores consistency and asymptotic normality of the parameter estimates, as well as the accuracy of standard measures of fit; d) performs well in both small and large samples. I provide new insights on the pricing ability of various factors proposed in the literature. In particular, I identify a set of robust factors (e.g. Fama-French ones, but not only), and those that suffer from severe identification problems that render the standard assessment of their pricing performance unreliable (e.g. consumption growth, human capital proxies and others).

"Consumption in Asset Returns", with Christian Julliard
Consumption dynamics are hard to measure accurately in the data, yet they are the crucial ingredient of macro-finance asset pricing models. The central insight of these models is that, in equilibrium, both consumption and returns are largely driven by the same fundamental shocks. Therefore, we use the information in returns to identify the underlying process of consumption. We find that aggregate consumption growth reacts over multiple quarters to the innovations spanned by bond and stock returns. This persistent component: (a) is economically large i.e. it accounts for about 26% of the total variation in consumption; (b) drives most of the time series variation of stocks and a significant (yet small) fraction of bond returns; (c) is reflected in the term structure of interest rates; and (d) is priced jointly in the cross-sections of bond and stock returns. These results, stable across estimation techniques and robustness checks, pose a novel challenge for asset pricing theory.

"Forest through the Trees: Building Cross-Sections of Asset Returns", with Markus Pelger and Jason Zhu

We show how to build a set of basis assets that captures complex information contained in a given list of stock characteristics. Our cross-section of portfolios is a small number of long-only strategies that (a) fully reflect the information in the cross-sectional return predictors, allowing for conditional interactions and non-linearities, (b) provide a small set of interpretable test assets for evaluating asset pricing models, (c) are substantially harder to price than conventional double or triple sorted portfolios constructed from the same information set, and (d) are the building blocks for a stochastic discount factor (SDF) projected on the characteristic space. We use decision trees to generalize the concept of conventional sorting, and develop a novel approach to the robust recovery of a sparse set of the SDF basis assets. Empirically, we show that traditionally sorted portfolios and factors present a too low hurdle for candidate models as they miss the complex information structure of the original returns. Our results have important implications for evaluating asset pricing models, and modeling expected returns.

"Bayesian Solutions for the Factor Zoo: We Just Ran Two Quadrillion Models", with Jiantao Huang and Christian Julliard
We propose a novel, and simple, Bayesian estimation and model selection procedure for cross-sectional asset pricing. Our approach, that allows for both tradable and non-tradable factors, and is applicable to high dimensional cases, has several desirable properties. First, weak and spurious factors lead to diffuse, and centered at zero, posteriors for their market price of risk, making such factors easily detectable. Second, posterior inference is robust to the presence of such factors. Third, we show that flat priors for risk premia lead to improper marginal likelihoods, rendering model selection invalid. Therefore, we provide a novel prior, that is diffuse for strong factors but shrinks away useless ones, under which posterior probabilities are well behaved, and can be used for factor and (non necessarily nested) model selection, as well as model averaging, in large scale problems. We apply our method to a very large set of factors proposed in the literature, and analyze 2.25 quadrillion possible models, gaining novel insights on the empirical drivers of asset returns.

TEACHING EXPERIENCE	**London Business School** Asset Management (core course for Master in Financial Analysis), 2019-2020 Empirical Asset Pricing (core course for Finance PhD), 2019-2020

Stanford GSB
Corporate Finance (core course for MBA), 2017-2018

Stanford Law School
Corporate Finance (JD/LLM), 2016-2018

CONFERENCE AND SEMINAR PRESENTATIONS

<u>2019</u>: INSEAD, SFS Cavalcade, Lund University, Luxembourg School of Finance, Gerzensee Asset Pricing, NBER Summer Institute Forecasting and Empirical Methods, Toulouse Financial Econometrics Conference, European Meeting of the Econometric Society (Manchester), Erasmus University Rotterdam workshop "Machine Learning for Economics and Econometrics", Stanford MS&E, Yale Junior Finance Conference, FARFE, UCL, Imperial College, Durham, CFE, European Meeting of the Econometric Society (Manchester), The Third International Workshop in Financial Econometrics (Brazil), Chicago Booth Asset Pricing Conference

<u>2018</u>: University of Geneva, Vienna Graduate School of Finance, International Symposium on Financial Engineering and Risk Management (FERM 2018, Shanghai), International Conference on Econometrics and Statistics (EcoSta 2018, Hong Kong), Rome Junior Finance Conference, EIEF

<u>2017</u>: London Business School, FIRN Asset Pricing workshop, UIUC, Pennsylvania State University

<u>2016</u>: AFA, MIT Sloan, Boston University Questrom, Northwestern Kellogg S, UC Berkeley Haas, SOFIE (Hong Kong), HKU, USC Marshall, EFA (Oslo), FRB Boston, Wharton

2015: London Business School, Oxford Saïd, Groningen University, Stockholm School of Economics, Duke University, UCLA Anderson, Austin McCombs, University of Washington Foster, Stanford GSB, Michigan Ross, Bank of England, City University CASS, Princeton, Chicago Initiative in Theory and Empirics, AQR Top Finance Graduate Award at Copenhagen Business School, SIRE Asset Pricing Workshop, EFA (Vienna), The Second International Workshop in Financial Econometrics (Brazil), The Fourth International Moscow Finance Conference, European Winter Meeting of the Econometric Society (Madrid).

2014: LSE, Trans-Atlantic Doctoral Conference, Princeton EconCon, European Meeting of the Econometric Society (Toulouse), INSEAD-LSE-LBS PhD Conference, European Winter Meeting of the Econometric Society, NRU Higher School of Economics (Moscow)

2013: University of Cambridge, Bank of England, LSE

DISCUSSIONS   "Drift in Transaction-Level Asset Price Models" (W. Cao, C. Hurvich, and P. Soulier), Princeton EconCon 2014

"Structural Changes in Networks: Estimation and Evidence from Financial Institutions" (L. Liu), Princeton EconCon 2014

"Stock Market Reactions to Unconventional Monetary Policy Announcements" (J.A. Johnson and B. Paye), Second International Workshop in Financial Econometrics 2015 (Brazil)

"From Characteristics to Factors: Asset Pricing Models via Instrumented Principal Components" (B. Kelly, S. Pruitt and Y. Su), Duke Financial Econometrics Conference (2016)

"Entropy-based implied volatility and its information content" (X. Xiao and C. Zhou), MFA 2016 (Atlanta)

"Anomalies are Publicized Broadly, Institutions Trade Accordingly, and Returns Decay Correspondingly" (P. Calluzzo, F. Moneta, and S. Topaloglu), EFA 2016 (Vienna)

"Inference on Risk Premia in the Presence of Omitted Factors" (S. Giglio and D. Xiu), AFA 2017 (Chicago)

"Portfolio Choice with Model Misspecification: A Foundation for Alpha and Beta Portfolios" (R. Uppal and P. Zaffaroni), AFA 2017 (Chicago)

"Shrinking the Cross Section" (S. Kozak, S. Nagel, and S. Santosh), NBER Asset Pricing Meeting 2017 (Chicago)

"Dissecting Characteristics Nonparametrically" (J. Freyberger, A. Neuhierl, and M. Weber), SFS Cavalcade 2017 (Nashville)

"A Diagnostic Criterion for Approximate Factor Structure" (P. Gagliardini, E. Ossola, and O. Scaillet), Third International Workshop in Financial Econometrics 2017 (Brazil)

"Which Bonds to Sell in Fire Sales? Liquidity versus Commonality of Holdings" (M. Chaderina, A. Muermann, and C. Scheuch), International Moscow Finance and Economics Conference 2017 (ICEF, Moscow)

"Competition and Banks Cost of Capital: Evidence from Relatively Exogenous Differences in Regulation" (A. N. Berger, S. El Ghoul, O. Guedhami, R. A. Roman), FIRS 2018 (Barcelona)

"p-hacking: Evidence from Two Million Trading Strategies" (T. Chordia, A. Goyal, and A. Saretto), ITAM Finance 2018 (Mexico City)

"Characteristics are Covariances: A Unified Model of Risk and Return" (B. Kelly, S. Pruitt and

Y. Su), FRIC 2018 (Copenhagen)

"Picking Funds with Confidence" (N. S. Gronborg, A. Lunde, A. Timmerman, and R. Wermers), EFA 2018 (Warsaw)

"Shrinking Factor Dimension: A Reduced-Rank Approach" (D. Huang, J. Li, and G. Zhou), New Methods for the Cross Section of Returns Conference 2018 (Chicago)

"Large Sample Estimators of the Stochastic Discount Factor" (S. Kim and R. Korajczyk), AFA 2019 (Atlanta)

"Estimating The Anomaly Baserate" (A. Chinco, A. Neuhierl, and M. Weber), AQR Symposium 2019 (London)

"Asset Pricing with and without Garbage: Resurrecting Aggregate Consumption" (S. Delikouras), Northern Finance Association 2019 (Vancouver)

REFEREEING	American Economic Review, Econometrica, Journal of Finance, Journal of Financial Economics, Review of Financial Studies, Journal of Econometrics, Management Science, Review of Asset Pricing Studies, Journal of Business and Economic Statistics, Journal of Financial Econometrics, Journal of Empirical Finance, Journal of Banking and Finance
HONORS, AWARDS AND FELLOWSHIPS	Distinguished Referee award from The Review of Financial Studies, 2019 Stanford GSB Trust Faculty Scholar, 2017-2018 Best paper award in Asset Pricing, Midwest Finance Association, 2016 EFA Best Doctoral Student Conference Paper Award, 2015 AQR Top Finance Graduate Award, 2015 Fellow in Finance, LSE, 2014-2015 Teaching Fellow in the Economics Department, LSE, 2011-2012 LSE Department of Economics Prize for Outstanding Performance in MRes Exams, 2011 Nomination for Best Teaching Assistant Award, LSE, 2011 LSE Department of Economics PhD Scholarship, 2009-2012 Valedictorian, MSc in Financial Economics, International College of Economics and Finance, NRU Higher School of Economics, Moscow, 2009 Scholarship from VTB-24 Bank, International College of Economics and Finance, 2007-2009 Oxford Russia Fund Scholarship for Outstanding Academic Achievements, 2007-2008 Scholarship of The President of Russia for Outstanding Students, 2007-2008 Valedictorian, BA in Economics, NRU Higher School of Economics Nizhny Novgorod, 2007 Best Student Research Paper Award, Nizhegorodky Region, Russia, 2007 Best Student Award ("Golden Vyshka"), NRU Higher School of Economics, 2006 Potanin Fund Scholarship, 2005-2007 Scholarship of the Nizhegorodsky Region Governor for Outstanding Students, 2005-2006