



THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

# Abstract Book

14<sup>th</sup> Annual International Symposium on  
Economic Theory, Policy & Applications  
1-4 July 2019, Athens, Greece

Edited by  
Gregory T. Papanikos

2019



# Abstracts

14<sup>th</sup> Annual International  
Symposium on Economic  
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# Preface

This book includes the abstracts of all the papers presented at the 14<sup>th</sup> *Annual International Symposium on Economic Theory, Policy & Applications* (1-4 July 2019), organized by the Athens Institute for Education and Research (ATINER).

In total 93 papers were submitted by 95 presenters, coming from 33 different countries (Algeria, Australia, Austria, Belarus, Belgium, Botswana, Brazil, Canada, China, Czech Republic, Egypt, France, Germany, Ghana, Hong Kong, India, Ireland, Israel, Italy, Japan, Malaysia, Mexico, Poland, Portugal, Romania, South Africa, Saudi Arabia, Spain, Taiwan, The Netherlands, Turkey, UK, and USA). The conference was organized into 24 sessions that included a variety of topic areas such as Business Economics, Economic Approaches to Understanding Consumption, International Economics, Trade and Development, Policy, Economics of Banking and Finance, Political Economy of China, Statistical and Quantitative Methods, and other. A full conference program can be found before the relevant abstracts. In accordance with ATINER's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ATINER's many publications.

The purpose of this abstract book is to provide members of ATINER and other academics around the world with a resource through which to discover colleagues and additional research relevant to their own work. This purpose is in congruence with the overall mission of the association. ATINER was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world could meet to exchange ideas on their research and consider the future developments of their fields of study.

It is our hope that through ATINER's conferences and publications, Athens will become a place where academics and researchers from all over the world regularly meet to discuss the developments of their discipline and present their work. Since 1995, ATINER has organized more than 400 international conferences and has published nearly 200 books. Academically, the institute is organized into 6 divisions and 37 units. Each unit organizes at least one annual conference and undertakes various small and large research projects.

For each of these events, the involvement of multiple parties is crucial. I would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ATINER for putting this conference and its subsequent publications together. Specific individuals are listed on the following page.

**Gregory T. Papanikos**  
**President**

**14<sup>th</sup> Annual International Symposium on Economic Theory,  
Policy & Applications  
1-4 July 2019, Athens, Greece**

**Scientific Committee**

All ATINER's conferences are organized by the [Academic Council](#). This conference has been organized with the assistance of the following academics, who contributed by a) setting up the program b) chairing the conference sessions, and/or c) reviewing the submitted abstracts and papers:

1. Gregory T. Papanikos, President, ATINER & Honorary Professor, University of Stirling, UK.
2. Chris Sakellariou, Head, Economics Unit, ATINER & Associate Professor of Economics, Nanyang Technological University, Singapore.
3. Sharon Claire Bolton, Vice President of Research, ATINER & Dean, The Management School, University of Stirling, UK.
4. Peter Koveos, Head, Accounting and Finance Unit, ATINER & Professor of Finance, Syracuse University, USA.
5. Codruta Simona Stoica, Head, Mathematics & Statistics Unit & Professor and Vice-Rector, Aurel Vlaicu University of Arad, Romania.
6. Timothy Young, Director, Center for Business & Manufacturing Excellence (CBME), ATINER & Professor and Graduate Director, Center for Renewable Carbon, The University of Tennessee, USA.
7. Theodore Trafalis, Professor of Industrial & Systems Engineering and Director, Optimization & Intelligent Systems Laboratory, The University of Oklahoma, USA.
8. Cleopatra Veloutsou, Head, Marketing Research Unit, ATINER & Professor of Brand Management, University of Glasgow, U.K.
9. Paul Contoyannis, Head, Health Economics & Management Unit, ATINER & Associate Professor & Director of Graduate Studies, McMaster University, Canada.
10. Samuel Seaman, Academic Member, ATINER & Professor, Pepperdine University, USA.
11. Rainer Przywara, President, Baden-Wuerttemberg Cooperative State University Heidenheim, Germany.
12. Henry Thompson, Professor Emeritus, Auburn University USA.
13. Geoffrey Bick, Professor, University of Cape Town, South Africa.
14. Yijiang Wang, Professor, Cheung Kong Graduate School of Business, China.
15. Mario Norbis, Professor, Quinnipiac University, USA.
16. George Burt, Professor, University of Stirling, UK.

17. Wei Li, Professor of Economics, Cheung Kong Graduate School of Business, Beijing, China.
18. Patrick Vyncke, Academic Member, ATINER & Professor and Director of Study, Department of Communication Sciences, Faculty of Social Sciences, Ghent University, Belgium.
19. Ampalavanar Nanthakumar, Academic Member, ATINER & Professor, State University of New York at Oswego, USA.
20. Alessandro Baldi Antognini, Academic Member, ATINER & Professor, University of Bologna, Italy.
21. Peter Vranas, Academic Member, ATINER & Professor, University of Wisconsin–Madison, USA.
22. Katerina Andrews, Associate Professor, Wofford College, USA.
23. Stavroula Malla, Academic Member, ATINER & Associate Professor, University of Lethbridge, Canada.
24. Mihalis Kuyucu, Academic Member, ATINER & Associate Professor, Istanbul Aydın University, Turkey.
25. Diarmuid O'Driscoll, Head of Department of Mathematics and Computer Studies, Mary Immaculate College, Ireland.
26. Kakoma Luneta, Associate Professor, University of Johannesburg, South Africa.
27. Abhishek Nayak, Assistant Professor, University of Amsterdam, Business School, The Netherlands.
28. Gustavo de Moraes, Assistant Professor, Pontifical Catholic University of Rio Grande do Sul, Brazil.
29. Jana Simakova, Assistant Professor, Silesian University in Opava, Czech Republic.
30. Debdatta Saha, Academic Member, ATINER & Assistant Professor, South Asian University (SAU), India.
31. Thanos Athanasopoulos, Senior Lecturer, De Montfort University - Leicester, UK.
32. Nimer Baya'a, Senior Lecturer A, Pedagogic Supervisor, Head of ICT Center, Al-Qasemi Academic College of Education, Israel.
33. Adele Potgieter, Lecturer, Nelson Mandela University, South Africa.
34. Otman Jaber, Lecturer, Pedagogic Supervisor, Al-Qasemi Academic College of Education, Israel.
35. Olga Gkounta, Researcher, ATINER.



**FINAL CONFERENCE PROGRAM**  
**14<sup>th</sup> Annual International Symposium on Economic Theory, Policy & Applications, 1-4 July 2019, Athens, Greece**  
**Conference Venue: University of Athens (Kapodistriako), 48 Akadimias Street, Athens, Greece**

**Monday 1 July 2019**

**08:10-08:40 Registration**

**08:40-09:00 (Room A): Welcome and Opening Address by Gregory T. Papanikos, President, ATINER.**

**09:00-10:30**

<b>Session I (Room A): Business Economics</b>	<b>Session II (Room B): Statistics</b>
<b>Chair:</b> Gregory T. Papanikos, Honorary Professor, University of Stirling, UK.	<b>Chair:</b> Codruta Simona Stoica, Head, Mathematics & Statistics Unit & Professor and Vice-Rector, Aurel Vlaicu University of Arad, Romania.
<ol style="list-style-type: none"> <li>1. Alois Paul Knobloch, Professor, Chair of Business Administration, Saarland University, Germany. An Option Theoretical Examination of Capital Increases with Preemptive Rights by a Levered Corporation.</li> <li>2. Samuel Seaman, Professor, Pepperdine University, USA. Gender BIAS in Professional Services.</li> <li>3. Vladimir Kulil, Director, Appraisal Institute, VŠB - Technical University of Ostrava, Czech Republic. Intangible Assets and Goodwill Valuation.</li> <li>4. Silvester van Koten, Associate Professor, Vysoká škola ekonomická v Praze, Czech Republic. The Forward Premium in Electricity Markets: An Experimental Study.</li> </ol>	<ol style="list-style-type: none"> <li>1. Ampalavanar Nanthakumar, Professor, State University of New York at Oswego, USA. A Comparison of Hierarchical and Vine Copulas.</li> <li>2. <u>Wei-ming Luh</u>, Professor, National Cheng Kung University, Taiwan &amp; Jiin-huang Guo, Professor, National Pingtung University, Taiwan. Sample Size Calculation with Cost Constraints for Testing the Superiority/Non-inferiority and the Equivalence of Two Poisson Means.</li> <li>3. Alan Ker, Professor, University of Guelph, Canada. Sup-Type of Distributional Equivalence when Break is Unknown.</li> <li>4. Stelios Georgiou, Associate Professor, RMIT University, Australia. Combining Robust Parameter Designs (RPDs) and Supersaturated Designs (SSDs).</li> <li>5. Stella Stylianou, Senior Lecturer, RMIT University, Australia. Screening Designs under Model Uncertainty.</li> </ol>

**10:30-11:45**

<b>Session III (Room A): Marketing Strategy, Experience Marketing and Tourism</b>	<b>Session IV (Room B): Mathematics: Education &amp; Teaching</b>
<b>Chair:</b> Samuel Seaman, Professor, Pepperdine University, USA.	<b>Chair:</b> Kakoma Luneta, Associate Professor, University of Johannesburg, South Africa.
<ol style="list-style-type: none"> <li>1. <u>Nacasius Ujah</u>, Assistant Professor, South Dakota State University, USA &amp; Anna Sadovnikova, Assistant Professor, South Dakota State University, USA. Managerial Talent, Corporate Social Responsibility, and Firm Performance.</li> <li>2. Adele Potgieter, Lecturer, Nelson Mandela University, South Africa. A Conceptual Framework to Investigate the Relation between Socio-Cultural, Geographical and</li> </ol>	<ol style="list-style-type: none"> <li>1. <u>Nimer Baya'a</u>, Senior Lecturer A, Pedagogic Supervisor, Head of ICT Center, Al-Qasemi Academic College of Education, Israel, <u>Otman Jaber</u>, Lecturer, Pedagogic Supervisor, Al-Qasemi Academic College of Education, Israel, Wajeeh Daher, Head of M.Teach Program in Graduate Studies, Al-Qasemi Academic College of Education, Israel &amp; Ahlam Anabousy, Teaching and Research Assistant, Al-Qasemi Academic</li> </ol>

<p>Financial Factors on Tourist's Overall Satisfaction of Township Tours in the Western Cape, South Africa.</p> <p>3. Juan Ignacio Alcaide, Lecturer, University of Cadiz, Spain. The Role of Pleasure Boat on the Andalusian Market Tourist.</p>	<p>College of Education, Israel. Educating Mathematics Pre-service Teachers in Metacognitive Skills.</p> <p>2. <u>Pei-Wan Liu</u>, PhD Student, National Changhua University of Education, Taiwan &amp; Erh-Tsung Chin, Associate Professor, National Changhua University of Education, Taiwan. How Taiwanese Junior High School Mathematics Teachers Learn Inquiry-Based Teaching via a Teacher Professional Learning Community.</p> <p>3. <u>Chien Minfeng</u>, Graduate Student, National Changhua University of Education, Taiwan &amp; Erh-Tsung Chin, Associate Professor, National Changhua University of Education, Taiwan. The Study of Vee Map Tactics Integrated into Mathematics Teaching and its Influence on the Eight Graders' Mathematical Proficiencies.</p> <p>4. <u>Chia-Hao Tsai</u>, Graduate Student, National Changhua University of Education, Taiwan &amp; Erh-Tsung Chin, Associate Professor, National Changhua University of Education, Taiwan. How Do Pupils Manipulate Teaching Aids to Solve Problems? An Example of Solving Fraction Problems.</p>
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11:45-13:30

<b>Session V (Room A): Consumer Behaviour: Economic Approaches to Understanding Consumption</b>	<b>Session VI (Room B): Special Topics in Statistics and Economics</b>
<p><b>Chair:</b> Katerina Andrews, Associate Professor, Wofford College, USA.</p>	<p><b>Chair:</b> Ampalavanar Nanthakumar, Professor, State University of New York at Oswego, USA.</p>
<ol style="list-style-type: none"> <li><u>Geoffrey Bick</u>, Professor, University of Cape Town, South Africa &amp; <u>Barbara-Jeanne Slazus</u>, Commercial Marketing Manager / MBA Student, University of Cape Town, South Africa. Factors that Influence FinTech Adoption in South Africa: A Study of Consumer Behaviour towards Branchless Banking.</li> <li><u>Iris Boeschen</u>, Professor, Federal University of Public Management, Germany &amp; Barbara Henman-Sturm, Professor, Federal University of Public Management, Germany. Digitization Levels Consumer's Transaction Costs.</li> <li>Pelin Bicen, Associate Professor, Suffolk University, USA. The R-A Theory Perspective on the Geographical Indications (GIs) Debate.</li> <li>Khulod Alqutub, Assistant Professor, Taif University, Saudi Arabia. Socio-Cultural Impact in Forming Consumption of Weight Management Products.</li> <li>Gihan El Sawy, Assistant Professor, Damanhour University, Egypt. Spatial</li> </ol>	<ol style="list-style-type: none"> <li>Wojciech Drozd, Vice-President for Innovations and Logistics, University of Szczecin, Poland. Poland in the Way to Electromobility.</li> <li>Isaias Chairez Hernandez, Professor, Instituto Politécnico Nacional, CIIDIR Durango, Mexico. White-tailed Deer Sex Identification by Faecal DNA and Pellet Morphometry.</li> <li><u>Panagiotis Ch. Anastopoulos</u>, Associate Professor, University at Buffalo, The State University of New York, USA, Ugur Eker, Graduate Research Assistant, University at Buffalo, The State University of New York, USA, Sheikh Shahriar Ahmed, Graduate Research Assistant, University at Buffalo, The State University of New York, USA, Grigorios Fountas, Lecturer, Edinburgh Napier University, UK &amp; Stephen E. Still, Professor, University at Buffalo, The State University of New York, USA. Will Flying Cars Be Safe and Secure: An Exploratory Empirical Analysis of Public Perceptions.</li> <li><u>Mihir Bhattacharya</u>, Assistant Professor,</li> </ol>



<p>Distribution of Automated Teller Machine in Alexandria.</p> <p>6. *Priscilla Omonedo, Teaching Fellow, Aston University, UK. Socio-Cultural Factors, that Significantly Influence the Perception, Behaviour, Acceptance and Consequent Uptake of Technology.</p>	<p>Ashoka University, India, Saptarshi Mukherjee, Associate Professor, Indian Institute of Technology, India &amp; Ruhi Sonal, PhD Student, Indian Institute of Technology, India. Attention and Framing.</p> <p>5. <u>Sheikh Shahriar Ahmed</u>, Graduate Research Assistant, University at Buffalo, The State University of New York, USA, Grigorios Fountas, Lecturer, Edinburgh Napier University, UK &amp; Panagiotis Ch. Anastasopoulos, Associate Professor, University at Buffalo, The State University of New York, USA. Accounting for Cross-Equation Error Correlation and Unobserved Heterogeneity in a Bivariate Hazard-Based duration Modeling Framework.</p>
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13:30-14:30 Lunch

14:30-16:00

Session VII (Room A): Branding	Session VIII (Room B): Applied Studies
<b>Chair:</b> Geoffrey Bick, Professor, University of Cape Town, South Africa.	<b>Chair:</b> Olga Gkounta, Researcher, ATINER.
<p>1. Jing Wan, Assistant Professor, University of Groningen, The Netherlands, <u>Pankaj Aggarwal</u>, Professor, University of Toronto, Canada &amp; Min Zhao, Associate Professor, Boston College, USA. To Trace is to Trust: From Product Traceability to Brand Trust.</p> <p>2. <u>Abhishek Nayak</u>, Assistant Professor, University of Amsterdam, Business School, The Netherlands &amp; Evaldas Jankauskas, Research Student, University of Amsterdam, Business School, The Netherlands. The Impact of Frequency and Spacing of Brand-Generated Content on the Dynamics of Consumer Interaction on Brands' Facebook Pages.</p> <p>3. <u>Arooj Rashid</u>, Lecturer, Nottingham Trent University, England, UK &amp; Louise Spry, Lecturer, Nottingham Trent University, England, UK. Brand Architecture in the UK Fashion Industry: Impact on Brand Identity and Image in an Evolving Business.</p>	<p>1. Rainer Przywara, President, Baden-Wuerttemberg Cooperative State University Heidenheim, Germany. Economic Prosperity under Varieties of Capitalism 1970-2010.</p> <p>2. Thanos Athanasopoulos, Senior Lecturer, De Montfort University - Leicester, UK. Dynamic Pricing and Compatibility in Durable Goods Markets with Network Effects.</p> <p>3. Estelle Sommeiller, Researcher, Institut de Recherches Economiques et Sociales (IRES), France. Employment &amp; Poverty in Southern Europe: When Measurement Matters.</p>

16:00-17:15

Session IX (Room A): Marketing Strategy, Ethics and Sustainability
<b>Chair:</b> Adele Potgieter, Lecturer, Nelson Mandela University, South Africa.
<p>1. <u>George Burt</u>, Professor, University of Stirling, UK &amp; <u>Sharon Bolton</u>, Professor, University of Stirling, UK. The Moral Economy of Sustainability Entrepreneurship.</p> <p>2. <u>Regina Mensah Onumah</u>, PhD Student / Lecturer, University of Ghana, Ghana, Samuel Nana Yaw Simpson, Senior Lecturer; Head of Accounting Department, University of Ghana Business School, Ghana &amp; Ibrahim Bedi, Senior Lecturer, University of Ghana Business School, Ghana. The Effect of Ethics Education Interventions on Ethical Attitudes of Professional Accountants in Ghana.</p> <p>3. <u>Dalila Mohellebi</u>, Professor, Université Mouloud Mammeri de Tizi Ouzou, Algeria &amp; Said Oubaziz, Professor, Université Mouloud Mammeri de Tizi Ouzou, Algeria. Open Innovation:</p>

A New Source of Business Competitiveness.

17:15-18:30

<b>Session X (Room A): International Economics, Trade and Development I</b>	<b>Session XI (Room B): Policy I</b>
<b>Chair:</b> Henry Thompson, Professor Emeritus, Auburn University USA.	<b>Chair:</b> Thanos Athanasopoulos, Senior Lecturer, De Montfort University - Leicester, UK.
<ol style="list-style-type: none"> <li>1. Marcel Kohler, Professor, University of KwaZulu-Natal, South Africa. International Trade, Carbon Emissions and Energy Rebound Effects: The Case of South Africa.</li> <li>2. Jana Simakova, Assistant Professor, Silesian University in Opava, Czech Republic. The Exchange Rate as a Determinant of the Development of Foreign Trade in the Food Industry.</li> <li>3. *<u>Gustavo de Moraes</u>, Assistant Professor, Pontifical Catholic University of Rio Grande do Sul, Brazil &amp; Lucas Souza Beppler, Student, Pontifical Catholic University of Rio Grande do Sul, Brazil. Total Water Consumption - A Computable General Equilibrium Experiment for the Brazilian's Economic Sectors.</li> <li>4. Fabian Baier, Research Associate, University of Wuppertal, Germany. Does Engaging in International Organizations Pay Off? A Gravity Foreign Direct Investment Analysis.</li> </ol>	<ol style="list-style-type: none"> <li>1. Chiung-Ju Huang, Professor, Feng Chia University, Taiwan. The Impact of National Fiscal Rules and Government Effectiveness on the Procyclicality of Fiscal Policy in the Asia-Pacific Countries.</li> <li>2. <u>Stavroula Malla</u>, Associate Professor, University of Lethbridge, Canada &amp; Derek Brewin, Associate Professor, University of Manitoba, Canada. Biotechnology, Crop R&amp;D and Public Policy.</li> <li>3. <u>Alexander Lubis</u>, PhD Student, Cranfield University, UK and Bank Indonesia, Indonesia, Constantinos Alexiou, Associate Professor, Cranfield University, UK &amp; Joseph Nellis, Deputy Director and Professor, Cranfield University, UK. Monetary Policy and Foreign Exchange Intervention in an Emerging Market: The Case of Indonesia.</li> <li>4. George Pantelopoulos, PhD Student, The University of Newcastle, Australia. A Redux of Monetary Mechanics in Currency Systems.</li> </ol>

18:30-20:00

<b>Session XII (Room A): International Economics, Trade and Development II</b>	<b>Session XIII (Room B): Policy II</b>
<b>Chair:</b> Gustavo de Moraes, Assistant Professor, Pontifical Catholic University of Rio Grande do Sul, Brazil.	<b>Chair:</b> Rainer Przywara, President, Baden-Wuerttemberg Cooperative State University Heidenheim, Germany.
<ol style="list-style-type: none"> <li>1. Alexi Thompson, Associate Professor, Indiana University of Pennsylvania, USA. The Colombian Peso: Commodity Currency or Cocaine Currency?</li> <li>2. Christina Anderl, Lecturer, London South Bank University, UK. Fractional Cointegration of Real Exchange Rates and Inflation Expectations.</li> <li>3. Arthur Korus, Research Associate, University of Wuppertal, Germany. Currency Overvaluation and R&amp;D Spending.</li> <li>4. <u>Abbhiraami Sivarajan</u>, PhD Student, Universiti Kebangsaan Malaysia (UKM), Malaysia, Fathin Faizah Said, Senior Lecturer, Universiti Kebangsaan Malaysia (UKM), Malaysia, Zulkefly Abdul Karim, Associate Professor, Universiti Kebangsaan Malaysia (UKM), Malaysia &amp; Mohd</li> </ol>	<ol style="list-style-type: none"> <li>1. Pier Giorgio Ardeni, Professor, University of Bologna, Italy. Inequality and Populism: The Growing Conundrum.</li> <li>2. Samir Kadiric, Research Associate, University of Wuppertal, Germany. The Effects of Brexit on Sovereign Risk Premium in UK and Euro Area Member Countries.</li> </ol>

Rizdwan Yaakub, Senior Lecturer, Universiti Kebangsaan Malaysia (UKM), Malaysia. Trade in Value Added: A Systematic Review.	
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**21:00-23:00 Greek Night and Dinner**

<b>Tuesday 2 July 2019</b>
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**07:45-10:45 Session XIV: An Educational Urban Walk in Modern and Ancient Athens**

Group Discussion on Ancient and Modern Athens. Visit to the Most Important Historical and Cultural Monuments of the City (be prepared to walk and talk as in the ancient peripatetic school of Aristotle)
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**11:15-13:00**

<b>Session XV (Room A): Digital Marketing and Marketing Communication</b>	<b>Session XVI (Room B): Mathematics</b>
<b>Chair:</b> Abhishek Nayak, Assistant Professor, University of Amsterdam, Business School, The Netherlands.	<b>Chair:</b> Diarmuid O'Driscoll, Head of Department of Mathematics and Computer Studies, Mary Immaculate College, Ireland.
<ol style="list-style-type: none"> <li>Patrick Vyncke, Professor and Director of Study, Department of Communication Sciences, Faculty of Social Sciences, Ghent University, Belgium. Automatic, Heuristic and Systematic Information Processing and Decision Making: From a Dual to a Triune Typology of Marketing Communications Strategies.</li> <li>Hiroshi Koga, Professor, Kansai University, Japan. Taxonomy of SNS Marketing Approach: Preliminary Study.</li> <li>Mihalıs Kuyucu, Associate Professor, Istanbul Aydın University, Turkey. The Use of QR Code in the Marketing of Music in the Terms of Digitalization.</li> <li>Stefanie Boyer, Associate Professor, Bryant University, USA. Adaptability Training Insights for Sales Leaders.</li> <li>Susie Khamis, Senior Lecturer, University of Technology Sydney, Australia. The Rise of Programmatic (and Problematic) Advertising: The Sleeping Giants Awake.</li> <li><u>Jan Valentin</u>, Teaching and Research Associate, Vienna University of Economics and Business, Austria &amp; Thomas Reutterer, Professor and Head of Institute, Vienna University of Economics and Business, Austria. From RFM to LSTM: How Machines Learn to Understand Customer History.</li> </ol>	<ol style="list-style-type: none"> <li>Codruta Simona Stoica, Professor, Aurel Vlaicu University of Arad, Romania. Current Trends in the Approach of Evolution Equation.</li> <li>Peter Vranas, Professor, University of Wisconsin-Madison, USA. Natural Deduction for Sentential Pure Imperative Logic.</li> <li>Chang-Yun Lin, Professor, National Chung Hsing University, Taiwan. Data-Driven Multistratum Designs with the Generalized Bayesian D-D Criterion for Highly Uncertain Models.</li> <li>Stefan Veldsman, Professor, Nelson Mandela University, South Africa. Where to Look for the Zeros of a Polynomial.</li> </ol>

**13:00-14:00**

<b>Session XVII (Room A): Public Policy</b>	<b>Session XVIII (Room B): Teaching &amp; Learning</b>
<b>Chair:</b> Yijiang Wang, Professor, Cheung Kong Graduate School of Business, China.	<b>Chair:</b> Otman Jaber, Lecturer, Pedagogic Supervisor, Al-Qasemi Academic College of Education, Israel.
<ol style="list-style-type: none"> <li><u>Mario Norbis</u>, Professor, Quinnipiac University, USA, Iddrisu Awudu, Quinnipiac University, USA, David Boison,</li> </ol>	<ol style="list-style-type: none"> <li><u>Kakoma Luneta</u>, Associate Professor, University of Johannesburg, South Africa &amp; Apostolos (Paul) Giannakopoulos, Lecturer,</li> </ol>

<p>Quinnipiac University, USA &amp; Yan Jin, Quinnipiac University, USA. Optimizing the Scheduling of Vessels Berthing: A Case Study of Tema Port in Ghana.</p> <p>2. <u>Katerina Andrews</u>, Associate Professor, Wofford College, USA &amp; Michael Vassalos, Assistant Professor, Clemson University, USA. Medicaid Expansion: Not All about Politics.</p> <p>3. Angana Banerji, PhD Student, University of Warsaw, Poland. Policy Options for Reforming the Pension System in India, as the Country Experiences a Structural Shift from Direct Benefit to Direct, Contribution, Drawing Parallels with Poland and Chile.</p>	<p>University of Johannesburg, South Africa. Problem Solving in Mathematics: Use of Teaching and Learning Theories versus the Psychology of Teaching and Learning Mathematics.</p> <p>2. <u>Stefan Britz</u>, Lecturer, University of Cape Town, South Africa &amp; Leanne Scott, Associate Professor, University of Cape Town, South Africa. Blended Learning Introductory Statistics - Lessons from Five Years of Application at the University of Cape Town in Context of a Socioeconomically Diverse Student Body.</p>
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**14:00-15:00 Lunch**

**15:00-16:15**

<b>Session XIX (Room A): Economics of Banking and Finance</b>	<b>Session XX (Room B): Statistical and Quantitative Methods</b>
<p><b>Chair:</b> Mario Norbis, Professor, Quinnipiac University, USA.</p> <p>1. Chiu-Hui Wu, Assistant Professor, Shih Hsin University, Taiwan. Measuring Earnings Management for the Banking Industry.</p> <p>2. Alen Veljan, PhD Student / Lecturer, Universidad Rey Juan Carlos / Hamburg University of Applied Sciences, Spain / Germany. Influence of Intra-and Inter-System Concentration on the pre-Regulated Setting of Interchange Fees within Cooperative Card Payment Networks.</p> <p>3. Anastasiya Luzgina, Deputy Director, Belarusian Economic Research and Outreach Center (BEROC), Belarus. FinTech Influence on Payment System Transformation.</p> <p>4. <u>Charikleia Kaffe</u>, PhD Candidate, University of Cambridge, UK, David Chambers, Reader in Finance, University of Cambridge, UK &amp; Elroy Dimson, Professor, University of Cambridge, UK. Are University Endowments Really Long-Term Investors?</p>	<p><b>Chair:</b> Nimer Baya'a, Senior Lecturer A, Pedagogic Supervisor, Head of ICT Center, Al-Qasemi Academic College of Education, Israel.</p> <p>1. Timothy Young, Professor, The University of Tennessee, USA. Improved Predictive Modeling using Bayesian Additive Regression Trees (BART).</p> <p>2. Diarmuid O'Driscoll, Head of Department of Mathematics and Computer Studies, Mary Immaculate College, Ireland. Comparing Different Methodologies in Polynomial Data Fitting.</p> <p>3. <u>Maroussa Zagoraiou</u>, Associate Professor, University of Bologna, Italy, <u>Alessandro Baldi Antognini</u>, Professor, University of Bologna, Italy &amp; Marco Novelli, Adjunct Professor, University of Bologna, Italy. Limitations of Likelihood-based Asymptotic Inference in Response-Adaptive Clinical Trials for Treatment Comparisons.</p> <p>4. <u>Hanitra Rakotoarison</u>, Economist, Office National des Forêts (ONF), France &amp; Martin Delsart, Student, Office National des Forêts (ONF), France. Understanding and Forecasting Wood Price Fluctuation? A Study Case in French Public Forest.</p> <p>5. Augustus Panton, PhD Candidate, Australian National University, Australia. Leaning Against the Wind via Finance-Neutral Output Gaps: Inflation Targeting and Financial Stability in an Open Economy.</p>

16:15-18:15

<b>Session XXI (Room A): Communication, Community and Understanding SME's</b>	<b>Session XXII (Room B): Essays on the Political Economy of China</b>
<b>Chair:</b> George Burt, Professor, University of Stirling, UK.	<b>Chair:</b> Timothy Young, Director, Center for Business & Manufacturing Excellence (CBME), ATINER & Professor and Graduate Director, Center for Renewable Carbon, The University of Tennessee, USA.
<ol style="list-style-type: none"> <li>1. Andreas Antonopoulos, Rector, University of New York in Prague, Czech Republic. Review, Assessment and Comparison of Startup Valuation Methodologies Emerging in the CEE Region.</li> <li>2. Helga Foure-Joopen, Professor, Groupe ESC Clermont / ISEOR Lyon, France. The Impact of Communication as a Management Tool on Inter-Organizational Social and Economic Performance: The Example of SMEs Cooperation in the Auvergne Region/France.</li> <li>3. <u>Antonio Baez Morales</u>, Professor, University of Guanajuato, Mexico &amp; Ana Karen Negrete-Garcia, Professor, University of Guanajuato, Mexico. The Efficiency of Microenterprises in Mexico in a Context of Economic Liberalization.</li> <li>4. *Jose Carlos Pinho, Associate Professor, University of Minho, Portugal. The Effect of Entrepreneurship Capital Dimensions on the Creative Firm's Success: A fsQCA Approach.</li> <li>5. Andy Yu, Associate Professor, University of Wisconsin-Whitewater, USA. Untangling Structure-Performance Relationship: The Need to Consider a Second-order Fit.</li> <li>6. Salmi Madjid, Assistant Professor, Université Mouloud Mammeri de Tizi Ouzou, Algeria. The Treatment of Type 2 Diabetics through a Spatially-Centered Care Network: What Contributions? Case of DIABIR.</li> <li>7. <u>Maria D. Illescas Manzano</u>, PhD Student, University of Almeria, Spain, Sergio Martinez Puertas, Professor, University of Almeria, Spain &amp; Manuel Sanchez Perez, Full Professor, University of Almeria, Spain. Importance of Ewom, Hotel Category and Competition to Fixing Prices of the Hotel Room in Spain.</li> </ol>	<ol style="list-style-type: none"> <li>1. Zhiwu Chen, Victor and William Fung Professor in Economics / Director of Asia Global Institute, The University of Hong Kong, Hong Kong. Women as Insurance Assets in Traditional Societies: A Study of Bride-Price in 18<sup>th</sup>-19<sup>th</sup> Century China.</li> <li>2. Yijiang Wang, Professor, Cheung Kong Graduate School of Business, China. The Wealth of Nations: A Further Inquiry into its Nature and Causes.</li> <li>3. Leslie Young, Professor, Cheung Kong Graduate School of Business, China. Geography Implies Institutions.</li> <li>4. <u>Xinyu Fan</u>, Assistant Professor, Cheung Kong Graduate School of Business, China, Shuo Chen, Fudan University, China &amp; Zhitao Zhu, The Chinese University of Hong Kong, Hong Kong. The Promotion Club.</li> <li>5. <u>Gang Zhang</u>, Assistant Professor, Cheung Kong Graduate School of Business, China &amp; Wei Li, Cheung Kong Graduate School of Business, China. Evasion of Capital Control via Misreporting Trade.</li> <li>6. Chenggang Xu, Professor, Cheung Kong Graduate School of Business, China. Institutional Genes: Analyzing Great Institutional Divergence among China, Japan, and Russia.</li> </ol>

18:15-19:30

<b>Session XXIII (Room A): HRM: Staff Turnover, Diversity and Inclusion</b>	<b>Session XXIV (Room B): International Economics, Trade and Development III</b>
<b>Chair:</b> Sharon Claire Bolton, Vice President of Research, ATINER & Dean, The Management School, University of Stirling, UK.	<b>Chair:</b> Jana Simakova, Assistant Professor, Silesian University in Opava, Czech Republic.

<p>1. Yevhen Baranchenko, Senior Lecturer, Northumbria University, UK. The Role of Organisational Support and Carrier Orientation in the Relation between Employability and Turnover Intention.</p> <p>2. <u>Asma Nisar</u>, Lecturer, Kinnaird College for Women, Pakistan &amp; Ghulam Abid, Assistant Professor, National College of Business Administration and Economics, Pakistan. Impact of Workplace Ostracism on Voice Behaviour: A Mediated Moderated Model.</p> <p>3. <u>Haowen Liu</u>, Postgraduate Student, Shanghai International Studies University, China, Peihua Fan, Shanghai International Studies University, China &amp; Inqli Fan, Postgraduate Student, The University of Chicago, USA. A Study on the Relationship among Subjective Well-being, Organizational Citizenship Behavior and Resignation of the Millennial Generation of Workers.</p>	<p>1. <u>Ying Wu</u>, Professor, Salisbury University, USA &amp; Hong Yao, Professor, Salisbury University, USA. Does Foreign Import-Biased Growth Need to Hurt Advanced Economies? - More on International Effects of Growth.</p> <p>2. <u>Debdatta Saha</u>, Assistant Professor, South Asian University (SAU), India &amp; Sunil Kumar, Professor, South Asian University (SAU), India. Efficiency of Production in an Industrially Backward Region: An Application of Two-Stage Network DEA.</p> <p>3. <u>Tshepang Molosiwa</u>, Lecturer, Botswana Accountancy College, Botswana &amp; Farai Manwa, Policy and Strategy Specialist / Adjunct Lecturer, United Nations Office for Project Services, Switzerland. Effects of Finance and Business Services Sector on Botswana Economic Growth.</p>
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20:30-22:00 Dinner (Titania Hotel)

<p><b>Wednesday 3 July 2019</b> Mycenae and Island of Poros Visit Educational Island Tour</p>
<p><b>Thursday 4 July 2019</b> Delphi Visit</p>
<p><b>Friday 5 July 2019</b> Ancient Corinth and Cape Sounion</p>

**Sheikh Shahriar Ahmed**

Graduate Research Assistant, University at Buffalo, The State University  
of New York, USA

**Grigorios Fountas**

Lecturer, Edinburgh Napier University, UK

&

**Panagiotis Ch. Anastasopoulos**

Associate Professor, University at Buffalo, The State University of New  
York, USA

### **Accounting for Cross-Equation Error Correlation and Unobserved Heterogeneity in a Bivariate Hazard-Based duration Modeling Framework**

Hazard-based duration models have been successfully implemented to study the duration of an event across many disciplines. However, the possibility of evaluating the duration of two interdependent events while accounting for the cross-equation error correlation and unobserved heterogeneity exists. This paper focuses on expanding the hazard-based duration modeling method to a bivariate framework while accounting for the cross-equation error correlation, unobserved heterogeneity and unbalanced panel effect by employing grouped random parameters. The flexibility of using appropriate case-specific distribution of the hazard function for each duration is also implemented. Compared to the parameter estimates from individual univariate duration models, this approach provides more efficient and unbiased parameter estimates for two durations, one of which depends on another. Greater explanatory capacity is achieved through estimation of panel specific random parameters. For demonstrative purpose, travel time and travel distance for trips made by household members from Miami metropolitan area, FL in the year 2017 are modeled using the proposed technique. The results show that using different distributions significantly affect the overall statistical fit, forecasting accuracy and the interaction of error terms within the model.



**Juan Ignacio Alcaide**  
Lecturer, University of Cadiz, Spain

## **The Role of Pleasure Boat on the Andalusian Market Tourist**

The recreational boating has positive economic fundamentals. On the Andalusian, affluent trends and mindsets favorable for market tourist, the consumer confidence near record highs. The nautical sector in general is an element of territorial cohesion and development, where recreational boating can become an indicator of the quality of tourism and relate to others new services. The objective of this document is to investigate the main indicators of nautical tourism in Andalusia and its key elements of development. The nautical tourist is one the models available for improve the image of quality tourism. The general data show an important development potential in the Mediterranean. In the specific case of Andalusian coastline, the range of nautical activities may be regulated by gastronomy, culture, natural spaces, etc. On the other hand, nautical or active tourism has a great attraction for the visitors of the segment. Andalusia has innumerable services inland, however a few require pleasure boat at sea.



**Khulod Alqutub**

Assistant Professor, Taif University, Saudi Arabia

## **Socio-Cultural Impact in Forming Consumption of Weight Management Products**

Within consumer culture, the body “plays a mediating role between consumer activities and the cultural constitution of the self” (Jagger, 2000: 46). Looking at the body in relation to marketing, we can see the prominence of the body in massive industries, such as diet production markets, fitness equipment and services, cosmetic surgeries, and so on (Thompson and Hirschman, 1995). That is to say, the social body is “what we eat, how we dress, the daily rituals through which we attend to the body – it is a medium of culture” (Bordo, 2003: 165). Power, from Foucault perspective is an approach to understand the social body and the consumption behaviour. This allows us to understand how individuals form their identities and thus their consumption behaviour within their societies. In Saudi Arabian context, society is encountering a contemporary phenomenon of idealizing slim body that was not there a generation ago. Daily newspaper cartoons satirise women’s battle with weight and show a rapid and significant shift of how a woman’s body in the Saudi society should be now: a thin and fit body. In the past, larger, usually married women were a common site receiving little commentary from popular culture and from people’s everyday conventions. Gym work and exercise were seen as inappropriate for women, and there were no diet foods or clinics. There has been a substantial change and increase with women-only gyms and special diet clinics, diet foods and a change to view the thin and fit body as the contemporary ideal. This paper will discuss the cultural shift in beauty ideals among Saudi women. Thus understanding their consumption behaviour of weight management products and services from Foucault’s perspective of power.

**Panagiotis Ch. Anastasopoulos**

Associate Professor, University at Buffalo, The State University of New  
York, USA

**Ugur Eker**

Graduate Research Assistant, University at Buffalo, The State University  
of New York, USA

**Sheikh Shahriar Ahmed**

Graduate Research Assistant, University at Buffalo, The State University  
of New York, USA

**Grigorios Fountas**

Lecturer, Edinburgh Napier University, UK

&

**Stephen E. Still**

Professor, University at Buffalo, The State University of New York, USA

**Will Flying Cars Be Safe and Secure:  
An Exploratory Empirical Analysis of Public Perceptions**

This paper investigates public perceptions towards the safety and security implications from the future introduction of flying cars in the traffic fleet. The paper's focus is on individuals' opinions on possible safety benefits and concerns, as well as policy measures that can potentially enhance the security of flying cars. Due to the emergent nature and lack of public exposure of this technology, individuals' perceptions and opinions regarding flying cars might be subject to several layers of unobserved heterogeneity. A few examples include shared unobserved variations across interrelated perceptions, grouped effects, and interactive effects among sources of unobserved heterogeneity. To explore individuals' perceptions, while accounting for such heterogeneity patterns, grouped random parameters bivariate probit and correlated grouped random parameters binary probit models with heterogeneity in means are estimated. For the analysis, recent data collected from online surveys of 692 individuals are used. The estimation results show that the perceptions towards the safety aspects of flying cars, and the attitudes towards potential security interventions, are affected by a number of individual-specific socio-demographic, behavioral, and driving attributes. Despite the empirical and exploratory nature of the analysis, the findings can provide manufacturers, policy-makers, and regulating agencies with valuable information regarding the integration and acceptance challenges that may arise with the introduction of flying cars.

**Christina Anderl**

Lecturer, London South Bank University, UK

## **Fractional Cointegration of Real Exchange Rates and Inflation Expectations**

This paper investigates the validity of PPP by testing for the fractional integration and cointegration of real exchange rates with inflation expectation differentials for inflation targeting and non-inflation targeting countries. We find that only exchange rates for which both countries are inflation targeting are integrated of a fractional order. For other exchange rates we find evidence for the fractional cointegration of the real exchange rate with inflation expectations differentials. This means that the relationship is mean reverting and possesses long memory. We show that relative differences in inflation expectations across countries are able to explain the slow adjustment of an exchange rate disconnect from PPP to its long run equilibrium.

**Katerina Andrews**

Associate Professor, Wofford College, USA

&

**Michael Vassalos**

Assistant Professor, Clemson University, USA

## **Medicaid Expansion: Not All about Politics**

The success of the PPACA in expanding coverage to individuals and groups previously uninsured depends heavily on the expansion of the Medicaid programs across states. In a 2012 ruling, however, the Supreme Court affirmed what has historically been the case, Medicaid eligibility thresholds and benefits design will remain in the domain of state legislatures. Currently, a not insignificant number of states have not expanded their Medicaid program, despite ACA provisions that the Federal government would fully fund the costs of the newly eligible population at the onset of the expansion, with the federal matching rate set at 90% in 2020 & beyond. A number of “cross-pressured” states, however, are expanding their Medicaid program in line with ACA provisions, seemingly overcoming partisan politics. Two separate logit econometric models were used in this study to identify the factors that played into states’ final decision. We found two variables, a) state per capita income and b) the percent of residents already enrolled into a state’s Medicaid program, significantly affect the probability of a “yes” or “no” decision. Whereas “party control of state governments” has widely been regarded as “the” driving force in these decisions, we found this variable to be “weaker” in its significance relative to “income per capita”. Richer states were more likely to expand their Medicaid program, as were states with heavier Medicaid enrollments prior to ACA. Past experience with growth rates in state overall medical expenditures was not found to be a consideration in this process.

**Andreas Antonopoulos**

Rector, University of New York in Prague, Czech Republic

## **Review, Assessment and Comparison of Startup Valuation Methodologies Emerging in the CEE Region**

The Central and Eastern European (CEE) startup scene has experienced solid growth during the last decade. Several successful exits having already taken place and much of the proceeds have been re-invested to new ventures from entrepreneurs turned angel investors. In addition, the increased presence of western based Venture Capital funds, coupled with new home grown funds as well as the proliferation of the regional government and EU startup finance programs result in the CEE region being busier than ever with several innovative startups forming daily and an abundant liquidity. However, the availability of this liquidity has also created market distortions, confusion and challenges in the valuation of new ventures in the early stage of their development. The challenge is particularly acute in the angel and seed stage financing and this has led several players to engage and experiment with different approaches in the financial valuation of early stage startups.

In this paper we will be discussing, reviewing, assessing and evaluating several approaches and methodologies that have emerged in trying to establish reasonable valuation ranges for early stage ventures and are increasingly used by several investors in the CEE region. The application of such valuation methods will be covered and analysis of their most relevant application, based on the stages of development of each venture, will be presented. The comparison of these methods will be discussed and recommendations will be made about optimal usage of such methods in the CEE startup market.

**Pier Giorgio Ardeni**  
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## **Inequality and Populism: The Growing Conundrum**

Various contributions in the literature - at the border-line between political sciences and economics - have been asking whether the recent political rise in self-defined "populist" political movements has been determined by old and new economic inequalities and cultural differences. The answer, implicit or explicit, outlined by the various authors, has been affirmative.

But which ones are the economic-social conditions and the inequalities that have allowed the growth of populist forces in the ballot and increased their capacity to condition public opinion? The populist label is a very "friable" and generic one, on one hand. These political subjects, and their slogans, derive their strength from the ability to address the resentments and anxieties against the elites to the detriment of minorities and weaker social groups. The issue of migration, for instance, lends itself perfectly to that purpose as it conveys different types of resentment: economic insecurity, cultural differences and identity fears. Yet, as it appears, it is not just the poor who are revolting, but also the middle classes and those who feel as left out from the "revenues of globalization".

Despite their interest, many recent studies lend themselves to various critical findings, mainly because of their incompleteness and relative superficiality. First of all, the empirical evidence is generally poor. Also, in many instances, the analysis of "populism" political success is limited: countries like Spain, Portugal, Greece that have not experienced the expansion of these political forces even though they have been exposed to the same economic processes during the last twenty years. It can therefore be concluded that increasing inequalities and the creation of a forgotten class may be necessary conditions for a populist turnaround such as occurred in many European countries, but there is no evidence to even consider them sufficient.

In this paper, we look in more depth at the empirical evidence of the relationship between inequality - as measured by income distribution and social mobility - and political tendencies in the main advanced economies. The results show that the response is not as clear-cut as one would expect.

**Thanos Athanasopoulos**

Senior Lecturer, De Montfort University - Leicester, UK

**Dynamic Pricing and Compatibility in Durable Goods  
Markets with Network Effects**

**Antonio Baez Morales**

Professor, University of Guanajuato, Mexico

&

**Ana Karen Negrete-Garcia**

Professor, University of Guanajuato, Mexico

## **The Efficiency of Microenterprises in Mexico in a Context of Economic Liberalization**

In recent years, the Mexican economy has been characterized by its immersion in free trade agreements, with one of its main objectives being to increase productivity in the country and, thus, the wellbeing of the population. Specifically, the North American Free Trade Agreement (NAFTA) is considered a watershed moment in the opening of the nation's markets. Therefore, this article aims to evaluate the efficiency of formal and informal microenterprises in the context of NAFTA in the 1994-2012 period and describe the factors that explain any differences in that efficiency. In pursuit of this objective, the study uses both econometric tools to measure microenterprise efficiency and the Blinder-Oaxaca decomposition method to explain the factors that cause the differences found, and, moreover, undertakes a more detailed study through decomposition by quantile. The efficiency differences between the formal and informal groups of enterprises are found to have first been minor at the beginning of the economic liberalization process and then to have widened. Moreover, the level of efficiency is found to have declined in comparison with the level at which this period began.



**Fabian Baier**

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## **Does Engaging in International Organizations Pay Off? A Gravity Foreign Direct Investment Analysis**

This research contributes to gravity foreign direct investment (FDI) modeling by considering the special role of international organizations (IO), presenting a useful basis for assessing trade and investments pattern in a world with industries facing increasing globalization, while partially political regimes raise trade conflicts and show rising protectionist tendencies. In the field of political research we find a rich literature basis assessing values of IO, this has however been neglected in the past years for economic relevance of production and prosperity in the international context. Our aim therefore is to clearly show the economic benefits and opportunity costs of membership in selected international organizations.

The gravity equation estimated subsequently therefore allows one to consider the effect countries' participation in (1) international industrial regulatory bodies and investment organizations, and (2) membership of international safety and security organizations, has on their FDI attractiveness. The results serve as a guideline for policy implications if, for example, countries should threaten withdrawal from such organizations, or help evaluate the pay-off when considering joining organizations. Our model currently includes 16 large IOs of which we can measure the membership- and participation effect, allowing us to estimate global FDI patterns when one or more countries decide to join or leave such an IO. One example would be the ongoing threats of US President Trump to leave the North Atlantic Treaty Organization (NATO) in 2018, and the effect an implementation would have on the foreign investment attractiveness of the US, which is said to be fostered by the same President. Looking at FDI flow and stock data from the Organization for Economic Co-operation and Development (for the periods from 1985 to 2012) and United Nations Conference on Trade and Development (for the periods from 2001 and 2012), Pseudo Poisson Maximum Likelihood (PPML) dyadic fixed estimations take into account a broad set of approaches and variables. Evaluating the treatment of negatives, zeroes and missing values is an additional contribution to the current state of the art in FDI gravity modeling, providing a solid econometric guideline for such studies. Our results underline the significant positive impact of many IOs on investment attractiveness of the participating countries, and we provide potential policy option to mitigate economic losses from leaving organizations.

**Angana Banerji**

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## **Policy Options for Reforming the Pension System in India, as the Country Experiences a Structural Shift from Direct Benefit to Direct, Contribution, Drawing Parallels with Poland and Chile**

The idea is to study certain Policy Options for reforming the Pension System in India, as the country experiences a structural shift from Direct Benefit to Direct Contribution, initially comparing the experience with Poland and Chile. In the year 2000, following the CHILEAN model, Poland has recently launched its public mandatory system of individual accounts run by private pension administrators. According to the Melbourne Mercer Global Pension Index for 2017, India's pension system was found to be more sustainable than that of Poland and Chile, though it ranked low on the adequacy sub-index. Major Indian retirement savings schemes do not cover the workers in the unorganized sectors, who compose 90% of the entire workforce. The absence of a formal system for retirement income support of the organized sector has resulted in a high incidence of elderly participation in the labour force. Of the total working population, about 52.6% are aged 60 and above. The rising number of retirees and the increasing generosity of the public pensions are rapidly jeopardizing their long-term financial sustainability. India faces a huge challenge in improving pension coverage (only about a fifth of the labour force is covered), particularly among those who are employed in the unorganized sector. Studies show that the social assistance programs for the elderly suffer from lack of funds resulting in low level of assistance and coverage provided. Also, a robust database, pension research capabilities and empirical evidence-based policies required to enhance effectiveness of current policies and to reform them are essential to have a sustainable system in place. Increase in the ageing rate of the population, coupled with emigration, exert stress on the available pension corpus of India. Thus, a simulation process to measure the Demographic Reserve Fund is carried out to ascertain the participants in the Pension Scheme. To study the Demographic Projections and the robustness of the Projection, we will study Samuelson's Overlapping Generation Model, The Survival and Frailty Models, the Auerbach and Kotlikoff OLG Model and the Lee-Carter Model. The data will be calibrated to estimate the cash flows for over a period of 50 years and thus giving us certain policy options to be followed.

**Yevhen Baranchenko**

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## **The Role of Organisational Support and Career Orientation in the Relation between Employability and Turnover Intention**

In today's era of the boundaryless career (Arthur and Rousseau 1996; Sullivan and Arthur 2006), the importance of lifetime employability has gradually replaced lifetime employment (Bloch and Bates 1995). There is growing research interest in employability and turnover intention, but empirical studies have shown mixed results (De Cuyper et al. 2011a; De Cuyper et al. 2011b). One possible reason is the neglect of considering contextual differences in the conceptualization of employability. Perceived employability or employees' self-assessment of their capability to obtain employment involves both their personal capabilities as well as contextual factors (Forrier et al. 2009). Thus the construct should be further studied based on employee self-perceived available employment opportunities with their current employer (internal employability) versus with a potential employer in the job market (external employability) (Forrier and Sels 2003; Vanhercke et al. 2014). It is external employability that is more likely to predict turnover intention rather than internal employability. However, scholars have rarely investigated this important contextual difference, and as a result, little is known about the potentially differential effects of internal and external employability on turnover intention. Further, there might be moderating factors that influence the relationship between employability and turnover intention, but only few studies have examined the contingency mechanism on the relationship between employees' employability and turnover intention, except De Cuyper et al. (2011b) who have examined work resources as the moderating factor between employability and turnover intention.

The main objectives of the present study were to examine the potentially differential impacts of internal and external employability on turnover intention, by considering the contingency factors of perceived organizational support (POS) and personal career orientation.

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## **Educating Mathematics Pre-service Teachers in Metacognitive Skills**

In the present research, we educated mathematics pre-service teachers in using metacognition as learners and teachers of mathematics. This education was performed in one-year and was part of the participants' practical training in the training schools and in the frame of a reflection-based workshop of the practical training. We studied the development of pre-service teachers' perceptions of using metacognition in problem solving as part of mathematics learning. In addition, we verified whether the pre-service teachers' achievement in the different sets of B.Ed. courses in the second year has significant correlations with their metacognitive skills. Twenty four pre-service teachers participated in the preparation. They were in their third academic year majoring in teaching mathematics and computer science in middle schools. The research results indicated that the educating program resulted in significant differences in the preservice teachers' scores in metacognitive skills, except in selecting solving strategies. In addition, the research results indicated that the second year achievement of the pre-service teachers in computer science courses, TPACK courses and pedagogic training courses had significant correlation with the metacognitive evaluation skill. The other correlations between the second year achievements in the different sets of B.Ed. courses, the pre-service teachers' metacognitive skills were insignificant.

**Mihir Bhattacharya**

Assistant Professor, Ashoka University, India

**Saptarshi Mukherjee**

Associate Professor, Indian Institute of Technology, India

&

**Ruhi Sonal**

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## **Attention and Framing**

We consider individual decision-making where every alternative appears with a *frame* (Salant (2008)), for instance a chocolate in a gift-box. The decision maker is subject to inattention that leads to *random choice*. A novelty in our work is that we explicitly model framing effects as the source of inattention and hence the randomness in choice. This is consistent with theory and empirical evidence, which is well-documented in the behavioural psychology literature.

We characterize a class of random choice rules that exhibit the effects of frames in drawing the decision maker's attention. According to the *frame-based stochastic choice rule*, the choice probability of an alternative (say,  $x$ ) is the probability with which attention is drawn by its frame and that attention is not drawn by the frames which are associated with the alternatives that beat  $x$  according to a *complete* and *asymmetric binary relation*. This rule attributes the variation in attention to the frame associated with an alternative.

**Pelin Bicen**

Associate Professor, Suffolk University, USA

## **The R-A Theory Perspective on the Geographical Indications (GIs) Debate**

Over the last three decades, agrifood systems have been experiencing major changes worldwide as a result of progress of globalization, the striking pace of technological progress, and deepening of economic liberalization. All these changes result in generating tensions and conflicts that are reflected in international trade negotiations and resulting in a significant move towards market differentiation in many parts of the world. One essential strategic response to these changes is increased institutionalization of food quality and safety and resulting institutional arrangements in agrifood systems.

Changing features of agrifood systems, consumption in industrialized economies, as well as social and environmental concerns have led consumers and economic actors in agrifood supply chain networks to seek more control not only over products but over production processes as well. Quality control and management issues, traceability, quality certifications, norms, and codes that intend to certify the origin of components and ingredients are now among the most essential parts of discussions in signaling food quality and guaranteeing safety strategies.

EU's Geographical Indications (GI) policy and regulations, distinctive quality convention, fit in reaction to the hyper-industrialization, mass production, and standardization of 'placeless' food, as well as food safety issues. GIs are collective intellectual property (IP) rights for agri-food products that highlight the unique tie between the quality of the GI product and the territory where it is produced and/or processed. For example, Prosciutto di Parma as a GI certified food product needs to be produced based on traditional techniques and sliced and packaged within the Italy's Parma region. The very notion of a GI certified food rests on characteristics that result not only from traditional human related factors techniques (i.e., local know-how, specific skills, historical traces) but substantially from the specific and distinct natural qualities (i.e., soil, climate, local variety and breed). GIs as IP rights resemble trademarks in their potentially unlimited duration and in their ability to convey information to consumers. It also provides incentives to producers to maintain quality because consumers look to the mark as shorthand for a bundle of qualities which lower their search cost.

There is a heated policy debate over EU's GI policies and the scope EU wants to expand them to. Supporters of these policies argue that due to concerns about the increase in genetically modified foods and internalization of trade, consumers are leveling up their quality control

demand over processes as well as control over products from food producers and asking for quality certifications that guarantee both health and environmental qualities. Further, they also argue that GI system prevents fraud, ensures fairness, and promotes regional and national economic growth, development, and sustainability. On the other hand, EU's GI policy critics argue that these policies are grounded by political interests and led by EU states to charge higher standards to protect farmers from increasingly growing global competition. They argue these protections are in monopolistic in nature, thereby, take place at the expense of consumer welfare and economic growth. Critics also claim that incentivizing traditional production patterns through communal rights, EU's GI system directly reduces both innovation and competition through protectionist policies. This paper, first, examines both sides of the arguments. Then, by drawing on Hunt's (2000) Resource-Advantage theory, a general theory of competition, it provides a perspective in this heated debate.

**Geoffrey Bick**

Professor, University of Cape Town, South Africa

&

**Barbara-Jeanne Slazus**

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Town, South Africa

## **Factors that Influence FinTech Adoption in South Africa: A Study of Consumer Behaviour towards Branchless Banking**

The widespread use of mobile phones and growth in internet penetration have created a unique opportunity to increase access to financial services. Financial Technology (FinTech) companies and mobile banking empower customers to use digital platforms to utilise financial services without the physical access requirements of traditional banking. This has led to the rise of FinTech firms that are disrupting traditional industry standards by servicing consumers through a range of digital channels and mobile devices. A new completely branchless bank, Bank Zero, is set to launch in South Africa in 2019 to exploit these opportunities.

This consumer behavioural study focuses on analysing FinTech adoption in the South African market. In order to focus the area of study and get the most robust data, a mixed-method approach was used to identify the enabling and inhibiting factors that motivate consumers to adopt or reject mobile banking (m-banking). Qualitative research was initially conducted via in-depth interviews with 7 respondents. The most salient factors identified in the literature review were tested and the qualitative findings were used to develop a quantitative, online questionnaire. A convenience sample of 217 valid responses was collected, and the data was analysed using exploratory factor analysis (EFA).

The EFA identified 6 influencing factors, categorised into four enabling and two inhibiting factors, pertaining to FinTech adoption in South Africa. The enabling factors that positively influence FinTech adoption are: *Utility*, *Socio-Economic Influencers*, *Mobile Device Trust* and *Youth*. The two factors that inhibit users from adopting FinTech offerings in South Africa were found to be: *Perceived Risks* and *Associated Costs*. Interestingly, 74% of the 217 respondents indicated that they would join a completely branchless bank, only using their mobile phones and the internet to access their banking services. This shows a very high propensity to branchless, mobile banking.

Finally, the *Enhancement Criteria Model* which is based on insights gained from the research findings, is proposed. This model provides recommendation criteria for existing and new FinTech providers who are looking to improve their business models and competitive advantage.



**Iris Boeschen**

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&

**Barbara Henman-Sturm**

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## **Digitization Levels Consumer's Transaction Costs**

Behavior of consumers is changing. We have the medial supported impression that more and more people consume through digital channels. Internet research, buying via online platforms with smart phones, tablets, and PCs are up to date consumer actions. This paper contributes to the understanding of consumer behavior in times of digitization. The classic analog market and the digitized market are subject to the shift from classic transaction cost to so called online transaction cost. These costs consist partly of knowledge about the behavior of consumers in the internet and partly of their personal data. The anonymity of the consumer while buying in analog stationary retail sale will be discussed in contrary to his or hers behavioral and maybe personal transparency in the digital world.

Companies active on digital markets collect data about consumers, their research and buying behavior. They analyze data, and they might sell them to companies specialized in data procession and design. The ideal case of a really great constituency helps generating 'big data'. 'Big data' can be used more efficient and effective in terms of analysis, prediction of consumer behavior, and eloquent advertising than relatively small data volumes. In this paper different business models of companies active on digital markets are focused and compared regarding classic and online transaction costs from the point of view of consumers.

An empirical research study reflects that consumers change their behavior only when there is an added value consuming via internet compared to analog consumption. In this case online transaction cost does obviously not matter to consumers. They accept that their data is being collected and used for analysis in different fields of interest - even by interest groups and in politics. The question popping up is, if consumer sovereignty is hurt on online markets compared to analog markets. In this context general data protection regulation will be discussed finally. The thesis is that data protection can be a double-edged sword: On the one hand it might delay or stop innovation and therefore consumers will have less opportunity to choose from a wide range of innovative products in the long term. On the other hand data protection might safeguard internet users against the transfer of their personal data to third parties and therefore it protects against the limitation of consumer sovereignty.

**Stefanie Boyer**

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## **Adaptability Training Insights for Sales Leaders**

The best managers, trainers and educators tailor their topics and methodologies to most effectively prepare their sales teams and students for success on the job (Taylor, Hunter, Melton & Goodwin, 2001). There is a trend in the training space to accomplish this by using dynamic active learning approaches to engage and motivate trainees in ways traditional methods like lecture-based Power Points and online learning platforms can't (Taylor et al., 2011, Young, 2010).

The latest trend finding its way into business classrooms and corporate training programs is improv and adaptability training. To test the efficacy of training in adaptability and to understand the outcomes of training using this novel approach, we performed an exploratory experiment at a small business school in the northeast United States. Students taking sales and marketing courses were assessed on their ability to solve problems under pressure, think on their feet and adapt in a constantly changing environment, not unlike the current business landscape where technology, customers, competition, politics and products are in a constant state of flux.

Students were assessed at the start of the semester on these variables, they were assessed again after one session of adaptability training and again at the end of the semester. Two groups were given only one adaptability session, the other group was provided adaptability training throughout the semester creating two groups (high and low adaptability training levels). Students reported a significant increase in their abilities in all categories after only one training, and this effect sustained throughout the entire semester, regardless of high or low levels of adaptability training. The most interesting finding from the study came from gender differences. Women reported initial abilities at a significantly lower level than their male counterparts. Although all groups reported improvements, women had the highest level of change, which created an even playing ground for both genders.

For managers, adaptability training can be added into their current methodologies in order to help sales teams adapt to their customers' changing needs, demands and goals. During this presentation, we will share an adaptability exercise along with the results of the findings with more details about the study.

**Stefan Britz**

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&

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## **Blended Learning Introductory Statistics – Lessons from Five Years of Application at the University of Cape Town in Context of a Socioeconomically Diverse Student Body**

The Department of Statistical Sciences at the University of Cape Town receives approximately 2000 students annually who enroll for an introductory applied statistics course at first-year level. This course had been historically challenging to teach since it is largely a service course to students across the Science, Commerce, Humanities, and Engineering faculties, with poor levels of engagement.

A blended learning model was introduced in 2014 and was specifically designed to engage students more actively in their own learning as well as to provide a multitude of scaffolded learning opportunities for material that students typically found obscure and inaccessible. The teaching approach is based on active learning with processes set up to engage students both online and offline.

In this paper we reflect upon the successes and challenges encountered throughout the 5 years of presenting the course, which includes 18 iterations and more than 9000 students. Although the focus of the analysis is on the pedagogical merit and efficacy of the teaching model, the interpretation of the analysis takes place against the background of our student body profile, which includes *inter alia* socio-economic status, demographic information, home language, and quality of schooling.

South Africa's wealth distribution is infamously unequal, with some recent sources proclaiming it to be the country suffering from the highest level of inequality. Contrary to intuition, though, we argue that providing all students with a fair learning opportunity is more feasible in a course with a significant online component, due to the ubiquity of smartphones.

The past few years has seen severe unrest and turmoil on South African campuses, speaking to the heart of inequality and decolonization. We discuss the effect that the protest fallout has had on the course and UCT as a whole, as well as how the course continued to function during times when classroom teaching was suspended.

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Athens, Greece: Abstract Book

**George Burt**

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&

**Sharon Bolton**

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**The Moral Economy of Sustainability Entrepreneurship**

**Isaias Chairez Hernandez**

Professor, Instituto Politécnico Nacional, CIIDIR Durango, Mexico

## **White-tailed Deer Sex Identification by Faecal DNA and Pellet Morphometry**

**Introduction.** Sex of white-tailed deer (*Odocoileus virginianus*) individuals can provide information to set harvesting rates and management activities. **Aims.** To obtain the sex classification function by using faecal pellet morphometry. **Methods.** We collected faeces for 12 months in Durango, Mexico, measured their morphometric variables, extracted DNA and amplified an SRY gene marker to identify sex. We then obtained a neural network and fuzzy logic sex classification function. Outputs were validated with the SRY gene. **Key results.** Data from adults in the winter were used to obtain the classification functions. We could accurately classify sex in 94.4% with neural networks and 86.9% with fuzzy logic. **Conclusion.** Both neural network and fuzzy logic accurately classified the sex of the white-tailed deer from their faecal pellets from the adults collected in the winter. **Implications.** Classification function with faecal morphometric variables provide information to set accurate harvesting rates and management activities without disturbing individuals.

**Zhiwu Chen**

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### **Women as Insurance Assets in Traditional Societies: A Study of Bride-Price in 18<sup>th</sup>-19<sup>th</sup> Century China**

Before modern financial markets, agrarian societies relied on non-financial means to insure against risks. In particular, women were implicitly used as insurance assets—they were traded for other resources when the survival of a family was under threat. This practice was shared by different parts of the world though they had little or no connections with each other back then. To examine how women were used as insurance, this paper uses data from marriage-and adultery-related homicide case reports that are kept at the First National Historical Archives of China. From the 73,216 marriage/adultery homicide case reports covering the 1736-1895 period, we find 3,119 usable cases that contain price information on wife or concubine sale, widow remarriage and regular marriage. This dataset is used to investigate whether bride-price (i.e. the price of woman traded as wife or concubine, a term used hereafter) would decrease significantly when human survival risks were high. We employ grain price as a proxy for survival risks: high grain price signals shortage of food supply. When a drought or other types of natural disaster reduce crop output and drive up grain price, survival risks for ordinary people will increase. As a response, more wives or daughters will be sold for liquidity than usual. This increases the supply of women on the market, while demand is likely negatively affected at such times. The resulting imbalance leads to higher “bride-price”. We find that grain price had a significant impact on bride-price in 18<sup>th</sup>-19<sup>th</sup> century China: when grain price was high, bride-price would be low. Confucian norms also had a significant impact on bride-price: the deeper the Confucian influence (proxied by a larger number of chaste women) in a region, the lower the supply of women on the market and hence the higher the region’s bride-price. Our two-stage estimation, using drought as an instrumental variable for grain price, shows that in a drought year grain price would increase by 10% and bride-price drop by 33%. Our findings support the hypothesis that, without financial markets, women were used as insurance assets. In this sense, financial markets are fundamental to liberate the individual, especially women, from being used as economic tools. Financial markets facilitate individual rights and freedom.

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&

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## **Total Water Consumption - A Computable General Equilibrium Experiment for the Brazilian's Economic Sectors**

The production of virtually all products requires water. Due to its very own nature, water is a unique input. Global economic growth puts pressure on local demands for water. This study investigates the total water consumption in Brazil, a country that benefits from a significant comparative advantage in the area, by economic sector, in scenarios of greater global demand for the country's domestic products. Two export patterns are established. The first pattern is the current Brazilian one, focused on primary production, and the second pattern is one that favors service sectors, in line with a more developed country. For this purpose, a Computable General Equilibrium model (CGE), ORANI-G, adapted to the Brazilian's Input-Output Table (2015) and the Environmental Economic Accounts of Water in Brazil (2013-2015) is used. Variations in total water consumption outweighed the variations in demand for capital and labor in all sectors. In addition, variations in total water consumption exceeded variations of the activity level of each one of the sectors. The Extractive sector displayed the greatest increase in water consumption, and its variations of demand for capital and labor and activity level were also quite high. The Agricultural sector, however, the largest water consumer sector in the world, displayed low variations in total water consumption, with variations lower than those displayed by sectors such as Commerce and Transport, even in export patterns that maintain the current primary production focused character.

### **Wojciech Drozd**

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## **Poland in the Way to Electromobility**

Recently, Electromobility is one of the most powerful ideas implemented on a large scale in Europe. Poland, following the trend of sustainable development, on 14 February 2017 adopted the Resolution No. 8 on the Strategy for Responsible Development until 2020 (with an outlook until 2030) and the Act on Electromobility of February 5, 2018. The Strategy adopted by the Government in February includes, among others E-bus project (stimulating the design and production of Polish electric vehicles, building strong entities at all stages of the value chain in the urban transport fleet production sector) and the design of an electric car. Electromobility is a concept closely related to the future of sustainable transport.

In Poland, as in other European countries, the era of electricity in the automotive industry is expected. Electromobility is therefore a necessity and affects various socio-economic aspects

According to the Electromobility Development Plan in Poland, this process should take place in three phases, which will differentiate, among others, level of market maturity and necessary state involvement:

1. 2016-2018 - of a preparatory nature. Conditions for the development of electromobility on the regulatory side as well as targeted public financing will be created.
2. 2019-2020 - in selected agglomerations an infrastructure for powering electric vehicles will be built. The incentives for the purchase of electric vehicles will be intensified. The commercialization of research results in the field of electromobility started in the first phase and the implementation of new business models for the universalisation of electric vehicles is expected.
3. 2020-2025 - it is assumed that the electromobility market will reach maturity, which will allow the gradual withdrawal of support instruments.

An important document is also the National Policy Framework for the Development of Alternative Fuels Infrastructure. It was assumed in them that by the end of 2020 - in six selected agglomerations, 6,000 will be located. points with normal charging power and 400 points with high charging power that will be used by at least 50,000 electric vehicles.

The main assumptions include reduction of the impact of transport on the environment, minimization of dependence on crude oil, implementation of the 2014/94 / EU Directive, development of the infrastructure and



alternative fuels market as well as general improvement of Poland's energy and fuel security.

The implementation of innovations referred to in the Act on Electromobility is a key activity from the point of view of the development of electric transport. For the mass introduction of electric cars to the automotive market, optimal adaptation of the infrastructure in the form of a charging station is required. The stages of implementation of electromobility processes are complex and require cooperation of many entities at both national and local levels. In addition to such important issues as the development and principles of the functioning of charging infrastructure, or clean transport areas, the Act introduced changes to other regulations, including in construction law, energy law, tax law, where basic incentives for electric car users have been hidden.

**Gihan El Sawy**

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## **Spatial Distribution of Automated Teller Machine in Alexandria**

The aims of this research are: Distribution of ATMs for government banks in Alexandria and, Spatial Analysis of ATM for Government Banks in east District, Characteristics of the users of the ATMs of the government banks, Satisfaction levels for users of the ATMs of the government banks in east District.

Automated teller machines are one of the features of urbanization in contemporary societies. It is a service that provides financial institutions customers access to financial transactions in public places without having to have a bank ATM. The selection of suitable ATM sites is one of the factors that support its role to perform its function better and more broadly, serving a larger segment of the population, especially after the transfer of state employees' salaries to banks starting in 2015.

There is no justice in the distribution of ATMs in Alexandria, and there is no connection between the distribution of ATMs and the population, which is a random distribution in east District.

**Xinyu Fan**

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**Shuo Chen**

Fudan University, China

&

**Zhitao Zhu**

The Chinese University of Hong Kong, Hong Kong

## **The Promotion Club**

We consider a tournament-like incentive scheme called the "promotion club": Principal selects, from  $n$  agents,  $m$  top-performing ones into a club, and then promote one from within a club based fully on principal's idiosyncratic preference ("mindset"). Intuitively,  $m=1$  indicates a tournament, and  $m=n$ , cronyism. We show that a proper ( $m>1$ ) promotion club helps alleviate the loyalty-competency trade-off, for two reasons: 1. effort features an inverted-U shape with club size; 2. larger club size makes it easier to recruit a potential crony. However, principal always tends to oversize the club, leading to effort distortions.

We further show that the existence of some publicly known crony/well-connected agents may lead to two equilibria: a shirk equilibrium when club size is large and all agents shirk; and a work equilibrium where club size is small and well-connected agents may work even harder than in a tournament.

We use promotion data of Chinese governments at different levels to validate the model and test its predictions. Our theory and empirical evidence helps to explain how an organization with centralized personnel control (e.g. China) manages to incentivize subordinates while maintaining high degrees of discretionary power at the top.

**Stelios Georgiou**

Associate Professor, RMIT University, Australia

## **Combining Robust Parameter Designs (RPDs) and Supersaturated Designs (SSDs)**

Robust parameter designs (RPDs) and supersaturated designs (SSDs) have attracted a great deal of attention. In this talk, these two fields are combined. A new construction of an effective SSD is presented along with an analysis method, in order to deal with the significant problem of the robust parameter design methodology (RPDM). Combining iterative SIS variable selection and a penalized method, namely SCAD, we perform the analysis of the SSDs developed in the present work. The proposed methodology applied in different models to show its effectiveness in many different scenarios, assuming both first and second-order models in a sense of a response surface design. Two illustrative examples as well as numerous numerical experiments are conducted for plenty cases. The results imply that the proposed method is highly effective for identifying the active effects of main factors, two-factor interactions, three-factor interactions as well as the pure quadratic ones, under the assumption of effect sparsity.

**Helga Foure-Joopen**

Professor, Groupe ESC Clermont / ISEOR Lyon, France

**The Impact of Communication as a Management Tool on  
Inter-Organizational Social and Economic Performance:  
The Example of SMEs Cooperation in the Auvergne  
Region/France**

As a matter of fact, companies in France, and in particular its SMEs, are important for the development of French territories, as they constitute the basis for employment. At the same time, competitiveness of enterprises has become increasingly important, from a national but also on from an international point of view. This situation results in many new challenges and tasks at the level of the organizations, and political and economic institutions.

In this context, and as a central concept for the success of the new economic challenges, the cluster concept has gained importance in France, both for management sciences and for the business world

Innovation as a performance factor is more and more vital for the particular company, and with regard to their economic growth policy, some SMEs so cooperate in a network to increase their economic achievement collectively. Collaborative work between them is supposed to contribute to their particular development, stimulate their common competitiveness and benefit their complementarity by creating added value. But their common success requires an organizational mode in which the internal and external articulations based on coordination and cooperation with other companies are called upon to play a pivotal role.

The specificity of the SMEs involved in the network, the complexity of the relationships between them, and the need for rapid dissemination of inventions and technical knowledge inside of the net, require efficient internal and external communication management. The managers are so obliged to implement effective strategies to exploit common innovation potentials and to use them with regard to a specific objective: changing the various organizational behaviours in order to create a common culture in the field of cooperation. Coordination between the organizations involved in a complex system and between its members at all levels, thus takes a predominant place in order to create mutual trust, the basis for increased stakeholder performance.

In order to be efficient enough, it is so essential to find a convergence between all the target companies and to identify the dysfunctions and areas for the improvement common to all of them. The creation of a common culture based on trust in the field of cooperation, with regard to the costs and performance of the projects, is the social counterpart without which the accomplishment of the cooperation will not become real.

The approach of combining creativity and rigor should make it possible to "think differently", the source of successful innovation. While preserving the specificities of each company, the combining of skills and knowledge can help to highlight the expertise of companies and their association.

The study of organizational dysfunctions in a network, based on action research, and the modelling of information sharing between the different actors of companies may so be essential for the understanding of socio-economic cooperation, planned economic growth and management in French networking organizations.

**Chiung-Ju Huang**  
Professor, Feng Chia University, Taiwan

## **The Impact of National Fiscal Rules and Government Effectiveness on the Procyclicality of Fiscal Policy in the Asia-Pacific Countries**

Fiscal rules are institutional approaches aimed at maintaining fiscal credibility and fiscal discipline and usually set a numerical indicator, generally a certain percentage of GDP, that can be sustained over a long period of time and focuses on budget deficits, net borrowings, and total national debt rules. The most common types of fiscal rules are balanced budget rule and debt rule such as the Maastricht Treaty and the Stability and Growth Pact.

Currently, there are two sources of the fiscal rules. One is the International Monetary Fund (IMF) dataset that provides country-specific details on various characteristics of rules for 96 countries and the other is European Commission) numerical fiscal rules index that provides the fiscal rule index for 28 member countries. Because of the lack of fiscal rule index for the Asia-Pacific countries, the main purpose of this study is using the IMF dataset to construction the national fiscal rule index for 8 Asia-Pacific countries over the 1996-2015 period. Then, utilizing the Panel Generalized Method of Moments and the constructed fiscal rule index to investigate the impact of fiscal rules and government effectiveness on the procyclicality of fiscal policy in 8 Asia-Pacific countries, classified as "advanced economies" and "emerging economies".

The empirical results show that for advanced economies, fiscal rules have a significantly positive impact on the procyclicality of government expenditure but the impact of government effectiveness is not significant. On the contrary, for emerging economies, government effectiveness has a significantly positive impact on the procyclicality of government expenditure but the impact of fiscal rules is not significant. When fiscal rules are combined government effectiveness, we find that for advanced economies, stronger rules in tandem with higher government effectiveness significantly increases procyclicality of government expenditure. Results of this study indicate that policymakers in advanced economies use fiscal rules and policymakers in emerging economies use government effectiveness to achieve the stabilization function of fiscal policy are not effective.

**Maria D. Illescas Manzano**

PhD Student, University of Almeria, Spain

**Sergio Martinez Puertas**

Professor, University of Almeria, Spain

&

**Manuel Sanchez Perez**

Full Professor, University of Almeria, Spain

## **Importance of Ewom, Hotel Category and Competition to Fixing Prices of the Hotel Room in Spain**

This study want to analyze determinant factors of the price in the Spanish hotel sector through hedonic pricing models obtained with MCO and quantile regression by the use of the statistical software R.

Price is a widely studied variable that directly influences the hotel's income (Chen and Rothschild 2010) and in attracting consumers (Tanford et al., 2012). Hotel category has a positive influence on pricing room (Abrate et al., 2011, Bull 1994 and Israeli 2002).Positive effect of the valuations on the price (Ye et al., 2009). Premium price in those hotels with positive contributions (Yacouel and Fleischer 2012). Location is one of the most important and widely studied factors (Egan and Nield, 2000, Urtasun and Gutiérrez, 2006). Hotel prices decrease when more hotels are in the same area (Becerra et al., 2013, Folta et al., 2006, Marco-Lajara et al., 2014, Ki and Jang 2015 and Balaguer and Pernías, 2013).Relationship between hotel concentration and economic returns is positive (Daniels 2007, Canina et al., 2005 and Chung and Kalnins, 2001).

Our work will incorporate knowledge the effect of the hotel category, eWOM and competition on the price set by the hotels in Spain and analysis of the hotel competition by the number of competitors of the same category in their area. At the methodological level, it will offer a more complete modeling than obtained through ordinary least squares (OLS). Our first objective will be to obtain a more detailed representation of the relationship between explanatory variables and the price of a hotel room and our second objective will be to know the effect of the hotel category, eWOM and competition on the price set by hotels in Spain.

The results will be through OLS show that the three explanatory variables have a positive and significant effect on the price. The results obtained with quantile regression show that, for high price levels, the positive effect of the hotel category intensifies, the effect of eWOM is the same for all price levels and finally hotels tend to be located in those areas where there are more hotels. This positive effect of competition has a non-constant effect and therefore the intensity of its effect will depend on the hotel's price level.



**Samir Kadicic**

Research Associate, University of Wuppertal, Germany

## **The Effects of Brexit on Sovereign Risk Premium in UK and Euro Area Member Countries**

In this analysis, I will try to capture and measure the direct effect of the UK's decision to leave the EU28 on sovereign risk premiums in the bond markets of the United Kingdom and EA member states. KADIRIC/KORUS (2018) find that for determining corporate bond yield spreads, the role of sovereign credit default risk is still important and indeed was playing a much more significant role in the post-referendum period in both the UK and EA. This is strong evidence of the risk transfer channel from sovereign to corporate in euro area countries, especially in times of market turmoil. Since they analyze the euro area as a whole, one key question remains open: How strong is the impact on a county-level? Evaluating the impact of the Brexit referendum on individual sovereign risk premiums is of particular importance for the euro area governments, since the EA is a heterogeneous union with country ratings ranging from B+ for Greece and BBB for Italy to AA for France and AAA for Germany. Higher sovereign risk premiums would restrict countries' capability of action in order to respond to the impact of Brexit and its aftermath. Thus understanding these movements would give us better understanding of Brexit's potential effects.

**Charikleia Kaffe**

PhD Candidate, University of Cambridge, UK

David Chambers, Reader in Finance, University of Cambridge, UK

&

**Elroy Dimson**

Professor, University of Cambridge, UK

## **Are University Endowments Really Long-Term Investors?**

This paper examines the investment behaviour of U.S. university endowments over the course of the 20<sup>th</sup> century. More specifically, it studies their investment strategies and returns over the very long run, and also examines their asset-class rebalancing decisions around five of the most important financial crises of the century.

The topic of this paper lies on the intersection of the literature on endowment investing, the history of financial market crises, and institutional investor strategies around times of distress. The analysis uses a specially-constructed dataset covering over a century of data (1900 to 2013) on endowment asset allocations, characteristics and investment returns of twelve of the largest U.S. university endowments. The U.S. endowments included in the data are the Ivy League schools and four top-tier U.S. schools (Brown, Columbia, Cornell, Dartmouth, Harvard, Princeton, University of Pennsylvania, Yale, MIT, Chicago, Johns Hopkins and Stanford), all of which are large private doctoral institutions.

In the investing community, universities' styles and strategies, especially those of well-established educational institutions, have provided the template that many subsequent institutional and individual investors have followed over the years. The analysis of the paper documents the distinctive trends of U.S. university endowment long-term asset allocation changes such as the early adoption of equity investing during the 1930s and the more recent shift into alternative assets during the 1980s. It also calculates their long-term returns and highlights the fact that endowments performed better than corresponding balanced benchmarks over time, and especially during recent years.

Moreover, the paper examines university endowments during five of the most important financial crises of the 20<sup>th</sup> century. The main question is how these supposedly long horizon investors behaved before, during and after the financial crises. That is, did they invest procyclically or did they invest countercyclically? It is well known that some institutional investors such as pension funds and mutual funds behaved procyclically during the recent financial crisis. In comparison to other institutional investors, endowment funds focus on long-term objectives, have low short-term liquidity needs, outflow and regulatory constraints, and therefore might have the autonomy to invest countercyclically during

times of distress. To this end, changes in the risky share of endowments are decomposed into passive changes (due to market fluctuations) and active changes (due to rebalancing). During the months prior to half of the crises, there is a discernible negative active change in equity allocations, while after the crises endowments were typically buyers when equity prices were depressed. This evidence suggests that endowments tend to invest countercyclically, and this behavior looks more pronounced during the more recent crises.

Overall, university endowments are one of the most long-lived classes of institutional investors and have different attributes and goals than other more commonly studied institutional investors. Therefore, they provide an interesting new laboratory for exploring institutional investor strategy evolution and asset-class rebalancing during times of distress.

**Alan Ker**

Professor, University of Guelph, Canada

## **A Generalized KS-Test**

The KS-test is used to test if two samples come from distinct distributions or data generating processes. The KS-test statistic measures the maximum difference between two empirical distribution functions generated from two samples. In this sense the KS-test is a sup-type test. In this manuscript we propose a generalization to the KS-test where the cut-off between the two samples is unknown. We do this by first calculating the KS-test statistic on all possible cut-off points and then comparing the maximum of the KS-test statistics to its order statistic under the null of identical distributions or data generating processes. In some sense, this is closely related to the generalization of the Chow test by Bai-Perron where the cut-off point for structural change is unknown. However, the Chow and subsequently Bai-Perron tests strictly relate to structural change in the conditional mean and have no power against structural changes in higher moments. Fortunately, the KS-test measures differences in the empirical distribution functions and thus has power against structural change in higher moments. We use this generalization of the KS-test in a number of simulated and real applications to illustrate its usefulness.

**Susie Khamis**

Senior Lecturer, University of Technology Sydney, Australia

## **The Rise of Programmatic (and Problematic) Advertising: The Sleeping Giants Awake**

It is ironic that the most significant aspect of contemporary advertising – a profession that delivers visibility and salience – is so thoroughly hidden: the rise of programmatic advertising. This refers to the automated buying and selling of online advertising, a job once assigned to agency personnel (the media planning department) but has been usurped by smart machines that can calculate with precision and speed the optimal opportunities for personalised advertising. In just a few seconds, or the time it takes the average computer to load a homepage, an impression has been purchased. With each click on a publisher's website, a third-party ad exchange notifies a group of bidders – potential advertisers – of the profiled user and invites them to bid for that impression; within milliseconds, machines decide if a bid should be made and at what price. At the same time, this efficiency comes at a cost: an acumen for context-appropriate positioning is effectively lost as ad placement is determined exclusively by software, so advertisers no longer decide when and where a target demographic is assumed to be. Instead, we see the expedient targeting of individuals *wherever they happen to go*. This paper considers how the rise of programmatic advertising, and in particular its inadvertent sponsorship of content that is potentially offensive or even morally reprehensible, has inspired a novel form of resistance. This paper considers how Sleeping Giants, a Twitter-based activist group, confronts a burgeoning media economy that has essentially allowed for the commercialisation of hateful content.

Sleeping Giants was set up by Matt Rivitz, a 45-year-old copywriter based in San Francisco with decades of experience in the advertising industry. Rivitz knew well how online publications commercialised content through programmatic advertising and how, in the placement of an advertisement, programmatic swaps human supervision for speed, granularity and automation. It is therefore possible that a brand ad will appear alongside content that is divisive, demeaning or completely made up, 'fake news'. Yet this is exactly the situation that many brands have walked straight into by virtue of programmatic marketing: effectively bankrolling hate speech by advertising on media platforms that preach racism, sexism, bigotry or a combination thereof. Sleeping Giants now has regional Twitter accounts in 15 countries outside the US: Australia, Belgium, Brazil, Canada, Finland, France, Germany, Italy, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland and the UK. This paper therefore surveys and analyses how programmatic

advertising has not only changed the business of advertising, but also prompted an industry-wide reckoning with advertising's role in emerging media practices.

**Alois Paul Knobloch**

Professor, Chair of Business Administration, Saarland University,  
Germany

## **An Option Theoretical Examination of Capital Increases with Preemptive Rights by a Levered Corporation**

The capital increase of a corporation with limited liability which is financed with risky debt can bear delicate issues when considering equity as a call option on the company's assets. This especially holds, if the corporation is in need of liquidity in times of crisis. The paper's scope is to analyze the implications of specific forms of capital increase including preemptive rights when performed by a risky debt financed corporation from an option theoretical point of view. We take the German Stock Corporation Act as a reference. At first, we investigate an agency problem between the executive and supervisory boards on one side and the (existing) shareholders on the other side. If the capital contribution turns out to be not beneficial for the shareholders after the decision has been already made, depending on the concentration of shares, the single shareholder cannot prevent her participation especially if the capital increase is in the management's interest. Indeed, there is an equilibrium where the boards can enforce a capital raise that implies a capital dilution for non-cooperative acting equity holders by a suitable choice of the recapitalization parameters, the number of newly issued stocks and the selling price. With respect to a capital increase a legal obligation for boards to act in line with a fiduciary duty in regards to the investors' interests is not to be found. Then, preemptive rights do not offer protection. In the case of Germany this leads to a conflict with § 54 German Stock Corporation Act which does not allow for an even virtually obligation of shareholders to make an additional contribution. Secondly, we emphasize a positive characteristic of recapitalization including preemptive rights in that fixing the selling price and the number of new shares allows for optimizing the proceeds with respect to the net present value of the issue.

**Hiroshi Koga**

Professor, Kansai University, Japan

### **Taxonomy of SNS Marketing Approach: Preliminary Study**

In this paper, we will examine the possibility of Buzz marketing using SNS through case study. Today, the growth of digital marketing that utilizes media called triple media is remarkable. Among others, marketing using social media such as SNS has received attention. However, as various cases are reported, it seems that the model for comprehensively grasping or organizing them is not enough. In this paper, we attempt to classify SNS marketing using WOM (words of mouth). That is, models are classified into four quadrants using two axes: (1) degree of customer's concern for goods and services, and (2) customer participation degree. As a result, (1) synchronic festive type (involvement large - direct) (2) chronologically festival (involvement large - mediated), (3) pale empathy (involvement small - indirect), and (4) flames up (small involvement - direct). It can be divided into four quadrants. (4) In flames (small involvement - direct) Furthermore, we will clarify the characteristics of each quadrant through case examples. We would like to show the effectiveness of the model through discussion.



**Marcel Kohler**

Professor, University of KwaZulu-Natal, South Africa

## **International Trade, Carbon Emissions and Energy Rebound Effects: The Case of South Africa**

The effect of trade liberalisation on environmental conditions has yielded a great deal of debate in the current energy economics literature. Although research on the relationship between international trade and CO<sub>2</sub> emissions is not new, there are surprisingly only a limited number of studies which specifically address the role that energy rebound effects play in complicating this relationship. There is no doubt that energy efficiency improvements caused by trade induced technological progress exert a significant influence on energy conservation and carbon emission reductions. The real effects of such efficiency improvements are however seldom consistent with forecasted energy consumption changes. Projections often fail to take account of energy rebound effects, whereby energy consumption may not decrease on a one-for-one basis with energy efficiency gains. The presence of the rebound phenomenon has sparked considerable debate and research in recent years in respect of the effectiveness of energy efficiency policies. This paper undertakes to investigate the interplay between these variables employing recent South African trade, energy and emissions data together with modern econometric techniques. Whilst the findings of the study suggest positive bidirectional causality between foreign trade and income per capita and between foreign trade and per capita energy use, it appears however that trade liberalisation in South Africa has not contributed to a long run growth in pollution-intensive activities nor higher emission levels. Rather, our research suggests that a higher degree of trade openness possibly reduces CO<sub>2</sub> emissions in South Africa through an environment which stimulates technological innovations by increasing spending on energy R&D which results in energy efficiencies, fewer pollutants and hence environmental conservation. In the presence of the country's highly energy intensive economic activities and given South Africa's extreme dependence on coal as its major energy source, it is indeed surprising that the country's pollutant emissions outcome is not exaggerated in the presence of foreign trade. This econometric finding should however be interpreted with care, as it may not be sufficiently robust enough to categorically state.

**Arthur Korus**

Research Associate, University of Wuppertal, Germany

## **Currency Overvaluation and R&D Spending**

This paper investigates the impact of an overvalued currency on R&D spending in manufacturing sectors. In particular, we explore whether a real overvaluation against the US Dollar affects R&D investments in manufacturing sectors of OECD countries. So far the literature has elaborated on either the impact of exchange rate swings on R&D investment or the effect of exchange rate volatility on R&D spending. Thus, to the author's best knowledge, this study is the first which investigates the relationship between real overvaluation and R&D spending. In this paper, we test empirically whether real overvaluation against the US dollar has a direct effect as well as an indirect effect via export activity on R&D investment by using OECD panel data of the manufacturing sectors of 16 OECD countries. We find that real overvaluation against the US dollar both directly and indirectly affects R&D intensities in manufacturing sectors. Furthermore, we have evidence that real overvaluation against the US Dollar caused by monetary policy and financial factors negatively affects R&D intensities in manufacturing sectors.

**Vladimir Kulil**

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Republic

## **Intangible Assets and Goodwill Valuation**

The subject matter of this thesis is a proposal for a method of valuation of intangible effects that will impact assets prices. Special effects are in particular name, historical value, design, quality of layout, security aspects, accessibility, conflict groups of inhabitants in or near the property, location, provenience and other. European valuation standards TEGoVA have conception for valuation of intangible assets and they formed in order to be conform to International valuation standards IVS also in order to reach worldwide consensus in best practices in valuation process.

The process of valuation of intangible influences was also surveyed in China, Hong Kong, USA, Canada, Japan, Germany, UK, Poland, Russia and overall in the Europe. Situation in mentioned locations is similar, valuation of intangible influences has not been determined by a concrete list of items and there has not been established concrete clear process. It deals with proposed procedures for valuation of intangible assets, and definitions of such property. Valuation of intangible assets include certain specifics compared to cost assets. The specifics should be considered in the methodology and in final price. There exists a basic consensus in the way of tangible assets evaluation, in the case of intangible assets there is not. Aim is to introduce the scientific public with a different view on the essence of valuation.

Proposed methodology is subjective approach of an expert while valuating intangible assets, each expert can work out valuation with a different result. It is not possible to avoid expert's personal view. Disproportion among individual experts valuating by market price will appear also in the future. These differences can only be reduced by accepting unified methodology such as proposed in this monograph. Future research will therefore focus on the clarification of procedures and a detailed validation of recommended tariffs for fixed assets.

**Mihalis Kuyucu**

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## **The Use of QR Code in the Marketing of Music in the Terms of Digitalization**

The changes of technology caused too many transformations in communication. This transformation created many new forms in the presentation of products and services. One of the markets which had faced a great change is music thanks to digitalization. Music which was a tangible product transformed to intangible product with the effect of digital music. Music was distributed with records, cassettes and CDs before the digitalization. The new media which was under the effect of digitalization changed also the marketing mix. Producing, distributing, pricing and promoting of music products had a deep change in the new media era. This paper explores the marketing of music products in the new media age. The study focusses on QR code as tool of mobile and digital media and how it works in the marketing of products and services. In the first part of the paper there is a conceptual explanation of QR code and its advantages in marketing. In the second part, there is a research for applications of using QR code in marketing of music. How did music industry mobilize music and how did digital music promoted by QR code. What the advantages and disadvantages are and how can this effect the structure of music marketing in the terms of digitalization.

**Chang-Yun Lin**

Professor, National Chung Hsing University, Taiwan

## **Data-Driven Multistratum Designs with the Generalized Bayesian D-D Criterion for Highly Uncertain Models**

Multistratum designs have gained much attention recently. Most criteria, such as the D criterion, select multistratum designs based on a given model that is assumed to be true by the experimenters. However, when the true model is highly uncertain, the model used for selecting the optimal design can be seriously misspecified. If this is the case, then the selected multistratum design will be not efficient for fitting the true model. To deal with the problem of high uncertain models, we propose the generalized Bayesian D-D (GBDD) criterion, which selects multistratum designs based on the experimental data. Under the framework of multistratum structures, we develop theorems and formula that are used for conducting Bayesian analysis and extracting information about the true model from the data to reduce model uncertainty. The GBDD criterion is easy and flexible in use. We provide several examples to demonstrate how to construct the GBDD-optimal split-plot, strip-plot, and staggered-level designs. By comparing with the D-optimal designs and one-stage generalized Bayesian D-optimal designs, we show that the GBDD-optimal designs have higher efficiency on fitting the true models. The extensions of the GBDD criterion for more complicated cases, such as more than two stages of experiments and more than one class of potential terms, are also developed.

**Haowen Liu**

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**Peihua Fan**

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&

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## **A Study on the Relationship among Subjective Well-being, Organizational Citizenship Behavior and Resignation of the Millennial Generation of Workers**

In the analysis of the turnover rate of the company in 2014, it was pointed out that the average turnover rate of manufacturing employees in China ranks first in the turnover rate of employees in all industries, among which the resigned employees are mainly the millennial generations of workers. Different from the older generation of workers, the Millennials concentrated more on their subjective well-being, and based on gender differences, the Millennials also exhibit different organizational citizenship behaviors at work.

This paper takes Mobley's Intermediate Linkages Model and Steers & Mowday's Voluntary Turnover Model as the theoretical basis, combined with questionnaire survey and statistical methods such as mediating effects analysis, regression analysis etc., to study the relationship between subjective well-being, organizational citizenship behavior and turnover behavior of the millennial generation of workers. At the same time, based on gender differences, the dimension of subjective well-being is studied.

The main conclusions of this study are: subjective well-being has a positive effect on workers' OCB and resignation behavior. OCB acts as an intermediary between subjective well-being and resignation. And based on gender differences, the subjective well-being has different dimensions. This study effectively expands the study of the outcome variables of subjective well-being and gives enterprises management incentives based on gender differences.

**Pei-Wan Liu**

PhD Student, National Changhua University of Education, Taiwan  
&

**Erh-Tsung Chin**

Associate Professor, National Changhua University of Education, Taiwan

## **How Taiwanese Junior High School Mathematics Teachers Learn Inquiry-Based Teaching via a Teacher Professional Learning Community**

Inquiry-based learning [IBL] is one of the main streams of the contemporary education, as science, technology and inquiry are considered as the three crucial skills in the 21st century (NRC, 2010). Although inquiry-based teaching [IBT] has been the trend of science and mathematics education and research in Taiwan (Yang & Tuan, 2015), the time control of teaching, the load of lesson preparation, and the students' performance on exams are the major difficulties and pressures for teachers to conduct IBT (Tseng, Tuan & Chin, 2011). This is a case study of how two junior high school mathematics teachers learn IBT with the support of a teacher professional learning community [PLC]. The teacher PLC, consisting of in-service, pre-service teachers, and mathematics educators, was formed based on the theory of co-learning, and had run once every two weeks for two years. The regular PLC meetings include studying literature for helping the community members develop theoretical background of IBL and IBT, and observing and discussing the members' teaching practice for supporting them to implement theory into practice. By means of collecting case teachers' IBL activity designs, students' worksheets, teachers' reflection diaries, classroom teaching records, and student interviews, the researchers apply grounded theory to analysing and constructing the two case teachers' strategies and models for learning IBT, and their corresponding teaching knowledge for IBT.

The research results show that, by means of the support of the teacher PLC under the co-learning relationship, the two case teachers developed slightly different models for learning IBT. They also showed some corresponding teaching knowledge for IBT, such as setting proper contexts of inquiry problems and the following guidance, understanding students' prior knowledge and hypothetical learning trajectories, and creating and arranging a better environment for IBL. It might be suggested that, before putting IBT into practice, literature review might help the IBT beginner grasp the possible problems and solutions. While implementing IBT in the classroom, the support from a teacher PLC plays a crucial role for the teachers to continuously revise their teaching strategies for making IBL successfully happened in students' mathematics learning.

**Alexander Lubis**

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**Constantinos Alexiou**

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&

**Joseph Nellis**

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## **Monetary Policy and Foreign Exchange Intervention in an Emerging Market: The Case of Indonesia**

Foreign exchange rate (FX) intervention has regained wide attention since the global financial crisis, particularly in emerging markets. The massive volatility of capital flows, coming in the wake of unconventional monetary policy in advanced countries, has provided challenges for policymakers, who must now attempt to restrain the capital flows and prevent them from aggravating the already heavy pressure on the exchange rate and consequent inflation, and mitigate the risk that protracted periods of easy financing conditions will threaten the financial stability. Many emerging market economies depend on FX intervention to tackle this volatility.

Despite the implementation of, and a host of pertinent studies on, FX intervention, the findings in this area are still inconclusive. In addition, the study of FX intervention in emerging countries is still inadequate, due to the unavailability of a dataset. It is essential to put FX intervention within the framework of the central bank. However, it is still unclear whether central banks should use interest rate policy or combine this with FX intervention to achieve their targets.

In this paper, we explore the benefits of FX intervention as an instrument in an emerging market that implements an inflation-targeting framework. We examine this issue by building a Dynamic Stochastic General Equilibrium (DSGE) model with a sticky price à la Calvo (1983). We incorporate in our model the risk appetite of the investor as a shock to the economy. We then estimate the model using data from Indonesia, one of the emerging market economies that have been affected by the capital flow volatility. During the episode of surging capital inflows in the aftermath of quantitative easing in the advanced economies, the exchange rate in Indonesia appreciated strongly. The interest rate was decreased. Following the Federal Reserve's announcement that it would begin tapering its quantitative measures, the exchange rate came under depreciation pressures. This pressure, combined with the increase in inflation, forced the central bank of Indonesia to increase the interest rate. During this period, FX intervention was used to complement the interest rate and maintain stability (Warjiyo, 2014). As the biggest economy in



South East Asia, Indonesia will provide useful insight into how FX intervention is utilised to stabilise the economy. Moreover, we examine the impact of three different policies: an interest rate policy aimed at stabilising inflation and output, an interest rate policy aimed at stabilising inflation, output and the exchange rate, and finally, interest rate and FX intervention used in an attempt to stabilise inflation, output and the exchange rate.

This paper makes three contributions. Firstly, it provides empirical estimations of FX intervention based on the DSGE model in an emerging market, which features households with limited financial access. Secondly, the model demonstrates the impact on domestic macroeconomic stability of a change in foreign investors' risk appetite. Thirdly, we prove that FX intervention can be utilised by policymakers to stabilise an economy during a period of capital flow shocks.

**Wei-ming Luh**

Professor, National Cheng Kung University, Taiwan

&

**Jiin-huang Guo**

Professor, National Pingtung University, Taiwan

### **Sample Size Calculation with Cost Constraints for Testing the Superiority/Non-inferiority and the Equivalence of Two Poisson Means**

The Poisson distribution is probably the most popular model for describing the number of rare events, for example, the breakdown of a machine in the engineering field or the onset of a disease in the medical setting. However, for testing the superiority/non-inferiority and equivalence of two Poisson means, the studies for sample size planning and power analysis are very limited. Most of the studies focus on the case of testing equality rather than testing equivalence. Thus, there are two purposes for the present study. When considering the cost constraint and based on Whitworth (1901) and Maguire, Pearson and Wynn's (1952) methods, the present study aims to discuss the sample size calculation on the basis of the incidence rate for testing superiority/non-inferiority and equivalence of two Poisson means, respectively. Under cost constraints, the second purpose of the present study is to develop an optimal sample size allocation ratio such that the total sampling cost is minimal or the statistical power is maximal for a given significance level. To evaluate the performance of the proposed methods, we derived the test statistics, calculated the sample sizes needed and the corresponding total cost, and then the resulting Type I error rates and the statistical power were evaluated in the simulation study. The simulated results show that the proposed methods are valid and economic.

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&

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**Problem Solving in Mathematics:  
Use of Teaching and Learning Theories versus the  
Psychology of Teaching and Learning Mathematics**

Why problems solving (in general and in Mathematics in particular) is a ..problem to many people? Does it lie in the teaching and learning situation? The teaching and learning (T & L) of Mathematics has puzzled many researchers, psychologists, educationists and Mathematics educators for decades. If it is accepted that learners have to be taught how to solve problems in Mathematics, then the teaching and learning theory used has to be the appropriate one that fits with Mathematics as well as the context that Mathematics is taught. The assumption though is that the teacher knows the learners and what the learners know and continues with the imparting of new knowledge that is assumed to be connected to the previous knowledge. These two assumptions in the end become the reasons that so many learners fail or go as far as to hate Mathematics. Such perceptions start from an early stage of development where children begin to see Mathematics as 'cold and abstract' or 'hot and abstract (the aesthetic and utilitarian aspect of Mathematics). Applying existing T & L theories (e.g. Behaviourism, Cognitivism, Constructivism), although they all make a contribution to the education, somehow they fall short, especially when it comes to Mathematics. The reason could be because such theories are not designed for the learning of Mathematics but learning in general. However, Richard Skemp back in the late seventies introduced the idea of the psychology of teaching and learning Mathematics which gave new life to Mathematics as it combined the general learning theories but also how people learn Mathematics. Using Skemp's ideas and including pragmatism, a new way of teaching problem solving in Mathematics is suggested, making use of existing learning theories in general and the psychology of teaching and learning Mathematics in particular. The paper concludes with a new model for the teaching and learning of Mathematics and problem solving from pre-school to higher education which could assist especially novice Mathematics teachers to improve the teaching and learning situation.

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**FinTech Influence on Payment System Transformation**

Thanks to penetration of information technologies in the different economic spheres financial market develops very quickly. Integration of IT and financial sector leads to huge transformation in finance and develops such phenomenon like FinTech. The most important issue is that even poor countries, with underdeveloped banking sector, can compete with well-developed states in some FinTech spheres. Nevertheless the main Fintech hubs are situated in some Asian countries, USA and UK. The FinTech market is very competitive. It attracts more and more investments. Countries that understand the trend of FinTech future will have a lot of benefits from the market development. At the same time there are some risks as for consumers so traditional financial institutions, that will be described in the paper.

One of the most popular sphere in FinTech is payments. The paper will be dedicated to payment system transformation. Today there are a lot of modern methods of payment and different payment applications. For example, in EU new principals of payments and rules are based on PSD2. At the same time M-Pesa is very popular in Africa. In China one of the important role in payment transactions belong to messengers. It is important to underline new trends, methods and directions of payments system transformation in the framework of FinTech development.

Next part of the work is concerning to cryptocurrency market development as a part of modern payment system. Operations with cryptocurrencies become more and more popular. At the same time there is no unified approach of their regulation. Some countries allow carrying out operations in cryptocurrencies and regulate such operations as financial assets or foreign currencies. Other countries try to forbid such operations. Belarus is the only country in the world that officially legalized cryptocurrencies and created a separate legal framework for this. On the base on the Belarusian experience some recommendations about market regulation and possible risks of operations with cryptocurrencies can be made. One more thing here is the national cryptocurrency adoption. Some central banks and monetary authorities officially announced such possibilities (Estonia, Sweden, Russia). The best examples and future perspectives in the sphere will be presented in the paper.

The last but not the least issue in the paper will be dedicated to competition/cooperation of traditional banking system and new participants in the sphere of payment transactions.

So, technologies in payment sector (including payments in cryptocurrencies) develop very quickly. To be in trends and understand new perspectives there is important to analyze the modern payment system transformation in the framework of new technologies implementing.

**Salmi Madjid**

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**The Treatment of Type 2 Diabetics through a Spatially-  
Centered Care Network: What Contributions?  
Case of DIABIR**

A health care system faces a number of limitations which, all of them, can make the organization of its distribution of care, at a given moment, its inoperative evolution. Indeed, the traditional organizational patterns on which this distribution of care is based can experience a shortness of breath since the care provided to patients has several characteristics: continuous care, global care, quality care ... To answer these legitimate quests of sick to be better informed and to benefit from a more humane, better coordinated and closer to their place of life, care networks can help to correct a number of difficulties inherent in the distribution of care through schemas classics.

**Stavroula Malla**

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&

**Derek Brewin**

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## **Biotechnology, Crop R&D and Public Policy**

The agriculture sector around the world faces some major challenges regarding food security; sustainably balance between future supply and demand, at a time of constrained research budgets, increasing pressures from population growth, changing consumption patterns and dietary preferences, post-harvest losses, climate change, loss in ecosystems biodiversity, and demands for the use of biomass to provide additional renewables (EASAC 2013). Alston and Pardey (2009) attribute the global productivity slow down to underinvestment in certain types of productivity enhancing agricultural R&D. It is vital the policies and regulations that are in place be assessed to insure further growth in the sector. There is compelling evidence that investment in agricultural research, biotechnology in particular, could contribute to sustainable development goals with benefits to farmers, consumers, the environment and the economy. However, policies and regulations must be designed to foster the investment needed.

The goal of this study is to develop a broader understanding of how agricultural research, related regulations, policies, and key industry trends have changed overtime in Canada, and to consider how these changes affect the optimal public innovation policy for the future. Specifically, the objective of the paper is to provide a critical assessment of the biotech canola industry; and to compare it to other sectors/crops in Canada. Current opportunities and challenges in crop research will be assessed. Furthermore, the study will assess the evolution of research policies over time, examine whether there is a government role in today's crop research, and, if so, what form should it take.

The paper includes an assessment of a number of pertinent issues facing the biotech and research industry, from industry, environment and product development strategies to IPRs (intellectual property rights) and regulatory frameworks. Contrasting the experience in different crops also provides some valuable quantitative and qualitative information regarding the effects of privatization and innovation policies, as well as could facilitates a discussion of the appropriate roles for public and private sector agencies in the development and regulation of crop innovations in other countries.

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**Samuel Nana Yaw Simpson**

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&

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## **The Effect of Ethics Education Interventions on Ethical Attitudes of Professional Accountants in Ghana**

The study investigates the extent to which ethics education interventions (EEI) significantly and positively influence ethical attitudes of accountants (EAA). It also investigates the effects of other factors such as age, gender, experience, professional qualification, position or rank in organisations and sectors where the accountants work on ethical attitude. The study employs a cross sectional survey to collect data from 340 professional accountants in all sectors of the Ghanaian economy. The study uses OLS estimation to test a hypothesized relationship between EAA and EEI. The results show a positive association between ethics related courses (ERC), method of teaching ethics (MTE), method of assessing ethics (MAE), method of ethics intervention (MEI), level of ethics intervention (LEI) and EEI though not significant. Also, the effect of other factors such as: age, professional qualification and sector are positively associated with EEI but not significant. Furthermore, gender and position or rank of accountants within organisations are negatively associated with EEI though not significant. From the study, experience seems to be the key factor that positively and significantly influences ethical attitudes of accountants in Ghana.

The study recommends that academic and professional institutions must consider the use of experienced practitioners as resource persons in their teaching and training programmes as a means of shaping the ethical attitudes of students and less experienced practitioners. Additionally, there is the need to encourage the training and education of more women in the accounting profession as females are more likely to exhibit negative attitudes towards unethical practices. There is the need for the profession to continuously educate their members to pursue the interest of the wider society rather than personal interest. Also, experienced faculties must be encouraged to share their experiences with young students in training. There is the need for mentorship programmes within the academic and professional environments where experienced members adopt younger ones as mentees in the quest to strengthen ethical attitudes of all members of the profession in Ghana for the benefit of society. The paper adds to



existing literature that focus on ethics interventions in accounting education from a developing country context. The study draws attention to the relationship among ethics interventions, demographic factors and ethical attitudes of professional accountants.

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&

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### **The Study of Vee Map Tactics Integrated into Mathematics Teaching and its Influence on the Eight Graders' Mathematical Proficiencies**

The study is an action research conducted by a researcher and a teacher, aiming at investigating the progress of how the teacher integrates Vee map tactics (Afamasaga-Fuata'i, 2004) into mathematics teaching and the performance of high, medium and low achievers' mathematical proficiencies under the Vee map tactics integrated teaching.

The research subjects are twenty five eighth grade students of the same class, including twelve boys and thirteen girls, while eight students are purposively selected as the main observing subjects. There are two main stages of the study. The first is to develop an appropriate Vee map tactics for the students' learning. During this stage, two cycles of action research of plan, action, reflection and modification are conducted by means of collecting and analysing the students' Vee maps, teacher's teaching diary, researcher's classroom observation records, and students' interviews. In the second stage, modified Vee map tactics is applied in the teaching, and students' performance of mathematical proficiencies is examined.

The research results show that the key point of modifying the Vee map tactics should be whether the students could grasp the essence of the Vee map and apply it easily, in order to help them record the process of constructing new knowledge effectively and then reach the learning goals meaningfully. Besides, by means of the Vee maps drawn by the students, the processes and methods of students' thinking while they are solving a problem are revealed clearly. No matter they are high, medium or low achievers, all of them could reveal conceptual understanding, procedural fluency and adaptive reasoning. Especially the low achievers show productive disposition through actively consulting and discussing with the teacher and peers. To sum up, the Vee map tactics developed in the study might be helpful for the traditional expository, or even didactic, mathematics teaching and the students' development of mathematical proficiencies.

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&

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## **Open Innovation: A New Source of Business Competitiveness**

Several experiences in the world, show the development of innovative strategies in the field of innovation, in its various forms, which consist in the establishment of a policy of strengthening individual and collective initiatives, by setting up new models. support for innovation, such as the open innovation model. In fact, open innovation tends to strengthen inter-company relations, and therefore, the increase of information and co-operative exchanges between the company and its partners.

The objective of this work is to highlight the issues related to open innovation, by structuring networked businesses around innovation (BCG report and CMI 2008), and the opportunities offered by the latter for companies. the opportunities that accompany this new vision, which according to (CHESBROUCH, H 2003), is no longer to be content with the internal resources of the company, but rather, to rely on the innovation capacity of multiple parties external stakeholders.

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&

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## **Performance of Life Insurance Companies and Economic Growth in Botswana: A Supply-Leading Hypothesis**

The insurance industry is a big part of Botswana's financial sector and plays a vital role to the country's economy. This is achieved through the maintenance of economic stability using risk-mitigation and long-term savings. The industry has seen tremendous growth over the past 30 years with an increase in the number of insurance companies and their subsequent profits. This is reflected in the National Development Plan (NDP) 8 and 9. Success of the insurance industry generally feeds into the financial system culminating in the growth of the economy. It is therefore useful for policy makers to identify key performance indicators of insurance companies to create an enabling environment for their success. Whilst the relationship between financial development and economic growth has been studied over the years, there has not been consensus about the direction of the relationship between financial development and economic growth. Authors have argued on whether the causal relationship is supply leading, demand following or non-existent. In this study we attempt to define the causal relationship of Botswana's insurance industry. That is, we try to find out if life insurance performance leads to economic growth or vice versa. We test for co-integration between a vector of insurance performance variables and gross domestic product using the auto-regressive distributed lag (ARDL) framework and the granger causality test.

**Ampalavanar Nanthakumar**

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## **A Comparison of Hierarchical and Vine Copulas**

In this paper, we compare the performance of a hierarchical copula with a Vine Copula when the actual data has three dimensions.

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&

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## **The Impact of Frequency and Spacing of Brand-Generated Content on the Dynamics of Consumer Interaction on Brands' Facebook Pages**

This study examines the influence of frequency and spacing of brand-generated content on the dynamics of consumer interaction on social media. Dynamics of consumer interaction was operationalized in two ways: as the level of interaction and the growth rate of interaction of a post. Additionally, the moderating role of sentiment on the relationship between the frequency and the level of interaction was examined. Also, this paper investigated the role of posting and spacing between messages on the number of brand followers. Two data sets were collected via *Facebook's API* consisting of 6,471 and 932 brand posts respectively. Results showed that frequency of brand-generated content and the level of consumer interaction has an inverted u-shape relationship and that the level of consumer interaction is positively influenced by the time period (or space) between the posts. Furthermore, findings of this study suggest that posting on social media (higher audience reach specifically) is positively associated with unfollowing by followers and that the growth rate of interaction of the post depends on the rate of new message generation by the same brand. Based on these findings, marketing managers are advised to employ a more moderate posting behavior in terms of posting frequency in order to maximize consumer interaction.

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&

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### **Impact of Workplace Ostracism on Voice Behaviour: A Mediated Moderated Model**

Employee voice is a constructive and change oriented communication planned to improve a situation. Drawing on Conservation of Resources Theory (CRT), our study investigates the direct influence of workplace ostracism on voice behavior. Moreover, study also examines the mediating impact of energy in the relationship between ostracism and voice behavior and the moderating impact of incivility between energy and voice behavior. Data was collected in three wave time covering a 2-month time period at regular intervals of three weeks from public sector employees and their immediate supervisors. By employing PROCESS macro by Hayes on actual sample of 300 employees and 19 supervisors belonging to government sector, strong empirical support has been established for all the direct and indirect hypothesized relationships. The finding of the study adds to the improved understanding of one of the most emerging construct, namely, voice behavior. Theoretical and practical implications alongside recommendations for further empirical research on voice behavior have also been given.

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**Iddrisu Awudu**

Quinnipiac University, USA, David Boison, Quinnipiac University, USA

&

**Yan Jin**

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### **Optimizing the Scheduling of Vessels Berthing: A Case Study of Tema Port in Ghana**

Trade and globalization have resulted in a steady growth after WWII, but growth has become more explosive in the last half a century where it grew 10 folds (1964-2014) more than doubling in the last 20 years (1994-2014) (Ortiz-Ospina et.al. 2018.) Nations gain from trade in a global environment that foster specialization and increase competitive advantage. Even more, not only has trade grown immensely during the last half a century, but it also has grown more than proportional to the GDP. In the world, trade has gone from being 10% to be 25 % of the world's GDP in the last 50 years and from 15% to 25% of the world's GDP in the last 20 years (Ortiz-Ospina et.al. 2018.) As more of this global trade is done through maritime ways, the importance of ports and the efficient use of their resources has grown correspondingly. Developing countries find bigger challenges in the development of these expensive facilities that are the ports and so they feel more challenged to making an efficient use of these resources. In the case of Ghana, the Tema port has been the center of the government's efforts and investment, being the main trade door for this country with the second highest trade in Africa. In this study, we summarize achievements obtained by modeling the optimization and simulation of vessels berthing and move to the next step, the scheduling of vessels berthing in the case of the Tema Port, Ghana.



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## **Comparing Different Methodologies in Polynomial Data Fitting**

The standard linear regression model can be written as  $Y=X\beta+\varepsilon$  with uncorrelated zero mean and homoscedastic errors. Here  $X$  is a full rank  $n \times p$  matrix containing the explanatory variables and the response vector  $y$  is  $n \times 1$  consisting of the observed data. The Ordinary Least Squared (OLS) estimators are given by  $\widehat{\beta}_L = (X'X)^{-1}X'y$  and the Gauss-Markov Theorem states that  $\widehat{\beta}_L$  is the best linear unbiased estimator. However, the OLS solutions require that  $(X'X)^{-1}$  be accurately computed. A given set of data may suggest that a polynomial best represents the general trend of the data. If we try to fit a polynomial of too high a degree to a data set, containing noise, using OLS, then  $(X'X)^{-1}$  will be numerically difficult to calculate and can lead to very unstable solutions. This paper will compare the performance of the recent mixture estimators of Jensen, D.R. and Ramirez, D.E. (2018) with the performance of using orthogonal polynomials in the design matrix to 'control' the complexity of the model and to prevent the polynomial from fitting the noise in the data. The surrogate estimators of Jensen, D.R. and Ramirez, D.E. (2008) perturb the singular values of  $X \rightarrow X_k$  by the rule  $\sigma_i \rightarrow \sqrt{(\sigma_i^2 + k)}$ , whereas the new mixing procedure of Jensen and Ramirez perturbs the eigenvalues of  $X'X$  towards a target value, so that the small eigenvalues are increased and the large eigenvalues are decreased. The orthogonal polynomials considered are Chebyshev and those constructed by the Gram Schmidt process using the inner product  $\langle p, q \rangle = \sum p(x_i)q(x_i)$ . The paper will use backward reduction, starting with a high order polynomial and using a t-test to reduce the model in a stepwise manner, which will best capture the underlying function.

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## **Socio-Cultural Factors, that Significantly Influence the Perception, Behaviour, Acceptance and Consequent Uptake of Technology**

The rapid uptake of mobile devices globally, propelled interest in opportunities through which businesses can reach customers via mobile. However, the differing pattern of m-Commerce adoption in developed versus developing economies; rapid growth in mobile telephony uptake; and potential for adoption of m-Commerce in developing economies, necessitate an understanding of the unique factors that can influence m-Commerce adoption within developing economies. As part of a paper series, this paper focuses on such unique, socio-cultural factors, though less researched, because they can significantly influence the perception, behaviour, acceptance and consequent uptake of technology. Three socio-cultural factors that are unique to developing countries e.g. Nigeria – personal relationship, ostentatious culture and multi-SIM culture are discussed. The paper also highlights unique strategies being adopted by businesses in Nigeria in order to either take advantage of factors that are facilitators, or address those that are barriers. Businesses seeking to operate in cultures similar to the Nigerian context can benefit from the findings of this research, as this can significantly contribute towards enhancing their adoption of m-Commerce, and by extension, delivering benefits to their business.

**George Pantelopoulos**

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## **A Redux of Monetary Mechanics in Currency Systems**

Since the Global Financial Crisis, fierce austerity measures have been pursued by many Eurozone members, which have proven to be self-defeating. There are a number of striking similarities between current socioeconomic tensions and the interwar years, with comparisons widely commented upon. In the aftermath of the First World War, a renewed impetus was put forward to restore gold convertibility. With the gold 'exchange' standard introduced, it was thought that a new world order had been established. Nevertheless, significant disequilibria with respect to holdings of gold eventuated, resulting in the system collapsing.

The purpose of this article is to draw a distinction between the two currency systems as maintained during the gold exchange standard and currently within the Eurozone. Both monetary regimes are able to be characterised by endogenous money, with central banks implementing open market operations as part of liquidity management. Moreover, both can be classified as 'overdraft' systems. Under the gold exchange standard, domestic commercial banks were permitted to take advances from national central banks (NCBs) via the discount window. In the Eurozone, under TARGET2 – the intraday payment system that handles all intra-union capital flows – commercial banks are able to incur overdrafts, with NCBs increasing their liabilities to the European Central Bank (ECB).

However, it is vital to highlight a number of disparities. A central premise is that under the gold exchange standard, a number of central banks were shackled by a series of involuntary fetters. On the other hand, as we will argue, the ECB has effectively ensured the smooth operation of TARGET2 in most instances. In contradiction to others who claim that TARGET2 inequities are the result of current account developments, we portray TARGET2 balances as a proxy for both market confidence and political stability in individual member states. That being said, we argue that the TARGET2 system is by far superior to arrangements which prevailed within the gold exchange standard.

**Augustus Panton**

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## **Leaning Against the Wind via Finance-Neutral Output Gaps: Inflation Targeting and Financial Stability in an Open Economy**

It has long been argued that a monetary policy regime that is narrowly focused on near-term price stability does not necessarily guarantee long-term financial and macroeconomic stability. In the wake of the global financial crisis (GFC) and the ensuing Great Recession, the debate on the role of central banks in sustaining financial stability has intensified, with a strong reawakening of the view that monetary policy must pre-emptively *lean against the wind* (LAW) of asset price bubbles—tighten the policy stance more than would be conventionally required, to prevent incipient asset price bubbles from becoming severe or bursting. In examining the use of finance-neutral output gaps as an approach to following the concept of LAW, this paper departs from the existing literature in a non-trivial way. Instead of restricting financial stability risks to imbalances only in the domestic financial system, a further step is taken by including external indicators of financial imbalances alongside domestic indicators. By doing so, the fact that domestic financial stability risks are not only internally generated but could be contagiously transmitted from abroad via liberalized financial markets is recognized. To achieve this, the paper employs a Bayesian dynamic factor model (DFM) in which distinctions are made between domestic and global (external) business and financial cycles, with the output gap then decomposed into its domestic and external finance-neutral components. Incorporating the open-economy finance-neutral output gaps into a Taylor-type monetary policy framework, counterfactual policy simulations are performed aimed at exploring what the policy signals during the years leading to the GFC would have been had central banks followed the LAW concept. The framework is calibrated to Australian and G-7 data to ensure comparison with existing evidence in the literature.

**Jose Carlos Pinho**

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## **The Effect of Entrepreneurship Capital Dimensions on the Creative Firm's Success: A fsQCA Approach**

This study examines which forms of Entrepreneurship Capital (cultural, social, human, financial and built) managers from creative industries perceive as having a substantive effect on firm's success (or performance).

This study focusses in this particular industry, the creative industry, which can be considered one of the fastest growing industries and as entry barriers and initial investment are still relatively low. This is much in line with the professional service firms examined by Stringfellow and Shaw (2009).

In terms of methodology, this study conducts Structural Equation Modeling (SEM) and fuzzy-set Qualitative Comparative Analysis (fsQCA) to analyze data. These data was collected through a structured online questionnaire to creative industry managers.

In terms of data analysis, the best solution found by fsQCA combines three forms of capital, namely: human, financial and built capital, which leads to firm's success (or performance). The only relationship that was not supported by using conventional methods based on OLS estimates (Smart-PLS) was the social capital-firm's success relationship. Yet, when social capital is combined with other causal recipes, it leads to firm's success. Specifically, results indicate that the different forms of Entrepreneurship Capital (EC) should be viewed in combination and not in an isolated form.

In terms of limitations, assuming that different forms of EC are interchangeable, dynamic and constant, thereby a longitudinal research design should capture these dynamic processes.

In terms of originality, this study advances knowledge in understanding how EC sub-dimensions lead to firm's success. We confronted the results obtained by Smart-PLS and fsQCA and found that each component of EC is not by itself necessary to achieve high firm's success.

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## **A Conceptual Framework to Investigate the Relation between Socio-Cultural, Geographical and Financial Factors on Tourist's Overall Satisfaction of Township Tours in the Western Cape, South Africa**

Consumers are no longer satisfied with just the physical attributes of a service or product, they are placing greater value on the memorable experience attached to an offering. Services are characterised by intangibility, inseparability, lack of ownership and perishability, all of which make creating value for the customer increasingly difficult. Service providers need to employ experience management in order to create a positive customer experience, which is a driver of customer satisfaction.

There has been a general growth in the tourism industry worldwide, while South Africa in particular has become known as a premier holiday destination. The experience economy allows memorable experiences to be created for consumers. This is apparent in the tourism industry as unique offerings are required for the various market segments. The tourism industry is a valuable source of income for South Africa's economy and tourist attractions such as township tours offered in the Western Cape comprise of many elements to provide a unique and authentic experience.

This study investigates the relation between socio-cultural, geographical and financial factors and tourists overall satisfaction of township tours in the Western Cape, SA, by making use of the experience model to determine how certain variables effect the tourists experience. Furthermore, the disconfirmation and expectancy value theories are used to explain experience as a driver of satisfaction. The above mentioned model and theories form the bases for the proposed theoretical framework of the study. The study investigates and evaluates the relation between the seven independent variables which are grouped into three categories. Firstly, socio-cultural factors, comprising of the variables authenticity, memorabilia and entertaining experience. Secondly, geographical factors, comprising of the variables safety and tour conditions and finally, financial factors, comprising of the variables of monetary value and flow of income. The dependent variable for this study is tourist's overall satisfaction with township tours in the Western Cape, SA.

The paper aims to make various contributions to the field of experience marketing in specifically the SA tourism industry. The paper discusses the theoretical conceptualisation of the various constructs, the proposed framework, methodology, the pilot study conducted and concludes with managerial implications and recommendations.

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**Economic Prosperity under Varieties of Capitalism 1970-2010**

In a study based on macro-economic data for 12 mature countries (i.e. fully industrialized states beyond their maximum relative employment in manufacturing) covering the years 1973-2008, their industrial development was analyzed with regard to outcome in terms of sectoral parameters and the resulting GDP per capita, employment and trade.

Manufacturing productivity was identified as a key indicator and specific driver for economic success. Following the achieved manufacturing productivity, three groups of states were identified. Their paths of development were put in relation with the politico-economic regimes of the analyzed states as described by models of capitalism. The match of these models with the identified streams of industrial development was tested. It was found that the varieties of capitalism (VoC) approach by Hall and Soskice (2001) provides a sound explanatory basis for macro-economic developments triggered by the manufacturing sector:

- Manufacturing requires incremental innovation, a path that is paved by coordinated market economies (CME) like Germany or Sweden.
- Due to their institutional structures, liberal market economies (LME) aim at disruptive innovation and put less effort into incremental innovation as required to achieve a high manufacturing productivity.

This notwithstanding, the VoC dichotomy was found to be incomprehensive since a number of coordinated market economies were found to be less successful in reaching a cutting-edge productivity. For this deviating third group, the strong role of the state in their national economies was identified as a very likely source of explanation, drawing from the model of Schmidt (2003). According to her, the state-led group is characterized by high direct influence of the state in terms of economic guidance and interference. This strong influence has kept the respective states from living up to their full potential in manufacturing and thus hampered economic success.

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&

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## **Understanding and Forecasting Wood Price Fluctuation? A Study Case in French Public Forest**

In the neoclassical approach of economics as Marshall (1890), equilibrium is defined by the intersection between the supply and demand functions. This is a simplifying approach and not adapted to the forest-wood sector. Partial dynamic equilibrium models such as the French Forest Sector Model under the acronym of FFSM (Caurla, 2014) better represent this sector, taking into account the long-term links between supply, demand, resource growth, foreign product competition and economic growth. Temporal variations in prices are addressed through price elasticities. These macroeconomic models, however, remain an approximate and limited description of forest-wood sector economy with a few variables.

In this paper, we propose to analyze the evolution of wood prices in France during the last decade (2009-2017) through variables inspired by the neo-Keynesian approach with the introduction of market imperfection, in particular the heterogeneity of the products, the international trade, currencies but also logging cost. The originality of the approach lies in the fact that we do not fix any assumptions *a priori* of the form of the relationships between all the variables. We proceeded in two stages: a selection of the explanatory variables of wood price among more than 80 variables of forest economics with a Random Forest model, then a creation of two types of temporal models: an autoregressive and a vector autoregressive model.

The preliminary results totally contradict the classic variables of the economy such as the impact of economic growth and supply on the wood market but only show a significant weight of the demand of the different sectors using wood. The case of oak price in French public forest, however, reacts differently according to the heterogeneity of products: a positive correlation has been found with the price of high quality products and negative correlation with the other products. We end by testing the ability of these empirical models to make short-term market forecasts to inform investment and management decision-making for all stakeholders.



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&

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## **Brand Architecture in the UK Fashion Industry: Impact on Brand Identity and Image in an Evolving Business**

The fashion industry is viewed as a complex business that is constantly evolving due to the nature of globalization, the emergence of new brands, competition, and the development of new channels that reach out to wider markets (McCormick *et al.*, 2014). Consequently, fashion brands in the UK are constantly seeking ways in which to differentiate themselves from the competition. Spry *et al* (2018) advance the view that a strong corporate brand can support organisations in the service industry, particularly in the higher education sector. Brand identity is the “unit of analysis” (Ugglä, 2006: 78) and the focus of this study. Balmer (2001) defines corporate branding as the process of framing an organisation’s identity, based on its culture, values, strategy, and tangible cues. Specifically, corporate brand identity relates to what the organization is actually seeking to be (Abratt and Kleyn, 2012). Thus corporate brand becomes “the interface between the organisation’s stakeholders and its identity” (Abratt and Kleyn, 2012: 1053) and a transition occurs from university identity to image (Kotler *et al*, 2009). Within the fashion industry, this highlights the complexity and challenges of managing multiple sub-brands within a corporate brand and there have been a number of calls for research in this area (Spry, 2014; Chapleo, 2015; Melewar and Nguyen, 2015).

More recently, scholars have been showing increasing interest in corporate brand identity and brand architecture with particular reference to higher education (Spry *et al.*, 2018) and international operational companies (Rodrigues *et al.*, 2017). However, brand architecture in the UK fashion industry has received limited attention, particularly with reference to fashion retailing, and existing studies are dated: since the last publication that was documented was in the early 2000s (See Burt and Sparks, 2002). This presents a unique opportunity for the research proposed; which will consider relationships between a corporate brand and sub-brand(s) within the UK fashion retailing industry. Responding to the identified gaps in the body of knowledge, this research will use a single revelatory case study approach (Yin, 2009). This is because little is known about brand architecture and its impact on brand identity and image in a fashion industry context. This will provide a unique insight into a corporate brand identity and related brand values. Consideration

will then be given to the development of an operational framework appropriate for developing a brand strategy in the UK fashion industry.

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&

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## **Efficiency of Production in an Industrially Backward Region: An Application of Two-Stage Network DEA**

This paper investigates the source of inefficiency in the production process, using plant-level data from the Annual Survey of Industries (ASI), for two sub-sectors in food processing: grain-milling and dairy for a less industrialized state in India, viz. Bihar. The import of the analysis comes from the fact that the state government had started out on a generous industrial incentive policy specifically directed at food processing, which the state was deemed to have a natural input advantage. In particular, grain milling and dairy seem to be the most promising sub-sectors for establishing primary and secondary processing units, in order to provide a much needed respite from overdependence on farm incomes. This is very important in a state like Bihar, where average agricultural landholdings are smaller than most other states in India, reducing scale efficiencies in agriculture. Food processing, with its strong input linkage with agriculture, comes with the promise of increasing agricultural incomes and generating additional employment for the state.

Despite the subsidies (particularly front-loaded capital subsidies, apart from interest subventions) from 2006 to 2011 (first policy cycle geared to jump-starting manufacturing units in food processing, Bihar saw a narrow undiversified growth in mostly rice-milling, which is a sub-component of grain-milling. That in itself would be less of a cause for concern had these units been profitable at the end of the first policy cycle. Our micro dataset, drawn from the population of all industries across all states from ASI, is for year 2012-13. Our methodology is to employ the state-of-the-art two-stage network DEA (NDEA) model developed by Kao and Huang (2008) to understand the drivers of performance of units in grain milling and dairy. The choice of these two sub-sectors is deliberate: grain-milling, primarily rice processing in Bihar, produces mostly primary processed product of unbroken rice, whereas dairy produces many secondary processing value-added items such as ice-cream, cheese, butter etc. apart from the primary processed output of homogenized pasteurized milk. We intend to contrast our findings between primary and secondary processing sub-sectors, as they face different challenges in achieving profitability. Our initial understanding, from a theoretical stand-point, was that marketing costs should be much higher in secondary processing than sub-sectors only engaging in primary processing. Our methodology

allows us to multiplicatively decompose the overall efficiency scores into pure technical efficiency and marketing efficiency. Interestingly, the overall low efficiency scores (relative other states and countries) is attributable to marketing inefficiency in both the sub-sectors. While it is understood that policy-induced entry of new manufacturing units will result in some inefficiency, the fact that marketing inefficiency mars profitability across sub-sectors is a novel finding, indicating deep-seated market and institutional failures that have resulted in the low industrial base for Bihar.

**Samuel Seaman**  
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**Gender BIAS in Professional Services**

**Jana Simakova**

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## **The Exchange Rate as a Determinant of the Development of Foreign Trade in the Food Industry**

The food industry is one of the major contributors to an economy. In the European Union (EU), it is ahead of other manufacturing sectors such as the automotive industry. The Eurostat data show that the share of production in the food industry on GDP has decreased in almost all EU member states since 2005. However, due to a counter-cyclical character of the industry this indicator usually rises in periods of economic slowdown or recession (years 2008 and 2009) and decreases along with economic boom. The importance of the FD industry is evident in the share of FD exports on total exports. Almost all EU member states show an increase of this indicator between 2005 and 2016. By inspection of the year-on-year changes of the share we can see that the largest changes usually occurred in 2008-2010, i.e. the years when the economies faced financial crisis and economic slowdown. The exports of the food industry in the EU have been increasing since 2009 to reach 110 billion EUR in 2017 while imports amounted to 75 billion EUR. More than 25% of exports were sold to non-EU countries while the rate of the extra-EU exports exceeded the rate of growth of the intra-EU exports in recent years. This fact assumes the exchange rate as one of the key determinants of its drivers.

Majority of previous studies of the effects of exchange rate changes on foreign trade have assumed to have symmetric effects on the trade balance or assumed its linear adjustment. In this paper, we distinguish between the depreciation and appreciation to show that the effects at the industry level can be asymmetrical in some branches of food industry for the bilateral trade. The aim of this paper is to evaluate the asymmetric effects of exchange rate on the one of the most important segment of the foreign trade – trade with food and beverages. For this purpose, we applied linear and non-linear auto-regressive distributed lag (ARDL) approach on the quarterly data for the period 1999-2017 for the selected EU countries. The results of the study shows, that exchange rate co-movement with partial trade balances is mostly proved by employment both applied approaches. However, the asymmetry cointegration approach, which introduces nonlinearity into the model specification, reveals a more significant impact of the exchange rate on commodity trade between than a more standard model that imposes symmetry. Furthermore, by distinguishing between the depreciation and appreciation showed that the effects at the industry level are in fact asymmetrical in most industries with their most important trading partners.

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## **Trade in Value Added: A Systematic Review**

Gross domestic product is a monetary measure of the market value of all the final goods and services produced by a country, however these final goods and services are usually not produced completely in a single country as raw materials are imported from other countries or manufacturing processes are outsourced to other countries. Policy makers require the real amount of production value, as it will provide them an insight of how much their country produces. Researches since 1985, have tried to analyse the real value of production of each country. This paper systematically reviews how researchers have quantified the value added process. We review the main methods of the value added processes; value chain, vertical integration, global community chain, global value chain, vertical specialisation and Trade in Value Added, Koopman method (2012). We found through Koopman method that the most renowned method Hummels, Yi and Ishii's (1999) vertical specialisation does not take into consideration movement of goods from one border to another as such it creates a double counting problem. This causes the goods to be revalued giving an impression that the country is producing more than it actually does. Hence, it is essential to remove the double calculation problem which Koopman method does. We have broken down the value added process after reviewing 110 articles, fifty-five articles were retrieved from Web of Science and SCOPUS, of which, twenty nine were common and another twenty-six are from countries or regional trade department working papers. Generally, this paper reviews all the methods used to measure value added process highlighting the problems faced and the best measure that can be used to analysis the real value of production in each country. We also highlight the importance of using a multi-regional input output database such as the World Input-Output Database (WIOD) and Organisation for Economic Co-operation and Development as it provides a symmetric product by product, country by country breakdown.

**Estelle Sommeiller**

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## **Employment & Poverty in Southern Europe: When Measurement Matters**

The standard measure of in-work poverty is the risk of poverty rate at work<sup>1</sup> published by Eurostat. According to this indicator, the working poor in Southern Europe have not recovered from the crisis of 2008. Spain, Italy and Portugal have rates ranging between 9% and 10% in 2007 compared to 11% - 13% in 2017. Greece is the only Southern European country where the rate of poverty at work has decreased over the period: from 14% in 2007 to 11% ten years later. The standard measure of poverty in the workplace, if not completed by other poverty measures, provides a very incomplete and unsatisfactory view of the overall picture. Using 2005-2015 EU-SILC microdata, this article aims to complete the measure of in-work poverty in several ways. First by considering poverty lines anchored in time, so that the poverty line considered is that of 2007.

Second by completing the sole measure of the poverty headcount by other dimensions of poverty as suggested by Amartya Sen: the degree of intensity of poverty (the distance between the disposable income of the working poor to the poverty line) and how unequal the working poor population may be. All measures being considered over time, before and after the Great Recession.

Third, the statistical population in Eurostat's standard indicator raises questions. Using the most frequent activity status, Eurostat considers a person as employed whenever s-he works (part-time or full-time) more than six months a year. If, in its standard indicator of poverty at work, Eurostat had delimited the scope of the population to persons working full-time throughout the year, then neither the intermittency of employment nor part-time work, and only the low level of wages would be the economic factor of in-work poverty. Such is not the case. Conversely, the Eurostat indicator does not make it possible to apprehend in-work poverty precisely where it is located, on the edge of un-employment and inactivity. The measures proposed here will do so.

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<sup>1</sup> In the total working-age population (18-64 years), the at-risk-of-poverty rate at work is the proportion of people in employment over half of the year whose disposable income per unit of consumption does not exceed the poverty line, which is set at 60% of national median income. Consumption units have been designed to consider the economies of scale achieved when several people share the same household. An adult living alone represents 1 consumption unit; a couple 1.5; a child over 14 represents 0.3 and a child under 14, 0.5.



**Codruta Simona Stoica**

Professor, Aurel Vlaicu University of Arad, Romania

## **Current Trends in the Approach of Evolution Equation**

The paper has the aim of showcasing the progress in recent years in the study of evolution equations. The approach is done by means of cocycles.

As the state space of the dynamical systems that describe processes from engineering, physics, biology is of infinite dimension, the study is more appropriate by means of associated operator families. The notion of skew-evolution cocycle arises naturally when considering the linearization along an invariant manifold of a dynamical system generated by a nonlinear differential equation. It generalizes the classic concepts of evolution operators and skew-product semiflows, and enables a unitary study in a non-uniform setting.

The aim of this research is to develop a framework that enables us to obtain characterizations in a unitary approach for the asymptotic behaviors of skew-evolution semiflows in Banach spaces. The classic techniques used to characterize asymptotic properties as stability, instability and dichotomy are generalized for the study of splitting and trichotomy.

Our main objective is to give characterizations for the above-mentioned notions and to establish connections between them. All results are underlined by examples and counterexamples.

**Stella Stylianou**

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## **Screening Designs under Model Uncertainty**

In experimental situations it is often anticipated that only few of the investigated variables will be important. Usually it is not known which of the variables will be the important ones, so it is not known which columns of the experimental design will be of further interest. Many designs have been proposed to be used for screening experiments and to identify the relevant variables. Edge designs is a new class of designs that allow a model-independent estimate of the set of relevant variables, thus providing more robustness than traditional designs. Here we present a method for generating edge designs having  $n-1$  edges,  $n \equiv 0 \pmod{4}$  from skew conference matrices of order  $n$ .

We provide an algorithm to construct the needed circulant matrices and use them to build new inequivalent skew Conference matrices. From these we generated new edge designs. An illustrative simulated example using the analysis of edge design is provided.

**Alexi Thompson**

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### **The Colombian Peso: Commodity Currency or Cocaine Currency?**

This paper investigates the determinants of the Colombian peso including commodities prices that represent a major portion of Colombia's export revenues including crude oil and coffee. While the underground economy is not explicitly included in the measure of GDP, the cocaine trade was a major source of revenue for Colombia, particularly during the 1980s and 1990s. Using quarterly cocaine prices from 1982 to 2007 published by the Office of National Drug Control Policy, this paper uses error correction methods to look at the relationship between cocaine prices and the peso/\$ nominal exchange rate. Cocaine prices are obtained from individuals arrested in the US for dealing the drug at various stages, from wholesale distributor to street level dealer. Wholesale distributor prices for cocaine are used as a proxy for the price of cocaine exported from Colombia. While several empirical papers have investigated commodity currencies, to the authors' knowledge, this is the first attempt to take into account the underground economy's relationship with an exchange rate. Results indicate cocaine prices affect the value of the Colombian peso which leads to some interesting policy implications.

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&

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### **How Do Pupils Manipulate Teaching Aids to Solve Problems? An Example of Solving Fraction Problems**

In Taiwan, we hope to cultivate our future citizens who are able to solve problems. How to effectively improve students' ability to solve problems by means of formal teaching has become a crucial issue in education reform globally. In the 12-year Basic Education Curricula of recent education reform in Taiwan, it emphasises students' ability of operation for enhancing their mathematical proficiencies. Therefore, in this study, we plan to investigate pupils' ability to solve mathematical problems by means of manipulating teaching. Firstly, we refer to the principles of problem solving proposed by Polya (1954) in his famous book "*How to Solve It*", in order to generalise the proper role of the teaching aid and how it can support students in solving fraction problems during the process of comprehending the problem, proposing solving strategies, conducting the solving plan, and reflecting feedback. Secondly, we select six fourth graders as our research subjects, while two of them are low achievers, another two middle achievers, the last two high achievers. By means of an on-line testing system, these six subjects' abilities of solving fraction problems are analysed. Then they are given appropriate teaching aids to help them solve fraction problems. The research results show that whether the pupils can effectively apply the teaching aids to solve fraction problems depends on their former experience of manipulating teaching aids, their ability to represent mathematical meaning by the teaching aids and communicate with others. The results might be able to provide some experimental evidence for teachers to apply teaching aids in their teaching for fostering the students' competence of problem solving.

**Nacasius Ujah**

Assistant Professor, South Dakota State University, USA

&

**Anna Sadovnikova**

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## **Managerial Talent, Corporate Social Responsibility, and Firm Performance**

For two decades, the critical role of corporate social responsibility (CSR) and the need to measure returns on CSR investments have been among the top priorities for practitioners and academics. The mainstream literature suggests that the effect of CSR on firm performance depends on the presence of other organizational resources. There were a number of studies published, arguing that firm marketing capabilities may play a complementary role and moderate the relationship between corporate CSR and firm performance.

Despite a large volume of research accumulated, the empirical findings paint a limited and inconsistent picture suggesting that sometimes marketing capabilities may moderate the relationship between CSR and firm performance and sometimes they seem to have no impact whatsoever (i.e. Hirunyawipada & Xiong 2018; Kemper et al 2013; Mishra & Modi 2016; Nguen & Oyotode 2015). In a separate stream of research, it was also argued that while the concept of marketing capability has received a considerable attention in marketing literature, most of extant research fail to identify its specific components (Morgan 2012).

This study complements the extant literature by offering a joint analysis of the CSR-financial performance and the CSR-market performance relationships and examining the role of marketing capability as a moderator in both relationships. Furthermore, it partitions the marketing capability effects into manager-specific (managerial ability) and firm-specific (marketing investments and firm knowledge base) components and examines their individual contributions to the CSR-firm performance relationships (Demerjian et al 2012; Dutta et al 1999, 2004).

To explore empirically the proposed relationships, we combined data from several well-established sources, like COMPUSTAT, USPTO, NBER and KLD databases. The obtained dataset covered 144 publicly-traded chemical companies observed from 2002-2013, totaling 1091 observations. We apply a system of simultaneous equations and the seemingly unrelated regression approach, to examine the relationships between the different aspects of firm marketing capability, CSR, and firm performance. First, we estimated the model using the aggregate measure of marketing capability. Then, we re-ran the model with the measures of managerial

ability, marketing investments and firm knowledge base, to examine their individual contributions.

The findings support the argument that marketing capability moderates the relationships between CSR and firm financial performance and the CSR and firm market performance, which is consistent with prior studies. When the individual components of the marketing capability are considered, the managerial ability becomes an important moderator in the CSR-firm financial performance relationship; but, it turns non-significant in the CSR-firm market performance relationship. Marketing investments and firm knowledge base are significant moderators in the CSR-market performance relationship, but have no impact on the CSR-firm financial performance link. Furthermore, marketing capability may inform firm CSR, which confirms the superior role of marketing capability in driving firm performance. However, this happens only, when managers have strong pro-environmental orientation. A series of robustness checks confirm the findings above. The study highlights the importance of CSR to firm performance and provides practical guidance to firms regarding the relative value of managerial talent and firm marketing resources in driving the CSR –firm performance relationship.

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&

**Thomas Reutterer**

Professor and Head of Institute, Vienna University of Economics and  
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## **From RFM to LSTM: How Machines Learn to Understand Customer History**

Probabilistic models have proven useful for customer lifetime prediction in non-contractual business settings since the RFM-based Pareto/NBD and the BG/NBD; but despite recent advances they have limitations. First, they assume rigid patterns in both the purchase and the dropout process; second, including covariates is cumbersome, and third, the model capacity often doesn't scale to the available data. But perhaps most importantly, RFM methods present a simplified, coarse view of future customer behavior, which isn't rich enough to allow for meaningful short and mid-term strategies to be executed.

We introduce a generic, flexible modeling approach based on recurrent neural networks using layers of Long Short-Term Memory units, or LSTM. The predictive performance of the model is demonstrated on a range of data sets, we show how it benefits further from incorporating time-varying and time-invariant covariates, and we highlight how the LSTM-based approach improves on advanced probability models by capturing seasonal patterns.

**Silvester van Koten**

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### **The Forward Premium in Electricity Markets: An Experimental Study**

In a seminal paper, Bessembinder and Lemmon (2002) predict that forward premia in electricity markets are determined by the statistical properties of demand. While an abundance of empirical studies have been employed to test the theory, the empirical evidence is mixed. A possible explanation is that some of the variables are fundamentally unobservable, leading to inconsistent estimates. This study employs economics experiments, designing a tightly controlled environment of an experimental laboratory, to control variables that are usually unobservable in field data. We test one of the main theoretical drivers for forward premia, the variance of demand. The specific hypothesis is that an increase in the variance of demand makes the forward premia more negative. The experimental data corroborate the theoretical predictions.



**Stefan Veldsman**

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## **Where to Look for the Zeros of a Polynomial**

One of the early joys of a first undergraduate course in ring theory (or abstract algebra), is the result that any monic polynomial over a ring with unity will always have a zero in the coefficient ring or in an extension thereof. This well-known result of Kronecker is usually shown by embedding the coefficient ring into the quotient ring of the polynomial ring over the ideal generated by the polynomial. As such, the elements are cosets which can also be written as polynomials of formal sums, all with degree less than the degree of the starting polynomial and the indeterminate is a root of the original polynomial. Products of such formal sums give powers of the indeterminate which must be reduced to the required degree by using a rule prescribed by the starting polynomial.

More than often, the beauty and significance of this process and result is lost on the students at this early stage of their training in algebra. This is mainly due to their discomfort of working with rings where the elements are cosets or formal sums or, as is the case for the complex numbers, using a symbol to stand in the place of the unknown square root of negative 1.

There is a more natural way to view this ring extension which requires a minimum number of tools; the only requirement is a knowledge of basic matrix theory. Most introductory modern algebra texts will refer to this only in the exercises (if at all) by considering one or two special cases.

In this talk this approach of extending a number system to a bigger system of matrices will be motivated and outlined. Of course, this approach using matrices, is not new in the sense that bits and pieces of the ideas involved have appeared in different contexts elsewhere. However, the simplicity and the minimal requirements of the method does warrant wider exposure. A further advantage of this approach is that many properties of the extension ring can be expressed in terms of well-known linear algebra concepts.

**Alen Veljan**

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## **Influence of Intra-and Inter-System Concentration on the pre-Regulated Setting of Interchange Fees within Cooperative Card Payment Networks**

This paper deals with motives and consequences of regulatory involvement in cooperative card payment networks across the European Union and United States. The aim is to draw a bridge between the theoretical framework of two-sided markets and observable industry characteristics. By consolidating a data set on intra- and inter- industry concentration in acquiring, issuing and card scheme markets a multivariate analysis of the determinants of interchange fees is enabled. Unlike previous studies, it departs from a pure theoretical view and empirically assesses the influence of concentration, rather than market externalities, in the setting of interchange fees. Findings allow for a preliminary assessment of the applicability of established theoretical models and policy intervention in card payment markets. Contrary to widespread belief, acquirer markets show to be highly (and more) concentrated than issuer markets which are characterised by a relative degree of concentration. Results show that concentration has a statistically significant influence on the setting of interchange fees in credit and debit card markets. Findings within this paper call for a more conservative regulatory involvement, as well as a review of utilised economic models incorporating empirical evidence.

**Peter Vranas**

Professor, University of Wisconsin-Madison, USA

## **Natural Deduction for Sentential Pure Imperative Logic**

I present a sound and complete natural deduction system for sentential pure imperative logic, in five steps. (1) Syntax: I introduce an *imperative formal language* by using the imperative operator '!'; e.g., if 'A' is a declarative sentence, '!A' ("let A be true") is an imperative sentence. (2) Semantics: I introduce *interpretations* of the imperative formal language, and (building on previous work) I define what it is for a declarative sentence to *sustain* a (declarative or imperative) sentence on an interpretation. (3) Semantic validity: I define an argument to be *semantically valid* exactly if, on every interpretation, every declarative sentence that sustains its premises also sustains its conclusion. (4) Syntactic validity: I define an argument to be *syntactically valid* exactly if its conclusion can be derived from its premises by applying certain "natural" replacement and inference rules that I introduce. (5) Soundness and completeness: I prove that semantic and syntactic validity coincide.

**Patrick Vyncke**

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## **Automatic, Heuristic and Systematic Information Processing and Decision Making: From a Dual to a Triune Typology of Marketing Communications Strategies**

Over the past two decades, traditional models of consumer information processing and decision making within classic economics and classic consumer psychology – both dealing with consumers as being rational and well-informed – have come under serious attack. In both fields a single model of consumer information processing and decision making has been replaced with a dual model.

Within the field of consumer psychology, the Elaboration Likelihood Model as developed by Richard Petty and John Cacioppo already in 1980, has gradually come to dominate the literature. This model posits that consumers use two different ways of processing marketing communications stimuli: the central route and the peripheral route. While persuasion via the central route is based on (more or less extensive, careful and thoughtful) cognitive information processing about the true merits of the product or brand attributes, persuasion via the peripheral route is more affective than cognitive and mainly based on the processing of likeable peripheral cues (like the use of music, humor, attractive models, animals, babies, celebrities, etc. within the advertisement). However, what exactly constitutes a ‘peripheral cue’ and how these cues work remains rather unclear. Some authors explain this in terms of a person's association with positive or negative cues in the stimulus, while others explain this in terms of consumers making a simple (heuristic) inference about the merits of the advocated position. However, it is clear these two peripheral mechanisms correspond with two very different ways of consumer information processing and decision making.

More recently, within the field of economics, behavioral economists like Daniel Kahneman (see e.g. *Thinking, Fast and Slow*, 2012), Richard Thaler (see e.g. *Nudge: Improving Decisions About Health, Wealth and Happiness*, 2009) – both winners of the Nobel Prize in Economics – and Dan Ariely (see e.g. *Predictably Irrational: The Hidden Forces That Shape Our Decisions*, 2010) have illustrated how consumers often rely on heuristics or rules of thumb in making decisions under uncertainty (i.e. in light of an unpredictable future or outcome, possessing only partial information, etc.), rather than rely on extensive and systematic information processing and deliberate, rational and logical decision making. Again, a dual model (this time, in terms of System 1 versus System 2, or heuristic versus systematic information processing and decision making) is put forward.

However, some authors (e.g. John Bargh, *Before You Know It: The Unconscious Reasons We Do What We Do*, 2018) not only differentiate between heuristic and systematic information processing and decision making, but also speak of automatic processes.

In this paper, the findings from more recent developments within the field of consumer psychology (especially dealing with 'evaluative conditioning' and 'emotionally competent stimuli') and within the field of behavioral economics (especially dealing with automatic versus heuristic decision making), are linked to develop a triune (instead of a dual) classification of consumer information processing and decision making, and therefore a triune model of corresponding prototypical marketing communications strategies. These strategies are illustrated using qualitative, semiotic analyses of both advertising campaigns and product package designs for a wide range of products.

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&

**Pankaj Aggarwal**

Professor, University of Toronto, Canada

## **To Trace is to Trust: From Product Traceability to Brand Trust**

As consumers become more conscious of and concerned with the ingredients that constitute their products and how their purchases can impact the environment, they are paying more attention to the origin of their products and the process by which these products are made. The present paper examines how merely labeling products as “traceable” to their origin can help brands establish their transparency and build trust between consumers and brands.

The concept of tracing products to their origin has gained traction over the last two decades (e.g., knowing where/how the product was made; van Rijswijk and Frewer, 2008). However, there is yet to be a consensus on exactly what product information should be provided through the act of traceability (Asioli et al., 2011). Although traceability can evoke thoughts of safety and quality to consumers (van Rijswijk et al., 2008), the ability to trace products does not necessarily provide consumers with actual safety information or the exact production process (Hobbs et al., 2005). Currently, there is little research in the marketing domain of how consumers react to traceability labels and how brands should make use of these labels to build relationships with consumers.

Individuals infer that their relationship with a partner is intimate and close when personal information is divulged (human-to-human interactions: Aron et al., 1997; Laurenceau et al., 1998; human-to-computer: Moon, 2013). Similarly, the presence of a traceability label signals the willingness of a brand to disclose information that is typically kept private, allowing consumers to infer that they may have a closer and more trusting relationship with the brand. Further, research on signaling has indicated that consumers infer low store price from price-matching policies (Srivastava and Lurie, 2001), and that consumers feel more confident about products when they know they can retrieve information about them from the Internet (Bhargave et al., 2016). We propose that in the presence of a traceable label, which gives consumers the option to retrieve information about production origin online, consumers would infer greater transparency of the production process, more positive qualities about the brand even if the traced information was not new information or was even slightly negative. Four experiments were conducted to test this predicted effect.

Experiment 1 tests how the traceability label, in the absence of actual production information, can affect quality perceptions of the brand. Further, it tests how a traceability label (which does not convey any ethical information) measures up against an ethical label like fair trade. This experiment used a 2 fair trade (no label vs. FT label) x 3 traceability (no label vs. label-only *without* traceable information vs. label *with* traceable information) between-subjects design, with a chocolate bar as the product. The brand was rated on its trustworthiness, honesty, transparency, and social responsibility. Participants in all treatment conditions reported significantly higher brand trust scores compared with the control (no label) condition,  $F(4, 201) = 10.50$ ,  $p < .001$ . The three label-only conditions were viewed as equally trustworthy compared with the condition with actual traceable information, suggesting that the mere presence of traceability is sufficient to evoke positive responses.

Experiment 2 tested whether type of information plays a role in the effect of traceability label with canned tuna. Experiment 2 used a 2 (traceable label present vs. absent) x 3 (control vs. additional personal info vs. additional neutral info). In the non-traceability conditions, all information (basic information about the product, additional personal information about the fisherman, or neutral production information) was presented without the traceability label, whereas in the traceability conditions, additional information appeared via a traceable function. The significant interaction,  $F(2, 282) = 5.01$ ,  $p < .01$ , suggests that the mere presence of a traceability label increased perceived trust and transparency compared with an absence of the label. The type of information did not matter, and the availability of actual production information did not increase trust.

Experiment 3 examines how providing traceable *negative* information affects brand-related trust for milk products. In the two (positive vs. negative) actual tracing conditions, participants were given information about positive or negative facts about the production process. There were significant differences in brand perceptions across the four conditions,  $F(3, 185) = 13.00$ ,  $p < .001$ . Participants in the control condition reported significantly lower trust scores compared with the tracing label condition and the positive-trace condition, with no significant differences between the tracing label condition and the positive-trace condition. This suggests participants infer positive production processes in the presence of a traceable label, even without factual evidence. Those in the negative-trace condition perceived the brand to be less trustworthy compared with those in the label and positive conditions. Importantly, the negative-trace condition did not significantly differ from the control condition, suggesting that providing negative information about production practices does not decrease trust compared with giving no information.

Experiment 4 investigates if traceability increases consumers' willingness to reciprocate by sharing their own information with the brand through increased brand trust. Participants were given a piece of chocolate to examine. Half of the participants were told that the brand offers product traceability and the other half were given no indication of traceability. Participants perceived the brand offering traceability as more trustworthy,  $F(1, 91) = 14.27, p < .01$ , and they were more willing to share their personal buying habits and demographics with the traceable brand,  $F(1, 91) = 7.18, p < .01$ . Level of trust mediated the relationship between presence of traceability and reciprocation (95% CI = [.17; .96]).

Overall, although the mere presence of traceability is not associated with any specific ethical practice, consumers infer that the willingness of a brand to potentially disclose private information must signal transparent and socially responsible practices, similar to actual ethical labels such as fair trade. Brands that employ traceability labels indicate to consumers that they can retrieve production information on-demand, and hence, the mere presence of the label is enough to evoke trust within consumers. Our research sheds insight into the consumer inference process and offers practical recommendations to brands on strengthening their relationships with their customers.



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## **The Wealth of Nations in Different Worlds and the Road to Smith**

A framework for understanding the wealth of nations in different environments is introduced. It uses the involved parties' capacities for violence to explain wealth and institutions in the Hobbesian world of war and the Coaseian world of bargain. The Smithian market emerges from the Coaseian world when the capacities are such that the parties can bargain as equals. It is rare without government. A market-augmenting government can be created and sustained with the capacities properly structured. The capacities themselves are determined in a Cournot game of duopolistic competition. The study sheds light into important theoretic and policy issues.

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## **Measuring Earnings Management for the Banking Industry**

Earnings management in the banking industry is popular. Although there exist several proxies for measuring earnings management, the reliability and validity of measurements were not well addressed in the literature. In this study, we assess the reliability and validity of the existing proxies by using confirmatory factor analysis (CFA) and structural equation modeling (SEM), coupled with theoretical consideration, based on a large dataset for the top 500 banks across 73 countries in the world. The results that the four proxies selected for earnings management are internally consistent and the relationships between earnings management and ownership concentration and market valuation for the banking industry are empirically confirmed have demonstrated reliability and criterion-related validity. We recommend that the four proxies selected be used together for accounting and finance empirical studies rather than individually to improve the measurement quality for earnings management. Then the relationships among earnings management and its antecedent and outcome variables can be investigated by using SEM.

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## **Does Foreign Import-Biased Growth Need to Hurt Advanced Economies? More on International Effects of Growth**

The existing literature suggests that the economic growth pattern of emerging economies typically characterizes a transition from export-biased growth to import-biased growth, and once the transition begins, the deteriorated terms of trade will hurt rather than help advanced economies (e.g., Samuelson, 2004). Despite the validity of the theory, the pertinent evidence remains questionable, as indicated in this article with the panel data of 43 nations in the 1982-2013 period. To explain the anomaly, this article further analyzes a dynamic model of trade that considers an endogenous relationship between income growth and product upgrading in the global value chain and its interaction with the pattern of trade. It is shown that although advanced economies have to confront the deteriorated terms of trade in the *existing* pattern of trade as emerging economies conduct import-biased growth, persistent advances in their total factor productivity can upgrade their product structure to transform the import-biased growth of emerging economies into an export-biased growth to their own advantage. This result owes its origin to Schumpeter's creative destruction (Schumpeter, 1942), which holds the key for advanced economies to not only survive from but also prevail in international trade.

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**Institutional Genes: Analyzing Great Institutional  
Divergence among China, Japan, and Russia**

In the history of the recent century, we observe a great institutional divergence among Japan, Russia, and China. That is, since the Meiji Restoration, Japan established constitutional rules. However, Chinese and Russian reform/revolution endeavors towards constitutionalism, which lasted many decades, all ended up with a totalitarian regime, which is opposite to constitutionalism. This great institutional divergence has far-reaching impacts on their economies and their societies. Is the creation of this great institutional divergence accidental? To address these questions, I identify internal and external “institutional genes” of these nations and discuss their origins and evolutions. What I called “institutional genes” are basic institutional structures, which determine players’ incentives and are repeatedly self-reproduced over long historical processes. Through this mechanism, a society’s institutional genes affect ways that institutions change.

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## **Geography Implies Institutions**

Why did democracy, the rule of law and capitalism develop in Europe rather than China, which developed diametrically opposite institutions? The key Western institutions originated in the city-states of Greece, Italy and the Low Countries. They generated dynamic economies by preventing internal predators from expropriating the wealth created by individual initiative. But dynamic economies attract external predators also. The stalemate of Europe's evolving nation-states opened up space for its city-states to grow their institutions; the two political formations converged in safety offshore in the UK then the US; their rising economies spread Western institutions.

I shall argue that the open geography of West Eurasia fostered the co-evolution of Western culture, institutions, economies and nation-states, whose leading edge continually moved north and west from the Mediterranean, eventually crossing the Atlantic. By contrast, the closed geography of East Eurasia fostered the "co-involution" of its distinctive culture, institutions, economics and politics: all became deeper versions of themselves in self-reinforcing feedbacks within a geography enclosed by ocean, mountains, jungle and desert except for the thinly-populated steppe to the north.

Earlier authors have argued that Europe's fragmented political structure arose from a fragmented geography of enclaves, each dominated by a core of rich agricultural potential, whereas China has a unitary core. The premise of this geographic argument is false: like China, Europe has a unitary core of rich agricultural potential, namely, the North European Plain which extends from the Pyrenees to Russia; the nation-states which share this today dominate Europe's politics and economics. West and East Eurasia developed institutions and political structures along different trajectories because China's agricultural core was cleared and farmed very early, as its historic culture and institutions formed; thereafter, these co-involved with its economics and politics. By contrast, only the southwestern corner of the North European Plain was cleared and farmed when it was incorporated into the Roman Empire.

This incorporation injected divisive cultural elements, which had evolved in the fragmented geography of the Eastern Mediterranean and the Middle East, in particular, an exclusive religion that divided the world into the saved and the damned and a phonetic writing system that entrenched the inherent diversion of spoken language. This injection bequeathed religious and linguistic divides across the North European Plain which prevented the formation of a unitary state there that might

otherwise have unified Europe. Furthermore, the religious centre of Europe remained in Rome, even though its economic and political centre moved northwest across the Alps. This division of authority gave the city-states of Northern Italy and the Low Countries the political space to develop sophisticated business, financial, legal and fiscal institutions, which they transmitted offshore to the UK and US.

China's combination of tight top-down rule by law (Legalism) with loose local leadership based on family (Confucianism) suited an environment that was mostly stable but was occasionally disrupted by environmental disaster and nomad invasion. This tight-loose governance enabled dense populations to grow via irrigation systems that were highly productive, but fragile; system maintenance required a tight bureaucracy, whereas the catastrophes that were occasional but inevitable as the irrigation systems silted up served to reinforce local family-style self-organization. The rising wealth of the irrigated agricultural core corrupted the bureaucracy and attracted invasions from China's northern borderlands, which, however, lacked the agricultural potential to grow competing nations or enough invaders to change China's demography, language or culture. So, in contrast to Europe, nomad takeovers merely rebooted China's institutions and political economy into a new dynasty.

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**Improved Predictive Modeling using Bayesian Additive  
Regression Trees (BART)**

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### **Untangling Structure-Performance Relationship: The Need to Consider a Second-order Fit**

In the research domain of organizational structure and firm performance, researchers view formalization as a critical structural component for firms to build routines and boost business performance. The fit between the structural attributes (i.e., formalization in this study) and external environmental conditions (e.g., dynamism) to help business outcomes is largely researched and proved valid. However, in the context of family SMEs, in addition to the fit between structure, strategy, and environment (i.e., first-order fit), it seems the cultural fit (i.e., second-order fit) is ignored and under-researched due to theorists' ethnocentrism. Hence, the primary purpose of this theoretical work is to argue for the critical role of cultural contexts in studying structure-strategy- performance relationship, or called structural contingency theory. I used two very different dimensions of (national) culture to theorize how the second-order fit would influence family SMEs.

Accordingly, based on the literature review and theorization, I add to the structural contingency theory by arguing how formalization as a critical structural factor may manifest in family SMEs and in distinct cultures. For the research outcomes, I therefore propose two important propositions to be tested that both environmental dynamism and national cultures effectively moderate the relationship between formalization and firm performances.



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## **Limitations of Likelihood-based Asymptotic Inference in Response-Adaptive Clinical Trials for Treatment Comparisons**

Adaptive experiments are sequential procedures in which the decision about how to proceed is made according to a pre-established rule that makes use of the information accrued along the way. Widely used in different experimental fields, they are nowadays considered as a gold standard in the clinical context, especially in phase-III trials for treatment comparisons, where the ethical goal of maximizing the subjects care often conflicts with the statistical aim of drawing correct inferential conclusions.

In order to overcome in some sense the above-mentioned drawback, many authors suggested suitable Response-Adaptive (RA) randomization procedures, namely sequential allocation rules in which the treatment allocation probabilities change on the basis of earlier responses and past assignments in order to i) favour the treatment that appears to be superior at each step or ii) progressively approach a chosen target allocation of the treatments representing a possible trade-off among ethics and inference. Classical examples are the Play-the-Winner rule proposed by Zelen (1969), the efficient randomized-adaptive design suggested by Hu, Zhang and He (2009) and the doubly-adaptive biased coin design (Hu and Zhang, 2004).

Even if RA procedures induce a complex dependence structure between the outcomes, since the observations are no longer independent and inference should be unconditional with respect to the chosen design, several authors provided the conditions under which the classical likelihood-based asymptotic inference is still valid. These rely essentially on the functional form of the limiting allocation proportion of the treatments - i.e. the target - induced by a given RA procedure. Even if these conditions are apparently satisfied for several RA procedures of the literature, in many circumstances these are not sufficient to guarantee the applicability of classical likelihood-based inferential procedures.

The aim of the present paper is to explore the inadequacy and the practical limitations of the classical likelihood-based approach in terms of asymptotic confidence intervals and hypothesis testing, especially when the chosen target is characterized by a strong ethical component. In particular, we will stress the crucial role played by the target, that could i)

compromise the quality of the CLT approximation of the standard MLEs and ii) lead to a vanishing Fisher information, thus severely undermining any likelihood-based inferential method.

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## **Evasion of Capital Control via Misreporting Trade**

Capital control was historically treated as one of barriers for trade and finance liberalization. However, after the 2008 global financial crisis, a set of macroprudential policies, including capital controls, have been gradually accepted by major international organization like IMF and World Bank. In this paper, we examine how elective the capital control is. First, we document that the statistic error on China's balance payment surged after 2009, increasing from around 1 billion on average from 1999 through 2008 to more than 200 billions in 2015. The rise in such an error coincides with the timing when the Federal Reserve launched their large scale asset purchase program. As a result, the interest rate of treasury bill was dropped to and had stayed at nearly zero from 2009 to 2015, whereas the interest rate of government bond in China has remained between 3% and 5%. Due to capital control imposed by the People's Bank of China, in theory, internationally speculative investment was kept outside of China for arbitrage. However, our finding implies that some of capital was managed to avoid the policy and was struggled into China through misreporting trade.

Then we consider misreport in export and import separately. We respectively regress country level gap in export (import), defined as the difference between the value of imports (exports) reported by foreign countries and the value of exports (imports) reported by China on interest rate gap between two countries, defined as the difference between the short term interest rate in foreign and the one in China. The results show that interest rate gap between China and other countries is positively correlated with over reported exports and negatively correlated with under reported imports.

In the ongoing process, we use product level data and try to argue that the large scale of misreporting from 2009 to 2016 is due to evasion of capital controls rather than evading tariff and gaining value added tax rebates. It is because there was no major change in VAT rebates and total tariff in China had steadily declined from 2009 through 2015. The main hypothesis is that the evasion of capital controls happens to products with low tariff or high VAT rebates, which was not historically vehicle for misreporting.