CONTEMPORARY ISSUES IN BUSINESS ECONOMICS AND FINANCE

CONTEMPORARY STUDIES IN ECONOMICS AND FINANCIAL ANALYSIS

Series Editor: Simon Grima

CONTEMPORARY STUDIES IN ECONOMICS AND
FINANCIAL ANALYSIS   VOLUME 104

CONTEMPORARY ISSUES IN BUSINESS ECONOMICS AND FINANCE

EDITED BY

SIMON GRIMA
University of Malta, Malta

ERCAN ÖZEN
University of Usak, Turkey

HAKAN BOZ
University of Usak, Turkey

emerald
PUBLISHING

United Kingdom – North America – Japan
India – Malaysia – China

Emerald Publishing Limited
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2020

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN: 978-1-83909-605-1 (Print)
ISBN: 978-1-83909-604-4 (Online)
ISBN: 978-1-83909-606-8 (Epub)

ISSN: 1569-3759 (Series)

CONTENTS

LIST OF FIGURES

LIST OF TABLES

Chapter 5

ABOUT THE EDITORS

Simon Grima, PhD (Melit.), MSc (Lond), MSc (BCU), BCom (Hons) (Melit.), FFA, FAIA (Acad), is the Head of the Department of Insurance, in charge of the Bachelor of Commerce in Insurance, the Bachelor of Commerce (Honours) and Master's degrees in Insurance and Risk Management and a Senior lecturer at the University of Malta. He set up the Insurance Department in 2015 and started and coordinated the MA and MSc Insurance and Risk Management degrees. He served as the President of the Malta Association of Risk Management (MARM) between 2013 and 2015, and President of the Malta Association of Compliance Officers (MACO) between 2016 and 2018. Moreover, he is among the first Certified Risk Management Professional (FERMA), is the chairman of the Scientific Education Committee of the Public Risk Management Organisation (PRIMO) and a member of the curriculum development team of Professional Risk Managers' International Association (PRMIA) in 2014. His research focus and consultancy is on Governance, Regulations and Internal Controls (i.e. Risk Management, Internal Audit and Compliance) and has over 30 years of experience varied between Financial Services and with public entities in academia, Internal Controls, Investments and IT. He acts as an Independent Director for Financial Services Firms, sits on Risk, Compliance, Procurement, Investment and Audit Committees and carries out duties as a Compliance Officer, Internal Auditor and Risk Manager.

He has acted as Co-chair and is a Member of the Scientific Program Committee on some international conferences and is a chief editor, editor and review editor of some journals and book series. He has been awarded outstanding reviewer for *Journal of Financial Regulation and Compliance* in the 2017 Emerald Literati Awards.

Web Pages:
https://www.um.edu.mt/profile/simongrima
Web of Science Researcher ID: O-5299-2015
Loop profile: 348395
Scopus Author ID: 57151215400
ORCID: https://orcid.org/0000-0003-1523-5120
Emerald Insight Volume Editor: Contemporary Studies in Economic and Financial Analysis https://www.emeraldinsight.com/series/csef
Google Scholar https://scholar.google.com/citations?user=6L-kN98AAAAJ&hl=en
Research gate https://www.researchgate.net/profile/Simon_Grima

Previous Publications

Bonello, A. (2019). *Understanding the investor: A Maltese study of risk and behaviour in financial investment decisions*. In S. Grima & J. Spiteri (Eds.). London: Emerald Group Publishing Limited.

Borda, M., Grima, S., & Kwiecien, I. (Eds.) (2020, Forthcoming). *Life insurance in Europe: Risk analysis and market challenges*. Springer.

Grima, S., Bezzina, F., Romanova, I., & Rupeika-Apoga, R. (2017). *Contemporary issues in finance: Current challenges from across Europe*. Contemporary Studies in Economic and Financial Analysis, Volume 98. London: Emerald Group Publishing Limited.

Grima, S., & Marano, P. (2018, July). *Governance and regulations' contemporary issues*. Contemporary Studies in Economic and Financial Analysis, Volume 99. London: Emerald Group Publishing Limited. ISBN: 978-1-78743-816-3.

Grima, S., & Thalassinos, E. (2018). *Contemporary issues in business and financial management in eastern Europe*. Contemporary Studies in Economic and Financial Analysis, Volume 100. London: Emerald Group Publishing Limited.

Grima, S., Ozen, E., Boz, H., Spiteri, J., & Thalassinos, E. (2019). *Contemporary behavioural issues*. Contemporary Studies in Economic and Financial Analysis, Volume 101. London:Emerald Group Publishing Limited.

Grima, S., & Thalassinos, E. (2019, February 3, Forthcoming). *Financial derivatives: A blessing or a curse?* Emerald Group Publishing Limited. R. Dalli Gonzi & I. Thalassinos (Eds.).

Grima, S., Thalassinos, E., & Spiteri, J. (2019). Frontiers in applied mathematics and statistics mathematical finance. *Research Topic Risk Management Models and Theories*.

Grima, S., & Boztepe, E. (2020, Forthcoming). *Contemporary issues in audit management and forensic accounting*. Contemporary Studies in Economic and Financial Analysis, Volume 102. Emerald Group Publishing Limited..

Grima, S., Ozen, E., & Boz, H. (2020, Forthcoming). *Contemporary issues in business, economics and finance*. Contemporary Studies in Economic and Financial Analysis, Volume 104. Emerald Group Publishing Limited

Grima, S., Sirkeci, O., & Elbeyoglu, K. (2020, Forthcoming). *Street economy: Micro enterprises & street vendors*. Contemporary Studies in Economic and Financial Analysis, Volume 103. Emerald Group Publishing Limited.

Grima, S., & Boztepe, E. (2021, Forthcoming). *Contemporary issues in public sector accounting and auditing*. Contemporary Studies in Economic and Financial Analysis, Volume 105 Emerald Group Publishing Limited.

Zammit, M. L., Spiteri, J. V., & Grima, S. (October 3, 2018). *The development of the Maltese insurance industry: A comprehensive study*. London: Emerald Group Publishing Limited.

Ercan Özen received his BSc in Public Finance (1994), MSc in Business-Accounting (1997) and PhD in Business Finance (2008) from University of Afyon Kocatepe. Now he is an Associate Professor of Finance in Department of Banking and Finance, School of Applied Sciences, University of Uşak, Turkey. His current research interests include different aspects of Finance. He has (co-) authored five book chapters and more than 35 papers, more than 25 conferences participation, member in International Program Committee of three conferences and workshops. He is Chair of International Applied Social Sciences Congress. He is also a Certificated Accountant, a Member of Agean Finance Association and a member of TEMA (Turkey Combating Soil Erosion, for Reforestation and the Protection of Natural Resources Foundation.)

Web Pages:

https://orcid.org/0000-0002-7774-5153
http://www.researcherid.com/rid/A-2697-2019

Previous Publications:

Grima, S., Ozen, E., Boz, H., Spiteri, J., & Thalassinos, E. (2019). *Contemporary behavioural issues*. Contemporary Studies in Economic and Financial Analysis, Volume 101. London: Emerald Group Publishing Limited. ISBN: 978-1-78769-882-6 eISBN: 978-1-78769-881-9.

Grima, S., Ozen, E., & Boz, H. (2020, Forthcoming). *Contemporary issues in business, economics and finance*. Contemporary Studies in Economic and Financial Analysis, Volume 104. Emerald Group Publishing Limited.

Hakan Boz is an Assistant Professor at Usak University, School of Applied Sciences. Prior to joining the academia, he has held various positions in the tourism and hospitality sector. He has over 10 years of managerial experience in the tourism and hospitality sectors. He has also acted as a consultant for a wide variety of businesses. He has published several journal articles and book chapters in high impact tourism and hospitality journals tourism with a special emphasis on human interactions both as consumers and as employees.

He is the Founder of the HB Lab, a lab carrying out scholarly and business research using psychophysiological tools such as fMRI, EEG, Eye Tracker, GSR, HR, Speech Recognition and Facial Expression Recognition. He is the Co-developer of a Facial Recognition software algorithm used in understanding consumer and employee behaviour. The software algorithm he has co-developed is currently used by various businesses and non-profit organisations.

Previous Publications:

Boz, H., Yilmaz, O., Arslan, A., & Koc, E. (2016). A comparison of depression and turnover intentions of hotel employees in all-inclusive and non all-inclusive hotels. In *Global issues and trends in tourism* (pp. 372–382). Sofia: ST. Klıment Ohrıdskı Unıversıty Press

Boz, H., & Koc, E. (2019). *Measuring emotional intelligence in tourism and hospitality*. Emotional Intelligence in Tourism and Hospitality (pp. 36–45). London: Cabi Publication.

Grima, S., Ozen, E., Boz, H., Spiteri, J., & Thalassinos, E. (2019). *Contemporary behavioural issues*. Contemporary Studies in Economic and Financial Analysis. Volume 101. London: Emerald Group Publishing Limited.

Grima, S., Özen, E., Boz, H., Spiteri, J., & Thalassinos, E. (Eds.). (2019). *Contemporary issues in behavioral finance*. London: Emerald Publishing Limited.

Grima, S., Ozen, E., & Boz, H. (2020, Forthcoming). *Contemporary issues in business, economics and finance*. Contemporary Studies in Economic and Financial Analysis, Volume 104. Emerald Group Publishing Limited.

Koc, E., & Boz, H. (2015). All-inclusive food and beverage operations In P. Szende (Ed.), *F&B/restaurant management*. London: Pearson Publication. ISBN-13:9780133258769.

Koc, E., Aydın, G., Ar, A.A., & Boz, H. (2017). Emotions and emotional abilities in service failures and recovery. In *Service failures and recovery in tourism and hospitality: A practical manual* (p. 42). London: Cabi Publication.

Koc, E., & Boz, H. (2018). How can consumer science be used for gaining information about consumers and the market? The role of psychophysiological and neuromarketing research. In *Case studies in the traditional food sector* (pp. 129–152). New York, NY: Elsevier Publication.

Koc, E., & Boz, H. (2019). *Emotions and developing emotional intelligence in tourism and hospitality businesses*. Emotional Intelligence in Tourism and Hospitality (pp. 16–35). London: Cabi Publication.

Koc, E., Taşkın, Ç., & Boz, H. (2019). *Risk and control in consumer behavior: A discussion*. Contemporary Issues in Behavioral Finance (pp. 1–13). London: Emerald Publication.

This page intentionally left blank

ABOUT THE CONTRIBUTORS

Semih Acikgozoglu is a Research Assistant at Afyon Kocatepe University, Faculty of Economics and Administrative Sciences, Division of Business Administration, Turkey. His primary research areas are marketing and consumer behaviour.

Hilmi Tunahan Akkuş is a Lecturer at Savaştepe Vocational School, Balıkesir University, Balıkesir, Republic of Turkey, as well as an Assistant Director in Savaştepe Vocational School. His main research areas include Islamic finance, financial markets and institutions, investments and portfolio management, behavioural finance, financial forecasting and modelling.

Nurgül Emine Barin received her BSc in Public Finance from University of Afyon Kocatepe (1993), MSc in Labour and Social Security Law (1997) and PhD in Labour and Social Security Law (2002) from University of Anadolu. She is an Assistant Professor at Afyon Kocatepe University, Faculty of Economics and Administrative Sciences, Department of Business Administration, Turkey. Her main research interests are individual labour law, collective labour law, labour law acts, workers' rights, occupational health and safety, and female workers.

Adem Boyukaslan is a Research Assistant with a Finance PhD at Afyon Kocatepe University, Faculty of Economics and Administrative Sciences, International Trade and Finance Department in Turkey. His primary research areas include risk management, corporate finance, behavioural finance and financial markets.

Olimpia Livia Preda Buzgurescu received her BSc in Faculty of Mathematics and Informatics, Department of Informatics (2013), MSc in e-Business Administration Department (2014) from University of Craiova, Romania. She is a PhD Student in Accounting at the University of Craiova. Her current research interests include aspects of finance and accounting. She has participated in many international conferences.

Vildan Saba Cenikli received her Bachelor's degree and Master's degrees in Economics from University of Dokuz Eylül in 2008 and 2010. She is a Research Assistant in Department of Economics in Faculty of Economics and Administrative Sciences 'University of Afyon Kocatepe, Turkey'. She is currently a PhD student in the Department of Economics at the Dokuz Eylül University in Turkey. Her field of research are money theories, high-technology in the economies, application of econometric models and the input–output analyses. She has participated in numerous international conferences both as a speaker and as an attendee. She has published papers in national and international journals.

Sevil Bektaş Durmuş was born on the 7 August 1985 in Bakırköy. Bektaş Durmuş received the Master's degree in Strategic Marketing and Brand Management in 2009 at Bahçeşehir University after graduating from university in 2007. After completing the Master's degree in 2011, she worked with the title of 'Lecturer' at Beykoz University, Public Relations and Advertising Department between 2011 and 2013. While working as a lecturer, she also started her PhD Program at Istanbul University, Department of Journalism in 2012. She continued her academic career as a Research Assistant at the Department of New Media and Journalism at Istanbul Yeni Yüzyıl University in 2014. She completed her PhD with her thesis that had the title 'Digital Activism in the Context of Determining Agenda Theory in Social Movements in New Media' on 31 July 2018, and in the same year, she was appointed as a Doctor Lecturer in the Advertisement Department at the Faculty of Communication at Istanbul Yeni Yüzyıl University. Bektaş Durmuş, who is currently working as a Doctor Lecturer at Istanbul Yeni Yüzyıl University, Faculty of Communication, is also the Educational Coordinator of the Faculty.

Negru Elena is a PhD Student in Accounting at the University of Craiova, Romania. She received her BSc in Finance (1999) from University of Craiova and MSc in Management of European Public Affairs (2004) from Bucharest University of Economic Studies. Now she is working in the finance domain in the local government.

Aslı Elgün was born in 1975 in Izmir and completed BA in Ege University's Faculty of Communication Department of Journalism and then received her Master's degree from Ege University Women's Studies Department and doctorate from Ege University's Department of Journalism. She worked part time at Ege University Women's Issues and Research Center during her graduate studies. After that, Elgun worked as a Research Assistant at the Department of Journalism in Ege University. Since 2014, she has been working as a Doctor Lecturer at the same university. She has been giving lectures on gender, alternative media, and community media at undergraduate and graduate level and has various studies and works on gender and alternative media. In addition, she takes part in the ongoing European Union Erasmus Plus Youth Project and carries out several projects at national level which are still being conducted.

Umut Eroğlu is an Assistant Professor at Canakkale Onsekiz Mart University, Biga Economics and Administrative Sciences/Department of Business Administration. He is studying specifically human resources management and published many articles in various scientific journals. He has conducted several PhD and Master's thesis, management- and organisation-related courses in undergraduate, graduate and postgraduate levels. He also gives consultant service to private sector organisations around managerial issues like developing human resource effectiveness, designing training and learning processes, structuring corporate universities and developing business strategies.

Simon Grima, PhD (Melit.), MSc (Lond), MSc (BCU), BCom (Hons) (Melit.), FFA, FAIA (Acad), is the Head of the Department of Insurance, in charge of the Bachelor of Commerce in Insurance, the Bachelor of Commerce (Honours) and Master's degrees in Insurance and Risk Management and a Senior lecturer at the University of Malta. He set up the Insurance Department in 2015 and started and coordinated the MA and MSc Insurance and Risk Management degrees. He served as the President of the Malta Association of Risk Management (MARM) between 2013 and 2015, and President of the Malta Association of Compliance Officers (MACO) between 2016 and 2018. Moreover, he is among the first Certified Risk Management Professional (FERMA), is the chairman of the Scientific Education Committee of the Public Risk Management Organisation (PRIMO) and a member of the curriculum development team of Professional Risk Managers' International Association (PRMIA) in 2014. His research focus and consultancy is on Governance, Regulations and Internal Controls (i.e. Risk Management, Internal Audit and Compliance) and has over 30 years of experience varied between Financial Services and with public entities in academia, Internal Controls, Investments and IT. He acts as an Independent Director for Financial Services Firms, sits on Risk, Compliance, Procurement, Investment and Audit Committees and carries out duties as a Compliance Officer, Internal Auditor and Risk Manager.

He has acted as Co-chair and is a Member of the Scientific Program Committee on some international conferences and is a chief editor, editor and review editor of some journals and book series. He has been awarded outstanding reviewer for *Journal of Financial Regulation and Compliance* in the 2017 Emerald Literati Awards.

Umut Halac is currently working in Yasar University, Department of Economics. He got his PhD and Master's degrees from Dokuz Eylul University, Institute of Social Sciences, Department of Economics. He has major on macroeconomics and minor on econometrics. His interests are macroeconomy and applied econometrics. He is an active member in national and international projects and cooperations.

Bahadır Ildokuz studied Economics and graduated from Boğaziçi University in 2006. At the same university, he finished his Master studies on Economics and Finance in 2008. He started his PhD studies on Finance in İstanbul University in 2012 and graduated in 2015. He has worked in several departments of different banks at different positions such as treasury marketing supervisor, product development supervisor, treasury operations manager and he is still the manager of economic research and private banking in EmlakBank. He was also an Assistant Professor in Toros University in 2018. He was a Lecturer of Finance and Economics for undergraduate, graduate and PhD classes. He gave lectures ranging from Economics to Finance Theory.

Sezer Bozkuş Kahyaoğlu is an Associate Professor at the Izmir Bakircay University, Faculty of Business Administration and Social Science, Accounting and Finance

Department. Sezer graduated from Bosporus University in 1993 with honour degree BSc in Management. Sezer had MA degree in Money Banking and Finance at Sheffield University and Certification in Retail Banking from Manchester Business School, both with a joint scholarship of British Council and Turkish Bankers Association. After finishing her doctoral studies, she earned her PhD degree in Econometrics from Dokuz Eylul University in 2015. In the period of 1993–2004, Sezer worked in banking sector in various positions of head office. Sezer worked at Turkish Derivatives Exchange (TurkDEX-VOB) for two years as the founding member and Head of Audit and Investigations Department. Also, Sezer worked in KPMG Risk Consulting Services as Senior Manager between 2007 and 2012. Afterwards Sezer joined in Grant Thornton as a founding partner of advisory services and worked there for two years. Since August 2014, she has been working in SMM Technology and Risk Consulting as a partner responsible for risk consulting. Sezer has certifications of CIA, CFSA, CRMA, CFE and CPA as well. Her research interests mainly include applied econometrics, time series analysis, financial markets and instruments, energy markets, corporate governance, risk management, fraud accounting and auditing.

Seda Mumlu Karanfil, Human Resources Specialist, completed her undergraduate degree in 2007 at Anadolu University, Department of Business Administration and her Master's degree in 2013 at Istanbul University's Human Resources Management Program. She is currently a PhD candidate in Human Resources Management at Istanbul University. During her doctoral studies, she conducted research on human resources management, transformative leadership, business values, personality traits, perception of job insecurity and organisational citizenship behaviour. Starting her career in a multinational bank, She worked in the field of Human Resources Recruitment, Training and Development. Most recently, and also worked as a Human Resources Specialist at Istanbul University Career Development Application and Research Center. Currently, She continues to pursue her academic studies.

İbrahim Kiray, MSc, was graduated from Çanakkale Onsekiz Mart University Biga Faculty of Economics and Administrative Sciences, Department of Business Administration in 2016 as the highest ranking student of the department. In the same year, he started his Master's degree in both Economics and Business Administration at Çanakkale Onsekiz Mart University, The Graduate School of Social Sciences. In 2018, he graduated from the Economics Program by presenting the Project titled 'The Relationship Between Democracy, Economic Developing Development and Poverty: A Comparison of Developed and Developing Countries'. In 2019, the thesis entitled 'A Study on Investigation of the Effect of Motivation Factors on the Motivation and Performance of Salesperson' was accepted and successfully completed the Master of Business Administration Program. In 2017–2018, he lectured for one year at Çanakkale Onsekiz Mart University Gelibolu Piri Reis Vocational School. He has participated in International Scientific events and presented papers.

Ayşegül Kirkpinar did her Bachelor's degree at Celal Bayar University, Department of Business Administration in 2009. She got her Master's degree in Accounting and Finance at the same university in 2011. Her Master's thesis was about artificial neural networks in finance. During her Master studies, she has also been as an international student in a language school in London for a couple of months. After Master's degree, she completed her Doctor of Philosophy degree in Finance at Dokuz Eylül University in 2018. Her dissertation thesis was regarding volatility spillover between commodity and bond markets of some emerging markets. Her research interests include financial modelling and forecasting, portfolio management and behavioural finance. She continued research in these areas. She is married and has a son. She is currently working at İzmir Katip Çelebi University, Faculty of Economics and Administrative Sciences, Department of Business Administration as an Assistant Professor.

Nihan Akincilar Köseoğlu graduated from the Department of Political Science and International Relations at Marmara University in June 2007. After that, she started an International Relations MA program – mainly focussing on Turkish–Greek relations at Istanbul Bilgi University in February 2008. She finished the MA program in June 2010 after writing her thesis called 'The European Communities' Reactions to Military Interventions in Turkey and Greece'. She began her PhD in the Department of European Union Politics and International Relations at the European Union Institute of Marmara University in September 2010. She finished her PhD program in July 2015 after writing her thesis called 'Europeanization of Minority Rights in Turkey and Greece: A Comparative Analysis'. Additionally, she has been working at several universities in Istanbul since 2009. Now she is working at Fenerbahçe University as an Assistant Professor at the Department of Political Science and International Relations since April 2018. Her academic working areas are the European Union, minority rights, human rights abuses, fight against discrimination, Europeanisation and Turkish-Greek Relations. She has several international and national publications while she knows also English, German and Greek languages.

Sabriye Kundak received her Bachelor's degree in Economics from University of Anadolu in 2005. She received her Master's degrees and Doctorate's degrees in Economics from University of Afyon Kocatepe in 2008 and 2015. She is a Research Assistant in Department of Economics in Faculty of Economics and Administrative Sciences 'University of Afyon Kocatepe, Turkey'. Her fields of research are international economics, growth, manufacturing industry, panel data analyses, application of econometric models and the input–output analyses. She has participated in numerous international both as speaker and as attendee. She has published papers in national and international journals.

Gamze Yıldız Şeren Kurular was born in 1987, from Elazığ, Turkey. She is an Assistant Professor at Namık Kemal University, Faculty of Economics and Administrative Sciences, Public Finance Department Tekirdag-Turkey. She received an undergraduate degree from Marmara University, Faculty of Economics and Administrative Sciences, Department of Public Finance (2008).

She holds Master's degree (MA) in Public Economics from Marmara University (2011) and PhD in Public Finance from Marmara University. Her doctorate thesis is on gender responsive budgeting and local government. Her main research fields focus on public finance, environmental economics, budgeting and gender.

Serdar Ogel is an Assistant Professor at Afyon Kocatepe University, Faculty of Economics and Administrative Sciences, Division of Business Administration, Turkey. His primary research areas include risk management, financial markets and investment tools.

İlkin Yaran Ögel is a Research Assistant at Afyon Kocatepe University, Faculty of Economics and Administrative Sciences, Department of Business Administration in English, Turkey. Her main research interests are brand management, global brands and brand culture. Secondary areas include international business management.

Ercan Özen received his BSc in Public Finance (1994), MSc in Business-Accounting (1997) and PhD in Business Finance (2008) from University of Afyon Kocatepe. Now he is an Associate Professor of Finance in Department of Banking and Finance, School of Applied Sciences, University of Uşak, Turkey. His current research interests include different aspects of Finance. He has (co-) authored five book chapters and more than 35 papers, more than 25 conferences participation, member in International Program Committee of three conferences and workshops. He is Chair of International Applied Social Sciences Congress. He is also a Certificated Accountant, a Member of Agean Finance Association and a member of TEMA (Turkey Combating Soil Erosion, for Reforestation and the Protection of Natural Resources Foundation.)

Alparslan Özmen is an Assistant Professor at Afyon Kocatepe University, Faculty of Economics and Administrative Sciences, Department of Business Administration, Turkey. His study fields range from brand management to city marketing, service marketing and international marketing.

Inna Romānova is a Professor and the Vice-Dean of the Faculty of Business, Management and Economics at the University of Latvia and the Director of a professional master degree program in Finance. Her academic interests are in corporate finance and financial sector development. She is an expert in Economics and Management Sciences of the Latvian Academy of Sciences. Inna is the author of a number of papers on Financial Sector Development, Financial Management and Asset Management published in international scientific journals. She is on the editorial board of several scientific journals. She has also a professional experience in banking and finance, both in Latvia and in Germany. She is also a Visiting Professor in several universities in Europe.

Ramona Rupeika-Apoga is a Professor in Finance at the University of Latvia and the Head of the Department of Finance and Accounting. She has leaded and participated in several studies and research projects internationally and locally.

She has more than 15 years of pedagogic experience in Latvian and European higher education institutions with specialisation in EU Economic and Monetary Integration, International Finance, Banking Economics and SMEs. She is an Expert in Economics and Management Sciences of Latvian Academy of Sciences and the author of a great number of articles in Access to Finance for SMEs, Financial Risk Assessment and Management, Financial Globalisation and more, published in several international journals. She participated, as a leader, in many European research projects, among them a Nordic–Baltic network in Corporate and International Finance, the research project 'Innovations in Latvian Companies and Industries for Competitiveness Enhancement within the Framework of Globalization', the think tank 'CERTUS' on the research project 'Riga as Financial Centre' and 'Access to Finance' and INTERFRAME project 'Latvian State and Society Challenges and Solutions in an International Context'.

She is an Editor at the *European Research Studies Journal*, *International Journal of Economics & Business Administration*, *Journal of Applied Economics and Business*, *Journal of Finance and Financial Law* and *International Journal of Business and Economic Sciences Applied Research*.

Metin Tetik, born on 8 April 1986, received his BSc in Economics (2009), MSc in Economics (2011), PhD in Economics (2017) from Pamukkale University. Now he is an Assistant Professor of Economics in the School of Applied Sciences, University of Uşak, Turkey. While his current research interests include macrofinance, macroeconomics, game theory and applied economics, his teaching interests include game theory and econometrics.

Rustem Baris Yesilay is currently at Ege University, Aviation Higher Vocational School. He is the Vice Director/Manager of the school and the Founding Head of Civil Aviation Management Program. He earned his PhD from Dokuz Eylul University, Institute of Social Sciences, Department of Economics, and he has Master's degree from Istanbul University, Institute of Social Sciences, Department of Fiscal Economics. He has 17 years teaching and research experience. He has publications on sustainable development, innovation, entrepreneurship and cluster management. He has taken active role as a coordinator/researcher at least in 10 national and international projects.

Hasan Hüseyin Yildirim was born in 1987 in Konya. He completed his previous education in a university in Konya and graduated from Istanbul University, Faculty of Business Administration in 2009. He received his Master's degree (2011) in Finance from Marmara University and obtained a PhD degree (2016) from Istanbul University. He is an Assistant Professor in the Burhaniye School of Applied Sciences at Balikesir University. His Master's and PhD theses are on the evaluation of investment projects. He is a Lecturer in Financial Analysis, Financial Management and International Finance courses in Banking and Finance Department and International Trade Department in undergraduate, graduate and Master classes. His research interests include the economy, finance and banking sector and renewable energy investments.

This page intentionally left blank

LIST OF CONTRIBUTORS

Semih Acikgozoglu	Afyon Kocatepe University, Turkey
Hilmi Tunahan Akkuş	Balıkesir University, Turkey
Nurgül Emine Barin	Afyon Kocatepe University, Turkey
Adem Boyukaslan	Afyon Kocatepe University, Turkey
Olimpia Livia Preda Buzgurescu	University of Craiova, Romania
Vildan Saba Cenikli	Afyon Kocatepe University, Turkey
Sevil Bektaş Durmuş	Istanbul Yeni Yuzyil University, Turkey
Negru Elena	University of Craiova, Romania
Aslı Elgün	Ege University, Turkey
Umut Eroğlu	Çanakkale Onsekiz Mart University, Turkey
Simon Grima	University of Malta, Malta
Umut Halac	Yasar University, Turkey
Bahadır Ildokuz	Emlakbank, Turkey
Sezer Bozkuş Kahyaoğlu	İzmir Bakırçay University, Turkey
Seda Mumlu Karanfil	İstanbul University, Turkey
İbrahim Kiray	Çanakkale Onsekiz Mart University, Turkey
Ayşegül Kirkpinar	İzmir Katip Çelebi University, Turkey
Nihan Akincilar Köseoğlu	Fenerbahçe University, Turkey
Sabriye Kundak	Afyon Kocatepe University, Turkey
Gamze Yıldız Şeren Kurular	Tekirdag Namık Kemal University, Turkey
Serdar Ogel	Afyon Kocatepe University, Turkey
İlkin Yaran Ögel	Afyon Kocatepe University, Turkey
Ercan Özen	Uşak University, Turkey
Alpaslan Özmen	Afyon Kocatepe University, Turkey
Inna Romānova	University of Latvia, Latvia
Ramona Rupeika-Apoga	University of Latvia, Latvia
Metin Tetik	Uşak University, Turkey
Rustem Barıs Yesilay	Ege University, Turkey
Hasan Hüseyin Yildirim	Balikesir University, Turkey

This page intentionally left blank

SERIES EDITOR'S INTRODUCTION

The Emerald book series: **Contemporary Studies in Economic and Financial Analysis**, edition CSEF104 includes studies on Contemporary Issues in Business Economics and Finance contributed mainly by authors invited from participants in the 3rd International Applied Social Science Congress (C-IASOS2019) held in Çeşme, İzmir, Turkey, between 4 and 6 April 2019.

An analysis of the existence of volatility spillover between the conventional stock index and participation-30 index based on the indexes in the Turkish Capital Markets BIST-30 and the Participation-30 indexes is carried out in Chapter 1. They find a strong correlation between the BIST-30 and Participation-30, which are affected by the same shocks, causality and volatility in both directions.

The authors of Chapter 2 identify models for carrying out bankruptcy risk analysis that have as variables relevant performance indicators to examine the bankruptcy risk of the Romanian industrial companies, to determine its predictability and significance, in order to avoid their potential bankruptcy.

In Chapter 3, the authors aim to support the employment of the female labour force and to show its share in the development and growth in the member countries of the Organisation of Islamic Cooperation (OIC). They find that female employment has a positive impact on economic growth for the selected OIC countries.

The author of Chapter 4 investigates the volatility spillover from oil to precious metals under high volatility and low volatility regimes. Accordingly, results showed that there were volatility spillovers from oil to palladium and platinum in low volatility regimes and from oil to platinum in high volatility regimes.

In Chapter 5, the authors reveal knowledge, report on perception level and look at the evaluation of exchange rate risk management techniques of enterprises registered to Afyonkarahisar Chamber of Commerce and Industry. The most important finding of this study is that the majority of the companies, which are operating in a competitive environment, are intensely exposed to foreign exchange risk but try to overcome the foreign exchange risk using traditional internal firm-level hedging methods instead of well-reputed external hedging methods or derivative instruments.

The authors of Chapter 6 demonstrate the effect of the CAMLS (C represents capital adequacy; A, asset quality; M, management adequacy; E, earnings; L, liquidity; and S, sensitivity to market risks) variables on the variable E. The study revealed the importance of the capital, management and liquidity variables, which are internal factors, in increasing the profitability of banks.

In the Chapter 7, the authors examine the interaction between experience, satisfaction and positive word of mouth within the context of city marketing. The findings of the study exposed an interaction between experience, satisfaction and positive word of mouth regarding a city. Additionally, it showed the mediator role of satisfaction on the relationship between experience and positive word of mouth.

The author of Chapter 8 aimed to determine the pros and cons of the Crowdsourcing concept through new media applications in the form of critical evaluations by examining sample case studies that use the Crowdsourcing concept. The study demonstrated that Crowdsourcing is becoming a worldwide business model and allows anyone with free time and internet connection to contribute to the economic productivity.

In Chapter 9, the authors analyse the effect of motivation factors on the performance of the salesperson and found that the dimensions of image and relations among five dimensions namely satisfaction, image, relations, knowledge of product and service and advertisement related to motivation factors have a significant effect on the task performance of salesperson.

The author of Chapter 10 focused on combining positive psychological capital and its assurances with seven different sources of motivation, as categorised in Allen and Fabian, in 2019. Based on input from managers of human resources department employees, job search behaviour was found to be high. The inability to optimise the skills of individuals and limited career opportunities in the institutions they work for are examples of factors that affect job search behaviour.

In Chapter 11, the author discussed tax as a tool for solving the issue of climate change. The author noted that a multidimensional policy instead of a one-_dimensional policy, an environmentally conscious society and state, and cooperation of policy actors on a global scale are the basic elements, which can play an important role in the solution of the climate change problem.

In Chapter 12, the author discussed the concepts of community media, sustainability and female-oriented non-governmental organisations (NGOs), and then explained the media usage habits and the factors that affect the sustainability of the preferred channels of the female-oriented NGOs. Conclusions show that the financial, content production related, technical, and legal factors affect the sustainability of community media.

The author of Chapter 13 investigates the EU's anti-discrimination policy for sports (i.e. the Treaty of Lisbon (2009)). In this study, the author raises awareness of this crucial and unending discrimination problem in sports.

In Chapter 14, the authors measure efficiency of national innovation systems (NIS) using the data envelopment analysis (DEA) method. This method is used on country samples of 18 Eastern European and Central Asian countries (EECA) and Turkey. Based on the key findings one can note that Kazakhstan, Turkey, Latvia and Uzbekistan are more efficient in innovation performance when compared to other EECA countries.

In Chapter 15, the authors investigate whether the BIST30 index acted in accordance with the overreaction hypothesis against the return changes in the Dow Jones Industrial Average (DJIA) index during the 2008 global financial crisis. Findings obtained using the CAR analysis show that the BIST30 index did not generally act in accordance with the overreaction hypothesis against the DJIA.

The last chapter (16) relates to the determinants of the Bank's Stability in Latvia post-transition. The authors confirm the results of other studies on bank stability of small economies, with some exceptions due to the unique situation in term bank business models applied by Latvian banks.

CHAPTER 1

VOLATILITY SPILLOVER BETWEEN CONVENTIONAL STOCK INDEX AND PARTICIPATION INDEX: THE TURKISH CASE

Sezer Bozkuş Kahyaoğlu and Hilmi Tunahan Akkuş

ABSTRACT

Introduction – *The rapid flow of information between the markets eliminates the possibility of diversifying the portfolio by bringing the markets closer, and may cause the volatility in a market to spread to another market. In this context, revealing the relationships between conventional and participation markets or financial assets is important in terms of portfolio diversification and risk management.*

Purpose – *The major aim of this work is to analyse the existence of volatility spillover between conventional stock index and participation index based on the indexes in Turkish Capital Markets. BIST-30 and Katılım-30 indexes are used as the representatives of conventional stock index and participation index, respectively.*

Methodology – *Firstly, the univariate HYGARCH (1,d,1) parameters are calculated, and secondly, the dynamic equicorrelation (DECO) methodology is applied. DECO model is proposed to simplify structural assumptions by introducing a structure in which all twosomes of returns take the same correlation for a given time period. In this way, DECO model enables to have an optimal portfolio selection in comparison to an unrestricted time varying-dynamic*

Contemporary Issues in Business, Economics and Finance
Contemporary Studies in Economic and Financial Analysis, Volume 104, 1–17

ISSN: 1569-3759/doi:10.1108/S1569-375920200000104002

correlation approaches and gives more advanced forecasting ability for the duration of the financial crisis periods compared to the various portfolios.

Findings – *There is a strong correlation between BIST-30 and Katılım-30. They are affected by the same shocks. We expect to see different investor behaviours for Katılım-30 and BIST-30. However, they seem to have almost the same investor profile. In addition, there is a causality in both ways and volatility spillover between them.*

Keywords: Participation index; volatility spillover; Dynamic Equicorrelation (DECO) model; HYGARCH model; Non-linear causality; Islamic stock index; Sharia-compliant equity; Islamic finance; conventional stock index

JEL classification: C58; G11; G32

1. INTRODUCTION

The financial deregulation and foreign openness process, which accelerated in the late twentieth century, increased trade relations between countries. Especially, the market collapse (Black Monday) in October 1987 and the 'Asian Financial Crisis' in 1997 made the integration of international stock exchanges more important (Kılıç & Buğan, 2016, p. 167). Along with technological developments, financial liberalisation accelerates the flow of information between markets and offers different investment opportunities in different geographical regions. However, the rapid flow of information between the markets eliminates the possibility of diversifying the portfolio by bringing the markets closer, and may cause the volatility in a market to spread to another market. In this context, revealing the relationships between markets or financial assets is important regarding the portfolio diversification and risk management.

Some of the new improvements in the global financial system are the establishment of Islamic banks, Islamic equities and bond markets, which are different from their counterparts (Ajmi, Hammoudeh, Nguyen, & Sarafrazi, 2014, p. 214). The Islamic financial system shows significant differences from the traditional financial system in terms of both principles and financial products (Hammoudeh, Mensi, Reboredo, & Nguyen, 2014, p. 190). The Islamic financial system requires all financial transactions to be made based on real assets, as well as sharing the profit and loss of the parties in the contracts (Rejeb, 2016, p. 2). Islamic law constitutes the basis of Islamic finance. In this context, the Islamic finance prohibits interest (riba) to be received and paid; performing overly ambiguous transactions (garar); gambling (maysir) including derivative transactions, which are not based on short sales, real transactions and speculation. In addition to these, Islamic finance is an asset-based financial system that differs from the interest-based conventional system and it establishes a principle to share profit and loss in the transactions (Hammoudeh et al., 2014, pp. 189–190; Shahzad, Ferrer, Ballester, & Umar, 2017, pp. 9–10). Islamic finance is identified with the concept of interest-free finance. Aydin (2012) stated that the compound interest rate in conventional finance is considered to be the eighth wonder of the world (p. 61).

Islamic stocks, one of the broadest range of investment products provided by the Islamic finance industry, have attracted the attention of international investors over the past few years. Portfolio managers and investors are increasingly interested in Islamic stocks that have different characteristics based on Islamic ethical values (Mensi, Hammoudeh, Sensoy, & Yoon, 2016, p. 2457). Stock markets definitely contain the risk-sharing component (Masih, Kamil, & Bacha, 2018, p. 1). Islamic stock indices comprise the shares of enterprises that meet the qualitative and quantitative criteria. However, these qualitative and quantitative criteria may differ between countries (Buğan, 2016, pp. 251–254). There is a difference between the criteria of the Kuala Lumpur Syariah Index (KLSI) Islamic indices in Malaysia and the criteria for the DJIMI and FTSEGII Islamic indices. While the income approach is preferred as the monitoring criteria rather than the activity approach in the DJIMI and FTSEGII Islamic indices, the situation for the KLSI indices is the opposite. According to the activity approach, the activities of the enterprises to be included in the Islamic index should be in accordance with the Islamic rules (Albaity & Ahmad, 2011, p. 163). However, as in the conventional finance system, the index selection for investments in Islamic finance is becoming more important as the global economic structure develops (Dania & Malhotra, 2013, p. 66).

The Islamic financial sector has improved significantly in recent years and it is foreseen that this development will not stop. According to the ICD-Thomson Reuters-published Islamic Finance Development Report-2018, it is estimated that, at the end of 2017, the total amount of global Islamic financial assets reached $ 2,438 billion and it will have reached $ 3,809 trillion by 2023 (ICD-Thomson Reuters, 2018). According to the report, the total Islamic financial assets in the world is dispersed as 71% Islamic banking, 17% sukuk, 6% other financial institutions, 4% Islamic funds and 2% takaful.

It is claimed that Islamic stocks represent a unique class of investment which is called as 'decoupling hypothesis', related to Islamic stocks and different from conventional stocks (Masih et al., 2018, p. 5). It is important to know how the investors in the market have differentiated from the conventional investors in terms of their investment preferences for portfolio diversification and risk management. Majdoub and Sassi (2017) stated that individual or institutional Islamic investor behaviour has an impact on market behaviour (Majdoub & Sassi, 2017, p. 16). It is thought that this effect may create different results on the volatility spillover in Islamic markets. Although there are various reasons behind the volatility spillover and the transmission of shocks between the markets, the Islamic financial sector brings different explanations to this situation. Indeed, this connection is expected to disappear as companies in 'Islamic stock exchange indexes' are assumed to contain low interest rates and low leverage ratios. In addition, the asset-supported financing rule, one of the basic principles of Islamic finance, provides that the real sector and financial sectors are interconnected, and this situation does not lead Islamic emerging markets to have volatility spillover in the US market (Majdoub & Mansour, 2014, p. 453). Due to the unique and conservative nature of Islamic investments, there is a common perception that 'Islamic financial assets' may provide a specific safeguard against the increased risk and instability in international financial markets. In addition, Islamic investment tools should be less sensitive to external shocks in comparison to their conventional counterparts due to low 'leverage ratios', investable sectors and restrictions on speculative activities (Shahzad et al., 2017, pp. 9–10). Within the scope of these explanations, theoretically, we do not expect any volatility spillover between both of these two Islamic and conventional indexes.

The volatility spillover, which can be expressed as the effect of volatility in a financial market or asset on a volatility of a different market or asset, is the fact that new information on a market or asset can be effective on another market or asset. Therefore, the volatility spillover is the assimilation of news in a market by another market (Gebka & Serwa, 2007, p. 204). Volatility spillover can be divided into two as contemporaneous and dynamic volatility spillover. The contemporaneous volatility spillover is the spread of volatility that very same day, which usually occurs between the markets in the same region. The dynamic volatility spillover occurs usually between capital markets in different regions. In this case, the information in a capital market will affect other markets the next trading day, that is, the volatility spread may occur the next day (Mulyadi, 2009, p. 5).

In this study, whether there is volatility spillover between the indices in the same market is investigated. For this purpose, Katılım-30 participation index and BİST-30 conventional index in Turkey were included. Thus, it will be revealed whether these indices can be put in the same basket for portfolio diversification or not. In addition, conventional and Islamic stock investors in Turkey will have information regarding the risk sources of stock indices that they are investing. In earlier studies on volatility spillover, no study was found on conventional and Islamic indices in Turkey. This issue demonstrates the authenticity of the study. In addition, dynamic equicorrelation (DECO) method developed by Engle and Kelly (2012) will be used in this study. The method is one of the newest methods developed in recent years.

In the second part of the study, the literature review will be included. In the third part, the method of the study will be explained. The data and preliminary statistics about the data will be explained in the fourth section. Empirical findings will be included in the fifth part of the study. The general conclusions of the study will be explained in the sixth and last sections.

2. LITERATURE REVIEW

Various studies have been carried out on the risk and return structure of Islamic and conventional investment tools and indicators (Dewandaru, Bacha, Masih, & Masih, 2015). However, the issue of volatility spillover is studied in many ways due to its importance in terms of risk management. However, evidence for volatility spillover from developed markets to emerging markets has usually been investigated in those studies. Similarly, there are various empirical works on the volatility spillover between 'Islamic and conventional markets'. Those studies were generally based on US markets, and the studies were carried out by linking US conventional markets with US Islamic markets (DJIM and MSCI Islamic indices). In our study, the effects of volatility spillover between 'Islamic and conventional stock indices' in the same market are investigated. For this purpose, the literature on the volatility spillover between Islamic markets and conventional markets is summarised in the following.

Mulyadi (2009) investigated the volatility spillover between capital markets in Indonesia, the USA and Japan. As a result of the study, one-way volatility spillover from the US market to Indonesian market and two-way volatility spillover between Indonesian and Japanese markets were determined.

Albaity and Ahmad (2011) investigated the return and volatility behaviours of three Islamic stock market indices (DJIMI, FTSEGII and KLSI) in three different countries (USA, UK and Malaysia). According to EGARCH and TARCH model results, one-way volatility spillover from the DJIMI and FTSEGII Islamic indices to the KLSI Islamic index was determined. In addition, while the leverage effect was determined in the DJIMI and FTSEGII Islamic indices, no effect was found in the KLSI Islamic index.

Dania and Malhotra (2013) investigated the dependence between the four global Islamic indices (North America, EU, Far East, Pacific Region) and the conventional indices in the same region. As a result of the study, 'positive and significant volatility spillover from conventional indices to Islamic indices' was determined. There was also an evidence of the asymmetric volatility transition between the relevant markets.

Hammoudeh et al. (2014) examined the dependence between DJIM index, 'three indexes of the global conventional stock exchanges' (Asia, Europe, USA) and global factors (oil prices, VIX, US 10-year treasury interest rates, 10-year European monetary union government bonds). The empirical findings showed that there is dependence between the Islamic market (DJIM) and the conventional markets and risk factors. Accordingly, the 'dissociation hypothesis', which shows differences between Islamic markets and conventional markets, is rejected.

In their study investigating the volatility spillover between US stock markets and five MSCI Islamic indices (Indonesia, Malaysia, Pakistan, Qatar, Turkey), Majdoub and Mansour (2014) have implemented three models including 'the multivariate GARCH-BEKK, DCC and CCC'. As a result of the study, conditional correlation estimations were found to be statistically significant in almost all cases, but it was determined that they were very low, that is, the shock transfers between these markets were not significant.

Nazlioglu, Hammoudeh, and Gupta (2015) examined whether there was volatility/risk transmission between 'the Dow Jones Islamic stock markets and the three conventional markets (the US, Europe and Asia)' before, during and after the 2008 global financial crisis. The study also explored the volatility spillover dynamics between the aforementioned markets and the US economic policy uncertainty index, oil prices, VIX and federal funding rate. As a result of the study, the presence of significant volatility spillover between 'Islamic and conventional indices' was determined.

In their study including 'three sub-periods as pre-crisis, crisis and post-crisis', Saadaoui and Boujelbene (2015) investigated the volatility spillover between 'the Dow Jones stock indices and six Dow Jones emerging Islamic stock indices (Hungary, Malaysia, Mexico, Peru, Poland, Turkey)'. As a result of the study, it was concluded that there was a spillover especially during the crisis period and the crisis affected all financial assets, whether Islamic or not.

Kılıç and Buğan (2016) investigated the spillover effects between the USA S & P-500 index and six Dow Jones regional indices (E1DOW, DJIEU, DJGCC, DJIGCC, DWAP, DJIAP). As a result of the study, apart from the relationship between Europe and Asia-Pacific regions, it was seen that there was a financial spillover effect in all relations between 'Islamic and conventional markets'. The findings also show that there is a high correlation between their returns. In the crisis period, this relationship is not persistently decreasing and reactions to shocks occur at different times. The overall result of the empirical work was that Islamic markets did not respond differently to financial shocks emerging from conventional markets and there were no safe zones for investors during the financial crisis.

Mensi et al. (2016) carried out their study on 10 'Dow Jones Islamic and conventional sector index' pairs ('basic products, consumer goods, consumer services, finance, health services, industrialists, energy, technology, telecommunications and public services'). As a result of the study, the Islamic-conventional financial sector index pairs were found to be related to the period from 2001 to 2015 despite the prohibitions of Islamic principles.

Rejeb (2016) investigated the existence of volatility spillover for crisis period and calm period between 10 conventional market indices ('developing markets', 'Arabian markets', 'Arabian markets except S. Arabia', 'GCC', 'Canada', 'UK', 'USA', 'Europe', 'Asia-Pacific', 'World market') and eight Islamic market indices ('developing Islamic market', 'general Islamic market', 'Canada Islamic', 'England Islamic', 'USA Islamic', 'Europe Islamic', 'Asia-Pacific Islamic', 'World Islamic'). As a result of the study, it was determined that Islamic markets were sensitive to financial crises, there was a strong dependence on Islamic markets from conventional markets and this dependence spreads among Islamic markets. These results show that the Islamic finance industry has failed to provide a strong safeguard against economic and financial shocks affecting conventional markets.

Majdoub and Sassi (2017) examined the volatility spillover and hedging effectiveness between China and Asian Islamic stock indices. As a result of the study, there was a significant positive and negative return on the Asian Islamic stock markets selected from China and a two-way volatility spillover between China, Korea and Thailand Islamic markets existed. This shows evidence of short-term predictability on Chinese Islamic stock market movements. However, there is no short-term volatility permanence in India, Indonesia and Malaysia.

In their study, Shahzad et al. (2017) contributed to the current debates on the empirical evidence of the hypothesis of the separation of Islamic stock markets from their basic peers. For this purpose, they investigated return and volatility spillover between three 'conventional stock markets (USA, UK and Japan)', the 'global Islamic stock index (DJIM)' and a number of important macroeconomic and financial variables ('VIX index', the 'US stock market uncertainty index', 'US 10-year Treasury bond yields' and 'crude oil prices'). As a result of the study, strong interactions between 'global Islamic stock market', 'conventional stock exchanges' and significant risk factors have been determined. This shows that the 'Islamic and conventional stock markets' are not decomposed.

Celik, Ozdemir, and Gulbahar (2018) examined the existence of return and volatility spillover through VAR-EGARCH model between the 'US and MSCI emerging markets' and 'Islamic stock index (Indonesia, Malaysia and Turkey)'. As a result of the study, it was found out that there was an asymmetric and multifaceted return and volatility spillover between developed countries and developing countries in terms of Islamic indices.

When the summary of the literature is examined, the studies on the volatility spillover between Islamic markets and conventional markets show that there is no differentiation between the markets. Only Majdoub and Mansour (2014) found a very low level of volatility relationship between Islamic markets and conventional markets, but evidence for strong volatility was found in other studies. Moreover, another point that is noteworthy in the literature is to explore the relationship between Islamic indices and developed markets such as the USA, Japan and European countries.

3. RESEARCH METHODOLOGY

It is a fact that the volatility of an asset is not directly observable so it is necessary to construct a model. The volatility is used as a measure of uncertainty or risk which plays an important role in financial market analysis. Hence, by means of a constructed model, the volatility can be easily measured and predicted. In the financial analysis literature, there are various volatility models which have been suggested to evaluate the characteristics of return for an asset. When the major characteristics of the high-frequency time series data are considered:

1. The volatility changes over-time in a continuous style.
2. The volatility clustering is the most common attribute with the periods of big changes in prices alternate with the periods during which small price changes or almost no changes occur. This leads to an asymmetric feature in the volatility.
3. In addition, excess kurtosis or fat-tailed feature is frequently observed.

The major aim of this work is to analyse the existence of volatility spillover between conventional stock index and participation index based on the indexes in Turkish Capital Markets, namely BIST-30, against Katılım-30 Participation Indexes. In this chapter, DECO approach is applied to capture the volatility of indexes. Based on the theoretical and conceptual framework, data and the empirical findings are discussed in the following and policy recommendations are made to contribute relevant literature.

3.1. Data

BIST-30 and Katılım-30 indexes are used as the representatives of conventional stock index and participation index, respectively. The daily return series of BIST-30 and Katılım-30 stock indexes are used for the period July 2014–October 2018.

The previous empirical literature examines the comparative behaviour of the Islamic financial markets and conventional markets (e.g., Al-Khazali, Lean, & Samet, 2014; Beck, Demirguc-Kunt, & Merrouche, 2013; Hayat & Kraussl, 2011; Jawadi, Jawadi, & Louhichi, 2014; Milly & Sultan, 2012) In this context, there are two major types of investor profiles, that is, faith-based stock investors and conventional-based stock investors (Umar, 2017). Faith-based investors only buy shares in Sharia-compliant equity and keep out traditional equities from their asset portfolio. On the contrary, the conventional investors' portfolio contains both Islamic and traditional equities. This information is critical for the interpretations of the empirical findings in the following sections.

3.2. Methodology

The major steps of modelling BIST-30 and Katılım-30 are given in Fig. 1 such that the first and second steps start with calculation of the descriptive statistics and the routine stationarity tests are applied. Third step is the estimation for univariate model by using HYGARCH (1,*d*,1). As the fourth step, DECO model is estimated for pairwise return series. Afterwards, robustness test is implemented to ensure the reliability of DECO model in the fifth step. Finally, the existence of relationship between BIST-30 and Katılım-30 are tested and also the direction of this relationship is investigated by using the nonlinear Granger Causality tests.

3.3. Descriptive Statistics

Both of the return series are not normally distributed and they are skewed to the right. The graphs of BIST-30 and Katılım-30 are shown in Fig. 2a and 2b, respectively.

3.4. Stationarity Tests

The time series analysis starts with testing the normality and stationarity of the data to proceed to the next steps. The 'Augmented Dickey Fuller (ADF) test' and 'Kwiatkowski–Phillips–Schmidt–Shin (KPSS) test' results of BIST30 and Katılım-30 are shown in Tables 1–4, respectively. It should be noted that the null

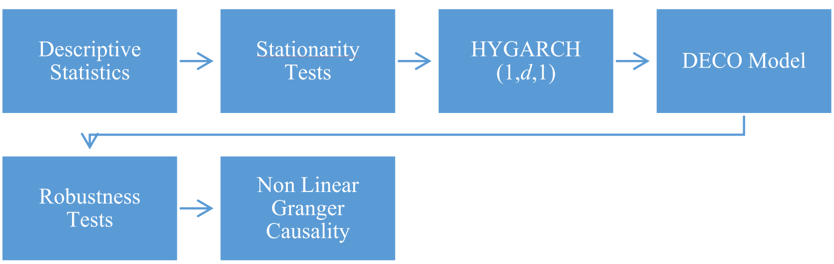

Fig. 1. The Major Steps in Modelling BIST-30 and Katılım-30.