

# Financial Reporting Quality Measurement - Approaches, Issues and Future Trends

---

**Aljinović Barać, Željana**

*Source / Izvornik:* **Proceedings of FEB Zagreb 12th International Odyssey Conference on Economics and Business, 2021, 1 - 13**

**Conference paper / Rad u zborniku**

*Publication status / Verzija rada:* **Published version / Objavljena verzija rada (izdavačev PDF)**

<https://doi.org/10.22598/odyssey/2021.3>

*Permanent link / Trajna poveznica:* <https://um.nsk.hr/um:nbn:hr:124:742885>

*Rights / Prava:* [In copyright](#) / [Zaštićeno autorskim pravom.](#)

*Download date / Datum preuzimanja:* **2024-04-18**

*Repository / Repozitorij:*

[REFST - Repository of Economics faculty in Split](#)



UNIVERSITY OF SPLIT



**Proceedings of FEB Zagreb 12th International Odyssey  
Conference on Economics and Business**

**June 9-12, 2021, Šibenik, Croatia & online**



**1/2021**

**ISSN 2671-132X**

**Vol.3 No.1 pp.1-1286**

**June 2021, Zagreb**



**University of Zagreb  
Faculty of Economics & Business**

## **Editors:**

### **Ivana Načinović Braje**

University of Zagreb, Faculty of Economics & Business, J. F. Kennedy square 6,  
10000 Zagreb, Croatia  
ivana.nacinovic@efzg.hr

### **Božidar Jaković**

University of Zagreb, Faculty of Economics & Business, J. F. Kennedy square 6,  
10000 Zagreb, Croatia  
bjakovic@efzg.hr

### **Danijela Ferjanec Hodak**

University of Zagreb, Faculty of Economics & Business, J. F. Kennedy square 6,  
10000 Zagreb, Croatia  
dferjanic@efzg.hr

Publisher:

Faculty of Economics & Business  
University of Zagreb  
J. F. Kennedy square 6  
10000 Zagreb  
CROATIA

DOI: <https://doi.org/10.22598/odyssey/2021.3>

Indexed in: EconLit, ProQuest, EBSCO

## **International Editorial Board**

**Lovorka Galetić** – chair (Faculty of Economics & Business, University of Zagreb, Croatia)

**Károly Balaton** (University of Miskolc, Hungary)

**William C. Gartner** (University of Minnesota, USA)

**Aleš Groznik** (Faculty of Economics, University of Ljubljana, Slovenia)

**Joe F. Hair, Jr.** (University of South Alabama, USA)

**Ulrich Hommel** (EBS Business School, Germany)

**Zoran Krupka** (Faculty of Economics & Business, University of Zagreb, Croatia)

**Milan Jurše** (Faculty of Economics and Business, University of Maribor, Slovenia)

**Tonči Lazibat** (Faculty of Economics & Business, University of Zagreb, Croatia)

**Junsoo Lee** (University of Alabama, USA)

**Michael J. Morley** (University of Limerick, Kemmy Business School, Ireland)

**Jurica Pavičić** (Faculty of Economics & Business, University of Zagreb, Croatia)

**Soumitra Sharma** (Juraj Dobrila University of Pula, Croatia)

**Robert Sonora** (University of Montana, USA)

**Mark C. Strazicich** (Appalachian State University, USA)

**Jean-Paul Thommen** (University of Zurich, Switzerland)

**Goran Vlašić** (Faculty of Economics & Business, University of Zagreb, Croatia)

**Krešimir Žigić** (CERGE-EI, Prague, Czech Republic)

**Joseph Windsperger** (University of Vienna, Austria)

## **Organizing Committee**

Ivana Načinović Braje (chair)

Danijela Ferjanić Hodak

Fran Galetić

Marijana Ivanov

Božidar Jaković

Ivana Pavić

Mario Spremić



## LIST OF REVIEWERS

|                              |                              |                            |
|------------------------------|------------------------------|----------------------------|
| <b>Ana Novak</b>             | <b>Katarina Žager</b>        | <b>Rebeka D. Vlahov</b>    |
| <b>Ana Rep</b>               | <b>Lovorka Galetić</b>       | <b>Golomejić</b>           |
| <b>Blaženka Knežević</b>     | <b>Lucija Rogić Dumančić</b> | <b>Sanda Rašić Jelavić</b> |
| <b>Danijela Ferjanić</b>     | <b>Maja Klindzic</b>         | <b>Tanja Komarac</b>       |
| <b>Hodak</b>                 | <b>Marijana Ivanov</b>       | <b>Tomislav Baković</b>    |
| <b>Fran Galetić</b>          | <b>Mario Spremić</b>         | <b>Tomislav Globan</b>     |
| <b>Ingeborg Matečić</b>      | <b>Mateja Brozović</b>       | <b>Tomislav Herceg</b>     |
| <b>Ivana Mamić Sačer</b>     | <b>Mirjana Hladika</b>       | <b>Valentina Vučković</b>  |
| <b>Ivana Marić</b>           | <b>Miroslav Mandić</b>       | <b>Vanja Krajinović</b>    |
| <b>Ivana Načinović Braje</b> | <b>Nikolina Dečman</b>       | <b>Vladimir Arčabić</b>    |
| <b>Ivana Pavić</b>           | <b>Ozana Nadoveza Jelić</b>  | <b>Zoran Krupka</b>        |

University of Zagreb, Faculty of Economics and Business

**Agnieszka Ignys**

Poznań University of Economics and Business, Poland

**Biruta Sloka**

University of Latvia, Faculty of Business, Management and Economics, Latvia

**Danguole Oželienė**

Vilnius University Business School, Lithuania

**Diana Bratić**

University of Zagreb, Faculty of Graphic Arts, Croatia

**Gabrijela Vidić**

University of Zadar, Croatia

**Goran Vuković**

University of Maribor, Faculty of Organizational Sciences, Slovenia

**Hatidža Jahić**

University of Sarajevo, School of Economics and Business, Bosnia and Herzegovina

**Ján Dvorský**

Tomas Bata University in Zlin, Faculty of Management and Economics, Czech Republic

**Jana Blštáková**

University of Economics in Bratislava, Faculty of Business Management, Slovakia

**Junsoo Lee**

University of Alabama, USA

**Krešimir Žigic**

CERGE-EI, Czech Republic

**Margarida Abreu Novais**

Griffith University, Australia

**Mateja Petračić**

Karlovac University of Applied Science, Croatia

**Noha El-Bassiouny**

German University in Cairo, Egypt

**Olga Miroshnychenko**

Taras Shevchenko National University of Kyiv, Ukraine

**Robert Sonora**

University of Montana, USA

**Senka Borovac Zekan**

University of Split, University Department of Professional Studies, Croatia

**Simona Šarotar Žižek**

University of Maribor, Faculty of Economics and Business, Slovenia

**Agnes Somosi**

John von Neumann University, Hungary

**Throstur Olaf Sigurjonsson**

University of Iceland, Iceland

**Tjaša Redek**

University of Ljubljana, School of Economics and Business, Slovenia

**Vilem Semerak**

CERGE-EI, Czech Republic

**FEB Zagreb 12th International Odyssey Conference on Economics  
and Business**

**June 9-12, 2021, Croatia**

***Šibenik & online***

***Under the patronage of***



MINISTRY OF SCIENCE  
AND EDUCATION  
OF THE REPUBLIC OF CROATIA

## Table of contents

### ACCOUNTING

FINANCIAL REPORTING QUALITY MEASUREMENT – APPROACHES, ISSUES AND FUTURE TRENDS .1

Željana ALJINOVIĆ BARAĆ

PROFESSIONAL ACCOUNTANTS SKILLS EXPECTED FROM ACCOUNTING EMPLOYERS EVIDENCE FROM RECENT RESEARCH.....14

Ivana BARIŠIĆ

Ana NOVAK

Sanja SEVER MALIŠ

ABSENTEEISM AND LOST PROFIT OF EMPLOYERS CAUSED BY THE COSTS OF ABSENTEEISM .....28

Sanja BROZ TOMINAC

Matea MILOŠ

Ana ALEKSIĆ

FINANCIAL POSITION AND PERFORMANCE OF LISTED HOTELS IN TIMES OF PANDEMIC – CASE OF CROATIA .....38

Mateja BROZOVIĆ

Sanja SEVER MALIŠ

Luana BOŽIĆ

TOWARDS FULL DIGITIZATION OF THE FINANCIAL REPORTING – OVERVIEW OF THE FINANCIAL REPORTING LANGUAGES .....55

Marina ĐUROVIĆ

Ana REP

Nikolina DEČMAN

SECTORAL ANALYSIS OF THE PROFITABILITY AND IMPORT COMPONENT CONTRIBUTION WITHIN THE VALUE CHAIN IN CROATIA .....70

Darko KARIĆ

Ivana PAVIĆ

Ana REP

THE CONSISTENT FEATURE: BRAND EQUITY ACCOUNTING – A CURRENT VIEW FROM THE PERSPECTIVE OF IFRS AND MARKETING .....92

Gunther MEEH-BUNSE

Katja LUER

Thorsten LITFIN

POSSIBLE APPROACHES FOR ACCOUNTING OF BUSINESS COMBINATIONS UNDER COMMON CONTROL- EVIDENCE FROM CROATIAN CONSOLIDATED GROUPS .....107

Hrvoje PERČEVIĆ

Marina ERCEGOVIĆ

|                                                                                                                                 |     |
|---------------------------------------------------------------------------------------------------------------------------------|-----|
| PRIORITY OF THE ECONOMIC SUBSTANCE OF THE TRANSACTION OVER THE LEGAL FORM IN THE FINANCIAL REPORTING OF LATVIAN COMPANIES ..... | 122 |
|---------------------------------------------------------------------------------------------------------------------------------|-----|

Jūlija POUHA

|                                                                              |     |
|------------------------------------------------------------------------------|-----|
| CRITICAL AUDITORS' EXPERTISE FOR BLOCKCHAIN-BASED BUSINESS ENVIRONMENT ..... | 133 |
|------------------------------------------------------------------------------|-----|

Boris TUŠEK

Ana JEŽOVITA

Petra HALAR

## **ECONOMICS**

|                                                                                                                                                             |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| ENTREPRENEURSHIP EDUCATION AS A FACTOR OF ORGANIZATIONAL SUPPORT TO EMPLOYEE ENTREPRENEURIAL ACTIVITY WITH THE NECESSARY INCENTIVE OF TAX INSTRUMENTS ..... | 145 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|

Ivana BEKIĆ

Iva SENGOVIĆ

Tajana KRAMAR ŠANDL

|                                                                                                                                          |     |
|------------------------------------------------------------------------------------------------------------------------------------------|-----|
| ECOMUSEUM – A CONTEMPORARY CONCEPT AND KEY SOLUTION FOR VALORISATION OF HERITAGE AND SUSTAINABLE DEVELOPMENT IN THE EUROPEAN UNION ..... | 161 |
|------------------------------------------------------------------------------------------------------------------------------------------|-----|

Vlatka BILAS

Lana TRIFUNIĆ

|                                                         |     |
|---------------------------------------------------------|-----|
| HYSTERESIS IN TRADE FLOWS OF EX-YUGOSLAV COUNTRIES..... | 173 |
|---------------------------------------------------------|-----|

Mile BOŠNJAK

|                                                 |     |
|-------------------------------------------------|-----|
| EFFECTIVE TANGIBLE FIXED ASSETS MANAGEMENT..... | 183 |
|-------------------------------------------------|-----|

Vladimir BUKVIĆ

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| YOUTH ENTREPRENEURSHIP IN RURAL AREAS – REFLECTION ON CROATIA ..... | 197 |
|---------------------------------------------------------------------|-----|

Borna BULJAN

Božena KRCE MIOČIĆ

|                                                                        |     |
|------------------------------------------------------------------------|-----|
| SPECIFICITIES OF DIGITAL BUSINESS MODELS IN RELATION TO TAXATION ..... | 214 |
|------------------------------------------------------------------------|-----|

Mario HAK

Berislav ANDRLIĆ

Anton DEVČIĆ

|                                                                        |     |
|------------------------------------------------------------------------|-----|
| GROWTH OF SMALL AND MEDIUM SIZED ENTERPRISES: THE CASE OF KOSOVO ..... | 223 |
|------------------------------------------------------------------------|-----|

Arbenita HALILAJ

|                                                                                                    |     |
|----------------------------------------------------------------------------------------------------|-----|
| TACKLING YOUTH UNEMPLOYMENT IN BOSNIA AND HERZEGOVINA: INSTITUTIONS, POLICIES AND CHALLENGES ..... | 238 |
|----------------------------------------------------------------------------------------------------|-----|

Hatidza JAHIC

Almir PESTEK

|                                                                     |     |
|---------------------------------------------------------------------|-----|
| EMPLOYMENT RELATIONS UNDER COVID-19 CRISIS – CASE OF SLOVAKIA ..... | 252 |
|---------------------------------------------------------------------|-----|

Miroslava KNAPKOVA

|                                                                                                                                                                                               |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| THE ABSENCE OF INFLATIONARY PRESSURES DURING LARGE MONETARY INTERVENTIONS BY CENTRAL BANKS .....                                                                                              | 264 |
| Marin LEVAJ                                                                                                                                                                                   |     |
| INNOVATIONS AND KNOWLEDGE-BASED ECONOMY: PERFORMANCE OF UKRAINE AND CROATIA .....                                                                                                             | 274 |
| Olga MIROSHNYCHENKO                                                                                                                                                                           |     |
| Fran GALETIĆ                                                                                                                                                                                  |     |
| THE EFFECTS OF LABOUR MARKET POLICY SPENDING SHOCKS: DOES IT MATTER WHERE WE ARE IN THE BUSINESS CYCLE?.....                                                                                  | 290 |
| Ozana NADOVEZA JELIĆ                                                                                                                                                                          |     |
| Tomislav SEKUR                                                                                                                                                                                |     |
| Marko DRUŽIĆ                                                                                                                                                                                  |     |
| PERFORMANCE EVALUATION OF THE FRUIT AND VEGETABLE SUBSECTORS IN THE AZERBAIJANI ECONOMY: A COMBINATORIAL ANALYSIS USING REGRESSION AND PRINCIPAL COMPONENT ANALYSIS .....                     | 308 |
| Ibrahim NIFTIYEV                                                                                                                                                                              |     |
| LABOR MARKET INSTITUTIONS CONVERGENCE IN THE EUROPEAN UNION .....                                                                                                                             | 328 |
| Alka OBADIĆ                                                                                                                                                                                   |     |
| Vladimir ARČABIĆ                                                                                                                                                                              |     |
| Lucija ROGIĆ DUMANČIĆ                                                                                                                                                                         |     |
| DEVELOPMENT POTENTIAL AND FUTURE OF CROATIAN SHIPBUILDING INDUSTRY .....                                                                                                                      | 347 |
| Luka PAVELIĆ                                                                                                                                                                                  |     |
| Tomislav HERCEG                                                                                                                                                                               |     |
| EUROPEAN UNION ENERGY INDUSTRY: AN OVERVIEW .....                                                                                                                                             | 360 |
| Dubravka PEKANOV STARČEVIĆ                                                                                                                                                                    |     |
| Boris CRNKOVIĆ                                                                                                                                                                                |     |
| Ivana BESTVINA BUKVIĆ                                                                                                                                                                         |     |
| COASTAL AND CONTINENTAL REGIONAL ENTREPRENEURSHIP IN THE MACRO SYSTEM .....                                                                                                                   | 369 |
| Damir PIPLICA                                                                                                                                                                                 |     |
| Tihomir LUKOVIĆ                                                                                                                                                                               |     |
| Nikola VUKČEVIĆ                                                                                                                                                                               |     |
| INTERFERENCE OF THE PUBLIC SPHERE WITH THE PRIVATE SPHERE. A STUDY OF THE RELATIONSHIP BETWEEN THE DEGREE OF INSOLVENCY PHENOMENON PENALIZATION AND THE EFFECTIVENESS OF INSOLVENCY LAW ..... | 380 |
| Katarzyna PUSTULKA                                                                                                                                                                            |     |
| COMPARISON OF THE USABILITY OF EU FUNDS IN THE REPUBLIC OF CROATIA WITH THE COUNTRIES THAT HAVE SIMILAR ECONOMIC INDICATORS.....                                                              | 390 |
| Mladen RAJKO                                                                                                                                                                                  |     |

|                                                                                                                                      |     |
|--------------------------------------------------------------------------------------------------------------------------------------|-----|
| INSTITUTIONS AND THE EFFICIENCY OF THE EUROPEAN UNION PRODUCT MARKET WITH AN EMPHASIS ON CROATIA – DYNAMIC PANEL DATA ANALYSIS ..... | 403 |
|--------------------------------------------------------------------------------------------------------------------------------------|-----|

Lucija ROGIĆ DUMANČIĆ

Željko BOGDAN

Irena RAGUŽ KRIŠTIĆ

|                                                                                                                                       |     |
|---------------------------------------------------------------------------------------------------------------------------------------|-----|
| A POSSIBLE METHOD OF OPTIMIZATION OF INTERMITTENT RENEWABLE SOURCES PLANNING POLICY FOR MINIMIZED EXTERNAL COSTS OF VARIABILITY ..... | 427 |
|---------------------------------------------------------------------------------------------------------------------------------------|-----|

Dubravko SABOLIĆ

Iljko ĆURIĆ

|                                                                                                                                                  |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| THE EFFECT OF UNEMPLOYMENT ON THE CRIME RATE: COMPARATIVE ANALYSIS BETWEEN WESTERN BALKAN COUNTRIES AND SELECTED EU COUNTRIES (2012 - 2018)..... | 440 |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----|

Durim SELMONAJ

Fisnik MORINA

|                                                                                |     |
|--------------------------------------------------------------------------------|-----|
| DETERMINANTS OF EXPORTS IN KOSOVO: EVIDENCE FROM THE REGRESSION ANALYSIS ..... | 461 |
|--------------------------------------------------------------------------------|-----|

Shkëlqesa SMAJLI

Agnesa SMAJLI

|                                                                                            |     |
|--------------------------------------------------------------------------------------------|-----|
| HOUSEHOLD CONSUMPTION STRUCTURE AS AN INDICATOR OF ECONOMIC MIGRATION IN EU COUNTRIES..... | 477 |
|--------------------------------------------------------------------------------------------|-----|

Marin STRMOTA

Krešimir IVANDA

|                                                                                                                |     |
|----------------------------------------------------------------------------------------------------------------|-----|
| INVESTIGATING THE DETERMINANTS OF EU-28 SOVEREIGN CREDIT RATINGS USING STEPWISE LEAST SQUARES REGRESSION ..... | 489 |
|----------------------------------------------------------------------------------------------------------------|-----|

Berislav ŽMUK

Hrvoje JOŠIĆ

## **EDUCATION**

|                                                                                  |     |
|----------------------------------------------------------------------------------|-----|
| ONLINE LEARNING VS TRADITIONAL LEARNING: THE RESEARCH OF STUDENT ATTITUDES ..... | 502 |
|----------------------------------------------------------------------------------|-----|

Fran GALETIĆ

|                                                                                                    |     |
|----------------------------------------------------------------------------------------------------|-----|
| THE EFFECT OF ETHICS EDUCATION ON STUDENTS' ETHICAL DECISIONS: AN EXPLORATORY LAB EXPERIMENT ..... | 517 |
|----------------------------------------------------------------------------------------------------|-----|

Chaoping LI

|                                                                       |     |
|-----------------------------------------------------------------------|-----|
| TO TEACH OR NOT TO TEACH BUSINESS ETHICS – THAT IS THE QUESTION ..... | 527 |
|-----------------------------------------------------------------------|-----|

NATAŠA RUPČIĆ

|                                                                                                                           |     |
|---------------------------------------------------------------------------------------------------------------------------|-----|
| ENTREPRENEURIAL COMPETENCY DEVELOPMENT - EVALUATION OF TEACHING METHODS FROM THE PERSPECTIVE OF UNIVERSITY STUDENTS ..... | 541 |
|---------------------------------------------------------------------------------------------------------------------------|-----|

Michaela SLABOVÁ

Ladislav ROLÍNEK

|                                                       |     |
|-------------------------------------------------------|-----|
| SERVICE QUALITY MEASUREMENT IN HIGHER EDUCATION ..... | 556 |
|-------------------------------------------------------|-----|

Vivien SURMAN

Zsuzsanna Eszter TÓTH

|                                                                                                |     |
|------------------------------------------------------------------------------------------------|-----|
| MOTIVATION DIMENSIONS OF BUSINESS ANALYSES STUDENTS IN THE DISTANCE LEARNING ENVIRONMENT ..... | 571 |
|------------------------------------------------------------------------------------------------|-----|

Zsuzsanna TÓTH

Éva ERDÉLYI

Zsolt TÖRCSVÁRI

## **FINANCE**

|                                                 |     |
|-------------------------------------------------|-----|
| EFFECTIVE TANGIBLE FIXED ASSETS MANAGEMENT..... | 590 |
|-------------------------------------------------|-----|

Vladimir BUKVIČ

|                                                                                   |     |
|-----------------------------------------------------------------------------------|-----|
| START-UP FIRMS AS A FORM OF ENTREPRENEURIAL ACTIVITY: RECENT TRENDS IN CROATIA... | 604 |
|-----------------------------------------------------------------------------------|-----|

Lucija JELIĆ

Lidija DEDI

|                                                                                                                  |     |
|------------------------------------------------------------------------------------------------------------------|-----|
| THE IDENTIFICATION OF INDICATORS INFLUENCING THE CREDIT RISK OF AUTOMOTIVE COMPANIES IN THE CZECH REPUBLIC ..... | 613 |
|------------------------------------------------------------------------------------------------------------------|-----|

Blanka KAMENÍKOVÁ

Radka DAŇOVÁ

Tomáš URBÁNEK

|                                                                                           |     |
|-------------------------------------------------------------------------------------------|-----|
| “OLD” VS. “NEW” INTERNATIONAL FINANCIAL INSTITUTIONS: COMPETITORS OR SUPPLEMENTARIES..... | 623 |
|-------------------------------------------------------------------------------------------|-----|

Gordana KORDIĆ

|                                                                                            |     |
|--------------------------------------------------------------------------------------------|-----|
| BEHAVIOURAL BIASES AND RISK PROPENSITY OF CROATIAN CITIZENS IN THE CORONAVIRUS CRISIS..... | 635 |
|--------------------------------------------------------------------------------------------|-----|

ANA KUNDID NOVOKMET

DORA JUG

PETAR AKRAP

|                                                                                                                   |     |
|-------------------------------------------------------------------------------------------------------------------|-----|
| THE EVALUATION OF EFFICIENCY AFTER SOLVENCY 2 IMPLEMENTATION: AN EMPIRICAL STUDY IN THE REPUBLIC OF CROATIA ..... | 662 |
|-------------------------------------------------------------------------------------------------------------------|-----|

Maja MIHELJA ŽAJA

Margareta GARDIJAN KEDŽO

Marta HARAMUSTEK

|                                                                                                                   |     |
|-------------------------------------------------------------------------------------------------------------------|-----|
| THE IMPACT OF FINANCIAL SERVICES DEVELOPMENT ON THE LIVING STANDARD OF POPULATION IN BOSNIA AND HERZEGOVINA ..... | 679 |
|-------------------------------------------------------------------------------------------------------------------|-----|

Zoran NAJDANOVIĆ

Natalia TUTEK

Mirko PALIĆ

|                                                                       |     |
|-----------------------------------------------------------------------|-----|
| MONETARY FALLOUTS IN SINGLE LEGAL TENDER, IN GLOBAL AREA UNIONS ..... | 689 |
|-----------------------------------------------------------------------|-----|

Mario PINES



|                                                                                                                                        |                         |
|----------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| MANAGERIAL OVERCONFIDENCE IN CAPITAL STRUCTURE DECISIONS AND ITS LINK TO AGGREGATE DEMAND: AN AGENT-BASED MODEL PERSPECTIVE .....      | 702                     |
| Marcin RZESZUTEK                                                                                                                       |                         |
| Antoine GODIN                                                                                                                          |                         |
| Adam SZYSZKA                                                                                                                           |                         |
| Stanislas AUGIER                                                                                                                       |                         |
| BANKRUPTCY MODELLING: FACTORS INFLUENCING MODELS PREDICTABILITY .....                                                                  | 742                     |
| Martina SPONEROVA                                                                                                                      |                         |
| PORTFOLIO SELECTION: A GAME THEORY BASED MODEL FOR SUPERIOR PERFORMANCE .....                                                          | 753                     |
| Mirza ŠIKALO                                                                                                                           |                         |
| Almira ARNAUT-BERILO                                                                                                                   |                         |
| Azra ZAIMOVIĆ                                                                                                                          |                         |
| THE EFFECTS OF QUANTIFICATION OF LIQUIDITY RISK REQUIREMENTS ON THE AGGREGATED LEVEL OF LIQUID ASSETS IN CROATIAN BANKING SECTOR ..... | 770                     |
| Džanela ŠTEFANEC                                                                                                                       |                         |
| Azra ZAIMOVIĆ                                                                                                                          |                         |
| THE IMPACT OF MEDIA REPORTING ON BANK SAVINGS AS AN INCENTIVE FOR PROMOTING FINANCIAL LITERACY .....                                   | 783                     |
| Roman ŠUBIĆ                                                                                                                            |                         |
| IT                                                                                                                                     |                         |
| E-GOVERNMENT IN CROATIA: STATE OF PLAY AND<br>COVID-19 CRISIS                                                                          | LESSONS FROM THE<br>795 |
| Ana ANDABAKA                                                                                                                           |                         |
| APPLICATION OF DIGITAL TECHNOLOGIES IN BANKING OPERATIONS IN THE REPUBLIC OF CROATIA .....                                             | 811                     |
| Filip BIROVČEC                                                                                                                         |                         |
| Vjekoslav BRATIĆ                                                                                                                       |                         |
| Božidar JAKOVIĆ                                                                                                                        |                         |
| THE INTERSECTION BETWEEN IOT AND BPM: SYSTEMATIC LITERATURE REVIEW .....                                                               | 825                     |
| Vesna BOSILJ VUKŠIĆ                                                                                                                    |                         |
| Ana-Marija STJEPIĆ                                                                                                                     |                         |
| Dalia SUŠA VUGEC                                                                                                                       |                         |
| ICT INVESTMENT IMPACT ON THE COMPANY PROFITABILITY .....                                                                               | 838                     |
| Natalija KOKOLEK                                                                                                                       |                         |
| Božidar JAKOVIĆ                                                                                                                        |                         |
| Tamara ĆURLIN                                                                                                                          |                         |

|                                                                                                                 |     |
|-----------------------------------------------------------------------------------------------------------------|-----|
| OPEN DATA, ONLINE VOTING AND ONLINE DISCUSSIONS: DIGITAL IMMIGRANTS vs. DIGITAL NATIVES .....                   | 851 |
| Jovana ZOROJA                                                                                                   |     |
| Ivan MILOLOŽA                                                                                                   |     |
| Igor KLOPOTAN                                                                                                   |     |
| MANAGEMENT                                                                                                      |     |
| CIVIC ACTIVISM OF BOSNIA AND HERZEGOVINA'S CITIZENS.....                                                        | 866 |
| Selma BITEVIJA                                                                                                  |     |
| Hatidza JAHIC                                                                                                   |     |
| Almir PESTEK                                                                                                    |     |
| REDUCING SOCIAL STRATIFICATION VIA DIGITAL SKILLS IMPROVEMENT: THE CASE OF SOCIAL ENTERPRISES IN LATVIA .....   | 878 |
| Kristine CASNO                                                                                                  |     |
| Biruta SLOKA                                                                                                    |     |
| LINKING HRM PRACTICES TO OPERATIONAL PERFORMANCE IN THE EMERGING ECONOMY .....                                  | 891 |
| Xhavit ISLAMI                                                                                                   |     |
| Enis MULOLLI                                                                                                    |     |
| SUPPLIER INVOLVEMENT IN NEW PRODUCT DEVELOPMENT .....                                                           | 902 |
| Aurelija MARCINA                                                                                                |     |
| Jure ERJAVEC                                                                                                    |     |
| THE ROLE OF MISSION IN MANAGEMENT OF CULTURE AND ART – CASE STUDY OF MIMARA MUSEUM.....                         | 916 |
| Ivana MARIĆ                                                                                                     |     |
| Ana HOIĆ                                                                                                        |     |
| Josipa KVATERNIK                                                                                                |     |
| GIG WORK: THE CHALLENGES FOR THE PROTECTION OF PLATFORM WORKERS' RIGHTS.....                                    | 934 |
| Ivana NAČINOVIĆ BRAJE                                                                                           |     |
| Kosjenka DUMANČIĆ                                                                                               |     |
| Zoran WITTINE                                                                                                   |     |
| INTERNAL SOCIAL NETWORKS IN DAILY OPERATIONS AND THEIR IMPACT ON GREATER EMPLOYEE SATISFACTION.....             | 946 |
| Jelena PETROVIĆ                                                                                                 |     |
| WORK-STUDY-LIFE BALANCE – THE CONCEPT, ITS DYADS, SOCIO-DEMOGRAPHIC PREDICTORS AND EMOTIONAL CONSEQUENCES ..... | 955 |
| Nina POLOŠKI VOKIĆ                                                                                              |     |
| Milka RIMAC BILUŠIĆ                                                                                             |     |
| Iva PERIĆ                                                                                                       |     |

|                                                                                                                                                         |      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| MAPPING THE EVOLUTION OF AGILITY MANAGEMENT AS A RESEARCH PARADIGM .....                                                                                | 971  |
| Vasja ROBLEK                                                                                                                                            |      |
| Judita PETERLIN                                                                                                                                         |      |
| Maja MEŠKO                                                                                                                                              |      |
| Vlado DIMOVSKI                                                                                                                                          |      |
| EFFECT OF THE PANDEMIC ON SUSTAINABLE DEVELOPMENT OF ENTERPRISES .....                                                                                  | 990  |
| Aleksandra STANEK-KOWALCZYK                                                                                                                             |      |
| Anna SKOWRONEK-MIELCZAREK                                                                                                                               |      |
| Monika ZAJKOWSKA                                                                                                                                        |      |
| <b>MARKETING</b>                                                                                                                                        |      |
| CONCEPTUALIZATION OF SERVICE VALUE ON THE MARKET OF RESEARCH, DEVELOPMENT AND INNOVATION PRODUCTS AND SERVICES: INFLUENCE ON PURCHASE INTENTIONS.....   | 1010 |
| Nina ANTIČIĆ                                                                                                                                            |      |
| DESCRIPTIVE STUDY OF THE COMPLEX DECISION-MAKING MECHANISMS OF CONSUMERS OF DIGITAL FPS GAMES: OR ON WHAT BASIS DOES THE HUNGARIAN FPS GAMER BUY? ..... | 1028 |
| Gönczy BALÁZS                                                                                                                                           |      |
| TRAVEL INSURANCE ONLINE INTERMEDIARY PLATFORMS: FACTORS OF INFLUENCE ON BEHAVIORAL INTENTION AND THE ROLE OF INNOVATION ADOPTION TYPE .....             | 1042 |
| Valentina BALDIGARA                                                                                                                                     |      |
| Ivana FIRST KOMEN                                                                                                                                       |      |
| POLITICAL BRANDS POSITIONING IN CROATIA WITHIN THE YOUTH SEGMENT .....                                                                                  | 1057 |
| Karla BILANDŽIĆ                                                                                                                                         |      |
| Ana PAP                                                                                                                                                 |      |
| Marija HAM                                                                                                                                              |      |
| SENTIMENT ANALYSIS OF THE INFOGRAPHICS ON SOCIAL MEDIA .....                                                                                            | 1073 |
| Diana BRATIĆ                                                                                                                                            |      |
| Mirko PALIĆ                                                                                                                                             |      |
| Petar MILJKOVIĆ                                                                                                                                         |      |
| THE PATH TO AUTHENTICITY IS PAVED WITH THE RIGHT CUES: A DECADE OF RESEARCH ON BRAND AUTHENTICITY .....                                                 | 1083 |
| Branka DROPULIĆ                                                                                                                                         |      |
| Đurđana OZRETIĆ DOŠEN                                                                                                                                   |      |
| SOCIAL MEDIA USE IN MUNICIPALITIES IN LATVIA .....                                                                                                      | 1099 |
| Biruta SLOKA                                                                                                                                            |      |
| Kate LASE                                                                                                                                               |      |
| Mārcis VĪTOLS                                                                                                                                           |      |

|                                                                                                                                       |      |
|---------------------------------------------------------------------------------------------------------------------------------------|------|
| INFLUENCE OF COVID-19 ON ONLINE PURCHASE HABITS IN CROATIA.....                                                                       | 1110 |
| Marija STAMAĆ OŽANIĆ                                                                                                                  |      |
| Irena STARMAN FRANČIĆ                                                                                                                 |      |
| DID CORONAVIRUS PANDEMIC CHANGE CONSUMER PURCHASE BEHAVIOUR: PRELIMINARY RESEARCH .....                                               | 1127 |
| Jelena ŠIŠARA                                                                                                                         |      |
| Jasmina SLADOLJEV                                                                                                                     |      |
| Divna GOLEŠ                                                                                                                           |      |
| EXPLORING MOBILE SHOPPING INTENTIONS: AN ANALYSIS OF SELF-ESTEEM AND ATTITUDES TOWARD M-SHOPPING .....                                | 1140 |
| Radica VELJANOVA                                                                                                                      |      |
| ANITA CIUNOVA-SHULESKA                                                                                                                |      |
| <b>TOURISM</b>                                                                                                                        |      |
| LOCALS' ATTITUDES TOWARDS TOURISM DEVELOPMENT: THE CASE OF OMAN .....                                                                 | 1153 |
| Zakiya S. AL-HASNI                                                                                                                    |      |
| Galal M. H. AFIFI                                                                                                                     |      |
| THE ROLE OF BIKE SHARING SYSTEM IN DEVELOPING SUSTAINABLE URBAN TOURISM DESTINATION .....                                             | 1170 |
| Kristina BUČAR                                                                                                                        |      |
| Petra BARIŠIĆ                                                                                                                         |      |
| Nidžara OSMANAGIĆ BEDENIK                                                                                                             |      |
| EXPLORING HOW INTERNET IMPACTS NATURE-BASED DESTINATION SATISFACTION .....                                                            | 1185 |
| Songling CHANG                                                                                                                        |      |
| Éva ERDÉLYI                                                                                                                           |      |
| THE DIFFERENCES AND SIMILARITIES OF THE SPANISH FLU AND THE COVID-19 PANDEMIC IN THE REGION OF OPATIJA FROM A HORECA PERSPECTIVE..... | 1201 |
| Wolfram IRSA                                                                                                                          |      |
| SHEDDING THE LIGHT ON DARK TOURISM RESEARCH: A SCIENTOMETRIC ANALYSIS OF LANDMARK STUDIES.....                                        | 1214 |
| Ingeborg MATEČIĆ                                                                                                                      |      |
| Oliver KESAR                                                                                                                          |      |
| Danijela FERJANIĆ HODAK                                                                                                               |      |
| CREATIVE INDUSTRY AS GENERATOR OF TOURISM TRANSFORMATION AND ECONOMIC DEVELOPMENT.....                                                | 1232 |
| Karmen MIKULIĆ                                                                                                                        |      |
| Adriana JELUŠIĆ                                                                                                                       |      |
| TRAVEL INFLUENCERS AS A NEW STRATEGIC PARTNERS IN TOURISM .....                                                                       | 1250 |
| Magdalena MUSTAPIĆ VLAHOV                                                                                                             |      |
| Antonio VLAHOV                                                                                                                        |      |

|                                                                                                        |      |
|--------------------------------------------------------------------------------------------------------|------|
| CAN CULTURAL TOURISM FOSTER SOCIAL WELL-BEING? THE CASE OF THE MUSEUM OF<br>BROKEN RELATIONSHIPS ..... | 1268 |
|--------------------------------------------------------------------------------------------------------|------|

Lorena UJEVIĆ

Ingeborg MATEČIĆ

Daniela Angelina JELINČIĆ

# **ACCOUNTING**

# FINANCIAL REPORTING QUALITY MEASUREMENT – APPROACHES, ISSUES AND FUTURE TRENDS

Željana ALJINOVIĆ BARAĆ

*University of Split, Faculty of Economics, Business, and Tourism*

*Cvite Fiskovica 5, 21000 Split, Croatia*

*zbarac@efst.hr*

## **Abstract**

*Different high-profile corporate scandals worldwide but also in Croatia have highlighted the crucial importance of credible, high quality financial reporting system. The issue of financial reporting quality (FRQ) is an important part of the regulatory and supervisory infrastructure, as well as an activity of great public interest, so it arises a question of its adequate and reliable measurement. Higher quality of financial reporting brings the more significant benefits to investors and other financial statement users. As earnings are widely believed to be the single most important information item provided in financial statements, therefore FRQ is commonly approximated by earnings quality. Researchers developed a huge range of earnings quality metrics, such as accruals quality, persistence, volatility, conservatism, etc. but various releases and restatements from external resources are also used. The aim of this paper and its' scientific contribution is two folded: first, to present an extensive review of the most relevant FRQ measures, including their variations; and second, to provide a list of their advantages and disadvantages. Moreover, the suitability of their application in Croatia as a case of bank-oriented economy with accounting macro-oriented system will be discussed.*

**Keywords:** financial reporting quality, earnings quality, earnings management

**JEL classification:** M41

## **Introduction**

The importance of financial reporting quality (FRQ) is well acknowledged by academics, standard setters and market regulators striving to develop appropriate accounting standards and corporate governance framework. Although the issue of FRQ is always actual, it becomes especially relevant when different financial distresses or corporate scandals (e.g. recent Agrokor case in Croatia) occur.

According to International Financial Reporting Standards (IFRS) Framework, high quality financial reporting system should provide decision-useful information, which is relevant and faithfully represents underlying economic reality of the company for capital providers and other stakeholders in making investment, credit and similar resource-allocation decisions (IASB, 2018). In a literature review on the impact of IFRS on FRQ, Newman, Edmore, Milondzo & Wadesango (2016) document the benefits of IFRS adoption that implicitly or explicitly improve

the quality of financial reporting of listed companies in a regulatory capital market. However, the results differ in the cases of voluntary and mandatory IFRS adoption. Most research document substantial economic benefits following voluntary adoption, and contrary, evidence show FRQ decreasing in the case of mandatory IFRS adoption because of earnings management activities.

Although there is a general consensus among academics and practitioners that FRQ is an important feature of financial reporting process, there is no consensus on its definition and meaning (Dichev, Graham, Harvey & Rajgopal, 2013). One of the reasons why FRQ is hard to define is because it is contingent on context of a specific decision model and depends on an informative representation of underlying financial performance (Dechow, Ge, & Schrand, 2010). Moreover, FRQ is also affected by the quality of financial statement audit. To be more precise, DeFond & Zhang (2014) describe these relations using two equations:  $FRQ = f(AQ, R, I)$  and  $\partial FRQ / \partial AQ > 0$ , where financial reporting quality is a function of audit quality (AQ), the quality of the firm's financial reporting system (R) which maps its underlying economics into financial reports, and its innate characteristics (I) which determine its underlying economics. Thus, achieving high FRQ depends on the integrity of each of the links in the financial reporting supply chain: managers, accountants, audit committees, external auditors, etc., so it is necessary to choose adequate and reliable FRQ proxies. Lev (1989) have noticed that earnings are widely believed to be the single most important information item provided in financial statements, so FRQ is commonly approximated by earnings quality measures. Dechow & Schrand (2004) outline that high-quality reported earnings reflect current operating performance, indicate future performance and accurately annuitize the intrinsic value of the company. Also, inverse measurement of earnings quality may be used as indicator of earnings management activities.

## **Review of financial reporting quality measures**

Although FRQ is a multidimensional concept without general definition which is difficult to quantify, researchers primarily use earnings quality as the most representative measure of overall FRQ. The origins of this concept can be found in Lev's work (1989), where he introduced the term "quality" in describing earnings, i.e. decision-usefulness of earnings in the context of equity valuation. Nowadays the use of terms earnings quality and financial reporting quality has been extended broadly, and moreover, research on the earnings quality are characterized by continual attempts at refining the analysis, usually revealing considerable inventiveness and more sophisticated methodology. This consequently led to wide spread of FRQ proxies, which according to Francis, LaFond, Olsson, P.M. & Schipper (2004) may be generally classified into two groups: accounting-based and market-based earnings measures.

Accounting-based attributes use only accounting information for earnings measurement. They are based on assumption that the role of earnings is correct allocation of cash flows to periods by using accruals, so earnings of better quality allocate cash flows more effectively.

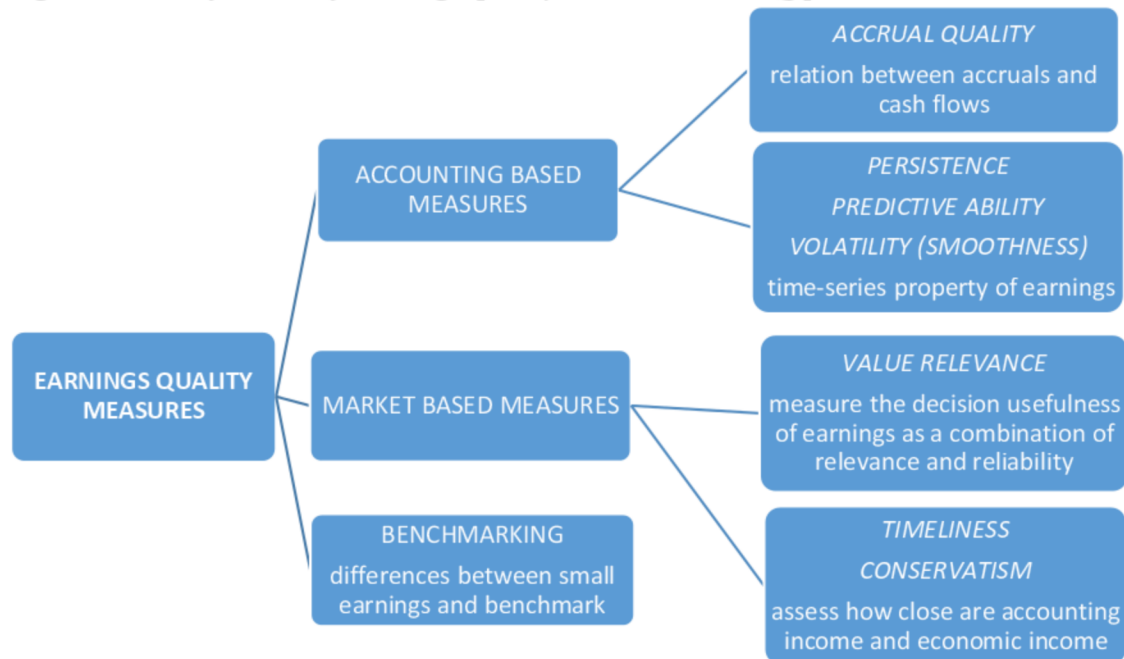
Market-based attributes use accounting information as well as market data for earnings measurement and assume that the function of earnings is to reflect economic income approximated by stock returns. Therefore, higher quality earnings are closer to stock returns.



Dechow et al. (2010) identified a third group of attributes that use small positive differences between reported earnings and any benchmark as earnings quality proxy. These measures are based on unusual clustering (kinks or changes) in the distribution of earnings, and points to earnings management activities around targets. Thus, lower quality earnings are observations at or slightly above the targets.

Classification and most relevant FRQ proxies are presented in the picture below and will be discussed in more detail.

Figure 1. Classification of earnings quality attributes as FRQ proxies



Source: Author's adoption according to Francis et al., 2004, Dechow et al., 2010

Accounting-based attributes are divided to accrual quality measure which is based on a relation between accruals and cash flows, and measures that are based on time-series property of earnings (persistence, predictive ability, and volatility).

Accruals quality and abnormal accruals is the most popular earnings quality measure. Studies regarding this attribute generally intend to divide accruals into a component that is associated with the company's fundamental earnings process and into abnormal accruals, which are assumed to be discretionary (Dechow et.al, 2010). Higher levels of abnormal accruals are assumed to reduce the quality of earnings because they represent less persistent component of earnings. However, there is no general consensus on how to estimate "normal" levels of accruals associated with common business activities that generate revenues, so several different models are used frequently. The basic, Jones (1991) model computes accruals as a function of revenue growth and property, plant, and equipment, using the following notation:  $ACC_{it} = 0i(1TA_{it-1}) + 1i(\Delta REV_{it}TA_{it-1}) + 2i(GPPE_{ijt}TA_{it-1}) + i,t$ , where  $ACC_{it}$  is total accrual in year  $t$ .  $GPPE_{it}$  is gross property, plant, and equipment as reported in the statement of financial position and  $\Delta REV_{it}$  is the change in revenue reported in the statement of profit and loss. All variables are scaled by  $TA_{it}$ .

$i$ , which is total assets, as reported in the statement of financial position in year  $t-1$ . Jones constructed this model as a tool for earnings management detection, and years after she adjusted it to exclude growth in credit sales in years flagged as manipulated. Another modification was made to capture industry specificities, so the cross-sectional modified-Jones model for estimation of total abnormal accruals may be expressed as  $DACC_{ijt} = ACC_{ijt}TA_{ijt-1} - 0.01TA_{ijt-1} + 1.01(\Delta REV_{ijt}TA_{ijt-1}) + 2.01(GPPE_{ijt}TA_{ijt-1})$ , where  $DACC_{ijt}$  is discretionary accrual component and subscript  $i$  denotes each company in the industry estimation portfolios  $j$  by two-digit SIC codes.  $ACC_{ijt}$  is total accruals and  $GPPE_{ijt}$  is gross property, plant, and equipment, all as reported in the statement of financial position and  $\Delta REV_{ijt}$  is the change in revenue reported in the statement of profit and loss. All variables are scaled by  $TA_{ijt-1}$ , which is total assets at the beginning of the year  $t$ , as reported in the statement of financial position in the previous year (Dechow, Sloan & Sweeney, 1995). Later, Dechow & Dichev (2002) made the turn from revenues to cash flows and constructed a measure of accrual quality as the residuals from firm-specific regressions of changes in working capital ( $\Delta WC$ ) computed from the statement on financial position items, on past ( $t-1$ ), present ( $t$ ), and future ( $t+1$ ) operating cash flows (CFO) as reported in the statement of cash flows, given their purpose to alter the timing of cash flows recognition in earnings, applying the following equation:  $\Delta WC_{i,t} = 0 + 1CFO_{i,t-1} + 2CFO_{i,t} + 3CFO_{i,t+1} + \epsilon_{i,t}$ . In both cases, model's residuals are proxies of abnormal accruals, and accrual quality is computed as the standard deviation of total abnormal accruals. Lower values of accrual quality indicate lower level of earnings quality and poorer financial reporting quality.

Persistence is one of the measures that are based on the time-series property of earnings, assuming earnings as a summary metric of expected cash flows. Persistent earnings are current earnings that are likely to be maintained in the future, and consequently, companies with more persistent earnings generate more accurate equity valuation. It is typically measured as the slope coefficient from autoregressive models of earnings. Values of slope coefficient close to 1 imply highly persistent earnings, while values close to zero imply highly transitory earnings (Francis, 2004). Highly persistent earnings are considered sustainable, that is, more permanent and less transitory. Earnings persistence attribute usually stands for the ability of current reported earnings to predict itself in future periods, contrary to earnings predictive ability.

Previous relevant research on earnings predictive ability are mainly motivated by the assumption that the prediction of cash flows is useful as input to equity valuation models (Dechow et al., 2010). Therefore, earnings can be considered more useful if they accurately predict future cash flows. Analysis of the predictive ability of earnings applies the model  $CFO_{i,t} = 0 + 1NI_{i,t-1} + \epsilon_{i,t}$ , where  $CFO_{i,t}$  is defined as net cash flow from operating activities of company  $i$  in year  $t$  as reported in the statement of cash flows and  $NI_{i,t-1}$  is net income of company  $i$  in year  $t-1$  as reported in the statement of profit and loss, both scaled by total assets as reported in the statement of financial position. After that, a standard deviation of estimated error from the above equation is calculated as earnings predictability measure proxy based on the variance of earnings shocks (Lipe, 1990, Francis et al., 2004, Gaio, 2010). Also, explanatory power of regression model for every company may be used (Dechow et al., 2010, Šodan, 2012). Lower variance and higher explanatory power values indicate higher predictability of earnings and better financial reporting quality. Earnings persistence and predictive ability are often closely related to the next measure, earnings volatility or smoothness.

Last in the group of accounting based measures built on time-series property of earnings is volatility or smoothness. It is assumed that less volatile earnings are more predictable and persistent, so volatility is often linked with risk. Consequently, smoothness is typically seen as a desirable attribute of earnings. Relevant previous research (e.g. Leuz, Nanda & Wysocki, 2003; Francis et al. 2004; Gaio, 2010) usually measure volatility as standard deviation of earnings, i.e. net income, as reported in the statement of profit and loss, divided by standard deviation of operating cash flows as reported in the statement of cash flows, which can be expressed as  $VOL_i = \sigma(NI_{i,t}) / \sigma(CFO_{i,t})$ . Higher values indicate less smooth and more volatile earnings, which imply low financial reporting quality. However, it is important to note that some authors (e.g. Barth, 2004) have not found volatility per se as low financial reporting quality, but contrary, providing information relating to the uncertainty and timing of future cash flows (inherent volatility) is a key to complete financial reporting. Moreover, there are authors (e.g. Bhattacharya, Daouk & Welker, 2003; Tucker and Zarowin, 2006) that identify smoothing as earnings management activity, and consider it undesirable attribute of earnings because it distorts accounting earnings information and increases opaqueness of earnings.

Unlike accounting based attributes, market-based attributes include also market data in earnings measurement calculations. They measure the decision usefulness of earnings as a combination of relevance and reliability (value relevance) or assess how close accounting income and economic income are (timeliness, conservatism).

Value relevance measures the decision usefulness of earnings to investors as a combination of two desirable features: relevance and reliability. It is commonly known as earnings response coefficient (ERC), and higher ERC implies earnings that better reflect fundamental performance. Value relevance is operationalised as the ability of earnings to explain variation in market prices or returns, so there are two model modalities. The first one, price model (Collins, Maydew & Weiss, 1997) is used to examine link between stock prices and net income, i.e.  $P_{i,t} = \alpha_0 + \alpha_1 NIPS_{i,t-1} + \epsilon_{i,t}$ , where  $P_{i,t}$  is the stock price of company  $i$  three months after year-end  $t$  and  $NIPS_{i,t}$  is net income per share of company  $i$  in year  $t$ . The second, return model (Francis & Schipper, 1999) links stock returns and net income, i.e.  $RET_{i,t} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 \Delta NI_{i,t} + \epsilon_{i,t}$ , where  $NI_{i,t}$  is net income of company  $i$  in year  $t$  and  $\Delta NI_{i,t}$  is change in net income, both as reported in the statement of profit and loss and scaled by market value at the beginning of year  $t$ .  $RET_{i,t}$  is fifteen month stock return of company  $i$  three months after year-end  $t$ . Regardless the use of price or return model, explanatory power of regression model for every company is used as measure of value relevance. Higher values imply better value relevance when market agents react more to changes in earnings and thus financial reporting of better quality.

The last two measures in market-based group are used to assess how close accounting income, as reported in statement of profit and loss, is to economic income approximated by stock returns. The one is timeliness of earnings recognitions, which refers to the extent that current earnings reflect value relevant information and the second is conservatism, which is defined as the asymmetric timeliness of good and bad news in earnings. Both measures are based on Basu's (1997) standard regression model:  $NIPS_{i,t} = \alpha_0 + \alpha_1 NEG_{i,t} + \alpha_2 RET_{i,t} + \alpha_3 NEG_{i,t} RET_{i,t} + \epsilon_{i,t}$ , where  $NEG_{i,t}$  is a dichotomous variable that equals 1 if  $RET_{i,t} < 0$  and zero otherwise, and  $RET_{i,t}$  is buy-and-hold annual stock return for company  $i$  cumulated over year  $t$  inclusive of dividends.  $NIPS_{i,t}$  is net

income per share as reported in the statement of profit and loss and scaled by market value at the beginning of year  $t$ .

To measure earnings timeliness according to Ball, Kothari & Robin (2000), model's explanatory power is calculated:  $TIMEL_i = R_i^2$ . Higher values of explanatory power point to more timely earnings that reflect information incorporated in stock returns more quickly, and are seen by investors as being of higher quality.

If explanatory power is computed as  $CONSi = -2\beta_1 + 3\beta_2$ , it is expressed as conditional conservatism attribute. Conditional conservatism, also known as ex post conservatism or earnings conservatism, refers to asymmetric timely recognition of losses relative to gains. Conservative bias in accounting causes negative stock returns, which reflect downward adjustment in economic income, to have a higher association with earnings than positive stock returns (Šodan & Aljinović Barać, 2013). Conservative earnings reflect bad news more quickly than good news, so conservatism causes more timely recognition of losses than gains and improves quality of accounting information.

In the case of small sample and missing of stock return data, Basu's (1997) asymmetric persistence model is more appropriate to measure level of conservatism than standard regression model. This model assumes that under conservative accounting, bad news are recognized in earnings immediately, contrary to good news. As Šodan (2012) explains, it causes increase in earnings due to good news to be more persistent, while decrease in earnings in current period due to bad news is less persistent and more likely to reverse in future periods. Thus, negative correlation can be expected between earnings decrease in the current and future periods. Asymmetric persistence model is computed as  $\Delta NI_{i,t} = 0 + 1NEG_{i,t} + 2\Delta NI_{i,t-1} + 3NEG_{i,t}\Delta NI_{i,t-1} + \beta_1 + \beta_2\Delta NI_{i,t-2}$ , where  $NEG_{i,t}$  is dichotomous variable which takes value of 1 when  $\Delta NI_{i,t}$  is negative and zero otherwise.  $\Delta NI_{i,t}$  is change in net income for company  $i$  from year  $t-1$  to  $t$ , and  $\Delta NI_{i,t-1}$  is change in net income from year  $t-2$  to  $t-1$ , both scaled by total assets as reported in the statement of financial position at the beginning of year  $t$ . In this case, conditional conservatism is measured by  $CONSi = 3\beta_1$ , and  $\beta_2$  should be negative if economic losses are recognized in more timely manner than gains. Higher values of CONS attribute suggest lower level of conditional conservatism and less timely loss recognition which decreases the value relevance of earnings and financial reporting quality.

In several studies, it may be noticed that some individual measures whose higher values suggest lower earnings quality are transformed and expressed in negative form. The main purpose of such transformations is to ensure consistency in the explanation, i.e. that higher values of the attribute indicate better earnings and financial reporting quality.

Unlike the quantitative models described previously, benchmarking measures of earnings quality are simple and easy to calculate. These attributes are based on assumption that kinks in the earnings or forecast error distributions are caused by opportunistic earnings management behaviour and are measured by a distance between reported earnings and benchmark. According to Vuko, Aljinović Barać & Šodan (2011), the literature is predominantly focused on three earnings targets: positive earnings, positive earnings change or positive earnings surprise. Positive earnings practice indices reporting small profits rather than small loss, positive earnings

change consider reporting results that improve upon last year performance, and positive earnings surprise or “meet or beat” analysts’ forecasts of quarterly earnings. Šodan, Visković & Miočić (2021) point out that great number of prior empirical studies show an unusually high frequency of firms with small positive earnings and an unusually low frequency of firms with small negative earnings in comparison to the normal distribution.

In addition to single FRQ measures described above, researchers have also developed different aggregate earnings quality measures in order to mitigate possible concerns about measurement errors and omitted variables. These measures are usually computed as sum of several individual attributes. For example, Gaio (2010) calculate aggregate earnings quality for every company by averaging its rankings over the seven individual earnings quality measures and higher rankings suggest better earnings and financial reporting quality. Šodan (2015) followed up Gaio’s methodology in his aggregate measure construction, so he summed up rankings of six single attributes to calculate aggregate quality measure for companies, as well as sum of rankings of five single attributes for bank’s aggregate quality measure. Herath and Albarqi’s (2017) approach measures FRQ as standardized score computed as sum of weight score of fundamental and enhancing qualitative characteristics. The results range from 1 implying a poor quality to 5 for an excellent quality.

The usefulness of each FRQ measure and its advantages and disadvantages over others cannot be uniquely determined, because it is context-specific and influenced by a variety of economic, social, and political factors like the legal system, stage of economic growth, ownership of the company and its activities, etc. This issue will be discussed in more detail in the following part.

### **Issues on advantages and suitability of financial reporting quality measures**

Analysis of relevant previous literature on the usage of FRQ proxies enables us to list main advantages and limitations for common for groups of attributes (accounting-based and market-based), as well as features of individual measures.

The usefulness of FRQ metrics depends on the purpose of measurement and the study’s specific settings. The main benefit of accounting-based attributes is that they are calculated on data from annual reports only. This is of high importance especially in bank-oriented countries whose financial reporting differs comparing to market-oriented economies and it is characterized by underdeveloped, low liquid capital markets. On the other hand, there is a problem that FRQ can be deteriorated by intentional or unintentional financial reporting misstatements. Application of market-based attributes in bank-oriented countries can be tagged as their main disadvantage, because it is questionable how informative stock prices are, or in other words how well stock returns can proxy for economic income in less liquid capital markets. Moreover, Financial Reporting Council (2020) detected rising volatility of market values due to changes in the market structure (e.g. trading by institutional investors and hedge funds, electronic trading) as a factor that may affect the relevance of market-based attributes. Francis et al. (2004) found that accounting-based attributes have a stronger cost of equity effects than market-based attributes, with accrual quality measure having the largest effects among the measures in the prior group.

Regarding individual measures, there is no consensus among researchers if they actually improve or reduce FRQ because they are context-specific (Dechow et al. 2010; DeFond & Francis, 2005).

Accruals quality is the most frequently used earning quality metric, and abnormal accruals are the ones on which academics have focused their efforts to improve and enhance the most (DeFond, 2010). Assuming that the main purpose of financial reporting is the usefulness of financial reporting to investors, Francis et al. (2004) and Perotti & Wagenhofer (2014) suggest that accruals quality is the best measure of earnings quality. Meanwhile, recent research raises a question on the adequacy of abnormal accruals for valid inferences about earnings management practices. Wysocki (2005) suggests that Dechow & Dichev's model (2002) fails in earnings quality measurement because there is a strong negative correlation between contemporaneous cash flows and accruals. Jackson (2018) finds discretionary accruals as an inappropriate measure for earnings management and McNichols & Stubben (2018:227) tag them as "noisy proxies of earnings management, producing results that are of low power and biased for certain non-random samples". However, the same authors suggest improvements by choosing an optimal accrual model, using randomized treatments from exogenous events or perfect benchmark group, including control variables, etc. Despite all the controversies, accruals quality remains the most popular proxy, and according to Jackson (2018) continues to be used with little reflection on the underlying economics of the accounting process, and without good understanding of the statistical properties of models and their interpretation.

Persistence as a proxy of earnings quality is related with the notion of predictability, i.e. the capacity of the entire financial reporting package, including earnings and its components for improving users' abilities to forecast items of interest (Financial Reporting Council, 2020). Earnings predictive ability proxy is constructed to measure the accuracy of earnings in the prediction of future cash flows because one of the purposes of financial reporting by the IASB (2018) is to provide information useful for assessing future financial performance, which can be operationalised by future cash flows. However, according to Perotti & Wagenhofer (2014), persistence and predictive ability are less good earnings quality measures in comparison to others.

Although smoothness is usually considered desirable and volatility undesirable attribute of earnings, some authors (e.g. Bhattacharya et al., 2003; Tucker & Zarowin, 2006) consider smoothness disadvantageous attribute and a signal of earnings management practices claiming that managers use their reporting discretion to intentionally reduce the fluctuations in earnings. Also, Dechow et al. (2010) point the difficulty of disentangling smoothness of reported earnings that reflect fundamental earning process from artificial smoothing as earnings management tool. Perotti & Wagenhofer (2014) found smoothness and value relevance as a measure of decision usefulness of earnings to investors to be very good individual proxies of earnings quality and FRQ quality.

The timeliness of earnings and conditional conservatism assess how close accounting income and economic income are. The main deficiency of these measures is that only a small proportion of total information incorporated in stock prices is associated with earnings announcements. According to Ball & Shivakumar (2008), 5% to 9% and 1% to 2% of total information



incorporated in stock prices are associated with annual and quarterly earnings announcements respectively, which suggest that the primary economic role of reported earnings is not to provide timely new information to the stock markets. Moreover, although conditional conservatism mitigates information asymmetry and the negative market response to bad news, it is not efficiently incorporated into analyst forecasts, indicating that it provides poor quality information to analysts (Financial Reporting Council, 2020).

As it is already mentioned, the main benefit of benchmarking measures of earnings quality is their simplicity and ease of calculation. Nevertheless, Dechow et al. (2010) found only evidence on earnings that are likely managed when firms just meet or beat an external target persuasive, while the use of small profits as a proxy for earnings management consider not generalizable and evidence on the quarterly patterns in earnings distributions conflicting.

The main advantage of aggregate earnings quality measures is mitigation of the problem of omitted variables and measurement errors. Furthermore, these measures may be constructed as narrow context-specific as they are computed as a sum of several individual attributes.

Lastly, it is important to mention that from the methodological point of view, Gow, Ormazabal & Taylor (2010) stress that proxies applying company-year observations usually rely on econometric methods and assume time-series or cross-sectional independence, or rely on methods developed in accounting literature that have not been formally evaluated, which may be listed as weakness of all FRQ measures previously discussed.

Taking into account all features of individual earnings quality measures, as well as fact that they are context specific, the suitability of FRQ measures in Croatia is primarily determined by Croatian legislative and economic framework. Namely, Croatia has macro-based accounting systems with a shallow and underdeveloped domestic capital market, and companies obtain capital mainly from financial institutions. In such circumstances, it is suggested to use accounting-based attributes in assessment of FRQ, because stock prices necessary for calculation of market-based attributes are quite uninformative and stock returns may be inadequate proxies for economic income. Regarding the suitability of aggregate earnings quality metrics in Croatia, they may be found very useful as they are context-specific in their construction. Considering the above remark on appropriateness of accounting-based attributes, individual measures from this group should be selected when aggregate measure of FRQ is calculated.

## **Concluding remarks**

The issue of FRQ is an important part of the regulatory framework and activity of great public interest. However, nowadays the FRQ concept became broader and expands the coverage to corporate reporting quality (CRQ), as a need of capturing the effects of some other indicators than financial reports that might be essential in FRQ assessment. Financial Reporting Council (2020) define CRQ as the quality of financial and non-financial information, where the latter includes information from corporate social responsibility reports, as well as other types of narrative information from annual reports (e.g., risk disclosure, disclosures about environmental,

ESG issues) or other corporate documents (integrated reports, intellectual capital statements, etc.).

The academic scope of FRQ metrics mostly focuses on its measurement in listed companies, while the question of FRQ in non-listed, and moreover in small and medium-sized companies is neglected. This problem is especially highlighted in bank-oriented economies, i.e. economies where borrowings from banks are the main source of finance to companies, like Croatia. For example, according to the Croatian Bureau of Statistics (2020) there are 209.253 registered trade companies in March 2020 in Croatia. Public trade companies with a number of 363 counts for 0,17% of total number only, while all joint-stock companies have a share of 0,6% (1.235 entities), which stresses the importance of FRQ measurement of non-listed companies. This is in compliance with Herath and Albarqi (2017) conclusions, who pointed out that the ignorance of non-listed companies biases the results of FRQ research and do not yield a full representation of the financial reporting position of entities in economies worldwide. Thus, further research on FRQ topic should expand the range to all registered trade companies, regardless of the size and listing status.

Another issue on FRQ measurement in bank-oriented economies is the reliability and usefulness of market-based attributes, and consequently the focus on accounting-based attributes. At the same, Financial Reporting Council (2020) notice that the relevance of accounting information is decreasing over time worldwide. They ascribe this reduction to increasing reliance on other contemporary information sources and intermediaries like media or blogs, and emergence of new technologies outside of the accounting system that quickly and cheaply disseminate information. Thus, it is suggested to future research to include these new sources of information in the computation of FRQ measures. Moreover, obtained results should be more reliable if studies are limited to countries that have similar institutional and financial reporting regulatory frameworks.

Lastly, consistency in evaluating the FRQ quality in a longer period may be improved by the availability of data throughout the years. Thus, it may be recommended to regulatory authorities and companies by themselves to find ways to enhance the transparency of annual reports and other corporate reports.

## **Acknowledgement**

This work has been fully supported by Croatian Science Foundation under the project IP-2020-02-9372 "Disentangling Financial Reporting Quality".

## **References**

- Ball, R., Kothari, S.P & Robin, A. (2000). The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics*, 29 (1), 1-51. [https://doi.org/10.1016/S0165-4101\(00\)00012-4](https://doi.org/10.1016/S0165-4101(00)00012-4).
- Ball, R., & Shivakumar, L. (2008). How Much New Information Is There in Earnings?. *Journal of Accounting Research*, 46, 975-1016. <https://doi.org/10.1111/j.1475-679X.2008.00299.x>



- Barth, M. (2004). *Fair Values and Financial Statement Volatility*. In Borio, C, Hunter, W.C., Kaufman, G. & Tsatsaronis, K. (Eds.). *Market Discipline across Countries and Industries*. London: The MIT Press, 323-334
- Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics*, 24 (1), 3-37. [https://doi.org/10.1016/S0165-4101\(97\)00014-1](https://doi.org/10.1016/S0165-4101(97)00014-1)
- Bhattacharya, U., Daouk, H. & Welker, M. (2003). The World Price of Earnings Opacity. *The Accounting Review*, 78 (3), 641–678. DOI: [10.22004/ag.econ.127185](https://doi.org/10.22004/ag.econ.127185)
- Collins, D.W., Maydew, E.L. & Weiss, I.S. (1997). Changes in the value-relevance of earnings and book values over the past forty years. *Journal of Accounting and Economics*, 24 (1), 39-67, [https://doi.org/10.1016/S0165-4101\(97\)00015-3](https://doi.org/10.1016/S0165-4101(97)00015-3)
- Croatian Bureau of Statistics (2020): Number and structure of business entities, First release, Year LVII., No 11.1.1./1. Retrieved from: [https://www.dzs.hr/Hrv\\_Eng/publication/2021/11-01-01\\_01\\_2021.htm](https://www.dzs.hr/Hrv_Eng/publication/2021/11-01-01_01_2021.htm)
- Dechow, P., Sloan, R., & Sweeney, A. (1995). Detecting Earnings Management. *The Accounting Review*, 70 (2), 193-225. <https://www.jstor.org/stable/248303>
- Dechow, P., & Dichev, I. (2002). The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors. *The Accounting Review*, 77, 35-59. <http://www.jstor.org/stable/3203324>
- Dechow, P. M., & Schrand, C. M. (2004). *Earnings quality*. USA: The CFA Institute Research Foundation.
- Dechow, P., Ge, W., & Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, 50 (2-3), 344-401. <https://doi.org/10.1016/j.jacceco.2010.09.001>.
- DeFond, M.L. & Francis, J.R. (2005). Audit Research after Sarbanes-Oxley. *Auditing: A Journal of Practice & Theory*, 24 (s-1), 5–30. <https://doi.org/10.2308/aud.2005.24.s-1.5>
- DeFond, M.L. (2010). Earnings quality research: advances, challenges and future research. *Journal of Accounting and Economics*, 50 (2), 402-409. <https://doi.org/10.1016/j.jacceco.2010.10.004>
- DeFond, M.L. & Zhang, J. (2014). A review of archival auditing research. *Journal of Accounting and Economics*, 58 (2-3), 275-326. <https://doi.org/10.1016/j.jacceco.2014.09.002>
- Dichev, I. D., Graham, J. R., Harvey, C. R., & Rajgopal, S. (2013). Earnings quality: Evidence from the field. *Journal of Accounting and Economics*, 56 (2-3), 1-33. <https://doi.org/10.1016/j.jacceco.2013.05.004>
- Financial Reporting Council (2020). Understanding research findings and evidence on corporate reporting: An independent literature review. London: The Financial Reporting Council Limited.
- Francis, J. & Schipper, K. (1999). Have Financial Statements Lost Their Relevance?. *Journal of Accounting Research*, 37 (2), 319-352. <https://doi.org/10.2307/2491412>
- Francis, J. R. (2004). What do we know about audit quality?. *The British Accounting Review*, 36 (4), 345-368. <https://doi.org/10.1016/j.bar.2004.09.003>
- Francis, J., LaFond, R., Olsson, P.M. & Schipper, K. (2004). Costs of Equity and Earnings Attributes. *The Accounting Review*, 79 (4), 967–1010. <https://doi.org/10.2308/accr.2004.79.4.967>

- Gaio, C. (2010). The Relative Importance of Firm and Country Characteristics for Earnings Quality around the World. *European Accounting Review*, 19 (4), 693-738. <https://doi.org/10.1080/09638180903384643>
- Gow, I., Ormazabal, G., & Taylor, D. (2010). Correcting for Cross-Sectional and Time-Series Dependence in Accounting Research. *The Accounting Review*, 85 (2), 483-512. <http://www.jstor.org/stable/20744139>
- Herath, S.K & Albarqi, N. (2017). Financial Reporting Quality: A Literature Review. *International Journal of Business Management and Commerce*, 2 (2), 1-14,
- International Accounting Standards Board (IASB). (2018). Conceptual Framework for Financial Reporting. Retrieved from: <https://www.ifrs.org/issued-standards/list-of-standards/>
- Jackson, A.B. (2018). Discretionary Accruals: Earnings Management ... or Not?. *Abacus*, 54, 136-153. <https://doi.org/10.1111/abac.12117>
- Jones, J. J. (1991). Earnings Management During Import Relief Investigations. *Journal of Accounting Research*, 29 (2), 193-228. <https://doi.org/10.2307/2491047>
- Leuz, C., Nanda, D. & Wysocki, P. D. (2003). Earnings management and investor protection: an international comparison. *Journal of Financial Economics*, 69 (3), 505-527. [https://doi.org/10.1016/S0304-405X\(03\)00121-1](https://doi.org/10.1016/S0304-405X(03)00121-1)
- Lev, B. (1989). On the usefulness of earnings and earnings research: Lessons and directions from two decades of empirical research. *Journal of Accounting Research*, 27, 153-192. <https://doi.org/10.2307/2491070>
- Lipe, R. (1990). The Relation between Stock Returns and Accounting Earnings Given Alternative Information. *Accounting Review*, 65 (1), 49-71. <https://www.jstor.org/stable/247876>
- McNichols, M.F. & Stubben, S.R. (2018). Research Design Issues in Studies Using Discretionary Accruals. *Abacus*, 54: 227-246. <https://doi.org/10.1111/abac.12128>
- Newman, W, Edmore, T., Milondzo, K. & Wadesango V. O. (2016). A Literature Review on the Impact of IAS/IFRS and Regulations on Quality of Financial Reporting. *Risk Governance and Control: Financial Markets & Institutions*, 6 (4), 102-108. DOI:[10.22495/RCGV6I4ART13](https://doi.org/10.22495/RCGV6I4ART13)
- Perotti, P. & Wagenhofer, A. (2014) Earnings Quality Measures and Excess Returns. *Journal of Business Finance & Accounting*, 41, 545-571. <https://doi.org/10.1111/jbfa.12071>
- Šodan, S. (2012). Conditional conservatism and the cost of debt: Evidence from central and eastern Europe. *Croatian Operational Research Review*, 3 (1), 245-255.
- Šodan, S. & Aljinović Barać, Ž. (2013). Asymmetric timeliness of earnings across corporate life-cycle stages *The Journal of American Business Review Cambridge*, 1 (2), 143-149.
- Šodan, S. (2015). The impact of fair value accounting on earnings quality in eastern European countries. *Procedia Economics and Finance*, 32, 1769-1786. [https://doi.org/10.1016/S2212-5671\(15\)01481-1](https://doi.org/10.1016/S2212-5671(15)01481-1)
- Šodan, S., Visković, J. & Miočić, F. (2021). Does management ownership make earnings more kinky?. Conference proceedings of International conference on Decision making for Small and Medium-Sized Enterprises (DEMSME 2021), retrieved from: [https://demsme.opf.slu.cz/images/DEMSME\\_2021\\_Proceedings.pdf](https://demsme.opf.slu.cz/images/DEMSME_2021_Proceedings.pdf)
- Tucker, J.W. & Zarowin, P. (2006). Does Income Smoothing Improve Earnings Informativeness? *The Accounting Review*, 81(1), 251-270. <http://www.jstor.org/stable/4093136>

Vuko, T., Aljinović Barać, Ž. & Šodan, S. (2011). The Shape of the frequency distributions of earnings metrics—evidence from Croatia. *Journal of Accounting and Management*, 1, 1-13.

Wysocki, P. (2005). Assessing Earnings and Accruals Quality: U.S. and International Evidence. Unpublished working paper. Cambridge: MIT Sloan School of Management. Retrieved from:  
[https://www.researchgate.net/publication/267951373\\_Assessing\\_Earnings\\_and\\_Accruals\\_Quality\\_US\\_and\\_International\\_Evidence](https://www.researchgate.net/publication/267951373_Assessing_Earnings_and_Accruals_Quality_US_and_International_Evidence)