Does Management Ownership Make Earnings More Kinky?

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Source / Izvornik: **3rd International conference on Decision making for small and medium-sized enterprises DEMSME-2021 Conference Proceedings, 2021, 622 - 631**

Conference paper / Rad u zborniku

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

Permanent link / Trajna poveznica: https://urn.nsk.hr/urn:nbn:hr:124:609315

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

Repository / Repozitorij:

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The conference was funded by the project: Development of R&D capacities of the Silesian University in Opava CZ.02.2.69/0.0/0.0/18_054/0014696.

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Editors: Jarmila ŠEBESTOVÁ, Roman ŠPERKA, Petr SUCHÁNEK, Šárka ČEMERKOVÁ, Žaneta RYLKOVÁ, Kateřina MATUŠÍNSKÁ, Radka BAUEROVÁ, Jiří MAZUREK and Radim DOLÁK

Publisher: Silesian University in Opava, School of Business Administration in Karviná

Number of pages: 710

Year of publishing: 2021

Online version

ISBN: 978-80-7510-456-4

All papers passed a double-blind review process

Suggested citation:

Author, A., 2021. "Title of the paper". In: DUHÁČEK ŠEBESTOVÁ, J., ŠPERKA, R., SUCHÁNEK, P., ČEMERKOVÁ, Š., RYLKOVÁ, Ž., MATUŠÍNSKÁ, K., BAUEROVÁ, R., MAZUREK, J., DOLÁK, R. (eds.), 2021. 3rd International conference on Decision making for Small and Medium-Sized Enterprises. Conference Proceedings. Karviná: Silesian University in Opava, School of Business Administration in Karviná, pp. XXX-XXX. ISBN 978-80-7510-456-4.

Dear reader,

this is proceedings from the 3rd edition of the international scientific conference DEcision Making for Small and Medium-sized Enterprises 2021 (DEMSME 2021, go.slu.cz/demsme) that should have taken place in Congress & Wellness Hotel Olšanka in Prague. Unfortunately, due to pandemic and government restrictions we had to shift the programme of the conference to the virtual form in MS Teams environment. This 2-day conference is organized by Department of Business Economics and Management and Department of Informatics and Mathematics of Silesian University in Opava, School of Business Administration in Karvina. DEMSME 2021 is a regular meeting of experts from universities and businesses interested in the theory and application of decision-making in research using the methods from business economics, management, marketing, artificial intelligence and mathematics disciplines in the current practice of small and medium-sized enterprises (SMEs). This year's edition reflected particularly on lessons learnt from Covid-19 pandemic in 2020-21 period.

We are very pleased that we have obtained 110 submissions and we have selected a total amount of 84 original contributions after rigorous double-blind review process and evaluation. The authors gathered from 14 countries, namely the Czechia, Slovakia, Moldova, Romania, Hungary, Spain, Croatia, Greece, India, Tunisia, Latvia, Iran, France, and Poland. From the 84 papers are 73 papers included in our conference proceedings, the best papers will be selected for the publication in our 11 partner journals (e.g., Journal of East-West Business, European Journal of International Management, Scientific Annals of Economics and Business, Organizacija, Central European Business Review, etc). Total number of papers from before-mentioned areas indicates that these fields are interesting from a scientific point of view and in general, there is a plethora of issues that require a specific scientific approach to solving them and strengthening the competitive advantages of SMEs.

The papers link scientific activities with up-to-date practice dedicated to SMEs and beyond. The emphasis in this edition of DEMSME was given, e.g., to the theory of acceptance and use of technology, e-commerce, buyers' preferences and management strategies during pandemic, creating sustainable competitive advantage, shaping and improving the human resource management, behavioral aspects of decision making in SMEs, innovation and knowledge sharing, brand support and online marketing, ICT tools and their use in Industry 4.0, process mining, robotic process automation, mathematical models, business intelligence, exchange rates, consumers' behaviour and business performance measurements. Most of the papers brought up-and-coming case studies, which could be implemented immediately into SMEs practice. The conference was enriched by 2 keynote speeches delivered by Václav Švec and Jana Švecová (Czech University of Life Sciences Prague, Czechia, with the topic „Team Academy implementation in the Czech Higher Education context"), and Tomáš Gavlas (TietoEVRY, Czechia, with the topic „Predictive Analytics: Unified solution for real-time application and business process performance visibility and insights using machine learning ").

Great thanks to the scientific committee of the conference, its organizers and, last but not least, its partners and sponsors, alongside the Silesian University in Opava, School of Business Administration in Karvina, also European Structural and Investment Funds (Operational Programme Research, Development and Education), Ministry of Education, Youth and Sports

of the Czech Republic, Veolia company, IT Cluster of Moravian-Silesian Region (Czechia), Czech Society for System Integration and European Council for Small Business and Entrepreneurship (ECSB). We believe that the 3rd edition of the DEMSME conference was once again successful and we look forward to its repetition in two-year cycles next to other traditional scientific conferences organized at the Silesian University in Opava, School of Business Administration in Karvina, Czechia.

Roman Šperka, Petr Suchánek
Executive Co-Chairs, DEMSME 2021

CONTENT

1| EFFECTS OF THE CORONAVIRUS CRISIS ON BUSINESS MODELS
Pavel Adámek and Lucie Meixnerová

15| MULTI-CRITERIA CLASSIFICATION OF SPARE PARTS - CASE STUDY
Iman Ajripour and Saeed Ranjbar

29| DECISION-MAKING IN STATE-OWNED EXPORT CREDIT AGENCIES (ECAS): WHAT CAN BE EXPECTED FROM HUNGARIAN ECA'S ORGANIZATIONAL STRUCTURE?
Rosa Alamian

38| AGILITY AND RESILIENCE IN HRM PRACTICES FROM CENTRAL AND EASTERN-EUROPEAN COUNTRIES - EVIDENCE FROM LITERATURE REVIEW
Carmen Claudia Arustei, Irina Teodora Manolescu and Adriana Prodan

47| ENTREPRENEURS' PERSONALITY AND THE SMES DECISION MAKING PROCESS: THE MODERATING ROLE OF INSTITUTIONAL ENVIRONMENT
Sudin Bag and Amina Omrane

61| A NOTE ON HOMOGENEOUS LINEAR PROGRAMMING
David Bartl

71| PLATFORM-BASED HORIZONTAL COLLABORATION IN LAST MILE DELIVERY
Csilla Bartucz and Edit Süle

80| DESIGN OF THE DECISION-MAKING MODEL IN THE PROCESS MANAGEMENT OF IT SERVICES
Blanka Bazsová and Jan Ministr

87| USE OF STEREOTYPES AS A COMMUNICATION TOOL TO SUPPORT THE BRAND - CASE STUDY OF THE POLISH AND CZECH BRAND OF BEER
Hanne-Lore Bobáková and Janusz Karpeta

95| POST-COVID ENTREPRENEURIAL TRENDS
Geanina Brînză, Alexandru Anichiti and Gina Ionela Butnaru

105| INFORMATION-MATHEMATICAL MODELLING OF THE DECISION MAKING PROCESS IN THE LOGISTICS SYSTEM
Robert Bucki and Petr Suchánek

115| PERSONNEL WORK IN SMES IN THE CZECH REPUBLIC BEFORE THE CORONA CRISIS
Šárka Čemerková and Vojtěch Malátek

125| PROCESS MINING FROM E-COMMERCE WEB LOGS
Radim Dolák, Natálie Sušková and Filip Pawera

131| THE ROLE OF BANKS' REPUTATION DURING THE COLLABORATION WITH ROMANIAN SMES
Răzvan-Ionuţ Drugă

141| COMPARISON OF PROCESSOR ARCHITECTURES
Rostislav Fojtík

150| THE IMPACT OF CUSTOMER ENGAGEMENT ON RETAILER'S BRAND EQUITY
Valentin Gallart-Camahort, Luis Callarisa-Fiol and Javier Sanchez-Garcia

160| CRISIS MANAGEMENT STRATEGY OF SMALL AND MEDIUM-SIZED BUSINESSES DURING THE COVID-19 IN RIGA, LATVIA
Victoria Gudovskaya

173| WHY SHOULD A TIME-DRIVEN ACTIVITY-BASED COSTING APPROACH BE INTEGRATED WITH PROCESS MINING?
Michal Halaška

183| THE IMPORTANCE OF LIFECYCLE EXTENSION MODEL FOR IMPLEMENTATION OF RPA
Michal Halaška

193| URBAN CULTURAL TOURISM IN EUROPEAN ECONOMIC CONTEXT. THE ROLE OF MUSEUMS, THEATERS, PUBLIC LIBRARIES AND CINEMA ATTENDANCE
Alina-Petronela Haller and Georgia-Daniela Tacu Hârșan

204| METHODOLOGIES USED TO INVESTIGATE EARLY STAGE INVESTORS' (BA AND VC) DECISION MAKING CRITERIA
Róbert Hanák

220| DATA-DRIVEN DECISION MAKING IN FIGURE SKATING
Jiří Helešic and Jan Gorecki

231| KNOWLEDGE SHARING AS AN IMPORTANT FACTOR FOR DECISION MAKING IN SMES
Tereza Horáková and Kateřina Maršíková

241| FREE ONLINE PROCESS SIMULATOR FOR SMALL AND MEDIUMSIZED ENTERPRISES PROCESSES. CASE STUDY: BPSIMULATOR
Constantin Ilie, Margareta Ilie and Andreea Daniela Moraru

250| RESEARCH OF THE BUSINESS INTELLIGENCE APPROACH USE IN FINTECH COMPANIES
Sherzod Ishankulov

257| INFORMATION SUPPORT FOR CRM DECISION MAKING AND DATABASES
Milena Janakova

264| SUPER-DEDUCTION FOR RESEARCH AND DEVELOPMENT IN SLOVAK COMPANIES
Lea Jančičková and Renáta Pakšiová

275| BUYER PERSONA: USEFULNESS OF THE METHOD IN SOCIAL MEDIA ADVERTISING
Martin Klepek and Jana Majerová

283| EXAMINATION AND VALIDATION OF THE HOLISTIC MARKETING CONCEPT AS A MARKET ORIENTATION CONSTRUCT
Enikő Kontor, Zoltán Szakály and Bence Kovács

294| REDUCE – AN ONLINE DECISION SUPPORT TOOL FOR REDUCTION OF INCONSISTENCY IN MULTIPLICATIVE PAIRWISE COMPARISONS
Bartosz Kowal, Pawel Kuras, Dominik Strzalka, Jiri Mazurek and Radomir Perzina

301| WHAT MACROECONOMIC INDICATORS AFFECT PERFORMANCE OF SMALL AND MEDIUM-SIZED ENTERPRISES?
Radmila Krkošková

310| DOES JOINT DECISION-MAKING FOSTER TEAM CREATIVITY? AN EMPIRICAL STUDY IN SMALL MEDIUM-SIZED ENTERPRISES
Yasir Mansoor Kundi, Subhan Shahid and Rahman Ullah

319| SIMILARITIES OF TRANSFORMATIONAL LEADERSHIP AND STRATEGIC MANAGEMENT IN THE MULTICULTURAL ORGANIZATIONS DEMONSTRATED AS EXAMPLE OF GARDENING
István Kunos and Somayeh Kariman

328| E-STORE OWNERS' PERCEPTION OF CUSTOMER E-LOYALTY
Daniel Kvíčala and Halina Starzyczná

342| BARRIERS TO ECO-INNOVATION: EMPIRICAL EVIDENCE FROM SLOVAK SMES
Ľubica Lesáková and Peter Laco

352| INNOVATIVE FINANCIAL INDICATORS - FROM ROI TO HUMAN CAPITAL ROI
Katalin Lipták, Klára Szűcsné Markovics and Zoltán Musinszki

362| COVID-19 AS AN IMPULSE FOR A SUSTAINABLE, SOCIALLY RESPONSIBLE AND ETHICAL CZECH LUXURY FAHION INDUSTRY?
Radka Macgregor Pelikánová

371| ANALYSIS OF SUPPLY CHAIN AGILITY FOR CREATING SUSTAINABLE COMPETITIVE ADVANTAGE IN EDUCATIONAL ENVIRONMENTS
Maftoon Mahmoodi

381| PERCEPTIONS OF SMES FINANCING CHALLENGES: A CROSS-EUROPEAN PERSPECTIVE
Irina Manolescu and Sebastian Tocar

391| EXAMINING UNIFIED THEORY OF ACCEPTANCE AND USE OF TECHNOLOGY (UTAUT) OF E-COMMERCE USAGE BY FARMERS IN WHEAT-ORIENTED FARMS OF KAZAKHSTAN
Aigul Meirmanova and Somayeh Kariman

401| REGIONAL BRANDING IN SMALL AND MEDIUM-SIZED BUSINESSES IN E-COMMERCE
Ondřej Mikšík and Halina Starzyczná

412| EVALUATION OF ENTREPRENEURIAL EDUCATION PRIORITIES IN THE CASE OF INTERNATIONAL PROJECT
Lubomír Nenička and Zuzana Neničková

420| EUROPEAN CITIZENS ARE BECOMING MORE AWARE OF ENVIRONMENTAL ISSUES – EVIDENCE FROM TWO SPECIAL EUROBAROMETER STUDIES
Cristina-Andreea Nicolae

429| THE ROLE OF ORGANIZATIONAL EXTERNAL ENVIRONMENT IN MOTIVATING OFFICE AND CONSTRUCTION SITE EMPLOYEES
Nikolaos Nikoloutsopoulos, Alexandros Sahinidis and Maria Panagopoulou

438| BALANCE SHEET RULES AND THEIR ABILITY TO INFLUENCE BUSINESS PERFORMANCE
Marta Nosková and Petra Taušl Procházková

445| ORGANIZATIONAL CULTURE AND INTERCULTURAL MANAGEMENT OF FOREIGN NGOS WORKING IN DEVELOPING COUNTRIES
Monika Nova

452| HOTEL RECOVERY STRATEGIES FOR THE COVID-19 PANDEMIC CRISIS
Aikaterina Oikonomou and Michael Polemis

461| INNOVATIVE DNA OF SHOE MANUFACTURING COMPANIES
Jindra Peterková and Štefan Kolumber

470| BRANDBUILDING IN TOURISM. SUBTITLE: HOW TO ESTABLISH A STRONG BRAND WHICH TOURISTS WILL LOVE?
Lukáš Pichlík

479| TAILORING CYBERSECURITY EDUCATION AND SERVICES FOR CZECH SMES
Tomáš Pitner and Jan Ministr

487| DOES BEING PART OF THE FORMER HABSBURG EMPIRE MATTER TO CURRENT ENTREPRENEURIAL INTENTIONS? A CASE STUDY FROM THE NORTH-EASTERN REGION OF ROMANIA
Aurelian-Petrus Plopeanu and Daniel Homocianu

499| BEHAVIOUR CHANGE IN FINANCIAL DECISION MAKING UNDER UNCERTAINTY
Pavla Pokorná and Jarmila Duháček Šebestová

506| DECISION MAKING FOR SMALL AND MEDIUM-SIZED ENTERPRISES: SUSTAINABILITY AND RISK ASSESSMENT DURING THE COVID-19 PANDEMIC
Cristina Raluca G. Popescu

516| BUSINESS PERFORMANCE MEASUREMENT AND SMALL AND MEDIUM-SIZED ENTERPRISES MANAGEMENT: INTELLECTUAL CAPITAL AS A KEY FACTOR DURING THE COVID-19 PANDEMIC
Cristina Raluca G. Popescu

526| THE USABILITY OF BANKRUPTCY MODELS CAPTURING THE FINANCIAL SITUATION OF SMALL AND MEDIUM ENTERPRISES IN BUSINESS PRACTICE
Tomáš Pražák and Tomáš Gongol

535| BANKRUPTCY PROBLEM UNDER UNCERTAINTY
Jaroslav Ramík

542| CONSTRUCTING SHORTLISTS OF POTENTIALLY ATTRACTIVE OFFERS FROM LARGE DATABASES USING THE TOPSIS METHOD
David Ramsey, Aleksander Mariański, Leopold Szczurowski and Michał Kędziora

552| THE IMPACT OF PERSONALITY TRAITS ON ENTREPRENEURIAL EDUCATION EFFECTIVENESS
Alexandros G. Sahinidis, Panagiota I. Xanthopoulou and Panagiotis A. Tsaknis

564| THE EMERGING DILLEMA OF EURO ADOPTION IN ROMANIA
Georgiana-Loredana Schipor and Cristina Duhnea

573| SYSTEMS OF HUMAN RESOURCE MANAGEMENT IN SMALL AND MID-SIZE FAMILY ENTERPRISES WITH PRODUCTION ACTIVITIES
Małgorzata Smolarek, Joanna Dzieńdziora and Dawid Żebrak

583| CORPORATE SOCIAL RESPONSIBILITY AND SUSTAINABLE SCM
Asterios Stroumpoulis and Evangelia Kopanaki

591| KNOWLEDGE MANAGEMENT IN SMALL AND MEDIUM-SIZED ENTERPRISES – WAY OF INCREASING THEIR COMPETITIVENESS
Tatiana Stucalova

601| IMPLEMENTATION APPROACHES IN RPA PROJECTS: NARRATIVE INQUIRY OF CZECH RPA EXPERTS
Dalibor Šimek

611| UTILIZATION OF EUROPEAN STRUCTURAL AND INVESTMENT FUNDS 2014-2020 AT THE NATIONAL AND REGIONAL LEVEL IN THE CZECH REPUBLIC
Jaroslav Škrabal

622| DOES MANAGEMENT OWNERSHIP MAKE EARNINGS MORE KINKY?
Slavko Šodan, Josip Visković and Franko Miočić

632| CORPORATE SOCIAL RESPONSIBILITY: ENVIRONMENTAL AND GENDER ISSUES
Anita Talaja, Slavko Šodan and Ivona Ninčević

642| **OPTIMIZING THE AMOUNT OF EQUITY AS AN IMPORTANT TOOL FOR THE SUSTAINABILITY OF BUSINESSES**
Katarína Tasáryová and Renáta Pakšiová

651| **THE IMPACT OF FEMININE MANAGEMENT ON BANKS FINANCIAL PERFORMANCE: EVIDENCE FROM ROMANIA**
Bogdan Andrei Tiliuță, Ioana Raluca Diaconu and Dumitru Cristian Oanea

661| **THE INTERNATIONAL ACCOUNTING REFERENTIAL USED IN THE SMES FINANCIAL REPORTING: THE CASE OF ROMANIA**
Iuliana Ungureanu

672| **REPORTING INFORMATION ON CORRUPTION AT THE LEVEL OF ROMANIAN PUBLIC COMPANIES**
Iuliana Ungureanu

672| **THE ROLE OF CORPORATE VALUES AND CORPORATE CULTURE IN THE UNTYPICAL TIMES OF THE COVID-19 PANDEMIC**
Sanja Varlaj, Tanja Grmuša and Dijana Vuković

681| **DOES CORONAVIRUS CHANGE BUYERS' PREFERENCES AND INDUCE CONSUMER ETHNOCENTRISM – THE NEED FOR STRATEGIC REORIENTATION?**
Josip Visković, Anita Talaja and Ivan Androja

694| **DECISION MAKING IN THE STRATEGIC PLANNING OF RETAIL ENTERPRISE: PERSPECTIVE OF CZECH RETAIL SMES**
Šárka Zapletalová, Radka Bauerová and Kateřina Matušínská

703| **SOCIO-COGNITIVE PERSPECTIVE OF OPPORTUNITY EVALUATION: THE IMPACT OF SOCIAL NETWORK AND POSITIVE ILLUSIONS ON OPPORTUNITY EVALUATION**
Andrea Zelienková

DOES MANAGEMENT OWNERSHIP MAKE EARNINGS MORE KINKY?

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Abstract
Prior empirical research documents a "kink" in the earnings distribution, meaning that empirical distribution of reported earnings is discontinuous around a threshold such as zero. Results of these 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. This phenomenon is usually considered as evidence of accounting manipulation or earnings management practice. Firms that would report a small loss, manipulate earnings to report a small profit and firms that would report a large profit, decrease earnings to evade paying tax. The aim of this paper is analyze discontinuity of earnings distribution for firms owned by managers. We find evidence that earnings distribution of firms with managers' equity ownership have more pronounced zero-earnings discontinuity. Namely, if managers participate in ownership, they might more often use accounting techniques in order to maximize firms' net cash flows by evading tax payments. Empirical analysis is conducted on the sample of 32,346 firms from Croatia, Slovenia and Serbia in 2017.

Keywords: earnings distribution, earnings management, management ownership
JEL codes: M41

1. Introduction

Reported earnings are considered to be the single, most important information from financial statements. Therefore, managers can abuse their discretion in the financial reporting process in order to influence the distribution of wealth and maximize their own expected benefits in comparison to other stakeholders. Flexibility in the choice of accounting policies and the use of estimates allow opportunistic behavior of managers in determining the net financial result in reported financial statements. Namely, the accounting rules contained in the accounting standards (IAS /IFRS and US GAAP) provide managers a choice between different accounting policies and/or the possibility of subjective estimates that directly affect the reported earnings. The set of accounting rules is determined ex ante and is generally accepted

by all parties, and within this defined set of accounting rules there must be a certain level of freedom of choice because it is simply not possible to prescribe accounting rules for every possible situation (Fields et al., 2001). In addition, the choice of accounting policy can be important information for decision-making to users of financial statements. Managers may use discretion when choosing accounting policies to increase the wealth of all parties or to increase the wealth of one party. If the managerial choice of accounting policy is primarily aimed at ex post increasing one's own benefits through the redistribution of wealth from other parties, then such behavior is called opportunistic (Watts and Zimmerman, 1990). Managers' compensations in publicly traded firms are frequently related to reported earnings either directly or indirectly via share prices. Therefore, managers have the incentives and the ability to manage earnings, and the vast empirical evidence suggests that they frequently do so (Guttman et al., 2006).

Discontinuities in earnings distributions at zero have been widely cited as evidence of accounting manipulations (earnings management) (Gilliam et al., 2015). The discontinuity or kink means that too few firms report small losses and too many firms report small profits in comparison to smooth, bell-shaped distribution. Firms that would report a small loss, manipulate earnings to report a small profit and firms that would report a large profit, decrease earnings to evade paying tax. Managers engage in these activities because they perceive private benefits from doing so (e.g. maximizing private compensations related to reported earnings) or they act as agents in value transfers among stakeholders (e.g. maximizing value of the firm by minimizing the present value of corporate tax) (Garrod et al., 2007). In the first case, managers will have incentive to increase reported earnings in order to maximize private compensations that will lead to decrease in the value of equity held by owners and to the conflict of interests between managers and owners. In the second case, managers will have incentive to lower reported earnings in order to reduce cash outflows through corporate tax payments that will lead to maximizing the value of the firm.

The aim of this paper is to analyze discontinuity of earnings distribution for private firms in which managers are ultimate owners. Namely, when manager and owner are the same person, management behavior can only be motivated by increasing the firm value and not by opportunistic behavior (Fields et al., 2001). We assume that earnings distribution of firms with managers' equity ownership will have more pronounced zero-earnings discontinuity. Namely, if managers are owners, they will use accounting techniques in order to manage earnings downward and to reduce tax payments, without significant incentive to opportunistically manage earnings upwards. Therefore, in our unique research setting there are no confronting motives for increasing and decreasing earnings, which will result in more pronounced evidence of earnings management. We expect that firms will more frequently practice earnings decreases in order to decrease the tax base. Our hypothesis is empirically tested on the sample of 32,345 large and medium-sized firms from Croatia, Slovenia and Serbia in 2017.

Most prior studies were mainly focused on the earnings distributions of publicly traded firms and there is lack of reliable empirical evidence on earnings distribution kinks of private firms owned by managers that do not have significant manager-owner conflicts of interests. This paper tries to fill that void.

The rest of the paper proceeds as follows. Section 2 presents brief summary of previous research on the discontinuities in earnings distributions. Section 3 describes the research design, sample, and variables measurement. Section 4 provides empirical results and paper ends with concluding remarks.

2. Literature review

Burgstahler and Dichev (1997) were among the first authors that described and empirically analyzed zero-earnings discontinuity. Their research provided empirical evidence that earnings decreases and losses were frequently managed away, more precisely, that 30% to 44% of the firms with small negative pre-managed earnings used discretion to report positive earnings. They provided two theories that could explain empirical findings. First theory is that managers avoid reporting losses to decrease the costs from transactions with stakeholders. Second explanation is provided by prospect theory and assumes that increase in value is greatest when the increase in wealth moves the individual from a loss to a gain relative to a reference point. Burgstahler and Dichev (1997) paper has been widely discussed in the literature and the discontinuity has been dominantly interpreted as evidence of earnings

management to avoid small losses (e.g. Degeorge et al, 1999; Guttman et al, 2006; Roychowdhury, 2006; Garrod et al., 2007; Jacob and Jorgensen, 2007; Burgstahler and Chuk, 2017, Lee et al 2017).

However, a number of studies argues that earnings management is not the cause of the earnings discontinuity. Dechow et al. (2003) discuss five explanations for the kink in earnings other than earnings management: managers' real actions to improve performance; the sample selection bias because of exchange listing preferences for profitable firms; the possibility that the kink is driven by the scaling of earnings with market value; the impact of accounting rules and accounting conservatism; the role of financial assets. Beaver et al. (2007) suggest that the asymmetric effects of income taxes and special items can contribute to a discontinuity even in the absence of discretion. Furthermore, some research papers did not find evidence of discontinuities at zero in earnings distributions (e.g. Durtschi and Easton, 2005) and some researchers claim that zero-earnings discontinuity has disappeared soon after passage of the Sarbanes-Oxley Act (Gilliam et al, 2015).

Most international studies on zero-earnings discontinuity are focused on developed, market-oriented countries. However, there are only a few previous papers that have used a sample of firms from bank-oriented, countries of Central and Eastern Europe. Vuko et al. (2011) provided evidence on discontinuity around zero in distribution of reported earnings and earnings changes of firms listed on Croatian capital market. Degiannakis et al. (2019) also analyzed earnings distribution of Croatian listed firms and have found that distribution of scaled earnings and changes in earnings show high frequencies of small positive earnings and small increases in earnings while the frequencies of small losses and small decreases in earnings are less frequent. Further, they have demonstrated that these discontinuities are likely due to discretionary accruals.

Earnings management in private firms is different in comparison to public firms due to various institutional factors. Bao and Lewllyn (2017) argue that firm ownership predictors along with national institutional dimensions significantly explain variation in earnings management behavior. Coppens and Peek (2005) analyzed earnings distributions of private firms in eight European countries and have found that private firms also avoid small losses. Burgstahler et al. (2006) examined how capital market pressures and institutional factors shape firms' incentives to report earnings. They have documented that private firms exhibit higher levels of earnings management. Garrod et al. (2007) examined earnings management on the sample of small Slovenian private firms and found evidence that firms manage earnings downward to reduce current period corporate tax.

Prior research regarding the impact of management ownership on earnings management has shown mixed evidence and generally has not used zero-earnings discontinuity as a proxy for earnings management. For example, Alexander and Christina (2017) and Susanto et al. (2019) provided evidence that managerial ownership does not have effect on earnings management. However, other papers argue that managerial ownership has a positive (e.g. Ruan et al., 2011) or negative (Alves, 2012) impact on earnings management. Furthermore, O'Callaghan et al. (2018) stated that this relationship has non-linear U-shaped pattern and Saona et al. (2020) found evidence that there is an inverse U-shaped relationship between managers' ownership and the earnings manipulation.

When analyzing previous research regarding zero-earnings discontinuity, following conclusions can be derived. First, previous research mostly explain the kink in earnings as evidence of earnings management but several studies offer different explanations. Second, majority of prior studies on this topic are performed on public firms in common law countries such as United States, United Kingdom or Australia. Third, there is generally a lack of research regarding the impact of management ownership on earnings discontinuity.

3. Sample description and research design

3.1 Sample description

Empirical research is conducted on the sample of large and medium sized, active firms from Croatia, Serbia and Slovenia with available financial data for 2016 and 2017. Respectively, the final sample consists of total of 32,346 firms. Data was gathered from BvD Amadeus database. Firms from Croatia, Serbia and Slovenia were selected because these three countries have similar institutional framework and similar financial reporting regulatory framework. Namely, these countries apply national financial reporting standards that are almost completely aligned with the provisions of IFRS (Novak and

Valentinčič, 2017; Šodan and Aljinović Barać; 2017; Obradović, 2018) which makes results comparable with previous research that is mainly conducted on the samples of listed companies that apply IFRS.

Our main variable of interest, net income (earnings) is deflated by book value of total assets at the end of the previous year. In accordance with previous research (e.g. Burgstahler et al. 2006), to mitigate the influence of outliers and potential data errors we adopt the method of winsorizing; i.e. for any observation above the 99th percentile or less than 1st percentile we assign the same value of scaled net income at these 99 or 1 percentile.

Table 1 presents summary statistics of net income in 2017 scaled by total assets in previous year.

Table 1: Summary statistics of net income in 2017 deflated by total assets in previous year (ROA)

Ultimate owner*	**Mean**	**Max**	**Min**	**N**	**SD**	**Median**
Not manager	0.071	1.352	-0.481	9509	0.197	0.035
Manager	0.111	1.352	-0.481	14147	0.218	0.057
Total	**0.095**	**1.352**	**-0.481**	**23,656**	**0.211**	**0.049**
Country						
Croatia	0.097	1.352	-0.481	12284	0.228	0.042
Serbia	0.096	1.352	-0.481	11452	0.201	0.053
Slovenia	0.098	1.352	-0.481	8610	0.197	0.052
Total	**0.097**	**1.352**	**-0.481**	**32,346**	**0.211**	**0.049**
Size						
Very Large	0.019	1.341	-0.481	947	0.132	0.014
Large	0.080	1.352	-0.481	3564	0.166	0.051
Medium sized	0.102	1.352	-0.481	27835	0.217	0.050
Total	**0.097**	**1.352**	**-0.481**	**32,346**	**0.211**	**0.049**

Notes:*Ultimate owner is the person who owns minimum of 50.01% of firm's equity.
Source: author's calculations

As it can be seen from Table 1, most firms in the sample are medium sized, firms are equally distributed by country and mean return on total assets (net income scaled by total assets) are almost the same in all three countries. However, mean return on total assets is much higher in firms where manager is also firm ultimate owner in comparison to other firms. Performed statistical test also confirms that firms where manager is also a firm owner, return on total assets is significantly higher (Table 2).

Table 2: Two-sample t test with equal variances

N1 (Man.-not Owner)	**N2 (Man.-Owner)**	**Mean1 (Man.-not Owner)**	**Mean2 (Man.-Owner)**	**dif**	**St Err**	**t value**	**p value**
9509	14147	0.071	0.112	-0.041	0.003	-14.6	0.000

Source: author's calculations

Additional analysis of liquidity and solvency for the firms in the sample is presented in the Table 3. Results from the table indicate that firms' characteristics are relatively similar across countries in the sample.

Table 3: Summary statistics of firms' liquidity and solvency

	Mean	Max	Min	N	SD	Median
Current ratio						
Croatia	2.634	26.008	0.032	12168	3.863	1.435
Serbia	2.462	26.008	0.032	11384	3.713	1.366
Slovenia	1.479	26.008	0.032	8814	3.296	1.479
Total	**2.511**	**26.008**	**0.032**	**32.366**	**3.664**	**1.421**
Solvency ratio						
Croatia	38.557	98.821	-50.305	12115	31.863	37.753
Serbia	43.170	98.821	-50.305	11248	31.533	43.178
Slovenia	42.711	98.821	-50.305	8892	27.440	41.713
Total	**41.311**	**98.821**	**-50.305**	**32.255**	**30.662**	**40.841**

Notes: Current ratio is calculated by dividing current assets by current liabilities. Solvency ratio is calculated by dividing equity and other shareholders' funds by total assets. Both variables are winsorized, i.e. for any observation above the 99th percentile or less than 1st percentile the same value at these 99 or 1 percentile is assigned.
Source: author's calculations

3.2 Research methods

In order to test our assumptions regarding the discontinuity in earnings distributions, we employ three methods: histogram analysis; Garrod et al. (2006) statistical test of discontinuity (smoothness); and Leuz et al. (2003) ratio of small profits and small losses. Analyses are performed on two subsamples: subsample of firms where managers are ultimate firm owners and other firms.

Histogram analysis of earnings distribution uses earnings (deflated by total assets in previous year) interval width of 0.005 (0.5%) which is consistent with previous studies (e.g. Garrod et al., 2007; Gilliam et al, 2015).

To statistically test our hypothesis we use Garrod et al. (2006) modified test of smoothness. In contrast to Burgstahler and Dichev (1997) test of smoothness that assumes normal distribution with mean 0 and standard deviation 1, Garrod et al. (2006) test does not require any assumption regarding the underlying distribution of the sample. In addition, Garrod et al. (2006) test is stricter than Burgstahler and Dichev (1997) test and requires stronger evidence to support the distribution kink (Garrod et al., 2007).

The first step in Garrod et al. (2006:10-12) methodology is to define the probability (p_i) that an observation will fall into interval i as the arithmetic average of two adjacent intervals:

$$p_i = \frac{\tilde{X}_{i-1}+\tilde{X}_{i+1}}{2N} \quad (1)$$

where $\tilde{X}_i$ denotes the actual number of observations in interval i and N is the total number of observations.

After that, test statistic is calculated as:

$$\tau_i = \frac{\tilde{X}_i - E(X_i)}{\sqrt{var(X_i)}} \quad (2)$$

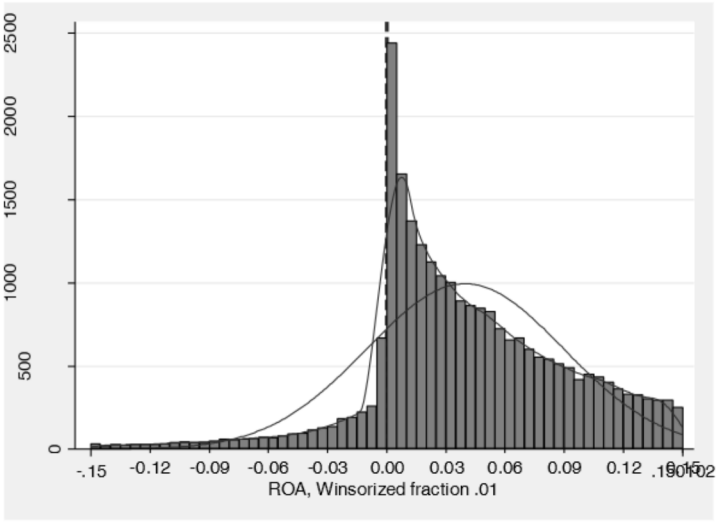
Under assumption that events are independent, the random variable X_i will be distributed binomially with parameters (N, p_i), therefore $E(X_i) = N \cdot p_i$ and $var(X_i) = N \cdot p_i \cdot (1 - p_i)$. Finally, authors have determined the critical significant values of τ-statistic by use of the Chebyshev inequality. Garrod et al. (2006) reported that at the levels of significance of 1%, 5% and 10% critical levels of τ-statistic are ±10, ±4.4721 and ±3.1632, respectively.

Third measure of discontinuity is Leuz et al. (2003) ratio of small profits and small losses. An observation in the sample is classified as a small profit if earnings scaled by lagged total assets are in the range [0,0.01] and an observation is classified as a small loss if earnings scaled by lagged total assets are in the range [-0.01,0).

4. Results

The distribution of firms by deflated earnings in the whole sample is graphically presented by histogram on the Figure 1. The values in the earnings-levels are limited to the interval (-0.15, +0.15) for presentational parsimony.

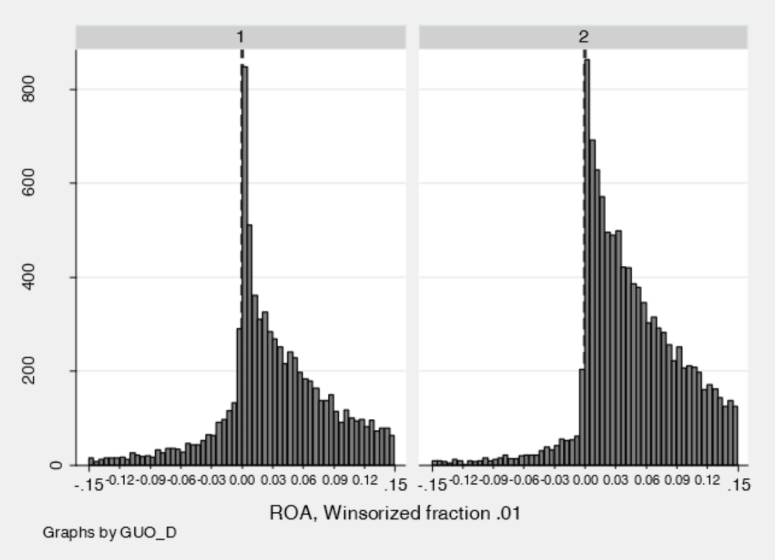
Figure 1: Distribution of firms by earnings deflated by lagged total assets



Notes: lines on histogram represent normal-density plot and kernel density plot of distribution
Source: author's calculations

Figure 1 shows a clear discontinuity in the distribution in earnings around zero which is consistent with the theory that reported earnings are manipulated to meet the zero benchmark. After that, we want to analyze differences in earnings discontinuity between sample of firms where managers are ultimate owners and the sample of other firms (Figure 2).

Figure 2: Distribution of firms owned by managers (Panel 2) and other firms (Panel 1)



Notes: This figure shows histograms of earnings scaled by lagged total assets. Panel 1 shows subsample of firms not owned by managers and Panel 2 shows subsample of firms owned by managers.
Source: author's calculations

As assumed, Figure 2 provides evidence that earnings kink around zero is even more pronounced in the subsample of firms owned by managers. Although discontinuities in earnings distributions on Figure 1 and 2 are visually evident, we still need to perform statistical tests to prove their significance.

Table 4 presents actual frequencies, expected frequencies and calculated Garrod et al. (2006) statistical test of discontinuity (smoothness) for the subsample of firms that are not owned by managers. Results provide evidence that discontinuities in earnings intervals around zero are statistically significant at the level of significance below 1%. In the interval (partition) to the left of zero frequency of firms (254) is significantly lower than expected (501) and in the interval (partition) to the right of zero frequency of firms (871) is much higher than expected (386).

Table 4: Statistical test of discontinuity for subsample of firms not owned by managers

Scaled earnings intervals	X_i	p_i	$E(X_i)$	$var(X_i)$	τ_i	$\lvert\tau_i\rvert$	**Sig.**
(-0.02, -0,015)	98	0.010675221	102	100.4164651	-0.39917	0.39917	>10%
(-0.015, -0.01)	115	0.012042491	115	113.1211348	0	0	>10%
(-0.01, -0.005)	131	0.019404712	185	180.9198307	-4.01468	4.014678	<10%
(-0.005, 0)	**254**	**0.052692469**	**501**	**474.6010728**	**-11.3379**	**11.3379**	**< 1%**
(0, 0.005)	**871**	**0.040544804**	**386**	**369.8699779**	**25.21838**	**25.21838**	**< 1%**
(0.005, 0.01)	517	0.064997897	618	577.8313	-4.20166	4.201659	<10%
(0.01, 0.015)	365	0.043331931	412	394.1472444	-2.36738	2.367383	>10 %
(0.015, 0.02)	307	0.036600757	348	335.2629365	-2.23919	2.239191	>10 %

Notes: Table shows only 8 earnings intervals (partitions) surrounding zero
Source: author's calculations

Statistical test of zero-earnings discontinuity for subsample of firms owned by managers indicate even more pronounced kink (Table 5). Namely, three intervals surrounding zero are showing statistically significant discontinuity and the difference between observed and expected frequencies in the interval (partition) to the left of zero is relatively higher than in previous table.

Table 5: Statistical test of discontinuity for subsample of firms owned by managers

Scaled earnings intervals	X_i	p_i	$E(X_i)$	$var(X_i)$	τ_i	$\lvert\tau_i\rvert$	**Sig.**
(-0.02, -0,015)	54	0.003675691	52	51.80886407	0.277861	0.277861	>10 %
(-0.015, -0.01)	50	0.004205839	60	59.2497526	-1.29914	1.299142	>10 %
(-0.01, -0.005)	**65**	**0.007952216**	**113**	**111.6053757**	**-4.54359**	**4.543585**	**<5%**
(-0.005, 0)	**175**	**0.033222591**	**470**	**454.3853821**	**-13.8392**	**13.83916**	**< 1%**
(0, 0.005)	**875**	**0.030889941**	**437**	**423.5010956**	**21.28369**	**21.28369**	**< 1%**
(0.005, 0.01)	699	0.05297943	750	709.791917	-1.91428	1.914276	>10 %
(0.01, 0.015)	624	0.044956528	636	607.4076483	-0.4869	0.486902	>10 %
(0.015, 0.02)	573	0.039655051	561	538.7535166	0.516995	0.516995	>10 %

Notes: Table shows only 8 earnings intervals (partitions) surrounding zero
Source: author's calculations

Finally, we compute our third measure of discontinuity, Leuz et al. (2003) ratio of small profits and small losses (Table 6).

Table 6: Ratio of small profits and small losses

Ownership	Scaled earnings intervals frequency		Leuz et al. (2003) ratio
	(-0.01, 0.00)	(0.00, 0.01)	
Managers not owners	385	1388	**3.61**
Managers owners	240	1574	**6.56**

Source: author's calculations

Results support our main assumption that if managers participate in ownership, they will use accounting techniques in order to maximize firms' net cash flows by evading tax payments. Namely, ratio of small profits and small losses is almost two times higher in the sample of firms owned by managers indicating that managers more frequently manipulate earnings if they participate in ownership.

5. Discussion and conclusion

The previously described results of discontinuities in earnings distributions indicate that private firms in Croatia, Serbia and Slovenia manage earnings to avoid losses. When benchmarking the results for private firms owned by managers against the results for other private firms, we conclude that earnings kink (i.e. earnings management) is even more pronounced when managers are firm owners. In situation when manager and owner are the same person, there are no agency conflicts between managers and owners, so there should be less motives and incentives for manipulations. However, if managers are also firm owners they might not have incentive to opportunistically manage earnings upwards, but they will have strong motives for managing earnings downwards and reducing current tax payments. Consequently, there are no confronting effects of motives for increasing and decreasing earnings, which can cause more pronounced evidence of zero-earnings discontinuity.

Our results and conclusion differ from those that did not find evidence of a discontinuity at zero (Durtschi and Easton, 2005) or those claiming that the discontinuity around zero earnings has disappeared (Gilliam et al, 2015). Besides, previous studies are mainly focused on the earnings distributions of publicly traded firms and there is generally a lack of reliable empirical evidence on earnings distribution of private firms owned by managers. Previous studies regarding the impact of management ownership on earnings management commonly used other proxies for earnings management and not zero-earnings discontinuity proxy (Ruan et al., 2011; Alexander and Christina, 2017; O'Callaghan et al., 2018; etc.). These studies have found mixed and inconsistent evidence on the impact of managerial ownership on earnings management. O'Callaghan et al. (2018) argue that if opportunistic earnings management is motivated by managers' efforts to increase their proportion of firm's cash flows at the expense of shareholders, then the incentive for this behavior will be inversely related to managerial ownership. They assume that managers who own high percentage or all of the firm's equity will not have incentive for earnings management. However, their results based on discretionary accruals proxy for earnings management suggest that firms with both high and low levels of managerial ownership engage more in accounting manipulations in comparison to firms with intermediate levels of managerial ownership. Accordingly, our results based on earnings distribution proxy also indicate that when managers are ultimate owners there might not be agency conflicts between managers and shareholders, but there will be strong incentives to manage earnings that influence third parties such as tax authorities.

This paper has several contributions. First, the analysis provides empirical evidence of pronounced discontinuity around zero earnings despite the fact that recent studies claim that zero-earnings discontinuity has disappeared in years after 2002. Second, previous studies on the impact of managerial ownership on the earnings management have provided inconsistent evidence. This paper provides evidence of higher level of earnings management in firms where managers are ultimate owners by using earnings discontinuity measure of earnings management that has not been used in this type of research before. Third, the empirical results could provide better understanding of earnings management characteristics in specific institutional setting with less developed capital markets, weak legal

enforcement, bank-oriented and with low level of investor protection. Results and conclusions derived from this paper could help researchers, auditors, standard setters, investors and other financial statement users to better understand and recognize accounting manipulation attempts.

Although results should contribute to the existing academic literature, the empirical research is limited to the frame of specific institutional setting of three countries and to the sample of large and medium-sized companies, so the generalization of the results and conclusions should be taken with caution.

Acknowledgement

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

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