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Araştırma Makalesi

ANALYZING THE IMPACT OF FORENSIC ACCOUNTING ON THE DETECTION OF FINANCIAL INFORMATION MANIPULATION[1]

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Abstract

The advent of rapid technological change and globalization has prominently decreased the ability of traditional methods to deal with financial information manipulation. Forensic accounting has brought a contemporary approach to the investigation of financial information manipulation. Financial market participants expect that future demand for forensic accountants will significantly increase in the business environment. Forensic accounting applications have grabbed significant attention in the recent years due to its effectiveness in the investigation of financial information manipulation. Forensic accounting includes a wide range of activities such as litigation support, expert witness and fraud investigation. Past experiences have proved that forensic accounting practices play a pivotal role in the detection and deterrence of financial information manipulation. In this study, Mann-Whitney U test is employed to test differences between financial statement variables of non-manipulator and manipulator firms. The results of Mann-Whitney U test reveal that current ratio, net working capital, return on assets, return on equity, profit margin, and size of non-manipulator firms is higher than those of manipulator firms. This study also aims to investigate the impacts of forensic accounting on the detection of financial information manipulation in the current business environment. The dynamics of forensic accounting are discussed. The methods used by forensic accountants to detect financial information manipulation are presented.

Keywords: Forensic Accounting, Financial Information Manipulation, Fraud

ADLİ MUHASEBENİN FİNANSAL BİLGİ MANİPÜLASYONUNUN TESPİT EDİLMESİNDEKİ ETKİSİNİN İNCELENMESİ

Öz

Küreselleşme ve hızlı teknolojik gelişmeler, geleneksel yöntemlerin finansal bilgi manipülasyonların ortaya çıkarılmasında yetersiz kalmasına neden olmuştur. Adli muhasebe, finansal bilgi manipülasyonların araştırılmasına çağdaş bir yaklaşım getirmiştir. Finansal piyasa katılımcıları gelecek dönemlerde adli muhasebecilere olan ihtiyacın artacağını beklemektedir. Son yıllarda adli muhasebe uygulamaları önemli derecede dikkat çekmiştir. Adli muhasebe uygulamaları, dava desteği, uzman tanıklık ve hile denetiminde yoğun olarak kullanılmaktadır. Geçmiş deneyimler, adli muhasebenin finansal bilgi manipülasyonunun tespit edilmesinde ve önlenmesinde önemli bir role sahip olduğunu ispat etmiştir. Bu çalışmada, manipülasyon yapan ve manipülasyon yapmayan firmaların mali tablo verilerinin analizinde Mann-Whitney U testi kullanılmıştır. Mann-Whitney U testin sonuçlarına göre, manipülasyon yapmayan firmaların

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cari oranı, net çalışma sermayesi ve karlılık oranları manipülasyon yapan firmalara göre daha yüksektir. Bu çalışma aynı zamanda adli muhasebenin finansal bilgi manipülasyonunun tespit edilmesindeki etkisini araştırmayı amaçlamaktadır. Adli muhasebenin temel dinamikleri tartışılmıştır. Finansal bilgi manipülasyonun tespit edilmesinde adli muhasebeciler tarafından kullanılan metotlar hakkında bilgi verilmiştir.

Anahtar Kelimeler: Adli Muhasebe, Finansal Bilgi Manipülasyonu, Hile

1. INTRODUCTION

Financial statements are major way through which a firm disseminates its financial information to the public. Investors, creditors and stockholders use financial statements of firms in making investment decisions. Firms are expected to disclose reliable and accurate financial information. The degree of efficiency of financial markets heavily depends on the quality of financial information disclosed by firms. Accounting standard setting bodies and government authorities have taken prominent actions for increasing quality of firms' financial statements over the last two decades.

Financial information manipulation is one of the most discussed issues in the general economic environment. As the business world become more complex than before, the dynamics of financial information manipulation prominently change. Some firms deliberately fail to provide reliable and accurate financial information. Firms may commit financial information manipulation to influence stock price, mitigate tax burden and perceived financial risk. Financial information manipulation has devastating impacts on the functioning of economy. Previous corporate frauds have demonstrated that financial information manipulation significantly erodes the public trust in firms' financial statements (Gerald, 2002).

Forensic accounting methods are mainly used to detect and deter financial information manipulation that becomes more complex as a result of advanced information technology. Forensic accounting primarily focuses on the well-structured investigation of corporate frauds and corruptions (Rittenberg et al., 2010). Forensic accounting is one of the newest area in the accounting science. As a discipline, forensic accounting use qualitative and quantitative methods to solve underlying issues in financial information manipulation. These methods used in the forensic accounting continue to evolve according to the needs of firm. Increasing number of fraudulent activities is one of the prominent factors that give rise to the term 'forensic accounting' (Ozkul and Pamukçu, 2012).

This study is organized as follows. Second section introduces the concept of forensic accounting. Third section puts forward the dynamics of financial information manipulation. In the fourth section, the methods used in the forensic accounting investigation are discussed. Fifth section presents research design. Empirical results are discussed in sixth section. The

final section concludes the paper and recommends for future research studies.

2. THE FIELD OF FORENSIC ACCOUNTING

The catastrophic corporate frauds have grabbed massive attention of investors, stockholders and government agencies. In the current business environment, traditional methods are ineffective in dealing with financial information manipulation. Forensic accounting practices appear to be superior to the traditional methods in the detection of financial information manipulations.

The forensic accounting was introduced in some developed countries, United States of America and United Kingdom, at the beginning of the twenty-first century (Singleton and Singleton, 2010). In the early years of forensic accounting, tax authorities employ forensic accounting practices to detect tax evasion by firms. In many famous fraud cases such as Ponzi scheme and Al Capone, forensic accounting clearly demonstrated its effectiveness. In the early development stage of forensic accounting, the major client of firms specialized in the field of forensic accounting was government institutions. Today, forensic accountants have vital roles in economic crime unit. Big- 4 auditors, Deloitte, PricewaterhouseCoopers, KPMG and Ernst and Young, have taken important steps in reestablishing the nature and dynamics of forensic accounting.

There are important reasons for the emergence and rise of forensic accounting. Illegal corporate activities and financial information manipulation have always been part of the global business environment. The efficiency and stability of financial system and income distribution among groups are adversely influenced by corporate frauds and financial information manipulation (Nightingale, 1996). Corporate activities and financial information manipulation significantly erode the public trust and investor confidence. Government authorities should implement effective policies that enhance public trust and investor confidence when financial markets suffer from the results of financial information manipulation. The practices introduced by forensic accounting enable firms and government institutions to solve highly complex accounting fraud.

As one of the new fields of accounting science, forensic accounting has strong relationship with auditing, criminology and law. Forensic accounting applications are influenced by auditing. The development of forensic accounting owes auditing. Auditors mainly focus on the fairness and reliability of financial statements. On the other hand, forensic accountants focus on the alleged financial information manipulations, litigation support, tax and bankruptcy fraud. Traditional methods such as recalculation, sampling, confirmation and analytical procedures are used by auditors. Besides these methods, forensic

accountants employ advanced statistical techniques and criminal investigation techniques. Professional skepticism is an important issue in the auditing and forensic accounting process. The lack of professional skepticism can cause serious audit deficiencies.

The science of criminology significantly contributes to the development of forensic accounting. Social and individual factors that affect crime activity and criminals are explored through the science of criminology (Hurwitz and Christiansen, 1983). The science of criminology enables forensic accountants to profile the fraudster in the investigation process. Fraud triangle created by criminology is heavily used in the forensic accounting investigations. According to the fraud triangle, every fraud activity has three common things in common; opportunity, motivation and rationalization (Ramos, 2003). The fraud triangle is one of the effective tools that enable forensic accountants to evaluate the fraud risk.

Forensic accounting has a closer relationship with law than other business sciences. Forensic accounting is thought to be intersection of law and accounting. The law system prominently shapes forensic accounting practices. It is worth noting that forensic accounting practices should comply with laws. Forensic accountants are expected to have deep knowledge about rules of evidence. Forensic accountants should obtain evidences legally to use them in the court. The forensic accounting reports play vital role in the legal system. These reports significantly contribute to increasing the quality of the court decision (Golden et al., 2005). Forensic accountants should have adequate education in criminal justice issues to effectively conduct the investigation of financial information manipulation.

2.1. The Characteristics of Forensic Accountants

Forensic accountants should possess specific characteristics. Forensic accountants should have bachelor or graduate degree in the accounting or business administration. Forensic accountants tasked with the investigation of financial information manipulation have deep knowledge of investigation methods (Gardner and Anderson, 2010). Investigation models can be based on qualitative and quantitative. The selected investigation model can vary according to the type of corporate fraud. Forensic accountants should be independent in the fraud investigation process. The effectiveness of investigation of financial information manipulation strongly depends on independency of forensic accountant. Forensic accountants should not be affected by the interests of third parties.

Being skeptical plays a vital role in the investigation process. Forensic accountants are expected to be skeptical about complex financial reporting process. Root causes of financial information manipulation may lie in the details. The identifying root causes of financial

information manipulation helps forensic accountants establish an effective fraud investigation. In the investigation process, forensic accountants are expected to utilize detail-oriented approach to identify accounting irregularities (Manning, 2011).

Strong communication skill is an important key to the success of investigation process. Forensic accountants should excel in interpersonal skills. Some of the evidences can be collected by using communication skills. At the end of the investigation process, forensic accountants should effectively communicate the results of investigation report to the internal and external parties.

Forensic accountancy gives significance to the analysis of evidence and accounting data. Success on forensic accounting investigation requires strong ability to scrutinize accounting data and evidences. Analytical skill incorporates many important skills such as attention to details, critical thinking and problem solving to deeply analyze the issue. Analytical mind is critical to forensic accountants' ability to effectively analyze and interpret evidences (Davis et al., 2010).

2.2. The Areas of Forensic Accounting

There are three different areas in forensic accounting; investigative accounting, litigation support and criminal investigation. Forensic accountants can be tasked in these areas. It is worth noting that all of these areas are related to each other. In the future, new areas can be added to the existing areas if needed.

Investigative accounting mainly focuses on the alleged corporate fraud. Investigative accounting specialists know how to collect and manage evidences and interview suspects and witnesses (Singleton and Singleton, 2010). The procedure of investigating accounting is not standard, may change according to the type of engagement. At the end of investigation process, investigative accounting specialists are required to prepare a report that may be used in the resolution of corporate fraud.

Forensic accountants play a prominent role in the litigation process. The services of forensic accountants contribute to the translation and decoding complex accounting issues (Bendrey et al., 2004). High-quality litigation support provided by forensic accountants significantly fosters equitable decision making (Hopwood et al., 2012). Forensic accountants provide expert testimony in areas such as insurance fraud, asset misappropriation, bankruptcy fraud, merger and acquisition.

In today's economic environment, government agencies need the support of forensic accountants in the criminal investigations. Insurance companies, banks, financial institutions,

courts, lawyers, and security forces have great demand for forensic accountants in criminal investigation (Karacan, 2012). Forensic accountants are tasked in the team of criminal investigation to gather necessary evidences, determine whether a criminal activity has occurred, and submit report related with criminal activity.

3. FİNANCIAL INFORMATION MANIPULATION

Financial information is crucially important for investors, creditors, stockholders, suppliers and regulatory bodies in the assessment of firms' financial position and performance. Financial information disclosed by firms should be reliable, comparable, relevant and understandable. The financial information manipulation committed by firms mitigates the economic efficiency and harms investor confidence and economic development. The manipulation of financial information causes financial market participants to make irrational investment decisions. Weak internal control systems and corporate governance mechanisms facilitate the manipulation of financial information (Barucci, 2003). Accounting standard setting bodies should take effective actions that can prevent manipulation of financial information.

The firm management may exercise financial information manipulation to hide the actual financial performance and position in order to keep investors, creditors and stockholders away from the truth. Financial information manipulation provides short term benefits. In the long run, financial information manipulation has adverse impacts on the distribution of economic resources. Financial information manipulation also influences the prices of common stock and capital structure of firms.

3.1. The Methods of Financial Information Manipulation

In this section of the study, the methods of financial information manipulation are discussed. The methods of financial information manipulation may evolve depending on the dynamics of economic environment, information technology and financial reporting standards. The multidimensional analysis of methods of financial information manipulation enables forensic accountants to detect weaknesses in the financial reporting system.

Earnings management is one of the widely used methods employed by firms to manipulate financial information. It should be noted that earnings management does not always violate financial reporting standards. The management of firms can choose appropriate accounting policy to reach the desired level of corporate earnings (Rahman et al., 2013). However, earnings management become a fraudulent activity when firm management employ earnings management practices to mislead financial market participants on corporate earnings.

The management of firms employs discretionary accruals to manage earnings. To manage corporate earnings, firms can early adopt mandatory accounting policies and change estimates useful life of fixed assets (Ayres, 1994).

Big bath accounting, one of the newest methods of financial information manipulation, is primarily used when the management of firms changes (Walsh et al., 1991). The new management of firms may make an effort to overstate the financial loss of the accounting period by employing big bath accounting. The overstating of financial loss enables the new management of firms to get significant credit for the future.

Creative accounting practices play a vast role in many financial information manipulation cases. It is highly difficult for internal auditors and forensic accountants to detect sophisticated creative accounting practices. Shah et al. (2011) supports the assertion that creative accounting practice is a strategic weapon for firms suffering from financial distress. In the business history, creative accounting practices are heavily used by Enron, WorldCom and Parmalat to manipulate accounting numbers. Past events have demonstrated that creative accounting practices significantly increase the information asymmetry between firm management and stakeholders.

4. DETECTION METHODS FOR FINANCIAL INFORMATION MANIPULATION

In this part of study, the methods used by forensic accountants to detect financial information manipulation are discussed. There are different models having the objective of detecting financial information manipulation by using accounting ratios, indexes and advanced statistical tools. These methods have proved their usefulness in the detection of financial information manipulation. It is worth noting that as the dynamics of business environment change, new methods can be added. Each method has unique strengths and weaknesses. Forensic accountants should select the appropriate method after analyzing dimensions of financial information manipulation.

4.1. Benford's Law

Benford's Law is created by Frank Benford, an electrical engineer working at the electric company. Benford's Law claims that the sequence of numbers is generally non-uniformly distributed. Frank Benford created Benford's Law by using real data. Daily sales volume, cash disbursements, accounts receivable and payable reports, invoice listings are expected to follow Benford's Law (Nigrini, 2012).

Benford's Law states that the probability of digit 1 as a first digit is 30.10%, the probability of the 2, 3, and 4 used as a first digit is approximately 17%, 12% and 9% respectively.

According to the frequency of leading digit, 9 is the least used number. Benford's Law may not perform well when the sample size is not large enough. Forensic accountants primarily employ Benford's Law to check whether sample data have been artificially created.

4.2. Beneish Model

Beneish Model is one of the most prominent tools in the forensic accounting investigations. Beneish model has been created by Messod Daniel Beneish, an accounting professor in Indiana University. The variables used in this model are derived from the balance sheet and profit and loss statement of the business entity (Beneish, 1999). Beneish Model enables forensic accountants to analyze financial statements of firms from different perspectives.

Beneish Model states that the following variables have significant potential to detect financial information manipulation perpetrated by business entities; days' sales in receivables index, asset quality index, total accruals to total assets, leverage index, sales, general and administrative expenses index, sales growth index, depreciation index, and gross margin index. Beneish Model reveals that larger increases in days' sales in receivables, larger accruals, larger decreases in gross margins and asset quality are indicators of financial information manipulation.

4.3. Analytical Procedures

Analytical procedures include the evaluations of accounting information via analysis of relationships between financial and non-financial information. Analytical procedures enable forensic accountants to uncover inconsistent relationships among financial statement accounts. The most common analytical procedures used in the forensic accounting investigations are listed as follows; trend analysis, horizontal and vertical analysis, regression analysis, ratio analysis and markov chain (Bozkurt, 2011; Arens et al., 2012).

Analytical procedures have become more prevalent in the forensic accounting investigations in the recent decades. They provide important benefits to the forensic accountants. Generally speaking, analytical procedures are more practical than other methods. The decision regarding which analytical procedure to utilize is mainly based on the judgement of forensic accountants about the effectiveness of procedures (Trompeter and Wright, 2010). Analytical procedures can be employed to multidimensionally analyze the alleged firm's situation. The key to successful employing analytical procedures is to determine financial and non-financial measures that have a significant association with financial information manipulation (Fleming, 2004). The major steps in analytical procedures are as follows; developing an expectation, comparison between actual and expectation and investigation the variance if there is a difference between actual and expectation.

4.4. Datamining Techniques

Fanning and Cogger (1998) employed datamining methods to establish a model that can effectively detect the financial information manipulation and suggest that datamining methods are useful in creating models that may help forensic accountants to detect fraudulent financial statements. Datamining techniques are also used in the detection of money laundering, loan decision, prediction of bankruptcy and security analysis (Ravisankar et al., 2011). Datamining techniques can handle a huge volume of accounting data and efficiently use them in the investigation process.

Datamining techniques include artificial neural networks, logistic regression, probit regression, decision trees and fuzzy based learning system. Datamining techniques can effectively adapt to the fast changing conditions of financial reporting process. In today's competitive economic environment, firms using datamining techniques are able to identify structural weaknesses of financial reporting system and be able to enhance the quality of financial statements. There is no single one datamining technique which is adequately effective for identifying, analyzing and detection of financial information manipulation. Therefore, forensic accountants should use datamining techniques together in the investigation process.

4.5. Red Flags

The use of red flags significantly increases the success of forensic accounting investigations. In the modern business environment, the design of internal controls and fraud investigation processes are based on red flags. Red flags are vital symptoms that indicate likelihood of financial information manipulation (Rezaee and Riley, 2010).

Forensic accountants should take red flags into consideration when investigating financial information manipulation. SAS 99 Consideration of Fraud in a Financial Statement Audit lists red flags related with financial information manipulation. These red flags are derived from past fraud cases. Sorenson and Sorenson (1980) assert that the use of red flags is more cost-effective than other detection methods.

Frequently changing financial reporting system, complex and unusual transactions that occur at the end of the accounting period are among key red flags that may be used in the forensic accounting investigations. Koornhoof and Plessis (2000) investigated the relative importance of red flags among investors, creditors and stockholders. They state that the most important red flags in the detection of financial information manipulation are unethical and ineffective management structure and high turnover rates in internal auditors.

5. RESEARCH DESIGN

A well- established research design enables researchers to obtain important evidence. It is worth noting that the appropriate statistical analysis method should be employed in order to get more reliable and accurate results. Many previous studies have been devoted to analyze key characteristics of financial statements manipulated by firms. In this part of the study, variables used in the empirical analysis and the results of empirical research analysis are presented. The objective of empirical analysis is to contribute to the existing literature on financial information manipulation. Data used in the empirical analysis came from the weekly bulletin released by the Capital Markets of Board (CMB), Public Disclosure Platform, and daily bulletin released by Borsa İstanbul. In this paper, the selected financial statement data of publicly available business entities listed on Borsa İstanbul are analyzed for the eight years of reporting period from 2005 to 2013 year. The financial statement data of 52 non-manipulator firms and 44 manipulator firms are analyzed. Firms operating in the financial industry are excluded from the empirical analysis since they have largely different balance sheet structures.

The selected financial statement data are current ratio, net working capital, return on assets, return on equity, financial leverage, profit margin, and size measured by log of total assets. These financial statement ratios are heavily used by creditors, the management of business entities, suppliers, labour unions, stockholders, individual and institutional investors. The calculation of these ratios is provided in the table below.

Table 1. Formulas for the Selected Financial Statement Data

Current Ratio	Current Assets / Current Liabilities
Net Working Capital	Current Assets - Current Liabilities
Return On Assets	Net Income / Total Assets
Return On Equity	Net Income / Total Equity
Financial Leverage	(Short term Obligations + Long-term Obligations) / Total Assets
Profit Margin	Net Income / Sales Revenue
Size	Log of total assets

In the below table, industry classifications of non-manipulator firms and manipulator firms are provided. In the sample selection process, non-manipulator firms are matched with manipulator firms on the basis of industry. It is worth mentioning that some of firms that manipulate the financial statements are delisted from Borsa İstanbul for violating regulations or failing to satisfy financial criteria. As can be seen from Table 2, 71 % of sample firms operate in the manufacturing industry.

Table 2. Industry Classification of Sample Firms

Industry	Non-Manipulator Firms	Manipulator Firms
Manufacturing Industry	35	33
Wholesale and Retail Trade, Hotels and Restaurants	8	4
Technology	7	5
Textile, Wearing Apparel and Leather Industry	2	2
Total	52	44

6. EMPIRICAL RESULTS

6.1. Descriptive Statistics

Descriptive statistics enable researchers to summarize the major characteristics of the variables used in the empirical analysis. Table 3 reveals that average return on assets, return on equity and profit margin of manipulator firms are less than those of non-manipulator firms. Additionally, the average current ratio and net working capital of manipulator firms are less than those of non-manipulator firms, suggesting that some of manipulator firms face serious liquidity problems.

Table 3. Descriptive Statistics of Sample Firms

Non-Manipulator Firms	Mean	Std.Dev.	Min	Max
Current Ratio	2.01	1.55	0.52	10.75
Net Working Capital	132,928,621	327,016,207	-146,030,498	1,556,126,507
Return On Assets	0.06	0.09	-0.18	0.43
Return On Equity	0.13	0.18	-0.26	0.85
Financial Leverage	0.49	0.21	0.10	0.86
Profit Margin	0.03	0.33	-2.20	0.60
Size	7.15	1.49	4.56	11.30
Manipulator Firms				
Current Ratio	1.56	1.96	0.1	12.64
Net Working Capital	18,066,724	74,227,422.5	-124,175,282	291,335,287
Return On Assets	-0.04	0.3	-1.19	1.06
Return On Equity	-0.14	0.54	-2.27	1.64
Financial Leverage	0.72	0.78	0.27	0.87
Profit Margin	-0.16	0.52	-1.66	1
Size	5.56	1.69	3.72	8.74

6.2. Normality Tests

The normality of the variable is one of the key assumptions in the data analysis. There are several methods that can be used to assess whether data are normally distributed or not normally distributed. These methods can be graphical and statistical. In this study, Shapiro-Wilks test is used to determine whether data are normally distributed or not normally distributed. Shapiro-Wilk test shows the best performance in the detection of non-normality of data (Srivastava and Hui, 1987). The hypotheses used in the normality test are as follows.

H_o: The sample data are normally distributed.

H_1: The sample data are not normally distributed.

The results of Shapiro-Wilk test are presented in Table 4. In the SPSS output below, probabilities are not greater than 0.05 (the typical alpha level), H_0 is rejected; it means that variables used in the empirical analysis are non-normally distributed.

Table 4. The Results of Shapiro-Wilk Test

Variable	Statistic	df	Sig.
Current Ratio	0.322	96	0.000
Net Working Capital	0.471	96	0.000
Return On Assets	0.603	96	0.000
Return On Equity	0.719	96	0.000
Financial Leverage	0.579	96	0.000
Profit Margin	0.652	96	0.000
Size	0.449	96	0.000

6.3. The Results of Mann-Whitney U Tests

The results of Mann-Whitney U test are provided in Table 5. Mann-Whitney test is one of the widely used non-parametric tests. Mann-Whitney U test is used to test whether there is a significant difference between financial statement ratios of manipulator firms and financial statement ratios of non-manipulator firms. In this section of the paper, the results of Mann-Whitney U test are presented and discussed.

According to the results of the Mann-Whitney U test, there is a statistically significant difference between manipulator firms and non-manipulator firms in terms of current ratio and net working capital. It can be concluded that current ratio and net working capital of non-manipulator firms are higher than those of manipulator firms. In the forensic accounting investigation, forensic accountants should take the level of current ratio and net working capital of business entities into consideration. The low current ratio and net working capital are one of the characteristics of financial statements manipulated by business entities.

There is a statistically significant difference between non-manipulator and manipulator firms in terms of return on assets, return on equity, profit margin. The results of Mann-Whitney U tests reveal that the profitability of non-manipulator firms is higher than that of manipulator firms. In other words, firms that show poor financial performance are more likely to manipulate financial statements.

Null hypothesis that there is no statistically difference between financial leverage of non-manipulator firms and financial leverage of manipulator firms is accepted (p= 0.1280).

The result of Mann-Whitney U test suggests that the low or high financial leverage is not a sign of financial statement manipulation in the forensic accounting investigation.

Employing Mann-Whitney U test, a statistically significant ($p<0.10$) difference is observed for size. The size of firms that did not manipulate financial statements is likely to be higher than that of firms that manipulate financial statements. This may be because large-sized firms have advanced accounting systems and effective internal control systems that prevent the manipulation of financial statements. Taken together, the results of empirical analysis provide prominent implications for forensic accountants.

Table 5. The Results of Mann-Whitney U Test

Variable	Observation	z	p-value
Current Ratio	96	3.059	0.002
Net Working Capital	96	3.110	0.002
Return On Assets	96	4.522	0.000
Return On Equity	96	4.934	0.000
Financial Leverage	96	-1.522	0.128
Profit Margin	96	3.360	0.001
Size	96	1.669	0.095

7. CONCLUSION

Financial information manipulation is a serious problem. Past experiences demonstrated that financial information has adverse impacts on the business environment. Financial information manipulation engagements erode the public trust in financial statements. Government authorities, standard setting bodies and stakeholders should work together to minimize financial information manipulation. Financial information manipulation is a consequence of the misuse of the flexibility of International Financial Reporting Standards.

Auditing firms, government institutions, law enforcement agencies, private firms increasingly need the expertise of forensic accountants. In the current business environment, the need of forensic accounting has emerged because independent auditors and internal auditors fail to detect complex accounting irregularities. Forensic accountants should have deep knowledge about methods to identify potential indicators of financial information manipulation. Financial information manipulation may be exercised to raise stock prices, get business loans and decrease tax burden. Another possible reason may be to pay less dividends to stockholders.

In this study, Mann-Whitney U test, a non-parametric test, has been used to test differences between financial statement variables of sample firms. The results of Mann-Whitney U test indicate that current ratio, net working capital, return on assets, return on

equity, profit margin, and size of non-manipulator firms is higher than those of manipulator firms. The results of empirical analysis are expected to substantially contribute to the forensic accounting investigation. In designing forensic accounting investigation, forensic accountants should pay close attention distinct advantage of each model used in the detection of financial information manipulation. It is worth mentioning that financial information manipulation can be preventable. Strong corporate governance mechanisms and effective internal control systems should be established by firms to prevent financial information manipulation. Past experiences demonstrated that the judgmental knowledge of forensic accountants plays prominent roles in the detection of financial information manipulation. The present study aims to analyze the contributions of forensic accounting in detecting financial information manipulation. It appears that forensic accounting investigations will grab more attention in the general economic environment.

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GENİŞ ÖZET

İşletmelerin mali tabloları finansal piyasalar için çok büyük öneme sahiptir. İşletmelerin hazırlamış oldukları mali tabloların gerçeği yansıtması, yatırımcı güvenini olumlu olarak etkilemektedir. Firmalar tarafından açıklanan finansal bilgiler güvenilir, karşılaştırılabilir, ilgili ve anlaşılabilir olmalıdır. Finansal bilgi manipülasyonu, finansal piyasa katılımcılarının irrasyonel yatırım kararları vermelerine neden olmaktadır. Finansal bilgi manipülasyonunun ekonomik kaynakların dağılımı üzerinde olumsuz etkileri vardır. Birçok finansal krizin temelinde finansal bilgi manipülasyonu bulunmaktadır. İşletmeler hisse fiyatlarını etkilemek ve vergi yükümlülüklerini azaltmak için finansal bilgi manipülasyonu yapmaktadır. Finansal bilgi manipülasyonu için kullanılan metotlar işletmeden işletmeye farklılık göstermektedir. Devlet kurumları, standart koyucular ve firmalar, finansal bilgi manipülasyonunu en aza indirmek için birlikte çalışmalıdır.

Finansal bilgi manipülasyon yöntemleri, ekonomik ortamın dinamikleri, bilgi teknolojisi ve finansal raporlama standartlarına bağlı olarak değişebilir. Finansal bilgi manipülasyon yöntemlerinin çok boyutlu analizi, adli muhasebecilerin finansal raporlama sistemindeki zayıflıkları tespit etmelerine olanak sağlamaktadır.

İşletme faaliyetlerinde artan yapısal ve fonksiyonel karmaşa, yeni uzmanlık alanlarının ve uygulama alanlarının ortaya çıkmasına neden olmuştur. Adli muhasebe ortaya çıkan yeni alanlardan biridir. Adli muhasebe son yıllarda hızlı bir şekilde dikkat çekmiştir. Büyük ölçekli şirketlerde yaşanan muhasebe hileleri ve finansal suçlar adli muhasebenin ortaya çıkmasını sağlamıştır. Adli muhasebe, yasal süreç boyunca kullanılacak olan finansal bilginin toplanması, analizi ve sunulması ile ilgilenen bir bilim dalı olarak tanımlanabilir. Denetim firmaları, devlet kurumları ve özel şirketler adli muhasebecinin uzmanlığına daha fazla ihtiyaç duymaktadır. Mevcut ekonomik ortamda, bağımsız denetçiler ve iç denetçiler karmaşık

finansal bilgi manipülasyonunu tespit etmekte zorluk yaşamaktadırlar.

Küreselleşme ve hızlı teknolojik gelişmeler, geleneksel metotların finansal hilelerin ve suçların ortaya çıkarılmasında yetersiz kalmasına neden olmuştur. Adli muhasebe, bir disiplin olarak hile soruşturması, dava desteği ve adli bilişime kadar çok çeşitli alanlardaki eylemleri kapsamaktadır. Geçmiş yıllarda sıklıkla karşılaştığımız finansal bilgi manipülasyonun tespit edilmesinde ve önlenmesinde adli muhasebe önemli bir rol oynamaktadır. Yeni bir disiplin olan adli muhasebenin denetim, hukuk ve kriminoloji ile güçlü bağları bulunmaktadır. Adli muhasebe tarafından sunulan uygulamalar, firmaların ve devlet kurumlarının oldukça karmaşık finansal bilgi manipülasyonunu tespit etmesine olanak sağlamaktadır.

Adli muhasebeciler dava sürecinde önemli bir rol oynamaktadır. Adli muhasebeciler sigorta suistimali, hileli iflas, birleşme ve devralma gibi alanlarda uzman tanıklığı sunmaktadır. Adli muhasebeciler tarafından sağlanan yüksek kalitede dava desteğinin, mahkemelerin karar verme sürecine olumlu etkileri bulunmaktadır.

Adli muhasebecinin sahip olması gereken önemli özellikler vardır. Adli muhasebecilerin güçlü iletişim yeteneklerine sahip olması ve detaylara önem vermesi beklenmektedir. Bunlara ek olarak, adli muhasebeciler hukuk ve denetim alanında ciddi bir bilgi birikimine sahiptir. Adli muhasebecilerin finansal bilgi manipülasyonunun araştırılması sürecinde bağımsız olması gerekmektedir.

Bu çalışmada finansal bilgi manipülasyonunun tespit edilmesinde kullanılan metotlar hakkında bilgi verilmiştir. Muhasebe oranları, endeksler ve gelişmiş istatistiksel araçlar kullanarak finansal bilgi manipülasyonunu tespit etme amacı taşıyan farklı modeller vardır. Bu yöntemler finansal bilgi manipülasyonunun tespitinde faydalı olduklarını kanıtlamıştır. Ekonomik çevrenin dinamikleri değiştikçe, yeni yöntemlerin geliştirilebileceğini belirtmekte fayda var. Her yöntemin kendine özgü güçlü ve zayıf yönleri vardır. Adli muhasebeciler finansal bilgi manipülasyonun temel boyutlarını analiz ettikten sonra uygun yöntemi seçmelidir. Kırmızı bayraklar, Benford yasası, Beneish Modeli ve veri madenciliği adli muhasebecilerin finansal bilgi manipülasyonunun tespit edilmesi sürecinde kullanmış olduğu önemli metotlar arasındadır.

Bu çalışmanın amacı, adli muhasebenin ekonomik çevredeki temel dinamiklerini incelemektir. Borsa İstanbul'da işlem gören halka açık işletmelerin mali tablo verileri, 2005-2013 yılları arasındaki sekiz yıllık raporlama dönemi için analiz edilmiştir. Finansal bilgi manipülasyonu yapmayan 52 firmanın ve finansal bilgi manipülasyonu yapan 44 firmanın finansal tablo verileri analiz edildi. Çalışma içerisinde verileri kullanılan firmaların %71'i imalat sektöründe faaliyet göstermektedir. Finans sektöründe faaliyet gösteren firmalar,

büyük ölçüde farklı bilanço yapılarına sahip oldukları için ampirik analizin dışında tutulmuştur. Ampirik analizde kullanılan veriler Sermaye Piyasası Kurulu tarafından yayınlanan haftalık bültenden, Kamuyu Aydınlatma Platformu'ndan ve Borsa İstanbul tarafından yayınlanan günlük bültenden alınmıştır.

Bu çalışmada, finansal bilgi manipülasyonu yapan ve finansal bilgi manipülasyonu yapmayan firmaların mali tablo verilerinin analizinde Mann-Whitney U testi kullanılmıştır. Mann-Whitney U testi, yaygın olarak kullanılan parametrik olmayan testlerden biridir. Mann-Whitney U testinin sonuçları, finansal bilgi manipülasyonu yapmayan firmaların cari oranı, net işletme sermayesi, varlıkların getirisi, öz sermaye kârlılığı, kâr marjı ve büyüklüğü finansal bilgi manipülasyonu yapan firmalarınkinden daha yüksek olduğunu göstermektedir. Bunlara ek olarak, düşük veya yüksek finansal kaldıraç, adli muhasebe soruşturmasında finansal bilgi manipülasyonunun bir işareti değildir. Mann-Whitney U testinin sonuçlarının, adli muhasebeciler açısından finansal bilgi manipülasyonunun araştırılması sürecinde önemli katkılar sağlayacağı düşünülmektedir.

Firma yönetimi, paydaşlarından gerçek finansal performansı ve pozisyonu gizlemek için finansal bilgi manipülasyonu yapabilir. Finansal bilgi manipülasyonunu önlemek için firmalarda güçlü kurumsal yönetim mekanizmaları ve etkin iç kontrol sistemleri kurulmalıdır. Sonuç olarak hızlı teknolojik değişim ve küreselleşme, geleneksel yöntemlerin finansal bilgi manipülasyonunun tespit edilmesindeki kabiliyetini belirgin biçimde azaltmıştır. Adli muhasebe, finansal bilgi manipülasyonunun araştırılması sürecine çağdaş bir yaklaşım getirmiştir. Adli muhasebe uygulamalarının gelecekte daha fazla kullanılacağı öngörülmektedir.