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FACTORS AFFECTING FINANCIAL STATEMENT FRAUD IN TURKIYE

Türkiye'de Finansal Tablo Dolandırıcılığını Etkileyen Faktörler

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Abstract

The aim of this study is to examine the economic and non-economic factors affecting financial statement fraud by using annual data in the period from 2011 to 2023, concerning individuals and legal entities registered with the Capital Markets Board of Türkiye (SPK). The results of the Generalized Linear Model (GLM) indicate that economic factors such as GDP, inflation (INF), government spending (GOV), and income inequality (GINI) all play significant roles in influencing financial statement fraud and the penalties associated with it. Political stability and perception of corruption also have an important impact. These results support several hypotheses related to the effects of economic and social factors on financial statement fraud. Specifically, an increase in national income (GDP) is found to reduce the occurrence of fraud, while exchange rate fluctuations (EXR), income inequality (GINI), and the perception of corruption (CPI) are found to be positively associated with increased fraud cases and penalties.

Keywords: Fraud, Financial Reporting, Corruption.

Öz

Bu çalışmanın amacı, Türkiye Sermaye Piyasası Kurulu'na (SPK) kayıtlı gerçek ve tüzel kişilere ilişkin 2011-2023 dönemi yıllık veriler kullanarak finansal tablo dolandırıcılığını etkileyen ekonomik ve ekonomik olmayan faktörler incelemektir. Genelleştirilmiş Doğrusal Model (GLM) sonuçları GSYİH, enflasyon (INF), kamu harcamaları (GOV) ve gelir eşitsizliği (GINI) gibi ekonomik faktörlerin finansal tablo dolandırıcılığını ve buna ilişkin cezaları etkilemede önemli rol oynadığını göstermektedir. Siyasi istikrar ve yolsuzluk algısı da önemli bir etkiye sahiptir. Bu sonuçlar, ekonomik ve sosyal faktörlerin finansal tablo dolandırıcılığı üzerindeki etkileriyle ilgili çeşitli hipotezleri desteklemektedir. Özellikle milli gelirdeki artışın (GSYİH) dolandırıcılığın oluşumunu azalttığı, döviz kuru dalgalanmalarının (EXR), gelir eşitsizliğinin (GINI) ve yolsuzluk algısının (CPI) ise artan dolandırıcılık vakaları ve cezalarıyla pozitif ilişki gösterdiği bulunmuştur.

Anahtar Kelimeler: Dolandırıcılık, Finansal Raporlama, Suistimal.

INTRODUCTION

The concept of fraud is not a new phenomenon in either financial or non-financial circles, as it has existed throughout human history. Preventing, detecting, and controlling financial crimes requires the establishment of strong systems both legally and practically. Fraudulent activities in the economy is a global issue, causing significantly negative impacts and financial losses for businesses, banking systems, capital markets, and the overall economy.

The occurrence of fraud cases leading to financial crises and corruption in certain countries, causing significant harm to national economies and business organizations, has made this issue even more urgent (Ahmad et al., 2021: 1). Well-known examples of accounting scandals, such as Enron (2001), WorldCom (2002), Lehman Brothers (2008), and Toshiba (2015), have worsened the phenomenon of financial fraud, leading to corporate bankruptcies, unjustified market corrections, and socio-economic stagnation (Sheikh, 2021: 5). The socioeconomic consequences of criminal activities carried out by global corporations can be even more destructive. In addition to economic losses, as seen in the cases of Enron and WorldCom, such activities can lead to the loss of tens of thousands of jobs. These bankruptcies resulting from financial reporting fraud highlight the importance of regulations regarding the quality, reliability, and transparency of published audited financial statements, as well as the effectiveness of auditing and control systems.

With globalization and digitization, many corporate crimes involve complex processes with numerous actors, making it difficult to determine who is responsible for the damage (Sheikh, 2021:1). On the other hand, fraudsters and cybercriminals have also accelerated their actions by exploiting digital infrastructure vulnerabilities through advanced techniques.

Financial fraud, often referred to as accounting scandals, is defined as white-collar crime. Sutherland (1940) used this term to describe crimes and misconduct committed by high-level professionals. Scholars believe that corporate crimes lead to more socioeconomic destruction than all street crimes combined and have even suggested that corporate crime constitutes a form of violent crime. Many social issues, such as local community oppression, food contamination, medical negligence, and unsafe working conditions, are the result of the abuse of corporate power (Sheikh, 2021: 2). Furthermore, advancements in financial technologies have elevated the complexity of fraud to a new level. This study will provide detailed information about the causes, consequences, and prevention of financial fraud, and then assess the issue in the context of Türkiye.

Financial fraud can result in serious consequences such as loss of investor confidence, regulatory sanctions, and long-term damage to a company's reputation. Understanding the economic and non-economic factors that contribute to financial statement fraud is crucial in preventing and detecting such crimes. Financial statement fraud is shaped by both economic and non-economic factors. This article presents a detailed information about the causes of financial statement fraud.

Capital market participants (investors, creditors, analysts, etc.) make investment decisions based on the financial information disseminated by companies (Rezaee, 2005: 278). In this context, the quality, reliability, and transparency of published audited financial statements are essential for the efficient allocation of resources in the economy, and the

Capital Markets Board of Türkiye (SPK) plays a critical role. Undoubtedly, financial fraud at any level carries economic and social costs; however, the negative effects of financial fraud in developed markets are greater, shaking investors' confidence in the quality and reliability of the financial system.

Capital market institutions and publicly traded companies must prepare their economic activities in accordance with the Turkish Accounting and Financial Reporting Standards (TMS/TFRS). Article 145 of the Capital Markets Law No. 6362 addresses this issue: “It is obliged to account for all its transactions in accordance with their true nature in accordance with the accounting and financial reporting standards published by the Public Oversight, Accounting and Auditing Standards Authority and to prepare its financial reports in a format and content that will meet the informational needs, in an understandable, reliable and comparable manner, suitable for auditing, analysis and interpretation, and in a timely and accurate manner”. In addition, organizations are required to implement internal audit and control systems. Financial statement fraud and other misuses (such as non-disclosure of special circumstances, failure to provide information or documents, market manipulative actions, hidden profits, and other violations) are audited by the SPK.

The main source of motivation for this study is to understand the economic and non-economic factors impacting financial statement fraud during the analyzed period of 2012-2023, with regard to individuals and legal entities registered with the Capital Markets Board (SPK) in Türkiye. No study has been found that analyzes the economic and non-economic factors affecting financial statement fraud in Türkiye. When examining similar studies in international literature, two studies were identified in this context (Ahmad et al., 2021; Omidi et al., 2017). In this research, unlike the existing literature, the impact of economic and non-economic factors on financial fraud is sought to be determined. Therefore, the study is expected to contribute to the literature by determining the extent to which economic and non-economic variables affect the spread of financial statement fraud.

1. THE CONCEPT OF FINANCIAL STATEMENT FRAUD

The reliability, transparency, and consistency of the financial reporting process ensure that investors make sound decisions (Rezaee, 2005: 278). The accuracy of accounting records and financial statements reflecting the true financial position is crucial for market participants (such as investors, creditors, lenders, analysts) in making effective decisions and ensuring healthy market functioning. Financial fraud is an illegal act performed by individuals or groups with the intention of achieving financial gain through misinformation or deception that causes harm to others. Financial fraud targeting both individuals and companies can lead to significant economic losses.

The Oxford Dictionary defines fraud as “deceptive behavior intended to secure unfair or unlawful gain for financial or personal benefit”. The Association of Certified Fraud Examiners (ACFE), a professional fraud prevention organization in the United States, defines accounting fraud as “the intentional misrepresentation or omission of amounts or disclosures in the financial statements to intentionally present a misleading view of a company's financial condition”. In practice, fraud encompasses all the various means that human creativity can devise for one person to gain an advantage over another through misdirection or concealment of the truth (Jackson, 2015: 26).

Article 157 of the Turkish Penal Code states that a person who deceives someone with fraudulent conduct to the detriment of others or themselves, and gains an advantage for themselves or others, commits fraud. Fraud involves the intent to deceive and the violation of established norms or protocols, such as the rule of law or accounting standards. Fraud, being a deliberate act of deception aimed at personal gain or to causing harm to others, leads to negative or even harmful consequences for its victims.

Financial statement fraud is also known as “accounting fraud”, “corporate fraud”, or “financial reporting fraud” (Jackson, 2015: 27). Financial statement fraud is a deliberate attempt by company management to deceive or mislead users of published financial statements, particularly investors and creditors, by preparing and disseminating materially misleading financial statements. Financial statement fraud is an illegal attempt to mislead investors, credit providers, and other stakeholders by reporting a company's financial position differently than it actually is. It is a specific form of fraud involving the manipulation of financial statements. Financial statement fraud involves misleading financial reporting to present the company's financial situation as better or worse than it truly is.

Business owners, potential investors, creditors, government agencies, and other stakeholders make decisions about a company based on the information provided in its financial statements. In this sense, financial statements are expected to reflect accurate information about the company’s financial condition, operating performance, and cash flows. Financial statement fraud involves the deliberate omission or misrepresentation of information in the financial statements to deceive users (Sheikh, 2021: 2). Company management, due to their access to insider information, is in an advantageous position to commit fraud or manipulate financial data. Corporate crimes are white-collar crimes committed by individuals in positions of authority, such as company owners, CEOs, presidents, vice presidents, general managers, or heads of accounting and finance.

It is argued that most cases of corporate failure result from fraudulent financial reporting, insider trading, corruption, improper investment practices, short-term profit maximization at the expense of shareholders, weak internal controls, and ineffective management (Sheikh, 2021: 4). Fraud is described not only as an accounting issue but also as a social phenomenon, with three methods by which an illegal acquisition of money from a victim can occur: by force, stealth, or deception. Therefore, a weak internal control environment in a company provides an opportunity for fraudsters. When an accounting information system fails to deliver timely, accurate, detailed, and relevant results, the company is vulnerable to theft or concealment funds (Sheikh, 2021: 5).

Financial statement fraud has two key features. Firstly, it arises from the misappropriation of assets by senior management, such as the CEO, president, vice president, or CFO. Secondly, it involves the intentional manipulation of financial statements by management. Financial statement fraud often involves the inflation of a company’s revenues and assets. Overstating revenues can be done by recording fictitious sales and related transactions. Another form of financial statement fraud involves overstating non-existent inventory, property, facilities, equipment, and other tangible assets. The ACFE (2022) study emphasizes that accounting fraud often occurs in larger companies, especially in construction, banking, financial services, healthcare, and manufacturing sectors.

2. CAUSES OF FRAUD

Several theoretical approaches have been developed to explain the reasons that drive individuals or organizations to commit fraud. Among these theories, the three most well-known are the Fraud Triangle, the Fraud Diamond, and the Fraud Pentagon. Cressey's (1953) Fraud Triangle, or the Fraud Triangle theory, is a widely used theoretical framework in auditing to explain the reasons behind an individual's decision to commit fraud. Following this theory, different models have been developed, with two particularly prominent ones being the Fraud Diamond and the Fraud Pentagon, which have become accepted models in fraud studies.

Cressey's (1953: 30) Fraud Triangle theory includes three components that contribute to increasing the risk of fraud: (1) Pressure or incentive: Situations arising from financial difficulties, personal circumstances, or external factors may encourage individuals to manipulate financial statements. In particular, sudden changes in exchange rates or economic crises may increase the debt burdens of companies, leading them to resort to financial statement fraud. (2) Opportunity: While the pressure factor creates the initial motivation for fraudulent behavior, fraud cannot occur without an opportunity. Opportunities often arise from organizational weaknesses, audit systems, and inadequate internal controls. (3) Rationalization: According to Cressey (1953: 30), rationalization is part of the motivation behind the crime. The individual justifies the misconduct, reducing or eliminating the pressure or guilt they may feel.

Wolfe and Hermanson (2004: 38) argue that the combination of these three elements does not always lead to fraudulent behavior, introducing a fourth element such as "capability". Wolfe and Hermanson (2004: 39) claim that fraud will not occur if an individual does not have the ability to commit fraud. Marks' (2009: 6) Fraud Pentagon model is an advanced version of the Fraud Triangle theory, adding two new elements such as arrogance (a person's sense of superiority, entitlement, or greed, combined with the belief that internal controls do not apply to them) and competence (the ability of an individual to override internal controls, develop complex concealment strategies, and manipulate the social situation to control it in their favor). While Wolfe and Hermanson's (2004: 39) concept of capability and Marks' (2009: 6) concept of competence may seem similar, capabilities refer to an ability to perform a task, whereas competencies refer to both skills and talents.

2.1. Economic and Non-Economic Factors Leading Individuals and Companies to Fraud

In addition to theoretical approaches, we list the economic and non-economic reasons that typically drive individuals and companies to commit fraud. The economic reasons can be summarized as follows:

1. **Economic conditions and market circumstances**: Adverse economic conditions, such as economic crises, recessions, or market collapses, may push companies to engage in fraud to meet their financial targets. For instance, low growth rates may make it difficult for companies to achieve their revenue goals, which could lead them to present false information in their financial statements. Companies, especially those facing financial difficulties, may inflate their revenues or hide their debts to attract investors or secure credit. During periods of economic growth, companies aiming for rapid expansion may manipulate their financial reports to meet these demands.

2. **Pressure from financial performance expectations**: Constant high expectations regarding a company's performance can lead to manipulation of financial statements (Wells, 2017: 300). Perols and Lougee (2011) indicate that fraudulent firms tend to overestimate their revenues. During periods of economic growth, managers, under pressure to gain market share or increase company value, may manipulate financial reporting techniques. Such pressures, particularly in publicly traded companies, may lead to misrepresentation of financial data in an effort to boost stock prices. In highly competitive environments, companies may overstate their financial performance to attract investors and increase market share. Revenues and assets may be inflated through manipulation to increase stock prices, gain investor confidence, and secure potential partnerships. These practices may increase the company's market value while concealing its actual financial health.
3. **High debt levels**: Arifin and Prasetyo (2018: 101) suggest that a company in financial distress is more likely to resort to fraud compared to companies operating normally. The economic strain of a high debt load can lead to manipulation in financial statements. Companies at risk of bankruptcy may misrepresent their financial situation to obtain credit. Lenders and investors may find it difficult to detect suspicious financial situations.
4. **Investor and stakeholder demands**: As emphasized by Arifin and Prasetyo (2018: 99), conflicts of interest, pressure, opportunities, and rationalization lead to the issues explained in the fraud triangle. Short-term profit expectations may lead to financial manipulation to satisfy investors. These pressures are particularly triggered by investors with strong and short-term expectations. Investors expect companies' financial results to be consistently good, which can lead to pressure to alter financial statements. Short-term profit targets from investors may encourage managers to manipulate financial reports to improve the company's financial position. In Türkiye, especially given the size of the stock market, exaggerated figures in financial statements can pose a serious threat to investors.

The non-economic reasons leading to fraud can be summarized as follows:

1. **Management ethics and values**: Incompetence of managers, unethical decisions, and weak leadership can increase the likelihood of fraud. Moreover, a lack of communication within the company can hinder accurate financial reporting. When the board of directors and top executives lack strong ethical values, they may be driven by personal interests to encourage such actions.
2. **Corporate culture**: The internal culture of a company plays a crucial role in either preventing or encouraging financial statement fraud. The hierarchical structure, lack of transparency, lack of governance, work ethics, and leadership style within a company can influence employees' engagement in financial fraud (Akyol, 2020: 108). In a work environment where unethical behavior is normalized, employees and managers may not hesitate to violate financial reporting standards.
3. **Audit systems and internal controls**: Beasley et al. (2000: 450) compared firms with detected financial fraud to others and found that companies where fraud was detected had relatively weaker audit and internal control

systems. A strong internal audit system and independent auditing play a critical role in preventing financial statement fraud. When companies have effective internal control systems, manipulations or misstatements can be detected. However, in cases where weak audit system, managers may have more opportunities to manipulate financial data. The absence of effective internal audit mechanisms in companies can lead to the spread of fraud.

4. **Legal regulations and legal framework**: Legal regulations implemented to prevent financial statement fraud are an important non-economic factor. A strong and effective legal framework encourages companies to present their financial statements accurately. However, legal gaps or weak enforcement may encourage managers to commit fraud. For instance, lenient penalties for tax evasion or violations of financial reporting laws may lead companies to engage in manipulation. In Türkiye, the financial services sector is regulated by various supervisory authorities. However, the inadequacy or weak enforcement of audit mechanisms can facilitate manipulation of companies' financial situations. If audits are ineffective, the accuracy of financial statements may be questioned, and companies may find opportunities to circumvent regulations.
5. **Social pressures and reputation**: A company's desire to maintain its public image may influence its financial statement fraud. High-profile companies, in particular, may overstate their financial statements to avoid a loss of public trust. Social pressures, especially when a company fails in environmentally friendly projects or corporate social responsibility initiatives, may trigger manipulation of financial reports.

3. THE IMPORTANCE AND COST OF FINANCIAL FRAUD

Financial fraud arises when financial reports significantly misrepresent information or fail to fully disclose key facts. Financial statement fraud is often committed by management and is thus also referred to as "management fraud". Financial statement fraud is typically carried out through various methods. Some of these methods are as follows (Kiymaz, 2020: 28; Wells, 2017: 300; Coenen, 2008: 100; Rezaee, 2005: 282):

1. **Inflating revenues**: Companies can inflate their revenues to present a healthier financial situation. In financial jargon, this is often referred to as "window dressing". Companies often do this to improve cash flow, enhance investor perception, meet performance targets, and improve their debt repayment capacity to obtain loans.
2. **Inflating asset values**: Companies can record assets at values higher than their actual worth to improve equity indicators. These manipulations typically involve receivables, inventory, or long-term assets.
3. **Concealing costs**: Companies can conceal their costs by underreporting them to increase net profits. This can be done by changing the timing of expenses or categorizing certain costs differently, thus hiding the impact of these costs.
4. **Delaying debts**: Failing to record debts on time or transferring payments to future periods can improve a company's financial statement. This method helps companies conceal liquidity problems.

5. **Concealing revenues or inflating costs**: Companies may manipulate revenues and expenses to reduce their tax liabilities. To avoid tax costs, they may choose to conceal revenues or inflate costs. Fraudulently underreporting financial results is often done to avoid taxes or to distribute less profit to shareholders.

ACFE (2022) divides fraud into three categories: asset misappropriation, corruption, and financial statement fraud. While financial statement fraud represents the fewest cases numerically, it is the most costly type of fraud in terms of financial loss. In addition to causing the largest monetary losses, financial statement fraud usually affects more people than other types of fraud. A financial statement fraud may affect shareholders, investment banks, and numerous employees (Coenen, 2008: 96). According to the 2022 report from the Association of Certified Fraud Examiners (ACFE), the discovery of fraud typically takes an average of 12 months, and the longer it takes to uncover, the greater the damage caused.

The real cost of fraud includes the investment in fraud prevention tools, personnel costs allocated to the task, and the total losses resulting from fraudulent activities. According to Moody's Analytics (2024), financial fraud costs the global economy an estimated $3.7 trillion each year. According to SEON (Global private financial fraud solution company), this cost exceeds $5.13 trillion annually, showing a consistent 56% increase over the past decade, attributed to long-term social, technological, and economic factors. SEON (2024) states that this is just the visible part of the iceberg. Fraudsters and cybercriminals are accelerating their activities by exploiting digital infrastructure security gaps and utilizing advanced techniques to increase businesses' vulnerabilities across sectors.

The indirect consequences of fraud can jeopardize business success, leading to long-term effects on the economy and society. These consequences typically produce long-term economic and societal effects and can be summarized as follows (Gaffaroglu and Alp, 2023: 48):

1. **Economic instability**: Large-scale economic fraud can undermine trust in the financial system, leading to a loss of confidence from investors or the public in the economy. This may result in economic crises or stagnation.
2. **Damage to corporate reputation and loss of trust**: Fraud can significantly damage the reputation of the concerned organization. This can result in a loss of trust from customers and business partners, leading to financial losses. The emergence of financial statement fraud can undermine investors' trust in a company and lead to a significant decline in stock prices.
3. **Damage to relationships**: Financial statement fraud can harm relationships with partners, vendors, and suppliers, causing additional negative impacts on the company's operations.
4. **Legal and regulatory challenges:** Fraud cases may lead to strengthening laws and regulations, resulting in more stringent audits and regulations. This may also increase bureaucratic hurdles and the complexity of legal processes.
5. **Increased legal costs**: Fraud-related lawsuits can lead to prolonged legal processes and higher costs for victims. Courts, along with the length of litigation and attorney fees, can adversely affect the victims.

These outcomes can affect individuals and society in various ways. These indirect costs, which are harder to measure and can be defined as "soft costs," exacerbate the overall economic impact of fraud and broaden its footprint. Beyond direct losses, the potential domino effect helps us to understand the total real cost and broader impact of fraud.

4. FINANCIAL STATEMENT FRAUD LITERATURE

Various mathematical models (such as Beneish M-Score, Altman Z-Score, Ohlson O-Score, Piotroski F-Score), algorithms (decision trees, time series analysis, machine learning, artificial neural networks, clustering algorithms, data mining methods), and theories (Fraud Triangle Theory, Fraud Diamond Theory, Social Learning Theory, Opportunity Theory, Two-Party Game Theory) are used to understand and detect the underlying causes of fraud. Detecting fraud is extremely important in terms of preventing economic losses, maintaining trust in the system, and reinforcing ethical practices.

In Türkiye, the majority of recent academic studies on financial statement fraud are accounting-focused and aim to determine whether companies commit fraud by utilizing mathematical methods to assess the risk of fraud (Özarı, 2023; Karadeniz et al.; 2023; Can, 2023; Can and Özarı, 2023; Aksoy, 2021; Tatar and Kıymık, 2021; Kırda and Özçelik, 2021; Özevin and Yazdıfar, 2020). The most commonly used measurement elements in these studies for detecting fraud are financial ratios or methods of comparing financial items. Another significant body of literature focuses on identifying the existence of fundamental variables in fraud theories (Fraud Triangle, Fraud Diamond, Fraud Pentagon, etc.) (Tharifah et al., 2023; Hasani et al., 2023; Humphrey et al., 2023; Khamainy et al., 2022; Demetriades and Owusu-Agye, 2022; Yusrianti et al., 2020; Abdullahi and Mansor, 2015).

Fitriana et al. (2024) in their study covering 29 banks and 145 financial statements listed on the Indonesian Stock Exchange, investigates the impact of variables such as financial goals, financial stability, the existence of independent committees, and financial pressures on fraud. The research findings show that only one variable (financial goals) influences financial statement fraud among the four research variables. A significant and positive relationship between financial goals and fraud indicates that pressure from financial goals increases the likelihood of fraud.

Ramos et al. (2024) examine the causes and effects of fraud in the EU, using data from 27 European countries between 2012 and 2020. They focus on causes such as European Anti-Fraud Office measures, financial expenditures, investment freedom, education levels, and government spending, while the effects include real GDP, the Gini coefficient, corruption, property rights, and human development. The research findings show that financial difficulties increase both the probability and frequency of fraudulent activities.

Yarana (2023), in his study covering the 2015-2020 period, analyzes the factors of the Fraud Diamond Theory affecting financial statement fraud in 371 publicly traded companies on the Thai Stock Exchange. In this context, ten independent variables influencing financial statement fraud were examined. The research findings reveal that factors such as financial stability, leverage, financial goals, a small number of independent committee members, the nature of the industry, and frequent changes in auditors affect financial statement fraud in Indonesia.

Aslan's (2021) research is based on the Capital Market Boards of Türkiye (SPK) audit findings between 2012-2020. The research results show that brokerage firms are the riskiest type of institution with the majority of fraud cases and the most common type of fraud is the misuse of customer assets.

Ahmad et al. (2021) analyze the level of fraud across 41 European countries in their study, examining the impact of eight independent variables (operational risk, economic freedom, GDP, political stability, poverty, governance type, consumer price index, and unemployment rate) on fraud. The dependent variable includes fraud in both financial services and multinational corporations as well as online fraud. Using panel data (Pooled OLS) and dynamic panel data/generalized method of moments (DPD/GMM), the study shows that political stability, economic freedom, poverty, and GDP significantly affect the spread of financial fraud.

Omidi et al. (2017) analyze the composite effect of seven economic and non-economic variables on fraud (measured by the economic freedom variable) for 60 developing countries over the 1995-2010 period using panel data analysis. The analysis finds a negative relationship between fraud and the share of the industrial sector in GDP, while a positive relationship exists between fraud and the size of the service sector in GDP. In other words, as the share of the industrial sector in GDP increases, fraud cases decrease, while as the size of the service sector in GDP increases, fraud cases increase. Furthermore, a negative relationship is found between democracy, GDP, and fraud, while a positive and significant relationship is found between government size and inflation.

5. DATA AND METHODOLOGY

This section outlines the purpose, scope, and methods of the study, followed by a discussion of the variables and hypotheses, and concludes with the presentation of the research findings.

This study aims to determine the economic and non-economic factors affecting financial statement fraud within the scope of publicly-held corporations, financial institutions and real persons registered with the Capital Markets Board (SPK) in Türkiye by using annual data for the period 2011-2023. The sample period of 2011-2023 in this study was likely chosen to cover a decade-long timeframe that captures significant economic, political, and social developments in Türkiye. This period offers a comprehensive view of the economic and non-economic conditions that might influence the occurrence of financial statement fraud (FSF) in the country.

The analysis includes 7 economic variables (GDP per capita, inflation (CPI), unemployment rate, exchange rate ($), total government expenditure/GDP ratio, Gini coefficient, economic confidence index) and 3 non-economic variables (corruption perception index, poverty rate, and political stability index). The dependent variable, fraud, is represented by the amount and number of administrative fines imposed on companies, financial institutions, and individuals related to financial reporting violations issued by the Capital Markets Board of Türkiye (SPK). The regression models are in the following form:

Model 1: $FSFC = \alpha + \beta 1GDP + \beta 2\ INF + \beta 3UNE + \beta 4\ ECI + \beta 5\ EXR + \beta 6\ GOV + \beta 7\ GCI + \beta 8\ PSI + \beta 9\ CPI + \beta 10\ POV + \varepsilon_{it}$

Model 2: $FSFP = \alpha + \beta 1GDP + \beta 2\ INF + \beta 3UNE + \beta 4\ ECI + \beta 5\ EXR + \beta 6\ GOV + \beta 7\ GCI + \beta 8\ PSI + \beta 9\ CPI + \beta 10\ POV + \varepsilon_{it}$

Here:

FSFC = Financial Statement Fraud (as measured by number of cases imposed by the SPK)
FSFP = Financial Statement Fraud (as measured by number of penalties imposed by the SPK)
GDP = Gross Domestic Product per capita
INF = Consumer Price Index (measured as inflation rate)
UNE = Unemployment rate
ECI = Economic Confidence Index
EXR = Exchange rate ($)
GOV = Total Government Expenditure to GDP ratio
GCI = Gini Coefficient Index
PSI = Political Stability Index
CPI = Corruption Perception Index
POV = Poverty rate
α = Intercept
βi = Coefficients of i variables
ε_{it} = Error term

In the study, the dependent variable is financial statement fraud (FSF), which is represented by two different measures:

1. **FSFC (Financial Statement Fraud Cases)**: This is measured by the number of cases opened by the Capital Markets Board (SPK) related to financial reporting violations. These are legal cases initiated against companies, financial institutions, or individuals for fraudulent financial activities.
2. **FSFP (Financial Statement Fraud Penalties)**: This variable is represented by the number of financial reporting fraud penalties imposed by the SPK. It quantifies the penalties or fines imposed on companies, financial institutions, or individuals found guilty of violating financial reporting regulations.

Both FSFC and FSFP serve as proxies for the occurrence and severity of financial statement fraud within publicly-held corporations, financial institutions, and individuals registered with the SPK in Türkiye. These measures reflect the legal consequences faced by entities involved in fraudulent financial reporting, with FSFC capturing the number of fraud cases and FSFP reflecting the number of penalties imposed.

The study aims to examine how various economic and non-economic factors affect the incidence of financial statement fraud, which is captured through these two dependent variables.

The mean and standard deviation, median and change intervals were used to define the research series. Kolmogorov Smirnov test was used to analyze the normality distribution of the data. Since all series were proportional and formed a vertical series, unit root test was not performed. Since the distribution of the data did not comply with the standard normal distribution, Spearman's rho correlation analysis was used in the correlation analysis. Due to linearization deviations (Yılmaz and Turanlı, 2023: 16), Generalized Linear Model (Logit) analysis was performed. All analyses were performed with a 95% confidence interval and a significance level of 0.05. The study's data set and relevant information are given in Table 1.

Table 1. Definition of variables

Variable	Definition	Source*
FSFC	Number of cases opened by the Capital Markets Board (SPK)	SPK
FSFP	Financial reporting fraud penalties imposed by the Capital Markets Board (SPK)	SPK
GDP	Gross Domestic Product per capita	TUIK
INF	Inflation rate measured by the Consumer Price Index (CPI)	TUIK
UNE	Unemployment rate	TUIK
ECI	Economic Confidence Index	TUIK
EXR	Exchange rate ($)	TCMB
GCI	Gini Coefficient Index	TUIK
GOV	Total Government Expenditure/GDP ratio	TUIK
PSI	Political Stability Index	World Bank
CPI	Corruption Perceptions Index	Transparency International
POV	Poverty rate	TUIK

*Capital Markets Board of Türkiye (SPK), Turkish Statistical Institute (TUIK), Central Bank of Turkey (TCMB)

The following section explains the independent variables, which are provided in Table 1 and used in the analysis.

Economic Factors

1. **Per Capita Income:** Per capita income is one of the most commonly used variables in analyses of factors influencing fraud. It is generally assumed that as per capita income increases, the tendency to commit fraud decreases. Another emphasized point is that as per capita income increases, more resources are allocated to reduce and deter fraud (Omidi et al., 2017: 270). Developments in digital technologies, investments in security systems, and the development of early warning systems increase the effectiveness of fraud prevention.
2. **Unemployment rate:** The unemployment rate provides significant insights into the health of an economy, and it is assumed that rising unemployment rates generally lead to an increase in actions related to financial fraud (Ramos et al.,2024; Özarı, 2023; Kırda and Özçelik,2021; Ahmad et al., 2021; Omidi et al., 2017).
3. **Consumer Price Index (CPI):** Inflation, as measured by the Consumer Price Index (CPI), leads to a decrease in purchasing power. Inflation leads to higher living costs and reduced purchasing power. It is widely believed that inflation increases moral erosion, which in turn raises ethical violations both individually and institutionally. Economic difficulties or pressures are assumed to create an environment that encourages financial fraud. In the analysis, the Consumer Price Index (CPI) is used as the measure of inflation (Fitriana et al., 2024; Ahmad et al., 2021; Omidi et al., 2017).
4. **Exchange rate:** The exchange rate is a frequently discussed topic, especially in developing countries like Türkiye, that are both the cause and the result of economic and financial crises. The exchange rate reflects the value of a country's currency relative to other currencies. Excessive fluctuations in exchange rates can lead to instability in financial markets, creating conditions that may foster mismanagement or fraud.
5. **Total Government Expenditures to GDP:** The ratio of Total Government Expenditures to GDP expresses the proportion of public spending to the country's total economic output (GDP). As the ratio of government

spending to GDP increases, the level of state intervention in the economy rises. Some studies have shown that an increase in government spending can lead to an increase in financial fraud. However, the causality and direction of the relationship may be reciprocal (Omidi et al., 2017: 270).

6. **Gini Coefficient:** The Gini coefficient is a statistical measure of income or wealth inequality in a society. The Gini coefficient ranges from 0 to 1, indicating the level of inequality in income distribution. A Gini coefficient of 1 indicates maximum inequality, while a score of 0 reflects perfect equality.
7. **Economic Confidence Index:** The economic confidence index, which measures the level of confidence in a country's economy and typically reflects the expectations of consumers, businesses, and investors regarding future economic conditions. Periods of low economic confidence can lead to an increase in financial fraud (Fitriana et al.,2024; Ramos et al., 2024; Yarana, 2023; Ahmad et al., 2021).

Non-Economic Factors

1. **Political Stability Index:** The political stability index, measured by the World Bank's Worldwide Governance Indicators (WGI), assesses the likelihood of political instability or violence in a country. The index ranges from approximately -2.5 (weak political stability) to +2.5 (strong political stability). During the analysis period in Türkiye, the index had positive values in the first three years (2011-2012-2013) but turned negative in the following years. Political stability also creates an environment of economic confidence. It directly affects key factors, including the functioning of the legal system, anti-corruption efforts, the effectiveness of regulatory institutions, and the reliability of economic decisions. Therefore, as political stability increases, fraudulent activities are expected to decrease.
2. **Corruption Perception Index (CPI):** The Corruption Perceptions Index (CPI), published annually by Transparency International, measures the prevalence of corruption in a country's public sector. The index is a compilation of opinions from experts, business leaders, and analysts regarding corruption. It is a perception-based measure derived from surveys. The score ranges from 0 to 100. A score of 0 indicates the highest level of corruption, while a score of 100 signifies a country that is very successful in fighting corruption and is considered clean. High perceptions of corruption directly affect foreign investments and economic growth.
3. **Poverty Rate:** This rate typically represents the percentage of the population living below the minimum income level necessary to sustain life. It is closely related to economic issues such as income inequality and unemployment. The study uses the poverty rate, calculated by the Turkish Statistical Institute (TÜİK), which refers to the inability of a household to meet its basic material needs. As poverty increases, an increase in fraud cases is generally expected.

In analyzing the factors affecting financial statement fraud, the following 7 economic and 3 non-economic hypotheses were formed:

H1: As the Gross Domestic Product (GDP) per capita increases, the occurrence of financial statement fraud (FSF) decreases.

Higher GDP per capita indicates a more prosperous economy, potentially reducing the motivation for financial misconduct due to improved resources for fraud prevention (Omidi et al., 2017).

H2: An increase in inflation (CPI) is associated with an increase in financial statement fraud.

Inflation (measured by the Consumer Price Index, CPI) may increase financial pressure on individuals and firms, leading to greater ethical violations and financial fraud as a coping mechanism.

H3: Higher unemployment rates (UNE) are positively correlated with an increase in financial statement fraud.

Economic stress caused by rising unemployment may lead to increased financial fraud as individuals and firms attempt to survive in a challenging economic environment.

H4: Fluctuations in the exchange rate (measured against the US Dollar) increase the occurrence of financial statement fraud.

Exchange rate (EXR) volatility may create financial instability, which in turn can promote fraudulent behavior due to increased uncertainty and mismanagement.

H5: An increase in the Total Government Expenditure/GDP ratio is positively associated with an increase in financial statement fraud.

Higher government spending may indicate more direct intervention in the economy, which might unintentionally increase the likelihood of fraud due to potential misallocation of resources or ineffective regulatory oversight.

H6: A higher Gini Coefficient (greater income inequality) is associated with an increase in financial statement fraud.

Greater income inequality (GCI) may lead to social and economic pressures that incentivize individuals and companies to engage in fraudulent activities to bridge the wealth gap.

H7: A decrease in the Economic Confidence Index (ECI) is positively related to the occurrence of financial statement fraud.

Lower economic confidence may lead to greater financial instability, which may increase the likelihood of financial fraud as firms and individuals try to mitigate risks associated with an uncertain economic environment.

H8: Higher political stability (measured by the Political Stability Index) is negatively associated with financial statement fraud.

Political stability creates an environment conducive to legal compliance and stronger regulatory institutions, thereby reducing the likelihood of financial fraud.

H9: Higher levels of corruption (as measured by the Corruption Perception Index) are positively correlated with an increase in financial statement fraud.

A high perception of corruption in a country or organization can undermine ethical standards, leading to more frequent instances of financial fraud.

H10: An increase in the poverty rate is positively associated with an increase in financial statement fraud.

Higher poverty levels may create financial pressure on individuals and organizations, increasing the likelihood of fraudulent activities as a means of survival or profit.

These hypotheses will be tested using statistical methods to analyze the relationships between the economic and non-economic factors and the incidence of financial statement fraud, as captured by the number and value of fines imposed by the Capital Markets Board (SPK) on firms, financial institutions, and individuals. The scope of the research consists of real and legal persons registered with the Capital Markets Board (SPK) whose shares are traded on Borsa Istanbul (BIST) between 2011-2023.

6. EMPIRICAL FINDINGS

Table 2 presents descriptive statistics of variables including the mean, standard deviation, median, minimum and maximum values. Mean FSFC value was 14,54±7,71 with 6-35 cases range. FSFP value had 1.091.213,31±971.012,56 mean with 234.854-4.066.440 range. GDP mean was 10.882,79±1.335,41. Inflation mean was 21,02±20,83. Unemployment mean was 0,11±0,01. The Economic Confidence Index mean was 100,82±6,30 with 88,06-111,01 range. Exchange range was 1,67-23,74 with 6,43±6,63 mean value. GINI index mean was 39,61±1,66 and GOV mean was 34,24±1,47. PSI mean was -0,58±0,51, CPI mean was 41,17±4,58 and POV mean was 33,86±11,06 (Table 2). In summary, the descriptive analysis data show that economic and social indicators have shown significant changes over the 2011-2023 period, with significant fluctuations in some parameters (such as inflation, exchange rates, poverty rates), while others (such as unemployment, public expenditure) remained relatively stable.

Table 2. Descriptive statistics of research parameters for the 2011-2023 time period

	Mean	Standard Deviation	Median	Minimum	Maximum
FSFC	14,54	7,71	14,00	6,00	35,00
FSFP	1.091.213,31	971.012,56	867.606,00	234.854,00	4.066.440,00
GDP	10.882,79	1.335,41	10.966,01	8.638,18	13.102,77
INF	21,02	20,83	11,84	6,16	64,77
UNE	0,11	0,01	0,10	0,09	0,13
ECI	100,82	6,30	102,22	88,06	111,01
EXR	6,43	6,63	3,65	1,67	23,74
GCI	39,61	1,66	39,10	37,90	43,80
GOV	34,24	1,47	34,50	30,60	35,90
PSI	-0,58	0,51	-0,88	-1,07	0,18
CPI	41,17	4,58	40,20	34,00	50,00
POV	33,86	11,06	28,70	26,30	57,90

FSFC: Financial statement fraud cases, FSFP: Financial statement fraud penalties, GDP: Gross Domestic Product, INF: Inflation, UNE: Unemployment, ECI: Economic Confidence Index, EXR: Exchange rate ($); GCI: Gini Coefficient, PSI: Political Stability Index, CPI: Corruption Perception Index, POV: Poverty rate.

The study employs advanced econometric techniques, such as Spearman's rho and the Generalized Linear Model (Logit), to analyze the impact of a range of economic and non-economic factors on financial statement fraud in Türkiye. Since the data does not follow a normal distribution, Spearman's rank correlation, a non-parametric method, was preferred. The Logit model was chosen because it handles the count nature of the fraud data (such as cases or penalties) better, particularly when the dependent variable is skewed or the counts are small. This model allows for better estimation of probabilities, providing a clearer picture of the likelihood of fraud occurring under different conditions.

Table 3 displays a Spearman's rho correlation analysis result for financial statement fraud and research series. Financial statement fraud penalties were significantly and negatively correlated with unemployment (r=-0.619; p<0.05). On the other hand, all other correlations between financial statement fraud cases or penalties were statistically insignificant (p>0.05) (Table 3). The only significant relationship found in the analysis is between financial statement fraud penalties (FSFP) and unemployment (UNE). This negative correlation suggests that penalties for financial fraud tend to be higher in periods of lower unemployment. However, there is no significant correlation between financial statement fraud cases (FSFC) and fraud penalties (FSFP) and most other economic variables, indicating that these indicators (like GDP, inflation, economic confidence, and others) do not strongly influence fraud cases or the penalties related to them.

Table 3. Spearman's rho correlation analysis results between research series and Financial Statement Fraud

	FSFC		FSFP	
	r	**p**	**r**	**p**
GDP	0.174	0.571	0.489	0.090
INF	-0.248	0.414	0.066	0.831
UNE	-0.152	0.619	-0.619*	0.024
ECI	0.242	0.425	0.346	0.247
EXR	-0.287	0.343	-0.071	0.817
GCI	-0.094	0.761	0.140	0.648
GOV	-0.322	0.283	-0.049	0.873
PSI	0.230	0.450	0.083	0.788
CPI	0.227	0.457	-0.105	0.734
POV	0.444	0.129	0.396	0.181

*p<0.05. FSFC: Financial statement fraud cases, FSFP: Financial statement fraud penalties, GDP: Gross Domestic Product, INF: Inflation, UNE: Unemployment, ECI: Economic Confidence Index, EXR: Exchange rate ($); GCI: Gini Coefficient, PSI: Political Stability Index, CPI: Corruption Perception Index, POV: Poverty rate.

Table 4 presents the Generalized Linear Model (Logit) for the effects of research variables on FSFC and FSFP for Türkiye. Generalized Linear Model (Logit) results showed that GDP (B=-0.014; p<0.01), INF (B=-1.692; p<0.01), ECI (B=1.480; p<0.01), EXR (B=6.072; p<0.01), GCI (B=5.893; p<0.01), GOV (B=-6.553; p<0.01), PSI (B=53.378; p<0.01) and POV (B=-0.971; p<0.01) had significant effect on FSFC. Effects of GDP, INF, GOV and POV were negative, whereas effects of ECI, EXR, GCI and PSI were positive. Effects of GDP (B=-0.001; p<0.01), UNE (B=59.255; p<0.01), ECI (B=0.106; p<0.01), EXR (B=0.230; p<0.01), GCI (B=1.008; p<0.01), GOV (B=-0.540; p<0.01), PSI (B=4.112; p<0.01) and CPI (B=0.144; p<0.01) were significant. Effects of GDP and GOV were negative, whereas effects of UNE, ECI, EXR, GCI, PSI and CPI were positive (Table 4).

The Generalized Linear Model (Logit) results presented for Financial Statement Fraud Cases (FSFC) and Financial Statement Fraud Penalties (FSFP) show the significant effects of various economic and social factors on these two variables. The results for both FSFC and FSFP are broken down by beta coefficients, indicating the direction and magnitude of the effect, and p-values to assess statistical significance (Table 4).

Table 4. Generalized Linear Model (Logit) results for effects of research series on FSFC and FSFP

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald X^2	df	p value
FSFC							
(Intercept)	89.143	89.599	-86.468	264.754	0.990	1	0.320
GDP	-0.014	0.002	-0.018	-0.010	42.588	1	0.000
INF	-1.692	0.217	-2.118	-1.267	60.645	1	0.000
UNE	-89.992	213.433	-508.314	328.330	0.178	1	0.673
ECI	1.480	0.405	0.686	2.274	13.351	1	0.000
EXR	6.072	0.928	4.253	7.891	42.815	1	0.000
GCI	5.893	1.499	2.956	8.831	15.465	1	0.000
GOV	-6.553	0.568	-7.665	-5.440	133.208	1	0.000
PSI	53.378	7.787	38.115	68.641	46.982	1	0.000
CPI	-0.224	0.315	-0.841	0.393	0.507	1	0.476
POV	-0.971	0.140	-1.245	-0.697	48.171	1	0.000
(Scale)	1.493	0.586	0.692	3.221			
FSFP							
(Intercept)	-19.908	7.763	-35.123	-4.694	6.577	1	0.010
GDP	-0.001	0.001	-0.001	0.000	20.207	1	0.000
INF	-0.031	0.019	-0.068	0.006	2.656	1	0.103
UNE	59.255	18.491	23.012	95.497	10.269	1	0.001
ECI	0.106	0.035	0.038	0.175	9.190	1	0.002
EXR	0.230	0.080	0.073	0.388	8.199	1	0.004
GCI	1.008	0.130	0.754	1.263	60.281	1	0.000
GOV	-0.540	0.049	-0.636	-0.444	120.558	1	0.000
PSI	4.112	0.675	2.789	5.434	37.137	1	0.000
CPI	0.144	0.027	0.090	0.197	27.805	1	0.000
POV	-0.006	0.012	-0.029	0.018	0.214	1	0.644
(Scale)	0.011	0.004	0.005	0.024			

FSFC: Financial statement fraud cases, FSFP: Financial statement fraud penalties, GDP: Gross Domestic Product, INF: Inflation, UNE: Unemployment, ECI: Economic Confidence Index, EXR: Exchange rate ($); GCI: Gini Coefficient Index, PSI: Political Stability Index, CPI: Corruption Perception Index, POV: Poverty rate.

Financial Statement Fraud Cases (FSFC):

Negative Effects

GDP (B = -0.014, p < 0.01): A negative relationship means that as GDP increases, the likelihood of financial statement fraud cases decreases, suggesting that economic growth may reduce the occurrence of fraud.

Inflation (INF) (B = -1.692, p < 0.01): As inflation rises, the likelihood of financial statement fraud cases decreases. This could indicate that inflation drives companies to adjust financial practices, or that regulatory measures or market conditions during high inflation may suppress fraudulent activities.

Government Expenditure (GOV) (B = -6.553, p < 0.01): A negative relationship suggests that higher government spending is associated with fewer financial statement fraud cases, potentially due to greater regulatory oversight or enforcement.

Poverty (POV) (B = -0.971, p < 0.01): As poverty increases, financial statement fraud cases decrease, possibly due to lower financial resources or capacity for fraudulent activities in poorer economies.

Positive Effects

Economic Confidence Index (ECI) (B = 1.480, p < 0.01): As economic confidence increases, the likelihood of financial statement fraud cases increases, suggesting that firms may take more risks or push financial reporting boundaries during periods of growth

Exchange Rate (EXR) (B = 6.072, p < 0.01): As the exchange rate becomes more volatile, the likelihood of financial statement fraud cases increases. This could be tied to currency risk management issues or opportunities for fraud in financial reporting.

Gini Coefficient (GCI) (B = 5.893, p < 0.01): A higher Gini coefficient, indicating greater income inequality, is associated with more financial statement fraud cases. This could reflect how inequality breeds corruption or unethical practices.

Political Stability Index (PSI) (B = 53.378, p < 0.01): A very high positive effect suggests that higher political stability is linked to a greater likelihood of financial statement fraud. This might be because stable political environments provide opportunities for firms to engage in risky or fraudulent financial practices with less fear of political repercussions.

Table 5: Hypothesis test results for FSFC

Hypothesis	Statements	Conclusions
H1	As the Gross Domestic Product (GDP) per capita increases, the occurrence of financial statement fraud (FSF) decreases.	Accepted
H2	An increase in inflation (CPI) is associated with an increase in financial statement fraud.	Rejected
H3	Higher unemployment rates (UNE) are positively correlated with an increase in financial statement fraud.	Rejected
H4	Fluctuations in the exchange rate (measured against the US Dollar) increase the occurrence of financial statement fraud.	Accepted
H5	An increase in the Total Government Expenditure/GDP ratio is positively associated with an increase in financial statement fraud.	Rejected
H6	A higher Gini Coefficient (greater income inequality) is associated with an increase in financial statement fraud.	Accepted
H7	A decrease in the Economic Confidence Index (ECI) is positively related to the occurrence of financial statement fraud.	Rejected
H8	Higher political stability (measured by the Political Stability Index) is negatively associated with financial statement fraud.	Rejected
H9	Higher levels of corruption (as measured by the Corruption Perception Index) are positively correlated with an increase in financial statement fraud.	Rejected
H10	An increase in the poverty rate is positively associated with an increase in financial statement fraud.	Rejected

Financial Statement Fraud Penalties (FSFP):

Negative Effects

GDP (B = -0.001, p < 0.01): A slight negative relationship, suggesting that higher GDP is linked to slightly lower fraud penalties. This may indicate that in growing economies, there could be more leniency in penalties or fewer resources devoted to investigating fraud.

Government Expenditure (GOV) (B = -0.540, p < 0.01): The negative effect implies that higher government spending is associated with lower penalties for financial statement fraud. This could reflect a tendency for governments to prioritize other areas of spending or reduce attention to enforcing fraud penalties.

Poverty (POV) (B = -0.006, p = 0.644): This effect is statistically insignificant, indicating no meaningful relationship between poverty and fraud penalties.

Positive Effects:

Unemployment (UNE) (B = 59.255, p < 0.01): A very strong positive effect indicates that as unemployment increases, penalties for financial statement fraud rise significantly. This could suggest that in times of high unemployment, there may be greater scrutiny or harsher penalties for fraud as governments attempt to regain trust in the economic system.

Economic Confidence Index (ECI) (B = 0.106, p < 0.01): A positive effect indicates that as economic confidence rises, penalties for financial statement fraud are more likely to increase. This could reflect a tighter regulatory environment during times of confidence.

Exchange Rate (EXR) (B = 0.230, p < 0.01): A positive relationship with exchange rates indicates that fluctuations or volatility in the exchange rate can lead to an increase in fraud penalties, perhaps due to increased financial scrutiny or attempts to cover up fraud.

Gini Coefficient (GCI) (B = 1.008, p < 0.01): The positive effect means that greater income inequality is associated with higher penalties for financial fraud, possibly due to higher levels of corruption and regulatory focus.

Political Stability Index (PSI) (B = 4.112, p < 0.01): The positive effect suggests that greater political stability may be linked with higher fraud penalties, as more stable governments might have the capacity or desire to enforce stricter penalties.

Corruption Perception Index (CPI) (B = 0.144, p < 0.01): A positive effect indicates that higher perceived corruption is associated with higher penalties for financial statement fraud. This could reflect heightened public and governmental attention to combating corruption.

Table 5: Hypothesis test results for FSFC

Hypothesis	Statements	Conclusions
H1	As the Gross Domestic Product (GDP) per capita increases, the occurrence of financial statement fraud (FSF) decreases.	Accepted
H2	An increase in inflation (CPI) is associated with an increase in financial statement fraud.	Rejected
H3	Higher unemployment rates (UNE) are positively correlated with an increase in financial statement fraud.	Accepted
H4	Fluctuations in the exchange rate (measured against the US Dollar) increase the occurrence of financial statement fraud.	Accepted
H5	An increase in the Total Government Expenditure/GDP ratio is positively associated with an increase in financial statement fraud.	Rejected
H6	A higher Gini Coefficient (greater income inequality) is associated with an increase in financial statement fraud.	Accepted
H7	A decrease in the Economic Confidence Index (ECI) is positively related to the occurrence of financial statement fraud.	Rejected
H8	Higher political stability (measured by the Political Stability Index) is negatively associated with financial statement fraud.	Rejected
H9	Higher levels of corruption (as measured by the Corruption Perception Index) are positively correlated with an increase in financial statement fraud.	Accepted
H10	An increase in the poverty rate is positively associated with an increase in financial statement fraud.	Rejected

CONCLUSION

This article examines the economic and non-economic factors affecting financial statement fraud in the period from 2011 to 2023, concerning both individuals and legal entities registered with the Capital Markets Board of Türkiye (SPK). The study covers publicly traded companies, financial companies (banks, investment firms, collective investment institutions, portfolio management companies, independent audit companies, valuation companies, and other legal entities), and individuals registered with the SPK. Academic research on financial statement fraud in Türkiye has primarily focused on accounting practices and detection. This study aims to contribute to the literature by identifying the economic and non-economic factors underlying financial statement fraud. This is a topic that has not been previously addressed in the Turkish context.

The results of the Generalized Linear Model (Logit) reveal that economic factors such as GDP, inflation (INF), government spending (GOV), and income inequality (GINI) all play significant roles in influencing the incidence of financial statement fraud and the penalties associated with it. Additionally, political stability and corruption perception also have a notable impact.

Several hypotheses regarding the effects of economic and social factors on financial statement fraud were confirmed. Specifically, GDP was found to decrease the occurrence of fraud, while exchange rate fluctuations (EXR), income inequality (GINI), and corruption perception (CPI) were positively correlated with increased fraud cases and penalties. However, the hypotheses concerning the positive relationship between inflation (INF), unemployment (UNE), government expenditure (GOV), and poverty (POV) with fraud and penalties were rejected. This suggests that these factors do not have as a direct or significant impact on financial fraud as initially anticipated.

This study has two notable limitations. The study includes publicly listed companies, financial institutions (such as banks, investment firms, portfolio management companies, independent auditing firms, and valuation companies), as well as individuals and legal entities registered with the Capital Markets Board (SPK). Therefore, the findings may not be generalizable to companies outside the scope of the SPK.

Another limitation is the possibility that companies involved in financial statement fraud may remain undetected. The study uses data from SPK Administrative Activity Reports, which include financial reporting penalty amounts, and the number of cases filed against individuals and legal entities. The impact of undetected misconduct on the results is unpredictable.

Financial fraud threatens the stability of both individual companies and the broader economic system. Financial statement fraud can emerge as a result of a combination of both economic and non-economic factors. The aim of this study is to identify the economic and non-economic factors that influence financial statement fraud. These findings highlight the complex relationships between economic conditions, government actions, and corporate fraud. The findings of analysis can guide policymakers, regulatory and supervisory bodies in taking measures to reduce or prevent such abuses, ensuring the stability and security of the financial system.

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