



The effect of corporate ethical misconduct on JSE-listed companies' returns

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ABSTRACT

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The purpose of the study was to determine the relationship between corporate misconduct announcements and share prices. The study employed an event study methodology where data was collected from a sample of 30 companies that were listed on the Johannesburg Stock Exchange (JSE). Data collected spanned a period of ten years, from 2011 to 2020. The study's findings demonstrate that there is no significant relationship between announced incidents of ethical misconduct by JSE-listed companies and the returns of the underlying shares. Previous studies of a similar nature have asserted that the announced ethical misconduct of a company has a significantly negative effect on its share price. The study considers the dynamics that exist between principals (shareholders) and their agents (directors), who are charged with the governance of listed companies. It considers the morality of the actions taken by agents in governing organisations and the implications for the equity returns of principals. Contrary to the previous studies and studies in other countries, analysed results imply that equity holders of JSE-listed companies do not significantly punish companies that have incidents of ethical misconduct that are announced. The study's findings have practical implications for the JSE and its requirements for disclosure of ethical issues to firm principals.

Contribution/Originality: The study contributes to the body of knowledge on corporate governance and the agency problem in South Africa. A unique aspect of the study is the period over which it was conducted: a decade of highly publicized governance and ethical failures of JSE registrants, followed by significant regulatory reform.

1. INTRODUCTION

In today's world, large corporations, especially those whose shares are publicly traded, cannot have incidents of ethical misconduct that go unnoticed. (Ferreira, Mohlamme, Van Vuuren, & Dickason, 2019) largely attribute this to globalisation and the rapid pace at which information travels, noting that even a minor event has the ability to attract widespread media coverage. They also note that a company's share price may fall drastically following the revelation of a scandal. King and Soule (2007) build on this notion, indicating that stock market responses to organisational ethical failures have the ability to determine the entire fate of the organisations and even the markets themselves.

Aside from anecdotal evidence, there exists a body of academic studies within the fields of ethical misconduct, fraud, and its consequences on shareholders' wealth as measured in share price returns (Carberry, Engelen, & Van Essen, 2018; Dempewolf & Meyer, 2023; Ghafoor, Zainudin, & Mahdzan, 2019; Karpoff, Lee, & Martin, 2008; Long & Rao, 1995; Rao & Brooke Hamilton, 1996; Saha, Shashi, Cerchione, Singh, & Dahiya, 2020). According to Saha et

al. (2020) and Rao and Brooke Hamilton (1996), a question of increasing importance to researchers concerns the cause-and-effect relationship that exists between an entity's ethical conduct and its profitability. In line with this, Liew, Puah, and Entebang (2016) point to the fact that the collapse of large established organisations globally has motivated researchers to investigate the correlation of corporate governance to share price. Chang (2018) specifically mentions the credit crisis of 2007 as a catalyst that brought corporate governance into the public eye on global scale. It was in the aftermath of this global financial crisis that corporate scandals became the subject of media headlines. Management researchers have developed a keener interest in corporate misconduct, its causes, and its potential consequences outside of just the organisational context (Andrew & Baker, 2020; Greve, Palmer, & Pozner, 2010; Saha et al., 2020).

Although it has become socially accepted in today's world, the preconception that ethical misconduct in corporations negatively affects shareholder value has historically been tested (Long & Rao, 1995). According to the OECD Steering Committee on Corporate Governance, the global financial crisis of 2008, which resulted in several corporate collapses, can be attributed to failures in corporate governance practices (Kirkpatrick, 2009). Andrew and Baker (2020) and Afors (2018) investigated numerous high-profile corporate scandals, and their empirical evidence supports the notion that shareholders' wealth is destroyed in the wake of corporate ethical misconduct and governance failures. Wann, Long, and Brockman (2016) empirical findings in general also show that unethical business behaviour is incompatible with the maximisation of shareholders' wealth.

Stock market responses to corporate ethical misbehaviour are shaped by an interaction between features of individual unethical acts and features of the organisational context within which the acts occur (Baker, Derfler-Rozin, Pitesa, & Johnson, 2019). This means that the way market participants react to corporate unethical behaviour is driven by the relationship between the attributes of the unethical actions and those of the organisational setting (its culture, values, and general *modus operandi*). Baker et al. (2019) propose that to understand investors' reactions to unethical organizational behaviour, it is necessary to study the manner in which individuals construct moral judgments about actions that take place inside organisations that may otherwise be deemed unethical.

In South Africa, the ten years from 2010 to 2019 were blemished by a recurrence of scandals in private, public, and state-owned entities, with every scandal clearly signifying an absence of moral judgement and ethics (Business Insider South Africa, 2020). Ironically, South Africa is a country where studies relating to business ethics have enjoyed corporate attention, largely due to the King Reports' emphasis on the importance of an ethical culture (Rossouw, 2017). This brings to the fore the dynamics of ethics and leadership in corporations – whether the agents who exercise control over organisations are conscious of the morality of their actions.

The impact of corporate ethical misconduct extends beyond the company and the stock market on which it is listed to a broader macro-economic level. In recent years, the repeated incidents of corporate misconduct have adversely impacted South Africa's global competitiveness, as was seen in the World Economic Forum's Competitiveness Index ("GCI") 2017-2018, in which South Africa's overall competitiveness ranking declined from 47 to 61 (out of 137 countries).

The objective of this study was to understand how the JSE responds to corporate malfeasance - whether shareholders respond to, or even punish corporate ethical misconduct. The perception that financial misconduct does not suffer the consequences of significant punishment has a large effect on regulation and policy (Karpoff et al., 2008). However, evidence points to the reality that penalties meted out for financial misconduct are minimal, particularly in the context of the South African capital market. This research was undertaken with the purpose of filling a gap in knowledge by ascertaining the influence that ethical misconduct announcements made by JSE-listed companies have on their share prices and whether capital markets penalise unethical conduct by companies.

2. LITERATURE REVIEW: ETHICS AND CORPORATE GOVERNANCE

2.1. A Brief Overview Ethics in the Context of Business

Typical definitions for the term “ethics” refer to the rightness or wrongness of behaviour when judged morally. Such judgements about the rightness or wrongness of actions remain subjective, and there is no universal unanimity, especially when ethics is considered in the context of business. [Abdullah and Valentine \(2009\)](#) understand business ethics to be a “study of business activities, decisions, and situations where the right and wrong are addressed.” Business ethics can also be understood to concern the morals, principles, and values of an individual or an organisation ([Ferrell & Ferrell, 2009](#)).

It is accepted that ethics examines the moral status of actions, whether they are right or wrong. Within the realm of business, King IV indicates that this term applies to the way decisions are framed and made, the conduct of those making decisions and the organisation’s relationship with its broad stakeholder groups ([Institute of Directors of South Africa, 2016](#)). Some ethics theorists, such as [Goodpaster \(1991\)](#) and [Afors \(2018\)](#), view business ethics through the lens of its consequences on stakeholders; they consider an action to be unethical to the extent that it harms stakeholders. Similarly, [Long and Rao \(1995\)](#) consider business conduct to be unethical insofar as it is harmful to shareholders.

Still, there are those who consider ethics to be synonymous with the law and thus regard actions as unethical if they violate the law. However, many definitions of business ethics unequivocally place the concept in a conceptual realm that transcends the law. In so doing, they create a clear distinction between business ethics and statute as approaches to answering questions relating to ethics ([Cragg & Matten, 2011](#)). A notable challenge that prevails in the literature is the lack of consensus on how ethical business behaviour is defined, which results in ethicists having dissenting perceptions about how firms should or should not act.

Despite the absence of consensus on a ubiquitous understanding of business ethics, there is far more consensus around the notion that unethical corporate behaviour leads to negative consequences. According to [Goodpaster \(1991\)](#), the crux of ethics in the context of business is rooted in understanding the conscience of a corporation and appreciating that, as an entity, its conscience is derived from and connected to the morality of its principals. This understanding ultimately plays into the overall principal-agent problem ([Moloi, 2009](#); [Moloi & Marwala, 2020b](#)).

2.2. The Interaction between Corporate Governance, Ethics, and Ethical Conduct

It is widely postulated that ethics lacks compatibility with business to the extent that adhering to the protocols of business results in the self-interested pursuits of one party to the detriment of another ([Duska, 2007](#)). However, what is not necessarily a given is the idea that strategic management is diametrically opposed to ethical values. In fact, [Carr \(1968\)](#) believes that ethics and business strategy tend to coincide often, and it is in those instances of alignment that both parties’ interests are satisfied. This is because organisations seek to be seen as legitimate ([Moloi & Marwala, 2020a](#)). However, when applied to the agency problem, it implies that it is unethical for an agent (manager) to pursue self-interests at the expense of the principal (shareholder or broader stakeholder group).

In response to the prevalence of corporate scandals, business ethicists hold the view that ethics works as a mechanism for the curtailment of agency risks and that highlighting parties’ duty to uphold moral values is a sound response to the inherent risks of agency ([Buchanan, 1996](#); [Moloi & Marwala, 2020a](#); [Pouryousefi & Frooman, 2017](#)). Evaluating agency risk and the moral obligation linked to it is critical to developing an appreciation of societal norms in today’s world that direct, either covertly or overtly, how organisations behave. To this end, codes of ethics have been hailed as the glue that binds things together and keeps organisations from falling apart ([Heath, 2009](#); [Pouryousefi & Frooman, 2017](#)). Essentially, this becomes a risk management and mitigation process ([Moloi, 2014, 2015, 2018](#)).

The close ties between ethics and effective governance can be seen, according to [Abdullah and Valentine \(2009\)](#) as an outcome of the development and association of business ethics theory and other modern ethics theories.

Accordingly, researchers have considered corporate governance to be a type of social-relationship structure that is rooted in ethical principles. This is indicative of the view of [Rossouw \(2005\)](#) who opines that a company's treatment of its stakeholders reflects the standards of ethics that it upholds. Thus, it follows that companies that make ethical values a priority will exhibit sensitivity to the voices of their stakeholders.

Debate about the importance of ethics as a foundation for corporate governance continues, especially as scholars gain better insights into corporate scandals and failures ([Moloi, 2009](#)). [Cragg and Matten \(2011\)](#) recognise the role that ethics plays in effective leadership and call for more attention to be directed towards addressing the current ethical failures within modern approaches to corporate governance. Moreover, [Arnold, Goodpaster, and Weaver \(2015\)](#) emphasise the importance of ethical principles in corporate governance due to the increasing role of global trade in today's world and the advent of new societal norms that drive enterprise and the values of humanity.

2.3. Ethical Misconduct in the Context of this Work

An analysis of the literature concerning unethical behaviour and shareholder wealth reveals that ethical misconduct tends to be described with reference to its visible consequences: scandals, illegal activities ([Carberry et al., 2018](#); [Long & Rao, 1995](#)), financial misrepresentation and malfeasance ([Karpoff et al., 2008](#); [Wesley & Ndofor, 2013](#)), or other fraudulent acts or misdeeds committed by those charged with governance ([Jory, Ngo, Wang, & Saha, 2015](#)). For [Amiram et al. \(2018\)](#) the scope of misconduct encompasses insider trading, price manipulations, the communication of false information (including fraudulent financial reporting), and any breach of securities laws. There are very few studies that clearly define ethical misconduct in the context of a corporation.

A result of the lack of consensus about what constitutes ethical misconduct is that academic researchers use different terms to describe similar events pertaining to unethical behaviour committed by those charged with the governance of an organisation. Common terms used include misconduct, irregularity, fraud, white-collar crime, and malfeasance. [Amiram et al. \(2018\)](#) also observe these variations and ascribe these differences in terminology to the varying interest in those studies and the fact that the concepts themselves are inherently not simple to define, even within the context of law. As such, it is important that this study presents a baseline definition for ethical misconduct that is commonly understood across business, legal, and social constructs.

For this study, corporate ethical misconduct is defined as 'behaviour or actions taken in or by an organisation that transgress ethical, legal, and socially responsible behaviour, causing harm to others. This definition was considered appropriate as it allows for behaviour to be judged in various socio-economic and geographical contexts by various judges of that behaviour. By defining ethical misconduct in this way for the purpose of the study, the study can use empirical evidence to identify instances of wrongdoing (misconduct) while acknowledging the reality that the line between what is considered morally right and wrong remains variable.

3. LITERATURE REVIEW: EFFICIENT CAPITAL MARKETS AND INVESTOR REACTIONS TO ETHICAL MISCONDUCT

3.1. The Efficient Market Hypothesis: A Brief Overview

[Fama \(1970\)](#) states that an efficient market is "a market in which prices always fully reflect available information." This is a market in which price, as a variable, provides signals to market participants that influence the allocation of resources. By inference, in an efficient market, shares tend to be priced at a fair market value. This creates difficulty for shareholders in achieving a rate of return that is better than that of the market (as determined through technical or fundamental analysis). This is because at any given point in time, market prices would already be reflective of all available information ([Fama, 1965](#)). The Efficient Market Hypothesis is widely regarded as a cornerstone theory of traditional finance ([Alkali, Okoh, & Abubakar, 2022](#); [Gupta, Preetibedi, & Mlakra, 2014](#); [Konku, Rayhorn, & Yao, 2018](#)).

The Efficient Market Hypothesis is closely related to the Random Walk Theory (Fama, 1965; Malkiel, 1989). The premise of the random walk theory is that information flows in a manner that is not obstructed, resulting in it being reflected in share prices almost immediately. By implication, tomorrow's share price changes will be reflective of tomorrow's information as opposed to today's price movements. Moreover, because the news is generally unpredictable, any price changes will also be unpredictable (or random), hence the name "random walk." A consequence of this theory is that investors (who lack information) purchasing a diversified portfolio at fair value will receive a return on equity equivalent to that of the total market index.

This study drew considerably from the principles of the efficient market hypothesis in order to determine equity valuations and price movements in the context of announced ethical misconduct. This approach was supported by a sizeable body of research that evaluates investors' responses to corporations' ethical misconduct. Such research is predicated on the theory of market efficiency (also referred to as the efficient market hypothesis), which makes the critical assumption that investors are rational beings that make logical judgements about their investment decisions using all publicly available information concerning inputs into their valuation models (Barberis & Thaler, 2003; Carberry et al., 2018; Wesley & Ndofor, 2013). The present value of a company's anticipated future cash flows, discounted at a risk-adjusted discount rate, serves as the basis for determining its theoretical valuation. There are three forms of the efficient market hypothesis. These are summarized in Table 1.

Table 1. Forms of the efficient market hypothesis (EMH).

Form of EMH	Assumption	Examples of information
Weak	Weak prices reflect all past returns and any other security market information.	<ul style="list-style-type: none"> • Historical sequence of prices • Rates of return • Trading volumes
Semi-strong	Prices adjust rapidly to the release of all public information (Encompasses the weak form).	<ul style="list-style-type: none"> • Earnings and dividends announcements • Stock splits • Other corporate actions, e.g. Accounting policy changes, IPOs, new listings • News about the economy and political events
Strong	Security prices reflect all information from public and private sources.	All of the above

Source: Reilly and Brown (2011).

At its core, the efficient market hypothesis explains that markets move in response to information; the more information is available, the stronger the form of market efficiency. Investors make buy-sell decisions that directly affect the price of a share on the basis of the information available about that share. In an efficient capital market, it makes sense that if a corporate announcement provides information that the market perceives to be important, then it is assumed that such information will be reflected in share price reactions that follow (Mlonzi, Kruger, & Nthoesane, 2011).

When evaluating capital markets' efficiency, the effects of the asymmetry of information are noteworthy. Typically, the agent (the directors) is in possession of the information that the principal (investor) requires to make decisions about a company's share. The pursuit of a more in-depth understanding of this dynamic in the arena of capital markets is important because corporations that are under scrutiny concerning incidents of misconduct are inclined, and even incentivised, to minimise the extent of disclosure pertaining to the incident (Carberry et al., 2018).

In keeping the extent of their disclosures at a minimum, corporations possess a cunning ability to exercise control over what shareholders and broader stakeholder groups know about an alleged incident of ethical misconduct. Carberry et al. (2018) find that when information asymmetry prevails, investor reactions to information are driven by the signalling effects of information that is publicly available. By not fully acknowledging that an

ethical transgression may have occurred, they are able to limit potential reputational damage to their corporation and any resulting share price impact, at least in the short term.

3.2. Efficiency of the South African Capital Market

3.2.1. Efficiency of the JSE

In South Africa, the JSE is the main stock exchange in operation, having been founded in 1887 to provide a facility through which investors can trade equity instruments, debt instruments, and later derivatives. The JSE is the largest stock exchange on the African continent, and it currently ranks among the twenty biggest stock exchanges worldwide by market capitalisation. South African and international companies may list on the JSE to raise capital and access liquidity across the JSE's product range (JSE, 2015).

In addition to being the primary stock exchange, the JSE also acts as the primary regulator of listed companies. It sets out listing requirements for registrants and enforces trading rules under the supervision of the Financial Sector Conduct Authority (FSCA) formerly the Financial Services Board (FSB) (FSCA, 2019). The FSCA has the power and authority to investigate matters concerning illicit trade, market manipulation, and the publication of false or misleading information by issuers. The FSCA makes official announcements of its investigations on its website (and other publicly available media).

Several studies performed on South Africa's stock market have found the JSE to have evidence of being efficient in either the weak form (Konku et al., 2018; Magnusson & Wydick, 2002; Smith, Jefferis, & Ryoo, 2002) or the semi-strong form (Watson & Rossouw, 2012). Ferreira et al. (2019) conclude that, in fact, findings from South Africa and other emerging marketing economies prove largely inconclusive about the form of stock-market efficiency. There haven't been recent studies in the South African context.

While the research is inconclusive concerning the JSE's form of efficiency (either weak-form or semi-strong form), determining the form of market efficiency that is present in the JSE is not an objective of this study. Rather, what is relevant for this study is the consensus of the scholars that the JSE is considered an efficient market, and therefore the disclosure of information has the potential to inform investor decisions and thus impact share prices. Critical to this study is understanding whether and how the informational content of misconduct announcements affects the decisions of market participants. Accordingly, this study is founded on the principles of efficient market hypothesis and the considerable evidence presented in this review of the JSE exhibiting efficiency in the weak form, which aligns with the random-walk principle. In this study, the returns of the JSE, by implication, are unpredictable. Price changes are arbitrary, and they fully reflect all the information that is available in the stock market. This means that the listed equity prices consider the informational content of announced ethical misconduct and corporate governance failures.

3.2.2. Disclosure of Ethical Misconduct Incidents

The JSE and FSCA, as regulators, have rules that govern the disclosure of market-sensitive information. For instance, according to the JSE's listing requirements, companies that are listed are required to publish their financial results at least twice a year, in the form of an interim report and annual financial statements. Furthermore, the JSE requires that listed companies publish cautionary announcements if they become aware of any price-sensitive information where the requisite degree of confidentiality of the information in question cannot be maintained or where it has already been compromised (JSE, 2015). This may include instances where ethical misconduct has occurred and may significantly affect a company's share price.

Information about perceived or actual corporate ethical misconduct is not always reported, and Hirsh and Cha (2015) found that when it is reported, it typically takes the form of judgements, estimates, or imprecise data because the final quantifiable outcomes generally remain unknown until a significant amount of time has passed after the initial revelation of the misconduct. Investor reactions to misconduct, therefore, will initially be dependent upon

whether investors notice it and whether they perceive there to be a threat that the organisations that engaged in the misconduct will in some way suffer punitive consequences (Barnett, 2014).

In cases where ethical misconduct has occurred, companies may be motivated to maintain a state of information asymmetry, but their SENS announcements will be one of the prime disseminators of information (or signals) to the market. Announcements made on the SENS may potentially reduce the variability of investor interpretations and responses, as the information that is released on the SENS must be communicated in a prescribed manner. To the extent that investors perceive the SENS to be a reliable source of information, they will trade a share accordingly.

According to the JSE Listings requirements section 11, all corporate announcements must be made through the SENS. Where information is considered price-sensitive, the company must release an announcement providing sufficient details about that price-sensitive information, applying the guidance from Practice Note 2/2015, – *Price Sensitive Information*. Directors of JSE-listed companies are expected to use their highest judgement when deciding about what constitutes information that may be deemed price-sensitive.

The JSE Listings Requirements also set out that listed companies must comply with the King IV Code of Corporate Governance (Institute of Directors of South Africa, 2016). King IV states that the basis for sound governance is ethics. The requirement for ethical conduct is thus consistent throughout the regulatory framework for JSE-listed companies (Institute of Directors of South Africa, 2016). This indicates that unethical conduct is prohibited, and that where it has occurred and has the potential to materially impact the price of a share, it should be reported (announced on SENS).

3.2.3. Unpredictability of Market Reactions

Many of the existing studies on market reactions to corporate ethical misconduct tend to point to the negative impact on share prices owing to negative investor perceptions (Frooman, 1997; Greve et al., 2010; Rao & Brooke Hamilton, 1996). In comparison, relatively fewer studies report market indifference or even positive effects, although these incidents and the studies on them exist. Baker et al. (2019) argue that in fact, markets have varied reactions to announced misconduct that are shaped by an interplay between features of individual unethical acts and features of the organisational context within which the acts occur. Wesley and Ndofor (2013) investigated this counterargument and found that unethical behaviour by corporate executives is not sufficiently penalised by the market to deter future opportunistic behaviour. Sabbaghi and Xu (2013) did not find evidence of above-normal returns on shares of companies that are considered ethical and socially responsible. Moreover, it is interesting to note that Wesley and Ndofor (2013) also found that there can also be a financial benefit for unethical behaviour both before and after a fraud is uncovered.

It is worth considering whether it is in shareholders' own interest to punish companies that act unethically by selling their shares. Is it in their interest to do so? A shareholder who purchased shares before an incident of misconduct is revealed as having paid an inflated price and is exposed to any potential losses of the company in the form of fines, reputational losses, etc. Such shareholders tend to be victimised twice (Amiram et al., 2018), having overpaid for the shares initially and losing out on capital appreciation. As such, they may consider it more financially feasible to hold the share until the price recovers rather than to sell at a loss. In contrast, some shareholders will look to quickly divest their shares upon revelation of misconduct because, initially, the extent of potential losses that the company may face as a result of its misconduct is often uncertain. Short sellers will take the opportunity to exit the trade and take profit on the initial news of misconduct if a share price falls. Market participants are not homogenous, and there are many possible reactions that shareholders may have considered news of misconduct.

The empirical objective of this study was to observe the share price movements of JSE-listed companies that made ethical misconduct announcements between 2011 and 2020 and to investigate whether financial markets punish perpetrators of corporate ethical misconduct by driving down share prices. The extent to which the market

responds to announced ethical misconduct is largely determined by the information content of that announcement (because of the information asymmetry that exists in capital markets) and the state of the market's efficiency.

3.3. Formulation of the Research Hypothesis

Using existing global and South African research and having identified the absence of literature on JSE-listed companies' share price reactions to announced ethical misconduct, the hypotheses below were posed:

- *H₁: There is a relationship between announcements of corporate ethical misconduct and share price.*
- *H₂: Abnormal returns on a share are realised within 15 days of a corporate ethical misconduct announcement.*

4. METHODOLOGY

4.1. Overview of Research Methodology and Sampling

A quantitative research design was employed, which entailed the collection of quantitative data to perform an event study. Share price data and misconduct announcements were collected from IRESS to assess how share prices responded to announcements of misconduct on the JSE SENS. Ethical misconduct announcements made between 2011 and 2020 by listed companies were obtained from the SENS database, the JSE's Stock Exchange News Service data repository. Daily share prices were obtained from the IRESS (formerly INet BFA) website, which is recognised as one of Africa's leading providers of accurate and timely financial data feeds and analysis tools. The data was analysed using the IBM SPSS tool to generate the research findings and validate the models used.

4.2. Quantitative Method: Event Study

The event study method typically seeks to understand and analyse the behaviour of the returns of a sample of companies that are affected by a type of incident, termed 'an event' (De Batz, 2021; Kothari & Warner, 2007). The use case for event studies is rooted in the notion that the degree of abnormality in a share's return (share price performance) at the point in time when an event occurs provides a measure of the (unexpected) effect of this kind of event on the wealth of a company's shareholders. Within capital markets research, event studies have functioned as an important mechanism for testing market efficiency (Kothari & Warner, 2007).

In corporate finance research, event studies have traditionally been utilised for the achievement of two key objectives. The first use case for event studies has been to perform testing on the null hypothesis that the market processes information in a manner that is efficient. The second is to examine the result of some pre-defined occurrence on the wealth of a company's shareholders under the presupposition that the null hypothesis of market efficiency stated above holds true (Binder, 1998).

Malkiel and Fama (1970) posit that event studies are premised on certain core assumptions, and they follow propositions of market-efficiency theory (also referred to as the efficient market hypothesis) that share prices rapidly absorb and adjust to information. The overarching assumptions applied in this event study are those of the efficient market hypothesis. Even though the assumptions of market efficiency are not always valid, they are an important component of event studies in corporate finance and are necessary to lend credibility and plausibility to the results of the study. This study aimed at examining the abnormal rates of return surrounding ethical misconduct announcements. Accordingly, an event study research method was used to analyse the impact of an event (ethical misconduct announcement) on the performance of a share (where the movement in the share price is the dependent variable).

4.2.1. Application of the 5-Step Event Study Method

The standard event study methodology, which sets out a step-by-step procedure for applying the event study methodology (Henderson, 1990; Skrepnek & Lawson, 2001), is considered relatively simple and straightforward in its practical application.

Step 1

The first step is to identify the announcement date, that is, the first date on which the market would have received the news of the event, be it a transaction or an event. An event was characterised as an ethical misconduct incident announced by JSE-listed companies. One of the listing requirements governing JSE-listed companies is that they are required to formally announce to market participants, using the Stock Exchange News Service (SENS), any information that can reasonably be expected to materially affect the share prices (Sennanye, 2015).

The event date (t = 0) is the initial date of the announcement of ethical misconduct.

The event window should consider a certain number of days before the event date (t-x) and a certain number of trading days after the event date (t+x). According to Skrepnek and Lawson (2001), event windows might range between 21 and 121 days for daily studies, and researchers typically analyse several test windows within these overall ranges. This study used three ranges in a 15-day event window, as indicated below:

3 days before and 3 days after the event {t-3;t+3}

10 days before and 10 days after the event {t-10;t+10}

15 days before and 15 days after the event {t-15;t+15}

The rationale for choosing three separate event windows in this study was that investors take variable lengths of time to act on price-sensitive information for different shares depending on the valuation variables used to analyse the underlying company (Ferreira et al., 2019). With respect to the event window, the term “days” refers to trading days of the JSE rather than calendar days.

Step 2

Using the historic price observations before the news of the transaction, the second step estimates the normal returns of the shares in the sample. The equity valuation model that was applied to compute the expected return in this study is the capital asset pricing model (CAPM). Despite arguments against this asset-pricing model, researchers still consider it practical and reliable. Mlonzi et al. (2011) put forward the idea that even though CAPM may not be the best equity valuation model, evidence suggests that it is still an appropriate tool to use when measuring share price returns.

$$E(R_{jt}) = R_f + B(R_m - R_f)$$

Where the above variables have the following meanings:

E(R _{jt})	Expected return of equity holders
R _f	Risk-free rate
B	Beta of the share <i>Closing price data must be available for at least 1,500 trading days before the ethical misconduct-related announcement of interest in order to compute the companies' beta.</i>
R _m	Market return (The return on the market portfolio)

Observed return may be defined as ‘the change in the price of a share relative to its initial price’ (relative share price). The calculation of the return for each company covered in the study at a given point in time is as follows:

$$R_{jt} = \frac{S_{jt} - S_{t0}}{S_{t0}}$$

Where the variables denoted have the following meanings:

R _{jt}	Observed return on the share at on day t
S _{jt}	Share price on day t
S _{t0}	Initial share price on the event day (t=0)

In this study, normal (expected) returns were calculated using the capital asset pricing model (CAPM). The R186 was applied as a measure of R_f - the risk-free rate. The R186 is a long-term government rate of return on

government bonds that was applicable throughout the 10-year period of the study. The JSE All Share Index (J203) was used as a measure of the return of the market (R_m). The beta coefficient (β) is a measure of a share's risk in relation to the market. All inputs into the CAPM model that were utilised for computing the expected return of each share in the dataset were obtained from Iress.

Step 3

In the third step, actual and expected returns of each share are subtracted from one another. The difference is used to determine the abnormal return (AR) of each of the sampled shares as follows:

$$AR_{jt} = R_{jt} - E(R_{jt})$$

Where the above variables have the following meanings:

AR_{jt}	Abnormal return of share j in period t
R_{jt}	Observed return on the share j at on day t
$E(R_{jt})$	Expected return on the share j at on day t

Step 4

The cumulative abnormal return (CAR) over the event window is determined by averaging the abnormal returns (AR) over time in the fourth step as follows:

$$AAR_t = \sum_{j=1}^N AR_{jt} / N$$

Where N is the number of earnings announcements in the sample at day t . The cumulative average abnormal returns (CAAR) for t days are calculated by:

$$CAAR = \sum_{t=-15}^{+15} AAR_t$$

Step 5

The fifth step conducts statistical testing to evaluate whether the abnormal returns that were calculated in step 4 are statistically significant over a predetermined period. This step-by-step event study approach was applied to the study, and the results are presented in Section 5. We used [Brown and Warner \(1985\)](#) method to test the statistical significance of the cumulative average abnormal returns using the null hypothesis that these returns are equal to zero. It follows a t-distribution and is formulated as:

$$t_{AAR} = \frac{AAR_{jt}}{\sigma(AAR) / \sqrt{n}}$$

The statistical significance of the cumulative abnormal returns is given by:

$$t_{CAAR} = \frac{CAAR_{jt}}{\sigma(AAR) d^{0.5}}$$

Whilst $\sigma(AAR)$ is the estimated standard deviation, d stands for the total number of days for which AAR is cumulative. The significance level is set at a 95% level of confidence, allowing a 5% margin of error. This is used to determine whether the CAAR differs statistically significantly from zero.

$$H_0: CAAR_t = 0$$

Table 2. Summary of results, sampling, and exclusion of confounding events.

Key words	No. of initial results	Results exclusions by category				Total no of announcements excluded	No. of announcements included in the final sample
		Results announcement or trading statement	Corporate action	Follow-on announcements	Other non-misconduct related announcements		
Financial service board	8	-	3	-	3	6	2
Irregularities	67	11	2	26	23	62	5
False statement	1	-	-	-	1	1	-
Misleading statement	1	-	-	-	1	1	-
Investigation	2	-	-	2	-	2	-
Price manipulation	4	-	-	1	3	4	-
Unethical	17	1	-	7	7	15	2
Misconduct	17	2	-	4	3	9	8
Cautionary announcement	-	-	-	-	-	-	-
Fraud	357	16	8	4	321	349	8
Allegation	3	-	-	-	2	2	1
Censure	12	3	1	4	-	8	4
Total	489	33	14	48	364	459	30

Note: ¹Corporate actions include announcements related to mergers, acquisitions, IPOs, dividends, share splits, spin-offs and BEE transactions.

²Announcements related to updates and clarifications of a previous announcement.

³Other non-misconduct related announcements relate to company-specific announcements related to a company's strategic and governance actions.

5. FINDINGS

5.1. Event Study – Determination of Sample

The study obtained announcements of corporate ethical misconduct from the JSE's Stock Exchange News Service (SENS). All SENS announcements are available on the Iress database. A key word search of announcements made for the period extending from January 1, 2011 to December 31, 2020 was performed. The key words used in the initial search for SENS announcements are documented in [Table 2](#). The initial search yielded a result of 489 announcements. To this list of announcements, the study applied a non-probability convenience sampling method to identify and select only the listed companies in the initial list that had made announcements specifically related to ethical misconduct during the sampled 10-year period.

It is clear from the table above that the most common announcements of unethical conduct in companies are those of misconduct and fraud, with both being 8. This is followed by an announcement relating to irregularities (5) and censure (4). Unethical reports, the Financial Services Board with both at 2, and allegations (1) make the list of announcements.

5.2. Filtering of Results

The initial results list of 489 announcements was filtered to a final sample size of 30 announcements. The filtering of results from an initial list of market announcements obtained from a key word search is not unusual in event studies. For instance, [Maneenop and Kotcharin \(2020\)](#) applied convenience sampling to an initial sample to filter for relevant results and eradicate any possible bias of a small sample. In a similar event study on announcements of illegal conduct, [Baker, Edelman, and Powell \(1999\)](#) filtered their initial list of announcements to eliminate announcements made by companies that experienced other major concurrent corporate events. They made further adjustments to include only the first public announcement of the misconduct and exclude subsequent announcements about the same event.

The exclusion of confounding events is common in event studies ([Baker et al., 1999](#); [Carberry et al., 2018](#); [Mlonzi et al., 2011](#); [Wesley & Ndofo, 2013](#)). Confounding events are events or occurrences that are unrelated to the event but that induce a share price reaction. Considering this, [Serra \(2002\)](#) warns that researchers must be careful to control for unrelated factors that affect share prices because, at any time, market participants observe a combination of market factors and events. Confounding events have not been included in the final event list of 30 event announcements.

5.3. Results and Interpretations

This study fundamentally raises a simple empirical question: To what extent are share prices affected by the actions of announced corporate misconduct? In other words, do market participants care enough about incidents of corporate ethical misconduct to trade because of them? This question was applied to the sample of 30 companies selected. The event study was conducted over a 15-day event window, which was subdivided into three distinct time frames. Three distinct event windows were applied because part of the objective entailed testing whether the misconduct announcements represent an immediate, knee-jerk reaction ($t - 3$; $t + 3$), a protracted response ($t - 10$; $t + 10$), and a more prolonged effect ($t - 15$; $t + 15$). For each of the windows mentioned above, the cumulative average abnormal return (CAAR) was calculated. A statistical significance analysis was performed on this CAAR.

5.3.1. Findings on the Relationship between Announced Misconduct and Share Price

Regression is used to try to explain changes in a variable by comparing those changes to changes in one or more other variables ([Ross & Willson, 2017](#)). R^2 (also termed "coefficient of determination") represents a statistical measure obtained from a regression model. R^2 measures the percentage of the dependent variable's variance that the

independent variable can account for. The values of R² for the dataset measured at each time interval of the event window after the event date are presented in the tables below.

Table 3 presents the values of r² for the dataset measured at each time interval of the event window.

Table 3. Correlation analysis.

Source	Dependent variable	Type III sum of squares	Df	Mean square	F	Sig.
Corrected model	Day +3	713.136 ^a	3	237.712	2.595	0.74
	Day+10	5468.089 ^b	3	1822.696	7.399	<0.001
	Day+15	2224.021 ^c	3	741.340	1.882	0.157
Intercept	Day +3	2910.758	1	2901.758	31.682	<0.001
	Day+10	2835.271	1	2835.271	11.510	0.002
	Day+15	3885.006	1	3885.006	9.861	0.004
Day 3	Day +3	221.515	1	221.515	2.419	0.132
	Day+10	1452.060	1	1452.060	5.895	0.022
	Day+15	379.379	1	379.379	.963	0.335
Day 10	Day +3	95.156	1	95.156	1.039	0.317
	Day+10	713.677	1	713.677	2.897	0.101
	Day+15	778.281	1	778.281	1.975	0.172
Day 15	Day +3	418.043	1	418.043	4.564	0.042
	Day+10	2291.281	1	2291.281	9.301	0.005
	Day+15	1604.737	1	1604.737	4.073	0.054
Error	Day +3	2381.333	26	91.590		
	Day+10	6404.865	26	246.341		
	Day+15	10243.335	26	393.974		
Total	Day +3	5422.392	30			
	Day+10	13929.977	30			
	Day+15	15614.514	30			
Corrected total	Day +3	3094.469	29			
	Day+10	11872.954	29			
	Day+15	12467.356	29			

Note: ^a R² = 0.230 (Adjusted R² = 0.142).
^b R² = 0.461 (Adjusted R² = 0.398).
^c R² = 0.178 (Adjusted R² = 0.084).

Interpretation of R²

R² post event date
T₁₅: R² = 0.230

Interpretation of R²

The linear regression model explains 23% of the outcome variance, and 77% of the variance is explained by other factors.

T₁₀: R² = 0.461

The linear regression model explains 46.1% of the outcome variance, and 53.9% of the variance is explained by other factors.

T₃: R² = 0.178

The linear regression model explains 17.8% of the outcome variance, and 82.2% of the variance is explained by other factors.

The results of R² are indicative of the existence of some form of relationship between a misconduct announcement and time. The correlation between time (post-announcement) and AAR is relatively low. The relationship between time after a misconduct announcement and average abnormal returns may be characterised as weak. Table 4 presents the correlation of the return of the market (J203) and its correlation to the number of misconduct announcements made in that same year over the period of the study.

The Pearson product moment is a commonly used statistical measure to describe the strength of association between two variables (Puth, Neuhäuser, & Ruxton, 2014). In this study, this variable is used as a measure of correlation when analysing the relationship between market return and the number of announcements over the 10-year period. The range of correlation values is between -1 and 1. A positive 1 (+1) represents a perfectly positive correlation. Negative 1 (-1) is a perfectly negative correlation. Zero (nil) means that there is no correlation between

the variables. The Pearson correlation coefficient of this dataset is 0.138. This coefficient indicates a very weak relationship between the return of the JSE and the number of incidents of announced misconduct.

Table 4. Correlations analysis.

		J203 return	No of events in a year
J203 return	Pearson correlation	1	0.138
	Sig. (2 tailed)		0.703
	Sum of squares and cross products	955.437	27.740
	Co-variance	106.160	3.082
	N	10	10
No of events in a year	Pearson correlation	0.138	1
	Sig. (2 tailed)	0.703	
	Sum of squares and cross products	27.740	42.000
	Co-variance	3.082	4.667
	N	10	10

5.3.2. Findings on Abnormality of Returns

The average abnormal returns were accumulated, and the cumulative average abnormal return (CAAR_t) was determined. This result is depicted in Table 5.

Table 5. CAAR_t over the event window.

Time period in relation to the event date (t)	t-15	t-10	t-3	t+3	t+10	t+15
Average abnormal return(AAR _t)	13.19%	11.86%	7.65%	-8.81%	-8.28%	-10.24%
Cumulative average abnormal return (CAAR _t)	5.37%					

The test of significance utilised in this study for testing the null hypothesis is a t-test. The excess return on event days divided by the standard deviation of those excess returns yields the t-statistic. A t-statistic greater than the critical value of 1.96 signifies that the excess return is significant at the 95% confidence level. This assumes that the returns follow a normal distribution (De Batz, 2021; Udpa, 2021). The statistical significance of the cumulative average abnormal returns was found to be 0.48. The result of the t-statistic indicates that the CAAR t does not differ statistically significantly from zero (CAAR t = 0.48). This result supports the null hypothesis that significant abnormal returns for a share were not experienced following announced ethical misconduct.

5.4. Hypothesis Testing

Table 6 brings together the hypotheses formulated for the study with the data findings. The hypotheses are either accepted or rejected based on the statistical significance of the results.

Table 6. Hypothesis testing outcomes.

Hypothesis	Decision
H ₁ There is a relationship between the announcement of corporate ethical misconduct and share price.	Accept
H ₂ Abnormal returns on a share are realized within 15 days of a corporate ethical misconduct announcement.	Reject

The results of this event study, read together with the outcome of the correlation between the variables, lend credence to hypothesis 1 (H1). It is evident that there is a relationship between announcements of corporate ethical misconduct and share prices. The strength of the relationship in this study was tested using regression analysis. The co-efficient of determination (r²) supports the hypothesis that there is a relationship between announced misconduct and share prices (measured in terms of CAAR). However, it is notable that the relationship is relatively weak, indicating that there are significant other factors contributing to the abnormality of the share prices. Market

reactions to misconduct announcements are thus likely shaped by various other factors (besides misconduct), which were not hypothesised in this study. The event study found that the shares in the dataset experienced abnormal returns following the event. However, this abnormality of the returns only presented evidence of statistical significance (based on the t-test) up to 3 days after the event (at $t+3$). Beyond this time frame, both at 10- and 15-days post-event ($t+10$; $t+15$), the return abnormality failed to demonstrate statistical significance. This means that, over the entire 15-day event window ($t-15$; $t+15$) for the 10-years that were looked at, CAART does not differ statistically significantly from zero after an incident of reported ethical misconduct on the SENS. Accordingly, the results failed to provide support for hypothesis 2 (H2), resulting in the rejection of this hypothesis. The findings reflect that while there is some degree of abnormality in the returns, market participants did not significantly punish firms for misconduct.

6. CONCLUSIONS

The study sought to determine whether a relationship existed between the announcement of corporate ethical misconduct and the share price. Further, it further sought to determine whether abnormal returns on a share are realized within 15 days of a corporate ethical misconduct announcement. Two hypotheses in this regard were formulated. In this regard, data was collected from a sample of 30 companies that were listed on the Johannesburg Stock Exchange (JSE). The data collected and analysed spanned a period of ten years, from 2011-2020.

Using IBM SPSS to analyse the data, the findings are that there is a relationship between share prices and announced misconduct because returns of the shares were found to be abnormal over the 15-day event window. As such, the first hypothesis was accepted. However, analysed data indicated that the abnormality of those returns did not bear statistical significance, indicating that the market does not significantly punish corporations for incidents of ethical misconduct. This resulted in the rejection of the second hypothesis.

6.1. Theoretical Contributions

Previous studies had generated mixed results. Contrary to the previous studies and studies in other countries, from the analysed results, it is concluded that equity holders of JSE-listed companies do not significantly punish companies that have incidents of ethical misconduct that are announced. This study's findings supplement agency theory by shedding light on the usage of other sources of information (announcements) than the integrated or annual reports to disclose ethical issues to firm principals.

6.2. Limitations

The main limitation of the study was that its focus was on the published cases of misconduct.

6.3. Future Research Directions

Since most investors in the JSE are institutional investors, a future study could be undertaken to establish, from the perspectives of these investors, the rationale behind the decisions not to divest from companies that announce ethical misconduct.

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