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The Impact of "Panama Leaks" on the Stock Market: Empirical Evidence from the Emerging Equity Market

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Abstract

The aim of the present study is to examine the effect of the events related to the "Panama leaks" on the stock market in Pakistan. For this purpose, we have analyzed a total of 24 events related to the "Panama leaks" in Pakistan. These events are further divided into three broad categories i.e. 8 events are related to the news/statements by the opposition parties, 8 events are related to news/statements by Sharif's family/sitting governments, and 8 events are related to the news/statements by the Apex court in Pakistan. The analyzed period begins on the 1st of March 2015 and has lasted until the 30th of July 2018. This research applies the event study methodology, and overall findings show that "Panama leaks-related news has a significant impact on stock returns in Pakistan. What is more, all the news related to the Apex court in the Panama leaks show a significant positive impact on stock returns. This study provides a guideline to investors, regulators, policymakers, and other stakeholders by proving that all the news related to the "Panama leaks" have a significant impact on stock returns in Pakistan. Future researchers can extend this study by analyzing the impact of the "Panama leaks" on stock returns in all the countries to which the "Panama leaks" are connected.

Introduction

Millions of secret documents dubbed the "Panama Papers," were leaked in April 2016. This unprecedented data dump of offshore accounts showed the hidden wealth and questionable transactions of influential persons ranging from corporate titans to world leaders. The Panama Papers rattled global financial markets and sent investors scurrying to figure out what they meant. How might the discovery of hidden fortunes and illegal financial maneuverings affect stock prices in Pakistan, a fast-growing country with a dynamic but volatile exchange? This research looks at how the Panama Leaks influenced the Pakistani stock market and its delicate efficiency dance during this financial earthquake.

The stock markets play a notable role in the financial markets. These financial markets are the backbone of the country's industrial betterment, by channeling the most appropriate direction of funds between the buyers and providers of funds (Husnain, Islam & Ali, 2020). The expansion and firm functioning of the stock market engages investments from both native and overseas investors, and it has a powerful impact on the overall economic establishment of the country

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(Levine & Zervos 1998). There are certain economic, non-economic, and political factors that determine the efficiency of the stock exchange such as inflation, fiscal policies, interest, and monetary rate; at the same time, the microeconomic variables have an impact on the production potential of individual organizations. Non-productive circumstances such as floods, plane crashes, earthquakes, and natural disasters also affect the wealth and economy of the country (Ismail & Suhardjo, 2001).

Market efficiency is a scale in which market prices reflect all the accessible and relevant data (Husnain & Akhtar, 2016). If markets are systematic, then all information is already integrated into the prices, and that is the reason why there is no means by which to beat the market there are no undervalued or overvalued securities available. Eugena Fame was the economist who developed this term in a 1970s paper. However, Fama himself confessed that the term is a bit deceptive because no one knows how to ideally define or concisely evaluate the term market efficiency (Husnain, Islam & Ali, 2020). Despite such constraints, the term is now used when referring to the efficient market hypothesis (EMH). This hypothesis reveals the value of a share analyzes all the data, and consistent alpha generation is impossible. According to EMH, stock markets cannot be beaten because it consolidates all the vital information into current share prices and as such, stocks always deal at their fair prices. There are three forms of efficient market theory: weak, semi-strong, and strong form efficiency. The semi-strong form efficiency theory reflects that investors cannot employ either technical or fundamental investigations to acquire better returns in the market due to public data which is applied in the assessment of a stock's current price (Husnain, Islam & Ali, 2020). Those who advocate this stage of the theory believe that non-public data can assist investors in improving their returns to a degree of execution beyond the general market. The semi-strong form reveals that public data is part of a stock's current price and therefore investors may not avail over and above the market by dealing with that data.

The "Panama Leaks" news event is considered as being a worldwide phenomenon that may have both a direct and indirect impact on the economy of any country. As per the efficient market hypothesis, any news should be incorporated into the stock prices of any company. Therefore, investors may have great concern regarding the incorporation of any news into stock prices. Panama leaks can be considered as being a major event that might have affected the stock prices in Pakistan. Hence, a major problem for investors, regulators, policymakers, and other stakeholders is whether the stock market has incorporated the news of the "Panama leaks" into prices.

The objective of this study is to investigate the influence of the "Panama leaks" on the Pakistani stock exchange. What is more, we have also analyzed the semi-strong efficiency of the stock market of Pakistan. All the news related to the Apex court in the "Panama leaks" shows a significant and positive impact on stock returns, while other results show a mixed impact on the stock market. The study of the impact of "Panama leaks" on the financial markets further contributes to existing literature. This study extends the existing debate on the "Panama Leaks" by analyzing the impact of the "Panama Leaks" announcement on the stock markets. There are numerous studies that examine the "Panama Leaks". Fosseen (2003) investigates the influence of activities of Panama upon global financial uncertainty. Dalen (2016) has discussed the power players engaged in Panama activities. At the same time, Hines, Foley, and Desai (2004) have examined the "Panama leaks" concerning tax activities. Therefore, this study extends this debate by analyzing the impact of "Panama leaks" on financial markets.

This study provides a new viewpoint on the impact of the Panama Papers by delving into an understudied area: the reaction of the Pakistani stock market in an emerging market scenario. By investigating its semi-strong efficiency and possibly abnormal returns during the leaks, it opens up new research routes and generates critical discussions about market fairness and regulatory necessities in such economies.

The present study targets the financial markets of the emerging economy of Pakistan. This study investigates the stock market of emerging markets by investigating the latest dataset available. The result of the studied events shows that among the leaked papers, all the news related to the Apex court in the “Panama leaks” had a significant impact on the stock returns in Pakistan. Hence, the study reveals that investors earned abnormal returns in the Pakistan stock exchange during the “Panama leaks” announcement, which shows that the Pakistani stock market lacks a semi-strong form efficiency. This study's findings are important for developing investment strategies, and theoretical understanding. Policymakers and regulators can establish more equal and effective regulations if they get vital insights into how the market reacts to new information. In theory, this research calls into question the assumption of perfect semi-strong form efficiency in developing countries, opening up new avenues for research into efficiency dynamics in a variety of circumstances. The impact of the "Panama Leaks" is empirically established, which advances current market behavior theories. It also raises serious concerns about potential knowledge asymmetry in the Pakistani market, adding to the ongoing debate over market fairness and the need for increased regulatory oversight. Hence, it provides guidelines to investors, policymakers, regulators, and other stakeholders regarding the response of the financial markets towards the “Panama leaks” announcements.

First, the study looks at financial market efficiency and an examination of major news events. The study hypothesizes how the Panama Leaks affected Pakistani stock prices based on this. To evaluate this notion, we carefully describe and measure key factors from the chaotic period following the breaches. We then use a robust technique to examine the data to uncover the empirical findings that demonstrate how this financial earthquake has changed Pakistan's market landscape.

Literature Review

Existing literature analyzes how the proficiency of noisy public information impacts stock market returns (Li, 2005). Chen *et al*., (2015) have described the post-announcement drift (PAD) of stock returns in the Chinese stock exchange. The finding of this hypothesis is powerful for constructive reports with reference to the magnitude and the variance of the stock market. Su *et al.* (2019) have demonstrated that academic research largely depends on essentials to forecast annual returns, with relatively less attention paid to the broadcast channels. This gap is to be filled by using the NVIX as a proxy for broadcast unreliability in order to explore its anticipating ability for the Chinese stock exchange surge investigation framework. Rehman *et al*. (2016) conducted a study to check the impacts of mega events i.e. Panama leaks, CPEC, and surgical strikes on stock markets of the UK, US, Saudi Arabia, India, Pakistan, and China. In this study, the impacts of these mega-events were identified by using an empirical approach. The stock market returns of different countries from January 2014 to October 2016 were used as samples in this research study. CPEC is playing a significant role in the progress of Pakistan, China, and other countries that are associated directly and indirectly with it. Medovikov (2016) has applied the mathematical tools of copulas to study the relationship between stock market returns and macroeconomic news. The information based on different reviews and data has been used to prove that macroeconomic news/badly affects the financial markets. Boyd *et al*., (2005) as well as Mcqueen and Roley, (1993) have studied how economic contractions or reductions have negative shocks on stock prices by rising unemployment signals.

Similarly, Nazir *et al*., (2014) starting with May 1999 and up until December 2011, have evaluated the connection between the Pakistani Stock Markets and undetermined political events. Autocratic and democratic, these two government styles compare the market efficiency and examine how the Pakistani stock markets are affected by uncertain political events, by look whether interest rate announcements, such as the ones brought forth by the Federal Reserve, have an impact on stock prices (Rigobon & Sack, 2004; Raoof, 2010; Kim, 2003). Several empirical studies have been conducted to determine the impact of union budgets on the stock market. Several authors have analyzed this, by looking at the Dow Jones Industrial Average, such as (Anil, 2009; Harvinder, 2004; Kutchu, &Vishal, 2012; Divya et al., 2015; Babu & venkateswarlu, 2013). Variables such as money supply, inflation, other macroeconomic variables, and their effect on stock prices, such as the treasury yields (Kim & Nguyen, 2008; Bernanke & Kuttner, 2005; Hamilton, 2008), have all investigated the impact of announcements of monetary policy and their impact on the stock market. They have also examined various policy issues and their influence on returns of stock market crude prices and their impact on the stock exchange.

The country’s economy has also been affected by natural disasters (Ismail & Suhardjo, 2001). One such example that has affected 11 economies represents the December 2004 tsunami. The results showed that due to Pakistan’s political consequences, the Karachi stock exchange came to its real position in almost 15 days. Chen *et al*., (2016) have studied the ways in which managers cover up the negative news and use as a sample the voluntary trading disclosures in order to analyze the hypothesis of an asymmetric PAD in the market. The Chinese stock market has long explored a type of long-term reversal and short-term momentum in returns to retain up to 250 trading days by the announcement of trading statements. Truong (Truong, 2011) has found that positive earnings bring less of a surprise than the negative earning types of events in the Chinese market. The cause of this is represented by the short sale constraints conjecturing the asymmetric PAD. Shin (Shin, 2006) has shed some light on to stock returns by pointing to the fact that PAD was affected by the characteristics of the magnitude of the returns and by the variance brought by announcements; this also entails greater reliable results for and from positive announcements. For the Chinese stock market, the findings have shown that due to government support, through the adoption of a sanitation strategy by the managers of partially state-owned firms. At the same time, privately owned firms are far less impacted than partially state-owned firms by positive TSA in the presence of reversal and momentum patterns. The magnitude and variance of stock returns are to present more reliable results for/from positive announcements.

The framework is established by Li's (2005) noisy information research, however the "Panama Leaks" are unique to Pakistan. Fang et al. (2022) on social media and Sun et al. (2023) on news emotion give light to how this shocking revelation occurred. This study investigates Pakistan's sociopolitical landscape and its impact on investor conduct following this extraordinary incident. Akinloye and Adeola's research on African governmental uncertainty provides a more nuanced approach. These approaches are used in this study to investigate how the "Panama Leaks" uniquely resonated in Pakistan, influencing investor attitudes and risk-taking beyond mega-event analysis. This study adds to previous research that has looked at the impact of noisy public information on returns (Li, 2005). Fang et al. (2022), for example, study how the usage of social media platforms on the internet accelerates the transmission of news, which influences volatility and return patterns. Similarly, Sun et al. (2023) investigate the role that news sentiment plays in affecting investor behavior and market patterns. This adds another layer to the process of determining how the "Panama Leaks" story may have affected the Pakistani market, possibly beyond the first release. Even though Rehman et al. (2016) explored the effects of mega-events on a range of stock markets, including Pakistan's, a more recent study has focused more explicitly on developing market dynamics. Akinloye and Adeola (2023), for example, analyze the relationship between governmental unpredictability and investor attitude in African markets, revealing diverse patterns of risk and financial return. Ma et al. (2023) investigate the link between economic policy announcements and market movements in Asian emerging markets. They underline the need to consider regional contexts in their approach. If these findings were incorporated into the research, the study may go on to analyze how the "Panama Leaks" story resonated within the specific socio-political and economic environment of Pakistan. The results have demonstrated that good news regarding firm information grants increased volatility to asset returns through the adoption of a sanitation strategy. Based on the above literature, this study has the following hypothesis:

$H_{0:}$ There is no significant impact stemming from the "Panama leaks" on the stock market of Pakistan.

$H_{1:}$ There is a significant impact stemming from the "Panama leaks" on the stock market of Pakistan.

Conceptual framework of the study

The objective of the present study is to analyze the impact of the "Panama leaks" on the stock market of Pakistan. The independent variable of this study is the news related to the "Panama leaks" in Pakistan. The dependent variable is the stock market of Pakistan. These types of news/events are further divided into three broad categories, namely: events related to the Apex Court, events related to the opposition parties, and events related to Sharif's Family.

The following figure shows the conceptual framework of the study.

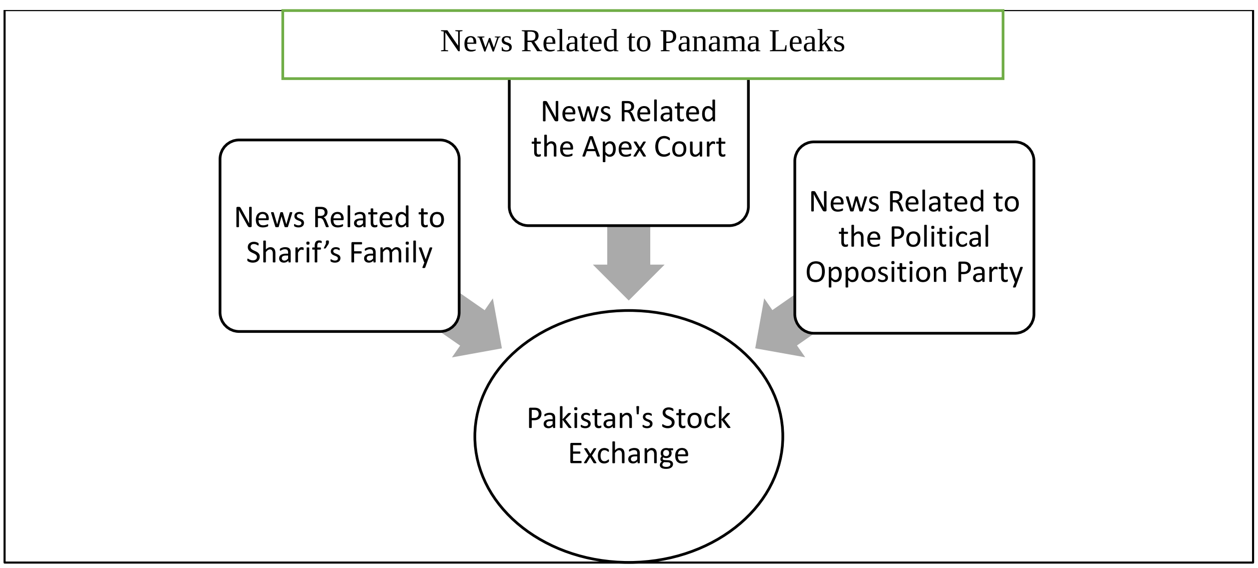

Figure 1: Conceptual Framework of the study

Methodology

This section discusses the data and detailed research methodology of the study.

Data description

The independent variable of this study is the news related to the "Panama leaks" in Pakistan. The dependent variable is the stock market of Pakistan. The period of this study is from the 1st of January 2015 to the 30th of July 2018. This period has been selected because the "Panama leaks" in Pakistan started during this period. The data regarding the "Panama leak" independent variable has been collected on a daily basis. The data of the independent variable of the "Panama leaks" is collected from newspapers, print, and electronic media and is presented in Table 1. The data of the dependent variable has been collected from the official website of the Pakistani Stock Exchange.

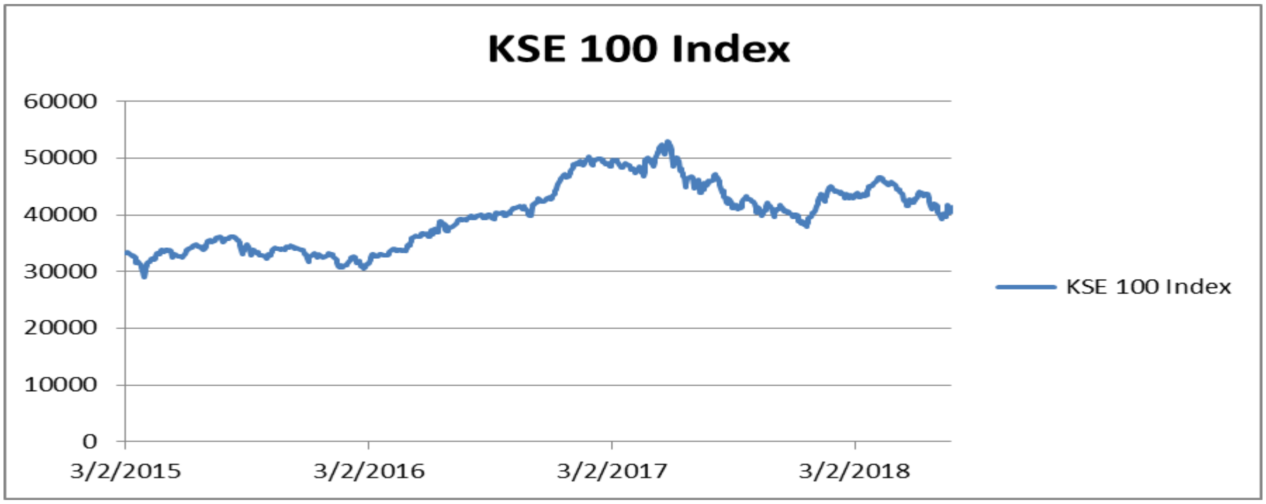

Figure 1: Timeline of the Pakistan Stock Exchange

Measurements of variable

This study consists of two variables: leaked news and the stock market. The stock market has been measured by using the KSE 100 index. The "Panama leaks" news variable is measured by using different news related to Panama. Such examples are court news, critical news, and Panama-related news, collected starting with the 1st of January 1 2015, and until the 30th of July 2018.

Event Study Methodology

Event studies are a type of research approach in which financial market-related transaction data is utilized to anticipate financial gains or losses associated with freshly disseminated information in a timely manner (Sharma, 2010). The investigation will look into the incident and provide us with a more in-depth understanding of the sorts of grand events that may or may not have a large influence on the financial markets in the future (Husnain, Islam & Ali, 2020). When it comes to finding out ways in which to find what is abnormal, the procedure is quite crucial (a significant anomaly from the average is an indication of such an abnormal event). The study is based on the assumption that prices will respond instantaneously to an increase or decrease in supply (Fama, Fisher, Jensen, & Roll, 1969). Event studies are being used to determine the reaction of the stock price. The price reacts as a result of abnormal returns. The following Table (Table 1) shows the details of all the selected events.

Event Window

According to this study, the estimated time window is one year long, with the event window for each event encompassing seven days previous to the occurrence and seven days after it has occurred. Rehman et al. (2018) investigated the impact of mega-events on Pakistani markets over the course of a year. Because of this consistency, our findings are more valid and comparable. Li et al. (2022) emphasized the need to receive timely responses using a five-day timeframe surrounding event announcements. This is extended by seven days to account for delays in information diffusion and investor reaction. Chen et al. (2015) investigated stock price drift in the days following announcements. Our seven-day event window technique examines both immediate and sustained market responses within a given timeframe. This is congruent with the findings of Rehman, Khan &Malik (Rehman, Khan & Malik, 2018). To determine the influence of any event, it is necessary to define the anomalous return. When the index's normal return is subtracted from the index's ex-post return over a given event window, the result is the abnormal return for that particular event window. A normal return, on the other hand, is described as a return that does not need the condition of the event to occur.

Abnormal return (AR) and Cumulative Abnormal Return (CAR)

The first step to estimate the actual return is to make use of the following formula:

$$R_i = Ln\left(\frac{P_t}{P_{t-1}}\right) \dots \dots (1)$$

Where, R_i is the actual return of the stock market, while P_t and P_{t-1}show the current and previous period index prices. The study will estimate the abnormal return and cumulative abnormal return by using the following equations.

$$AR_i = R_i - E(R)_i \ \dots \dots (2)$$

Where, AR= Abnormal Return, R_i = Actual Return, $E(R)_i$ = Estimated Return

Table 1 Details of the selected events related to the Panama Papers in Pakistan

Sr. #	Date	Event Name	Event Description
1	04-04-16	'The leaks are God sent' says Imran Khan	Government took steps regarding corruption allegations by the assistant of PTI and his chairman Imran Khan by asking to clarify their position.
2	22-04-16	'Will resign if proven guilty'	Nawaz Sharif has had another nation-address, and has stated that if any points proven him wrong, his resignation delivered on the spot
3	3-05-16	Opposition presents TORs	Formation of term of references (TORs) delivered to media and government by the combined meetings of both opposition parties. The main focus of the inquiry is on the off shore holding of the Sharif family.
4	16-05-16	Sharif explains in landmark speech	A speech addressed by prime minister about Panama papers allegations.
5	4-06-16	The TOR stalemate	Formation of 12-member committee for the investigation of off-shore companies by a parliamentary committee, although the committee has not given a final verdict yet. The draft of TORs reviewed has failed.
6	20-07-16	'No more negotiations,' says the opposition	No more work has been carried out on the drafting of TORs given an issue with a government that has been decided by the opposition.
7	3-08-16	Imran lashes out	Not a single institute has been investigated in the money laundering scandal brought forth by the "Panama leaks" which is not a good sign, said Imran Khan.
8	24-8-16	JI files Panama petition in SC	Petition orders received by the Supreme Court anxiously awaited the Jammat e Islami party. Imran Khan's party filed another petition indirectly related to Nawaz Sharif's petitions.
9	25-9-16	Imran urges followers to put up a strike	Khan appeals to people to fully take part in the PTI March to Raiwind on 30 September to pressure the Government.
10	7-10-16	Khan's next plan for lockdown in Islamabad	1. Nawaz Sharif is to resign or free himself of accountability until the 30th of October 30, according to Khan
11	20-10-16	SC accepts petitions	The process was started by using petitions from the Jamhuri Wattan party, PTI, and Jammat ul Islami accepted the challenge by the Supreme Court.
12	28-10-16	SC forms a larger bench to formally initiate proceedings	Supreme Court forms a large five-member bench to formally initiate the proceeding of the case
13	7-11-16	Sharif's children submit replies to SC	Sharif's children clarified their allegations and submitted replies to the supreme court

14	14-11-16	Good for selling Pakoras PTI submits evidence	Justice Sheikh Azmat and PTI's counsel Hamid Khan declared that all evidence about Sharif's properties had not been published in newspapers and that newspapers were being good for selling Pakora's.
15	30-11-16	Shahbaz forged signatures	Chief Minister Mr. Shahbaz Sharif fashioned the signatures of his cousin Tariq Shafi on documents, he has claimed before the supreme court.
16	9-12-16	CJ Jamali's retirement halts proceedings	Chief Justice of SC retired, which halts proceedings
17	4-1-17	New bench resumes hearing	The hearing of the "Panama Gate" case resumed on Thursday where the five-member bench, led by Justice Asif Saeed Khosa
18	13-1-17	Sharif family's flats purchased in the 1990s, BBC report discloses	Properties owned by the Sharif family in London's upscale Park Lane neighborhood were purchased in the 1990s.
19	23-1-17	German daily tweets trouble for Maryam	German newspaper Süddeutsche Zeitung on Monday tweeted their opinion on the role of Prime Minister Nawaz Sharif's daughter in Panama Gate.
20	31-1-17	Supreme Court concerned over NAB	NAB Prosecutor General Waqas Qadeer Dar was called once again and questioned why the ruling in the Hudaibiya Paper Mills case was not appealed.
21	16-2-17	Maryam trustee of London flats for six months	The lawyer sprang a new surprise before the Supreme Court by affirming that the bearer shares certificates of the four London flats
22	20-3-17	2. Neither a clean chit nor a conviction: Supreme Court issues split verdict on Panamagate case	The SC's split verdict on the "Panama Gate" case ordered, for the first time in Pakistan's political history, that a sitting prime minister face further investigation by a specially constituted joint investigation team.
23	28-7-17	SC disqualifies Nawaz from holding public office	On the 28th of July, the bench disqualified Nawaz Sharif from holding public office.
24	13-7-18	Nawaz and Maryam return to Pakistan, sent to jail	Nawaz Sharif and Maryam Nawaz returned to Pakistan to face jail time after their sentencing in the Avenfield verdict. NAB arrested them on their arrival in Lahore.

Table 1 shows the timeline of how the Panama Papers issues have unfolded in Pakistan. It reports the date (Day/Month/Year), a brief name of the event, and a short description of the event that has occurred.

The present study will use the following historical average formula for the computation of estimated return

$$E(R)_i = \frac{1}{T}\sum_{t=1}^{T} R_i \dots\dots (3)$$

Here, T shows the length of the estimation window which is 360 days i.e. one year.
For the calculation of the cumulative abnormal return, the study will use the following equation:

$$CAR = \sum_{t=1}^{T} AR_t \ \dots\dots (4)$$

To check the statistical significance of AR and CAR, our study will use the T-AR and T-CAR by using the following equations:

$$t_{AR} = \frac{AR_t}{\sigma_{AR}/\sqrt{n}} \dots\dots (5)$$

$$t_{CAR} = \frac{CAR_t}{\sigma_{CAR}/\sqrt{n}} \dots\dots (6)$$

Here, σ_{AR} shows the standard deviation of the abnormal returns while "n" is the number of observations of the event window.

Data Analysis and Findings

The objective of this study is to analyze the impact of the "Panama leaks" on the stock market of Pakistan. The independent variable of this study is the news related to the "Panama leaks" in Pakistan. The dependent variable is the stock market of Pakistan. The period of this study is from the 1st of January 2015 to the 30th of July 2018. The dependent variable is measured by using the KSE 100 index of Pakistan's stock market. Figure 1 shows the timeline of the KSE 100 index between the 1st of March 2015 to the 30th of July 2018. An increasing trend has been observed, this trend reaching its maximum in 2017. The quantitative feature of the data of the KSE 100 index which is presented in Table 2 shows the value of the mean, the standard deviation, the maximum and minimum kurtosis, the skewness, and the range. The results show that the average daily return of the KSE 100 index is 0.02%, with a standard deviation of .98%. Furthermore, the maximum daily return is 0.0442, with the minimum value of the daily return being -0.0476. If the value of skewness is 0 and kurtosis is 3, then the data is normally distributed. The result of Table 2 shows that skewness is -0.4250 which shows that data is negatively skewed 2.8142.

Table 2: Descriptive Statistics of the KSE-100 index

	R_KSE100
Mean	0.0002
Standard Deviation	0.0098
Sample Variance	0.0001
Kurtosis	2.8142
Skewness	-0.4250
Range	0.0918
Minimum	-0.0476
Maximum	0.0442

The results of the event study methodology have been presented the below tables 3, 4, 5, 6 & 7. These tables present the value of the cumulative abnormal return (CAR), abnormal return (AR), and their corresponding “p” values for the pre and post-event window for all 24 events of this study. We have used the historical method for the estimation of the return vector regarding the equity market in Pakistan. Furthermore, *, **, and *** denote the statistical significance at 90%, 95% & and 99% respectively.

Consistent with specialty literature, this study develops the 15 days event window i.e. 7 days before the event and 7 days after the event window. The data presented in table 3 illustrates that in most instances, the events related to opposition parties have a negative significant impact on the stock market in Pakistan in the AR and CAR window. Out of 24 total events, 8 events are related to the news/statements by Sharif’s family/sitting governments. The results also reveal that most of the time, the stock market shows a positive significant response against these events around the event dates in both the AR and CAR windows. Furthermore, we observe a significant response on the event day or in the post-event window under AR and CAR. Out of the total 24 events, 8 events are related to the news/statements by the Apex Court/ Supreme Court in Pakistan. Here, the results display how and in what manner the results show a positive significant reaction against the news related to the Apex court stemming from the “Panama leaks” in Pakistan. Additionally, these types of news have more impact during the day of the event or post-event window under the AR and CAR window. It shows that investors, policymakers, and other regulatory institutions have more confidence in the Apex Court in Pakistan. This is because the stock market shows favorable responses against the news related to the Apex court.

Table 3: Reaction of the stock market against the "Panama Leaks" – (Event Study Analysis)

	Event No. 1		Event No. 2		Event No. 3		Event No. 4		Event No. 5		Event No. 6	
Window	AR	CAR	AR	CAR	AR	CAR	AR	CAR	AR	CAR	AR	CAR
-7	-0.004	-0.004	0.005	0.005	0.001	0.001	0.010**	0.010	0.003	0.003	-0.004	-0.004
-6	0.002	-0.001*	-0.002	0.003	0.004	0.005	0.017***	0.027**	0.000	0.003	0.003	0.000
-5	0.001	0.000	0.005	0.007	-0.013	-0.008	0.000**	0.000**	0.000	0.003	0.001	0.000
-4	-0.001**	-0.001**	0.012	0.019	-0.005	-0.013	0.005**	0.005**	-0.008**	-0.005	-0.003**	-0.002
-3	0.001	0.000	0.007	0.026	0.012	-0.002	-0.002*	-0.002**	-0.007**	-0.012**	-0.015**	-0.017**
-2	0.007	0.007	0.006	0.032	0.009	0.008	0.001**	0.001*	-0.002**	-0.014***	0.009**	-0.009**
-1	0.009	0.016	-0.005	0.027	0.010	0.018	-0.002	-0.002	-0.002**	-0.016***	-0.009**	-0.018**
0	0.011**	0.027**	0.009*	0.036*	-0.018**	-0.001**	-0.003	-0.003	0.002	-0.013***	0.007**	-0.011**
1	-0.001*	0.026*	0.012*	0.048**	0.021**	0.020**	0.005*	0.005**	0.007	-0.007**	0.003	-0.008**
2	0.005*	0.031**	0.017***	0.066**	0.001**	0.021**	-0.004*	-0.004	0.003**	-0.004**	0.001	-0.007**
3	-0.001**	0.030**	0.001**	0.066**	0.001	0.021***	-0.004	-0.004	0.002	-0.001**	0.001	-0.006**
4	0.002	0.032**	0.007**	0.073***	-0.001	0.021***	0.003**	0.003**	-0.001	-0.003*	-0.002	-0.008
5	-0.012	0.020**	0.001**	0.074**	-0.013	0.007**	0.007**	0.007**	-0.005	-0.008	0.005	-0.003
6	0.001	0.021	0.000	0.074***	0.001	0.008**	0.001**	0.001**	-0.002*	-0.010	0.010	0.007
7	0.001	0.022	-0.006	0.068***	0.014	0.022***	0.001**	0.001**	-0.007*	-0.017**	0.003	0.010

This table shows the abnormal return (AR) and the cumulative abnormal return (CAR) for events no. 1, 2, 3, 4, 5 & 6 related to the "Panama leaks" in Pakistan. The event window of this study consists of 15 days i.e. 7 days before the event, the day of the event, and 7 days after the event. We have used the historical method for the estimation of the return vector regarding the equity market in Pakistan. Furthermore, *, **, and *** denote the statistical significance at 90%, 95% & 99% respectively.

Table 4: Reaction of the stock market against "Panama Leaks" – (Event Study Analysis)

	Event No. 7		Event No. 8		Event No. 9		Event No. 10		Event No. 11		Event No. 12	
Window	AR	CAR	AR	CAR	AR	CAR	AR	CAR	AR	CAR	AR	CAR
-7	0.005	0.005	0.001	0.001	0.006	0.006	-0.014***	-0.014***	0.002	0.002	-0.004	-0.004
-6	0.013**	0.018**	0.003	0.004	-0.005*	0.001	-0.004***	-0.018***	0.003	0.005	-0.001	-0.005
-5	0.009**	0.028***	0.000	0.004	0.009**	0.011	0.000**	-0.019***	0.005	0.010	0.005	0.000
-4	0.006	0.034***	-0.001	0.003	0.012***	0.023***	0.034**	0.015**	0.000	0.010	-0.001	-0.001
-3	0.003*	0.036***	-0.001	0.002	0.017*	0.040***	0.010***	0.025***	0.000	0.011	-0.005	-0.006
-2	0.004	0.040***	-0.004	-0.002	0.001	0.041***	0.005***	0.030***	0.000	0.011	0.009	0.003
-1	0.007	0.047**	-0.002	-0.004	0.007	0.048***	-0.004**	0.026***	-0.007	0.004	0.002*	0.004
0	0.005**	0.052***	0.005	0.001*	0.001	0.048***	0.006**	0.032***	-0.006	-0.002	-0.008	-0.004***
1	-0.006*	0.046***	-0.002	-0.001**	0.000*	0.048**	-0.001***	0.031***	0.006**	0.004	-0.008	-0.012**
2	-0.007*	0.039***	0.005	0.004**	-0.006**	0.042***	0.001***	0.032***	0.007*	0.011**	-0.006	-0.017**
3	-0.003*	0.036***	0.012***	0.016***	0.002	0.044***	0.011***	0.043**	0.010**	0.021**	-0.002	-0.020**
4	0.000	0.036***	0.007**	0.022**	0.000	0.044**	0.003***	0.046**	0.009***	0.030***	0.006*	-0.014**
5	0.004	0.040*	0.006**	0.028***	0.000	0.045**	-0.008**	0.038**	0.006**	0.036***	0.006*	-0.008**
6	0.009	0.049**	-0.005*	0.024***	0.005	0.049**	-0.006***	0.031**	0.004**	0.040***	0.009	0.001*
7	0.004	0.053**	0.009***	0.033**	0.010	0.059	0.002**	0.033**	0.013*	0.053***	0.000	0.001**

This table shows the abnormal return (AR) and the cumulative abnormal return (CAR) for events no. 7, 8, 9, 10, 11, and 12 related to the "Panama leaks" in Pakistan. The event window of this study consists of 15 days i.e. 7 days before the event, the day of the event, and 7 days after the event. We have used the historical method for the estimation of the return vector regarding the equity market in Pakistan. Furthermore, *, **, and *** denote the statistical significance at 90%, 95% & 99% respectively.

Table 5: Reaction of the stock market against "Panama Leaks" – (Event Study Analysis)

	Event No. 13		Event No. 14		Event No. 15		Event No. 16		Event No. 17		Event No. 18	
Window	AR	CAR	AR	CAR	AR	CAR	AR	CAR	AR	CAR	AR	CAR
-7	0.002	0.002	0.003	0.003	-0.029	-0.029	-0.008	-0.008	0.007**	0.007***	-0.002**	-0.002**
-6	-0.008	-0.006	-0.002	0.001	-0.002	-0.031	-0.007	-0.015**	0.005*	0.011**	0.014**	0.013***
-5	-0.008	-0.014	-0.001	0.000	0.002	-0.030***	-0.002	-0.016**	-0.006**	0.006**	-0.007**	0.006**
-4	-0.006	-0.020	-0.002	-0.001*	-0.025	-0.055**	-0.002	-0.018***	-0.007**	-0.002**	-0.012**	-0.006**
-3	-0.002	-0.022**	-0.001	-0.002**	0.005**	-0.050**	0.002	-0.016**	-0.003**	-0.004**	-0.003**	-0.009**
-2	0.006**	-0.016	-0.006	-0.008	0.004**	-0.046***	0.007**	-0.009**	0.000**	-0.004**	-0.007**	-0.016**
-1	0.006**	-0.010*	-0.013**	-0.021	0.008*	-0.039**	0.003**	-0.006**	0.004**	-0.001**	-0.014*	-0.030**
0	0.009***	-0.002	0.006	-0.016**	0.010*	-0.028***	0.002**	-0.004**	0.010**	0.009**	-0.004**	-0.034**
1	0.000***	-0.001*	-0.006	-0.022*	-0.015*	-0.043**	-0.001*	-0.005**	0.004**	0.013***	0.000***	-0.034**
2	-0.006	-0.007**	-0.011**	-0.033**	0.007**	-0.036**	-0.005	-0.010***	0.002**	0.015***	0.034**	0.000***
3	0.007***	0.000***	0.000*	-0.033**	0.024**	-0.012**	-0.002	-0.012**	0.008**	0.022***	0.010***	0.010**
4	-0.006	-0.006**	-0.003	-0.035**	0.022**	0.011***	-0.007	-0.020**	0.011**	0.033***	0.005***	0.014**
5	-0.022	-0.028	0.000	-0.035**	-0.013	-0.003**	-0.005	-0.025**	-0.004**	0.029***	-0.004***	0.010**
6	-0.006	-0.034	-0.003	-0.038*	-0.018	-0.021**	0.010**	-0.015	-0.001**	0.028***	0.006*	0.017**
7	0.013	-0.021	-0.012*	-0.050**	0.022	0.001**	0.010*	-0.006	0.005*	0.033***	-0.001*	0.015**

This table shows the abnormal return (AR) and the cumulative abnormal return (CAR) for events no. 13, 14, 15, 16, 17, and 18 related to "Panama leaks" in Pakistan. The event window of this study consists of 15 days i.e. 7 days before the event, the day of the event, and 7 days after the event. We have used the historical method for the estimation of the return vector regarding the equity market in Pakistan. Furthermore, *, **, and *** denote the statistical significance at 90%, 95% & and 99% respectively.

Table 6: Reaction of the stock market against "Panama Leaks" – (Event Study Analysis)

	Event No. 19		Event No. 20		Event No. 21		Event No. 22		Event No. 23		Event No. 24	
Window	AR	CAR	AR	CAR	AR	CAR	AR	CAR	AR	CAR	AR	CAR
-7	0.002	0.002	-0.005	-0.005	0.003**	-0.002	0.006**	0.006***	0.009**	0.009**	0.006***	0.006*
-6	0.003	0.005	0.006	0.001	0.011**	0.004	0.009**	0.014**	0.002**	0.010**	0.006**	0.012**
-5	0.005	0.010	0.008	0.008	0.000**	0.008	0.000	0.015	-0.008***	0.003**	0.009**	0.021**
-4	0.000	0.010	0.010**	0.018	-0.007**	0.010**	-0.006**	0.009*	-0.008**	-0.005**	0.000**	0.021**
-3	0.000	0.011	0.010**	0.028	-0.005**	0.012***	0.007***	0.016**	-0.006**	-0.011**	-0.006**	0.015***
-2	0.000*	0.011	0.006	0.033	-0.007**	0.013**	-0.006***	0.010***	-0.002**	-0.013**	0.007**	0.022**
-1	-0.007	0.004	0.005*	0.038**	-0.010**	0.010**	-0.022***	-0.012*	0.006**	-0.007**	-0.006**	0.016*
0	-0.006	-0.002	0.013***	0.051***	-0.005**	0.014**	-0.006***	-0.018**	0.006**	-0.002**	-0.002***	0.014**
1	0.006**	0.004	0.009*	0.061***	-0.004**	0.020**	0.013**	-0.005*	0.009**	0.007**	-0.021***	-0.007**
2	0.007**	0.011**	0.006	0.067***	0.012**	0.023**	0.003**	-0.003**	0.000**	0.008**	-0.006***	-0.013**
3	0.010**	0.021**	0.003	0.070***	0.012**	0.026**	-0.004**	-0.006***	-0.006**	0.002**	0.013***	-0.001**
4	0.009***	0.030***	0.004	0.074***	0.016**	0.029**	0.000**	-0.007**	0.007**	0.009**	0.003***	0.002**
5	0.006**	0.036***	0.007	0.080***	0.008**	0.032***	0.003**	-0.004***	-0.006**	0.003**	-0.004***	-0.002**
6	0.004**	0.040***	0.005	0.085***	0.012**	0.034**	-0.002***	-0.005**	-0.022**	-0.019***	0.000***	-0.002**
7	0.013*	0.053***	-0.006	0.079***	0.013**	0.035***	-0.001***	-0.006**	-0.006**	-0.025**	0.003**	0.001***

This table shows the abnormal return (AR) and cumulative abnormal return (CAR) for events no. 19, 20, 21, 22, 23 and 24 related to the "Panama leaks" in Pakistan. The event window of this study consists of 15 days i.e. 7 days before the event, the day of the event, and 7 days after the event. We have used the historical method for the estimation of the return vector regarding the equity market in Pakistan. Furthermore, *, **, and *** denote the statistical significance at 90%, 95% & and 99% respectively.

Conclusions and Discussion

The present study aims to examine the impact of the events related to the "Panama leaks" on the stock market of Pakistan. For this purpose, we have analyzed a total of 24 events related to the "Panama leaks" in Pakistan. These events are further divided into three broad categories: 8 events are related to the news/statements by the opposition parties, 8 events are related to the news/statements either by the Sharif family or by the sitting governments, and 8 events are related to the news/statements by the Apex court in Pakistan. The period for this study has lasted from the 1st of March 2015, up until the 30th of July 30. The event window of this study consists of 15 days i.e. 7 days before the event and 7 days after the event of the "Panama leaks" in Pakistan.

The overall findings show that the Panama leaks have had a significant impact on stock return in Pakistan. Out of 24 events, 16 events have had a significant impact on stock returns on the event day i.e. day 0 in the event window. Furthermore, out of 8 events related to news/statements by the opposition parties, 7 events have had a significant impact on stock returns on the day the event took place i.e. day 0 in the event window. 7 such events show the significant effects of abnormal returns on stock return in the pre-event window. Also, 8 events are related to the news/statements by the Sharif family or by the sitting governments, and 7 events have resulted in a significant impact on stock return in the pre-event window of abnormal returns. Furthermore, all the events show a significant impact on the stock return in the post-event window of abnormal returns and cumulative abnormal returns in Pakistan. Therefore, among Panama leaks, all the news related to the Apex court in the "Panama leaks" shows a significant positive impact on the stock returns in both the pre and post-event window. Hence, the present study reveals that investors have earned abnormal returns in the Pakistan stock exchange during the "Panama leaks" announcement, which shows that the Pakistani stock market is lacking a semi-strong form efficiency.

All 24 Panama Leaks events affected stock results, but further study shows surprising details. With 7 out of 8 opposition party news affecting returns on event day, volatility was apparent. Investors likely reacted to opposition criticism as a threat to the administration and market stability. However, news from the Sharif family or sitting governments mostly affected returns in the pre-event window, with 7 out of 8 occurrences showing significant abnormal returns. This may indicate that investors are anticipating market impact from government leak responses and trading cautiously. Most impressively, Supreme Court news regularly affected returns pre- and post-event, demonstrating its importance in investor sentiment. This shows the court's authority and ability to influence market movements with its Panama Leaks findings. The study disputes Pakistan's stock market's semi-strong form efficiency. Investors' aberrant returns on publicly available information, especially from the Supreme Court, suggest informational inefficiencies or delayed stock price response to the news. This shows that investors may rely more on court rulings than others, causing market biases and inefficiencies.

This present study provides insight for investors, regulators, policymakers, and other stakeholders in the sense that it sheds light on the effects that the news related to the "Panama leaks" have had on stock returns in Pakistan. Furthermore, the results show that the news related to the Apex court has had a more meaningful impact on stock returns in Pakistan. While the research reveals significant market reactions to Panama Leaks news, particularly from the Apex court, limitations must be considered. The study focuses solely on Pakistan, overlooking potential spillover effects in other involved countries. Additionally, only the stock market was analyzed, leaving the impact on other financial markets, like foreign exchange, unexplored. Future research can address these limitations by expanding the scope to encompass all affected countries and markets, providing a more holistic understanding of the leaks' broader financial impact. Additionally, delving deeper into the specific news content and its influence on investor sentiment could offer further insights into market dynamics during such impactful events.

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