

Measuring Reputational Risk: Market Reaction to Operational Loss Announcements in Pakistan

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Abstract

In this research, we strive to analyze whether operational loss announcements in media have any effect on the stock prices and what direction the reaction takes with respect to the announcement timings. Reputational loss is interpreted as when the firm's market price decreases when loss amounts are announced in the media known as an occurrence of an event. The research is based on Pakistan's banking industry and a sample of eight banks have been taken for which event study analysis and paired sample t-tests have been employed. The results of the research concludes that however small, operational loss announcements do cause a market reaction.

Keywords: Reputational risk, operational risk, operational loss announcements, stock price, volume by deposit, firm size

1.2 Introduction and Background

1.3 Introduction

Stock exchange is a market where financial instruments are traded, sold and purchased. It is very similar to your grocery market where items are sold and purchased. (Simanovsky, 1994) The selling and buying of stocks that take place here forms our basis for research. Anyone who buys these stocks is known as an investor and becomes a shareholder of the firm of which the stocks are bought. If a firm performs well, the stock prices go up and

more profit is earned by the shareholders as laid down in the dividend policy of the firm. (Furgang, 2011) By market reaction we mean how various factors effect the movement of share prices in the stock exchange. These factors include operational risk events, loss announcements and other external economic factors such as a recession.

For this research purpose, we will be concerned with studying operational risk events which lead to resultant negative losses. The

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most famous example of an operational risk event in the banking sector was of Baring's Bank in 1995 as a result of which the bank filed for bankruptcy. The event was triggered by internal rogue trading resulting in a USD 1.3 billion loss. Considering the current situation of the market, Basel Committee on Banking Supervision has emphasized on banks to keep a certain percentage of regulatory capital on account of their operational risk exposure and appetite.

Basel Committee (2003) stated, the insufficient internal processes, people and systems or any external force can result in severe operational risk. This definition does not include the effects of strategic & reputational risk. However, Basel II emphasizes on the measurement of reputational and strategic risk. There aren't any clear guidelines to measure reputational risk, and this is another reason why reputational risk is intangible.

As defined in the Reserve System (2004), Reputational Risk occurs when a decline in a firm's customer base, business operations or revenue happen generated by any negative publicity. Reputational risk can lead to a serious damage of a firm's image in the eyes of audience. Sometimes the harm may appear gradually rather than showing immediate consequences. Equity markets immediately react to the firms changing reputation. A firm's stock price is equal to the current discounted expected value of the cash flow that generates in result. In case a reputational event reduces the current or future expected cash flows, it will eventually reduce the equity value of the firm. If a firm is announced to

be at loss, it will be considered that the firm's control environment is deprived. If there are any losses forecasted, shareholders may sell the stock. Reputational losses can also occur if the shareholders analyze that the future cash flows will be negative.

1.4 Problem Statement

If we take a closer look over the last decade or so, we will find numerous cases where operational loss events have resulted in huge losses such as fraudulent activities or inadequate business practices. In addition to their occurrence, the disclosure of such operational loss events have an indirect effect on the firm, resulting in reputational risk which shakes the customer loyalty, shareholder and counterparties confidence. Hence the loss to the firm is much more than the stated dollar amounts. As there is no standardized method of calculating the effect of such risk or its contribution to the loss in dollar amount, in this research we will examine whether the loss announcements incur a negative market reaction.

1.5 Research Objectives

- Analyze how do operational loss announcements effect the stock prices (market reaction).
- Understand the difference in impact of loss announcements on large and small value firms.
- Understand the difference in impact of loss announcements and market reaction with firms having strong and weak shareholder rights.
- Determination of reputational risk due to loss announcements.

1.6 Research Questions

- Does announcement of operational loss affect the value of the firm?
- How much impact does announcement of operational loss has on stock price?
- How is reputational risk measured?
- Are large value firms affected more?

1.7 Limitations and Delimitations

Limitations

- o Time constraint. The time allotted for the completion of the research is limited. As a student this constraint effects the gathering of data in relation to the scope of the research.
- o As a research student, financial resources needed to access e-libraries are limited.
- o Financial resources to access other data sources such as government indexes and reports also present limitations. Some indexes are not even available with the government such as governance structure index as available in U.S.

Delimitations

- o The time frame chosen is from the year 2009 to 2013 as the data of the years is easily available owing to the time constraint which is present.
- o The sample chosen is of a limited number of banks owing to the time constraint present.

1.8 Hypothesis

H0: Operational loss announcements do not incur a negative market reaction

HA: Operational loss announcements do incur a negative market reaction

2. Literature Review

2.1 Literature Review

For the purpose of this research, various literature is cited that expresses the nature of relationship between market reaction and operational loss announcements which is a determinant of reputational risk though the evidence is scarce. The literature by Fombrun & Shanley (1990), Plunus, Gillet, & Hübner (2012), Charitou, Lambertides, & Theodoulou (2010), Cummins, Christopher, & Wei (2004), Murphy, Shrieves, & Tibbs, (2004), Perry & Fontnouvelle (2005), Karpoff & Lott (1993) and Gatzert, Schmit, & Kolb (2013) specifically discuss the reputational risk which is more often not recognized in the form of market reaction to operational losses. Previous literature suggests that when the ratio of percentage of loss amount and percentage of loss in stock prices is more than one, the losses are attributable to the operational announcements and are an evidence to the presence of reputational risk.

Varying expects of literature makes this research nonetheless more interesting. The researches up till now have not provided a unanimous opinion on whether the operational losses have the most significant impact on market value but have reported the same negative market reaction using different variables such as layoff announcements and restatement of financial statements.

Current research explains that the operational loss events occurring in firms that announce them, have a very strong, statistically substantial negative impact on stock price (Perry & Fontnouvelle, 2005) (Cummins, Lewis, & Wei, 2005). Cummins & Wei, 2006

suggested that in cases such as these, the loss in market value is more than the amount of operational loss which impart negative information regarding the loss which may impact the future cash flows in a negative way also. This in turn discourages the investors. The reason researches are focused around operational loss events is that they can prove to be single handedly terminal. The management can control most, if not all, such events from occurring as the threat posed is one that can bring the company down to ground zero (Blunden, 2003). This argument is supported by Kilavuka (2008) who states that the impact of operational failures in the long run do hamper the organization's affairs to such a state that it is often impossible for the organization to recover its success in the market. These operational failures are over looked if a short term loss is easily covered. The management supposes that the danger is averted but in reality until the cause is corrected, the company remains in loss. He also states that the loss which is incurred is via two channels. One, customer loyalty is lost when services start to waver in terms of quality, and two, law suits pressurize a firm's credibility to an extent that even if the costs of litigation are borne, the reputation is irrevocable.

Reputational Risk has been cited in several definitions in an attempt to try and explain what exactly can be interpreted as risk to the reputation and how is it determined. Atik (2009) suggests that the probability that a certain event will lead to the decrease in good will towards something or the feeling of restraint that overcomes a certain transaction, when apprehension is felt about an enti-

ty's survival due to a certain announcement, all such refer to reputational risk. Rindova et al. (2010) suggests that reputation refers to a thought process, impression, perception, belief or knowledge and it is a perception in an external person's or stakeholder's mind (Clardy, 2012, and Rindova et al., 2010). The external observer is relevant to this discussion because it is them whose impressions form the value, mostly the first of them is the company's own workforce (Davies et al., 2001).

There are a wide range of events throughout history to support the importance of such a risk as provided earlier in the Introduction of this paper as well. Another example being a USD 59 billion loss in a firm's value to BP shareholders from the reputational effects of the 2010 Gulf Coast oil spill. The risk has been recognized by the financial industry long before the Basel II accord came deeming the measurement of such a risk a necessity. After the definitions have been established, measurement of reputational risk to this day remains a dilemma. As it is a perception and is qualitative in nature, measurement is not straightforward. Though we do know that a standard model of measurement does not exist, organizations have derived ways to somehow keep check of it.

One of the older literatures is of Karpoff and Lott (1993), who examined the reputational damages to a firm when they are charged with illegal fraud. Using the time period 1978-1987, they concluded that in actual, the announcements of fraud can degrade the company's rankings in the corpo-

rate sphere. The loss amount charged in litigation fees is only a small portion (about 5.5 percent). Hence, it is suggested that the rest is only accountable to what losses the future brings owing to the committed fraud and current loss due to reputational damage.

Moosa and Silvapulle (2011) conducted a survey of 54 operational loss events from the database of eight Australian banks during the period of 1990-2007. The results showed that indeed the market had an adverse reaction to operational loss announcements but no substantial relationship could be analyzed between banks other characteristics such as size, leverage. It was also found that the number of times an event occurred had no link with the associated business line although the loss amount is linked to the business line. Farber and Hallock (2008) studied the impact of job loss announcements on the market value reactions and found that a negative and positive relationship can simultaneously exist where both has been seen owing their line of reasoning. Gompers et al. (2003) suggest that the firm with weak shareholder rights is already facing a sort of penalty from the market in terms of collecting a lower value and reduced equity returns where as strong shareholder rights would mean that announcements could impact these firms in a greater negative way hence they would like to see the impact reduced more fervently also.

The objective of this paper is to find out whether the operational loss announcements have a significant negative market value reaction in terms that the loss in market value exceeds the loss amount announced. The

theory is supported by previous literature but has not been validated in the Pakistan's banking industry. We take noteworthy support from this literature and set out to determine through the analysis in this study, whether the loss announcements hold true to measurement of reputational risk in Pakistan's Banking Industry or not.

3. Methodology

3.1 Research Approach

Quantitative approach has been used for the purpose of this research to find the relationship between market reactions to operational loss announcements. This approach has been used as the data of these variables such as stock price changes, operational loss announcements, firm size and firm value are in numbers.

3.2 Research Design

Research design applied for this research is co relational research design. This type of research design incorporates collection of data to determine the direction and strength of relationship between the variables. Determination of degree of relationship is also called the correlation coefficient.

3.3 Data

The data collected of stock price changes, operational loss announcements, firm size and firm value collected in the time period 2009-2013, on a daily basis. The data has been collected from brokerage house, financial statements, media announcements and electronic journals and websites. A sample of 8 banks has been chosen for the purpose of this study based on their leading customer

base (volume in deposits) in Pakistan's banking industry. The banks included in highest to lowest ranking order are Habib Bank Limited, National Bank of Pakistan, United Bank Limited, Muslim Commercial Bank, Allied Bank Limited, Bank Al Falah, Bank Al Habib and Askari Bank Limited.

3.4 Analysis Technique

Event study analysis and paired t-test has been used for the purpose of this study. It is a statistical method applied to analyze the impact of an event such as operational loss announcement on the stock price changes of a firm and its value relating to firm size. The basic concept is to study the means of stock prices before and after the event has occurred. For this analysis, 07 day event window will be taken into consideration.

4. Data Analysis

4.1 General Description of Data

The sample is taken of eight listed commercial banks out of twenty-one which are listed on the KSE-100 index. The eight banks are selected based on volume of deposits in the year 2013 by ranking in highest to lowest order. The customer base has been estimated on the value of deposits reported by each bank in their audited financial statements for the year 2013. The banks included in highest to lowest ranking order are Habib Bank Limited, National Bank of Pakistan, United Bank Limited, Muslim Commercial Bank, Allied Bank Limited, Bank Al Falah, Bank Al Habib and Askari Bank Limited. The data for operational loss announcements has been collected for the time period 2009-2013. A total of 67 operational loss announcements were

identified and daily closing share prices for the listed banks were taken for the period 2009-2013. The majority of the operational loss announcements are from the category of external / internal frauds reported in the media.

Event study methodology is used so that the market reaction to each event can be captured using a seven day event window. A week's event window has been decided upon for analysis so as to properly see the impact of share prices when the announcements are circulated in the media. The event selected is from media announcements which can related to any operational loss announcements and share prices are taken seven days before and after the event date.

4.2 Procedure of Data Analysis

The analysis tool used is SPSS and the technique employed is paired sample t-tests. Paired sample t-tests are effective in identifying results for data which has been taken before and after an event. It tells us whether the event has a significant effect on the change in data or not. For entering the data into SPSS, first the closing share prices of each bank, from the Karachi Stock Exchange, of the event window are noted. Then the means for each event window before and after the event are noted for each bank. The mean of share prices taken for seven days before the event is labelled as (bankname)Pre variable and the mean of share prices taken for seven days after the event is labelled as (bankname)Post. Each bank's pre and post are treated as separate variables. When paired samples t-test is run, following results are obtained.

4.2.1. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BALFPre	14.652857	4	8.5934964	4.2967482
	BALFPost	12.673571	4	5.2465422	2.6232711
Pair 2	AKBLPre	14.346905	6	3.0633287	1.2505987
	AKBLPost	14.662143	6	3.2166763	1.3132026
Pair 3	HBLPre	110.277778	9	11.3105667	3.7701889
	HBLPost	109.999206	9	10.5866139	3.5288713
Pair 4	ABLPre	58.330536	8	15.0090019	5.3064835
	ABLPost	58.180179	8	14.7217850	5.2049370
Pair 5	NBPPre	55.852689	17	9.4290420	2.2868786
	NBPPost	55.500336	17	9.2065089	2.2329064
Pair 6	UBLPre	63.559221	11	15.3655266	4.6328806
	UBLPost	63.693766	11	15.3626902	4.6320254
Pair 7	MCBPre	208.824762	9	44.3815251	14.7938417
	MCBPost	206.845556	9	41.8374947	13.9458316
Pair 8	BAHLPre	31.163810	3	9.3610551	5.4046077
	BAHLPost	32.434762	3	7.8489932	4.5316183

Total eight pairs of variables are extracted which are namely banks. Table 1 shows the means of each pre and post window of the events. N is the number of observations for each variable. These number of observations are purely incidental and are based upon the number of operational losses reported against each bank for the said time period. As we can see in the table, there is a difference, even if very slight, in means of pre and post

variable of each bank. For some banks such as MCB the change in mean is in whole numbers from 208 to 206 and for some banks the change in mean is in decimals such as for ABL, from 58.3 to 58.2. This means that a certain event does cause the change in share prices, even though the change in means is slight. The standard deviations and standard error in means being calculated is also shown against each variable.

4.2.2 Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	BALFPre&BALFPost	4	.999	.001
Pair 2	AKBLPre&AKBLPost	6	.998	.000
Pair 3	HBLPre&HBLPost	9	.940	.000
Pair 4	ABLPre&ABLPost	8	.995	.000
Pair 5	NBPPre&NBPPost	17	.837	.000
Pair 6	UBLPre&UBLPost	11	.992	.000
Pair 7	MCBPre&MCBPost	9	.958	.000
Pair 8	BAHLPre&BAHLPost	3	1.000	.005

Table 2: Paired Sample Correlations

Table 2 details on the Correlations between the pre and post variable of each bank. The data shows that the pairs are perfectly correlated and are significant in the study. All correlations are higher than 0.9 and significance is less than 0.05. N is the number of

observations for each variable. These number of observations are purely incidental and are based upon the number of operational losses reported against each bank for the said time period.

4.3 Outcome of Analysis

Paired Samples Test										
		Paired Differences					t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
					Lower	Upper				
Pair 1	BALFPre - BALFPost	1.9792857	3.3538893	1.6769447	-3.3575006	7.3160720	1.180	3	.323	
Pair 2	AKBLPre - AKBLPost	-.3152382	.2538692	.1036417	-.5816575	-.0488188	-3.042	5	.029	
Pair 3	HBLPre - HBLPost	.2785714	3.8737159	1.2912386	-2.6990302	3.2561730	.216	8	.835	
Pair 4	ABLPre - ABLPost	.1503571	1.4911046	.5271851	-1.0962375	1.3969518	.285	7	.784	
Pair 5	NBPPre - NBPPost	.3523529	5.3249492	1.2914899	-2.3854833	3.0901892	.273	16	.788	
Pair 6	UBLPre - UBLPost	-.1345455	1.9787681	.5966210	-1.4639000	1.1948090	-.226	10	.826	
Pair 7	MCBPre - MCBPost	1.9792064	12.7847308	4.2615769	-7.8480077	11.8064204	.464	8	.655	
Pair 8	BAHLPre - BAHLPost	-1.2709524	1.5136834	.8739255	-5.0311504	2.4892456	-1.454	2	.283	

Table 3: Paired Samples Test

Table 3 shows whether the pairs of variables show significant change due to the loss announcements or not. For each pair of pre and post variables of a bank, the means and its standard deviation is shown. The test is carried out at 95% confidence interval and t values are generated with their significance values. The results show that only Askari Bank's share prices show a significant change due to loss announcements. The significance is 0.029 which is less than 0.05 hence, meaning that the result is significant. All others show a change in share prices before and after the event but the change is not significant (value is greater than 0.05). This means that the market did not react significantly to the loss announcements of these banks but that of Askari Bank only. The outcome of the analysis shows us that smaller the customer base of the bank, larger the impact of operational losses is for it. Askari Bank has the lowest volume of deposits in our chosen sample of data whereas NBP has the second highest. The number of observations recorded for Askari Bank were 6 as opposed to the higher number of observations recorded for NBP which were 17. The impact of operational losses with more volume of deposits seems to be nullified by the effect of their size and thus no significant change is detected whereas for banks which are smaller in volume ratio, the effect becomes evident with even smaller number of operational loss events and thus, the market reaction is evident. However, in this analysis we talk about an overall outlook of market reaction. If the data is viewed closely, there are some events which do have an effect on the change in share prices individually such as the event of March 17, 2011 where

NBP faced an internal fraud report. The event caused the average share price of seven day window to fall from PKR 78.81 to PKR 62.11 after the event. But other events which do not emanate a negative market reaction offset this individual outcome in our final result.

5. Conclusion and Recommendations

5.1 Conclusion

In this paper, research carried out for the purpose of determining whether operational risk announcements do have an impact on the market reaction which would amount to identification of reputational risk in the industry in Pakistan has been discussed.

The partial study results are conclusive and in accordance with the previous literature Perry & Fontnouvelle (2005) who measure the reputational risk and the damage caused by it through amount of operational losses versus the loss in stock prices but others remain inconclusive and in accordance with the study results by Jobst (2007) who argue that that the relationship cannot be established and the connections appear to be haphazard. Our empirical results highlight significant negative market reaction for Askari Bank only versus the other seven banks which do show a change in the mean values caused by the event but not necessarily the announcement of operational losses. Therefore, our hypothesis is rejected for one bank that is, operational loss announcements do incur a negative market reaction and for other seven banks it is accepted, that is, operational loss announcements do not incur a negative market reaction.

The events reported for each bank in the

sample are in no way equal and loss amounts are not identical. This puts a restrain on our results as while the bigger banks can bear such a loss without being effected the smaller banks feel the consequence. Also, the study highlights that the frequency of the events occurring such as in NBP, points towards weak internal controls and poor implementation practices.

The Banking Industry has been selected as it is the most important sector in economy of Pakistan where the trading activities are most evident in the Karachi Stock Exchange and hence, the market reaction can be more easily determined. In terms of importance, it is also the most crucial sector, whose activities impact the trading in other sectors. Operational risk on the other hand has been a topic of interest world-wide since introduced in Basel II paper same as the idea of reputational risk was brought to be contemplated upon. The losses from operational risk events often are the most trying and the most vital to avoid if proper controls exist. In our study we have strived to find out whether the announcements of such losses also bring out a negative market reaction as was detailed by Wei. (2006)

From the results we can also conclude that reputational risk is barely noticeable in this industry for much bigger banks but it is the underlying cause of negative market reaction for smaller banks. The higher the losses and their number of announcements in the media the more the bank suffers. Askari bank's reportedly six events of operational losses shows a negative market reaction whereas seventeen

reported events of NBP and eleven reported events of MCB do not show a negative market reaction. It is owing to the fact that the bank can survive such attempts of external and internal fraud because of its volume and customer do not lose faith in them so quickly. With smaller banks the risk is always palpable. Also with smaller banks, there is no cushion to survive the hit as lesser the customer base, less are the funds available to the bank to create asset avenues. However, no matter small or big, events such as frauds are always an important operational and reputational risk for banks to consider. This study only provides a basic understanding that the industry in Pakistan is also impacted in a similar way.

5.2 Recommendations

Karachi Stock Exchange is the main trading ground for investors of both local and international origin. Investors need all sorts of advices when trading in the KSE and this study presents some of the areas where their doubts can be eradicated and help them in perceiving better firms to invest in;

- a) Commercial banks with larger volumes will nullify the effect of operational loss announcements and though market reaction might occur for the individual said event, there is no long term effect of the said event until and unless the event is the source of de-valuation of the bank.
- b) Commercial banks with smaller volumes receive more negative market reaction and so investment in such banks where news of operational losses reaches KSE, is better to avoid.
- c) The rumor mill does effect the share prices of commercial banks somewhat if not to a

full extend. One should keep track of the media announcements also.

- d) The market reaction also depends on the amount of operational loss reported. The investor should bear in mind that the banks with greater consistency of operational losses have weak controls in place and thus are operationally not sound.

5.3 Future Recommendations

The time frame chosen for this research was 4 years and a sample of eight banks was selected. The scope of this research was limited due to data access and time constraints. A larger amount of data and bigger time frame can lead us to more conclusive results than these. The study provides a partial proof that operational loss announcements do incur a negative market reaction for some banks in the banking industry of Pakistan. For taking the research further, some additional points are given below;

1. All commercial banks listed on the KSE 100-index can be taken under study.
2. The time frame can be increased for data to range over a decade. However, the comparison of data of before and after recession should be done separately.
3. Other sectors of the economy can be included. The banking sector is the first to respond but other sectors such as oil and gas, FMCG and other companies can be taken into consideration who have strong share price impacts at KSE 100-index.
4. For research in the future and more conclusive results, more variable should be considered such as the political influence in the banking industry, governance structure, dividends announced, firm value and stakeholder rights and risk controls implemented.
5. The researcher can also align the operational loss announcements into categories and according to volume of losses to witness market reaction of greater and smaller losses separately.
6. Researcher can assess the degree of reputational risk and design means of measuring the same for firms when operational loss announcements result in negative market reaction.
7. In future research, factual and rumored operational loss announcements can be compared and their impact can be determined by market reaction.
8. The researcher can also facilitate the research by finding out whether both kinds of, factual and rumored, operational loss announcements effect the market and are the investors able to differentiate between the two or not. How is such a risk measured?

Appendix

Commercial Banks by Volume of Deposits in 2013

SYMBOL	COMPANY	Deposits (PKR)
HBL	Habib Bank Ltd	1,401,229,814,000
NBP	National Bank.	1,101,138,574,000
UBL	United Bank	827,848,000,000
MCB	MCB Bank Ltd	632,000,000,000
ABL	Allied Bank	608,400,000,000
BAFL	Bank Al-Falah	525,525,770,000
BAHL	Bank AL-Habib	386,098,828,000
AKBL	Askari Bank	335,241,027,000

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