

THE EFFECT OF OPERATIONAL LOSS EVENTS ON THE REPUTATION OF SOUTH AFRICAN BANKS

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—Abstract —

With few previous data and literature based on the South African banking sector, the key aim of this study was to contribute further results concerning the effect of operational loss events on the reputation of South African banks. The study primarily focused on identifying reputational risk among Regal Treasury Bank, Saambou Bank, Standard Bank and African bank. The events announced by these banks occurred between 2000 and 2014. The results indicated significant cumulative abnormal returns on the announcement day for three of the four banks.

Key Words: *operational risk, reputational risk, event study, banks, abnormal return*

JEL Classification: G14, G21

1. INTRODUCTION

“It takes 20 years to build a reputation and only five minutes to ruin it. If you think about that, you will do things differently” (Buffet, 2008). Generally, risk management comprises the management of four major risk types: credit risk, market risk, liquidity risk and operational risk (Jarrow, 2008:870). However, operational risk has become the main focus of bank risk management (Mitra et al., 2015:123). Operational risk is classified as a pure risk since it results in negative losses for all institutions (Micocci et al., 2009:2; Moses & Rajendran, 2012:50). These negative monetary are then classified as operational losses. Operational risk is also one of the most difficult risks to anticipate. As a result, its sudden appearance can lead to a decline in the market value of financial institutions (Lewis, 2004:1). When not effectively managed, operational risk can be the most damaging to any financial institution. Failure to manage operational risk has led to the demise of numerous institutions, since operational risk causes other firm-wide risks to be extreme (Sweeting, 2011:102). Since operational losses include some sort of failure, these losses attract media attention despite the fact that the financial loss may be small. This increased attention on operational losses is the reason why these losses can pose severe threats to an institutions’ reputation (Sturm, 2013:192).

A few studies have found that whenever the market loss surpasses the announced operational loss, it suggests evidence of reputational risk. Cummings, Lewis and Wei (2006), as well as De Fontnouvelle and Perry (2005) studied the market reaction reflected by changes in stock prices after the announcement of operational losses during 1978 and 2003 in the United States (Fiordelisi et al., 2013:107). Cummings (2006) found that insurance companies suffer larger negative impact than banks. This result was attributed to better operational risk management in banks with the comprehensive guidance of the Basel Committee on Banking and Supervision (BCBS). Both banks and insurance companies acknowledged a drop in both share prices and market value after the operational loss announcement (Gillet et al., 2010:225). De Fontnouvelle and Perry (2005) found that prices are only affected negatively on the day the loss is announced. The study further made use of a loss ratio (loss amount/market capitalisation). Cummings considered the three factor model to identify a reputational loss, where de Fontnouvelle considered the one factor market model (Micocci et al., 2009:2).

Gillet, Hubner and Plunus (2010) followed a similar approach, focusing on 152 financial companies (banks and insurance companies) in the United States and

Europe between 1990 and 2004. Gillet et al. (2010:225) introduced an advanced measure of reputational risk, whereby the difference between the market loss and the announced loss of the bank was accounted for. This advanced measure allowed for the isolation of reputational risk as a result of operational events. Contrary to previous studies, Gillet et al. (2010:225) categorised each financial institution's operational loss according to three event windows: (1) press date (2) recognition date and (3) the settlement date of the operational loss amount.

Since only a few studies have focused on the effect operational loss announcements had on the reputation of financial institutions within Europe and the United States (Fiordelisi et al., 2014:107), there is much room for an analysis within the South African context. This paper follows the line of research performed by Gillet, Hubner and Plunus (2010) by analysing the stock market reaction to the announcement of operational losses. The main distinction between this study and previous empirical research is that a small sample of South African banks listed on the JSE, between 2000 and 2014 was used. Insurance companies were outside the scope of the study.

The first section describes the background of the study whereas the following section elaborates on the data used, the sample and the event methodology used. Furthermore, the results for the whole sample were represented while the last section elaborates and concludes on the analysis of the abnormal returns.

1. BACKGROUND

“Everything an organization does or says creates an indelible impression in the minds of its key stakeholders — senior management, employees, customers, local communities, investors, and so on. The sum total of all these interactions represents your reputation” (Wyman, 2014). South African banks are constantly faced with pervasive and immediate risks that could harm their reputation (ACE, 2013:2). Reputational risk, which arises from operational risk, is one such risk that constitutes a loss in value even if it is not yet possible to express it financially (Chartered Institute for Management Accountants, 2007:17). Both the BCBS and national regulators in South Africa have avoided defining reputational risk due to the difficulty in determining a minimum capital charge (BCBS, 2001:2 & BCBS, 2011:5). The lack of a uniform definition of reputational risk indicates that reputational risk is perceived differently by the various economic sectors (ACE, 2013:8). Reputational risk can influence the long-term sustainability of any financial institution (Xifra & Ordeix, 2009:355). Reputation has a different dynamic since its value can change much faster than other assets as a result of its

intrinsic volatility (Chartered Institute for Management Accountants, 2007:12). Prior to the 2008 financial crisis, most international banks failed to acknowledge reputational risk and its consequences (International Association of Risk and Compliance Professionals, 2015; Ferreira, 2014:32). However, the consequences include a decline in share value and market capitalisation; a decline in future expected cash flows; limiting funding by causing short-term sources to dissipate; diminishing reputational capital; loss of current and possible future customers; loss in valuable employees; destroying a bank’s trust and competitive advantage; reduction in current or future business relationships and regulators imposing greater compliance burdens (Fiordelisi et al., 2014:5; Ross, 2005:7; Zboron, 2006:505).

2. DATA AND METHODOLOGY

2.1 Sample data

As a result of the scarcity of operational risk announcements in comparison with credit risk and market risk, operational loss risk data are limited within the market. The time period of 14 years of data were used in order to include all possible operational events that occurred during these 14 years, starting with the first operational loss announcement of Regal Treasury Bank in 2000, Saambou Bank during 2002, African Bank in February 2013 and Standard Bank early in 2014. These four banks were chosen as they all experienced unanticipated operational loss announcements. Table 1 provides a summary of the operational loss events and their category, as well as the operational loss amounts.

Table 1: Summary of sample of operational loss events

Bank	Operational loss event	Operational loss amount
Regal Treasury Bank	Insider trading (unauthorised activity) on 16 th of May 2000.	ZAR6m
Saambou Bank	Internal fraud (insider trading) 15 th of August 2001.	ZAR2.3m
African Bank	Clients, products and business practices (guideline violations; aggressive sales; lender liability; the failure to investigate clients before granting credit; and exceeding their clients’ exposure limits) on 13 th of February 2013	ZAR300m
Standard Bank	Clients, products and business practices (guideline violations) and external fraud on 23 rd January 2014.	ZAR60m

Source: (Levenstein v The state, 2013:7; Stein et al., 2004:81; Dirk 2013; Lefifi 2014).

The primary reason for the reduced number of observations (four operational loss events) in the final sample is the sound banking sector in South Africa. Only a few operational loss events have been reported over the past 14 years. Other operational loss events were deleted from the sample due to incomplete information published (either the loss event date or the loss amount). The data concerning loss amounts used in this study are based on the information gathered from secondary sources such as newspapers, bank press releases and news and bank websites.

With few previous data and literature based on the South African banking sector, the key aim of this study was to contribute further results concerning the effect of operational events on the reputation of South African banks. Stock market (prices and market capitalisation) data were collected from the domestic exchange, the Johannesburg Stock Exchange (JSE) as well as from INET BFA. The data used in this study are not comparable to the data from previous studies, since the data from previous studies used different sample sizes, time periods, and are denominated in different currencies. The mean, median, standard deviation, minimum value and maximum value for each banks' returns are given, and both operational losses and market capitalisation are represented in South African Rand (ZAR).

2.2 Methodology

The empirical portion of this study included an event methodology commonly used in corporate finance research (Woon, 2004:1). The event methodology examined the average stock market reaction beyond expectation (abnormal returns) to specific operational loss events (Kumar et al., 2012:141). To obtain reliable and accurate results, the assumptions of the efficient market hypothesis had to be followed in order to obtain accurate results (Woon, 2004:3; Fama, 1970:390). Contrary to previous studies, only one distinct event window was used which included 20 days before the event and 20 after the event. This time period of 41 days including day zero allowed sufficient time for the share prices to react to new information. The Capital Asset Pricing Model (CAPM) were utilised for the sole purpose of incorporating a market benchmark, the JSE All Share Index (ALSI).

Abnormal returns were measured as the difference between the return achieved over a period of one day when the operational loss was made public and the expected stock return. Abnormal returns AR_{it} after the operational loss for each bank i for day t was measured by subtracting expected returns from actual returns

as demonstrated by equation (1). Hence, abnormal returns are a direct measure of the unanticipated change in stakeholder wealth associated with the operational event (Khortari & Warner, 2006:9).

$$AR_{it} = R_{it} - E(R_{it}) \dots\dots\dots(1)$$

Where AR_{it} is the abnormal return for bank i on day t . R_{it} is the normal return for bank i on day t . $E(R_{it})$ is the expected return for bank i on day t . In order to be able to capture the effect of operational loss events on the reputation of South African banks, the operational loss had to be accounted for (Sturm, 2013:198). Following the study of Gillet et al., (2010) and Sturm (2013), average abnormal returns were adjusted by incorporating the exact operational loss amount as seen in Equation 2. The operational loss announced by bank i were divided by the market value of bank i at time t and then added to the abnormal return of day t :

$$AR (Rep) = AR_{i0} + \frac{Op Loss_i}{Market Cap_i} \dots\dots\dots(2)$$

Where $AR (Rep)$ is the abnormal return for bank i on day t adjusted for the nominal loss amount. AR_{it} is the abnormal return for bank i on day t . $Op Loss_i$ is the operational loss announced for bank i on day t and $Market Cap_i$ is the market value for bank i on day t . This calculation, where abnormal returns were adjusted, captured and reflected the reputational damage of each bank and the market reaction to reputational risk (Sturm, 2013:198). According to Gladyssek and Chipeta (2012:434) when daily average abnormal returns are greater than 2.5 percent the announcement is perceived as favourable news, while average abnormal returns less than -2.5 percent are perceived as unfavourable news. For this reason the average abnormal returns were calculated. Average abnormal returns, adjusted for reputational risk $AAR (Rep)$ regarding the event window, were calculated by using Equation 3 by averaging AR of each of the n shares, where $AR (Rep)$ can be defined as the abnormal return adjusted for reputational risk.

$$AAR (Rep) = \frac{1}{n} \sum AR(Rep)_{i,t} \dots\dots\dots(3)$$

Cumulative average abnormal returns ($CAAR$), adjusted for reputational risk, were calculated by accumulating the average abnormal returns $AAR (Rep)$ over the event window [-20; +20] allowing for the estimation of share prices concerning the event date. Equation 4 represents this:

$$CAAR (Rep) (t_1, t_2) = \frac{1}{n} \sum CAR (Rep)_i(t_1, t_2) \dots\dots\dots (4)$$

The aim of the event study was to determine whether the returns at the time of the operational event were abnormal (systematically different) from what had been anticipated. The method in determination can be conducted in one of many ways. For the given performance measure (CAAR), a test statistic was calculated and equated to its distribution under the null hypothesis indicated by Equation 5 (Khortari & Warner, 2006:9):

$$H_0: CAAR = 0 \dots\dots\dots (5)$$

The null hypothesis stated that CAAR are zero, therefore, the announcement did not influence CAAR. The alternative hypothesis stated in Equation 6 indicated that CAAR are not zero, therefore, the announced event had an influence on CAAR.

$$H_1: CAAR \neq 0 \dots\dots\dots (6)$$

The null hypothesis was rejected if the test statistic surpassed the three levels of critical values (10%, 5% or 1%) (Khortari & Warner, 2006:9).

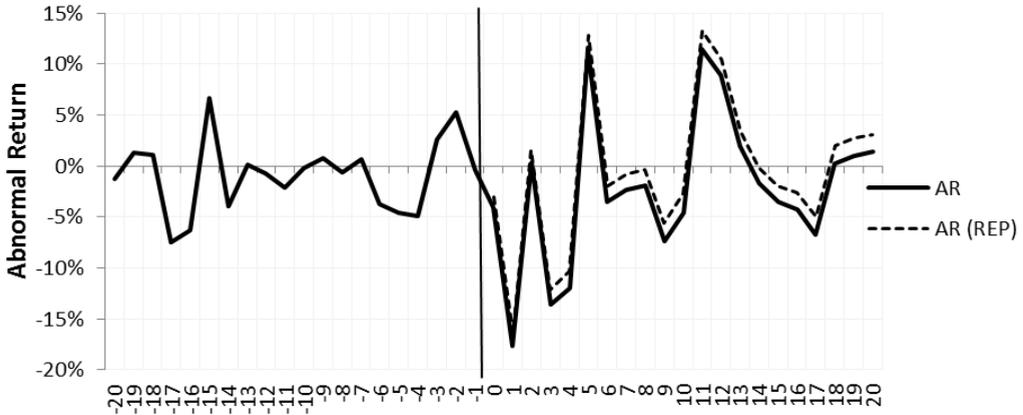
3. RESULTS AND DISCUSSION

3.1 Evidence of reputational risk for Regal Treasury Bank

The AR_{it} was adjusted for reputational risk by dividing the operational loss amount with Regal Treasury Bank’s market capitalisation. The time required for stakeholders to respond to operational loss announcements is random and may expose some market inefficiencies (Woon, 2004:9), as AR_{it} may be spread out over time and does not indicate a large spike. A distinction was made between the AAR_{it} and the $AAR (Rep)$ adjusted for reputational risk. From event day [-20] to event day [-1] the AAR_{it} remained relatively constant, whereafter a severe decline is seen after the event day zero.

The results indicated that all CAAR started to decline after the operational loss announcement on 16 May 2000. The dashed line indicates the reputational damage to the bank by adjusting the CAAR_it i.e (the negative impact operational loss announcement has on the share price and the reputation of a bank).

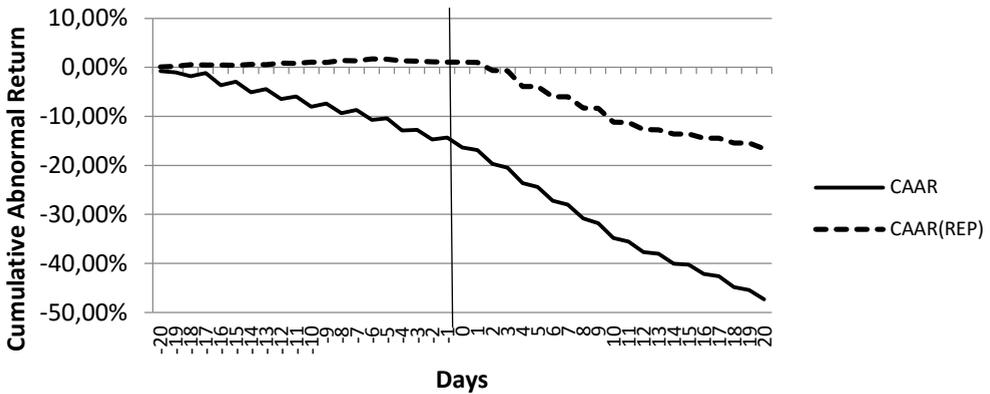
Figure 1: Abnormal returns for Regal Treasury Bank



Source: Own calculations.

Figure 2 illustrates a loss in market value greater than the announced operational loss, which further can be attributed to reputational risk (Sturm, 2013:199). Therefore, the evidence of negative CAAR values is distinctive.

Figure 2: Cumulative abnormal returns for Regal Treasury Bank.



Source: Own calculations.

Table 2: Test statistics on cumulative average abnormal returns

Test statistics	Regal Treasury	Saambou Bank	African Bank	Standard Bank
Mean CAAR	-16.61%	-32.35%	72.06%	-5.68%
Sample standard deviation	5.55%	4.58%	13.56%	2.03%
Sample size	20	20	20	20
t-test	-13.38	-31.56	23.76	-12.54
t-value at 90% (5%)	-1.73	-1.73	-1.73	-1.73
t-value at 95% (2.5%)	-2.09	-2.09	-2.09	-2.09
t-value at 99% (0.5%)	-2.86	-2.86	-2.86	-2.86

Source: Own calculations.

All CAAR values were negative within the post event window (+20 days) after the operational loss announcement on 16 May 2000 with a confidence level of 90% or more. The results are in line with the conjectural expectations, which indicate that operational loss news is withheld until the time of official disclosure where reputational losses then respond accordingly (Fiordelisi et al., 2014:114). The CAAR was statistically significant after the operational loss announcement leading to the rejection of the null hypothesis. The null hypothesis was rejected since the test statistic of (-13.38) surpassed the three levels of critical values (-1.73, -2.09 and -2.86) providing evidence of reputational damage to Regal Treasury Bank (Khortari & Warner, 2006:9).

3.2 Evidence of reputational risk for Saambou Bank (2002)

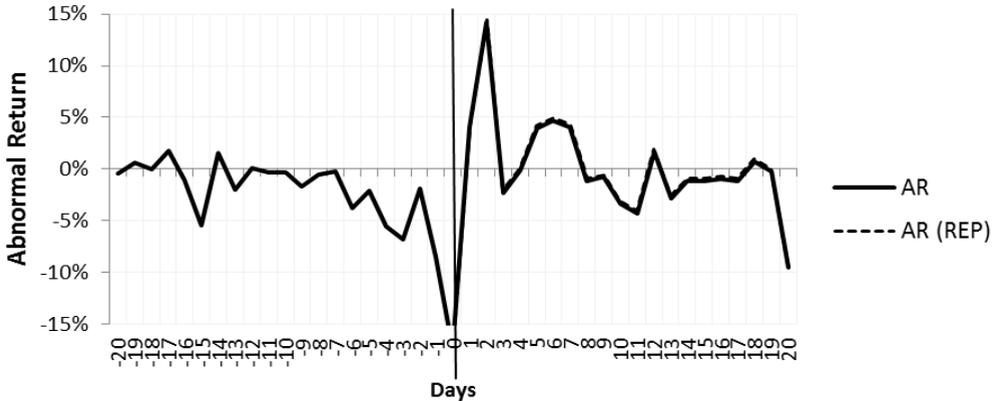
As seen in Figure 3, the abnormal returns (AR_{it}) are necessary to determine whether the performance of Saambou Bank shares varied from the market average during the event window.

The majority of the 41 day returns were negative as a mean AR_{it} of (-1.22%) was drawn. It can be assumed that Saambou Bank underperformed in the market since the majority of its AR_{it} were negative (Ord, 2011).

Few abnormal returns may be experienced based on all publicly available information and for all AR_{it} to be negative private information is needed (Marx et al., 2009:166). Therefore, the AR_{it} adjusted for reputational risk may be spread out over time and do not indicate a significant spike. A relative distinction was made between the AAR_{it} and the $AAR(Rep)$ adjusted for reputational risk. From event day [-20] to event day [-6] the AAR_{it} remained relatively constant, whereafter a severe decline is seen after day [-5]. This can be attributed to some

share overreacting (semi-strong form), since banks shares moves unambiguously, or some insider trading (strong form of market efficiency).

Figure 3: Abnormal returns for Saambou Bank

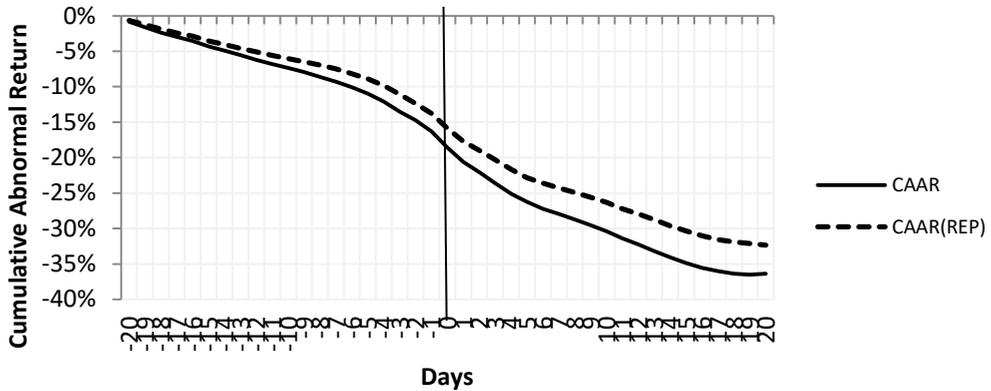


Source: Own calculations.

Figure 4 demonstrates that all *CAAR* started to decline prior to the event date of 15 October 2001. This can again be attributed to share overreacting (semi-strong form) or insider trading (strong form of market efficiency). Since the banks CEO sold off shares before the announcement date, due to the larger expected magnitude of future risk, a higher required rate of return was demanded. As a result, the expected return declined, forcing the share price downwards. In Figure 4 the dashed line indicates the reputational damage to Saambou Bank by adjusting the $CAAR_{it}$. The downward trend in the dashed line throughout the entire event window demonstrates the negative impact the operational loss announcement had on the share price and the reputation of Saambou Bank. Figure 4 demonstrates a deviation between the normal *CAAR* values and the *CAAR (Rep)* values, which further can be attributed to reputational risk (Sturm, 2013:199).

Contrary to Regal Treasury Bank, the results of Saambou Bank are not similar to the conjectural expectations, which indicate that operational loss news is withheld until the time of official disclosure (Fiordelisi *et al.*, 2014:114). Due to insider trading, reputational losses started to respond before the official announcement date. The null hypothesis was rejected as the test statistic of (-32.35) surpassed the three levels of critical values (-1.73, -2.09 and -2.86) providing evidence of reputational risk to Saambou Bank (Khortari & Warner, 2006:9).

Figure 4: Cumulative abnormal returns for Saambou Bank.



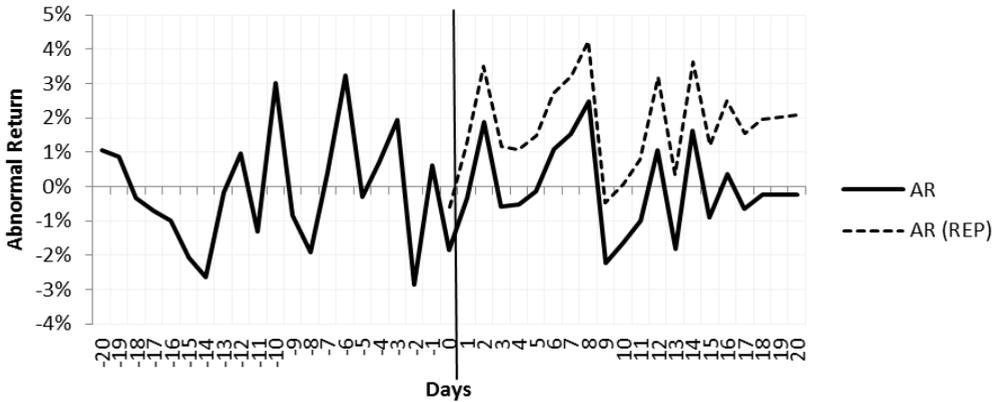
Source: Own calculations.

3.3 Evidence of reputational risk for African Bank (2013)

More than half of the AR_{it} values were negative, however none of the values surpassed (-2.5%). A large deviation between the AR_{it} and $AR_{it}(Rep)$ was not indicated. However, it may be possible that $AR_{it}(Rep)$ was not significantly affected by the operational loss announcement on 4 February 2013. Both the AAR_{it} and the $AAR(Rep)$ adjusted for reputational risk tends to be relatively volatile throughout the event window (as illustrated by Figure 5). Although a distinction can be made between the AAR_{it} and the $AAR(Rep)$, none of the daily $AAR(Rep)$ of the 41 values during the event window were negative.

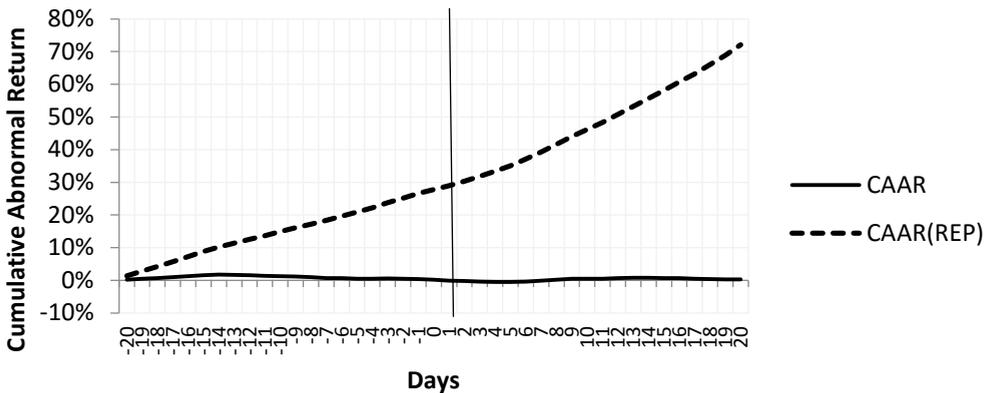
The evidence of positive $CAAR$ values is distinctive, therefore, no huge loss in the market value (Sturm, 2013:199). The results for African Bank after the announced loss performed contrary to the expectations of de Fontnouvell and Perry (2005) as the announced operational loss was much smaller than the gain in market value.

Figure 5: Abnormal returns for African Bank



Source: Own calculations.

Figure 6: Cumulative average abnormal returns for African Bank.



Source: Own calculations

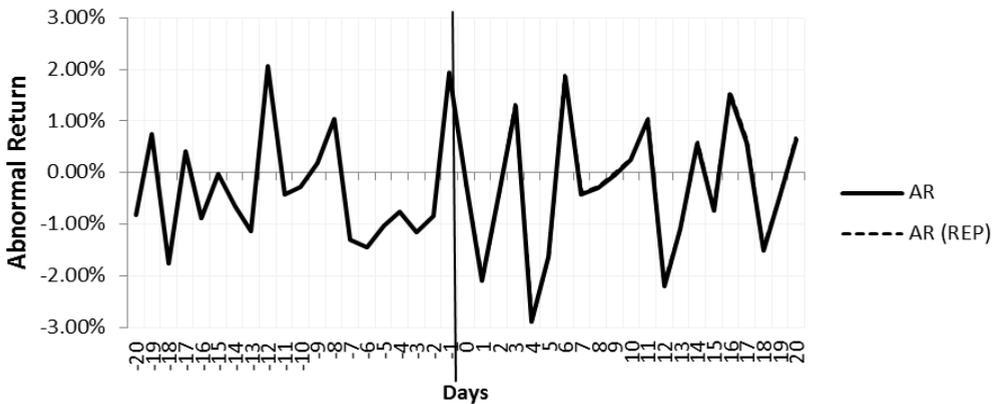
As seen in Figure 6 the CAAR (Rep) values were positive within the post event window (+20 days) after the operational loss announcement. The null hypothesis was accepted since the test statistic of (23.76) surpassed the three levels of critical values (-1.73, -2.09 and -2.86) providing evidence of no severe reputational damage to African Bank (Khortari & Warner, 2006:9). The actual knowledge of the real loss amount allowed African Bank to enter into an early agreement with the NCR. Therefore, the matter could be settled before severe reputational damage could be done. The early agreement to pay a ZAR20m fine showed that African

Bank took responsibility for their actions. This positive news after the operational loss announcement might have prevented the bank’s shares from reacting negatively.

3.4 Evidence of reputational risk for Standard Bank (2014)

The majority of Standard Bank’s returns were slightly negative with a mean AR_{it} of (-0.30%) observed. As seen in Figure 7, the AR_{it} was widely distributed, similar to the case of Saambou Bank.

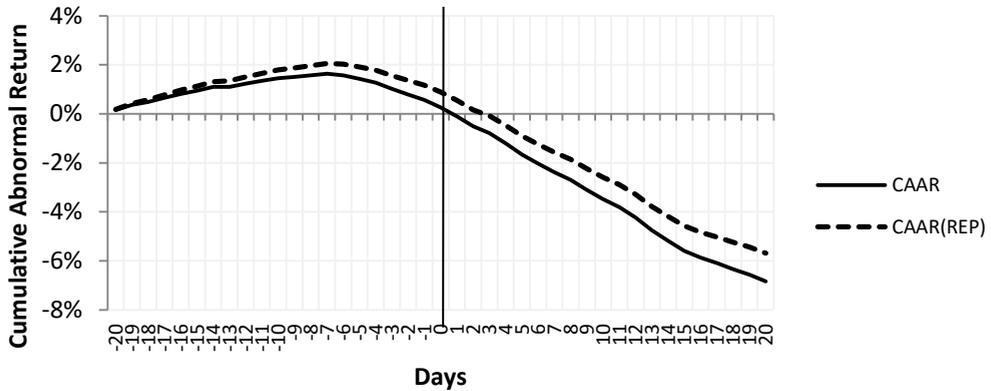
Figure 7: Abnormal returns for Standard Bank



Source: Own calculations

From event day [-20] to event day [-1] the AAR_{it} followed a downward trend and continued to decline after event day [0]. All $CAAR$ values declined tremendously after the operational loss announcement on 23 January 2014. However, the $CAAR$ values started to decline prior to the announcement day on day [-5]. This return reaction can be attributed to market overreaction (semi-strong-form). The downward trend in the dashed line demonstrates the negative effect of the operational loss announcement on the share price and the reputation of Standard Bank. Figure 8 clearly demonstrates a distinction between the normal $CAAR$ values and the $CAAR(Rep)$. These results further provide evidence of reputational risk (Sturm, 2013:199).

Figure 8: Cumulative abnormal returns for Standard Bank



Source: Own calculations.

CAAR (Rep) values were negative within the post event window (+20 days) after the operational loss announcement on 23 January 2014 at confidence intervals 99%, 95% and more. The operational loss news may have been released within the market before the time of official disclosure where reputational losses then started to decline before the announcement day (Fiordelisi *et al.*, 2014:114). This allowed for the rejection of the null hypothesis. The alternative hypothesis $H_1: CAAR \neq 0$ was accepted, which indicated that the CAAR were not zero, therefore, the announced event had an influence on the CAAR. The test statistic of -12.54 surpassed the three levels of critical values of -1.73, -2.09 and -2.86 providing evidence of reputational damage to Standard Bank (Khortari & Warner, 2006:9). This confirms that Standard Bank sustained a reputational risk after the announced loss.

4. DISCUSSION AND CONCLUSION

The primary focus of this study was to contribute further results concerning the effect of operational loss events on the reputation of four South African banks. The study primarily focused on identifying reputational risk among Regal Treasury Bank, Saambou Bank, African Bank and Standard Bank.

The following conclusions was drawn. Regal Treasury Bank experienced reputational risk as a result of the operational event due to large negative CAAR values adjusted for reputational risk and the test statistics that were found. The bank experienced a severe lost in market value and share return. The results of

Saambou bank indicated a clear deviation between the normal *CAAR* values and the *CAAR (Rep)* values which attributes to reputational risk of Saambou Bank. The null-hypothesis for Saambou Bank was accepted stating that the operational announcement had an effect on *CAAR (Rep)*. Hence, Saambou Bank experienced severe reputational risk.

The announced operational loss of African Bank was not of such severity to result in reputational damage as evidence of positive *CAAR* values were distinctive. This was not in line with the original expectations. The *CAAR* values for Standard Bank were statistically significant after the operational loss announcement which indicated that the *CAAR* were not zero. This confirms that Standard Bank sustained a reputational risk after the announced loss.

Three out of the four events analysed proved that operational event losses do have an effect on the reputation of banks as negative *CAAR* values were reported. Therefore, reputational risk is evident within the South African banking industry. The examples of Regal Treasury Bank, Saambou, Standard and African Bank are only a few among many. These banks have suffered severe reputational damage after they had announced their operational losses from operational events. It is therefore clear that controversial perceptions in banks do not originate from the decision whether or not to keep additional capital for reputational risk, but rather from the difficulty in determining how much capital needs to be kept for reputational risk.

As a reduced number of observations (four operational loss events) were used in the final sample – attributable to the sound banking industry in South Africa - additional operational events should be added as these events occur within the banking sector. This study can also be replicated in other countries with alternative banking systems to determine how different banking sectors react to reputational risk after operational loss events. This may include the effect of the contagion within these different banking sectors. Avenues for further studies may also include motives for positive stock price movements after operational loss events as in the case of African Bank.

The minimum loss amount of ZAR2.3m and maximum loss amount of ZAR300m represents the minimum and maximum thresholds for the model. Other models can be employed if a larger loss wants to be recorded. Further research could involve developing a mitigation model within the banking sector to hedge against reputational risk. Evidence suggests that the capital requirements for the sample of banks proved to underestimate the operational loss events, due to the negligence

of reputational risk. Therefore further research can include a sophisticated capital requirement calculation for reputational risk.

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