The Use of Cash Flow Statement and Accruals-Based Measures to Determine Corporate Failure: Evidence from Textile Sector of Pakistan

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ABSTRACT

This study examines the use of cash flow statements and accrual-based measurements to determine corporate failure in the Pakistan textile sector over the period 2008-2021. This study covers the ratio of cash flows from operations to current liabilities, total assets and net income, the ratio of cash flows from financing to interest expenses, the ratio of income from operations to current liabilities, total assets and net income and Cash flow has been used as an independent variable while corporate failure is used as a dependent variable. The purpose of this study is to check the reliability of cash flow measures and accrual-based measures to determine corporate failure adopting 40 listed firms on PSX from 2008 to 2021 in which 20 failed firms who delist form PSX and 20 non failed firms form textile sector of Pakistan. The study used a sample of 40 firms listed on the Pakistan Stock Exchange. This study used a logistic regression model to measure the relationship between cash flow statements, acrobatic measurements and corporate failure. The experimental results shows that cash flow measures are strong indicators and play important role in business success/failure in the case of both listed and delisted firms while accrual based have no distinguish results. So, it is concluded that cash flows are utmost important to determine business success and failure while accrual-based measure has no strong indicators for success and failure because the results are same in both contexts. The study suggests that investors, Pakistan Textile Sector

Administration and also government send early warnings to concerned parties so they use the models and take necessary corrective measures can be taken and further concerns can be raised over cash flow statements.

Keywords: Cash Flow Statement, Accruals Based Measure, Cash Flow Management, Business Failures, Business Success, Financial Reporting.

INTRODUCTION

These days Bankruptcy, default debt, failure, liquidation, risk of credit and also financially trouble things are all refer toward failure of entity (Altman, 1993). In corporate finance most searched topic is corporate failure because this is global problem now a day. Corporate failure is a situation where firms not pay the money deposited there to lenders, suppliers, shareholders, and employees. A situation when debt obligation does not meet by institutions, then it will seek an authority or involve court to restructure its debts or dispose of its assets (Altman, 1993). On other hand corporate failure is defined state in which firm bear loss due to cash flow problem without going bankrupt (Purnandam, 2008).

Bankruptcy is now a day most important risk for any business without depending on their size and nature of their operations. Besides, explicit qualities of the business, like the idea of unofficial laws and activities, may add to the company's disappointment (Charitou, Neophytou, & Charalambous, 2004, p. 465). There are many gatherings impacted by corporate failure like financial backers, moneylenders, the board, providers, workers and examiners in the event that they neglect to report disappointment in their review report.

Numerous studies have examined whether cash flow improves corporate failure predictions. It determined corporate failure, this study used cash flow and accrual-based measures because reliable models of corporate failure are needed. It enabled the concerned parties to take precautionary or

corrective measures.The objective of this study is to check business failure of companies by using cash flow-based measures and accrual-based measures. Check ratios of listed and delisted companies and find out which one determine business failure more accurately.

Cash is always considered important in everything of life because without cash nothing will happen in this world. In December 1992, the IASB released the IAS 7 Cash Flow Statement. According to the IAS 7 Cash Flow statement, firms are required to prepare a cash flow statement at the end of the accounting period. As an analytical tool, the cash flow statement is useful in determining a company's ability to pay bills. Cash flow is classified into three categories of operating activities, including the company's revenue-generating activities and other non-investment and financial activities. Operating Cash Flow is measure by all operation linked cash inflow and outflow. Second, investment activities include the acquisition and disposal of long-term assets and investments other than short-term investments. Thirdly financing activities that results in changes equity capacity, size and structure of the enterprise's debt (IASC 2000). Financing and investment Cash flow is side by side of operating cash flow as its requirement will determine the money and future investment needs.

OBJECTIVES OF STUDY

The objevtives of the study are listed below:

To examine the relationship between the ratio of cash flow from operations to current liabilities and business failure. Similarly, examine the relationship between Accrual based measures and business failure.Furthermore, to eamine the relationship between cash interest coverage and business failure.Finally, to eamine the relationship between the ratio of income from operations to total assets and business failure.Examine the relationship between the ratio of income from operations to Net income and business failure.

SIGNIFICANCE OF STUDY

Ozcan (2019), has some limitation that lead to do future research further like implementations of different model like accrual based model for prediction of corporate failure.

In this paper introduce new models for finding the prediction of business failure. Yap et al. (2010) recommended three more ratios that impact the business failure. With the help of this paper this study is adding three more ratios.

LITERATURE REVIEW

Gupta and Mahakud (2022) examined the impact of financial distress on investment-cash flow sensitivity (ICFS) of Indian firms. System generalized method of moments (GMM) used to check the effect of financial distress and ICFS of Indian firms during period from 2001 to 2009. By using Ohlson's bankruptcy method, Altman's Z-score researcher find out when financial distress increases ICFS and negative effect on corporate investment. Also find out that financially distressed firms decline in their investment which reduce firm profitability.

Setiany and Meryana (2021) checked investments, free cash flow, earning management, and interest coverage ratio affect risk of financial distress in healthy enterprises. Data of 33 companies in the category of healthy companies used. Altman Z score model technique used. The results showed that free cash flows and interest coverage ratio significant effect on the financial difficulties of healthy companies whereas investment and earnings management had no significant effect on the financial difficulties of healthy companies.

Celli (2019) examined the Z score forecast for the failure of the industrial companies in Italy over the period 1995 to 2013. The data used in this study was secondary. This study used a sample of 102 industrial companies listed on the Italian Stock Exchange. Out of 102, 51 companies didn't go to bankruptcy while the remaining 51 companies were delisted and

their shares suspended forever. This study explored whether the *Z-score* model could have predicted the bankruptcy of the organizations in the sample for up to three years previously, with a degree of precision and consistency similar to the one attained by Altman (and by many other authors) in the tests accomplished nowadays in the U.S. and Anglo-Saxon frameworks. Based on the findings, this study showed that the degree of reliability of Z-Score is relatively high and still does a great deal to predict the failure of an industrial company listed in Italy. This study also concluded that Z-Score works effectively in predicting the failure of listed firms on the Italy Stock Exchange but when it comes to Anglo Saxon companies, its credibility is a bit low.

Akande (2019) examined the effectiveness of liquidity management, which is a key strategy for companies listed on the Nigeria Stock Exchange between January 2016 and December 31, 2018. This study used a secondary source of data. The method of collecting data was randomly selected from ten companies of which 82 companies were delisted while the remaining 114 companies were listed on the Nigerian Stock Exchange. On the other hand, this study also collected the data on healthy listed companies and delisted companies during 2006-2008. For testing purposes, this study used a two-tailed test. The study concluded that there is a positive correlation between firm profitability and liquidity management. The result shows that the relationship between these two variables runs positively together. The study also suggested that proper liquidity management leads to the rapid growth of cash. This study suggests that if liquidity management is unhealthy, it can lead to business failure in developing economies.

Naguyen (2019) examined the implications of the cash flow statements of listed companies on the lending decisions of commercial banks in the context of Vietnam. The survey data were collected from 160 credit officers of commercial banks in Vietnam for short-term and long-term lending decisions, whether the cash flow statement contained complete

information or lack of information. The cash flow statement, in which the cash flow information is completely inconsistent with the profit information on the income statement, is examined. This study used the T-test to address research issues in a market considered ineffective, such as Vietnam. Research results show that information on cash flow statements influences credit officers' short-term and long-term lending decisions and the lack of information on cash flow statements affects tranquility and confidence in both positive and negative returns. Research findings also show that cash flow statements are important for credit institutions' lending decisions in Vietnam. Therefore, this study gives managers new insight into how to improve the quality of cash flow statements to meet the needs of the lenders.

Kamaluddin (2019) investigated the association of ratios of cash flows in anticipating financial distress that industrial and consumer companies faced in the case of Bursa Malaysia. This study used a secondary source of data. As a sampling, this study collected data from 2 sectors of consumers in Malaysia one was the industrial while the other was consumer companies. In order to test the level of financial distress, this study used Altman Z-score. On the basis of the results, this study concluded that there is a mixed relationship exists between financial distress and solvency ratio while there is a negative significant relationship exist between financial distress and profitability ratio, while no relationship between financial distress and efficiency ratio exist. This study suggested that one of the best and most reliable tools for predicting the financial distress of Malaysian companies is financial ratios. This indicates that the efficiency ratio had no relationship with financial distress whilst the solvency ratio has a mixed relationship with financial distress. Thus, it can be concluded that solvency and profitability cash flow ratio has a relationship with financial distress. As for the control variable, the result shows that there is no relationship between the firms' size with financial distress. This study had practical implications for the stakeholders that help them in taking decisions regarding investment.

PROBLEM STATEMENT

As we know, business failure is the most important factor that plays an important role in the modern business environment as well as in the economy of developing countries like Pakistan. Today, the Pakistan textile sector is facing major challenges in terms of business start-up, expansion and investment. Political instability and various factors such as favorable balance of payments, high exchange rate, inflation, and foreign debt burden, energy crisis, and legal issues create financial distress. Barriers, high tax duties, high interest rates create problems for firms to expand and even the numbers of firms are heading towards delisting and failure.

Stice et al. 2017 checked that many profitable firms have gone bankrupt due to cash flow problems. They spoil the business environment and discourage businesses from starting a new or investing in Pakistan. These issues have adversely affected the business environment. Even textile firms doing business in Pakistan are facing challenges in raising capital as the most important factor for investors and lenders when the business is in financial trouble. The element is the cash flow statement of the firms.

RESEARCH METHODOLOGY

Econometric Model

Econometric models are statistical models used in econometrics. An economic model describes the statistical relationship that is thought to exist between different economic/financial quantities related to a particular economic/financial trend. This study applied logistic regression to measure the matching between listed and delisted firms and check how financial ratios and accrual based measures ratios affect the cash flow statement and move the firms towards failure. For the selection of variables, this paper follows the earlier literature studies by Jantadej (2006), Rujoub et al. (1995), Shamsudin and Kamaluddin (2015), and Bhandari and Iyer (2013). An

economic model can be derived from the determining economic/financial model by allowing uncertainty, or an economic/financial model can be formulated that itself is stochastic.

On the basis of past research studies and economic relationships, the model of this study is established.

$$BF_i = \beta_0+\beta_1 (OCF/CL)_{it}+\beta_2 (OCF/NI)_{it} +\beta_3(OCF/TA)_{it}+\beta_4 (FCF/INT)_{it}+\beta_5(INC/CL)_{it} + \beta_6(INC/TA)_{it} + \beta_7(INC/NI)_{it}+\beta_8 (CF)_{it}+et$$

Where β_0= constant term

The ratio of cash flow from operations to current liabilities

It is defined as the ability of the firms to pay short-term obligations. On the basis of previous literature, these studies follows this ratio Casey & Bartczak (1985), Schmidgall et al. (1993), Murty and Misra (2004), Ryu and Jang (2004), Ibarra (2009), and Rodgers (2011). Ratio was used by (Rodgers,2013) and (Matar & obaidat, 2007) when these ratios go down more chances of corporate failure exist.

The ratio of cash flow from operations to net income

On the basis of previous literature Schmidgall et al. (1993) Ryu and Jang (2004) Jooste (2007) Ibarra (2009), this study followed this ratio. It measures the collectivity of net income, indicated by a percentage of net income converted into cash

The ratio of cash flow from operations to total assets

It is defined as the productivity of the total assets of a firm. This ratio updates participants of financial markets about the ability of assets to generate cash. (Barua and Saha, 2015).

The ratio of cash flow from financing to interest expense

It is defined as a measure of the ability of the company to pay its interest.

The ratio of income from operations to current liabilities

It is a measure of how well a company has the ability to pay off its current liabilities. This shows how much the company has the ability to earn from its operating activities in per dollar of current liabilities.

The ratio of income from operations to total assets

It measures a company's EBIT relative to its total assets. It is measured by the assets shown on the balance sheet and operating income is shown on the income statement. It is calculated dividing operating income by total assets of the firm.

The ratio of income from operations to net income

It measures how efficient a company's management is at keeping costs low from total net income.

DATA SOURCES

A set of people (arranged, well defined), events, services, component or anything who are going to check used as a population (Mugenda and Mugenda, 1999). From Pakistan stock exchange listed and delisted companies used as a population in this study. Delisting happens when company liquidates or winding up by court order which is against of PSX regulation listing 32(1) (d) and liquidation or winding up by SECP (Rashid and Abbas, 2011). The study uses period of (2008 to 2021) to determine corporate failure by different measures from statements.

This study uses a sample of 20 delisted and 20 listed firms in the textile sector of Pakistan from the period of 2008 to 2021. In this paper, 20 company's data was taken from 2008 to 2021 who delisted in this period, and 20 listed companies were taken from the Pakistan stock exchange. STATA were used to analyze this study.

This study used a Stratified sampling technique by using a sample set of 20 delisted and 20 listed firms in the textile sector of Pakistan from the period 2008 to 2021. In this study, textile sector listed and delisted companies match with each other to check the model usefulness and which measure is much better.

Methodology

In this study, Logistic regression analysis is applied to determine corporate failure by using cash flow and accrual-based measures. 20 listed firms with 20 delisted firms are comprised of 120 observations of 3 years' data. This study applied logistic regression to measure the matching between listed and delisted firms and check how financial ratios and accrual-based measures ratios affect the cash flow statement and move the firms towards failure. For the selection of variables, this paper follows the earlier literature studies by Jantadej (2006), Rujoub et al. (1995), Shamsudin and Kamaluddin (2015), and Bhandari and Iyer (2013).

RESULTS & DISCUSSION

This chapter presents the output of the research methodology. It presents and discusses the results of descriptive analysis i.e., descriptive statistics, correlation analysis, and output, and interpretation of empirical analysis which includes the Logistic Regression test performed on quantitative data. This chapter lays the foundation which is based on the conclusion and recommendations.

The given below table describes those general qualities of the data which includes mean, standard deviation, minimum and maximum values of the data collected from the targeted population of the study. Following are the results of 40 firms of textile sector listed on PSX 100 index: moreover, sample has been dividing into 20 non-failed firms and 20 failed firms. Now, first take a discussion of listed firms:

Table 1-Descriptive Statistics of - Non-Failed Firms

Variable	Obs	Mean	Std. Dev.	Min	Max
Bf	60	.683	.469	0	1
Ocf/ni	60	8.116	15.916	0	83.91
Ocf/ta	60	.074	.257	-.48	1.45

Cff/ie	60	-1.577	15.348	-82.69	41.95
Oinc/ta	60	7.544	16.083	-.01	83.91
Oinc/ni	60	3.418	8.761	-.01	57.15
Oinc/cl	60	.276	.648	-.48	4.1
Ocf/cl	60	.285	1.399	-4.77	8.45
Cashflow	60	.183	.39	0	1

Source: Author's Calculation

There is total eight independent variables and one dependent dichotomous variable business failure; business success considers 1 otherwise- failure it considers to be zero. There are total 60 observations of the listed firms. BF average value shows that only 68% businesses have success ratio and rest of all are failure. Standard deviation is 0.469 which is very high. If we get the value of coefficient of variance by dividing SD on mean value, it gives 70%, which indicates that business success ratio is more exposed towards greater risk. Likewise operating cash flow to net income ratio indicated percentage of net income converted into cash. This is on average 8.11 percent with high risk in term of SD 15.916%. While coefficient of variance is greater than 1 indicating high risk and less portion of net income is converting into cash. Similarly, operating cash flow to total assets indicating about the ability of assets to generating cash, on average is 0.074% while its SD is 0.257. Coefficient of variance is above one which indicating high risk, in other words there is less capacity of the firms to convert its income into assets generating resources.

Moreover, financing cash flow to interest expense indicates ability of firms to pay its interest on average which is -1.577 percent with SD of 15.348 and coefficient of variance is 8%. It indicates very low capacity of firm to pay off its interest obligation.

Besides, OINC/TA measure the company EBIT relative to its total assets, which is on average; 7.544 % with SD 16.083 and coefficient of variance is 2%; indicating very low capacity of firm to convert its operating income into total assets. Similarly, OINC/NI; measures how efficient a company's management is at keeping costs low while net income, on average it is 3.418% with SD 8.761and coefficient of variance is 3%; indicating very low capacity of firm at keeping costs low.

Likewise, OINC/CL measures how efficient a company's ability is to pay off its current liabilities; on average it is 0.276% with SD 0.648 and coefficient of variance is 2%; indicating very low capacity of firm to pay off its current liabilities. Furthermore, OCF/CL measures how efficient a company's ability is to pay off its current liabilities as compared to generating cash flow from operations on average it is 0.285% with SD 1.399 and coefficient of variance is 5%. This indicates very low capacity of firm producing operating cash flow to pay off its current liabilities.

Table 2-Pairwise Correlations

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
(1) bf	1								
(2) ocf/ni	0.19*	1							
(3) ocf/ta	0.28*	-0.11*	1						
(4) cff/ie	-0.17*	-0.18	0.22	1					
(5) oinc/ta	0.08*	0.29	-0.08*	0.04*	1				
(6) oinc/ni	-0.02*	0.39	-0.003*	0.06*	0.23*	1			
(7) oinc/cl	0.15*	0.03	0.15*	0.25*	-0.17*	-0.02*	1		
(8) ocf/cl	0.17*	-0.04*	0.28*	0.57*	-0.05*	-0.02*	0.76*	1	
(9) cashflow	-0.14*	-0.09*	-0.09*	-0.06	0.01*	-0.05	-0.20*	-0.095	1

**** p<0.01, ** p<0.05, * p<0.1*

Source: Author's Calculation

The correlation matrix of all the variables is shown in the above table. The table shows the pairwise correlation among all the variables under discussion. The correlation of the variable itself is always 1. The correlation among the variables of study has mix results of positive and negative. Likewise, correlation among BF and OCF/NI is significant and has positive relationship, it means as this ratio will increase business success will increase, similarly OCF/TA has significant and positive relationship, it means this ratio will increase business success will increase. However, CFF/IE has negative and significant relationship indicate as interest expense ratio will increase business become failure due to expensive cost of debt. Similarly, OINC/TA has positive and significant relationship; it means this ratio will increase; business success will also increase. On contrary, OINC/NI has negative and significant relationship; indicating as ratio will increase, business will also become failure. Besides, OINC/CL and BF have significant and positive relationship; as this ratio will also increase business success will also increase.

In the last, cash flow and BF have negative relationship but significant; indicating as much cash holding will decreases, business failure also increase.

Table 3-Logistic regression of Listed Firms

Bf	**Coef.**	**St.Err.**	**t-value**	**p-value**	**[95% Conf**	**Interval]**	**Sig**
Ocf/ni	1.948	1.109	1.76	.079	-.227	4.122	*
Ocf/ta	381.195	208.973	1.82	.068	-28.384	790.775	*
Cff/ie	.847	.479	1.77	.077	-1.787	.093	*
Oinc/ta	.027	.047	0.59	.557	-.064	.119	*
Oinc/ni	-2.468	1.397	-1.77	.077	-5.206	.27	*
Oinc/cl	10.637	5.509	1.93	.053	-.159	21.434	*
Ocf/cl	7.946	4.363	1.82	.069	-16.498	.605	*
cashflow	-.056	1.817	-0.03	.975	-3.618	3.506	
Constant	.894	1.172	0.76	.446	-1.404	3.192	
Mean			0.683	SD dependent		0.469	

dependent var		var	
Pseudo r-squared	0.772	Number of obs	60
Chi-square	57.872	Prob > chi2	0.000
Akaike crit. (AIC)	35.048	Bayesian crit. (BIC)	53.897

**** p<.01, ** p<.05, * p<.1*

Source: Author's Calculations

The results of the model showed that overall model is significance. R^2 in entities capture 77 %. It explains the variation in the depended variable due to change in the independent variables. For this study, it is clear that independent variable cash flows and operating income factors explain about business success and failure. Furthermore, the overall model is fit on the basis of F-statistic which has probability that chi square is less than 0.001; indicating significance of model up to 99 percent.

All the coefficients of model are indicating different pictures with their value and sign in results. For instance, OCF/NI is statically significant and has positive impact on business success. It shows that if one unit changes in this ratio will also increase business success up to 1.948 percent (Maklan, Knox, & Ryals, 2005). Similarly, OCF/TA has positive and significant impact on business success. It shows that if one unit changes in this ratio will increase, business success increase up to 381 percent. (Situm, 2013). Unlikely, CFF/Interest expense ratio has positive impact on business success. It shows that if one unit increases in this ratio, business success increase up to 84.7 percent (Karas & Režňáková, 2020).

Though, OINC/TA has positive and significant impact on business success. It shows that if one unit change in this ratio will also increase business success up to 27 percent; a similar result conjectured by (Marivate, 2014). However, OINC/NI ratio has negative impact on business success, if one unit increases in this ratio business failure is up to -2.468 percent (Ooghe, Spaenjers, & Vandermoere, 2009).

Alternatively, OINC/CL has positive and significant impact on business success. It shows that if one unit changes in this ratio, there will also be an increase in business success which is up to 10.637 percent (Bhandari, Showers, & Johnson-Snyder, 2019). Furthermore, OCF/CL has positive impact on business success. It shows that if one unit increases in this ratio business success is up to 7.946 percent in the last cash flow has no significant impact on business failure, because net cash flow or cash holding represents the liquidity of the business (Kim & Upneja, 2021). Business success and failure based upon operational and financial leverage of the business. Individual net cash holding does not contribute in any success and failure paradigm (Cho, 1994).

Descriptive Statistics of Failed Firms

The given below table describes those general qualities of the data which includes mean, standard deviation, minimum and maximum values of the data which is collected from the target population of the study. Following are the results of de-listed firms in PSX 100 index: moreover, sample has been dividing into listed firms and De-listed firms. Now, second results discussion is about de-listed firms:

Table 4- Descriptive Statistics- Delisted Firm

Variable	Obs	Mean	Std. Dev.	Min	Max
Bf	60	.683	.469	0	1
Ocf/ni	60	4.335	10.954	-.21	58.52
Ocf/ta	60	2.356	7.785	-.21	58.52
Cff/ie	60	.035	8.512	-53.2	20.33
Oinc/ta	60	7.789	16.013	-1.15	83.91
Oinc/ni	60	3.255	8.817	-2.8	57.15
Oinc/cl	60	.252	.421	-.35	2.08
Ocf/cl	60	.164	.56	-.72	3.02
cashflow	60	.217	.415	0	1

Table: 4- Source: Author's Calculation

The listed firms BF average value shows 68% businesses have success ratio and rest of all failure. Standard deviation in 0.469 which is very high if we get the value of coefficient of variance by dividing SD on mean value it comes 70%. Which indicating that business success ratios are more expose towards greater risk. Likewise operating cash flow to net income ratio indicating that how much net income converted into cash which is on average 4.335 percent with high risk in term of SD 10.954%. While coefficient of variance is greater than 1 indicating high risk and less portion of net income is converting into cash. Similarly, operating cash flow to total assets indicates the ability of assets to generate cash which is on average 2.356% while its SD is 7.785, coefficient of variance is above one indicates high risk. In other words, there is less capacity of the firms to convert its income into assets generating resources. Moreover, cash flow from financing to interest expense indicates the ability of firms to pay its interest on average which is 0.035 percent with SD of 8.512 and coefficient of variance is 11%. This is indicating very low capacity of firm to pay off its interest obligation.

Besides, OINC/TA measures the company EBIT relative to its total assets, which is on average; 7.789% with SD 16.013 and coefficient of variance is 5%; indicating very low capacity of firm to convert its operating income into total assets. Similarly, OINC/NI; measured how efficient a company's management is at keeping costs low while net income, on average it is 3.255% with SD 8.817 and coefficient of variance is 1%; indicating very low capacity of firm at keeping costs low. Likewise, OINC/CL measures how efficient a company's ability to pay off its current liabilities; on average it is 0.252% with SD 0.421and coefficient of variance is 1 %; indicating very low capacity of firm to pay off its current liabilities. Furthermore, OCF/CL measures how efficient is a company's ability to pay off its current liabilities as compared to generating cash flow from operations.; on average it is 0.217% with SD 0.415and coefficient of variance is 2%; indicating very low

capacity of firm producing operating cash flow to pay off its current liabilities.

Table 5- Pairwise Correlations-De-Listed Firms

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
(1) bf	1								
(2) ocf/ni	0.17*	1							
(3) ocf/ta	-0.19*	-0.06	1						
(4) cff/ie	-0.13*	0.02	0.007	1					
(5) oinc/ta	0.07*	0.51*	0.08	-0.009	1				
(6) oinc/ni	-0.004*	0.62*	-0.05	0.06	0.24*	1			
(7) oinc/cl	0.19*	-0.03	-0.16	0.07	-0.23*	-0.03	1		
(8) ocf/cl	0.240*	0.04	-0.04	-0.04	-0.04	-0.004	0.70*	1	
(9) cashflow	-0.16*	-0.09	-0.06	-0.03	0.002	-0.07	-0.07	-0.17	1

**** p<0.01, ** p<0.05, * p<0.1*

Table: V- Source: Author own Developed

The correlation matrix of all the variables is shown in the above table. The table shows the pairwise correlation among all the variables under discussion. The correlation of the variable itself is always 1. The correlation among the variables of study has mix results of positive and negative. Likewise, correlation among BF and OCF/NI is significant and positive, it means as this ratio will increase business success will also increase. Unlikely, OCF/TA has significant and negative relationship, it means if this ratio will increase, business will also become failure. However, CFF/IE has

negative and significant relationship indicating as interest expense ratio will increase, business will also become failure due to expensive cost of debt; similarly, OINC/TA has positive and significant relationship, it means if this ratio will increase, business success will also increase.

On contrary, OINC/NI has negative and significant relationship indicating if ratio will increase, business will also move toward failure. Besides, OINC/CL and BF have significant and positive relationship; if this ratio will increase, business success will increase. In the last, cash flow and BF have negative relationship but significant; indicating if cash holding decreases, business failure will also increase.

Table 6- Logistic regression

Bf	**Coef.**	**St.Err.**	**t-value**	**p-value**	**[95% Conf**	**Interval]**	**Sig**
Ocf/ni	-.667	.309	-2.16	.031	-1.273	-.061	**
Ocf/ta	-.042	.051	-0.84	.402	-.057	.141	*
Cff/ie	-.956	.443	-2.16	.031	.087	1.824	**
Oinc/ta	.074	.054	1.36	.174	-.033	.181	*
Oinc/ni	.496	.284	1.75	.081	-.06	1.052	*
Oinc/cl	3.688	2.165	1.70	.088	-.555	7.932	*
Ocf/cl	-7.273	3.93	-1.85	.064	-.43	14.976	*
Cashflow	-2.174	1.412	-1.54	.124	-4.941	.594	
Constant	.077	.897	0.09	.931	-1.681	1.836	

Mean dependent var	0.650	SD dependent var	0.483
Pseudo r-squared	0.474	Number of obs	40
Chi-square	24.569	Prob > chi2	0.002
Akaike crit. (AIC)	45.227	Bayesian crit. (BIC)	60.427

**** p<.01, ** p<.05, * p<.1*

When the dependent variable is dichotomous, use logistic regression (binary) (Wright, 1995). Logistic regression is a prediction analysis. Logistic

regression explains the relationship between a binary dependent variable and nominal, ordinal, interval, or ratio-level independent variables (Kleinbaum, Dietz, Gail, Klein, & Klein, 2002). Logit (pi) is the dependent or response variable in this logistic regression equation.

The result of the model shows that overall model is significance. R^2 with in entities capture 47 %. It explains the variation in the dependent variable which is due to change in the independent variables. For this study, it is clear that independent variable cash flows and operating income factors explain about business success and failure. Furthermore, the overall model is fit on the basis of F-statistic which has probability that chi square is less than 0.002; indicating significance of model up to 99 percent.

All the coefficients of model are indicating different pictures with their value and sign in results. For instance, OCF/NI is statically significant and has negative impact on business failure, if one unit change in this ratio will increase, business failure ratio will also increase up to -.667 percent (Maklan, Knox, & Ryals, 2005). Similarly, OCF/TA has negative and significant impact on business failure. It shows that if one unit change in this ratio will also increase, business failure up to -0.042 percent (Situm, 2013). Unlikely CFF/Interest expense ratio has significant and negative impact on business failure, if one unit increases in this ratio, business failure will also increase up to -0.956 percent (Karas & Režňáková, 2020).

OINC/TA has direct and significant impact on business failure. It shows that if one unit change in this, ratio will also increase business failure which is up to .074 percent; a similar result conjectured by (Marivate, 2014). However, OINC/NI ratio has negative impact on business failure, if one unit increases in this ratio, business failure will also increase up to 0.496 percent (Ooghe, Spaenjers, & Vandermoere, 2009).

Alternatively, OINC/CL has direct and significant impact on business failure, if one unit change in this ratio will increase, business failure will also increase up to 3.688 percent (Bhandari, Showers, & Johnson-Snyder, 2019). Furthermore, OCF/CL has negative impact on business failure, if one unit

increases in this ratio, business failure will also decrease up to -7.273 percent. In the last cash flow has no significant impact on business failure, because net cash flow or cash holding represents the liquidity of the business (Kim & Upneja, 2021). Business success and failure are based upon operational and financial leverage of the business. Individual net cash holding does not contribute in any success and failure paradigm (Cho, 1994).

CONCLUSIOIN

This chapter consists of conclusion based on empirical analysis and some recommendations and policy implications. The purpose of this study is to check the reliability of cash flow measures and accrual-based measures to determine corporate failure adopting 40 listed firms on PSX from 2008 to 2021 in which 20 failed firms who delist form PSX and 20 non failed firms form textile sector of Pakistan. Logistic regression model used for this study is to check the corporate failure.

In this paper introduce new models for finding the prediction of business failure. Yap et al. (2010) recommended three more ratios that impact the business failure. With the help of this paper this study is adding three more ratios. This study check comparison by two ways cash flow ratios and accrual-based ratios.

The results of the model conjecturing; overall model is significance. R^2 in entities capture 77 % in case of listed firms while R^2 with in entities capture 47 % in case of delisted firms. It explains the variation in the depended variable due to change in the independent variables. For this study, it is clear that independent variable cash flows and operating income factors explain about business success and failure. Furthermore, the overall model is fit on the basis of F-statistic which has probability of that chi square is less than 0.001 in case of listed firms and 0.002 in case of delisted firms. It indicates that significance of model is up to 99 percent.

In case of listed firms, the coefficients of model are indicating different picture with their value and sign. For instance, the ratio of operating

cash flow to net income, the ratio of operating cash flow to total asset, the ratio of operating income to total assets, the ratio of cash flow from financing activities to interest expense the ratio of operating cash flow to current liabilities and the ratio of operating income to current liabilities have positive and significant impact on business success. The ratio of operating income to net income has negative impact on business success.

In case of delisted firms, the coefficients of model are indicating different picture with their value and sign. For instance, the ratio of operating cash flow to net income, the ratio of operating cash flow to total asset, the ratio of cash flow from financing activities to interest expense, the ratio of operating cash flow to current liabilities, and the ratio of operating income to net income has negative impact on business success which results in business failure. While the ratio of operating income to total assets and the ratio of operating income to current liabilities have positive and significant impact on business failure.

In the last, cash flow that used as dichotomous variable comprises of positive operating, financing and investing cash flows have no significant impact on business failure, because net cash flow or cash holding represents the liquidity of the business. Business success and failure are based upon operational and financial leverage of the business. Individual net cash holding does not contribute in any success and failure paradigm in both listed and delisted firms.

The study concludes that measure of cash flows are strong indicators that show the existence of business success/failure. If there is increase in the ratio of Cash flows, then it will move the firm towards business success and downfall. The result of these ratios leads the firms towards liquidation/ bankruptcy of the business. So, from the above results it is concluded that cash flows are utmost important to determine business success and failure while accrual-based measure has no strong indicators for success and failure because the results are same in both contexts.

In business competition these days, companies need to reduce cash flow volatility, because if cash flow volatility is high firm survival is hard. Volatility of cash flow is inversely link with value of firms. The study suggests that investors, Pakistan Textile Sector Administration and also government send early warnings to concerned parties so they use the models and take necessary corrective measures and further concerns can be raised over cash flow statements. Firms need to improve accounts receivable for as early as possible recovery for prevention from bankruptcy. Lack of data availability is limitation. Due to shortage of data accuracy, in results being ambiguous is also limitation. This data included only the textile sector which is not sufficient and there is a need to add more sectors.

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