Presentation

EFFECT OF CREDIT RATING ON FIRM PERFORMANCE AND STOCK RETURNS: EVIDENCE FROM KSE LISTED FIRMS.

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Introduction

- A firm's credit rating reflects a rating agency's opinion of an entity's overall creditworthiness and its capacity to satisfy its financial obligations.
- provide a yardstick to the market participants and stakeholders

Rating Methodology

- Credit ratings are assessed on the basis of previously carried out financial transactions and recent assets and liabilities.
- There are two main credit agencies in Pakistan PACRA and JCR-VIS Credit Rating Co. Ltd. (JCR-VIS). They converted Rating into seven groups for the purpose of analysis, which ranges from AAA (highest) to D (lowest credit quality).

Significance of the Study

Credit ratings plays important role in financial investment decisions.

This current study contribute in literature by examining the significance of credit ratings in determining the financial performance, stock market performance and also testing the impact of corporate governance variables on credit ratings for both financial and nonfinancial sector in Pakistan

Theoretical Back ground

- Agency theory
- Wealth Redistribution Hypothesis
- Information Content Hypothesis
- Signaling Theory

Theoretical Background

- Agency theory

Good corporate governance practices leads to better credit ratings.

- Wealth Redistribution Hypothesis

WRH indicating rating upgrades are followed bond and stock return downgrades(Zaima and McCarthy (1998))

A greater variance of investments and cash

flows might lead to a lower credit rating as explained by WRH.

Theoretical Background

- Information content hypothesis

CRAs' have capability to overcome the problem with information asymmetry because CRAs have additional inside information about probability of default. CR provides true financial condition of firms.

- Signaling theory

The information asymmetry between shareholders and managers can be reduced by providing reliable financial reporting. Thus change in credit ratings is signal as financial outlook of firm to external parties.

Objectives

- To examine the determinants of credit ratings in Pakistan
- To examine the impact of credit ratings on firm financial performance after controlling firm specific, corporate governance and business conditions
- To examine the impact of credit ratings on stock returns after controlling firm specific, corporate governance and business conditions.

Research Gap

- As in case of Pakistan practice of credit rating is at initial stages and research on credit ratings and its significance is yet to be explored. No specific study has been done in Pakistan regarding to credit rating. This paper will fill the gap in academic research as combination of entity rating , firm performance ,stock return and governance, which has not been studied before in Pakistan.

Literature Review

Author(s)	Variables	Findings
Altman(1968)	Working capital/Ta, RE/Ta, EBIT/TA,	Significant in predicting default & bankruptcy
Horrigan(1966)	Accounting based data	TA significant impact on bond rating
Ederington (1985)	Interest ratios, coverage ratios, LT debt/ capital	Significant impact on firm ratings
Adam & Hardwick (2003)	profitability, growth, leverage, firm size business activity	Profitability has positive & significant impact on ratings
Al-Khawaldah (2012)	Profitability, leverage, capital intensity, Tobin's Q, audit quality	Tobin's Q, size are highly associated with credit ratings
Agerwal & knoeber(1996)	Shareholders right, block holders, outsider directors etc	Reduce agency problem and highly impact the CR
Bhoraj and Sengupta (2003)	Institutional ownership, outside directors	Increase the credit ratings of firm
Ashbaugh- Skaife *et al.* (2006)	Financial ratios, CG attributes	Significant in predicting CR
Alali *et al.* (2012)	Corporate governance Score	stronger corporate governance leads better CR
Shaheen and Nishat (2005)	Corporate governance variables	Positive relationship with firm value

Literature Review contd..

Author(s)	Variables	Findings
Singal (2013)	Tobin's Q , CR	CR as alternative measure of firm performance
De and Kale (1993)	-	Financially strong firm high return and good ratings
Garg *et al.* (2004)	Growth ratios, profitability ratios,	Growth has positive impact on performance and credit worthiness
Pinches and Singleton (1978)	-	CR changes have significant impact on stock returns
Holthausen *et al* (1985)	Stock price	Low credit rating has negative influence on stock return
Poon and Chan (2008)	Profitability, leverage, size	Financial ratios are important determinants of CR,
Chen, Roll and Ross (1986)	Industrial production, inflation oil prices, interest rate	Significant impact on SR
Apergis, Artikis and Eleftheriou (2011)	GDP), CPI, liquidity, short-term interest rate, trade deficit	significant in determining Stock returns
Ahmed *et al.* (2013)	Leverage, profitability, stock prices	Stock return and leverage effect each other
Abdul and Suleman (2012)	GDP, inflation, money supply, interest rate, etc	Significantly related with stock return in Pakistan.

Methodology

Factors affecting Credit Ratings

Theoretical and empirical literature suggest that Firm specific factors, Corporate governance attributes and Business Conditions affect the credit rating as given by following equations:

1. Determinants of Credit Ratings

Based on the theoretical and empirical literature firm specific variables and corporate governance variables determine the credit rating of the firm(Altman and Rijken (2004), Ashbaugh-Skaife et al. (2006) Al-Khawaldeh,(2012) and Alali et al.(2012) :

$$CR_{it} = \alpha_0 + \alpha_1 LEV_{it} + \alpha_2 Size_{it} + \alpha_3 ROA_{it} + \alpha_4 TQ_{it} + \alpha_5 CAP\_INT_{it} + \alpha_6 LOSS_{it} + \alpha_7 TYP\_SEC_{it} + \alpha_8 BS_{it} + \alpha_9 BH_{it} + \alpha_{10} DUAL_{it} + \alpha_{11} SHT_{it} + \alpha_{12} AQ_{it} + \varepsilon_{it}$$

Methodology

2.Impact of Credit Rating on Firm Performance

To examined the impact of credit ratings following equation is developed on basis of prior studies(Holthausen and Leftwich (1986), Pottier and Sommer (1999), Graham and Harvey (2001), Ashbaugh-Skaife, (2006), Bissoondoyal-Bheenick *et al.* (2011), Alali *et al*.(2012) and Singal (2013):

$$Perf = \beta_{0} + \beta_{1}CR + \sum_i \beta_i(\textit{firm specific variables}) + \sum_j \beta_j(\textit{corporate governance}) + \sum_k \beta_k(\textit{economic conditions}) + \varepsilon_t$$

Methodology

3. Impact of Credit rating on Stock Return.

In this Model the effect of credit rating along with the firm specific variables, corporate governance variables and macroeconomic variables on stock return is determined in the spirit of Chen, Roll & Ross (1986).

$$SR=\alpha_0+\alpha_1 CR+\sum_i \alpha_i(\text{firm specific variables})+\sum_j \alpha_j(\text{corporate governance})+\sum_k \alpha_k(\text{economic conditions})+\varepsilon t$$

Data: Credit Rating

- The ratings considered in the current study are long term ratings keeping in mind the long term stabilization of a firm. For the dependent variable , multiple ratings are converted into three categories of credit ratings (Adams, Burton, & Hardwick, 2003)as follow:
- **Rating category 1: AAA, AA, A**
- **Rating category 2: BBB, BB, B**
- **Rating category 3: CCC, CC, C, D**

Firm Specific factors

Variables	Effectiveness
leverage	•High levered firm have high probability default risk hence lower credit ratings.
Profitability, size	•Higher profitable firms and larger firms face lower risk, and thus it is expected to have higher credit ratings
Growth opportunities	•higher growth may signal to investors to exhibit high performance which should result in higher future profits
Capital intensity	Asset structure of firm influence the credit ratings.
Loss Propensity	•when a firm incurs operating losses, the chances of paying off creditors could diminish thus credit ratings are lower
Share price	Firm with low credit ratings tends to have lower stock price because of higher uncertainty about future earnings
Liquidity	High liquid firms have lower risk and firm have lower return on their stock.

Corporate Governance Attributes

Variables	Effectiveness
Board Size	•larger board implies members with diverse background and viewpoints, which is helpful for the quality of decisions
Block holders	•influence over management to secure benefits that are unfavorable to bondholders •block holders increase the monitoring power which encourage firm to invest in profitable projects
Shareholder's Right	Use their voting power and encourage manage to undertake risky project and increase in default risk.
CEO Duality	•Holding dual position CEO can influence the credit ratings of firm. •CEO duality create strong and explicit leadership.
Audit quality	• as not the part of firm, performs an audit in accordance with specific laws or rules on the financial statements. • plays an important role in improving the credibility of financial information as well as decision making.

Business Conditions

Variables	Effectiveness
GDP	GDP improves stock market performance and business conditions that leads to higher stock returns
Inflation	high inflation leads rigid monetary and fiscal policies which causes decline in equity return .
Exchange rate	when domestic currency depreciates, goods become cheaper for foreign market which ultimately increases the exports and equity return of exporting firms.

Data

- Data on 63 firms were taken from financial and nonfinancial sector of Pakistan . The data for all firm specific variables and macroeconomic variables is collected from analysis of balance sheet, companies' annual reports, monthly statistic bulletin, State bank of Pakistan, and credit rating data has been taken from PACRA over the period of 2007-2011.

Estimation Technique

- Probit Model

For estimating the determinant of CR Probit model is used

- Panel Data Estimation Technique

For estimating the performance model and SR model Panel Data Estimation Technique with common effect, fixed and random effect models are estimated.

- Common effect and fixed effect model are compared by F-test that supports the fixed effect model
- Hausman test is used to compare fixed effect and random effect and results suggest that fixed effect model best fits the data.
- Here only fixed effect results are reported.

Hypothesis

1. All else equal firm characteristics, corporate governance have significant role in determination of credit ratings.
2. All else equal firm characteristics, corporate governance and business conditions have significant role in determination of firm performance and stock return.

Results:
Determinants of Credit Ratings

Variables	Model 1	Model 2	Model 3
Leverage	-0.14** (-1.80)		-0.12** (-1.83)
Profitability	0.10*** (2.40)		0.08** (1.84)
Firm size	0.52** (1.80)		0.41** (1.93)
Growth opportunities	1.20** (1.22)		1.15 (1.14)
Capital intensity	1.21 (0.27)		1.26 (0.24)
Loss propensity	-0.93** (-1.75)		-0.55** (-1.80)
Industry type	0.76 (1.49)		-0.14 (-1.85)
Audit quality		0.015 (0.002)	0.007 (0.001)
CEO duality		0.99*** (2.20)	1.05*** (1.86)
Block holders		-0.57*** (-2.52)	-0.61*** (-2.43)
Board Size		1.44*** (2.35)	1.28** (1.73)
Shareholders right		0.91** (1.85)	0.99** (1.79)
Pseudo R^2	0.31	0.32	0.36

Impact of credit rating on firm Performance

	Model 1	Model 2
Variables	**ROA**	**Tobin's Q**
Credit Ratings	1.21*** (2.45)	0.12** (1.99)
leverage	-0.42 (2.10)	0.89*** (4.15)
size	0.87 (1.56)	-0.09*** (-3.45)
DPS	0.05 (0.78)	0.02 (1.13)
Loss	-0.30*** (-2.01)	-0.05*** (-2.05)
Share price	0.04 (1.89)	0.06)* (2.23)
CEO duality	0.43*** (2.79)	0.06 (1.67)
Board size	2.87*** (2.56)	0.09** (2.48)
Block holders	0.84** (1.23)	0.08*** (2.57)
GDP	0.45 (0.23)	0.055 (1.10)
R-Squared	0.25	0.32
J-stat	1.66	1.41
Hausman	1.22	0.75

Impact of CR on Stock Return

Variables	Model 1	Model 2	Model 3	Model 4
Credit Ratings	0.57** (1.89)	0.53* (1.80)	0.11** (2.01)	0.54** (2.10)
Leverage	-0.44 (-0.95)			-0.84** (-1.76)
Size	0.16*** (2.83)			0.43 (0.18)
Profitability (ROA)	0.013*** (2.77)			0.05 (1.51)
Growth opportunities	0.51 (0.01)			-1.65*** (-2.11)
Liquidity	-0.12 (-0.54)			-0.19*** (-2.61)
Dividend per share	0.08*** (2.63)			0.06** (1.04)
CEO duality		0.32 (0.71)		0.10 (0.55)
Board size		0.34 (0.81)		0.03 (0.12)
Shareholder’s rights		0.31 (1.05)		0.05 (1.71)
Audit quality		0.06 (0.33)		0.01 (0.07)
Block holders		-0.11 (-0.83)		-0.08 (-0.73)
Exchange rate			0.18*** (5.45)	0.17*** (5.63)
Inflation			-0.13*** (-5.11)***	-0.23*** (-3.55)
GDP			0.59*** (6.99)	0.71*** (4.32)
R-Squared	0.13	0.10	0.18	0.25

Conclusion

- Evaluation of firm default risk
- Rate firms on regular basis.
- Credit rating changes can reduce the agency cost problem and also mitigating information asymmetry between managers and creditors.
- firms credit ratings in Pakistan are appear to be mainly predicted by size, profitability, growth opportunities, leverage, CEO duality, board size and number of block holders.
- Credit ratings have significant influence on firm performance measured by ROA and Tobin’s Q
- CR along with firm specific factors and corporate governance and business conditions has significantly affect the stock returns in Pakistan.
- facilitate debt holders, investors, shareholders and other stake holders rated by PACRA.

Policy Implication and limitation

- Firms which are listed in Karachi Stock Exchange rate their credibility on regular basis from PACRA and other rating agencies like JCR-VIS, as it improves the reputation, status and creditworthiness which eventually attract the potential investors.
- Regulatory authorities such as SECP can consider to ask firms to give priority to credit rating.
- Due to non-availability of data this study uses only 63 firms.
- Research can be done on impact of credit rating on leverage and dividend and also relationship between interest rate and credit rating can be done in future.

Thank You