

Analyzing Kuwaiti Banks Credit Ratings: Are They Overrated?

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Abstract

After the 2008 global financial crisis, credit rating agencies were criticized for not doing their job properly resulting in billions of dollars in losses for investors that relied on these agencies ratings. The three main rating agencies (CRA's) Standard & Poor's, Fitch, and Moody's, assigned high credit ratings for companies such as Lehman Brothers, AIG, and many others which proved to be incorrect. This study examines the credit rating for Kuwaiti banks over the period spanning from 2013 to 2017 and compare them to the calculated rating based on Altman's Z-score model. The study also examines the difference in credit rating between Islamic and conventional banks. Results obtained from this study showed that Kuwaiti banks, under Altman's Z-score model, were overrated and are vulnerable to any short-term financial shocks. The study also showed that Fitch gave a higher rating to Kuwaiti banks than the other rating agencies, which explains their domination over the credit rating market of Kuwaiti banks. In addition, the outcome of the study showed that Islamic banks had a higher credit rating average compared to conventional banks based on agencies credit rating and the same rating when it came to calculated rating. The end result of this paper shows that Altman's z-score model, despite being useful model in comparing banks on a local scale, does not take external economical and political factors into consideration when assigning the rating which makes the model inapplicable for comparing the financial strength between banks globally.

Keywords: Credit Rating, Altman Z-score Model, Kuwaiti Banks, Credit Rating Agencies (CRA's).

Introduction

In 2008, Moody's had Lehman Brothers' investment-grade rating of A2 on review just five days before they filed for bankruptcy. Standard and Poor's gave American International Group (AIG) an investment-grade rating less than one week before the company was nationalized, which is against the free market economy they ask other countries to follow. Credit rating agencies defended their ratings by saying that their ratings only reflect the probability of default and what happened could be attributed to error margin. They also claimed that they should not be held accountable because they are merely issuing "opinions". Kuwaiti banks are not immune from bankruptcy also. In 2008 Gulf bank, the second largest lender in Kuwait, was in the blink of bankruptcy when the bank lost more than 359.5 million Kuwaiti Dinar (1 KWD = 3.3 USD) that amounts to 293% of its paid-up capital in currency options speculation which is an off-balance sheet item. Gulf bank filed for bankruptcy on October 23, 2008 and Kuwait central bank stepped to support the bank by guaranteeing 100% of all customers' deposits on October 26, 2008. At the time of Gulf banks' crisis, the bank had an A+ rating from Fitch. Standard and poor's has announced in August 11, 2008 that they are maintaining an A- rating for Gulf bank just two months prior to its collapse.

Getting credit rating is like shopping for any other service, the buyer seeks the best deal he can get. On the other side, credit rating agencies try to satisfy their customers to get more business. Partnoy (2006) concluded that 90% of Moody's revenues came from fees and that such dependence can affect the accuracy of their rating. Destraz and Lahaye (2012) argued that credit rating agencies tend to inflate their ratings to attract more clients and please their existing ones. Spatt (2009) claimed that the luxury of rating shopping by the bank or the bond issuer for credit agent to purchase from and get the rating published by him is leading to overrating. Hill (2004) found that Fitch is getting more business than Moody's and Standard and poor's because they were the cheapest and gave a higher credit rating than the others. Competition to get more business led these credit rating agencies to alter the way they conduct business, Becker and Milbourn (2011) conducted a study using the data for 19,630 bonds to examine the effect of the introduction of Fitch rating agency on the rating of these bonds. They concluded that, as competition increased, the rating for the bonds went up moving closer to AAA. They also found that credit rating agencies became less informative about the value of the bonds.

These overrating incidents led investors to re-think before investing about the worthiness of the information's provided by these credit rating agencies and they are required to conduct dual diligence from their side. One of the methods used to estimate the credit rating for banks is the Altman's z-score model, Khaddafi et al (2017) conducted a study using Altman's z-score model to measure the bankruptcy probability for banks listed in the Indonesian stock market over the period 2011-2013. By using the data of 29 banks, they concluded that only 11 banks were in the safe zone while the other 18 were facing the threat of bankruptcy. Another study conducted by Ilahi et al (2015) using the data of Pakistani banks over the period 2010-2013 found that all 6 banks under study were facing bankruptcy. Altman's z-score model has proven to be a reliable indicator for financial stress, Bredart (2014) used the model to examine the bankruptcy probability for 870 companies listed in the U.S. stock markets for the period 1/2000 to 12/2012. He found that Altman's model had an accuracy rate of 83.82% in predicting bankruptcy two years prior to its happening. Begovic et al (2014) used Altman's z-score model to assign the credit rating for enterprises in the Republic of Serbia between the years 2010-2012. They concluded

that enterprises under restructuring had only 14.14% of them with a credit rating that was above BBB, while on the other hand, enterprises that were out of restructuring had 59.63% of them with credit rating that was above BBB. Badea and Matei (2016) studied banks listed in Bucharest stock exchange for the period 2012-2014 using Altman's z-score model. They concluded that Romanian banks were weak in terms of liquidity and profitability and that all banks had speculative rating except for Transilvania bank that had an AAA rating in 2012 but was downgraded to BB- in the years 2013 and 2014.

Methodology

Credit rating is nothing more than a measure of how likely a borrower will be able to repay his loan on time and in full. The credit rating estimation model is based on Altman's z-score model Altman and Hotchkiss (2006) that measures the likelihood of bankruptcy. While all the coefficients are kept as is from the original model, a constant of 3.25 was added to the formula.

As for the formula it is as follow;

$$Z\text{-Score} = 3.25 + 6.56 X1 + 3.26 X2 + 6.72 X3 + 1.05 X4$$

(Equation 1)

Where;

X1 is the networking capital / total assets.

X2 is the retained earnings / total assets.

X3 is earnings before interest and tax (EBIT) / total assets.

X4 is the total market value of equity / total liabilities.

The score obtained from equation (1) is then compared to the equivalent S&P rating following Altman and Hotchkiss (2006) table as shown in table (1) to assign the rating for each bank.

Table 1

Equivalent Rating for the Z-score

Zone	S&P Rating	Z-Score Range
Safe Zone	AAA	$Z > 8.15$
	AA+	$8.15 > Z > 7.60$
	AA	$7.60 > Z > 7.30$
	AA-	$7.30 > Z > 7.00$
	A+	$7.00 > Z > 6.85$
	A	$6.85 > Z > 6.65$
	A-	$6.65 > Z > 6.40$
	BBB+	$6.40 > Z > 6.25$
Gray Zone	BBB	$6.25 > Z > 5.85$
	BBB-	$5.85 > Z > 5.65$
	BB+	$5.65 > Z > 5.25$
	BB	$5.25 > Z > 4.95$
	BB-	$4.95 > Z > 4.75$
Distress Zone	B+	$4.75 > Z > 4.50$
	B	$4.50 > Z > 4.15$
	B-	$4.15 > Z > 3.75$
	CCC+	$3.75 > Z > 3.20$
	CCC	$3.20 > Z > 2.50$
	CCC-	$2.50 > Z > 1.75$
	D	$Z < 1.75$

Source: Altman, Hotchkiss, 2006, p. 314.

Table (2) shows the credit rating agencies grades for the investment grade of the bank by the main three credit agencies, Moody's, Standard and Poor's, and Fitch. Investors would be confident to put their money in an investment grade banks since they are less likely to go bankrupted. On the other hand, the speculative grade banks are more vulnerable to default.

Table 2

Credit Rating Agencies Comparison

Grade	Numerical Rating	Moody's	S&P	Fitch	Meaning
Investment Grade	23	Aaa	AAA	AAA	Prime
	22	Aa1	AA+	AA+	High Grade
	21	Aa2	AA	AA	
	20	Aa3	AA-	AA-	
	19	A1	A+	A+	Upper Medium Grade
	18	A2	A	A	
	17	A3	A-	A-	
	16	Baa1	BBB+	BBB+	Lower Medium Grade
	15	Baa2	BBB	BBB	
	14	Baa3	BBB-	BBB-	
Speculative Grade	13	Ba1	BB+	BB+	Non-Investment Grade Speculative
	12	Ba2	BB	BB	
	11	Ba3	BB-	BB-	
	10	B1	B+	B+	Highly Speculative
	9	B2	B	B	
	8	B3	B-	B-	
	7	Caa1	CCC+	CCC+	Substantial Risks
	6	Caa2	CCC	CCC	Extremely Speculative
	5	Caa3	CCC-	CCC-	In Default with Little Prospect for Recovery
	4	Ca	CC	CC+	
	3		C	CC	In Default
	2			CC-	
1	D	D	DDD		

Source: Destraz and Lahaye (2012), The numerical rating is set by the author for calculation purposes. In any calculation onward the number produced is rounded.

Data and Empirical Results

The results presented in this study are based on the financial ratios of the ten Kuwaiti banks which are listed at the Kuwait stock exchange. These banks are, National Bank of Kuwait (NBK), Gulf Bank, Commercial bank of Kuwait, AlAhli Bank, Burgan bank, Kuwait Finance House (KFH), Boubyan bank, AlAhli United bank (AUB), Kuwait International bank (KIB), and Warba bank. Banks in Kuwait are divided into 2 categories either Islamic or conventional, despite both working under the central bank of Kuwait umbrella. Islamic banks work under the Islamic law that prohibits dealing in interest, so they conduct their business under the profit-loss basis. On the Other hand, conventional banks deal explicitly with interest just like any other bank in the rest of the world. Islamic banks include KFH, Boubyan, AUB, KIB, and Warba bank. NBK, Gulf bank, commercial bank, AlAhli, and Burgan bank are considered as conventional banks. Annual data were used for the period 2013-2017. The data were

obtained from banks annual reports that were downloaded from the Kuwait stock exchange website and the Kuwait Institute of Banking Studies database.

Table 3
Kuwaiti Banks Credit Rating 2013-2017

Bank	Rating Agency	2017	2016	2015	2014	2013	Average numerical rating
National Bank of Kuwait	S&P	A+ (19)	A+ (19)	A+ (19)	N/A	N/A	19
	Fitch	AA- (20)	AA- (20)	AA- (20)	AA- (20)	AA- (20)	20
	Moody's	(20) Aa3	Aa3 (20)	Aa3 (20)	N/A	N/A	20
Gulf Bank	S&P	A- (17)	A- (17)	A- (17)	BBB+ (16)	N/A	17
	Fitch	A+ (19)	A+ (19)	A+ (19)	A+ (19)	A- (17)	18.6
	Moody's	A3 (17)	N/A	A3 (17)	Baa1 (16)	N/A	16.67
Commercial Bank	S&P	N/A	N/A	BBB+ (16)	N/A	N/A	16
	Fitch	A+ (19)	A+ (19)	A+ (19)	A+ (19)	A+ (19)	19
	Moody's	N/A	N/A	A3 (17)	A2 (18)	N/A	17.5
Al Ahli Bank	S&P	N/A	N/A	N/A	N/A	N/A	N/A
	Fitch	A+ (19)	A+ (19)	A+ (19)	A+ (19)	A+ (19)	19
	Moody's	N/A	N/A	A2 (18)	N/A	A2 (18)	18
Burgan Bank	S&P	N/A	BBB+ (16)	BBB+ (16)	BBB+ (16)	N/A	16
	Fitch	A+ (19)	A+ (19)	A+ (19)	N/A	N/A	19
	Moody's	N/A	A3 (17)	A2 (18)	N/A	N/A	17.5
Kuwait Finance House	S&P	A- (17)	N/A	A- (17)	N/A	N/A	17
	Fitch	A+ (19)	A+ (19)	A+ (19)	A+ (19)	A+ (19)	19
	Moody's	N/A	N/A	A1 (19)	N/A	N/A	19
Boubyan Bank	S&P	N/A	N/A	N/A	N/A	N/A	N/A
	Fitch	A+ (19)	A+ (19)	A+ (19)	A+ (19)	A+ (19)	19
	Moody's	Ba1 (13)	Baa1 (16)	Baa1 (16)	Baa1 (16)	Baa2 (15)	15.2
Ahli United Bank	S&P	N/A	N/A	N/A	N/A	N/A	N/A
	Fitch	A+ (19)	A+ (19)	A+ (19)	A- (17)	A- (17)	18.2
	Moody's	A2 (18)	A2 (18)	A2 (18)	N/A	N/A	18
Kuwait International Bank	S&P	N/A	N/A	N/A	N/A	N/A	N/A
	Fitch	A+ (19)	A+ (19)	A+ (19)	A+ (19)	A- (17)	18.6
	Moody's	N/A	N/A	N/A	N/A	N/A	N/A
Warba Bank	S&P	N/A	N/A	N/A	N/A	N/A	N/A
	Fitch	A+ (19)	A+ (19)	A+ (19)	N/A	N/A	19
	Moody's	Baa2 (15)	Baa3 (14)	Baa1 (16)	N/A	N/A	15

Table (3) shows the rating for each Kuwaiti bank over the period 2013-2017 from the three credit rating agencies and the equivalent numerical rating. Banks in Kuwait have the choice to pick any credit rating agency they deal with, so it is a matter of shopping around for a rating agency that would provide them with the highest credit rating. Obtaining a high credit rating is essential for bank due to its effect on the banks' borrowing rate. A higher credit rating would result in a lower borrowing rate that would eventually lead to a higher interest rate margin between the funds they borrow and lend resulting in a higher profit.

Table 4
Number of ratings

	Conventional Banks	Islamic Banks
S&P	11 (23.91%)	2 (5.41%)
Fitch	23 (50%)	23 (62.16%)
Moody's	12 (26.09%)	12 (32.43%)
Total	46	37

From the table (4) it can be seen that Kuwaiti banks published credit rating 83 times out of which Fitch had 46 ratings compared to 13 for Standard and poor's and 24 for Moody's. When translating these numbers to market share it can be found that Fitch dominated the banking sector credit rating market with a market share of 55.42% compared to 15.66% for Standard and poor's and 28.92% for Moody's, as seen in figure 1. When it Comes to comparing Islamic and conventional, it can be seen from table (4), that conventional banks

got rated 46 times compared to 37 for Islamic banks. Both Islamic and conventional banks conducted most of their credit rating with Fitch. Although both Islamic and conventional banks used Fitch 23 times, this number presents 62.16% of the Islamic banks market share compared to 50% for conventional.

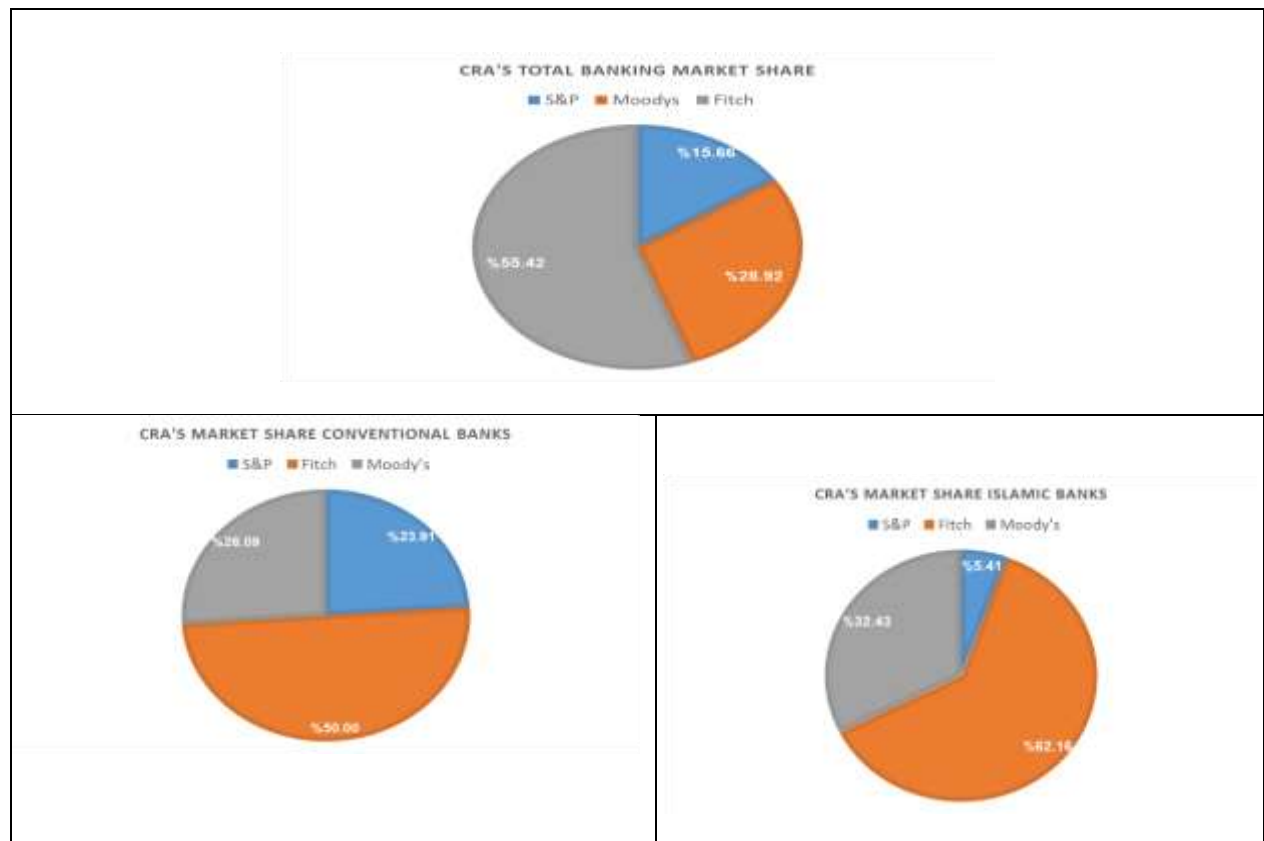


Figure 1: Credit Rating Agencies Market Share

Overall, conventional banks in Kuwait tend to have a similar credit rating as Islamic banks. Both conventional and Islamic banks scored an average credit rating of 18 which is equivalent to A grade based on the S&P rating. Cantor and Packer (1997) conducted a study over 363 firms and concluded that the average difference between the credit rating agencies is always less than one notch. Fitch market share can be explained by the rating they gave to Kuwaiti banks, Fitch gave an average rating of 19 which is equivalent to A+ on the S&P scale compared to 17 for both Standard and Poor's and Moody's which is equivalent to A- rating. This difference between Fitch and the other two rating agencies is almost two notches which is double of that founded by Cantor and Packer (1997). This indicates that Fitch tends to inflate their ratings to gain more business and market share. When looking at it from the conventional and Islamic banks view, it can be seen that Fitch gave Islamic banks 2.5 notches above the average of S&P and Moody's while in terms of conventional banks the difference between Fitch rating and the average rating of the other two agencies was 1.5 notches. The difference of 2.5 notches would explain the high demand by Islamic banks to conduct their credit rating with Fitch. The high demand can explain Fitch's market share that was 62.16% and 50% for Islamic and conventional banks respectively.

Table 5

CRA's Detailed Credit Ratings

	CRA's Detailed Ratings		
	Conventional	Islamic	All Banks
S&P	17	17	17
Fitch	19	19	19
Moody's	18	16	17
Overall Rating	18	18	18

The calculated and the actual credit ratings are presented in table (6). It can be seen that none of the Kuwaiti banks was able to achieve a calculated investment grade rating score during the study period, except for Warba bank in 2013 but that score went down in the year after. On the other hand, credit rating agencies did not give any bank a speculative grade rating.

On an individual bases, NBK, AlAhli, and Boubyan banks came as the highest rated banks in Kuwait based on credit rating agencies ratings with an average score over the study period of 19 which can be translated to A+ at the S&P scale. Burgan bank and Gulf bank came as the worst rated banks in Kuwait over the period 2013-2017 with an average rating of 17 that is equal to A- rating. From the Altman's z-score model side, NBK, Commercial and KIB managed to score the highest scores of 11 which is equivalent to BB- rating. Gulf bank managed to get the lowest score in the model by scoring only nine which is equivalent to B rating. Despite the two notches difference between the highest scoring banks and the lowest, all of the Kuwaiti banks were in the speculative grade area.

Table 6

Calculated Vs. Actual Credit Rating

NBK	X1	X2	X3	X4	Constant	Z-Score	Calculated Rating	Actual S&P Rating	Difference
2017	0.897	0.315	0.165	0.201	3.25	4.828	BB- (11)	A+ (19)	8
2016	0.921	0.323	0.157	0.185	3.25	4.835	BB- (11)	A+ (19)	8
2015	0.887	0.322	0.14	0.207	3.25	4.806	BB- (11)	A+ (19)	8
2014	0.864	0.337	0.133	0.242	3.25	4.827	BB- (11)	AA- (20)	9
2013	0.956	0.374	0.138	0.269	3.25	4.987	BB (12)	AA- (20)	9
						Average (Rounded)	11	19	8
Gulf									
2017	0.694	0.211	0.147	0.15	3.25	4.451	B (9)	A- (17)	8
2016	0.688	0.202	0.133	0.157	3.25	4.43	B (9)	A- (17)	8
2015	0.649	0.182	0.111	0.17	3.25	4.362	B (9)	A- (17)	8
2014	0.629	0.176	0.108	0.183	3.25	4.347	B (9)	BBB+ (16)	7
2013	0.626	0.174	0.105	0.238	3.25	4.392	B (9)	A- (17)	8
						Average (Rounded)	9	17	8
Commercial									
2017	0.978	0.367	0.15	0.185	3.25	4.929	BB- (11)	A+ (19)	8
2016	0.96	0.361	0.143	0.183	3.25	4.898	BB- (11)	A+ (19)	8
2015	0.937	0.351	0.122	0.214	3.25	4.874	BB- (11)	BBB+ (16)	5
2014	0.862	0.318	0.121	0.255	3.25	4.807	BB- (11)	A+ (19)	8
2013	0.94	0.364	0.076	0.294	3.25	4.923	BB- (11)	A+ (19)	8
						Average (Rounded)	11	18	7
AlAhli									
2017	0.861	0.31	0.179	0.13	3.25	4.731	B+ (10)	A+ (19)	9
2016	0.851	0.303	0.168	0.137	3.25	4.709	B+ (10)	A+ (19)	9
2015	0.837	0.298	0.09	0.168	3.25	4.643	B+ (10)	A+ (19)	9
2014	1.047	0.371	0.13	0.237	3.25	5.035	BB (12)	A+ (19)	7
2013	1.111	0.389	0.125	0.282	3.25	5.157	BB (12)	A+ (19)	7
						Average (Rounded)	11	19	8
Burgan									
2017	0.768	0.202	0.223	0.106	3.25	4.549	B+ (10)	A+ (19)	9

2016	0.763	0.205	0.215	0.102	3.25	4.536	B+ (10)	BBB+ (16)	6
2015	0.804	0.212	0.178	0.138	3.25	4.583	B+ (10)	BBB+ (16)	6
2014	0.809	0.2	0.147	0.145	3.25	4.55	B+ (10)	BBB+ (16)	6
2013	0.568	0.16	0.144	0.143	3.25	4.265	B (9)	N/A	N/A
						Average (Rounded)	10	17	7
KFH									
2017	0.8	0.252	0.209	0.229	3.25	4.739	B+ (10)	A- (17)	7
2016	0.811	0.264	0.2	0.206	3.25	4.73	B+ (10)	A+ (19)	9
2015	0.817	0.267	0.184	0.187	3.25	4.706	B+ (10)	A- (17)	7
2014	0.801	0.259	0.184	0.217	3.25	4.711	B+ (10)	A+ (19)	9
2013	0.838	0.285	0.182	0.241	3.25	4.796	BB- (11)	A+ (19)	8
						Average (Rounded)	10	18	8
Boubyan									
2017	0.747	0.122	0.163	0.296	3.25	4.578	B+ (10)	A+ (19)	9
2016	0.797	0.122	0.15	0.294	3.25	4.612	B+ (10)	A+ (19)	9
2015	0.672	0.117	0.127	0.339	3.25	4.505	B+ (10)	A+ (19)	9
2014	0.746	0.123	0.121	0.36	3.25	4.6	B+ (10)	A+ (19)	9
2013	0.806	0.121	0.073	0.562	3.25	4.812	BB- (11)	A+ (19)	8
						Average (Rounded)	10	19	9
AUB									
2017	0.837	0.166	0.172	0.214	3.25	4.639	B+ (10)	A+ (19)	9
2016	0.792	0.153	0.153	0.23	3.25	4.577	B+ (10)	A+ (19)	9
2015	0.606	0.131	0.146	0.247	3.25	4.381	B (9)	A+ (19)	10
2014	0.619	0.13	0.149	0.295	3.25	4.443	B (9)	A- (17)	8
2013	0.67	0.134	0.136	0.346	3.25	4.536	B+ (10)	A- (17)	7
						Average (Rounded)	10	18	9
KIB									
2017	0.903	0.344	0.157	0.15	3.25	4.804	BB- (11)	A+ (19)	8
2016	0.906	0.341	0.149	0.141	3.25	4.787	BB- (11)	A+ (19)	8
2015	0.908	0.339	0.122	0.16	3.25	4.779	BB- (11)	A+ (19)	8
2014	0.95	0.351	0.105	0.19	3.25	4.847	BB- (11)	A+ (19)	8
2013	0.992	0.36	0.097	0.252	3.25	4.95	BB (12)	A- (17)	5
						Average (Rounded)	11	19	7

Warba									
2017	0.649	-0.002	0.114	0.267	3.25	4.278	B (9)	A+ (19)	8
2016	0.552	-0.015	0.104	0.226	3.25	4.116	B- (8)	A+ (19)	11
2015	0.78	-0.032	0.08	0.301	3.25	4.379	B (9)	A+ (19)	10
2014	1.013	-0.045	0.058	0.493	3.25	4.769	BB- (11)	N/A	N/A
2013	1.466	-0.075	-0.02	1.1	3.25	5.721	BBB- (14)	N/A	N/A
						Average (Rounded)	10	19	10

When the rating for the S&P was not available, the highest rating from the other rating agencies was converted to the S&P scale using table (1).

When calculating the average difference between the calculated and the actual rating for all banks, it can be seen from table (6) that the average difference for all banks was eight notches. Warba bank was the most overrated bank in Kuwait where the average difference between that actual and the calculated rating was 10 notches. On the other hand, Burgan, KIB, and Commercial bank had the lowest difference between the calculated and actual rating of seven notches. The average difference for all banks was eight notches, NBK, KFH, AlAhli, and Gulf bank had a difference that was equal to the market average. Commercial, KIB, and Burgan bank had a lower than the market mean rating difference. While Boubyan, AUB, and Warba bank all were overrated when comparing their calculated score with the CRA's scores.

Islamic banks have demonstrated over the study period that they were better than the conventional banks when looking at it from agencies credit ratings. However, this superiority can be misleading since their average score is based heavier on Fitch credit rating agency that has proved to give an inflated ratings. From credit rating agencies prospective, conventional banks achieved a score of 18 (A) compared to 19 (A+) for Islamic banks.

Table 7

Calculated and Actual Rating

	Calculated Rating	Actual Rating
Conventional Banks	10 (B+)	18 (A)
Islamic Banks	10 (B+)	19 (A+)
Overall Rating	10 (B+)	18 (A)

Despite the one notch difference both Islamic and conventional banks were given an investment grade ratings. The results obtained from the Altman's z-score model showed somewhat different story, based on the model both Islamic and conventional banks had a rating of 10 (B+) which is an speculative grade.

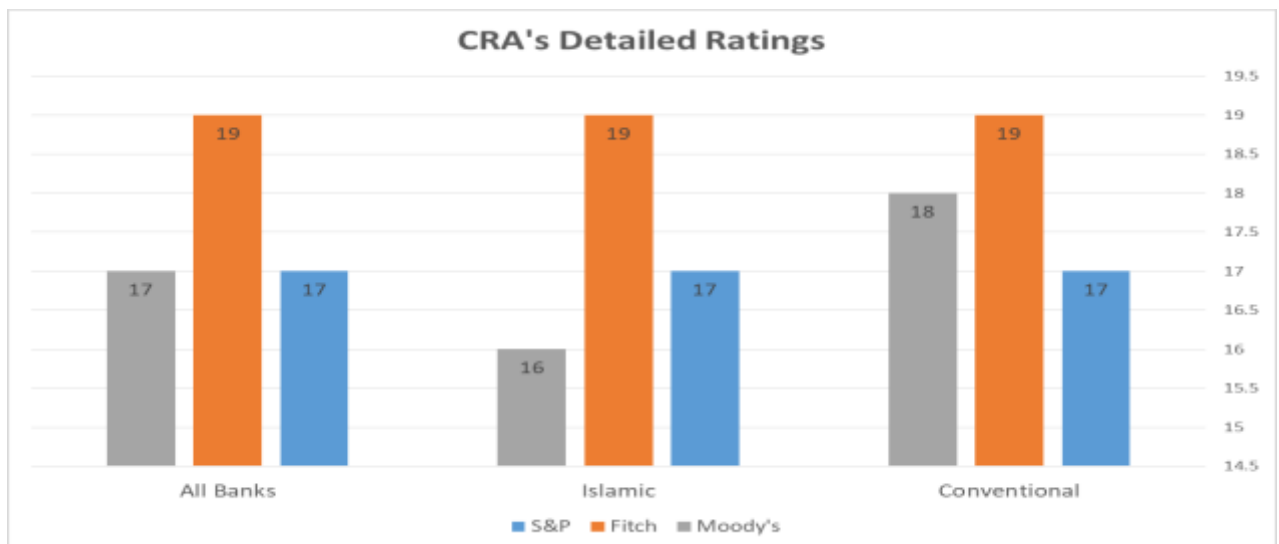


Figure 2: Detailed Credit Ratings

Conclusion and limitations

The aim of this paper is to contribute to the vast literature of commercial banks credit rating evaluation. The paper attempts to examine the variation between academic theories and actual practices and tries to explain them. Results obtained from this research showed that Kuwaiti banks are overrated under Altman's z-score model which makes them vulnerable to any financial short comes. The study also illustrated that Fitch rating agency assigned a higher rating to Kuwaiti banks by two notches, which explains its market share that exceeded 50%. The results also showed that Islamic banks used Fitch credit rating agency more often than conventional banks in order to inflate their ratings. As a result, Islamic banks showed a higher CRA's rating than conventional banks. Altman's z-score model is based on the banks' internal factors; the model does not take into account any external factors that might affect the banks' financial position. This neglect of external factors can contribute to the divergence between the calculated and the actual credit rating. Altman z-score model can be a useful tool in comparing between financial institutions that work in a particular country, but it is by no means applicable in determining the credit rating of banks and sets a comparison standard globally.

References

- Badea, I. R., and Matei, G. (2016) The Z-Score Model for Predicting Periods of Financial Instability. Z-Score Estimation for the Banks Listed on Bucharest Stock Exchange, Finances – The challenges of the future, 18, 24-35.
- Begović, S. V. Momčilović, M. and Tomašević, S. (2014) The Enterprise Creditworthiness Evaluation – By Z" Score Model, Economic Themes, 52(2), 184-196, June.
- Bo, B. and Todd, M. (2011) How did increased competition affect credit ratings?, Journal of Financial Economics, 101, 493–514. doi:10.1016/j.jfineco.2011.03.012.
- Bredart, X. (2014) Bankruptcy Prediction Model: The Case of the United States, International Journal of Economics and Finance, 6 (3), 1-7.
- Cantor, R., Packer, F. (1997) Differences of opinion and selection bias in the credit rating industry. Journal of Banking and Finance, 21, 1395–1417.
- Destraz, S. and Lahaye, R. (2012) Are Credit Ratings Trustworthy? Empirical Study on the Dependence of Corporate Defaults to Market Risk within Investment Grade and Speculative Grade Range (May 12, 2012). Available at SSRN: <https://ssrn.com/abstract=2056849> or <http://dx.doi.org/10.2139/ssrn.2056849>
- Hill, C. A. (2004) Regulating the rating agencies. Washington University Law Quarterly. 82, 43-94. Available at SSRN: <http://ssrn.com/abstract=452022>
- Ilahi, I. J. R. K. S. I. N. and Lodhi, M. (2015). Financial Performance Analysis of Pakistan Banking Sector Using the Altman Z-Score Model of Corporate Bankruptcy, *Applied Research Journal*, 1 (1), 34-40, March.
- Khaddafi, M. F. M. H., and Ayu N. (2017). Analysis Z-score to Predict Bankruptcy in Banks Listed in Indonesia Stock Exchange, *International Journal of Economics and Financial Issues*, 7(3), 326-330.
- Partnoy, F. (2006). How and Why Credit Rating Agencies are not like other gatekeepers. Yasuyuki
- Fuchita, R. E. Litan eds, Brookings Institution Press and the Nomura Institute of Capital Markets Research, (2006) San Diego Legal Studies Paper No. 07-46. Available at SSRN: <http://ssrn.com/abstract=900257>
- Spatt, C. (2009) Discussion of ratings shopping and asset complexity: a theory of ratings inflation, *Journal of Monetary Economics*, 56, 696–699.