

ANNEXURES

See Tables [A.1](#), [A.2](#), [A.3](#), [A.4](#), and [A.5](#).

Table A.1 Country-wise financial soundness indicators (FSIs) of banking sector (percent, end of Q4)

Countries	Regulatory Capital to Risk-Weighted Assets			Regulatory Tier 1 Capital to Risk-Weighted Assets			NPLs to Total Gross Loans			Return on Assets			Return on Equity							
	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019	2016	2017	2018	2019				
<i>Major South Asian Economies</i>																				
Bangladesh	11.1	10.7	10.5	11.6	8.1	7.5	6.8	7.7	8.9	8.9	9.9	8.9	1.3	1.4	0.9	1.1	16.7	19.0	12.9	16.6
India	13.0	12.8	12.9	15.4	10.7	11.0	11.9	14.7	9.2	10.0	9.5	9.2	0.4	0.3	-	0.2	5.1	4.5	-0.2	2.7
Pakistan	16.3	15.8	16.2	17.0	13.1	12.9	13.2	14.0	10.1	8.4	8.0	8.6	1.3	0.9	0.8	0.8	14.4	11.5	10.7	11.2
Sri Lanka	14.3	15.2	15.1	16.5	11.4	12.4	12.0	13.0	2.6	2.5	3.4	4.7	19.0	2.0	1.8	1.4	24.5	24.7	20.3	16.0
<i>Advanced Economies</i>																				
Japan*	16.2	16.7	17.0	17.3	13.4	14.2	14.8	15.1	1.4	1.2	1.1	1.1	0.3	0.3	0.3	0.2	8.3	8.1	7.3	6.1
United States	14.2	14.5	14.8	14.7	13.2	13.5	13.8	13.7	1.3	1.1	0.9	0.9	0.4	0.3	0.4	0.3	3.2	2.9	3.4	2.9
United Kingdom	20.8	20.5	21.4	N/A	16.9	17.1	17.9	N/A	0.9	0.7	1.1	N/A	0.3	0.5	0.5	N/A	3.8	7.6	7.5	N/A

* Japan data represent Q3 each year ***-Not available
Source IMF, Retrieved on 26 June 2020

Table A.2 Banking sector performance between 2009 and 2018

<i>Types of Banks</i>	<i>NPL ratio</i>									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
State Owned Commercial Banks	21.93	15.66	11.37	23.87	19.76	22.23	21.46	25.05	26.52	30
Specialized Banks	25.91	24.15	24.55	26.77	26.78	32.81	23.24	26.02	23.39	19.5
Private Commercial Banks	3.92	3.15	2.95	4.58	4.54	4.98	4.85	4.58	4.87	5.5
Foreign Commercial Banks	2.27	2.99	2.96	3.53	5.46	7.3	7.77	9.56	7.04	6.5
All Banks	9.21	7.27	6.12	10.03	8.93	9.69	8.79	9.23	9.31	10.3
<i>ROA</i>										
State Owned Commercial Banks	0.96	1.11	1.34	-0.56	0.59	-0.55	-0.04	-0.16	0.21	-1.3
Specialized Banks	-0.37	0.19	0.03	0.06	-0.82	-0.63	-1.15	-2.8	-3.49	-2.8
Private Commercial Banks	1.55	2.14	1.59	0.92	0.95	0.99	1	1.03	0.89	0.7
Foreign Commercial Banks	3.18	2.87	3.24	3.27	2.98	3.38	2.92	2.56	2.24	2.61
All Banks	1.37	1.78	1.54	0.64	0.88	0.64	0.77	0.68	0.67	0.3
<i>ROE</i>										
State Owned Commercial Banks	26.15	18.83	19.66	-11.87	10.93	-13.46	-1.47	-6.02	3.45	-29.6
Specialized Banks	-171.68	-3.17	-0.92	-1.06	-12.04	-5.97	-5.79	-6.94	-17.19	-13.5
Private Commercial Banks	20.95	20.94	15.69	10.17	9.76	10.26	10.75	11.09	12.01	11
Foreign Commercial Banks	22.38	16.99	16.99	17.29	16.93	17.29	14.59	13.08	11.31	12.4

(continued)

Table A.2 (continued)

<i>Types of Banks</i>	<i>NPL ratio</i>										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	
All Banks	21.72	17.02	17.02	8.2	10.8	8.09	10.51	9.42	9.6	3.9	
State Owned Commercial Banks	9	8.9	11.7	8.1	10.8	8.3	6.35	5.86	5	1.9	
Specialized Banks	0.4	-7.3	-4.5	-7.8	-9.7	-17.3	-31.95	-33.67	-35.5	-31.7	
Private Commercial Banks	121	10.1	11.5	11.4	12.6	12.5	12.38	12.36	12.5	12.8	
Foreign Commercial Banks	28.1	15.6	21	20.6	20.2	22.6	25.6	25.37	24.9	26	
All Banks	11.6	9.3	11.4	10.5	11.5	11.3	10.84	10.8	10.8	10.5	

Source Suzuki and Hasan (2018) and several issues of BB quarterly review

Table A.3 ECAI's Credit Rating Categories Mapped with BB's Rating Grade

BB Rating Grade	Equivalent Rating of S&P and Fitch	Equivalent Rating of Moody	Equivalent Rating of CRISL	Equivalent Rating of CRAB	Equivalent Rating of NCR1	Equivalent Rating of ECRL	Equivalent Rating of ACRSL	Equivalent Rating of ACRL	Equivalent Rating of WASO
1	AAA to AA	Aaa to Aa	AAA, AA+, AA, AA-	AAA, AA1, AA2, AA3	AAA, AA+, AA, AA-	AAA, AA+, AA, AA-	AAA, AA+, AA, AA-	AAA, AA+, AA, AA-	AAA, AA1, AA2, AA3
2	A	A	A+, A, A-	A1, A2, A3	A+, A, A-	A+, A, A-	A+, A, A-	A+, A, A-	A1, A2, A3
3	BBB	Baa	BBB+, BBB, BBB-	BBB1, BBB2, BBB3	BBB+, BBB, BBB-	BBB+, BBB, BBB-	BBB+, BBB, BBB-	BBB+, BBB, BBB-	BBB1, BBB2, BBB3
4	BB to B	Ba to B	BB+, BB, BB-	BB1, BB2, BB3	BB+, BB, BB-	BB+, BB, BB-	BB+, BB, BB-	BB+, BB, BB-	BB1, BB2, BB3
5	Below B	Below B	B+, B, B, CCC+, CCC, CCC-, CC+, CC, CC-	B1, B2, B3, CCC1, CCC2, CCC3, CC	B+, B, B-	B+, B, B-	B+, B, B-, CC+, CC-	B+, B, B-, CCC	B1, B2, B3, CCC
6			C+, C, C-, D	C, D	C+ C, C-, D	D	C+, C, C-, D	CC+, CC, CC-, C+, C, C-, D	CC1, CC2, CC3, C+, C, C-, D
<i>Short-Term Rating Category Mapping</i>									
S1	FI+	P1	ST-1	ST-1	N1	ECRL-1	ST-1	AR-1	P-1
S2	F1	P2	ST-2	ST-2	N2	ECRL-2	ST-2	AR-2	P-2
S3	F2	P3	ST-3	ST-3	N3	ECRL-3	ST-3	AR-3	P-3
S4	F3	NP	ST-4	ST-4	N4	ECRL-4	ST-4	AR-4	P-4
S5, S6	B, C, D		ST-5, ST-6	ST-5, ST-6	N5	D	ST-5, ST-6	AR-5, AR-6	P-5, P-6

Table A.4 ECAI's Credit Rating Categories Mapped with BB's SME Rating Grade

BB SME Rating	Equivalent Rating of BDRAL	CRISL	Equivalent Rating of CRISL	CRAB	Equivalent Rating of CRAB	ECRL	Equivalent Rating of ECRL	ARGUS	Equivalent Rating of ARGUS	ALPHA	Equivalent Rating of ALPHA	NCRL	Equivalent Rating of NCRL	WASO	Equivalent Rating of WASO
Grade															
01								03		04		05		06	
SME 1	SE1, ME 1	CRISL Me-1/Sc-1		CRAB-ME 1/SE 1	ESME 1	AQSE 1/AQME 1	ARMSME-1	NSME-1				NSME-1		WCR SE 1/ME 1	
SME 2	SE2, ME 2	CRISL Me-2/Sc-2		CRAB-ME 2/SE 2	ESME 2	AQSE 2/AQME 2	ARMSME-2	NSME-2				NSME-2		WCR SE 2/ME 2	
SME 3	SE3, ME 3	CRISL Me-3/Sc-3		CRAB-ME 3/SE 3	ESME 3	AQSE 3/AQME 3	ARMSME-3	NSME-3				NSME-3		WCR SE 3/ME 3	
SME 4	SE4, ME 4	CRISL Me-4/Sc-4		CRAB-ME 4/SE 4	ESME 4	AQSE 4/AQME 4	ARMSME-4	NSME-4				NSME-4		WCR SE 4/ME 4	
SME 5	SE5, ME 5	CRISL Me-5/Sc-5		CRAB-ME 5/SE 5	ESME 5	AQSE 5/AQME 5	ARMSME-5	NSME-5				NSME-5		WCR SE 5/ME 5	
SME 6	SE6, SE7, SE8, ME 6, ME 7, ME 8	CRISL Me-6,7,8,9,10/Sc-6,7,8,9,10		CRAB-ME 6,7,8/SE 6,7,8	ESME 6,7,8	AQSE6,7,8/AQME 6,7,8	ARMSME-6,7,8	NSME-6,7,8				NSME-6,7,8		WCR SE 6,7,8/ME 6,7,8	

Source BB (2014, pp. 23)

Table A.5 Exchange rate (Taka/USD)

2009–2010	69.18
2010–2011	71.17
2011–2012	79.10
2012–2013	79.93
2013–2014	77.72
2014–2015	77.67
2015–2016	78.26
2016–2017	79.12
2017–2018	82.10
2018–2019	84.03

Source BB, Monthly Economic Trend, November 2019

APPENDIX: HISTORY OF CRAs IN THE US AND REGULATORY REFERENCES OF THEIR RATING NOTCH BY THE US REGULATORS

INTRODUCTION

The history of credit rating to some extent is related with the sovereign bond issuance history of Europe in seventeenth century and US corporate bond rating history in the nineteenth century. In Europe, mainly the Dutch had developed a significant government bond market in seventeenth century to finance wars and other large-scale projects while in the US, government bonds played vital role in financing the railway industry (Scalet & Kelly, 2012). However, CRAs' evolution history is much more linked with the nineteenth and early twentieth century's US economy. Hence, this historical background of CRAs in the US will help us to understand the initiation of using CRAs' rating notch for regulatory purposes.

In the 1800s, CRAs mainly provided credit information to merchandisers in the US and Europe, who used the information to minimize their merchandising risk. CRAs were the necessary information brokers through informal sources to formal appointees. The mercantile agencies established the concept of 'rating' and published printed reports for its subscribers during this period. On the other hand, in the early 1900s, CRAs had produced reports mainly to rate the US securities which were used as a chief source of capital for the US railway reconstruction project. Therefore, CRAs' historical background in the US can be categorized into two broad timelines such as before 1907 and after 1907. The period before 1907, may be termed as the 'classical period' of credit reporting

agencies whereas, the story after 1907 can be termed as the ‘modern era’ of credit rating (see Table A.6 for developments in these two periods). In the following sections, we discuss the historical evolution of the US CRAs in detail.

CRAS IN CLASSICAL AND MODERN PERIOD

Role of CRAs in the ‘classical period’

Until the nineteenth century, American merchandisers relied on personal contact and commitment for credit information of other parties (Madison, 1974). The credit agent’s profession grew to be popular with the merchants as they provided borrowers personal creditworthiness (Madison, 1974). Wholesalers in New York had first hired credit investigators for their business in the 1820s; however, this attempt was not sustained due to coordination problems. Later in the 1830s, the American society invented a ‘credit reporting agency’ to coordinate all information of a client from various sources and disseminate the information to the merchandisers (Olegario, 2001). In fact, the unavailability of financial and moral information of the individuals was the prime reason for the emergence of the credit reporting agencies in the US in the early 1830s (Beckman, 1930; Harold, 1938; Lynch, 2009). The credit reporting process was in fact a kind of ‘hub and spoke’ system (Klein, 2001). The agency did not provide any written report to the merchants and rather verbally described the report while maintaining high confidentiality (Klein, 2001). The financial crisis in 1837 had also played an important role for creation of credit rating agencies as the merchants began to realize that the lack of information was one of the major reasons for the financial crisis (Darbellay, 2013). In the classical period, we have found two major credit reporting agencies namely the ‘mercantile agency’ which was founded by Lewis Tappan in 1841 and the ‘Bradstreet agency’ founded in 1849 by John M. Bradstreet (Madison, 1974). The mercantile agency is considered as the founder of modern CRAs in the US (Darbellay, 2013). Below we discuss in detail the ‘Mercantile Agency’ to portray the CRAs’ picture in the 1800s US market.

‘Mercantile Agency’ the first CRA in the US

In 1841, Lewis Tappan first established the ‘Mercantile Agency’ with aims to sell ‘creditworthy information’ of businesses to the US lenders (Sylla, 2002). Lewis Tappan may fairly be called the originator and father of

Table A.6 Timeline of CRAs evolution in the US

<i>Before 1907</i>					
<i>1820s</i>	<i>1830s</i>	<i>1840s</i>	<i>1850s</i>	<i>1860s</i>	<i>1870s</i>
New York Credit investigators	Credit reporting agency	Mercantile agency	Mercantile agency's reference book	HV Poor started to published annual report on railroad	
	Financial crisis in the US	Bradstreet agency			
<i>After 1907</i>					
<i>1900s</i>	<i>1910s</i>	<i>1920s</i>	<i>1930s</i>	<i>1940s</i>	<i>1950s</i>
Moody established		Fitch established. Standard published first rating report		Standard and Poor merged as S&P	
				NRSRO' rule incorporate	
					New rating agencies enter in the market
<i>1990s</i>	<i>2000s</i>				

the mercantile agency system (Vose, 1916). After his retirement from the agency in 1849, his brother Arthur Tappan and Benjamin Douglass took over the business. In 1854, Mr. Douglass assumed sole ownership of the mercantile agency from Arthur Tappan and made Robert Graham Dun a partner (Vose, 1916). In 1859, Mr. Douglass retired and sold his entire share to his partner Robert G. Dun (p. 77). In this way the entire ownership of the company had transferred to Dun, a non-sponsor of the firm. The first credit rating report (named as ‘Mercantile Agency’s Reference Book’) was published by the agency in 1859 which contained 20,268 clients name from the US and Canada with their respective ratings (Vose, 1916). Subsequently its next versions were published in 1864 and 1866 with 123,000 and 200,000 client’s names, respectively. The invention of the typewriting machine in the 1870s in the US made the printing job smoother and faster and made it easier to record client’s information (Jeong, 2016). The agency had 300 correspondents in 1844 and reached to more than 10,000 by the 1870s, and by the end of 1900th century it produced around 2,000 volumes of credit reports (Jeong, 2016). This bulk volume of reports documents how rapidly the mercantile agency’s business had expanded in the US market. The agency entered the Mexican market and expanded its business in several South African cities like Cape Town, Durban, Port Elizabeth, all states of the German Empire, Austria-Hungary and the Netherlands in 1901–1914 (Jeong, 2016). According to Vose (1916), Lewis Tappan established the mercantile agency in 1841, Benjamin Douglass strengthened it to a national level, Robert Graham Dun expanded it to the entire US and Canada, and finally Robert Dun Douglass made it accepted worldwide in the early 1900s. ‘Dun & Bradstreet’ of the US is the current version of the ‘Mercantile Agency.’

However, the road of the classical period was rocky, and several hurdles had to be passed to gain market confidence. For instance, lawsuits from rated businessmen to the agency, and business houses attempting to pass regulatory legislation against the agency (Darbellay, 2013). However, most of the verdicts in the 1800s were in favor of the agency which helped them with acceptance of their credit rating reports among the business community during this period (Madison, 1974). Another major problem of CRAs in the 1800s the improvement of the quality of credit reports which arose due to a low paid system and part-time correspondent (Madison, 1974). The reporting quality was improved by recruiting full-time paid reporters in most cities of America in the 1870s and contacting

businessmen directly with some set of questions (like a modern questionnaire) to prepare more reliable and active credit reports (Madison, 1974). Gradually, overcoming the internal weaknesses and legal threats, CRAs became a reliable center for providing creditworthiness information of businesses in the 1890s.

The Role of CRAs in the ‘modern period’

The US government had issued railroad bonds to finance the railroad construction project in the 1800s (Mundy, 1907). CRAs’ roles had changed in the beginning of the twentieth century as the agencies had started to do securities rating considering the experience of commercial credit rating (Darbelly, 2013). John Moody published the first security rating (using rating symbols) book ‘Analyses of railroad investment’ in 1909 based on his prior working experience as a financial analyst on railway bond-related financial information (Harold, 1938). His source of information and inspiration came from the then two contemporary books ‘The Earning Powers of Railroads’ published by Floyd Mundy in 1903 and ‘American Railways as Investments’ published by Carl Snyder in 1907 (Harold, 1938). The main limits in both publications were: No rating symbols were used in the books and the bond and security of American railroad ratings were not published together. John Moody classified the railroad securities according to their value and marketability and rated all railroad bonds of the country, which was the most attractive part of his book to the investors (Harold, 1938, p. 12). The business grew rapidly, and Moody had covered one hundred percent of US bond rating by 1924 (Partnoy, 1999). Poor’s publishing company was the second that published security and bond ratings by its prominent analyst Freeman Putney in 1916 (Harold, 1938). Standard Statistics Company, Inc. facilitated interpretation of the data and condensed their language into symbols and ratings, meaning that eventually they published their first version in 1922 with the initiatives and work of Harold G. Parker and R.S. Dana (Harold, 1938). Standard Statistics merged with Poor’s to form ‘Standard and Poors’ in 1941 (West, 1973) and today’s ‘S&P Global,’ is the latest version of the company. The security rating industry got its fourth entrant in 1924 as ‘Fitch Publishing Company,’ an extended business wing of Francis Emory Fitch Inc. (West, 1973).

According to Harold (1938), the attitude of investors toward the rating publication companies in 1900–1924 was mixed. Some bond

traders who had the intelligence to analyze security and bond profitability had coldly welcomed the publishing of ratings of securities and bonds as they considered that this would cut their speculative profit (Harold, 1938). However, it was welcomed by commercial banks and investors as the rating symbols expressed the judgment of investment quality (Darbellay, 2013). Some institutional investors' financial analysts seemed to feel pressured, as the 'psychological value of confirmation' of their own judgment on a specific security and bond compared with the rating published by rating agencies, due to fearing the loss of incentive from the corporation to rate their instrument too high (Harold, 1938). Overall, the rating book published by the agencies acted as a 'source of information' and 'trust' during this period and 'reputational consideration' was the most important driver of CRAs' behavior in order to gain market share during 1920–1930 (Darbellay, 2013; Partnoy, 1999). In summary, 'competition' within the industry and 'communication' within the stakeholders of securities and bonds helped the rating agencies to build 'reputational capital' which helped CRAs to gain acceptance of their ratings by US regulators.

REGULATORY REFERENCES OF CRAS RATING NOTCH AND ITS IMPACT

The two US regulators, the Office of the Comptroller of the Currency (OCC) and the U.S. Securities and Exchange Commission (U.S. SEC), considered CRAs' rating notch for regulatory purposes in different occasions. First, on the heels of a sharp decline in credit quality in 1931, the OCC ruled that banks holdings of publicly rated bonds had to be rated 'BBB' or better by at least one rating agency if they were to be carried at book value; otherwise, the bonds were to be written down to market value and 50 percent of the resulting book losses were to be charged against net bank capital (Cantor & Packer, 1994). If a bond was not rated 'Baa' or better, its short-term price action would have an impact on the adequacy of bank capital, regardless of whether a loss was realized (West, 1973). In addition, in 1936, OCC and the Federal Reserve again revised the rules and prohibited banks altogether from holding bonds not rated triple B ('BBB') or above by at least two agencies (Cantor & Packer, 1994). Due to the difference between an investment grade bond and speculative bond, the rating of bonds became crucial for investment by banks, pension funds and mutual funds as well (Cantor

& Packer, 1994). The National Association of Supervisors of the State Banks also issued a similar resolution in 1949. The National Association of Insurance Commissioners began equating the term ‘investment grade’ as bonds having ‘Baa’ or better in 1951 (West, 1973). This trend continued until the 1970s when bond ratings were considered an essential part of the financial regulation (Darbellay, 2013). Second, the U.S. SEC rules while incorporating ‘Nationally Recognized Statistical Rating Organization’ (NRSRO) in 1973, making credit rating a regulatory role which allows the broker dealers to calculate their net capital requirements based on credit ratings from a NRSRO certified by the SEC (Pinto, 2006). It indicates that the NRSRO rating is a legal instrument that is used for mapping the capital requirement. The NRSRO concept was widely accepted by other context in federal and state legislation.

Although the US regulators were significantly using the CRAs’ rating notch for regulation purposes, the rating agencies in the US market were limited to three until 1975 and the market was getting more competitors in the 1980s (Cantor & Packer, 1994). Currently there are ten NRSROs which are recognized by the US regulators (U.S. SEC, 2018). However, scholars are severely criticizing the regulatory uses of CRAs’ ratings. Abdelal (2007), while quoting the comment of the US Justice Department, noted that the NRSRO designation was inherently anticompetitive and ‘it does not maintain any form of ongoing oversight.’ Partnoy (1999, 2006) more precisely mentioned that, ‘in these ways credit rating agencies were granted a regulatory benefit, one kind of ‘regulatory license’ to generate economic rent by US governmental agencies.’ In fact, the consequence of the regulatory uses of CRAs’ ratings had switched the pay model of CRAs and created an opportunity to enjoy economic rent.

Switching the Pay Model of CRA

Investors were paying the rating agency assessment until 1970 (House of Lords, 2009); however, the revenue model/fee paying model of CRAs had changed to ‘issuer pay’ during the 1970s. There are two reasons behind this historic move of pay model from ‘investors pay’ model to ‘issuer pay’ model. Firstly, the default of Penn Central in 1970 for \$80 million commercial paper caused a panic in the industry and the issuers of the commercial paper were seeking ratings from CRAs to calm down the market and reassure the investors (Cantor & Packer, 1994). Some academics referred to it as ‘restoration of confidence of the investors’ (Darbellay, 2013). The second is the ‘free rider problem’ of the investors

pay model. Some investors pay the rating fees directly to the agencies and others are getting the information without any cost (Partnoy, 1999). To solve this problem, agencies started to charge their rating fees to the issuers considering it as ‘public goods’ and from the issuers perspective as the rating is used for ‘regulatory purposes’ as well, they have incentive to pay the rating fees to the agencies (Partnoy, 1999). Indeed, rating-based regulation played a key role in changing the rating fees model from ‘subscribers’ to ‘issuers’ (Darbellay, 2013).

Moreover, due to growth of structured finance or securitization in the US market, a new door had opened for corporate rating for CRAs (Hunt, 2009) and lead the US CRAs’ majority revenue to be derived from structured finance (Coval et al., 2009). Investors are heavily dependent on CRAs’ ratings and assessment (as third-party assessments of the riskiness of securitization products) on various structured capital market products due to their complex structure; the contents of the underlying asset pool were frequently not revealed (House of Lords, 2009). Considering this role of CRAs, some scholars mentioned them as the ‘gatekeeper of capital’ in the US financial market (Coffee, 2006; Hunt, 2009). To sum up, the regulatory references of CRAs’ rating notch have two great implications on CRAs’ business. First, it changes the initial business model and second, the reliability/trust in CRAs rating had increased significantly among US investors.

CONCLUSION

To conclude, the above-mentioned historical context document that CRAs started their business in the 1800s in the US for providing information about the creditworthiness of business entities. Once their rating had been accepted by investors; CRAs gradually accumulated ‘reputational capital.’ US financial regulators are extensively using the CRAs’ rating notch for regulatory purposes from this ‘reputational capital’ point of view which CRAs had built over their century-long experiences in the market. However, we cannot deny that such regulatory reference has created an economic rent for the US credit rating agencies.

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